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Chest Percussion in Pediatrics: Is It Really A Dying Art?

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Abstract

Percussion of chest in children is often avoided by busy pediatric respiratory practioners and resident doctors. May be it doesnt yield more diagnostic information than auscultation. Pleural effusion, pneumonias, pneumothorax and pericardial effusion are few of the serious issues that can be easily suspected and differentiated only by percussion; while auscultation interpretes all these four as reduced air entry without foreign sounds. Authors are concerned; if physicians and medical students tend to overlook these diagnoses and insist for a radiogram that not only takes time and delays diagnsis or therapy ; but also is relatively expensive and exposes the child to radiations.

Keywords: Percussion; Clinical Skill; Pneumothorax; Clincial Diagnosis.

How does one conjure an image of a doctor?; a man clad in a white apron with a stethoscope hanging around his neck. But little does anyone know about the skilful art of percussion, maybe because doctors and medical students are hardly seen it practising these days. Be it respiratory or cardiac percussion, it does involve good cooperation from the child; a sound proof environment; a stripped child in sitting posture and discriminatory hearing skills of the physician or resident doctor. Does this make the test a cumbersome or difficult to practice? Amongst the four cardinal parts of examination, along with inspection, palpation and auscultation, percussion forms a vital aspect of examination of respiratory system; are we about to give up performing this test in children like JVP examination which is barely standing the test of the times.

One of the favourite habits of Laennec, the pioneer of the stethoscope, was to percuss every part of the chest of a patient admitted due to chest disorders. Although relying wholly on auscultation isn't completely incorrect, but it must be accepted that percussion can provide a rapid indication of intrathoracic problems in a patient who cannot take deep breaths owing to pain, weakness or altered mental status [1]. The test involves hearing the sound generated by percussing across the pleximeter finger placed tangential between the rib spaces and the plexor finger percusses over the middle phalanx. The density of structures and pathology underneath; produces specific sounds like resonant, hyperresonant, dull, stony dull!

There is a Feeling that; the Skill is not Plexed Enough!!

Probable reasons for the loss of interest in this art is likely to be the lack of practice/belief/need/ expertise in this aspect. Are high tech diagnostic tools down regulating our senses of touch and hearing? Obviously, having a look at the X ray would be a quite safer and reliable option; but percussing before referring to the radiologist would help us in two ways; provide a quick idea of any underlying process before the report arrives and also would not cause 'disuse atrophy' of our percussion skills.

Thoracocentesis is a common procedure in medical

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practice, which needs the aid of chest percussion as it allows for the identification of the pleural fluid meniscus, and therefore, the procedure site [2]. Improper tapping can increase the risk of pneumothorax. Although ultrasonography is an alternative aid for this procedure, the timeand money expense incurred by the patient; and the exposure to radiation is a noteworthy side effect. An approach towards this procedure is the method of clavicle tapping with posterior chest auscultation for the housestaff who have poor percussion skills.

A case study describes a new clinical sign in a case series of pneumthoraces. Two patients had inconclusive x rays before insertion of chest drains and the third had a pneumothorax diagnosed on clinical findings alone. Pneumothorax was diagnosed by the anesthetist purely based on sternal percussion and simultaneous auscultation [3]. Computed tomography may be the best investigation in this case, but it is not possible in all settings. A simple and rapid solution to this is chest percussion with simultaneous auscultation.

There is no substitute for the beginner; the skill needs to be learnt in small groups practsing on colleagues; doing it himself under the close criticism of his peers and instructor [4]. Procrastinating it by consoling ourselves that we would compensate later in our practice is the misleading notion that has led to this problem in the first place. Technique is similar in adults and children but a pediatrician does need to build up a skill for percussing children.

If doctors are not confident in carrying out procedures like chest percussion, they tend to advise radiological procedures to their patients. Almost 35 percent of imaging tests were ordered mainly as a defense against lawsuits, when really not required; according to a study presented at the 2011 meeting of the US Orthopaedic Surgeons [5]. This shows the massive wastage of funds and additional health hazards to the patients due to the degradation of simple clinical skills like chest percussion.

In this era of rapid technological advancement, it is difficult to find a doctor who can adjust to low resource clinical setup, maybe portraying the slow degeneration of academic skills in clinical medicine. Mastering percussion is a matter of sheer practice, which is not only helpful in such settings but also in modernised hospitals due to their high patient load. Are we educating our current doctors in such a way which might make them functionally handicapped without assistive technologies? Lets not let the tool die in course of time.

It is time to reunderstand the worth of this clinical tool and keep practising the skill to differentially diagnose lower respiratory patholgies in pediatric respiratory practice; saving time and resources; without any hesitations.

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Original Article

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Study of Maternal and Foetal Morbidity and Mortality in Cases of Prom in Relation to the Elevated C-Reactive Protien

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Abstract

Aims and Objectives: The aims and objectives of this study is to evaluate the maternal and foetal morbidity and mortality in cases of PROM with elevated C-reactive protein. *Material and Methods:* The present study was carried out in the department of Obstetrics and Gynaecology as well as the department of Paediatrics, Katihar Medical College and Hospital, Katihar. A total of 120 cases were selected from Obstetrics OPD and admitted indoor patients of obstetrics ward during the period of October 2012 to September 2014. 100 pregnant women beyond 28 weeks of gestation and with history of leaking per vaginum but not in labour were included in study group. Patients with systemic infection and joint disorder were excluded. Control group included 20 pregnant women beyond 28 weeks of gestation with intact membranes. Proper history, clinical examination and investigations were done in both the groups. *Result:* Incidence of PROM was found to be 3.33%. C-Reactive Protein was significantly raised in 48% cases. Perinatal morbidity was found in 28% babies, out of which 71.4% mothers had raised serum C-Reactive Protein. Perinatal mortality was found in 12% cases in which all had raised serum C-reactive Protein. Puerperal pyrexia was present in 10% cases of which 80% had CRP significantly raised. No maternal mortality occurred. *Conclusion:* It was found that there is significant increase in maternal and foetal morbidity and mortality in cases of PROM where maternal serum C-Reactive Protein level is raised.

Keywords: PROM; C-Reactive Protein; Fetal Morbidity.

Introduction

Pregnancy, childbirth and their consequences are still the leading cause of disease, disability and death amongst women of reproductive age in a developing country like India. Our region i.e. Kosi region, is an underdeveloped area where complications of pregnancy and childbirth are even commoner. Literacy rate is low and people are ignorant about health care.

Human pregnancies are associated with profound inflammatory changes during early phase, resulting in adverse pregnancy outcomes like PROM, Hypertensive disorders of pregnancy, gestational diabetes mellitus, preterm labour, IUGR, LBW, etc.

Maternal Complications of PROM

Preterm Labour, Chorioamnionitis, Septicemia, Post Partum Endometritis.

Foetal Complications of PROM

Cord Prolapse and Foetal Distress, Prematurity, Hyaline Membrane Disease, Pulmonary Hypoplasia, Intraventricular Haemorrhage, Neonatal Sepsis, IUD

CRP is an acute phase reactant produced by liver in response to the pro-inflammatory cytokines, interleukin (IL-6) and Tumour Necrosis Factor (TNF).

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It has a relatively short half life so CRP level is dependent almost entirely on the rate of hepatic synthesis therefore, it is a sensitive index of systemic inflammation. Estimation of maternal serum C-Reactive Protein can be used for an early and reliable predictor of chorioamnionitis. It is an acute phase reactant, present in traces in plasma of healthy individuals. Serum concentration of CRP rises rapidly to 1000 fold in response to tissue trauma or inflammation triggered by the secretion of interleukin-1 by macrophages and prostaglandins. The normal values of CRP in pregnancy range between 0.7 to 0.9 mg/dl irrespective of gestational age. CRP elevation occurs 2-3 days prior to the development of clinical signs of chorioamnionitis and at least 12 hours earlier than any other investigated parameters.

Aims and Objectives

The aims and objectives of this study is to evaluate the maternal and foetal morbidity and mortality in cases of PROM with elevated C-reactive protein.

Material and Methods

The present study was carried out in the department of Obstetrics and Gynaecology as well as the department of Paediatrics, Katihar Medical College and Hospital, Katihar. A total of 120 cases were selected from Obstetrics OPD and admitted indoor patients of obstetrics ward during the period of October 2012 to September 2014. A total of 120 patients were included in the study. Cases were divided into study and control group. 100 pregnant women beyond 28 weeks of gestation and with history of leaking per vaginum but not in labour were included in study group. Patients with systemic infection and joint disorder were excluded. Control group included 20 pregnant women beyond 28 weeks of gestation with intact membranes to see the CRP level at different gestational period.

A detailed history, clinical examination specially to confirm PROM by sterile speculum examination, pad test, Nitrazine paper test, ultrasonography was done. Determination of maternal serum CRP was done by immunostat CRP kit.

Result

Table 1: Incidence of PROM at KMCH between october 2012 to september 2014

Total No of Labour room admission	Total No of Cases of PROM	Incidence
12065	402	3.33%

Table 2: No. of cases showing significantly raised level of c-reactive protein (N=100)

Groups	CRP level	No of Cases	%
Group A	Significantly raised (> 6mg / L)	48	48%
Group B	Not Significantly raised (<6 mg/L)	52	52%

Table 3: C-Reactive protein and apgar score at 1 and 5 minute apgar score at 1 minute

Apgar Score at 1 minute	Group A (significant CRP)	Group B (non-significant CRP)
0-3	12	2
4-6	18	14
7-10	18	36
Apgar Score at 5 minute	**Group A (significant CRP)**	**Group B (non-significant CRP)**
0-3	8	0
4-6	10	6
7-10	30	46

Table 4: C-Reactive protein and perinatal morbidity

Causes	Total no of Cases	Group A	Group B
Asphyxia	16	10	6
RDS	4	2	2
Bronchopneumonia	4	4	0
Septicemia	4	4	0
Total	28	20	8

Table 5: C-reactive protein and perinatal mortality

Causes	Total	Group A	Group B
Still Birth	4	4	0
Septicemia	4	4	0
RDS	2	2	0
Asphyxia	2	2	0
Total	12	12	0

Table 6: C-reactive protein and maternal morbidity

Causes	Total	Group A	Group B
Puerperal Pyrexia	10	8	2
Wound Infection	2	2	0
PPH	6	4	2
Retained Placenta	2	2	0
Total	**20**	**16**	**4**

Table 7: C-reactive protein in normal gestation beyond 28 weeks

Gestational Age (weeks)	Total	CRP Significant	CRP not significant
28-32	5	0	5
33-36	5	0	5
>36	10	0	10
Total	**20**	**0**	**20**

Discussion

Table 1 shows incidence of PROM at KMCH during October 2012 to September 2014 was 3.33% which is within the range of 2-18% as reported by Gunn et al. in 1970. Maxwell (1993) also reported the incidence in between 4-8%.

Analyzing the APGAR score at 1 minute and 5 minute in Table 4 , it was found that in CRP significant cases, 62.5% cases had APGAR score below 6 at 1 minute, while in group B only 30.7% cases had APGAR score between 0-6. In group A, only 40% babies showed improvement in APGAR at 5 minutes while in CRP insignificant cases 62.5% cases showed improvement.

Analyzing the Table 6 and 7 the perinatal morbidity was observed in 28% cases, among which 71.42% had CRP levels significantly raised. Infectious morbidity (Septicemia and Bronchopneumonia) was observed in 8 babies, and all of them had maternal serum CRP level significantly raised.

These finding are very much consisted to that of the Anju M, Tribedi et al (1993) who found perinatal morbidity in 22.1% cases of which 6.6% was attributable by sepsis. Total perinatal mortality rate in their study was 11.1% and 40% of it was attributed by septicemia. They observed that C-reactive protein is highly sensitive (100%) in predicting chorioamnionitis.

Regarding maternal mortality in present study, no maternal death occurred in these 100 cases. In very few studies maternal mortality has been found. Webb (1967) reported 1 maternal death among 5, 451 cases of PROM.

Conclusion

Premature rupture of membranes is a great problem for the Obstetrician. Maternal serum C-reactive protein is the most sensitive and early predictor of chorioamnionitis. It is a rapid, inexpensive, simple bedside test (By immunostat CRP kit). Therefore, it should be used as a routine screening test in all case of PROM for better obstetrical outcome. In this study, we have seen that in patients of PROM with raised C-Reactive Protein have poor maternal and foetal outcome. This poor outcome can be improved by early diagnosis and prompt intervention.

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Lactate Clearance as a Marker of Mortality in Paediatric Intensive Care Unit

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Abstract

Objectives: To correlate lactate clearance with Pediatric Intensive Care Unit (PICU) mortality. *Methods:* 45 (mean age 40.15 mo, 60% males) consecutive admissions in the PICU were enrolled between January 2015 and December 2015. Lactate clearance (Lactate level at admission – level 6 hr later x 100 / lactate level at admission) in first 6 hours of hospitalization was correlated to in-hospital mortality and PRISM score. *Results:* Twelve out of 45 patients died. 90% died among those with delayed/poor clearance (clearance <30%) compared to 8.5% in those with good clearance (clearance >30%) (P<0.001). Lactate clearance <30% predicted mortality with sensitivity of 75%, specificity of 97%, positive predictive value of 90%, and negative predictive value of 91.42%. Predictability was comparable to PRISM score >30. *Conclusion:* Lactate clearance at six hours correlates with mortality in the PICU.

Keywords: In-Hospital Mortality; Lactate Clearance; PRISM Score.

Introduction

Hyperlactatemia is an indicator of inadequate tissue perfusion, particularly in sepsis [1]. It reflects severity of illness with significant prognostic implications [2]. The severity and duration of lactic acidosis in critically ill patients correlates with overall oxygen debt, and increased production [3,4]. However, a single lactate measurement has not been correlated to mortality consistently [5]. Lactate clearance is the rate of fall in lactate after resuscitation is started. This has shown more promise in predicting mortality. Two studies in adult patients with shock showed that lactate clearance of <10% was related to mortality [5,6]. There are no pediatric studies looking at lactate clearance and mortality although Hatheril, et al. [7] showed that persistent hyper-lactatemia at 24 hours (>2 mmol/dL) was associated with mortality. We investigated whether lactate clearance in the early period of resuscitation (first 6 hours of hospitalization) could help predict mortality in pediatric patients

Methods

Admissions to the PICU (aged >1 month and <13 years) were studied between January 2015 and December 2015 after obtaining informed written consent from parents. Children with inborn error of metabolism and trauma were excluded. The study was approved by the hospital ethics committee. As a pilot study, a convenience sample of 45 patients admitted consecutively was enrolled. Heparinized syringe was used to collect venous blood. Lactate estimation was done by Radiometer Copenhagen ABL 555 blood gas analyzer. Lactate levels were estimated at admission and after six hours of admission and the clearance was calculated as follows: Lactate clearance = [Initial Lactate – Current

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Lactate) × 100 / Initial Lactate]. A positive value denotes clearance of lactate, whereas a negative value denotes an increase in lactate after intervention. Routine ICU care and investigations were performed and Pediatric Risk of Mortality (PRISM) score was calculated. In-hospital mortality was the primary outcome of interest.Survivors and non-survivors were compared by the Mann-Whitney test for continuous variables and by Fisher's exact test for categorical variables. For non- parametric data, pair-wise comparisons were made using Wilcoxon's signed-rank test. For continuous variable, we used t-test. A P value <0.05 was taken as statistically significant. SPSS version 16.0 was used.

Results

Out of 45 children (mean age 40.15, range 1-144 months, M:F ratio 1.5:1), twelve died. The initial lactate was not significantly different between those who died and those who survived [8.44 (3.27) vs 7.29 (3.31), P=0.18], but clearance at 6 hours was significantly lower in those who died (-4.01%) than those who survived (55.53) (P<0.001). The mean (SD) PRISM score was also higher in those who died compared with those who survived [43.6 (7.27) vs. 21.7 (9.2), P<0.001]. Where lactate clearance was <30% at 6 hours, nine out of ten died. In those with clearance >30% only three out of thirty-five died. ROC curve analysis for mortality prediction was 0.97 (P< 0.001) (Figure 1). Three children died within 24 hours. Mean (SD) duration of hospital stay in those with lactate clearance >30% was 18.5 (8.44) d (range 3-40), against 3.1 (2.61) d (range 1-9) in those with clearance <30%.An inverse relationship was observed between lactate clearance and PRISM score (Table 1). Lactate clearance <30% at six hours predicted mortality with sensitivity of 75%, specificity of 97%, PPV 90%, NPV 91.42%. Observed and expected mortality was almost similar in those having PRISM score of >30.

Table 1: Ccorrelation of prism s core with lactate clearance in relation to observed and expected mortality

PRISM score	Number of patients	Lactate clearance at 6 hrs (%)	Observed mortality (%)	Expected mortality (%)
01-05	0	-		09
06-10	4	60.9		15
11-15	5	51.0		23
16-20	6	54.4		35
21-25	9	61.3		49
26-30	3	48.0		63
31-35	6	42.3	33.3	75
>35	12	0.7	83.3	>75

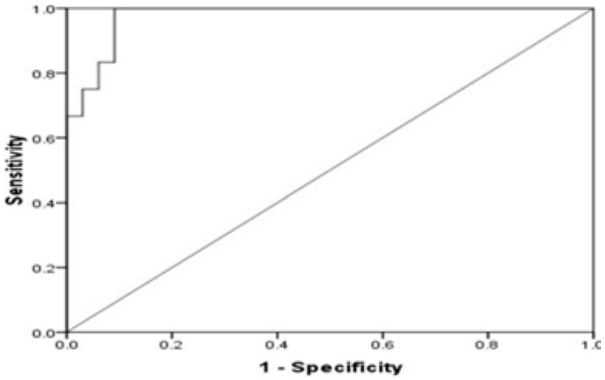

Fig. 1: ROC curve for lactate clearance at 6 hours in relation tomortality prediction

Discussion

Lactate clearance at 6 hours was significantly associated with mortality as was a PRISM score >35. The ROC curve shows mortality prediction of lactate clearance was 0.977. The duration of stay was longer in those with good clearance because of early mortality in the ones with poor clearance. There were very few survivors among those with poor clearance to allow us to compare duration of stay in survivors in the two groups. High admission lactate was a significant independent predictor of mortality in adult patients admitted to ICU [8-10] but it could not be replicated in other studies [6,11].

Studies have suggested the value of monitoring for lactate clearance with hypo-perfusion [6,7]. One of these studies found a 41% higher mortality rate among those subjects who failed to reach a lactate clearance of 10% when compared with those that effectively cleared lactate (60% vs. 19% mortality) during the early resuscitative period. The only study in pediatric age group conducted by

Hatheril, et al. [7], showed that persistent hyper-lactatemia >2 mmol/L after 24 hours was associated with 93% mortality, as compared to 30% in those children whose lactate level had normalized. Following the study in adults, we used lactate clearance at 6 hours [6]. We found that we can predict mortality as early as 6 hours. In our study PPV, NPV

and ROC curve analysis for mortality prediction at 6 hours of lactate clearance are comparable to Hatheril, et al. [7] findings at 24 hours.We found that a lactate clearance ≤30% at six hours and PRISM score more than 30 have high prediction for mortality. Lactate clearance can probably be used as a screening tool to predict adverse outcome. We have provided stratification and cut-off values of lactate clearance which need validation by more studies with larger samples.

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Antimicrobial Sensitivity Pattern of Salmonella Typhi in Eastern Uttar Pradesh

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Abstract

Background: Enteric fever is common waterborne disease in India and poses a therapeutic challenge in children due to emergence of drug resistant organism. *Objective:* the present study was undertaken to review the changes in antibiotic sensitivity and resistance pattern of *salmonella typhi* in eastern Uttar Pradesh. *Methods:* The study consisted of 79 clinically and serologically confirmed cases of enteric fever aged 2-15 years from may 2009 to January 2015 and subjected to blood culture and sensitivity. We had not done phage typing of isolated organism. *Results:* S*almonella typhi* was sensitive to ciprofloxacillin, cefotaxime, ceftriaxone and cefixime in 75%, 72%,71% and 72% respectively and resistant to both ciprofloxacillin and ceftriaxone in 38%. There is declining trend in resistant pattern to amoxicillin, chloramphenicol and cotrimoxazole as observed and reported from same institute in 1996. *Conclusion:* The drug resistant enteric fever still remains a therapeutic challenge and combination therapy with ceftriaxone and other antimicrobials may be another option.

Keywords: Enteric fever; Salmonella typhi; Sensitivity.

Introduction

Enteric fever is an important public health problem in children in developing countries including India. The emergence of multi-drug resistant salmonella typhi (MDRST) and increasing number of enteric fever cases every year have posed a therapeutic challenge in children [1]. Although a number of drugs effective against salmonella typhi (S. typhi) are available, the selection has become increasingly difficult every year. The present study was undertaken to review the change in antibiotics sensitivity and resistance pattern of S. typhi after a decade in eastern region of Uttarpradesh.

Methods

The study consisted of 79 confirmed children of enteric fever, aged 2 years to 15 years attending out patient department or admitted in children hospital, from May 2009 to January 2015 at a tertiary care hospital, India.

Enteric fever was diagnosed on the following basis

1. Clinical symptomatology: fever more than 7 days and presence of splenomegaly,
2. Positive widal test(O titre ≥ 1:180) and
3. Positive blood culture

Inclusion and exclusion Criteria: Only cases with positive blood culture for salmonella typhi was taken for study. Other cases were excluded from study. Patient with concomitant malaria and lower respiratory tract infection and infectious mononucleosis (diagnosis made by positive latex agglutination tests) were also excluded from study.

Complete blood count was done in all patients. After proper aseptic precaution, 5 ml of blood was collected from antecubital vein prior to start of anti-

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microbial therapy and put directly in L-J media and sent for culture and sensitivity in department of microbiology. Presently, there is no facility of phage typing of salmonella in the laboratory.

Treatment: Outpatient children were treated empirically initially with cefixime, whereas in door patient; ceftriaxone. After getting report of culture and sensitivity, ciprofloxacillin or ofloxacillin was added in regimen and continued for minimum of 10 days or 5 days after period of deverfescence.

Result

Ninety six children were enrolled in study but 17 children were excluded from study. Six children had concomitant malaria, 4; septicemia, 4; bacterial meningitis and 3; infectious mononucleosis. Out of Seventy nine remaining children with enteric fever, 49 were males and 30; females, in age range 2-15 years (mean age: 7.23±3.01). The lowest age of affected child was 2.5 year. Fever was present in all cases and leucopenia in 50 (63.3%) cases. Widal test was positive in 58 (73.4%) children.

The organism was most sensitive to ciprofloxacillin (75%) followed by cefotaxime (72%), ceftriaxone (71%) and cefixime (72%). Antimicrobials which showed good sensitivity pattern were amoxicillin (66%), cephalexin (63%), gentamicin (62%) and ampicillin(54%). The isolates were resistant to commonly used drug like ampicillin(46%), chloramphenicol (58%), cotrimoxazole (62%) and amoxicillin(34%),which have reduced as against data of 1996 [1]. Isolates were also resistant to ciprofloxacillin (25%), cefotaxime (28%), ceftriaxone (29%), cefixime(31%) and both ciprofloxacillin and ceftriaxone (38%), which had approximately doubled as reported in 1996 (Table1). It was observed that there is declining trend in resistance pattern in S. typhi with amoxicillin, chloramphenicol and cotrimoxazole but increasing resistance to ciprofloxacillin, third generation parenteral and oral cephalosporins and gentamicin (Table 1).

Table 1: Antibiotic sensitivity / resistance pattern of Salmonella typhi

Drugs	2009-2015		1996	
	Sensitivity(%)	Resistance(%)	Sensitivity(%)	Resistance(%)
Ciprofloxacillin*/ofloxacillin	75	25	87	13
Ceftriaxone	71	29	88	12
Cefotaxime	72	28	79	21
Amoxicillin	66	34	62	38
Cephalexin	63	37	59	41
Cefixime	--	--	72	28
Ampicillin	54	46	9	91
Chloramphenicol	42	58	31	69
Cotrimoxazole	38	62	31	69
Both ciprofloxacillin and ceftriaxone	62	38	10	90
Gentamicin	62	38	91	9

* 1996, sensitivity was done only with ciprofloxacillin

Discussion

There has been an emergence of MDRST strains throughout the world. Due to the development of multi drug resistance and atypical presentation of the disease, enteric fever is becoming difficult to diagnose and manage unless aided by blood culture studies. Integrons are a major vehicle for the spread of multiple-antibiotic resistance [2]. It was also reported that most MDR Salmonella typhi isolates have a conjugative plasmid of the IncHI1 type [3]. This plasmid has been implicated as a significant factor in the persistence and re-emergence of Salmonella serovar Typhi. The type of ß-lactamase resistance reported was mostly TEM-1. PFGE pattern of XbaI-digested genomic DNA of Salmonella had also been reported to be responsible for MDRST in India [3,5].

The observed declining resistance in present study to antimicrobials might be due to infrequent use of amoxicillin, chloramphenicol and cotrimoxazole in past decade and wide spread use of quinolones and third generation parenteral and oral cephalosporins in treatment of enteric fever.

Kumar et al. [4] had reported that Ceftriaxone is well-tolerated and effective drug but expensive, whereas ofloxacin is safe, cost-effective and therapeutic alternative in treatment of multidrug resistant typhoid fever in children with comparable efficacy to ceftriaxone. Sen et al. [5] also reported from Kolkata that Phage type E1 was the most common (60.3%) and most of the MDR strains belonged to phage type E1 and biotype I. Drug resistant typhoid

fever still remains a therapeutic challenge. Combination therapy with ciprofloxacillin and ceftriaxone perhaps is most effective. However, in situations when the patient is critically ill and not responding, gentamicin may be as an adjunct drug.

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Original Article

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A Review of Traditional Practices Regarding Exclusive Breastfeeding: Recommendations and Suggestions

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Abstract

While breastfeeding is nearly universal and it is first immunization for the baby. In India it is recognized as one of the most effective interventions for child survival particularly to improve immunity and to address mortality and morbidity related to major problems e.g. malnutrition, neonatal infections, diarrhea, jaundice and pneumonia etc. Still less than half of children (46%) are fed only exclusive breast milk for the first 6 months. It is estimated that exclusive breastfeeding prevents 13 percent of the estimated under-five deaths while appropriate complementary feeding prevents another 6 percent of under-five deaths. Every 6th death in the country pertains to an infant. In Himachal Pradesh the neonatal mortality rate is 28/1,000 live births means about 3000 children die within 28 days of life. (2005-2006 National Family Health Survey (NFHS-3), India).

The aim of this paper is to review traditional prevailing practices (Myths and Realities) of women regarding exclusive breast feeding in seven wards of panchayat Manjigram, Tehsil Shahpur, district kangra through survey sampling method. The recommendations and suggestion of this paper will address the cultural myths and promote breast feeding by behavioral change. Both Primary and secondary data will be used.

Keywords: Traditional Practices; Breast Feeding; Infant Feeding; Newborn Care.

Introduction

Over the last couple of decades, there has been an increasing interest in the promotion of exclusive breastfeeding as the 'best' feeding method for newborns. This, to a large extent, has been inspired by mounting scientific evidence on the importance of exclusive breastfeeding in reducing infant morbidity and mortality. In resource limited settings where poor and suboptimal breastfeeding practices frequently result to child malnutrition which is a major cause of more than half of all child deaths, exclusive breastfeeding is regarded as imperative for infants' survival. Indeed, of the 6.9 million under five children who were reported dead globally in 2011, an estimated 1 million lives could have been saved by simple and accessible practices such as exclusive breastfeeding (WHO, 2012). Consequently, the WHO and UNICEF (1990) have recommended exclusive breastfeeding for six months, followed by introduction of complementary foods and continued breastfeeding for 24 months or more.

Infant and young child nutrition has been engaging the attention of scientists and planners since last of couples of decade for the very simple reason that growth rate in the life of human beings is maximum during the first year of life and infant feeding practices comprising of both the breastfeeding as well as complementary feeding have major role in

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determining the nutritional status of the child. The link between malnutrition and infant feeding has been well established. Recent scientific evidence reveals that malnutrition has been responsible, directly or indirectly, for 60% of all deaths among children under five years annually. Over 2/3 of these deaths are often associated with inappropriate feeding practices and occur during the first year of life. Only 35% of infants world-wide are exclusively breastfed during the first four months of life and complementary feeding begins either too early or too late with foods which are often nutritionally inadequate and unsafe. Poor feeding practices in infancy and early childhood, resulting in malnutrition, contribute to impaired cognitive and social development, poor school performance and reduced productivity in later life. Poor feeding practices are, therefore, a major threat to social and economic development as they are among the most serious obstacles to attaining and maintaining health of this important age group.

Optimal Infant and Young Child Feeding practices -especially early initiation and exclusive breastfeeding for the first six months of life - help ensure young children the best possible start to life. Breastfeeding is nature's way of nurturing the child, creating a strong bond between the mother and the child. It provides development and learning opportunities to the infant, stimulating all five senses of the child–sight, smell, hearing, taste, touch. Breastfeeding fosters emotional security and affection, with a lifelong impact on psychosocial development. Special fatty acids in breast milk lead to increased Intelligence Quotients (IQs) and better visual acuity. A breastfed baby is likely to have an IQ of around 8 points higher than a non-breastfed baby.

The sound practice of breastfeeding suffered a setback because of the traditional practices and aggressive media campaign of the multinational companies producing baby milk powder and infant foods. The WHO in late 70s recognised the seriousness of the declining trend in breastfeeding and introduced an International Code for Protection and Promotion of Breastfeeding in 1981. The Indian Government adopted a National Code for Protection and Promotion of Breastfeeding in 1983. The Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act 1992, is being implemented by the Department of Women and Child Development since 1993.

Various research studies since early 90s have brought out the beneficial effects of exclusive breastfeeding for the first six months on the growth, development and nutrition and health status of the infant and also for the mother. It was revealed that exclusive breastfeeding not only prevented infections particularly the diarrheal infections in the child but also helped in preventing anemia in child as breast milk has the best bioavailable iron. The appearance of enzyme amylase in the seventh month of the infant was suggestive of desirability of introducing cereal based foods in the diet of infant after the age of six months.

Early initiation of breastfeeding lowers the mother's risk for excess post-partum bleeding and anemia. Exclusive breastfeeding boosts mother's immune system, delays next pregnancy and reduces the insulin needs of diabetic mothers. Breastfeeding can help protect a mother from breast and ovarian cancers and osteoporosis (brittle bones).

While the scientific community was making efforts to adopt six months as the duration of the exclusive breastfeeding, the commercial influence particularly from the West was resisting this move at international forum namely Codex Committee on Nutrition and Foods for Special Dietary Uses, Codex Alimentarius Commission and the World Health Assembly. However, with the persistent efforts of the Department of Women and Child Development with active cooperation of the Department of Health, a landmark decision was taken in the World Health Assembly in May 2001 and Resolution 54.2 made a global recommendation for promoting exclusive breastfeeding for the first six months, introduction of complementary foods thereafter with continued breastfeeding upto the age of two years and beyond. Further, a new Resolution on Infant and Young Child Nutrition (WHA 55.25) was adopted by the 55th World Health Assembly in May 2002. The resolution endorses a Global Strategy on Infant and Young Child Feeding. The 55th World Health Assembly recognizes that inappropriate feeding practices and their consequences are major obstacles to sustainable socio-economic Development and poverty reduction. It also states that Governments will be unsuccessful in their efforts to accelerate economic development in any significant long term sense until optimal child growth and development, specially through appropriate feeding practices, are ensured.

The global strategy gives due weightage to mother and child dyad and advocates that improved infant and young child feeding begins with ensuring the health and nutritional status of women, in their own right, throughout all stages of life.

In the context of Millennium Development Goal 4, scientific evidences have highlighted initiation of breastfeeding immediately after birth without squeezing out the colostrum (first milk) and exclusive breastfeeding for the first six months as the key to

tackle infant nutrition and also survival of infant. A study conducted by UNICEF (2006)7 has reported that if babies are exclusively breastfed for the first six months, an estimated 3500 lives could be saved each day. In India, it will account to saving 250,000 newborn babies annually. Recent research on accelerating child survival published in the Breastfeeding Promotion Network of India (BPNI) Lancet8 has clearly established that the universalization of early initiation of breastfeeding within one hour of birth has the tremendous potential in reducing 31 per cent of neonatal deaths, which is about 10 per cent of total child deaths.

Benefits of Breast Feeding

In the given table researcher tried to state the benefits of breast feeding not only to the infant but also to mother.

Benefits for the mother	Benefits for the infant	Other benefits
Lower risk of breast cancer	Complete nutrition that changes with baby's needs.	Lower health care costs as breastfed babies are not sick as often as bottle-fed babies.
Increased postpartum weight loss	Contains antibodies that protect baby from illness.	Good for the environment- less waste from bottles and packaging.
Increased bonding with the infant	Human milk is sterile baby is not exposed to outside germs.	
Money-saving	Lower risk of obesity.	
Reduced postpartum bleeding due to oxytocin release from breast feeding	Lower risk of asthma.	
Natural birth control for the first 6 months.	Lower risk of eczema and allergies.	
Lower risk of postpartum depression	Lower risk of SIDS.	
Lower risk to type II diabetes	Lower risk of heart disease.	
	Lower risk of diabetes.	
	Lower risk of diarrhea, constipation, and other GI disorders.	
	Lower incidence of hospitalization.	

Objectives of the Study

- To study the prevailing traditional practices regarding exclusive breast feeding.
- Initiation and myths attached to colostrums feeding
- To find out the care practices of pregnant women and the women with immediate birth deliveries.
- To find out the practices leading to malnourishment and other neo natal illness.

Research Methodology

Research Tools and Technique Used

Stratified Random Sampling technique is used, an interview schedule was used in which different open and close ended questions were included, In order to collect genuine information on various traditional practices which are prevailing in the targeted area, To increase the participation of the respondents some questions were not compulsory such as Name of the respondent but some questions are kept Compulsory to know the kind of activities which are practiced regarding the exclusive breast feeding.

Interviewing method used was structured interview in which all together Twenty nine questions were asked on sensitive issues.

This descriptive study aims to assess the traditional practices regarding exclusive breastfeeding in the seven wards of panchayat "Manjigram".

Study Setting

The study was conducted among 30 mothers of panchayat manjigram of tehsil shahpur block rait distt. Kangra H.P.

Demographics of Study Settings

Panchayat Manjigram is one of the panchayat of Tehsil shahpur. Manjigram is 2 km ahead towards Pathankot from Shahpur.The name of the Pradhan is Nina Thakur. Total population of the panchayat manjigram 3581 in which 1681 are males and 1900 are females.

There are seven wards in panchayat namely-

- Nargoni
- Kulihar
- Dramman-1

- Dramman-2
- Dadhrolli
- Bhaniyar-1
- Bhaniyar-2

In Panchayat Manjigram the structure of local community workers are as follows-

There are three ASHA worker deputed namely-

- Vindu Bala
- Seema Kumari
- Sunita Devi

There are two female health workers namely-

- Vipna kumari at Dohab health sub centre
- Neelam Bala at kiari health sub centre

Usually in tehsil shahpur one health sub-centre is allotted to a Panchayat but Manjigram is having two health sub centre namely-

- Dohab
- Kiari

Health Sub centre is having one female and one male health worker.

Sampling

Researcher made a visit to all the 7 wards of the panchayat manjigram and before visiting to the wards researcher decided to interview 4 mothers from each ward so, stratified random sampling is used after collecting the information 30 respondents information is used in this study.

Data Analysis

Personal Information

Q.1.1 Age of the Respondents

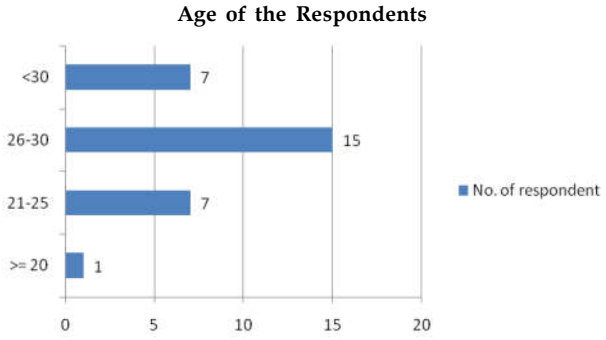

Fig. 1.1:

Interpretation

In this study we found only one mother who was under *20* year of age. Largest number of women in the survey belong to the age group of 26-30 years. Our focus was on newbie mothers and those who are mothers of children of 1-6 year of age.

Q.1.2 No. of children. (Open ended)

Interpration

80% of women has 2 children, few had one child and no women were found with more than three children.

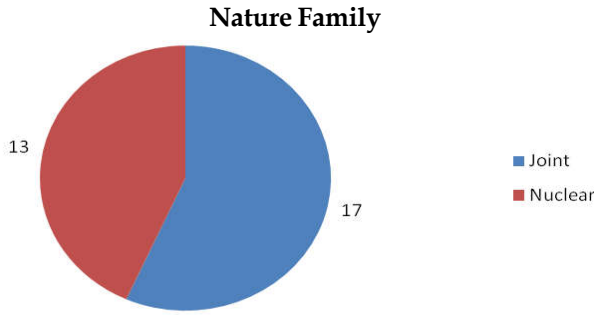

Fig. 1.2:

Q.1.3 Nature of the family

Interpretation

In Himachal a mix culture of joint and nuclear family is observed. Most of the women prefer to be in a joint family, it will assist them in upbringing of their children.

Also in a joint family, working women found it much easier to maintain a balance between their work and children. They feel much satisfied with the care, security and values their children get in a joint family.

60% of the families were joint family while 40% were nuclear. No extended family was observed.

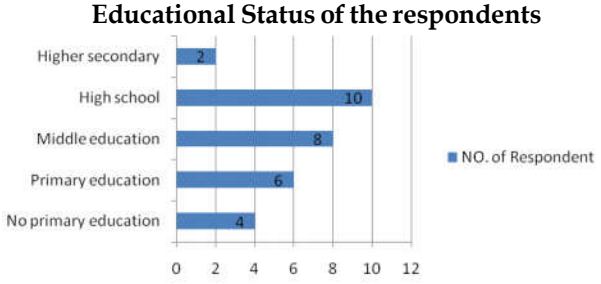

Fig. 1.3:

Q.1.4 Educational Status-

Interpretation

A shocking observation was made when the 13% of women in the study had no primary education.

Most of the women were high school pass. It was observed that in this section of women that the myths and unawareness about the colostrums and breast feeding prevail to a much larger extent.

Assessment of Socio Cultural Beliefs and Practices

Q.2.1 Beliefs prevailing in the community with regards to physical activities of pregnant mothers(open ended).

Interpretation

During study in the village it was found that there is a strong belief that a pregnant woman must keep on doing little work. If they sit ideal the child born will be lazy and may suffer from some disease.

In the early days of pregnancy the women are not allowed to walk or stand much. They are not asked to lift heavy things. A myth is associated with the long walking is that it will lead to premature delivery of the child.

The sweeping and swapping of the floor become necessary in the last trimester as it is believed that it will help in easy birth of the child. But this work should be done in a traditional Indian way.

Local Community Worker Awareness about your Delivery

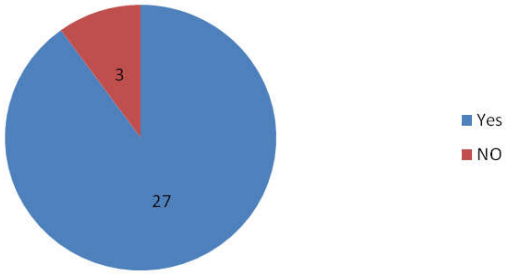

Fig. 2.1:

Q2.2 Local community worker were aware about your delivery

Interpretation

The results of the above questions leads us to the success of those policies which are formulated to take care of the pregnant women.90% of the respondents says that local community worker were aware about the delivery.

Name of Local Community Worker

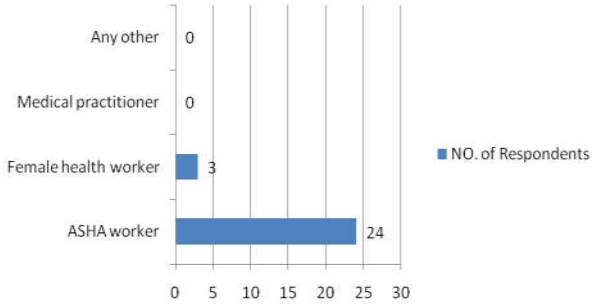

Fig. 2.2:

Q.2.3 Name of local community worker who were aware about the delivery.

Interpretation

Most of the respondents named ASHA worker who knows about the delivery. ASHA worker have been guiding them throughout the pregnancy. Role of ASHA worker in the community is commendable. They are trying their best to aware mothers about pre and post natal care, breast feeding and vaccination to protect child from various diseases

Visits before Delivery for Vaccination

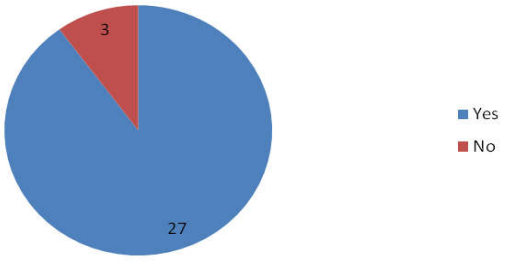

Fig. 2.3:

Q.2.4 Local community worker have visited you before delivery for vaccination.

Interpretation

The women were timely vaccinated by the female health worker and ASHA worker. Their card was made and was filled by those who did the vaccination. Also iron folic tablets and other food supplements were provided to them.

Type of Delivery

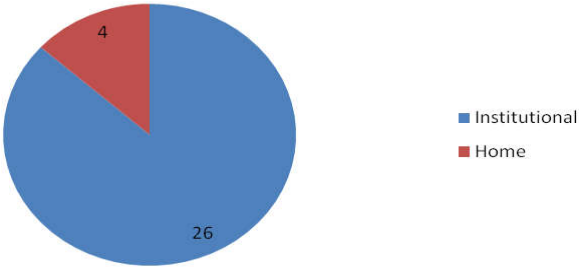

Fig. 2.4:

Q.2.5 Whether you have Institutional delivery/ home delivery

Interpretation

Most of the women had institutional deliveries and for this the credit goes to NHM program and ASHA workers.ASHA workers have been able to create awareness among the women about the benefits of institutional delivery and the drawbacks that they have to face in home delivery.

In case of institutional delivery the baby born is immediately weighed and polio dose is given to them, also other vaccinations are also given.

If baby is born with any symptom of disease, treatment can be started immediately.

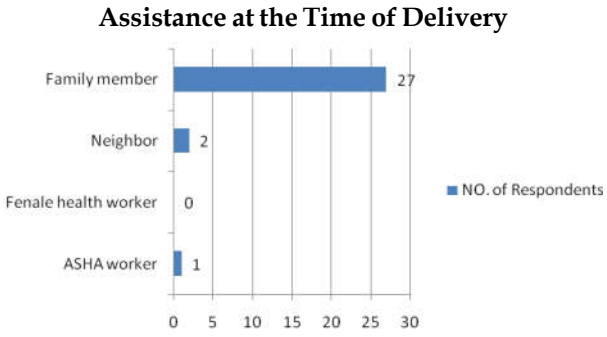

Fig. 2.5:

Q.2.6 Who assisted and accompanied you in delivery?

Interpretation

In most of the case the family member assisted the women for the delivery. Rarely ASHA worker and some neighbor assisted them. In the area under study the delivery of a baby is considered a family affair and family take the whole responsibility.

Elders in the family guide would be mother about what to do at the time of labor pain and also proves to be an encouragement to them. A moral support is provided by the family members to the women when in pain, it help to reduce stress they are facing at time of delivery

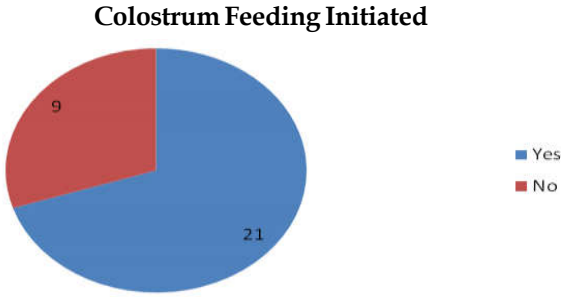

Fig. 2.6:

Q.2.7 Colostrum feeding was initiated

Interpretation

In most of the cases a positive response was observed to the question of colostrum feeding.

The most of the deliveries were institutionalized but still even in the case of institutional deliveries the colostrum was not given to the baby. The reason behind these is purely myths that have been there for generations. Traditionally they don't consider colostrum good for the baby's development and growth. In spite of all the efforts by government and WHO these types of traditions still prevails in the society which results that 30% of the respondents says that colostrom feeding was not initated.

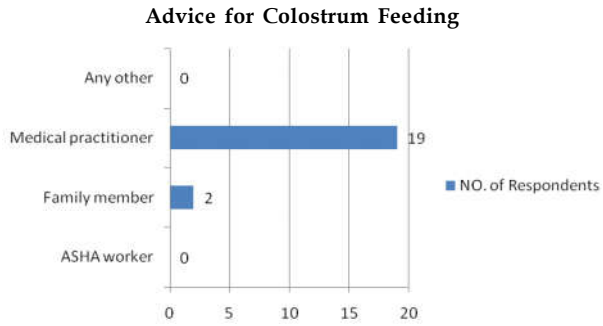

Fig. 2.7:

Q.2.8 If colostrum is initiated than who initiated or advice you for colostrum feeding

Interpretation

As most of deliveries were institutionalized so in 90% cases the medical practitioner and other staff members advised the colostrum feeding. The family have faith on those practitioners thus followed the advice. The feeding was done with the help of staff member and family member.

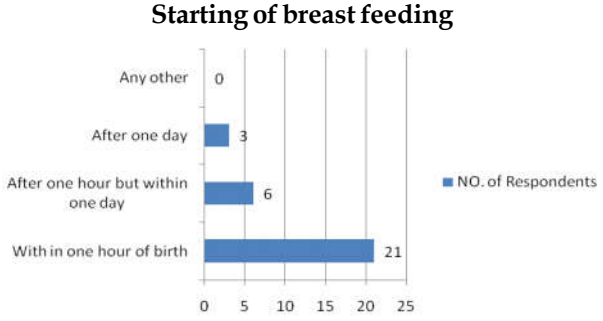

Fig. 2.8:

Q.2.9 When do you start the breastfeeding?

Interpretation

Most of the respondents i.e.70% starts the breastfeeding within one hour of the birth because they were very well aware about the importance of the colostrom feeding but there are some respondents who starts breastfeeding after one hour but within one day because they have such belief that first milk is the dirty milk so first they use to dispose that milk therefore the process of disposing the first milk takes some time upto that period respondents give supplementary fed to the beby.

Any New Natal illness to Child

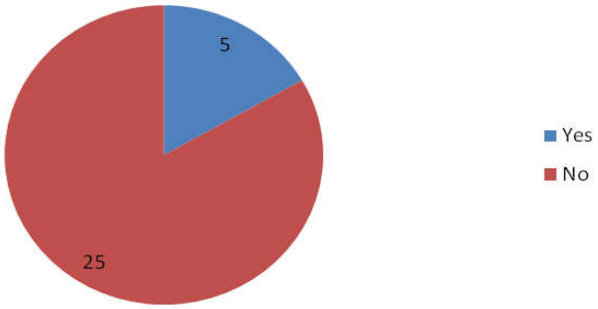

Fig. 2.9

Q.2.10 Whether your baby suffered with neo natal illness?

Interpretation

From the fig. 2.9 it can be seen that 83% of the respondents says that their baby doesn't face any neo natal illness and only 17% responds that their baby have or other new natal illness.

Type of Illness

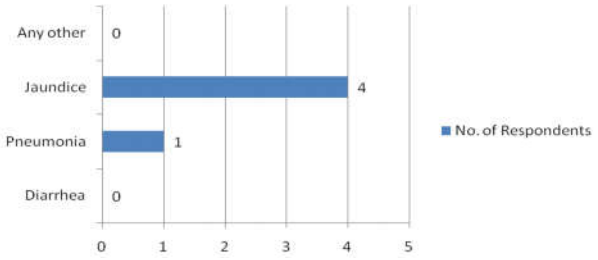

Fig. 2.10:

Q.2.11 If yes than which type of illness?

Interpretation

Maximum (83%) babies were born healthy without symptom of any disease. But some suffer from pneumonia or jaundice. These two diseases are quite often observed in the babies. Jaundice being in top with 80% reported cases. In hospitals or institutions treatment for these or any other disease is readily available to the patient i.e. new born. The treatment is more effective with exclusive breastfeeding given to the baby by his/her mother.

Assistence During Breast Feeding

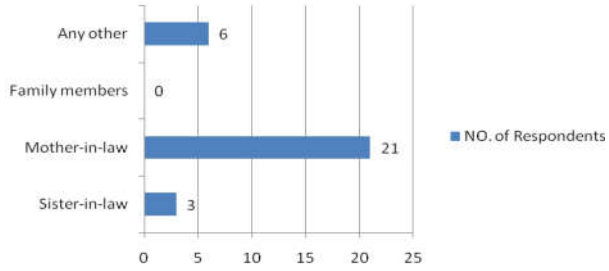

Fig. 2.11:

Q.2.12 Who assist you to feed the baby?

Interpretation

Mother-in-law has proven to be a big help in assisting new mothers to feed their children. In 70% cases mother-in-law helped her daughter-in-law, this shows that the family feel its responsibility towards the mother and child. 10% cases were said to be assited by sister-in-law. Thus family comtribution in assisting mother to breastfeed the child reaches to 80% in total. Other 20% have said to be assisted by others be it mother herself or ASHA worker or other help in surroundings.

Q.2.13 What are the rituals regarding feeding for the boy child?(Open ended)

Interpretation

It was observed that the child is equally fed weather it is a male child or a female child. No sign of gender based discrimination was present in the area regarding breastfeeding. Mother equally feed her children be it a boy or a girl.

Q.2.14 What are the rituals regarding feeding for the girl child? (Open ended)

Interpretation

It was observed that the child is equally fed weather it is a male child or a female child. No sign of gender based discrimination was present in the area regarding breastfeeding. Mother equally feed her children be it a boy or a girl.

First feed to baby

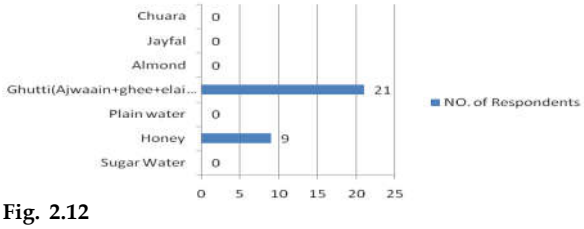

Fig. 2.12

Q.2.15 What feed was given to the baby in one hour after birth?

Interpretation

Though it is not recommended to give any other kind of feed to the baby except mother's milk till six months. But some traditions still prevails in the community. They lay emphasis on feeding the child with "ghutti" and honey first.

Honey is considered to be given after birth with the help of a golden spoon/pen. It is said one should write some sacred words on tongue of the infant, it will give allow the baby to speak sweet and polite language.

"Ghutti" is mainly a cardamom concentrated solution in water. It is also used as a supplement. It is used as digestive syrup for the baby.

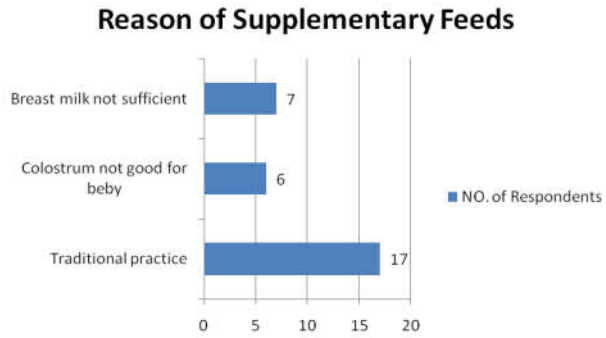

Fig. 2.13

Q.2.16 State the reason why supplementary feeds is given to the baby immediately after birth

Interpretation

Supplementary feed is given to baby immediately after birth and this custom is associated with the traditions prevailing in the area. People argue that their ancestors have tried and tested these over years and this is ideal way of welcoming the baby to the world. They follow these traditions strictly with new modern ways. 23% of women in the study feels that breast feeding is not sufficient for the baby and supplements will give more strength to the child. It will help the child to grow fast and will make him/her healthy.

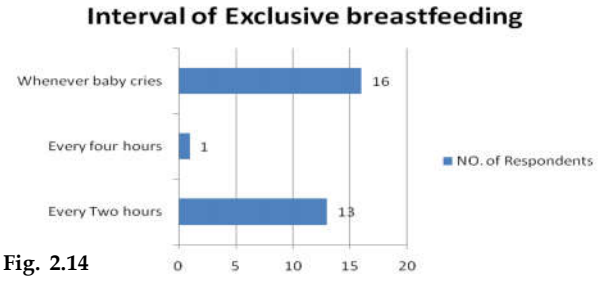

Fig. 2.14

Q.2.17 Intervals of exclusive breastfeeding in day times

Interpretation

53% of women said that the feed is given to the baby whenever the baby will cry. Duration of the baby crying may differ from 1hour to 3 hours. They are not comfortable in awaking the baby for feeding, as they will get time for themselves when baby is sleeping. Some says that with baby many Gods are sleeping so if they awake baby Gods will be disturbed. 43% women follow the ideal interval time i.e. they feed baby after every two hours. These women are influenced by community health workers.

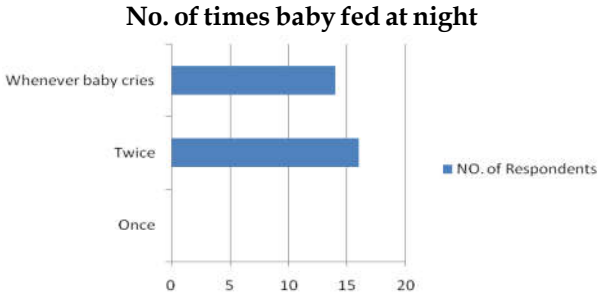

Fig. 2.15:

Q.2.18 No. of times baby fed at night

Interpretation

Here 53% women feed their baby only twice at night. They are not able to cope up with the stress and are soo much tired that they don't even hear the baby cry. They only feed twice when asked by others. Rest baby is given baby milk powder or cow's milk.

46% women feed their babies every time when it cries.

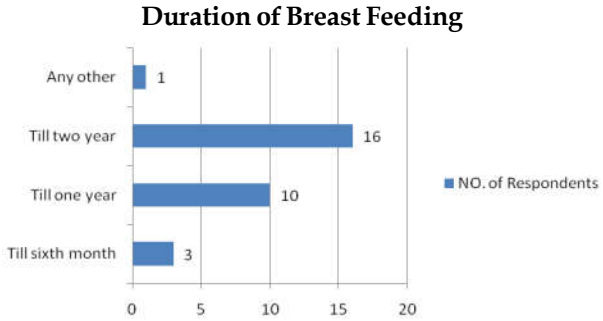

Fig. 2.16

Q.2.19 Duration of breast feeding given to the baby

Interpretation

Most of the mothers feed their children up to two years of age, this count for the 53% women. 33% of

women feed they child till one year and only 10% feed child till six months. No mother was found to feed child less than six months.

Fig. 2.17

Q.2.20 when you give first bath to the baby?

Interpretation

Fig.2.17 revels one more traditional practice regarding the first bath to the baby in 50% percent cases the first bath to baby is given immediate after delivery or on the same day of delivery respondent gives the rationale of this practice that the baby is impure and dirty sometimes some postpartum material get stick to baby which must be cleaned immediately.

Q.2.21 What food is given immediate after bath to baby? (open ended)

Interpretation

Respondents use to rub a paste of jaifal on the head and chest of the child after the bath. It is said to be sacred and provide immunity to child from diseases.Almond paste was also said to be given to baby after bath, almond is said to increase the brain capacity of child. It is belived that almond will make child sharper and smarter. Homemade Cardamom syrup was also said to be given

Q.2.22 When mother gets proper meal after delivery?

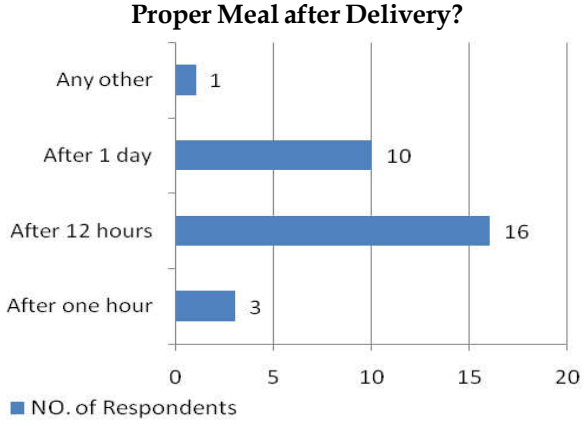

Fig. 2.18

Interpretation

53% of mothers was given proper meal after 12 hours of delivery and 33% were given after one day. It was observed after the birth of the child all the concentration was on baby and less were concerned about mothers. Also mothers are not given full apetite so that they are avoided of obesity. Only liquid or semi solid foods like milk with dry fruit mixture or milk with pure ghee is provided to them. Only 10% were given meal after one hour. Researcher observes that the procedure of not giving full appetite and proper meal is purely a myth. As if mother is not provided with full diet, how she will be able to feed her baby!! Also the concept of getting obesity by proper meal to women is wrong, because milk with dryfruits and pure ghee will lead to more obesity as it is more fatty also not easily digested.

Q.2.23 What is the first feed given after delivery to the mother?

Interpretation

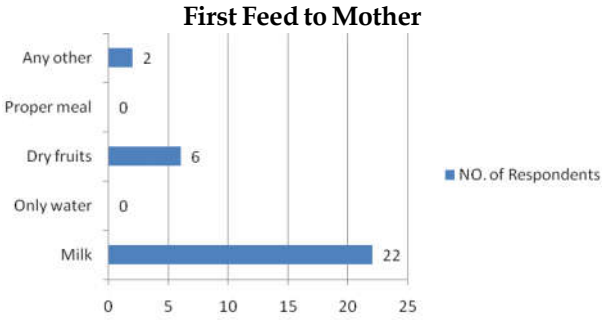

Fig. 2.19

After delivery 73% of mothers were given only milk. Milk is considered to be light as well as most nutritive substance by the elder of the community. It is also said to increase the milk production in lactating mothers, thus most of the people prefer to feed newly mother with milk. 20% were fed by dry fruits and remaining 6% with any other edible substance (like sweets or Prasad).

The belief of not giving proper meal is attached with the myth that meal or food will make women fatty, so light food must be given. No wonder the people believe that milk with dry fruit and pure ghee is light and will not increase fat. But in reality it is fattier and not easily digested.

To restore loss energy of women who has given birth and has to feed her baby adequate meal must be provide.

Q.2.24 Do you think exclusive breast feeding is good for health of mother and child

If yes than why?

If No than why?

Interpretation

It was very surprising for the researcher that only one or two respondents answer absurdly for the above question, otherwise most of the respondents were blank while answering.

It is a usual human tendency to adopt only such practices which are beneficial for him. Therefore an initiative must be taken to aware the masses for the benefits of exclusive breast feeding, colostrums feed, discourage complimentary feed before six months and have behavioral change. This is possible by active and affective ICT, Media, and involving Health worker at grassroot level, all health officials at different levels through Govt. and non Govt. agencies.

Researcher Observation and Findings

During the research it was observed by the researcher that:

- Media is very crucial and informative to shape the responses of the women. They were aware of what has to be answered or what is the actual prescribed practice by government regarding feeding. They were ready with the answers what has been prescribed due to awareness through ICT, media, television, radio etc. But when researcher was successful in establishing rapport with them or assure them that he will not reveal your responses to anyone and no government body, ASHA or any other office bearer or doctors are involved in this research then they share the exact practices or rituals.
- Few respondents have the knowledge about the benefits of the breast feeding It was observed during research that women are practicing some activities like supplementary feed to baby(Powder milk and cow milk) and colostrum feeding avoidance because their ancestors did the same they don't have any rationale for these activities.
- High impact of old age women in the decision making was observed. The answers for avoiding colostrum feed and initiation of supplementary food within six months was due to the mothers in law advice.
- First feed as a honey has to be given to baby by the successful person of the community because they believe that if they do so than one day their baby will also be successful.
- Imprinting "ÖM" on the tongue of child with honey is also a ritual.
- Regularly bathing a child either in summer or winter sometime frequency in a day may be two or three for bathing is practiced as it will improve child health. And after bath giving mixture of almond and ajwain to child so that child could have sound sleep.
- Maximum no. of respondents believe that mother milk is not sufficient as per child appetite is increasing with his age so cow milk (belief of economically not sound persons) and powder milk (belief of economically sound persons) is given.
- Highly rich family women don't give breast feed as it will de shape her figure.
- Very less number of Women are bearing child below age of 20.This is because in Himachal Pradesh maximum people got married at prescribed age. So there is very less chances of maternal deaths and miscarriages.

Recommendations and Suggestions

For Policy Makers

1. Behavioral change model has to be applied affectively. In Indian society old age women particularly mother in laws had high influence in decision making in the house. So considerable focus should be given to the people of old age for behavior change regarding the traditional harmful practices resulting in high neo natal illnesses.
2. Involvement of NGO's for intervention with community members to enhance infant and young child feeding practices.
3. To have counseling facilities in the hospital setting to promote breast feed and colostrums feed.
4. Advocacy involving local leaders and influential persons.
5. Strict monitoring, supervision and periodic review of health workers at each level regarding feeding practices in the community.
6. Special care units at grassroots level for high risk pregnant women and new born of the community.
7. Special focus should be given to the urban and economically rich class communities to promote breast feed and decrease complimentary feed.

For Community

1. To decrease neo natal mortality and

malnourished children ratio concept of exclusive breast feeding must be preached with the decision makers of house especially to old age women through community worker or social worker.

2. A reform need to be taken by every community member to avoid pre lacteal feed (Honey in particular), as in maximum no. of cases regarding jaundice to neo natal is result of the same. For this sensitization is required
3. Awareness and promotion of (KMC) Kangaroo Mother Care to decrease the rate of child Pneumonia and to increase breast milk with lactating mothers.
4. To change the behavior of the lactating mother by teaching them to feed baby in every two hour and not to wait for baby cry to provide him feed. Also make them to learn pre indication of baby hunger. Local community worker must be involved to teach lactating mothers for pre indication of baby and how to feed properly.
5. Lactating mothers must be informed through ICT and other media that if they have busy schedule and are not able to breast feed to their child, then milk can be extracted and stored which has to be given to child by any of the family member strictly by washed spoon and bowl. Bottle feeders must not be allowed in any case.
6. Strict supervision by local community health worker is required to monitor the child bathing practice of the community. It should be as per the UNICEF and WHO guidelines universally.
7. Awareness to provide balanced diet to the lactating mother after the delivery is required.
8. The concept of not giving proper rest to the pregnant lady must be rectified by proper intervention of workers involved in it.

Conclusion

Breastfeeding is a very important aspect of maternal and child health. Exclusive breastfeeding for six months help a child to counter malnutrition. Mother's milk provides all kind of nutrition for the optimum growth of the child. It keeps the body of the child hydrated and provides protection against infections and allergies. Also it help lactating mothers to fight with many negative syndrome a women can suffer like breast cancer, obesity etc..

Colostrum (first milk) produced by mammary glands of the mother. It is most precious thing for a new born as it contains many antibodies that help the child to fight against several infections. It helps to prevent jaundice. It stimulate the development of gut in a new born also have a mild laxative effect that help the child to pass its first stool.

Breastfeeding has number of advantage to mother as well as to child. Still some of the traditions or myths have countered its benefits. The traditions become more important to individuals health. These traditions are believed to be used from generations and people have immense faith in them. Lack of awareness doesn't contribute much to the reasons behind these myths rather it is a strong belief system that has a hold on people.

Therefore Outreach and advocacy is required for removing wrong myths and harmful traditional practices by the community regarding exclusive breast feeding and colostrums feed. Also social action with propaganda of behavioral change at all level is required. This initial small step to promote breast feeding will help in reduction of many serious issues and diseases as Malnourishment, child pneumonia, jaundice, diarrhea, obesity, anemia etc and overall reduction in infant mortality and morbidity.

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Study of Causes of Lactation Failure and the Effect of Intervention

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Abstract

Exclusive breastfeeding is recommended for all infants upto 6 months of age. However, all mothers are not able to exclusively breastfeed their babies upto 6 months and discontinue/are forced to discontinue breastfeeding partially or fully and introduce top milk or complimentary feeding before 6 months. This leads to various infections and malnutrition in infants due to early introduction of unhygienic and inadequate feeds. *Objective*: To study the causes of failure of lactation in mothers giving supplementary feeds to babies below 6 months and to study the effect of intervention. *Design :* Prospective study. *Method:* 100 underweight-for-age babies on supplementary feeding before 6 months of age and attending the Child Health Promotion Clinic (CHPC) of Kalawati Saran Children's Hospital, Delhi were enrolled after obtaining an informed consent over a period of 3 months. The mothers were interviewed for feeding practices, their own diet, rest/stress, knowledge regarding feeding and diet, reasons for failure of breastfeeding and the treatment taken, if any. *Case–specific advice was* given to the mothers regarding proper attachment, positioning, exclusive breastfeeding upto 6 months and extra diet, and rest. They were asked to comply with the advice and followed up every week for 4 weeks**.** Metoclopramide (10 mg TDS) was advised only when non –pharmacological methods were not effective. They were asked to report back in case of any adverse effect(s). *Observations*: The response was measured in terms of decrease in supplementary feeding and /or re-establishment of exclusive breastfeeding. *Subjects:* A total of 100-62 male and 38 female babies were enrolled in the study. 38 babies were 0-2 months, 40 were 2-4 months and 22 were 4-6 months of age. Out of the 100 mothers, 62 mothers were 20-24 year old, 27 were 25-29 year, 9 were 30-35 year and 2 were > 35 year old. 59% were first time mothers. *Feeding pattern*: On being interviewed , it was found that 79 babies were on top milk. 40 were bottle fed and 39 were on katori/spoon feeds. *Maternal education :* 15% mothers were illiterate, 66 % had completed school (12th grade) and only 15% had college education. Only 58% had knowledge regarding the advantages of breastmilk. *Maternal diet:* 32% mothers did not have adequate knowledge regarding requirement of extra-diet/nutrition during lactation. 74% were consuming less food than they were consuming during pregnancy ie only 26% were consuming more food than during pregnancy. *Family support :* Only 80% mothers had family support available to them during lactation period. 67% mothers started top feeding the baby at onset of slighted problem. Out of these, 45% started bottle feeding. Only 27% sought the advice of a medical personnel/doctor. Best results (100%) in establishment of exclusive breastfeeding after councelling were obtained in problems in attachment/ positioning /nipple, baby's illness, not getting enough diet, mother too busy in housework and family pressure to stop breastfeeds. Superstitious mothers who believed that their milk was poisonous, also benefitted from councelling and were able to re-establish lactation. Positive results of counseling were observed in solving the problems of lactation, caused due to misconceptions and re-establishment of exclusive breastfeeding was seen in a large number of mothers. *Conclusions:* Counseling was especially helpful in solving the problems of lactation, caused due to misconceptions and baby/breast disorders. More stress is required on adolescent education, and antenatal and postnatal counseling regarding adequate maternal diet and family counseling in national programmes in our country.

Keywords: Breastfeeding; Counceling; Lactation.

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Introduction

Breastfeeding is one of the important aspects of a woman's life. Adequate support, advice and encouragement can make it a more beautiful phase of her life and also help immensely in reducing neonatal morbidity and mortality[1,2]. Multiple factors influence breastfeeding and vary in various geographical regions [3,4].

Objective

To study the causes of failure of lactation in mothers giving supplementary feeds to babies below 6 months and to study the effect of intervention.

Design

Prospective study.

Method

100 underweight-for-age babies on supplementary feeding before 6 months of age and attending the Child Health Promotion Clinic (CHPC) of Kalawati Saran Children's Hospital, Delhi were enrolled after obtaining an informed consent over a period of 3 months.

The mothers were interviewed for feeding practices, their own diet, rest/stress, knowledge regarding feeding and diet, reasons for failure of breastfeeding and the treatment taken, if any Case–specific advice was given to the mothers regarding proper attachment, positioning, exclusive breastfeeding upto 6 months and extra diet, and rest. They were asked to comply with the advice and followed up every week for 4 weeks**.** Metoclopramide (10 mg TDS) was advised only when non – pharmacological methods were not effective. They were asked to report back in case of any adverse effect(s).

Observations

The response was measured in terms of decrease in supplementary feeding and /or re-establishment of exclusive breastfeeding.

Subjects

A total of 100- 62 male and 38 female babies were enrolled in the study (Table 1).

38 babies were 0-2 months, 40 were 2-4 months and 22 were 4-6 months of age (Table 2).

Out of the 100 mothers, 62 mothers were 20-24 year old, 27 were 25-29 year, 9 were 30-35 year and 2 were > 35 year old (Table 3). 59% were first time mothers (Table 4).

Feeding Pattern

On being interviewed , it was found that 79 babies were on top milk (table 5). 40 were bottle fed and 39 were on katori/spoon feeds (Table 6).

Maternal Education

15% mothers were illiterate, 66 % had completed school (12th grade) and only 15% had college education (Table 7). Only 58% had knowledge regarding the advantages of breastmilk (Table 8).

Maternal Diet

32% mothers did not have adequate knowledge regarding requirement of extra-diet/nutrition during lactation (Table 9). 74% were consuming less food than they were consuming during pregnancy ie only 26% were consuming more food than during pregnancy (Table 10).

Family Support

Only 80% mothers had family support available to them during lactation period (Table 11). 67% mothers started top feeding the baby at onset of slighted problem. Out of these, 45% started bottle feeding. Only 27% sought the advice of a medical personnel/doctor (Table 12).

Best results (100%) in establishment of exclusive breastfeeding after councelling were obtained in problems in attachment/ positioning /nipple, baby's illness, not getting enough diet, mother too busy in housework and family pressure to stop breastfeeds. Superstitious mothers who believed that their milk was poisonous, also benefitted from councelling and were able to re-establish lactation (Table 14).

Antenatal and lactation/IYCF (Infant and Young Child Feeding) clinics should focus on the benefits of breastfeeding, anatomy and physiology of the breast, techniques of breastfeeding, care of the breast(s) and common problems likely to be encountered during lactation and their remedies. These antenatal and lactation/IYCF (Infant and Young Child Feeding) clinics can help resolve maternal apprehensions regarding breastfeeding of the baby and promote breastfeeding as a method to reduce the risk of cancer [5]. This will decrease the likelihood of discontinuation of lactation.

Table 1: Sex distribution of babies enrolled in the study

Sex	No. of babies (%)
Male	62 (62)
Female	38 (38)
Total	100

Table 2: Age distribution of babies enrolled in the study.

Age (months)	No. of babies
0-2	38 (38)
2-4	40 (40)
4-6	22 (22)
Total	100

Table 3: Age distribution of mothers whose babies were enrolled in the study.

Age of the mother (yr)	No of mothers (%)
20-24	62 (62)
25-29	27 (27)
30-35	9 (9)
>35	2 (2)

Table 4: Gravida status of mothers whose babies were enrolled in the study.

Gravida status of mother	No of mothers (%)
Primigravida	59 (59)
Multigravida	41 (41)

Table 5: Type of milk given to babies

Type of milk	No of babies (%)
Breast milk	21 (21)
Top milk	79 (79)

Table 6: Feeding techniques of babies enrolled in the study

Feeding technique	No of babies (%)
Bottle feeding	40 (40)
Katori spoon feeds	39 (39)

Table 7: Education of mothers whose babies were enrolled in the study

Maternal education	No of mothers (%)
Illiterate	15 (15)
Completed class 10	4 (4)
Completed school(12^{th})	66 (66)
College education	15 (15)

Table 8: Knowledge of mother regarding advantages of breast milk

Knowledge reg. advantages of breastmilk	No of mothers (%)
Having knowledge of benefits	58 (58)
No knowledge regarding benefits	42 (42)

Table 9: Knowledge regarding diet & nutrition during lactation

Knowledge regarding extra diet& nutrition during lactation	No of mothers (%)
Having knowledge	68 (68)
Not having knowledge	32 (32)

Table 10: Mothers consumption of food during lactation

Mothers food consumption per day	No of mothers (%)
Consuming less food than in pregnancy	74 (74)
Consuming more food than during pregnancy	26 (26)

Table 11: Availability of family support

Family support	No of mothers (%)
Available	80 (80)
Not available	20 (20)

Table 12: Help sought by the mother

First person contacted	No. of mothers (%)
Medical intervention /doctor advice	27 (27)
Religious person	2 (2)
Used prior knowledge	4 (4)
Started top feed	67 (67)
Started bottle feeding	45 (45)

Table 13: Factors hindering Exclusive Breastfeeding

S. No.	Factors hindering Exclusive Breastfeeding	No of mothers (%)
1.	Mother's perception of inadequate milk output	13(13)
2.	Problem in attachment/positioning /nipple	5(5)
3.	Breast milk alone not enough for baby	14(14)
4.	Bottle feeding is better	7(7)
5.	Water is required by baby	13(13)
6.	Not getting enough diet	12(12)
7.	Baby's illness	7(7)
8.	Ignorance about exclusive Breastfeeding	8(8)
9.	Working mother	5(5)
10.	Mother busy in housework	4(4)
11.	wants to stop BF	4(4)
12.	Family pressure to stop Breastfeeding	4(4)
13.	Superstition – poisonous milk	2(2)
14.	Primary lactation failure	2(2)

Table 14: Interventions done to correct factors hindering Exclusive Breastfeeding

S. no.	Factors hindering Exclusive Breastfeeding	No of mothers (%)	Intervention undertaken	Outcome
1	Mother's perception of inadequate milk output	13(13)	↑freq. of Breastfeeding ↑mother's diet	10↑breastmilk out of13
2	Problem in attachment/positioning /nipple	5(5)	correction +councelling	all 5 began exclusive bf
3	Breast milk alone not enough for baby	14(14)	c+ ↑bf	11 ex.bf+ 3pbf
4	Bottle feeding is better	7(7)	c+ stop bottle feeding	All stopped bottle, pbf+KS feeds
5	Water is required by baby	13(13)	c+ stop water	9 stopped water
6	Not getting enough diet	12(12)	↑mother diet +c	all ↑diet + ex.bf
7	Baby's illness	7(7)	treated illness+ c	all ex.bf
8	Ignorance about exclusive Breastfeeding	8(8)	c + ↑ bf duration & freq.	All ex. bf
9	Working mother	5(5)	EBM +c	all 5 EBM
10	Mother busy in housework	4(4)	c+ ↑ bf duration & freq.	all ex.bf
11	wants to stop BF	4(4)	c+ ↑ bf duration & freq.	2↑bf+ 2 ex bf
12	Family pressure to stop Breastfeeding	4(4)	C	All 4 ex bf
13	Superstition – poisonous milk	2(2)	C	all ex bf
14	Primary lactation failure	2(2)	c+ ↑ bf duration & freq.	No benefit

c = family councelling,
bf =breastfeeding,
ex.bf=exclusive breastfeeding,
pbf=partial breastfeeding,
KS=Katori spoon feeds

PS: This research was undertaken as a part of short term student project from ICMR.

Discussion

Factors hindering exclusive breastfeeding were identified. We found that bottle feeding impairs successful establishment of exclusive breastfeeding. Breast milk alone not enough for baby (14%), mother's perception of inadequate milk output (13%), water is required by baby (13%) and not getting enough diet (12%) were major reasons for not being able to breastfeed. A positive influence of counseling and intervention for correction of these factors was observed.

Family and work place support is very essential for continuation of exclusive breastfeeding upto 6 months of life [6,7]. We found that 20% of mothers did not have any family support for household work

required for continuation of exclusive breastfeeding for 6 months of life.

It is well known that advice given to the mothers regarding proper attachment, positioning and increasing the frequency of breastfeeding help in maintaining lactation for continuing exclusive breastfeeding upto 6 months [8]. Similar councelling was done in the form of case–specific advice to the mothers regarding proper attachment, positioning and increasing the frequency of breastfeeding to help in maintaining lactation for continuing exclusive breastfeeding upto 6 months. These mothers were followed up every week upto 4 weeks**.** Knowledge regarding extra diet and rest was also provided and it was seen that all (100%) mothers benefitted from the councelling and were able to begin exclusive breastfeeding.

The fact that 67% mothers started top feeding the baby at onset of slighted problem (out of these, 45% babies started receiving bottle feeding) provides an insight into the lack of positive reinforcement regarding continuation of breastfeeding and that only 27% mothers sought the advice of a medical personnel/doctor (Table 12) indicates the dismal state of lactation failure/care seeking behavior of breastfeeding mothers in our society.

62% mothers were 20-24 year old, 27% were 25-29 years old,59% were primigravida mothers and 42 % had no knowledge regarding advantages of breast milk and 32% did not have any knowledge regarding extra diet, (calories) and nutrition required during pregnancy, indicating a huge deficit in adolescent education & premarital & antenatal counseling in our country.

62% babies enrolled were male, despite the fact that enrollment was done in a non-biased manner. This could indicate a strong health seeking behavior of parents for the male child. Maximum number of babies (40%) were in 2-4 month age group and babies of 4-6 month group constituted only 22% of all babies. 79% of these were found to be on top feeding indicating a high rate of discontinuation of breastfeeding.

Positive results of counseling were observed in solving the problems of lactation, caused due to misconceptions and re-establishment of exclusive breastfeeding was seen in a large number of mothers.

Conclusions

Counseling was especially helpful in solving the problems of lactation, caused due to misconceptions and baby/breast disorders. More stress is required on adolescent education, and antenatal and postnatal counseling regarding adequate maternal diet and family counseling in national programmes in our country.

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Determinants of Febrile Convulsion among Children

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Abstract

Introduction: The sources of infection in children with FC are varied and include upper respiratory tract infections, otitis media, pneumonia, influenza-like diseases, gastroenteritis, and urinary tract infection (UTI) that may present as simple cystitis or pyelonephritis. *Methodology:* The data was collected from parents/ guardian of children of age group 6 months to 5 years coming to pediatric emergency ward of VIMS, Bellary with Febrile Seizures. *Results:* In this study Upper respiratory tract infections (URTI) and urinary tract infection (UTI) is more common among children of age group 6-12 months as a cause for febrile seizure as compared to other age groups. *Conclusion:* Lower respiratory tract infection (LRTI) is more common in age group 49-60months as a cause for febrile seizure.

Keywords: Urinary Tract Infection; LRTI; Febrile Seizures.

Introduction

FS are the most common form of childhood seizures. The peak incidence is at the age of approximately 18 months. Nelson and Ellenberg found the average age of FS to be 23.3 months. In the United States and Western Europe, they occur in 2% to 4% of all children [1,2,3]. In Japan, however 9% to 10% of all children experience at least one FS and rates as high as 14% have been reported from the Mariana Islands in Guam [4].

Recent studies, however, found that only 21% of the children experienced their seizure either before or within 1 hour of the onset of fever, 57% had seizure after 1 to 24 hours of fever, and 22% experienced their FS more than 24 hours after the onset of the fever [5].

Bethune and associates found out that the following four risk factors were associated with an increased risk of FS:

1. A history of FS in a first or second degree relative.
2. A neonatal nursery stay of more than 30 days,
3. Developmental delay, or
4. Attendance at day care.

Children with two of this factor had a 285 chance of experiencing at least one FS [6].

The majority of FS are simple seizures. Berg and Shinnar found that 35% had at least one complex feature, including focality in 16%, multiple seizures in 14%, and prolonged duration longer than 10 minutes in 13%. Approximately 6% of children had at least two complex features, and 1% had all three complex features. It was found that 14% of children had seizures longer than 10 minutes, 9% longer than 15 minutes, and 5% longer than 30 minutes, or febrile status epilepticus[7].

The sources of infection in children with FC are varied and include upper respiratory tract infections, otitis media, pneumonia, influenza-like diseases, gastroenteritis, and urinary tract infection (UTI) that may present as simple cystitis or pyelonephritis. The signs and symptoms of UTI in children are different and depend on their age. The frequency of fever in UTI is as follows: neonatal period, 11%; 1-24 months,

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38%; 2-5 years, 57%; and 5-12 years, 50%. The frequency of seizure as a sign of UTI is as follows: neonatal period, 2%; 1-24 months, 7%; 2-5 years, 9%; and 5-12 years, 5% [8].

Methodology

- The data was collected from parents/guardian of children of age group 6 months to 5 years coming to pediatric emergency ward of VIMS, Bellary with Febrile Seizures.
- Study design; Cross sectional study
- Study area; Paediatric Emergency Ward. VIMS. Bellary,ATeritary care centre.
- Study subjects; Children of age group 6 months to 5 years.
- Sample size; 100
- Method of sampling; Non randomized Targeted study.

Inclusion Criteria

- Children in the age group 6 months to 5 years.
- Children with fever >38"C.
- Children with simple or complex febrile seizure.

Exclusion Criteria

- Children >5 years and <6months.
- Children with lab evidence of meningoencephalitis, know seizure disorder chronic neurological diseases were excluded.

Results

Table 1: Distribution based on diagnosis

Diagnosis	Frequency	Percentage
URTI	61	61%
UTI	09	09%
LRTI	13	13%
Dengue	11	11%
Chicken Pox	02	02%
Measles	01	01%
Otitis media	01	01%
Abscess	01	01%
Vaccination	01	01%
Total	100	100%

Table 2: Relation between age and diagnosis

Age group	Diagnosis					Total
	URTI	UTI	LRTI	Dengue	Others	
6 – 12 months	26 (61.9%)	04(21.4%)	03 (07.1%)	03 (07.1%)	01 (02.4%)	37 (100%)
13 – 24 months	15 (60.0%)	03(12.0%)	01(04.0%)	03 (12.0%)	03 (12.0%)	25 (100%)
25 – 36 months	07 (43.7%)	02(12.5%)	02 (12.5%)	03 (18.7%)	02 (12.5%)	16 (100%)
37 – 48 months	06 (60.0%)	00	03 (30.0%)	01 (10.0%)	00	10 (100%)
49 – 60 months	07 (58.3%)	00	04(33.3%)	01 (8.3%)	00	12 (100%)
Total	61 (61%)	09(09%)	13 (13%)	11 (11%)	06 (06%)	100 (100%)

P value <0.05

In this study urti and uti is more common among children of age group 6-12 months as a cause for febrile seizure as compared to other age groups.

LRTI is more common in age group 49-60months as a cause for febrile seizure.

Table 3: Relation between sex and diagnosis

Sex	Diagnosis					Total
	URTI	UTI	LRTI	Dengue	Others	
Male	37 (55.2%)	04 (15.5%)	07 (12.1%)	07 (12.1%)	03 (05.2%)	58 (100%)
Female	24 (57.1%)	05 (11.9%)	06 (14.3%)	04 (09.5%)	03 (07.1%)	42(100%)
Total	61 (61%)	09 (09%)	13 (13%)	11 (11%)	06(06%)	100 (100%)

P value <0.05

Table 4: Relation between diagnosis and average length of seizure

Diagnosis	Length of seizure			Percentage
	<5 mins	5-10 mins	>10 mins	
URTI	48 (78.68%)	12 (19.67%)	01 (01.63%)	61(100%)
UTI	09 (100.0%)	00	00	09(100%)
LRTI	09 (69.2%)	02 (15.4%)	02 (15.4%)	13(100%)
Dengue	07 (63.6%)	03 (27.3%)	01 (09.1%)	11(100%)
Chicken Pox	01 (50.0%)	01 (50.0%)	00	02(100%)
Measles	00	01(100%)	00	01(100%)
Otitis media	01 (100%)	00	00	01(100%)
Abscess	00	01 (100%)	00	01(100%)
Vaccination	01 (100%)	00	00	01(100%)
Total	76 (76%)	20 (20%)	04 (04%)	100 (100%)

P value <0.05

Table 5: Relation between diagnosis and type of seizure

Diagnosis	Type of seizure		Percentage
	GTT	Focal	
URTI	53 (85.7%)	08 (14.3%)	61(100%)
UTI	09 (100%)	00	09(100%)
LRTI	11 (84.6%)	02 (15.4%)	13(100%)
Dengue	10 (90.0%)	01 (09.1%)	11(100%)
Chicken Pox	02 (100%)	00	02(100%)
Measles	01 (100%)	00	01(100%)
Otitis media	01 (100%)	00	01(100%)
Abscess	01 (100%)	00	01(100%)
Vaccination	01 (100%)	00	01(100%)
Total	89 (89.0%)	11 (11.0%)	100 (100%)

P value <0.05

Table 6: Relation between age and average length of seizure

Diagnosis	Length of seizure			Percentage
	<5 mins	5-10 mins	>10 mins	
6 – 12 months	34 (88.1%)	03 (07.2%)	00 (04.7%)	37(100%)
13 – 24 months	22 (88.0%)	03 (12.0%)	00	25(100%)
25 – 36 months	08 (50.0%)	05 (31.2%)	03 (18.8%)	16(100%)
37 – 48 months	03 (30.0%)	07 (70.0%)	00	10(100%)
49 – 60 months	09 (57.1%)	02 (28.6%)	01 (14.3%)	12(100%)
Total	76 (74%)	20 (20%)	04 (06%)	100(100%)

P value <0.05

Table 7: Relation between Age and type of seizure

Age group	Type of seizure		Percentage
	GTT	Focal	
6 – 12 months	33 (89.1%)	04 (14.3%)	37(100%)
13 – 24 months	22 (88.0%)	03 (12.0%)	25(100%)
25 – 36 months	16 (100%)	00	16(100%)
37 – 48 months	08 (80.0%)	02 (02.0%)	10(100%)
49 – 60 months	10 (100%)	02	12(100%)
Total	89 (89.0%)	11 (11.0%)	100(100%)

P value <0.05

Discussion

Upper respiratory tract infection is the commonest trigger of febrile seizure in present group of children. This is in keeping with Nelson and Ellenberg (1978), Millichap et al (2006) amdKyong KL et al. Chevrie and A Aicardi et al (1975) reported URTI in 72% of the cases and Azhar S Daoud et al from Jordan, reported URTI as the commonest triggering factor, diagnosed in 53% of cases, which is comparable to present study. However the etiology of febrile convulsion varies from country to country due to different infection profile.

In this study, UTI among children with FC was 9% and the result is comparable with the study done by moment et al which showed 6.6% UTI children had FS.

URTI	Vaccinations
Nelson and Ellenberg Millichap et al. Kyong KL et al Chevrie and Aicardi et al Dauod AS et al Present study	Offringa et al Hertz and Nelson et al.

Recent Vaccination

In literature receipt of diphtheria, whole-cell pertussis and tetanus toxoid vaccine; and measles, mumps, and rubella vaccine has been reported to be associated with a transiently increased risk of a FS on the day of vaccination and 8-14 days after vaccination respectively as shown by Offringaet al [9] and Millichap et al. According to Hertz and Nelson vaccination constitutes only 2.2% of the febrile seizure. In present study 1% of children following vaccination had FS.

Conclusion

Among the range of triggering illnesses URTI pre dominated the cases.

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Approach to a Child with Recurrent Pneumonia

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Abstract

Pneumonia is commonest cause of under five mortality. Recurrent pneumonia occurs in approximately 10% cases of all pneumonias. Most common causes of recurrent pneumonia are: pulmonary tuberculosis, foreign body aspiration, misdiagnosed or inappropriately treated asthma, HIV, bronchiectasis, congenital heart diseases. Speed of radiographic resolutions depends on etiological organism causing difficulty in arriving at one particular cut off for defining persistent pneumonia. Early and accurate diagnosis is essential to ensure the optimal treatment and to minimise the risk of progressive or irreversible lung damage.

Keywords: Recurrent Pneumonia; Persistent Infiltrates; Children.

Introduction

Respiratory diseases belong to the most frequent and common disorders in clinical practice of every paediatrician. Recurrent viral infections are part of the growing up process of any child. It is a fact that children should suffer 7 to 8 upper respiratory infections per year until they are 5 years of age when their immune status reaches adult level[1]. Pneumonia is a major problem in children, especially those younger than 5 years, accounting for up to 5 million deaths each year in developing countries. Worldwide, 20% mortality among children aged less than 5 years is attributed to respiratory tract infections (predominantly pneumonia associated)[2]. While acute lower respiratory tract infections remain the most important cause of mortality and morbidity in under fives in the developing countries, recurrent and persistent pneumonias are not uncommon [3].

Recurrent respiratory infections in children pose a great challenge to the pediatrician where he has to exercise his clinical acumen and methodical approach for correct diagnosis and treatment. Recurrent pneumonia occurs in fewer than one tenth of all children hospitalized with pneumonia and constitute 7-9% of all cases of pneumonia with existing underlying illness in 84-90 % cases [4-6]. Firstly, one has to be sure that the recurrent infections are lower respiratory tract infections before the child is investigated for recurrent pneumonia. Secondly, the patient referred for recurrent or persistent pneumonia has clinical and radiographic features documented for these episodes [7].

Definitions

- *Recurrent pneumonia* is defined as two episodes of pneumonia in 1 year or three episodes over any time frame[8]. Conditions that are not included are: uncomplicated asthma with intermittent chest findings, presence of a persistent infiltrate, in the same location and without proven clearing of the radiograph in the interval between pneumonias.
- *Non resolving pneumonia/Persistent Pneumonia*

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is characterized by the persistence of symptoms and roentgenographic abnormalities for more than 1 month [8,9]. There are no clear cut guidelines for defining non-resolving or persistent pneumonia in children. Most acute pneumonias improve clinically and radiologically in 2-4 weeks.

Points of Interest before Making a Diagnosis

1. Make sure that these recurrences are lower respiratory infections and not acute upper respiratory tract infections.
2. Take history of previous events as many time "pneumonia" is the diagnosis conveyed to the parents for underlying bronchiolitis, bronchitis, asthma or persistent cough.
3. Bacterial pneumonias may appear to be recurrent if therapy given for underlying pathogen is inadequate / duration of treatment is inadequate or in presence of non-compliance of medication.
4. Symptoms of bronchial asthma and use of bronchodilators for relief of the same should be asked in detail. Bronchial asthma can initially be misdiagnosed as recurrent/persistent pneumonia, especially when it is not associated with wheezing [10].
5. The speed of radiographic resolution depends on the etiological agent as well [11-13].

- RSV/ parainfluenza ~ 2-3 weeks
- Adenovirus ~ 12 months
- Pneumococcal ~ 6-8 weeks
- Chlamydial ~ 1-3 months
- Mycoplasma ~ 2wks-2months
- Staphylococcal/ Legionella/ GNB ~ 3-6 months

ETIOLOGY

Patho-physiologically, recurrent and persistent pneumonia can be caused by singly or in combination by one of these three conditions Deficiencies in local pulmonary defenses

This includes defects and deficiencies at various levels [14].

- Bypassed nasal defenses in case of a child with tracheostomy
- Habitual mouth breathers
- Bypassed nasopharyngeal defences in cases of neurologic disorders with abnormal cough reflex
- Anatomical defects including vascular rings, polyps, tracheal web, tracheomalacia
- Aspirations (tracheoesophageal fistula, GERD, abnormal gag reflex)
- Mucocilliary clearance defects (immotile cilia syndrome, abnormal purulent mucus), abnormal airway secretions (cystic fibrosis, secrettory IgA deficiency)
- Obstruction to clearance (pulmonary secretions, cysts, fistulas, retained foreign body, bronchiectasis, extrinsic airway compression)

Deficiencies in Systemic Host Defenses

HIV and various primary immunodeficiencies. An underlying immunodeficiency is more likely when some of the following "warning" symptoms or signs occur [15,16]:

- Eight or more new ear infections (otitis media) within 12 months
- Two or more serious sinus infections within 12 months
- Two or more episodes of pneumonia within 12 months
- Two or more invasive infections in the history (meningitis, cellulitis, osteomyelitis, septicaemia)
- Failure of an infant to gain weight or grow normally ± chronic diarrhoea
- Recurrent deep skin or organ abscesses
- Persistent superficial candidiasis after age of 1 year
- Two or more months on antibiotics with little or no effect
- Need for intravenous antibiotics to clear infections
- Family history of primary immunodeficiency

Disorders that Modify Lung Defenses

Causes of Recurrent and Persistent Pneumonia [6,17- 23]

A. Congenital Malformations

Airways

- Cleft Palate
- Pierre Robin syndrome
- Tracheoesophageal fistulae
- Tracheomalacia

Lungs

- Pulmonary hypoplasia

- Pulmonary sequestration
- Congenital adenomatoid malformation of the lung
- Bronchogenic cyst

Cardiovascular

- Congenital heart disease, especially
- Left to Right shunts
- Vascular ring

B. Aspirations

- Gastro-esophageal reflux
- Swallowing abnormalities
- Foreign body
- Anomalies of the upper airways

C. Defects in the Clearance of Airways Secretions

- Cystic fibrosis
- Abnormalities of the ciliary structure of function
- Abnormal clearance secondary to infections, repair of congenital defects
- Airway compression (intrinsic/extrinsic) e.g., mediastinal tubercular lymphnodes

D. Disorders of Local/Systemic Immunity

Primary immune-deficiencies

- Brutons agammaglobulinemia
- Selective IgG subclass deficiencies
- CVID
- SCID
- Chronic granulomatous disease
- Hyper IgE syndrome (Job syndrome)
- Leukocyte adhesion defect

Acquired immune-deficiencies

- HIV Infection
- Immunosuppressive therapy
- Malnutrition

Non Infectious Causes of Persistent Lung Infiltrates (these conditions should be considered in a child with recurrent or persistent lung infiltrate, if infection seems unlikely).

- Asthma,
- Congenital anomalies like lung cysts & sequestration
- Pulmonary hemosiderosis
- Hyper-sensitivity pneumonitis
- Sarcoidosis
- Interstitial pneumonitis
- Alveolar proteinosis,
- Collagen vascular diseases
- Eosinophilic pneumonias

Causes of Recurrent or Persistent Cough

Asthma	Very common
Recurrent 'normal' infections	Very common
Prolonged infection (e.g. pertussis, mycoplasma, RSV)	Common
Cigarette smoking (passive/active)	Common
Habit or psychogenic cough	Common
Idiopathic Common Aspiration	Uncommon
Gastro-oesophageal reflux	Uncommon
Inco-ordinate swallowing	Uncommon
Intra-bronchial foreign body	Uncommon
Mediastinal or pulmonary tumours	Very rare
Suppurative lung disease	Very rare
Cystic fibrosis Post-infective (e.g. adenovirus, pertussis)	
Tuberculosis Ciliary abnormalities	
Congenital abnormalities of the respiratory tract	
Retained foreign body	
Immunodeficiency	

Approach to A Child with Recurrent /Persistent Pneumonia

3 steps approach

Step 1: careful history and clinical evaluation

Step 2: Localize the disease, establish the diagnosis of lower respiratory tract infection and Exclude common causes including TB, Foreign body, HIV and asthma

Step 3: Cause specific treatment In case of failure of diagnosis, refer to higher center for specialized investigations

History

Age of Onset

Onset soon after birth occurs in congenital malformations or hereditary disorders. Humoral immunity disorders manifest later in infancy.

Risk Factors for Lower Respiratory Infections in Children

Prematurity, parental smoking large family size, overcrowding, congenital abnormalities, immuno-deficiency should be inquired into.

Details of Episodes

Each episode merits detailed description with emphasis on onset, nature, duration of symptoms and documentation of signs of lower respiratory tract infections .All previous chest x-rays should be evaluated sequentially . Type and duration of antimicrobials used, response to treatment , need for hospitalization should be asked for.Any h/o wheeze, relation to feeds needs to be noted.

Past/Associated Complaints

Repeated infections at other sites give a clue towards probable immunodeficiency. Any history of choking episodes or paroxysmal cough while eating something point towards possible foreign body aspiration. If there is a tuberculosis contact, tuberculosis work up needs to be done before preceding onto any further investigations. Malabsorption symptoms ,salt craving and salty taste on kissing, fat soluble vit deficiencies and malnutrition favors diagnosis cystic fibrosis .

Environmental History

Exposure to sources of infection ,aero-allergens and passive smoking should be asked.

Perinatal History

History of prematurity with stormy neonatal course ,bronchopulmonary dysplasia or prolonged O2 exposure needs to be asked as these children are more susceptible to have recurrent chest infections.Any maternal infections or blood transfusions should be noted. Meconium ileus or delayed passage of meconium points toward cystic fibrosis.

Family History

Any history of allergic disorders, parental asthma, cystic fibrosis manifestations, recurrent infections in members should be asked for. High risk behavior in parents and history blood products use points towards possibility of acquired immunodeficiency

Physical Examination

Look for

- Significant weight loss, failure to thrive
- Digital clubbing, lymphadenopathy, absence of tonsils.
- Upper airway disease: enlarged tonsils and adenoids, prominent rhinitis, nasal polyps
- Unusually severe chest deformity (Harrison's sulcus, barrel chest)
- Fixed monophonic/ asymmetric wheeze
- Stridor
- Signs of cardiac or systemic disease/ dextrocardia

Investigations

- ⊙ X RAY Chest –PA as well as lateral view, as many areas of infection are often missed on PA view. Sequential x-rays of past events if available are helpful in reaching to diagnosis of recurrent pneumonia [24].
- ⊙ CT chest
- Suspected complications of bacterial pneumonia (eg. abscess)
- Exclude an underlying structural abnormality in recurrent or persistent pneumonia
- Investigate the immune-compromised child with a normal or equivocal x-ray
- Mediastinal compressive masses including suspected vascular rings
- ⊙ High Resolution Computed Tomography (HRCT) is used for evaluating all forms of bronchiectasis (including cystic fibrosis) and interstitial lung disease in children
- ⊙ Pulmonary function testing is done commonly

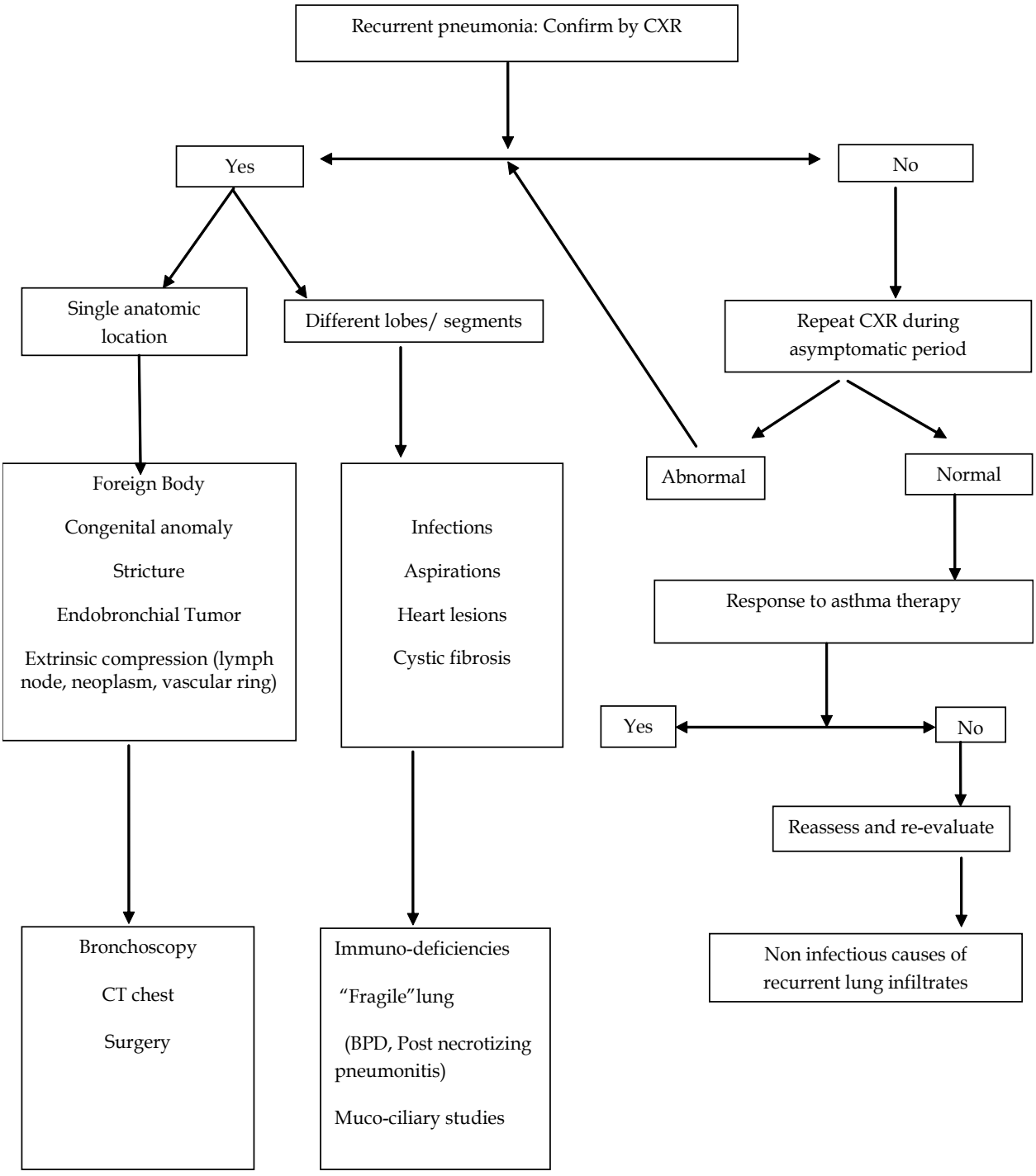

Fig. 1: Approach to a child with recurrent/persistent pneumonia

by spirometry (in more than 5 years of age) to evaluate airway hyper-reactivity

⊙ Bronchoscopy helps in finding

- Abnormal bronchial anatomy
- Suspected FB
- Broncho-alveolar lavage for etiological agent

⊙ GER scan with delayed films and esophageal pH

⊙ Milk technitium scan

⊙ For suspected Cystic fibrosis

- Sweat chloride
- Stool for fat globules
- Mutational analysis

⊙ Nasal mucosal scrapings for EM morphological studies

⊙ X-ray PNS for chronic sinusitis

Treatment

Treatment is directed towards the underlying cause once the diagnosis is made along with the supportive treatment.

Key Points of Clinical Interest

- There are many different causes of recurrent chest infections in children. The clinician has to distinguish between children with self-limiting or easily managed conditions, such as recurrent acute viral infections or asthma and those with more severe, often progressive, diseases
- It is important to understand the epidemiology of acute respiratory infections in children and the factors that influence the pattern of these common infections
- A chronic or recurrent cough productive of purulent sputum, or repeated episodes of pneumonia, suggest chronic suppurative lung disease and the possibility of bronchiectasis. These children require detailed and specialist assessment.
- The commonest causes of suppurative lung disease are cystic fibrosis, immune deficiencies, congenital lung and ciliary abnormalities, and lung damage caused by acute pneumonia. Other causes include an unsuspected foreign body or recurrent aspiration

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Case Report

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Bilateral Fracture of Femur in Neonate

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Abstract

Fractures of the limb bones particularly femur and humerus are uncommon in the neonate, as the force required to break the long bone is much higher. The infants feel pain and discomfort, causing parental distress, and the hospital stay is longer. We reported a rare case sustaining bilateral fracture of shaft of the femur with subluxation of tempero-mandibular joint in term neonate.

Keyword: Fracture; Femur; Neonate.

Introduction

Birth injuries are uncommon, occurring in <1% of live births. They are more commonly associated with breech presentations and difficult deliveries [1]. Fetal injuries are relatively less common in caesarian sections as compared to vaginal deliveries [2]. Twin pregnancies, breech presentations, prematurity, and osteoporosis were associated with the occurrence of a fracture of newborn. The typical injury pattern was a spiral fracture of the proximal half of the femur, which was held in an extended position. Immobilization of the fractured limb should allow access to the babies' torsos and limbs for necessary medical treatment, while preventing displacement and pain as much as possible [3,4]. Here, we report a case of bilateral fracture of shaft of the femur with subluxation of tempero-mandibular joint in term neonate.

Case Report

A one day old male baby was referred to KHS hospital for rapid breathing. The baby was delivered at 38 wks gestation, weighing 2.6 kg, by caesarian section (Indication: Fetal distress) from a 24 years old primigravida with single intrauterine breech presentation. The process of labor was uneventful without any undue prolongation of any stage of labor. There was no history of trauma or fall during antenatal period. Baby cried immediately after birth. APGAR score was 9,9,10 at 0, 1 and 5 minutes. On general examination, the baby had signs of respiratory distress in the form of fast breathing and subcostal retraction. Contour of jaw was unequal on both sides, more rounded on right side and flat on left side. Lower jaw appeared to be freely mobile. Vitals were Heart Rate: 130/min, Respiratory Rate: 68/min and SpO2: 98%. Respiratory system and cardiovascular system were normal. Musculoskeletal examination shows restriction of the lower limb movement on stimulation. On palpation, crepitus were present over both thighs. However, no swelling was present over the lower limbs. On investigation, complete blood cell count was: Hemoglobin: 8.4gm%, TC: 6,400/mm^3 (LY32%, MO 10%, GR 58%), platelet count was 4.5lac/ mm^3. An infantogram shows bilateral displaced fracture of the proximal 1/3rd of the shaft of femur (Figure 1). Splint was applied over thighs and the baby was put on nasogastric feeding. After 10 day of admission,

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baby was active, sucking well and no sign of respiratory distress. On follow up after 3month, infant was accepting feed well, no restrictive movement of the lower limb and weight gain present.

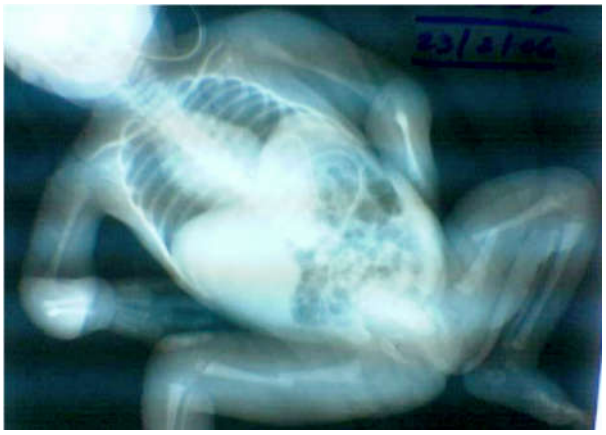

Fig. 1: Infantogram showed bilateral displaced fracture of the proximal 1/3rd of the shaft of femur

Discussion

Fractures of the femur have long been recognized as a complication of difficult deliveries, but they are rare. Inspite of the advances in the obstetric management and liberal caesarean sections in the event of the difficulties, it was assumed that such fractures may occur during birth [5]. Ehrenfest [6] described such a complication in 1922, associated with a difficult breech extraction during a cesarean section. Shoulder dystocia, singleton breech with large or small fetus, twin pregnancies, macrosomic, cephalopelvic disproportion, disuse osteoporosis prematurity, prolonged labor, forceps application, external version and forceful extraction are some of the predisposing factors associated with birth injuries.Fractures of the limb bones particularly femur and humerus are uncommon in the neonate, as the force required to break the long bone is much higher [7,8]. Morris et al [4] reported 8 femoral fractures in 55,296 deliveries whereas Bhat et al [9] reported 0.10 per 1000 live birth. Variety of treatment modalities are described for fracture femur including gallows traction, spica cast, and pavlik harness. Several treatment modalities were used like overhead traction is easy to apply and provides satisfactory immobilization. Reduction of the fracture is easily undertaken by adjusting the straps on the harness. Several significant complications includes skin sloughing, volkmann ischemic contracture, need for frequent readjustments, and interfere with bonding between mother and infant [10].

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Partial Trisomy of 13q and Partial Monosomy of 6q; A Patau Syndrome Variant

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Abstract

Trisomy 13 often presents with classical features of Patau Syndrome. Atypical features are likely to suggest a mixed phenotype; like associated 6q monosomy. In this case, skeletal features associated with 6q monosomy domnated the phenotype.

Keywords: Patau Syndrome; Phenotype.

Introduction

Trisomy 13, also known as Patau syndrome, is a relatively common chromosomal condition in which there are three copies instead of the usual two copies of all, or a part of chromosome 13 in the cells of the body [1]. But the partial trisomy 13q is uncommon with few cases being described with a specific phenotype with extensive variability of expression [2]. The 6q terminal deletion syndrome is characterized by specific craniofacial dysmorphisms, short neck, and neurologic manifestations, along with various nonspecific malformations [3]. Association of 13q trisomy with 6q deletion with mixed phenotype is extremely rare with only one case by Fryns et al in 1974 [4]. Here, we present this rare entity of Partial trisomy of 13q and partial monosomy of 6q in a child, second of its kind.

Case Report

A four month old boy, 3rd by birth order, born of non consanguineous marriage, presented to outpatient department with complaint of cough, runny nose for two days and not gaining weight. He had normal amtenatal and perinatal history, being a full term normal vaginal delivery with birth weight 3 kg. At 4 month age child had social smile and partial neck holding. There was no significant family history and child had two normal elder sisters without any congenital abnormality.

On examination child had lethargy with central cyanosis but no clubbing. At 4 month of age, child weighed 3.3kg and length was 45cm; both below 3rd centile for age. Trigonocephaly was strikingly obvious with left occipital plagiocephaly and craniosynostosis of coronal suture and metopic suture. Anterior fontanel was barely open and head circumference was 39cm. Bushy eyebrows, hypotelorism, prominent nasal bridge, long philtrum, thin upper lip, micrognathia, malformed ear with short neck, ankyloglossia, short fourth metatarsal with right lumbar bony prominence were additional dysmorphic features (Figure 1a). Pupils and fundus were normal. There was central and axillary hypotonia.

Systemic examination was not contributory; there was no murmur, nor any focal neurodeficit or limb deformities or spina bifida. Opitz C-trigonocephaly syndrome, carpenter syndrome were thought as close phenotypical differentials. The results of the complete blood count tests, liver and renal function tests were normal. The patient had boot-shaped appearance of heart on the chest radiograph and L4 hemivertebra

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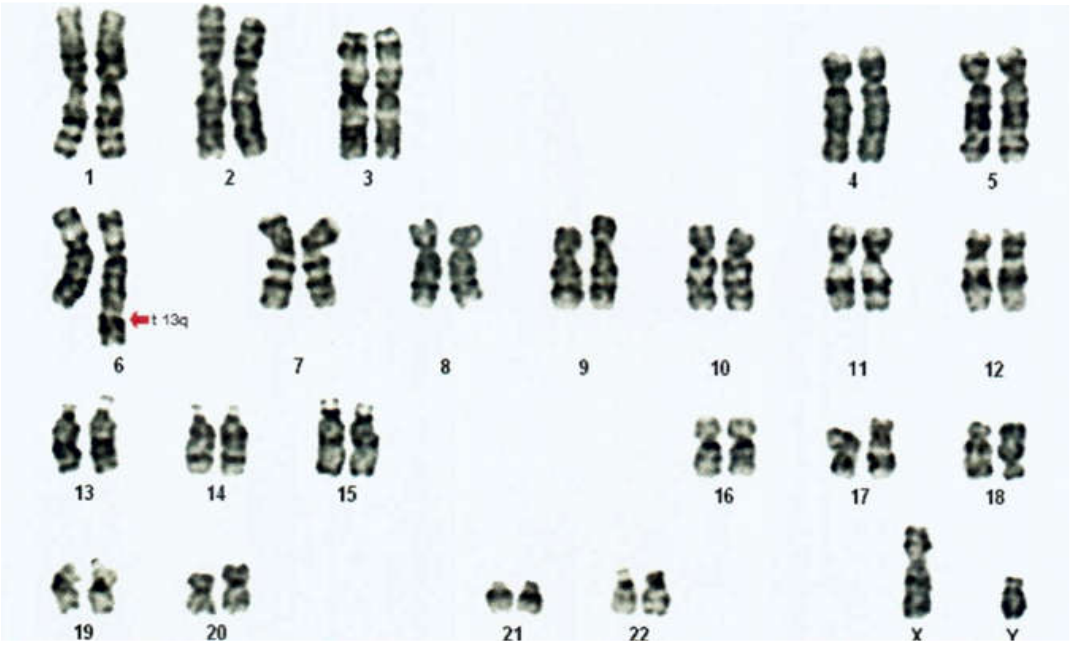
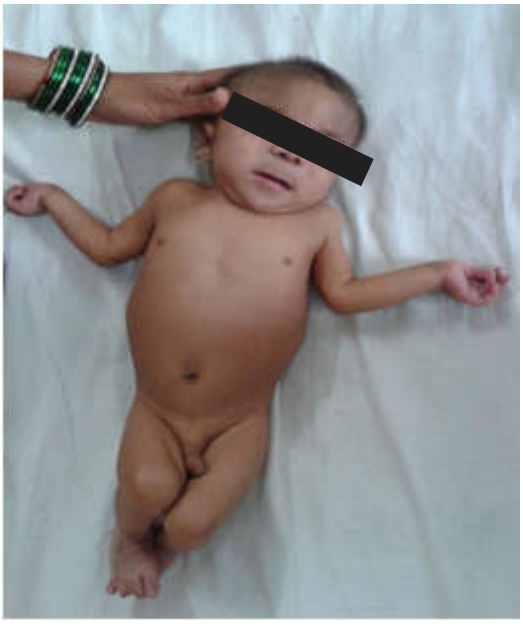
on X-ray abdomen (Figure 1b). The echocardiography revealed Tetralogy of Fallot's with severe pulmonary stenosis with mild pulmonary hypertension. The cranial computerized tomography revealed metopic synostosis (trigonocephaly) with prominence of left lateral ventricle, temporal horns and 4th ventricle. Chromosome analysis demonstrated caryotype of 23 XY, with gain of 13q 14.11-q ter segment and loss of 6q 22.1-q ter segment (Partial trisomy of 13q and partial monosomy of 6q) from peripheral blood leukocytes using 'G' banding technique (Figure 1c). Symptomatic treatment given for heart disease and upper respiratory tract infection and then the patient referred for surgical management.



Leucocyte Culture Metaphase Karyotype-G Banding



Karyotype depicting monosomy 6q and trsomy 13 and clinical photograph of the case

Discussion

Com-mon phenotypic features with terminal deletions involving chromosome 6q include intellectual disability, hypotonia, epilepsy, cardiac defects, retinal abnormalities, ear anomalies, facial dysmorphisms, and malformations of the brain, spinal cord, and vertebrae. Structural brain malformations are consistently observed in these patients and include agenesis of the corpus callosum (ACC), periventricular nodular heterotopia (PNH), polymicrogyria, hydrocephalus, and cerebellar [5]. Microcephaly is also a common feature. Facial dysmorphisms is described in form of large and malformed ear, micrognathia, high arched palate, long philtrum and short neck [6].

Our patient shared many of these craniofacial anomalies including metopic synostosis (trigonocephaly). Significant brain malformation with prominence of left lateral ventricle, temporal horns and 4th ventricle was present. Also, vertebral anomaly and congenital heart defect was present as he had L4 hemivertebra and Tetralogy of Fallot.

Partial trisomy 13q may result from parental reciprocal translocations; parental pericentric inversions or de novo direct duplications [7]. Partial trisomy 13q has been shown to have both a distinctive

and common pheno-type resembling that of complete trisomy 13. Also, there are distinctive clinical features between the trisomy of the proximal and distal regions of the long arm of chromosome 13[8]. Com-mon phenotypic features of partial trisomy 13q are: craniofacial dysmorphism (bushy eyebrows, long curled eyelashes, prominent nasal bridge, long philtrum, thin upper lip, microceph-aly, and hypotelorism), high arched palate, short neck, haemangioma, hexadactyly, urinary tract or kidney anomalies, umbilical or inguinal hernia, intra-uterine growth retardation, and oligohydramni-os. Other phenotypic features in child and adult patients described are: psychomotor retardation, hypoacusia, hypochromic anaemia, splenomegaly, ocular anomalies, convulsions, and fatty acid disturbances[7]. Our case despite having a karyotype of partial trisomy13 did not show most features of Patau syndrome or it's variant.

This case had presentation more similar to partial 6q deletion. Absence of most of phenotype of trisomy 13 insisted us to call it as a variant of Patau syndrome, probably a segmental translocation of 13q with segmental deletion of 6q. A similar case was published in 1974 by Fryns et al had features consistent with 6q deletion syndrome [4]. That makes our case a second of its type.

Conclusion

Cytogenetic abnormalities do decide phenotype. In case of mixed defects, they may not be consistent to any specific known syndrome. A partial trisomy 13, devoid of classical features of Patau syndrome is still a possibility; primarily due to deleted segment from other chromosome. So the features of Patau syndrome in a translocation need not be due to trisomy but due to primary deleted segment phenotype.

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Gastric Duplication Cyst Presenting as Haemoptysis

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Abstract

We report a rare case of a 3 year-old boy with a gastric duplication cyst located in the stomach, presenting with vague abdominal pain, recurrent cough, haemoptysis and a persistent patch in the left lower lobe of the lung on X-ray appeared to be a sequestration. The duplication cyst was attached to the diaphragm and lungs by a narrow tract confirmed by MRCP scan delineating usefulness of scan. The cyst was excised.

Keywords: Gastric Duplication Cyst; Pneumonia; Pseudopancreatic Cysts.

Introduction

Duplication cyst of the alimentary tract is a rare congenital anomaly. Gastric duplication cysts (GDCs) represent 4% of all alimentary tract duplications, and approximately 67% manifest within the first year of life. We are presenting 3 year old male child presenting with symptomatic gastric duplication cyst presented with haemoptysis with persistent lingular lobe consolidation on Xray causing diagnostic dilemma.

Case History

A 3 year old first born male child born out of nonconsanguinous marriage, a known case of sickle cell anemia presented with complaints of recurrent episodes of haemoptysis. Child had been hospitalised three times prior with pneumonia involving left lower lobe of lung. Child was immunised for age and breastfed and had no significant antenatal, perinatal history. There was no history of TB or TB contact. On examination child had pallor and failure to thrive with weight 10 kg and length of 80cm for age 3 years. Diagnosis of left lingular lobe consolidation in a case of sickle cell anemia was made. HB was 8 gm/dl, total count was 110000/cu.mm and platelet count was 260000/cu.mm. Repeat X-ray had persistent patch on left lower lobe of lung with minimal pleural effusion. An ultrasound was done for the same showed marginal collection trickling down across diaphragm in abdomen. Serum amylase level was 100U/L and diagnosis of added chronic pancreatitis was suspected. The haematological parameters including HB and serum amylase normalises within few weeks. In view of persistent patch on X-ray CT scan advised. HRCT done s/o consolidation of left lingular lobe with air bronchogram most likely infective etiology also thick irregular enhancing wall collection seen along greater curvature of stomach in body region extending superiorly forming irregular hypodense tract ending in left lower lobe consolidation. Tuberculosis was ruled out by extensive work up. Flexible bronchoscopy was not feasible. MRCP done s/o gastric duplication cyst . Cyst was surgically excised and confirmed on histopathology .

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Discussion

Duplication cysts of the stomach are quite rare, and most of them have been reported in children [1, 4, 5]. The essential criteria for diagnosis of gastric duplication cysts are a) the wall of cyst is continuous with stomach wall b) The cyst wall is surrounded by smooth muscle which is continuous with muscles of stomach c)Cyst wall is lined by epithelium of gastric or any other cyst mucosa [1,3,8]. Gastric duplication cyst compromises 4% of gastrointestinal cysts [7]. There malformations are believed to be congenital , formed before differentiation of epithelium lining and therefore named for the organ with which they are associated [2,9]. Gastric duplications cysts typically become symptomatic during childhood, 67% diagnosed within first year of life and less than 25% are diagnosed by the age 12 [3]. So the clinical presentation of these cysts can be variable and non specific ranging from vague abdominal pain, nausea, vomiting, epigastric fullness, weight loss, anemia, dyspepsia, dysphagia, epigastric mass on examination [3,9]. Because most cysts occur along greater curvature of stomach the cyst can potentially compress the adjacent organs such as pancreas, kidney, spleen and adrenal gland. cyst may also be manifested by complications such as infection, gastrointestinal bleed , perforation , ulceration , fistula formation , obstruction , carcinoma arising from cysts [6,7]. Upto 10% of cysts may contain ectopic pancreatic tissue which may lead to pancreatitis and may mimic pseudocyst [2,7]. Duplication cysts may have potential for neoplastic transformation , production of oncofetal antigens raises the possibility of precancerous condition in long standing intestinal duplication [7]. CT SCAN and Endoscopic ultra sound are by far the best ways to indetify gastic duplication cysts [7] Complete removal of cyst is the treatment of choice to avoid the risk of possible complications such as obstruction, tortion, perforation,haemorrhage and malignancy [8,9]. Noncommunicating gastric duplication cyst is classically treated by complete excision of cyst and resection of shared wall between stomach and duplication cyst [7]. Communicating duplication cysts usually require no interventions when both gastric lumens are patent [7]. Drainage and marsupialisation of cyst have been suggested but marsupialisation into the stomach wall exposes the unprotected mucosa of cyst to gastric content with risk of ulceration [3]. Drainage procedures such as cystojejunostomy may be complicated by stenosis at the anastomosis site or blind loop syndrome and therefore discouraged [3]. Also leaving cyst in place carries risk of malignant transformation [3].

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Case Report

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Acute Submandibular Sialadenitis

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Abstract

Diseases of salivary glands are rare in infants and children and the therapeutic regimen differs from that in adults[1]. Acute sialadenitis is a painful and inflammatory infection preferentially affecting the parotid and submandibular gland. Submandibular sialadenitis is an uncommon condition. Though commonly caused by bacteria, the etiology ranges from simple infection to autoimmune condition. The management is mainly early administration of antimicrobial therapy and surgical drainage [2].

Keywords: Submandibular Sialadenitis; Submandibular Gland; Infection.

Introduction

Acute sialadenitis is an infectious or inflammatory disorder of salivary gland[1].Incidence of submandibular siladenitis is 10%. A variety of factors affect the susceptibility of salivary glands to bacterial infection among them salivary flow rate, composition of saliva and varying damage to their ductal systems are the most common predisposing factors. Deterioration of host defence inevitably renders the salivary glands susceptible to haematogenous infections. Common factors are older age, debilitation and dehydration and the site and size of glands renders them prone to infection. The common features are swelling of glands, pain and tenderness, occasionally difficulty in opening the mouth and pus exudation through the duct orifice [3].

Case History

Mother of 18 months male child, 8 days before admission had noticed swelling in the left side of cheek which was acute in onset initially smaller in size, gradually progressed to attain the present size. It was painful on touch. She also complained of running nose and fever which was acute in onset, high grade, intermittent and associated with chills, evening rise of fever and was relieved on taking medications.

On clinical examination, a single well-defined swelling was present in left submandibular gland region below the lower border of body of the mandible, oval in shape measuring 5x6cm extending anteroposteriorly 1cm from the parasymphysis to 1cm beyond the angle of mandible and superoinferiorly below the inferior border of mandible to the level of second thyroid cartilage. There was no discharge.

Skin over the swelling was normal on palpation, stony hard in consistency, tender with raised temperature, immobile, nonfluctuant, transillumination was negative.

With all these clinical findings a differential diagnosis of cervical lymphadenpathy, alveolar abscess, cervical abscess, infection and sialoadenitis was made.

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Routine investigations were done which showed raised white blood cells count to 23,200/cumm.Rest of the haemogram was within normal limits.

An ultrasonography of the affected part was done which showed multiple enlarged lymph nodes at various cervical levels with the left submandibular gland showing mixed echogenicity, increased vascularity, increased size of the gland with no calcifications. It was suggestive of left submandibular gland sialoadenitis.

He was started on iv antibiotics (Inj. Ceftriaxone and Amikacin) with antiinflammtory Syrup Ibugesic.All these medications were given for 7days. Regular dressings were done to reduce the pain and swelling.

Fig. 1:

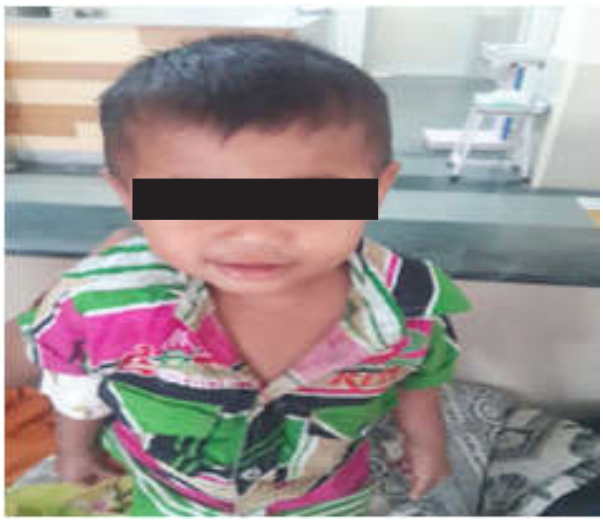

Fig. 2:

Discussion

Sialadenitis can occur in various forms ranging from acute bacterial sialadenitis (acute suppurative sialadenitis) to acute viral sialadenitis to chronic sialadenitis.

Acute Sialadenitis

Acute sialadenitis is an acute inflammation of a salivary gland.

Patients typically present with erythema over the area, pain, tenderness upon palpation, and swelling. Frank cellulitis and induration of adjacent soft tissues may be present. Purulent material may be observed being expressed from the Wharton duct, particularly upon milking the gland. Rarely, a cutaneous fistula may occur, with spontaneous drainage of purulent material. The inflammation is secondary to an infectious process.

Causative Organisms

Bacterial

Staphylococcus Aureus most Common. Other includes *Streptococcus viridans, Haemophilus influenzae, Streptococcus pyogenes,* and *Escherichia coli*. The infection is often the result of dehydration with overgrowth of the oral flora, immunosuppression, iatrogenic (drug-induced) and rarely haematogenous spread.

Viruses: These include the mumps virus, HIV, coxsackie virus, parainfluenza types I and II, influenza A, and herpes.

The common predisposing factors of submandibular sialadenitis are sialolithiasis and xerostomia [3].

Sialolithiasis is often present (causing obstructive sialadenitis) and stones are found in ~85% of submandibular ducts and ~15% of parotid ducts.

Of note, infection of the submandibular gland is rare in the neonate and prepubescent child. When it does occur, similar pathogens have been identified, including *Pseudomonas aeruginosa* and group B streptococci. Physical examination, in addition to the symptoms described above, includes failure to thrive and irritability. Progression may occur, involving the contralateral gland. The etiology of this entity is unclear.

The clinical signs and symptoms of sialadenitis include fever, chills, localized painful firm swelling of the affected gland area, with redness of the overlying skin. Other constitutional features include a foul taste in the mouth, dry mouth, decreased mobility of the jaw, and a general ill feeling. Pus

drainage through the gland duct may also be present.

Most often the diagnosis of submandibular sialadenitis is made by the history and clinical features of the lesion. Further investigations like radiograph and ultrasound helps to rule out sialolithiasis, Wharton's duct abnormalities and glandular neoplasm [4].

Of all the radiologic examinations available, one of the simplest is conventional plain radiography. Anteroposterior, lateral, and oblique intraoral occlusal views are used. This technique is particularly valuable in evaluating the presence of calculi, which are radio-opaque in approximately 70% of cases [3].

Radiographic Features

Fluoroscopy

Sialography is contraindicated in acute sialadenitis because it can worsen the infection [4].

Ultrasound

In acute sialadenitis the affected gland appears enlarged, hypoechoic and hyperaemiac on ultrasound.

In chronic infective forms the affected gland appears atrophic and diffusely hypoechoic with irregular margins - the ultrasound appearances have been likened to that of a "cirrhotic" liver .

There may be evidence of sialectasis if recurrent [4].

CT

Acute Sialadenitis

1. enlarged salivary gland with abnormal attenuation, indistinct margin and vivid contrast enhancement with associated adjcacent fat stranding and/or thickening of the deep cervical fascia that is typically unilateral
2. dilated duct from sialolithiasis or stenosis
3. enlarged intra- or extra-glandular lymph nodes may also be seen but this is non-specific and can occur in other conditions such as malignancy
4. abscesses are hypodense fluid collections, which may or may not be loculated [4].

MRI

The salivary gland(s) is often enlarged. The affected gland can range from well defined to poorly defined. Signal characterisitcs in majority of cases tend to be heterogenous [4].

Signal characteristics include

T1-acute sialadenitis:low signal

T2 -acute sialadenitis:overall signal tends to be high [4].

Differential Conditions Include

Sjogren syndrome

Sialadenosis

Sarcoidosis

Treatment

Medical management - Hydration, antibiotics, warm compresses and massage, sialogogues. Resolution of symptoms occurs in a week but oedematous condition may last for few weeks.

Patients are most often treated on an outpatient basis, with the administration of a single dose of parenteral antibiotics in an emergency department, followed by oral antibiotics for a period of 7-10 days. Clindamycin (900 mg IV q8h or 300 mg PO q8h) is an excellent choice and provides good coverage against typical organisms.

Surgical management - Excision of the gland in cases refractory to antibiotics, incision and drainage in case of abscess formation [5], gland excision in cases of recurrent acute sialadenitis.

Prognosis of sialadenitis is good with prompt diagnosis and treatment.

Conclusion

Submandibular sialadenitis is a rare condition and acute sialadenitis not amenable to conservative management requires surgical management. As these disease are rarer in young people it it is difficult to establish universally valid therapeutic guidelines.

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Case Report

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Fanconi's Anaemia

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Abstract

Fanconi anaemia (FA) is a very rare genetic disease with an incidence estimated at 1 per 130,000 births. FA is the result of a genetic defect in a cluster of proteins responsible for DNA repair As a result, the majority of FA patients develop cancer, most often Acute Myelogenous Leukemia, and 90% develop Bone Marrow Failure by age 40. About 60–75% of FA patients have congenital defects, commonly short stature, abnormalities of the skin, arms, head, eyes, kidneys, and ears, and developmental disabilities. Around 75% of FA patients have some form of endocrine problem, with varying degrees of severity. Median age of death is around 30-35 years. Treatment with androgens and hematopoietic (blood cell) growth factors can help bone marrow failure temporarily, but the long-term treatment is Bone Marrow Transplant if a donor is available.

Keywords: Fanconi; Anaemia; Bone Marrow Failure.

Case Report

A 12 year old boy, born of 3rd grade consanguineous marriage, 4th by birth order, came to our Out Patient Department with complaints of palpitations, breathlessness on exertion and easy fatiguability. The mother gave a history of multiple blood transfusions and 2 bone marrow examination performed 1 year apart. On examination, his weight was 29 Kg (Exp: 42 Kg), Head circumference: 48cm (Exp: 53 cm), Height: 128 cm (Expected: 161 cm). External genitalia was normal. Patient had severe pallor, microophthalmia, hyperpigmentation of perioral region (Figure 1), nail beds and palms, short stature and hypoplastic thumbs (Figure 2). Investigations revealed a hemoglobin level of 2.3 gm%, TLC: 2700/cumm and Platelet count: 17,000/cumm. Peripheral blood smear was suggestiove of pancytopenia and the bone marrow aspiration revealed Fanconi's Anaemia.

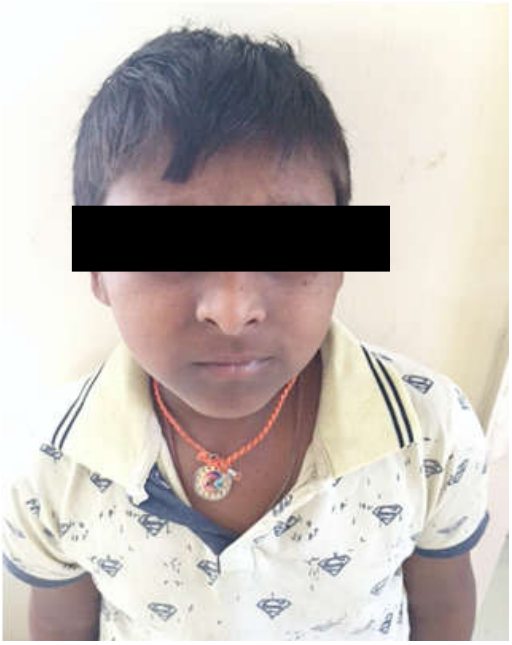

Fig. 1: Microophthalmia & perioral hyperpigmentation

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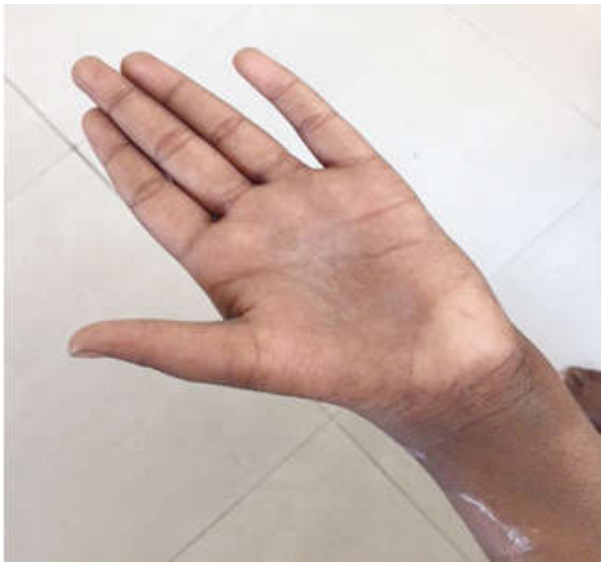

Fig. 2: Hypoplastic thumb

Discussion

Fanconi Anaemia (FA) is the most frequent inhertted cause of Bone Marrow Failure [1] with approximately 2000 cases reported in the medical literature. Half the patients are diagnosed prior to age 10, while about 10 % are diagnosed as adults.

Signs & Symptoms

Birth defects, such as short stature, abnormal thumbs and/or radial bones, skin pigmentation, microcephaly, microophthalmia, renal abnormalities and cardiac and skeletal anomalies [2,3].

During childhood, short stature & skin pigmentation, including cafe au lait spots may become apparent. The first sign of a hematologic problem is usually petechiae and bruises, with later onset of pale appearance, feeling tired and infections. Because macrocytosis usually precedes a low platelet count, patients with typical congenital anomalies associated with FA should be evaluated for an elevated red blood cell mean corpuscular volume [6].

The disorder is often associated with a progressive deficiency of all bone marrow production of blood cells, red blood cells, white blood cells, and platelets. Affected individuals have an increased risk of developing a cancer of blood-forming cells in the bone marrow called acute myeloid leukemia (AML), or tumors of the head, neck, skin, gastrointestinal system, or genital tract [4]. FA occurs equally in males and females, and is found in all ethnic groups.

FA is primarily an autosomal recessive genetic disorder. This means that two mutated alleles (one from each parent) are required to cause the disease. There is a 25% risk that each subsequent child will have FA. About 2% of FA cases are X-linked recessive, which means that if the mother carries one mutated Fanconi anemia allele on one X chromosome, there is a 50% chance that male offspring will present with Fanconi anemia [5].

Treatment

Bone Marrow Transplantation is the only deifinitive treatment at present.

Conclusion

Fanconi's Anaemia is a diagnosis made on histopathology and certain clinical findings. It is a rare, autosomal recessive disorder with a life expentency of around 30-35 years with infections, bleeding manifestations, progression to cancer and bone marrow failure being the causes of death. It is a genetic condition that strongly predisposes patients to aplasia, MDS, and AML. Follow-up of FA patients requires a specialized multidisciplinary clinical and biological expertise. Bone Marrow Transplantation is the only treatment at present.

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Case Report

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Whistle Aspiration A Diagnostic Puzzle

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Abstract

Foreign-body aspiration is commonly seen in infants and toddlers. Older children are less likely to aspirate a foreign body due to well-developed oro-pharyngeal reflexes. Our case a 6 year old female child presented with history of cough, fever and hemoptysis. History of aspiration of a plastic whistle was present but chest radiograms were not confirmatory. Due to a high index of suspicion, bronchoscopy was done. A cylindrical plastic whistle was removed. Thus underscoring the importance of history in determining bronchoscopy in suspected cases of foreign-body aspiration.

Keywords: Foreign Body; Whistle; Virtual Bronchoscopy; Rigid Bronchoscopy.

Introduction

Foreign-body aspirations is commonly seen in the age group less than 4 years [1,2]. Older children aspirate objects like pin, coin and jewellery or organic objects like peanut or beetle nut put in their oral cavity [3]. Though older children have good neuromuscular coordination as well as involuntary reflexes like cough, gag and closure of glottis can protect them from aspiration still they are susceptible for aspiration [1, 4]. Our case reiterates the importance of suspicion of history of foreign-body aspiration as a strong indication for bronchoscopy despite imaging studies are not suggestive of a foreign body.

Case History

A 6 year old female child presented with cough since one month, intermittent fever since one month. The child had one episode of hemoptysis with blood streaked sputum. On enquiry the child had history suggestive of foreign body aspiration while playing with a plastic whistle at the onset of symptoms a month ago. Though no one had seen her aspirating, the mother claimed that she heard whistle sound all of a sudden when child was playing. Also the whistle was missing from one of her baby shoe. She was breathing normally though. She had cough at rest but no tachypnea or signs of increased work of breathing. There was decreased vocal resonance and decreased air entry on the left side infra axillary area on auscultation of chest with no adventitious sounds. Rest of the systemic examination was normal. Chest x-ray did not show any air bronchogram, features of consolidation or foreign body (Figure 1), though there was bilateral hyperinflation as seen in bronchiolitis. HRCT thorax with virtual bronchoscopy was suggestive of patchy consolidation with air bronchogram in left lower lobe suggestive of infective etiology but failed to note any foreign body in airways. Total leucocyte count was 9700/cumm. The child was started on Amoxicillin-Clavulinic acid (100 mg/kg/d i.v.). But in keeping with a clue from history a rigid bronchoscopy under general anaesthesia was

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performed. A 15 mm long and 8 mm wide plastic whistle was removed. Post bronchoscopy air entry was bilaterally equal. The child tolerated the procedure well. Was discharged and is doing well on follow up.

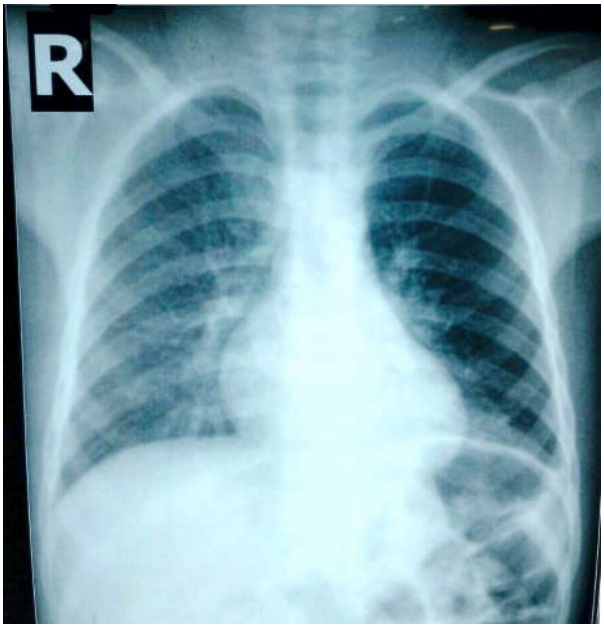

Fig. 1: Chest X-ray: Hyperinflation

Fig. 2: Foreign body: Whistle from baby shoe

Discussion

Prediction of foreign body aspiration has been described by Heyer et al as having three individual factors, firstly being a chest radiograph demonstrating a focal hyperinflation, secondly a documented choking episode and thirdly white blood counts being more than $10.0x10^9$/L. Bronchoscopy was advised if at least two of the factors were present. In our case all three factors were not present. Thus increasing the dilemma [5].

In our case there was no history of acute respiratory distress.The whistle did not cause complete obstruction as it was like "a lumen within a lumen" allowing air to pass in and out without major obstruction. Hence no complete obstruction signs were seen. It's known that even otherwise 15-30% patients can have no symptoms as well as have a normal chest x-ray [2]. They was no air trapping due to ball-valve mechanism causing obstructive emphysema or atelectasis or consolidation or shift of mediastinum on chest X-ray [6-8]. The HRCT with virtual bronchoscopy is not only non-invasive but also can help us define even a radiolucent foreign body with respect shape size and position, but in our case no foreign body was detected. This highlights the limitation as the sensitivity of computed tomography with virtual bronchoscopy 80% whereas that of HRCT varies from 90 to 100% [9].

It will be apt to restate that a high index of suspicion, history teamed with physical examination despite normal imaging studies warrants a bronchoscopy. History becomes an indispensable factor in deciding for bronchoscopy as radiological imaging lack sensitivity. Heyer et al had also shown that 76% of decisions based on only clinical findings for doing bronchoscopy had accurately detected foreign body [5]. A child with chronic cough and hemoptysis should also raise a suspicion of foreign body in the airway. Complications of foreign body depends on not only site, dimensions, shape, nature and time interval from day of aspiration of foreign body [10]. In our case the shape being cylindrical, non organic had not caused complete obstruction nor any bronchiectatic changes but did lead to pneumonic consolidation in left lower lobe. The gold standard investigation for this child was rigid bronchoscopy under general anaesthesia which was not only a diagnostic but also proved therapeutic. Increased awareness among parents and guardians is also important to prevent aspiration and recall eventful history. The earlier the bronchoscopy done the better the chance of reducing morbidity in children.

Rigid bronchoscopy the golden standard investigation for diagnostic cum therapeutic importance is often given a second thought in view of non-invasive virtual bronchoscopy [11]. Rigid bronchoscopy does have major risks of procedure and anaesthesia; but has promising life saving results in skilled hands. This case reiterates importance of check bronchoscopy with rigid bronchoscope in a suspected case when virtual bronchoscopy was not conclusive. Rather, virtual bronchoscopy in a suspected foreign body aspiration case may delay the check bronchoscopy and delay the cure by diverting the diagnosis; hence it should not be insisted for.

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Indian Journal of Biology	2	4000	400
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Journal of Forensic Chemistry and Toxicology	2	9000	900
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Case Report

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Benign External Hydrocephalus

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Abstract

The term external hydrocephalus or benign enlargement of subarachnoid space (BESS)was first used by Dandy in 1917 to describe enlargement of the subarachnoid space in the presence of increased intracranial pressure [1]. External hydrocephalus is defined as a rapid increase in head circumference in an infant combined with enlarged frontal subarachnoid spaces as seen on CT, MRI, or cranial ultrasound and with normal or slightly enlarged ventricles [2].

It is more common in males and is mostly idiopathic but can be due to delayed development or delayed function of arachnoid villi at sagittal sinus, intraventricular and subarachnoid haemorrhage, prematurity, meningitis and trauma. Patient presents with a rapidly enlarging head, or with delay in gross motor development, hypotonia, or it can be an accidental finding on investigations. It is a normal variant of hydrocephalus and the most common cuse of macrocephaly [3].

External hydrocephalus is diagnosed by an ultrasound with MRI and CT scan being more diagnostic. There is an increased risk of subdural haematoma communicating hydrocephalus or subdural haematoma.Studies show that infants with macrocephaly or rapid head-growth, CT findings of enlarged subarachnoid spaces, normal-to-minimally increased ventricular size and who have a parent with macrocephaly, have a good developmental prognosis and a characteristic pattern of neuromotor development in the first year [4]. In this poster we discuss a case of benign external hydrocephalus in a 11month male child presenting with a history of head injury.

Keywords: Hydrocephalus; Macrocephaly; Subarachnoid Space.

Introduction

Hydrocephalus is a relatively common neuropediatric condition, with an incidence of about 0.9 per 1,000 births.It is defined as the abnormal accumulation of cerebrospinal fluid (CSF) within the ventricles and/or subarachnoid spaces, leading to an increase in intracranial pressure (ICP) [5]. Raimondi defined it as an increase in CSF volume.

It occurs mainly during infancy, and the subarachnoid space enlargement gradually decreases and disappears over the next year. The word "benign" is often used together with "external hydrocephalus," reflecting the common view that this is a self-limiting condition occurring during infancy, resolving spontaneously during childhood. Hence, most patients are probably not treated.

Case History

11 months male child visited the OPD with H/O gradually increasing head circumference since the

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past 1 month.His head circumference was more than 95th centile fort hat age.The anterior fontanelle was soft and of normal tension. Frontal bossing was present. Rest of the clinical examination revealed no significant abnormality. The child was neurodevelopmentally normal with normal milestones. The child was born at 39 weeks of gestation by normal vaginal delivery and had cried immediately after birth. Ct scan revealed subdural hygroma. Later an MRI was done showing benign enlargement of subarachnoid space. As thee was no neurological involovement patient was adviced follow up with MRI at 18-21months of age. He was given only conservative treatment as BESS is a self-limiting illness.

Fig. 1: Child with BESS syndrome

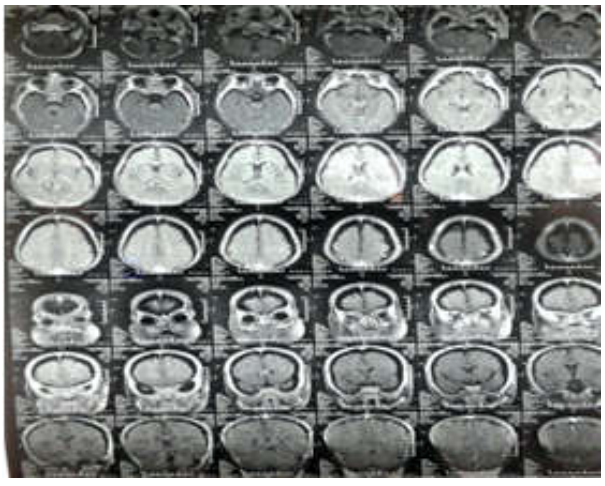

Fig. 2: MRI showing benign enlargement of subarachnoid space

Etiology

In most reported cases, there is no obvious cause of the external hydrocephalus, and it is therefore classified as idiopathic. However, it has been reported after numerous situations and conditions such as prematurity and intraventricular hemorrhage , meningitis, metabolic disorders , steroid therapy chemotherapy, neurosurgery , and trauma [6].

A complicating fact is that intraventricular and subarachnoid hemorrhages in premature infants often occur without symptoms , thus making it difficult to know if idiopathic hydrocephalus really is idiopathic or simply caused by such silent, clinical events .

External and communicating hydrocephalus is described in children with raised venous pressure, e.g., following various thoracic/cardiac conditions [7].

Heredity

Some patients with external hydrocephalus seem to have a familial form as one or more close relatives are macrocephalic.

An autosomal dominant mode of transmission has been assumed, although a multifactorial model of inheritance is the most recent proposal. The dominant inheritance might be due to a single gene exhibiting a major effect as part of a multifactorial phenomenon in some families , probably during a limited time of susceptibility in fetal development. Maytal et al. suggested that the primary phenotype merely was the delayed maturation of the arachnoid villi.

Pathophysiology

External hydrocephalus is caused by immature arachnoid villi not able to absorb the CSF that is produced continuously . The accumulated CSF then expands the ventricles and the subarachnoid space inside the compliant and growing skull of an infant, thus avoiding a marked increase in intracranial pressure. The arachnoid villi mature at about 18 months of age, ending the CSF accumulation and thus the widening of the subarachnoid space. Why the arachnoid villi do not mature remains unknown, but some heredity has been described [8]. The underlying mechanism for the formation of external hydrocephalus is poorly understood, although several theories exist. The familial macrocephaly associated with some of the cases indicates that heredity may play a role. CSF flow studies have shown reduced flow over the cerebral convexities; an impairment of CSF absorption through the arachnoid villi therefore seems intuitive. In normal children, it has been shown that the arachnoid villi are not fully mature at birth but that they gradually become so during infancy. This lack of maturation in combination with the pronounced increase in CSF production during the first year of life may be the

underlying mechanism and may also explain why the head starts to grow at around 6 months of age in most cases. This may not be a problem in most children, as their draining capacity through the villi or other draining pathways is balanced against the CSF production [8]. In children with external hydrocephalus, on the other hand, there may be a misbalance because of either delayed maturation or excessive CSF production.

Cerebrospinal Fluid Outflow

External hydrocephalus is commonly classified as a communicating hydrocephalus .Three pathways are recognized: the arachnoid granulations, the lymphatic capillaries, and the transependymal passage.

The term external hydrocephalus was first used by Dandy in 1917 to describe enlargement of the subarachnoid space in the presence of increased intracranial pressure. It was only recently that Robertson and Gomez reintroduced the term to describe a conditionin which children wtih enlarging heads have a CT scan of enlarged subarachnoid spaces with mild to moderate or no ventricular dilation. There appears to be an excess of normal CSF in the subarachnoid space. This was demonstrated by Andersson et al. who performed craniotomies on four patients with idiopathic EH and found an enlarged subarachnoid space without other abnormalities [9].

Risk Factors

External hydrocephalus may coexist with a series of conditions, such as some types of craniosynostoses, achondroplasia, Sotos syndrome, and glutaric aciduria type 1. A case of external hydrocephalus in a microcephalic infant has also been reported. The hydrocephalus in craniosynostosis and achondroplasia is supposedly caused by a rigid venous outflow obstruction.

Increased head circumference is found in all patients with external hydrocephalus. In most cases, the head circumference increases disproportionally only during the first year of life, an observation that may support the delayed maturation theory as discussed above. However, as the cranial sutures close between 1 and 2 years of age, it is difficult to exclude a persistently increased ICP. Many children end up with large heads, i.e., they to not normalize, signifying a continued growth stimulus beyond infant age [10].

A relatively common sign is a tense anterior fontanel. Other early symptoms and signs have also been reported occasionally: dilated scalp veins, frontal bossing (an unusually prominent forehead), irritability, hypotonia, vomiting, gross motor delay, ataxia, poor head control, seizures, fever, and mental retardation. We have not found any articles reporting sunset gaze.

Head Circumference

Infants with external hydrocephalus usually show a rapid increase in head circumference , which appears to be the most common symptom in all children developing hydrocephalus during their first year of life. Most of the increase in head circumference occurs around the age of 6. It seems that the head circumference usually stabilizes before the age of 18 months . Measurements afterwards typically lie above but parallel to the upper (95th to 98th) percentile. The amount of children ending up with macrocephaly varies considerably from 11% to 87% on long-term follow-up [11].

Hanlo et al. showed in a study of hydrocephalic infants that raised ICP is related to developmental outcome through the process of myelination as seen on MRI . Moreover, most children with severely delayed preoperative myelination showed at least a partial recovery following CSF diversion. The importance of myelination is supported by an animal study finding that white matter blood flow seems vulnerable in hydrocephalic kittens.

Investigations

Ultrasound, CT and MRI imaging of the brain may all demonstrate the characteristic findings seen in BESS:

- widening of the bifrontal and anterior interhemispheric CSF spaces
- no consensus of cut-off values exists
- findings should be correlated with patient age
- an estimated equation for both inter hemispheric width (IHW), craniocortical width (CCW) and sinocortical width (SCW) has been suggested
- IHW >5 mm in neonates
- IHW >8.5 mm in 1 year olds
- no flattening of adjacent gyri
- CSF space follows the gyral contour
- usually normal sulci posteriorly
- the anterior fontanelle is frequently enlarged with the enlargement of the subarachnoid space in the

frontoparietal regions

- normal ventricular size, no pressure effects on the surrounding brain tissue, no cerebral atrophy.
- no blood products on MRI study
- another key distinction between benign enlargement of the subarachnoid spaces and a subdural fluid collection is that in the former the cortical veins will be adjacent to the inner table of the calvarium on MR and ultrasound; whereas in the latter the veins are displaced away from the inner table, as the arachnoid membrane and subarachnoid space are displaced [12].

Complications

While these findings are benign in many cases, there is an increased risk of subdural haemorrhage, either spontaneously or following minor trauma. Subdural hematoma in a patient with BESS should not be interpreted as suggestive of non-accidental injury without other stigmata [13].

A low percentage of patients may develop communicating hydrocephalus, which may warrant treatment.

The condition resolves spontaneously by the age of 2 years. Although the macrocephaly may persist, the subarachnoid space fluid collection will resolve or become minimal as the child grows older.

Treatment

Studies show that infants with macrocephaly or rapid head-growth, CT findings of enlarged subarachnoid spaces, normal-to-minimally increased ventricular size and who have a parent with macrocephaly, have a good developmental prognosis and a characteristic pattern of neuromotor development in the first year [14].

A review of literature has described that although most children with external hydrocephalus do well, a substantial number show temporary or permanent psychomotor delay.

Conclusion

Although it is a self limiting disease and it usually resolves by 2 years of age, in some cases shunt operation is indicated. A review of literature has described that although most children with external hydrocephalus do well, a substantial number show temporary or permanent psychomotor delay. Hence, future research should focus on this, comparing the outcome of surgical treatment and conservative management of external hydrocephalus.

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Case Report

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Congenital Sacral Dermal Sinus – Marker of Presacral Dermoid Cyst

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Abstract

Sacral pits are commonly seen in newborns. They are simple dimples or atypical dimples. Congenital dermal sinus is an atypical dimple and is known to be associated with presacral dermoid cyst. Surgical intervention these without proper evaluation can lead to complications. The management of 8-year-old girl with recurrent congenital dermal sinus is discussed in this case report.

Keywords: Sacral Pits; Congenital Dermal Sinus; Presacral Mass; Dermoid Cyst.

Introduction

Sacral pits or dimples are not uncommon with prevalence of 1-4% quoted in literature [1]. They can be simple or atypical dimples. Congenital Dermal sinus occurs in children in the midline in the sacro-coccygeal region. These dermal sinuses are associated with presacral masses like dermoid cysts and teratomas. Presacral space is a potential space. The masses arising in the presacral space can be divided into following categories congenital, inflammatory, neurogenic, osseous and miscellaneous. Amongst these congenital lesions account for 50% of the masses [2]. Presacral masses are occult lesions with atypical presentations.

Case

A 8-year-old girl had undergone surgical procedures twice at a local hospital for a congenital sinus in the lower back. She presented with complaints of foul smelling discharge from the surgical site. There was no history of constipation. There was a single sinus in the coccygeal region 1 cm above the natal cleft. There was severe scarring of the surrounding tissue (Figure 1). Foul smelling discharge was draining from the sinus. CT fistulogram was suggestive of a pre sacral dermoid cyst with linear opacified tract leading to the sinus (Figure 2). MRI showed a presacral dermoid cyst with hyperintense fat component along with a linear tract extending from the mass up to the skin in the coccygeal region .

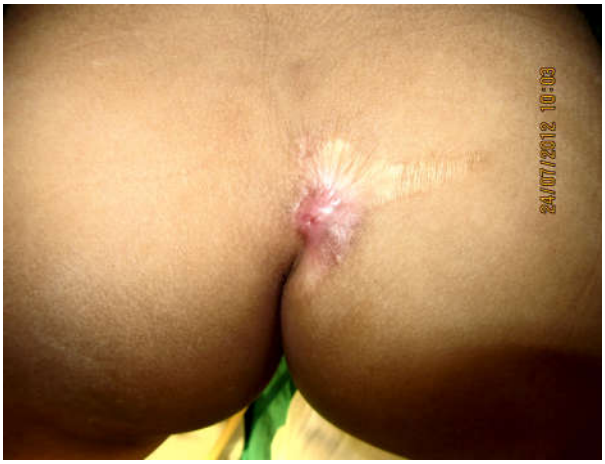

Fig. 1: Clinical image showing the scarring around the sinus

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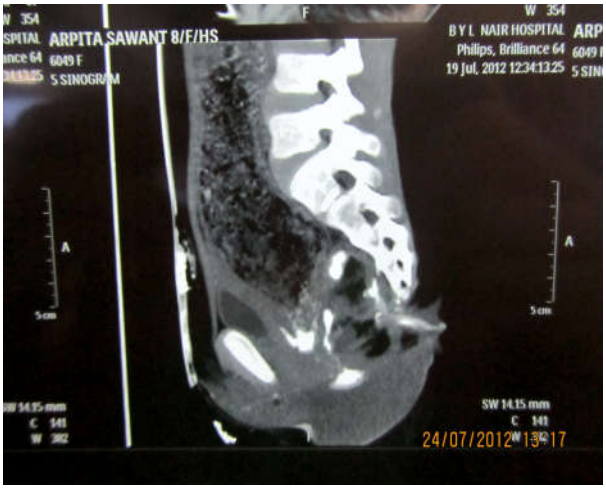

Fig. 2: CT fistulogram

Serum Alfa-feto protein and beta Human chorionic gonadotropin levels were normal. At surgery, the fistulous tract was dissected circumferentially up to the presacral mass. The mass was dissected away from the rectum and excised. Histopathology confirmed the diagnosis of dermoid cyst.

Discussion

Sacral dimples or sacro-coccygeal pits occur in as many as 1-4% healthy newborns [1]. Traditionally these are considered as cutaneous markers of occult spinal dysraphism. Occult spinal dysraphism is associated with sacral dimples in 50-80% of cases [3]. According to Kucera et al only 0.13% of asymptomatic children with sacral dimples required surgical intervention [4]. This brings us to the question which sacral dimple should be evaluated.

Clinical findings alone cannot help us decide with certainty which sacral dimples are associated with occult spinal dysraphism. However, the following findings help us differentiate them into simple dimples and atypical ones. Dimples which are <5mm deep and <2.5 cms from the anal verge and coccygeal pits which are located within the gluteal cleft or oriented caudally are considered as simple dimples. Atypical dimples are >5mm deep and >2.5cms from the anal verge and are associated with one or more of the following, subcutaneous mass, hairy patch, vascular lesions, skin tags or scars, and dermal sinuses (sinuses opening onto skin surface, located above gluteal cleft and have a cephalically oriented tract) [5].

Simple dimples can be safely monitored as long as they as asymptomatic [5]. All symptomatic and atypical dimples should be evaluated with Ultrasonography within the first three months of life, in older infants and children MRI is considered as the best diagnostic tool [6].

Congenital dermal sinus is a tract lined by stratified squamous epithelium occurring anywhere from the nasion to the coccyx. Excluding dimples in the sacrococcygeal region, the incidence of CDS appears to be approximately 1 in 2500 to 3000 live births. Dermal sinuses in the lumbosacral region or higher occur during the process of neuralation whereas those in the coccygeal region occur during the process of canalization of the tail bud. Since a dermal sinus contains dermal components one can anticipate it to be associated with a dermoid cyst [7].

Table 1: Classification by Uhlig & Johnson

Congenital-	Neurogenic	Osseous	Miscellaneous	Other
Benign Developmental cysts (teratoma, epidermoid, dermoid, mucus-secreting) Duplication of rectum Anterior sacral meningocele Adrenal rest tumor *Malignant* Chordoma Teratocarcinoma	*Benign* Neurofibroma Neurilemoma (schwannoma) Ganglioneuroma *Malignant* Neuroblastoma Ganglioneuroblastoma Ependymoma Malignant peripheral nerve sheath tumors (malignant schwannoma, neurofibrosarcoma, neurogenic sarcoma)	*Benign* Giant-cell tumor Osteoblastoma Aneurysmal bone cyst *Malignant* Osteogenic sarcoma Ewing's sarcoma Myeloma Chondrosarcoma	*Benign* Lipoma Fibroma Leiomyoma Hemangioma Endothelioma Desmoid (locally aggressive) *Malignant* Liposarcoma Fibrosarcoma/malignant fibrous hisiocytoma Leiomyosarcoma Hemangiopericytoma Metastatic carcinoma	Ectopic kidney Hematoma Abscess

The presacral space is located between rectum and the sacrum. This place is embryologically significant as it is a place of embroyological crossover of the neuroectoderm, hindgut, and notochord. This gives rise to various tumors and masses in this area. Presacral tumors are rare and the reported incidences range between 1 in 40,000 to 63,000 hospital admissions [8,9].

Uhlig and Johnson first classified these masses in 1975. The modified classification was put forth by Dozois et al who further subdivided the masses into benign and malignanat (Table 1). Congenital lesions are the commonest amongst these lesions accounting for 55 to 70% of all lesions [10].

Dermoid and epidermoid cysts result due to abnormal ectodermal tube closure. Epidermoid cysts are lesions composed of stratified squamous cells. These are usually benign and unilocular. Dermoid cysts in addition to stratified squamous epithelium contain skin appendages like sweat glands, hair follicles, or sebaceous cysts and thus can be differentiated from epidermoid cysts. Both these type of lesions may be associated with a postnatal dimple or sinus when they communicate with skin [10].

These masses due to their location present with non-specific symptoms. Thus, in presence of a dermal sinus a thorough evaluation of abdomen and pelvis by Ultrasonography is warranted. Surgery is mainstay therapeutic option. Complete excision of the mass along with the sinus tract ensures complete cure.

Conclusion

Sacral dimples are not uncommon in healthy term newborns. Atypical dimples should be evaluated with USG and MRI, as they are markers of sinister internal pathologies. Congenital dermal sinuses are associated with presacral dermoid cysts and hence should be thoroughly evaluated before surgery.

Conflict of Interest: Nil

Acknowledgements: Nil

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Craniopharyngioma in Child

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Abstract

Craniopharyngiomas are histologically benign neuroepithelial tumors of the CNS that are predominately observed in children aged 5-10 years. People may present with bitemporal inferior quadrantanopia leading to bitemporal hemianopsia, as the tumor may compress the optic chiasm These tumors arise from squamous cell embryologic rests found along the path of the primitive adenohypophysis and craniopharyngeal duct. Although histologically benign, these tumors frequently recur after treatment. In addition, because they originate near critical intracranial structures (eg, visual pathways, pituitary gland, hypothalamus), both the tumor and complications of curative therapy can cause significant morbidity. These characteristics have led to various treatment approaches, and disagreement continues regarding optimal treatment in children with this disease. Other names are Rathke pouch tumors, hypophyseal duct tumors, or adamantinomas. Evidence suggests that adult craniopharyngiomas are histologically and biologically different from paediatric craniopharyngiomas; however, only childhood craniopharyngiomas are discussed in this article.

Keywords: Craniopharyngiomas; Benign; Quadrantanopia; Bitemporal Hemianopsia; Neuroepithelial Tumors; Primitive Adenohypophysis and Craniopharyngeal Duct.

Introduction

Baby X 7 years old male child was admitted in the paediatric surgical ward on 23/02/2016 with the complaints of diminished vision from past 6 months and moderate to sever head ache on frontal area with one episode of vomiting. Thge child was apparently normal before 6 months, and his decreased in vision was reported by his school teacher that he is not able to see words in blackboard. He went for routine eye checkup and suggested for improving diet and no other treatment measures were used. The symptoms progress and the child vision worsen with which he started banging on walls and doors and thus continuous diminishing of vision for which he went for 2nd opthalmalogic check up and he was refered to PGI chandighar and advised for MRI and the child was diagnosed for brain tumor. Therefore the clint PD for the same complaints and pediatric surgeon. The child underwent craniotomy and excision on 3rd march and the tumor was removed and culture was sent for histopathological examination. The incision from frontal area starting from right ear 13 sutures was made to close the incision. The conformation of diagnosis was Craniopharyngiomas. Postoperatively the child was complaining for diarrhoea and head ache.

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Disease Condition

Book picture **Patient picture**

Definition: Craniopharyngiomas are benign neuroepithelial tumors of the CNS. These tumors arise from squamous cell embryologic rests found along the path of the primitive adenohypophysis and craniopharyngeal duct. Craniopharyngiomas are the most common childhood tumor

Incidence:

- Craniopharyngiomas are relatively rare, representing 6-10% of intracranial malignancies in children and adolescents (approximately 2-3 cases per 1,000,000 children).
- a slight male preponderance has been historically reported.
- Peak incidence occurs in individuals aged 5-14 years.
- Neonatal craniopharyngiomas are rare.
- Higher incidence rates have been observed in Asia and Africa.

Age 7 year
Sex: male
Race: Asian

Causes:
Unknown
chromosomal abnormalities
environmental or infectious causes can predispose

Unknown

Pathophysiology

Due to chromosomal abnormalities like deletions, translocations, and increased copy numbers

↓

Tumors arise from cellular remnants of the Rathke pouch, which is an embryologic structure that forms both the infundibulum and anterior lobe of the pituitary gland.

↓

These tumors have been identified extensively in suprasellar, parasellar, and ectopic locations. Typically, the tumors arise within the sella or adjacent suprasellar space.

↓

Tumor mass compresses the adjacent normal intracranial structures.

↓

Obstructing cerebral spinal fluid (CSF) pathways (ie, third ventricle, Monro foramen) and causing hydrocephalus and increased intracranial pressure that leads to headaches, nausea, and projectile vomiting.

Clinical manifestations

- **Headache**: due to increased intracranial pressure or hydrocephalus.
- **Vomiting**: Classic projectile vomiting (frequently without nausea)
- **Vision loss**
  - Children are frequently unaware of significant vision loss; nevertheless, this symptom reportedly occurs in 20-60% of pediatric patients with craniopharyngioma at presentation.
  - Anterior extension to the optic chiasm can result in a classic bitemporal hemianopsia, unilateral temporal hemianopsia, papilledema, or unilateral/bilateral decrease in visual acuity. Classically, vision loss starts with a superior temporal field cut. However, the eccentric growth of these tumors can result in varying patterns and severity of vision loss, including decreased acuity, diplopia, blurred vision, and subjective visual field deficits. Children are frequently inattentive to visual loss, and formal testing may be required.
- **Seizures** due to Temporal lobe involvemen
- **Hyperactive** children with unusual eye movements and even blindness due to extrinsic compression of the hypothalamus.
- **Endocrine deficiencies** leads to

short stature, Weight gain, Lethargy, Fatigue, Cold intolerance, Dry skin, Dry brittle hair, Slow teething, Anorexia, Large tongue, Deep voice, Myxedema, Delayed puberty.

Before surgery:
Head ache on frontal area
Vomiting
Partial Vision loss (bitemporal hemianopsia)
Unusual eye movement
After surgery:
Head ache
Diarrhoea

Diagnosis:

- History
- Physical examination
- Preoperative intellectual or psychological assessment

- **History**: The child natal history was apparently normal.
- **General appearance:** Oriented, conscious, moderate body built.

- Serum electrolytes levels
- Hormonal studies
- Skull radiography
- Head CT scanning
- Brain MRI
- Cerebral angiography
- Histological studies

- **GCS score:** Eye 4 verbal 5, and motor 6,
- **Vital signs:** stable
- **Anthropometr**y: height 154cm, weight 18kg, 1st degree malnutrition (according to Gomez classification).
- **Growth and development** seems to be normal. And child was mild hyperactive and have hurried in speech.
- **Head to foot:** after surgery suture line are present, partial visual acuity. Unusual eye movement, pupillary dilatation, partial optic atrophy. Extra ocular eye movement abnormalities. Slow teething and deep voice, weight loss.
- No other abnormal physical findings.

Investigations:

- **Haematological investigation**: Hb: 11.3gm/dl, RBC 4.56mc/cum,TLC 7500cells/cumm,DLC-N 90%,E-01%, L-05%, m-04%, platelet – 3.11 lacks/c/cumm, Hematocrit 34.8%.
- **Hormonal studies:** T3 level is elevated.
- **MRI**: suggestive of possibilitiey of Craniopharyngiomas.
- **Histopathologicla examination**: suggestive of Craniopharyngiomas.
- **Medical management**

Tab valporate 200mg OD (morning)
Tab veona CR 300 mg OD (evening)
Tab pantop -20mg OD
Tab sporlac 120mg TDS

- **Surgical management**

Craniotomy and excision was done

Treatment:

- Long-term hormone replacement is the primary medical treatment: intranasal vasopressin (desmopressin acetate [DDAVP]), corticosteroids, thyroid hormones, growth hormones, and sex hormones.
- There is no role of chemotheraphy in craniopharingioma. Immunostimulatory therapies with interferon and intracystic/intratumoral injection of chemotherapeutic agents (eg, bleomycin) are occasionally used in cases of recurrent disease. (Bleomycin (Blenoxane), Interferon alfa 2a (Roferon-A))
- Intracavitary irradiation (brachytherapy) also shows no clear outcome
- Repeated Surgical management for recurrent craniopharyngiomas after radiation therapy also shows fewer prognoses.

Surgical Care

- Radical surgery
- Conservative surgery alone
- Conservative surgery with postoperative radiotherapy

Complications:

- Vision loss
- Growth hormone deficiency, (35-95%).
- Thyroid-stimulating hormone deficiency (21-42%),
- adrenocorticotropic
- Hormone deficiency, (21-62%)
- Antidiuretic hormone deficiency,
- Luteinizing hormone or follicle-stimulating hormone deficiency (38-82%)

Diencephalic syndrome

- TSH deficiency
- Diencephalic syndrome (hyperactive with unusual eye movements)

Prognosis:

- There is 10 years of survival rates of 86-100% among patients who underwent gross total resection
- Subtotal resection or recurrence treated with surgery and radiation therapy carry 10-year overall survival rates of 57-86%.
- The perioperative mortality rate after primary surgical intervention has been estimated to be 1.7-5.4%. However, the mortality rate after re-resection for recurrent disease can be as high as 25%.

- Not evident till date
- Expected to have poor prognosis in future

- Almost all patients with craniopharyngioma ultimately suffer from chronic endocrinologic morbidities. And significant neurologic morbidities such as vision loss, ataxia, behavioral problems, cognitive disabilities, and sleep disorders

Nursing Assessment

- Identification of risk factors for exposure to radiation or chemicals that is carcinogenic.
- Identify the signs and symptoms are: headache, vomiting, and decreased vision or double vision.
- Identify any changes in client behaviour.
- Observation of hemiparese or hemiplegia.
- Changes in sensation: hyperesthesia, parasthesia.
- Observation of sensory changes: asteregnosis (not able to feel the sharp edges), agnosia (not able to recognize objects in general), apraxia (not being able to use the tool properly), agraphia (can't write).
- Observation of vital signs and level of consciousness.
- Observation circumstances fluid and electrolyte balance.
- Psychosocial: personality and behavioural changes, difficulty making decisions, anxiety and fear of hospitalization, diagnostic tests and surgical procedures, a change in the role.

Possible Nursing Diagnosis

1. Ineffective tissue perfusion related to circulatory damage caused by a tumor suppression.
2. Impaired sensory perception decrease visual acuity related to optic nerve compression
3. Pain (Acute / Chronic) related to increased intracranial pressure.

Altered comfort irritability related to increased intracranial pressure

4. Fluid and electrolyte imbalance related to vomiting
5. Impaired family coping related to poor prognosis of the disease
6. Risk for injury related to poor visual acuity.
7. Risk for recurrence related to metastatic nature of the disease
8. Potential for complications vision loss related to poor prognosis of disease
9. Potential for neurological deficit related to poor prognoses and non availability of the chemotherapy and radiation therapy.
10. Knowledge Deficit: the condition and treatment needs related to the inability to know the information.

Conclusion

Even though it is a common childhood tumor the treatment mortalities for this kind of tumor is still not clear. There is no role of chemotherapy in curing tumor. Radiation therapy and surgical interventions also shows no complete cure. Repeated surgeries needed for recurrent cases. This need consultation and team work of Pediatric neurosurgeon, Radiation oncologist, Pediatric endocrinologist and Pediatric hematologist/oncologist.

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Child with Multiple Organ Dysfunction

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Abstract

Daughter of Mr. Natwar Lal named "X", 16 years old child came to AIIMS OPD Jodhpur with complaints of increasing oedema, increasing BP, uncontrolled sugar and fever and dry cough since 3 days. She was diagnosed with IDDM, Solitary kidney, Diabetic nephropathy, Hypertension grade II and Hypothyroidism and was sent home with prescription. But 2 months later the child came with fresh complaints: which were ear pain, ear discharge for 10 days, swelling over right side of face for 4 days, pain over right shoulder for 4 days, unable to take orally for 3-4 days, and fever. She was additionally diagnosed with ASOM with complications. She has undergone mastoidectomy. Her solitary kidney and IDDM made her to develop super added infections. That led to multiple organ failure like chronic renal failure, respiratory failure, cerebral atrophy and liver dysfunction. She lost her consciousness due to brain involvement and respiratory involvement. The prognosis seems to be poor as multiple organs have got damaged, even though the child is provided with meticulous treatment in PICU.

Keywords: IDDM; Solitary Kidney; Diabetic Nephropathy; Hypertension Grade II; Hypothyroidism; Acute Suppurative Otitis Media; Periorbital Cellulitis; Vocal Cord Palsy; Pneumonia; Pleural Effusion; and Respiratory Failure.

History

Daughter of Mr. Natwar Lal named "X", 16 years old child, a known case of IDDM from 6 years of age came to AIIMS Jodhpur OPD on 12/02/2016 with the complaints of increasing oedema, increasing BP, uncontrolled sugar and fever and dry cough for 3 days. She undergone urine test, complete blood test , thyroid test, and blood culture. Later she was diagnosed to have IDDM, diabetic nephropathy, hypertension, with hypothyroidism. The paediatrician prescribed her Tab Telmesontan 40mg, Tab Dyton 30mg, Tab Zystarix 2.5mg, Tab Amlogard 10mg, Tab Calpol 500mg, Tab Augmentin 625mg, SypAsthalin 2 tsb, and Tab Monteklc and she was sent to home. After two months (04/05/2016) she came with the complaints of ear pain, ear discharge for 10 days, swelling over right face for 4 days pain at right shoulder for 4 days, not able to take orally for 3-4 days, and fever. The child was admitted in pediatric ward on same day. Various investigation like RFT, ear swab, urine test, USG of neck and face, pelvic 'X' ray, CT of face and neck as advised by ENT consultant and ophthalmologist consultation revealed that with previous diagnosis additionally at present she also suffering with ASOM, preseptal cellulitis and orbital cellulitis. After diagnosis she was shifted to PICU on 5/5/2016.

The family history revealed that Mr.Natwar Lal is suffering with IDDM and hypertension. But no family history of solitary kidney disease or other congenital anomaly.

Findings of Physical Exmination, Lab and Radialogical Investication

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General Condition

Unconscious for past 3 weeks to till date, GCS score is 3, short statue.

Vitals:

Temp: Fluctuating due to sepsis. CRP elevated.

Reps: under mechanical ventilator

Pulse: Increased

BP: uncontrolled

Anthropometry:

Weight: 34 kg

Height: 145 cm

Skin: pale yellow facial swelling, HB is 4.5gm. Oedema and swelling.

Head: 19/05/2016 CT head revealed large acute infarct in the right tempoperital region with right haemorrhagic transformation, thrombus in right M2 MCA, cerebral atrophy, and bilateral maxillary, ethmoidal, sphenoidal and right frontal sinusitis. Bilateral mastoiditis.

Oedema and Fluid in mastoid found as per Radiological report.

Eyes: orbital swelling. Pupils are constricted. No reflex response.

Ears: swelling and ear discharge present. Dressing done daily under asepsis.

Nose: epistaxis was present and Vitamin K given.

Mouth: secretion was there. Suctioning done as needed.

Face and Neck: 11/05/2016 *MRI neck* revealed Oedematous changes in larynx with partial effacement of pre epiglottic and right paraglottic space. The right parotid and submandibular gland and thyroid gland also appears oedematous. *Ultrasound of neck and face* on 05/05/2016 revealed thickening of skin and subcutaneous tissue in the right side of the face and neck. Sub centric cervical lymphadenopathy is seen on right side.

On assessment facial puffiness was observed.

Tracheostomy tube is placed and connected with mechanical ventilator.

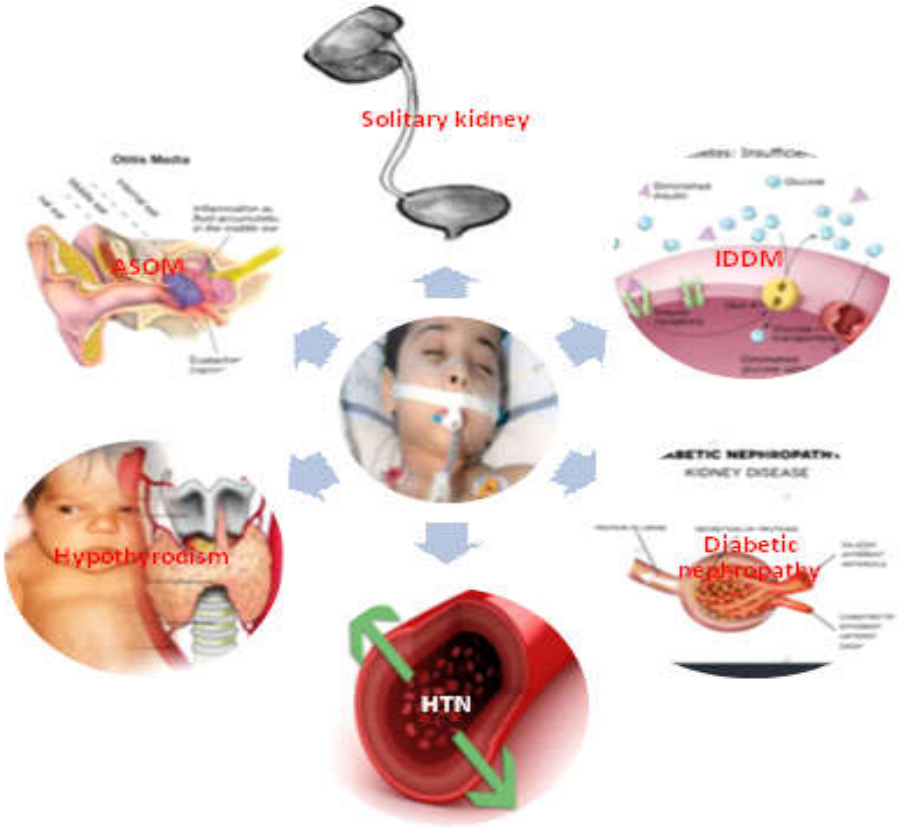
Jugular vein used for central line.

Thyroid gland and lymph node is palpable.

Chest: ABG revealed respiratory acidosis. CT revealed Vocal cord palsy. Child is connected with mechanical ventilator. SIMV mode. Respiratory failure.

Abdomen: under NG feed. Bilirubin levels are elevated. Liver is palpable. Elevated liver enzymes.

Extremity: Pedal enema present, no reflex response.



Spine and CNS: CT revealed cerebral atrophy, no reflex response. Not conscious.

Genitourinary: urine out was decreased, urea and creatinine levels are increased. GFR was decreased. Ultrasound revealed single kidney at right side. Primary amenorrhea.

Fluid and Electrolytes: sodium and potassium are elevate and Calcium decreased urea and creatinine elevated. Bilirubin level raised.

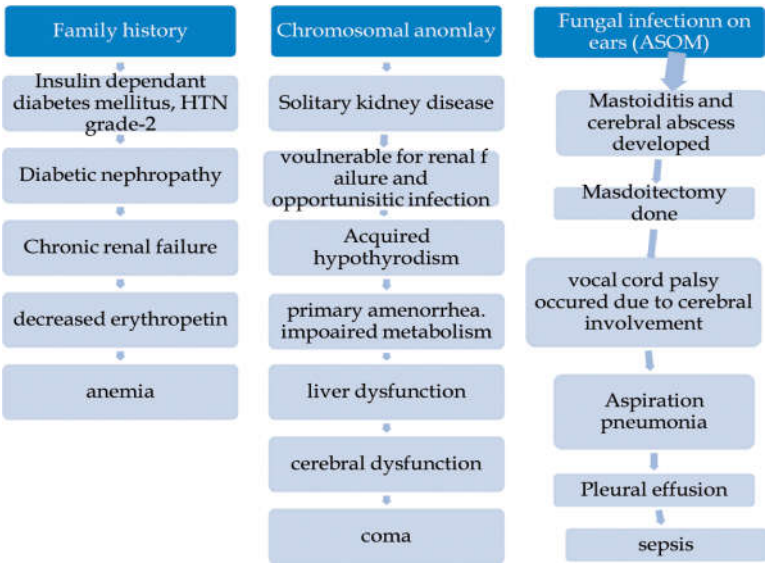
Actual Diagnosis

1. IDDM,
2. Solitary kidney
3. Diabetic nephropathy,
4. Hypertension grade II
5. Hypothyroidism
6. ASOM
7. Pre-septal and periorbital cellulitis.

Disease Consition and Treatment

Diseases	Condition and treatment
IDDM: Child's pancreas no longer produces the insulin leads to increased blood glucose. The causes in unknown. Family history and genetic **susceptibility is risk factor.**Manifested with Increased thirst and frequent urination. Extreme hunger. Weight loss. Fatigue. Irritability or unusual behavior. Blurred vision and Yeast infection. Complications are Heart and blood vessel disease, Nerve damage neuropathy. Nephropathy, Eye damage. Foot damage, and Osteoporosis. Diagnosis is **Random blood sugar test.Glycated haemoglobin (A1C) test. Management** is a lifelong commitment of blood sugar monitoring, insulin, healthy eating and regular exercise.	Blood sugar is not controlled. Last blood sugar was 138mg/dl. Weight loss was observed. Initially given regular insulin IV 40 unit with 40ml NS at 0.8ml/hr. Later shifter to SC 5 unit 6 hourly. Diabetic nephropathy was developed.
Diabetic nephropathy: It is a damage to kidneyscaused by diabetes. In severe cases it can lead to kidney failure. Risk factors are hypertension, hyperlipidaemia. There are no symptoms in the early stages. Swelling in body especially feet and legs.is early sign of kidney damage. Presence of albumin in the urine indicates kidney damage. Treatment is controlling BP and blood sugar.	History of diabetic nephropathy for past 2 years. Caused by uncontrolled blood sugar. She developed chronic renal failure as a complication of diabetic nephropathy Electrolyte imbalance is seen. BUN elevated creatinine levels are elevated. Catheterised for elimination Inj Heparin 2500 IU.
Hypertension grade II: Stage 2 hypertension – Systolic and/or diastolic blood pressure ≥99th percentile plus 5 mmHg. It often develops during childhood and adolescence. Manifested with headache, vomiting, seizures, or heart failure. When the blood pressure is at or greater than the 99th percentile on three separate measurements indicates HTN. Management includes Lifestyle changes (Weight loss, Regular exercise and Dietary changes) and antihypertensive drugs (thiazide diuretics, angiotensin converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs), calcium channel blockers, and beta blockers.)	BP is poorly controlled (134/100 mmhg). Caused by renal failure She is under multiple Anti HTN drugs. Like amlyodipin 10 mg BD, Metalozone 2.5mg OD. Injlasix 40mg with 10 ml D5 ovr one hr.
Acquired Hypothyroidism: Caused by autoimmune thyroiditis (Hashimoto thyroiditis) and occurs during later childhood and adolescence. Manifested with weight gain; fatigue; constipation; coarse, dry hair; sallow, cool, or mottled coarse skin. Growth retardation, delayed skeletal maturation, and usually delayed puberty. Thyroid function test, and thyroid ultrasonography or radionuclide scan are diagnostic stools. Treated with Thyroid hormone replacement.	T3 and T4 levels are reduced. Primary amenorrhea is present. On thyroxine 50 ug OD
ASOM: Inflammation of mucosal membrane of the middle year caused by pus forming organism. Manifested with pain the ear, hearing difficulty, giddiness. Congestion and bulging of ear drum. Leads to ear discharge and perforation. Treated with steam inhalation, and antipyretic, antibiotic antifungal agent based on organism caused. Myringotomy is the surgical management. Complications are mastoiditis, and hearing loss.	Caused by Zygomycetes (fungal infection) Mastoiditis developed as a complication. Right cortical Mastoidectomy was done on 10/05/2016 Multiple antibiotic and antifundal was given like. Amphoterecin-B 25mg IV. Metrogyl 400mg IV. Vancomycin 350mg OD, Piptaz 2.2 gm IV. InjPantop 40mg OD. InjMeropenam 350mg OD, Inj linezolid 350 mg BD. Wound debridement and dressing done daily.
Emergency condition: Condition interfering with respiration and circulation is termed as emergency condition.	Emergency conditions were managed with InjDopamin 10 Ug/kg IV, inj Nor adrenalin 0.3 Ug/kg IV. InjMidaz 3.5mg IV. InjDiazepalm 5mg TDS.

Flow Chart on Disease Process



Nursing Diagnosis

1. Ineffective breathing pattern, dyspnoea r/ tdecreased rate and depth of respirations associated with the depressant effect of some medications
2. Ineffective airway clearance r/t airway spasm, increased mucus secretion and retained secretions
3. Impaired gas exchange r/t ventilation-perfusion inequality as evidenced by client's dependence on supplemental oxygen
4. Impaired level of consciousness r/t cerebral dysfunction
5. Impaired hemodynamic status hypertension r/t congenital kidney disease
6. Impaired blood glucose r/t poor insulin secretion
7. Impaired sensory perception r/t poor consciousness
8. Impaired tissue integrity of cornea related to diminished or absent corneal reflex
9. Electrolyte imbalance r/t renal damage
10. Impaired nutrition pattern r/t poor consciousness and nothing by mouth status
11. Fluid volume excess r/t decreased GFR as evidenced by generalized tissue oedema
12. Impaired skin integrity r/t surgical interventions and prolonged immobility
13. Impaired metabolism r/t decreased thyroid hormone
14. Impaired body temperature r/t infection
15. Impaired growth and development r/t multiple organ dysfunction
16. Impaired communication pattern r/t unconsciousness
17. Disturbed thought processes related to altered level of consciousness
18. Self-care deficit r/t poor consciousness
19. Interrupted family processes related to hospitalization of child
20. Care giver role strains related to poor support system
21. Risk for decreased cardiac output related to fluid overload (kidney dysfunction) and electrolyte imbalance
22. Parental anxiety r/t disease condition and prolonged hospitalization
23. Knowledge deficit of parent's r/g disease condition, treatment and prognosis of disease.

Nursing Care Given

1. Monitored levels of consciousness
2. Monitored condition via ECG, Pulse oxymeter and mechanical ventilator
3. Assessed ventilator setting and mode frequently
4. Assessed status of pain and need for sedation
5. Vitals monitored 1 hourly.
6. RBS and Blood pressure monitored every 2 hourly
7. Intake output was monitored hourly
8. Central line care was provided
9. Suctioning done as needed

10. Position changed every 2 hourly
11. Bed Bath given daily.
12. Back care given every 2 hourly
13. Catheter care was given daily. Catheter was changed as per hospital policy. Tracheostomy dressing done daily
14. Moistened dressing was done on surgical site. Later changed to simple dressing.
15. Soframycin cream for local application on mastoid region.
16. Daily eye care and instillation of Moisal eye drops every 6 hourly
17. Chlorhexidine mouth wash given every 12 hourly
18. Nebulization with normal saline every 4 hourly
19. NG feeding with fresubin-DM with MCT oil as prescribed.
20. Wound debridement was done
21. Asepsis was followed throughout the care
22. Patient prognosis was reported to parents periodically
23. Parental counselling was given

Complications Developed

1. Respiratory failure
2. Vocal cord palsy
3. Cerebral atrophy
4. Aspiration pneumonia
5. Pleural effusion
6. Sepsis
7. Anaemia
8. Liver dysfunction
9. Corneal ulcer
10. Pus at tracheotomy insertion

Prognosis

Prognosis seems to be poor due to multiple organ dysfunction with super added infection.

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Short Communication

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Revisiting the Medical Internship Programme for India

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Abstract

The Internship during the graduate medical education course (MBBS) provides the much needed clinical training and exposure to the medical trainees. It also prepares them for their medical career and fulfills the requirements for their graduate training and degree. Introduction of a major clinical posting of 3 months duration (depending on the intern's choice/availability in the specialty departments) during internship may facilitate the interns to get a better exposure to their chosen specialty, medical problems, management & technology. 3 or 6 month long major posting(s) at end of the curriculum might be welcome as it would facilitate learning about medical conditions in details and give a good exposure of the countries' medical problems. The extended clinical posting system will give better insight to doctors and inspire them to choose a specialization accordingly. The proposed system of extended 3-month clinical posting along with the integration of the MBBS-MD course and the efficient implementation of the National Rural Health Mission (NRHM) shall also help to strengthen the community and specialist service in our country, along with providing an excellent career opportunity for young medical graduates.

Keywords: Medical Education; Internship.

The Internship during the graduate medical education course(MBBS) provides the much needed clinical training and exposure to the medical trainees. It also prepares them for their medical career and fulfills the requirements for their graduate training and degree.

The Bhore committee (1946) had recommended the 3-month training in social and preventive medicine to prepare social physicians for India. Subsequently, the Mudaliar committee (1962) recommended strengthening of district hospitals with Specialist services and setting up of All India Health Service [1]. But despite efforts by the subsequent governments, achievement of national health goals has been difficult. Also, it has been seen that most medical graduates yearn for specialty training rather than becoming general / social physicians. Medical students as well as new doctors are striving for higher education and excellence and trying to reach new heights of advanced patient care.

Introduction of a major clinical posting of 3 months duration (depending on the intern's choice/ availability in the specialty departments) during internship may facilitate the interns to get a better exposure to their chosen specialty, medical problems, management & technology. 3 or 6 month long major posting(s) at end of the curriculum might be welcome as it would facilitate learning about medical conditions in details and give a good exposure of the countries' medical problems. The extended clinical posting system will give better insight to doctors and inspire them to choose a specialization accordingly.

The integrated system may be a welcome step towards Integrated MBBS-MD course-MBBS (4 year) + MD (3 years) may bring much needed respite to the students aiming to complete post-graduate medical education in India. The integrated course may benefit

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the country by retaining the required talent & also expand the much needed specialist services in our country. This may be supplemented by 2 year super-specialty fellowships.

Practical learning about recent advances in medicine and new technologies can continue by way of adequate provision of newer technologies and diagnostics. This benefits the patients as well as medical students.

Other countries such as New Zealand place patient care and supervision responsibility on 'Trainee Interns'. Medical students in Italy and Romania write and discuss a medicine related 'thesis' over a period of one –year before their registration as medical practitioners. Interestingly, Brazil offers a shorter (4-year) medical course supplemented by 2-year internship [2].

The proposed system of extended 3-month clinical posting along with the integration of the MBBS-MD course and the efficient implementation of the National Rural Health Mission (NRHM) shall also help to strengthen the community and specialist service in our country, along with providing an excellent career opportunity for young medical graduates.

Discussions with the medical students associations and student representatives before implementing the changes in internship and graduate programme may help to allay the fears of young medical students and graduates. These changes may achieve better healthcare for the people of our country and prevent attrition too [3].

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Standard journal article

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