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CASE REPORT

Anaesthetic Management of Infant with Sacro-Coccygeal Teratoma

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ABSTRACT

Introduction: Sacro-coccygeal Teratoma (SCT) is the most common tumor of the newborn, occurring in 1:35000-40000 live births. It is more common in females with a ratio of 3-4:1. The tumor is small and presents as a lump in the sacral region. It is the tumor located at the base of coccyx (tailbone). It is derived from two or three embryonic germ cell layers.

Case Report: A one month 2 days old male infant's mother given complaints of abdominal distension and passage of green colour stools and vomiting. Baby was admitted in SNICU. CECT abdomen and pelvis showed multiple small round to oval cystic areas. It is in close relation with lower lumbar and sacrum from L5 to S3 level suggestive of ? primitive neuroectodermal tumor, ? Immature teratoma, ? Yolksac tumor, ? GIST.

Baby was premedicated with Glycopyrrolate 0.01mg and fentanyl 5mcg. Started maintenance fluid of isolyte P 15ml/hr. Preoxygenation was done for 3 mins and Baby was induced with Thiopentone and Sevoflurane and intubation was normal with direct laryngoscope. Muscle Relaxation is achieved with Atracurium 1.3mg iv given as loading dose and 0.25mg was given as maintenance dose. Warmer is connected. Pressure points were padded and baby's eyes were covered properly with cotton rolls. Baby was shifted to SNICU with tube insitu.one day baby was ventilated and next day extubated after spontaneous trial and kept on nasal prongs with 2lts of O2. After uneventful post op recovery and utmost care, baby got discharged after 20 days.

Conclusion: As most of the SCT tumors are benign in infants, it should be identified early and gets operated. The prognosis of this tumor is excellent in infants. Anaesthetic management includes specific considerations in this baby were

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fluid loss, posture and temperature control. Thus, early diagnosis, management of intra-operative blood loss, hypothermia and post-operative nursing can bring favourable outcome.

Key Messages: Management of infant possess a challenge to the anaesthetist in terms of preparation, accessing a iv cannula, planning for anaesthesia, positioning, fluid and pain management. Our case presented with a Sacro-coccygeal teratoma with no neurological deficit, the challenges were securing of iv access and maintain the patient in prone position. Multidisciplinary approach was done with help of Paediatrician, Neuro surgeon and our team. A Successful outcome happened with the team work.

KEYWORDS:

• Sacrococcygeal Teratoma • Infants • Benign • Anaesthesia

INTRODUCTION

Sacrococcygeal Teratoma (SCT) is the most common tumor of the newborn, occurring in 1:35000-40000 live births.It is more common in females with a ratio of 3-4:1.[12] The tumor is small and presents as a lump in the sacral region. It is the tumor located at the base of coccyx(tailbone). It is derived from two or three embryonic germ cell layers.[2,3] The etiology is unknown. The tumor usually have both solid and cystic parts. Some solid tumors will have more blood supply. The tumor may grow larger than the size of the baby. The tumors are mostly benign during newborn period but few can be malignant[4]. Surgical resection is the mainstay of treatment. This case has been reported to highlight clinical presentation and anaesthetic management of SCT in premature neonate. Prenatal Diagnosis of SCT can be done in first trimester using three dimensional sonography.

CASE REPORT

A one month 2 days old male infant's mother given complaints of abdominal distension and passage of green colour stools and vomiting. Baby was admitted in SNICU. CECT abdomen and pelvis showed multiple small round to oval cystic areas (causing displacement of rectum and anal canal to lateral aspect and urinary bladder and ureters anteriorly). It is in close relation with lower lumbar and sacrum from L5 to S3 level suggestive of primitive neuroectodermal tumor, Immature teratoma, Yolksac tumor, GIST. Mild hydroureteronephrosis. Mild hepatomegaly (7.2cm) and mild dilated small and large bowel loops. Pre operatively hb was 8gm% and two pints of PRBC -9ml/ hr over 4hrs was transfused and later hb is 13gm% and rest all investigations were within normal limits (plt-389000, INR-1.1, S. Creatinine -0.3mg/dl, PT-13.5, T. Bilurubin-0.2, SGPT- 30.1, SGOT-24.6). serum electrolytes were normal. From the radiological investigations it was seen to be arising from sacrum and coccyx and was labelled as Type 4 SCT. Baby was kept nil per oral.

Baby was premedicated with Glycopyrrolate 0.01mg and fentanyl 5mcg. Started maintenance fluid of isolyte P 15ml/hr. Preoxygenation was done for 3 mins and Baby was induced with Thiopentone 12.5mg and Sevoflurane (1-2%) as per the standard anaesthesia protocol and intubation was normal with direct laryngoscope with 3mm ID portex uncuffed tube. Anaesthesia was maintained with O_2, Air and Isoflurane (0.6-0.2%). Muscle Relaxation is achieved with Atracurium 1.3mg iv given as loading dose and 0.25mg was given as maintenance dose. Intraoperatively after intubation central line was secured for IV access. Intraoperatively vitals are stable (BP-90/60mmhg, HR-120-130 bpm, SpO2-99%). Warmer is connected. Surgical resection of tumor (5×6 cms) was done in the anterior approach and abdomen is closed in layers and later baby is positioned to prone position. Pressure points were padded and baby's eyes were covered properly with cotton rolls. In prone position coccygectomy was done. Total blood loss was around 60ml. Baby was shifted to SNICU with tube insitu. one day baby was ventilated and next day extubated after spontaneous trial and kept on nasal prongs with 2lts of O2. After uneventful post op recovery and utmost care baby got discharged after 20 days.

DISCUSSION

A newborn with SCT have a good prognosis, depending on the time of diagnosis, malignant potential of tumor and the ease of surgical resection.[4] Prenatal diagnosis was not possible in our patient, since mother did not attend antenatal care. Antenatal diagnosis of SCT is important, because during delivery, highly vascular tumor may rupture and cause hemorrhagic shock. Fetus with large vascular tumor should be delivered by C-section. The multi organ involvement may also occur, it should be assessed during anaesthesia evaluation. The most common anomalies associated with SCT include hydrocephalus, spinabifida, cleft lip and cleft palate, polydactyly, transposition of great vessels, neurogenic bladder, hypospadias, epispadias.[5] In my case, baby is male and delivered vaginally at full term. Fluid retention may occur in fetus will cause hydrops and high output cardiac failure, whereas water retention occurs in mother will cause placentomegaly leads to pre-eclampsia like features.[4,6] So earliest complete surgical resection along with excision of coccyx should be done. Peri-operatively, hypothermia itself will cause haemorrhage so, Infant should be adequately warmed using warmer to prevent hypothermia.[5] Proper intravenous access should be secured. Adequate blood and blood products should be arranged since more blood loss was expected, if the tumor is large and highly vascular. Proper monitoring should be done for the entire procedure. Pressure points were padded and baby's eyes were covered properly with cotton rolls. Sudden on table deaths are due to high blood loss and electrolyte imbalance may occur.[6] Distal motor deficit and bladder dysfunction might occur after resection of tumor.[6] Extubation and SNICU admission was planned according to blood loss, duration of surgery, body temperature and hemodynamic condition of the baby. Serial alpha-fetoprotein assay should be followed up for recurrence. If the tumor is malignant or the recurrence occurs, chemotherapy and radiotherapy is indicated following the extensive surgery.

CONCLUSION

As most of the SCT tumors are benign in infants, it should be identified early and gets operated. The prognosis of this tumor is excellent in infants. Modern Imaging techniques may be helpful delineate the extent of mass. Anaesthetic management includes specific considerations in this baby were fluid loss, posture and temperature control. Thus, early diagnosis, management of intraoperative blood loss, hypothermia and post-operative nursing can bring favourable outcome.

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