

Incidental Histopathological Findings in Medicolegal Autopsies: A Two Year Retrospective Case Study with brief review of literature

Kumar Deepak B*

Kumari Vinaya**

ABSTRACT

A handful of histopathological findings unrelated to the cause of death are noticed in routine histopathological examination of medicolegal autopsies. These findings which are of practically no significance to the autopsy report however have an immense academic value. A two year retrospective study was undertaken to enlist the various incidental microscopic findings in autopsy specimens. The interesting findings that were noted are Macronodular cirrhosis, Miliary tuberculosis, Aspergillosis of lung, focal von Meyenberg complex, Solitary cyst of liver, Intra tubular germ cell neoplasia (ITGCN), Ectocervical cavernous hemangioma and vegetations over the aortic valves. This article highlights these incidental findings along with a brief review of literature.

Key words: Incidental, Histopathological, Medicolegal autopsies.

INTRODUCTION

A detailed examination of the deceased is essential in framing the final report of a medicolegal autopsy. The final autopsy report contains the pathology of the organs which caused the death. Less frequently the histopathological findings unrelated to the cause of the death go unnoticed. In most of the academic institutions, due to the dearth of time, the forensic experts and pathologists are content with the final autopsy report and the other incidental findings are given little value. This study highlights the various incidental microscopic findings in medicolegal autopsies, which gain a prime importance in academic and research purposes.

MATERIALS AND METHODS

A two year (2008-2009) retrospective study of medicolegal autopsies was conducted at the Department of Pathology, Shimoga Institute of Medical Sciences, Shimoga, Karnataka, India. The organs relevant to the case concerned were sent for histopathological examination. Representative bits from the concerned organs were processed in a routine manner. The gross and microscopic findings, unrelated to the cause of death were taken into consideration and a brief discussion of the salient features has been made.

RESULTS

A total of 600 autopsies were conducted during the year 2008 and 2009. The organs relevant to the case concerned were sent for histopathological examination. Out of 600 autopsies conducted, various organs from 68 autopsies were sent for histopathological examination. Out of the various organs sent for histopathological examination, only ten organs showed incidental findings as depicted below (Table-1).

Author's Affiliation: *Assistant Professor, **Tutor-Department of Pathology, Shimoga Institute of Medical Sciences, Shimoga.

Reprint's request: Dr Deepak Kumar. B, Assistant Professor, Department of Pathology, Shimoga Institute of Medical Sciences (SIMS), Shimoga 577201, Karnataka, India., Ph: Mob: +919845640660.E-mail :dkgajare@yahoo.co.in.

(Received on 19.02.2011, accepted on 22.03.2011)

Table 1: Showing the various incidental histopathological findings

S. No	Cause/manner of death	Age/Sex	Organs received	Incidental histopathological finding
1	Road Traffic Accident	35/M	Liver	Macronodular cirrhosis.
2	Post surgical	26/F	Brain, lungs, heart, liver, spleen, kidneys, uterus	Miliary tuberculosis.
3	Head injury	50/M	Lung and liver	Lung – Aspergillosis. Liver – Focal von Meyenberg complex.(Fig:1)
4	Consumption of poison	35/m	Kidney, Liver, both lungs	Lung – Fibrocaceous tuberculosis.
5	Unknown	60 yrs male	Liver	Solitary Cyst – Liver (Fig:2)
6	Post surgical	26/F	Brain, Lungs, heart, liver, spleen, kidneys, uterus with adnexae	Cervix – ecto cervical cavernous hemangioma.(Fig:3)
7	Road Traffic Accident	35/M	Liver	Fatty liver
8	Road Traffic Accident	45/M	Lungs	Tuberculosis
9	Assault	37/m	Lungs, liver, kidney, spleen, heart, brain, kidneys and testis	Testis- ITGCN. (Fig:4&5)
10	Snake bite	40/f	Kidney, heart lungs	Vegetations over aortic valves.(Fig:6)

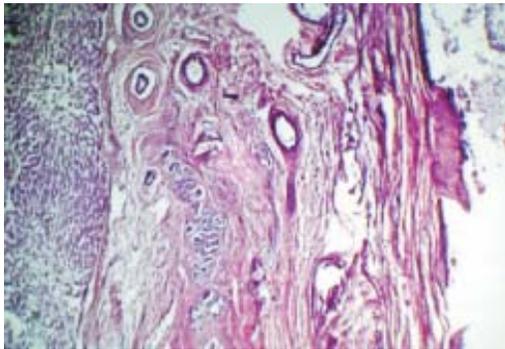
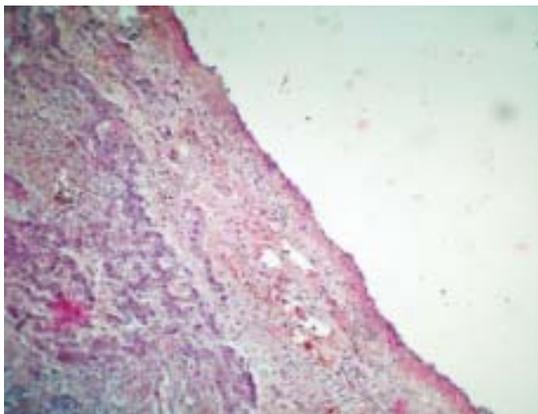
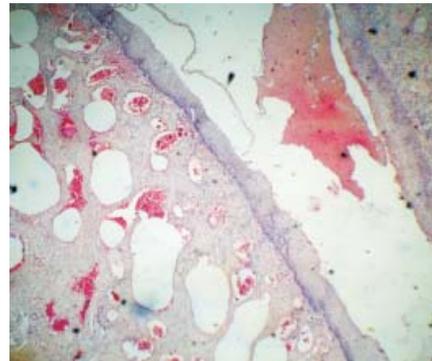
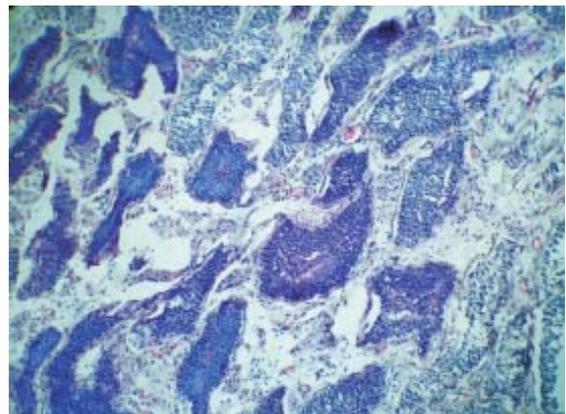
Fig. 1: Photomicrograph of liver showing von Meyenburg complex.(10X)**Fig. 2: Photomicrograph of liver showing solitary cyst.(10X)****Fig. 3: Photomicrograph of the cervix showing Cavernous hemangioma.(5X)****Fig. 4: Photomicrograph of Intra Tubular germ cell Neoplasia (ITGCN).(10X)**

Fig. 5: Photomicrograph of Intra Tubular germ cell Neoplasia (ITGCN).(40X)

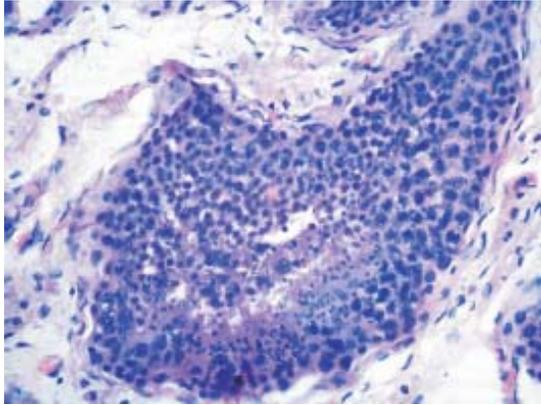


Fig. 6: Gross - Vegetations over aortic valve



It was not clear whether the deceased had a previous history of tuberculosis or the deceased acquired tuberculosis during pregnancy. However wide spread caseating granulomas were seen in multiple organs.

A 50 year old male with head injury, underwent autopsy. Lungs showed classical Aspergillous colonies and liver showed focal von Meyenberg complexes. Von Meyenberg complexes, also called as bile duct hamartomas are small clusters of modestly dilated bile ducts embedded in a fibrous or a hyalinised stroma. They presumably arise from residual embryonic bile duct remnants and are typically seen in late childhood or adolescence or during adult years. Lesions are usually found incidentally during radiographic studies or at autopsy. They are common and do not have any clinical significance, but caution has to be exercised during radiography as these lesions can be mistaken for metastatic malignancy. ^(1,2,3)

A 35 year old male who expired due to consumption of an unknown poison showed extensive fibrocaceous tuberculosis in the lungs. The cause for the suicide is unknown but the informants ascertained that there was no history of the patient suffering from tuberculosis. Similarly in a case of road traffic accident of a 45 year male, the lungs showed presence of fibrocaceous tuberculosis. Another victim of road traffic accident, a 35 year old male showed an incidental finding in the form of extensive fatty liver. Fatty change is a common finding in the general adult population and it is observed in 5-10% of the

adults. In the present study, among the various organs of 68 autopsy cases which were sent for histopathological examination, 30 were liver, out of which a total of 6 cases showed fatty change. An elderly male who died due to an unknown reason showed a solitary cyst in the liver measuring 4x4 cms. Cysts in the liver are usually multiple, lined by cuboidal to flattened epithelium, but occasionally solitary cysts are seen and these are of biliary origin and are commonly seen in women than men. The solitary cyst may be unilocular or multilocular. It is presumed to be of developmental origin. The lining consists of a single layer of flat, cuboidal or columnar

DISCUSSION

Incidental autopsy findings though not contributory to the cause of death, yet are very important from academic point of view. Among the cases which we came across, was a 35 years old male, who died in a road traffic accident, whose liver showed classical features of Macronodular cirrhosis. The deceased had a history of chronic alcoholism.

In a case of 26 year female, who underwent lower segment C-section and expired during the immediate post operative period, there were features of miliary tuberculosis in all the organs that were sent for histopathological examination.

epithelium which rarely may be ciliated or squamous. ^(2,4)

The cause of death of a 25 year female following laproscopic tubectomy was ascertained through post mortem examination. Histopathology revealed an incidental finding in the form of Cavernous hemangioma of the ectocervix. Cavernous hemangiomas of the cervix are extremely rare, benign lesions. To date, fewer than 50 cases have been reported. Most of these lesions are asymptomatic incidental findings, but sometimes, they may cause abnormal vaginal bleeding in the form of menometrorrhagia and postcoital spotting. They should be included in the differential diagnosis of patients with vaginal bleeding. ^(5,6) Ozver S et al has reported a case of cavernous hemangioma of the cervix in a 53-year-old patient with the complaint of postcoital spotting. ⁽⁶⁾

A post mortem examination was conducted on a 37 year old male who had been assault. The viscera that were sent for histopathological examination included lungs, liver, heart, spleen, brain, kidneys and testis. The testis showed features of Intra Tubular Germ Cell Neoplasia (ITGCN). ITGCN is encountered with a high frequency in cryptorchidism, prior to germ cell tumours, strong family history of germ cell tumors, androgen insensitivity syndrome and gonadal dysgenesis syndrome. Untreated ITGCN progresses to invasive germ cell tumor in approximately 50% of cases over 5 years follow up. Thus, its significance is similar to carcinoma in situ in other organs. ^(1,2)

Testes with ITGCN are usually normal in size but can be smaller than normal. Histologically, ITGCN is characterized by large primitive atypical cells that are usually twice the size of normal germ cells. These cells lie along the thickened basement membrane of atrophic seminiferous tubules or may replace the entire tubules. The malignant germ cells have large nuclei with prominent nucleoli and abundant clear cytoplasm that is rich in glycogen, demonstrable by a periodic acid-Schiff (PAS) stain. Because normal germ cells are not

stained with PAS, this stain may help to distinguish ITGCN cells from normal cells. ^(7,8)

ITGCN is usually found in testes which harbour invasive germ cell malignancy, but sometimes, ITGCN is found incidentally in the absence of an obvious tumour, occasionally in children or adolescent with various intersex states, but most often in the study of testicular biopsies performed for study of infertility.

A 40 year old female, who had succumbed to snake bite immediately following the incident, showed vegetations over the aortic valves. Microscopically the vegetations were sterile. Although disseminated intravascular coagulation (DIC) is well documented following viperine bite and the underlying mechanism of NBTE is thought to be DIC, there is no report of NBTE in humans following snake bite. Singh S et al reported a case of a young male who following viperine bite developed local swelling, superficial gangrene of tissues at the site of bite, and oliguria and died following multiple cerebral infarcts and acute renal failure. The post-mortem examination showed NBTE of the aortic valve, multiple embolic infarcts of brain, spleen and kidneys, acute tubular necrosis and features of DIC in the brain in the form of fibrin thrombi in the capillaries, perivascular hemorrhages and necrosis. ⁽⁹⁾ In the concerned case, the middle aged female succumbed to the snake bite within 24 hrs. With the available literature, it couldn't be concluded whether the vegetations were following snake bite or due to some other cause.

CONCLUSION

Incidental findings in medicolegal autopsies, though do not influence the cause of death, yet gain a prime importance in the histopathological report which contributes to the academic and research development. Cases such as solitary cyst in liver, Von Meyenburg complexes, and cavernous hemangioma of cervix produce little or no clinical symptoms and most of these are detected only as an incidental finding in autopsy specimens. Hence the importance of incidental

findings in medicolegal autopsies cannot be under emphasized.

ACKNOWLEDGEMENT

The authors thank Dr H.S Shankare Gowda, Director, SIMS, Dr. Sharada MS, Professor and HOD, Department of Pathology, SIMS and Department of Forensic medicine for their whole hearted support for this study.

REFERENCES

1. Kumar V, Abbas AK, Fausto N. Robbins and Cotran. Pathologic Basis of Disease. 7th ed. Philadelphia: Saunders, 2004; 906.
2. Juan Rosai. Rosai and Ackerman's Surgical Pathology. 9th Edition vol-1 and 2: Mosby-An Imprint of Elsevier, 2004.
3. Salles VJA, Marotta A, Netto JMK, et al. Bile duct hamartomas-the von Meyenburg complex. *Hepatobiliary Pancreat Dis Int*, 2007; 6: 108-109.
4. Redha SRM, Al-Muhtaseb S, Sawhney S. Large Congenital Solitary Non-Parasitic Cysts of the Liver: Laparoscopic Removal. *Kuwait Medical Journal*, 2001; 33 (2): 166-168.
5. Riggs J, Bertoni M, Schiavello H, et al. Cavernous hemangioma of the cervix with intractable bleeding. A case report. *J Reprod Med*, 2003; 48(9): 741-3.
6. Ozyer S, Uzunlar O, Gocmen M, et al. Cavernous hemangioma of the cervix: a rare cause of vaginal bleeding. *J Low Genit Tract Dis*, 2006; 10(2): 107-8.
7. Bahrami A, Jae Y. Ro, Ayala AG. An Overview of Testicular Germ Cell Tumors. *Archives of Pathology & Laboratory Medicine August*, 2007; 131 (8): 1267-1280.
8. Talic KF, Rikabi AC, AL-Rayess MM. Prevalence of intratubular germ cell neoplasia of the testis. *Saudi Medical Journal*, 1999; 20(9): 706-710.
9. Singh S, Dass A, Jain S, et al. Fatal non-bacterial thrombotic endocarditis following viperine bite. *Intern Med.*, 1998; 37(3): 342-4.