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Case Series

Incidental and Interesting Pathologies Diagnosed at Autopsy –A Case Series

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Abstract

***Background*:** The role of autopsy is to find out the cause of death, time of death and identify diseases which could have attributed to the death. Autopsy may reveal many histopathological findings which may or may not have been diagnosed ante mortem. A retrospective study of medicolegal autopsies for a period of 2 years was done in a tertiary care centre in Kerala. Clinical findings and ante mortem clinical diagnosis, gross pathological findings and histopathological details were noted. The results were analyzed based on gross findings and histological examination. Histopathological findings which were diagnosed incidentally or co-existing pathology which may or may not have been the cause of death were specifically noted. All the data were analysed using the SPSS software version 17. ***Results*:** The present study was based on 212 male and 92 female autopsies. Coronary arterial disease, myocarditis, pneumonia and cirrhosis liver were the common findings. Some of the other pathological findings noted were tuberculosis, burns, pancreatitis, meningitis, encephalitis and cardiomyopathy. There were 6 cases which showed rare and incidental findings. ***Conclusion*:** The diagnosis of incidental findings which were not diagnosed ante mortem emphasise the relevance of histopathological analysis in all cases of autopsy .This can also help in epidemiological studies.

Keywords: Histopathology, rare, co-morbidity.

BACKGROUND

Medicolegal autopsy is performed to find out the cause, time of death and identify diseases which could have contributed to the death. Gross and microscopic examination, toxicological analysis and laboratory investigations will aid in establishing the cause of death [1]. Histopathological analysis is considered as the gold standard in finding out a cause of death in cases of sudden death or when there is no history of any previous illness [2]. Histopathological analysis may reveal co existing diseases or incidental findings which may not have been diagnosed ante mortem. Sometimes such diseases must have caused sudden death and was diagnosed only at autopsy. These incidental findings may serve as a learning tool for pathologists and also to assess the mortality statistics which play an important role in health and treatment planning [3, 4]. Autopsies not only aid in studying the naturally occurring and treated lesions but also provide information about the untreated, asymptomatic or undiagnosed lesions [4]. Various studies have proved that autopsy helps to establish the cause of death as well as to study disease in situ thus enriching medical knowledge and making various rare diagnoses [5]. The present study was undertaken to evaluate the various incidental lesions or conditions that would normally go unnoticed during the person's life.

METHODS

The present study consisted of 304 autopsy cases; 212 (69.7%) were males and 92 (30.3%) were females. The majority (21.7%) of cases were between 41-50 years.

Histopathological findings of the organs submitted were studied and the findings were published [6]. In the present article emphasis is given on the rare conditions and incidental or co-existing pathology which were specifically noted.

Cardiovascular findings were the most common in histological findings which included mainly coronary arterial diseases, myocardial infarction, myocarditis, pericarditis and cardiac hypertrophy.

Common findings in pulmonary system were mainly pneumonia, pulmonary edema and tuberculosis.

Some of the other pathological findings noted were tuberculosis, burns, pancreatitis, meningitis,

encephalitis, cardiomyopathy, gastric ulcer and gangrene intestine. There were few cases with rare and interesting findings which is described in this case series.

The incidental/rare findings diagnosed by histopathological analysis are tabulated in Table /Fig 1. The relevant details of 6 cases are given in the table.

Table/Fig 1: Incidental /Rare findings

Sl No:	Gender/Age	Clinical diagnosis	Gross findings	Histopathological findings	Diagnosis
1	Male 2.5 yrs	Acute diarrhoeal disease	Waxy pale appearance of intestine, brain, lymph node, liver	Xanthomatosis involving liver, spleen, bone marrow, lymph node, small and large intestine	Wolman's disease
2	Female 19 yrs	Sudden death	Enlarged Heart	Cardiac hypertrophy and lymhovytic infiltration of myocardium	Pregnancy induced cardiac hypertrophy and myocarditis
3	Female 14yrs	Cardiac tumor	Tumor involving aorta, pulmonary artery and lungs.	High grade malignant neoplasm	Extra renal Rhabdoid tumor
4	Male 19 yrs	Sudden death	Anomalous origin of left coronary artery from right coronary sinus	Anomalous origin of left coronary artery from right coronary sinus	Anomalous origin of left coronary artery from right coronary sinus
5	Male 45 yrs	Haematemesis	Stomach showing ulceration	Hyphae of mucormycois invading the stomach mucosa and muscular layers	Invasive Mucormycosis stomach
6	Male 62 yrs	Lung Carcinoma	Greyish white areas over the pleural surface	Pleura and lung showed glandular structures	Mesothelial hyperplasia mimicking adenocarcinoma

RESULTS

Case Histories

The first interesting case was that of a two and a half month old male baby brought dead to hospital following episodes of diarrhoea. Grossly all organs were pale. Lymph nodes, adrenal glands, spleen were enlarged. Microscopy showed diffuse xanthomatosis involving liver, spleen, bone marrow, lymph node, small and large intestine with adrenal calcification (Fig-2). Cells were Oil Red O positive. It was diagnosed as Wolman's disease.

Second case was that of a nineteen year old unmarried pregnant female found dead at home. Grossly heart was dilated and flabby with multiple petechial hemorrhages and hemorrhage around left anterior descending artery. Microscopy showed myofibre disarray, oedema and evidence of lymphocytic Myocarditis. The case was diagnosed as peripartum cardiomyopathy with myocarditis.

Next was a fourteen year old girl with history of death following hematemesis. Grossly a tumour mass was seen infiltrating aorta, pulmonary artery and lungs with deposits in omentum. Microscopy showed a neoplasm with cells arranged diffusely, individual cells having abundant eosinophilic cytoplasm, eccentrically placed nucleus and prominent nucleoli (Fig-3). Cytoplasmic hyaline globules were seen. The neoplastic cells were positive for CK, EMA and Vimentin (Fig-3). A diagnosis of extra renal rhabdoid tumor was made.

There was another case of a 19 year old boy with history of sudden death following an athletic run in the ground. There was no previous relevant clinical history. On examination of the heart the left coronary artery was seen to arise from right coronary sinus (Fig-4). A diagnosis of anomalous origin of left coronary artery from right coronary sinus was given.

There was another case of a 45 year old male who was admitted in the hospital for chronic liver disease. He died while undergoing treatment .Liver showed evidence of cirrhosis and kidney show acute tubular necrosis. Stomach showed multiple mucosal ulcerations which on histopathological studies showed Invasive Mucormycosis (Fig-5).

A 62 year old male brought dead to hospital. Grossly heart showed whitish patches on the surface and pericardial fluid was present. Microscopy showed lymphocytic pericarditis & mesothelial proliferation in glandular pattern (Fig-6). There was no evidence of tuberculosis or any other inflammatory pathology in lungs. The cells were positive for calretinin and P63.A

diagnosis of mesothelial hyperplasia mimicking adenocarcinoma was made.

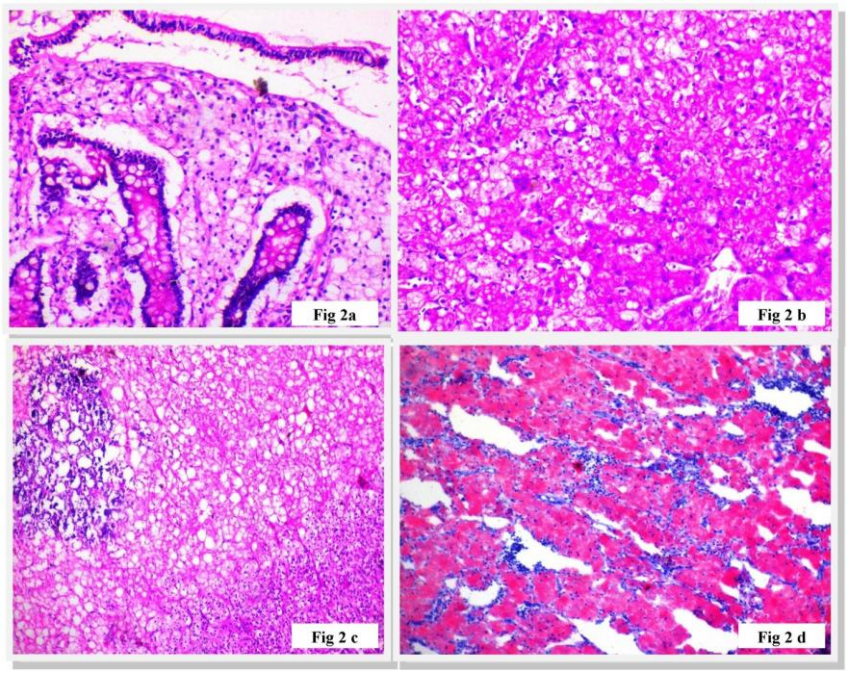

Fig 2a- diffuse xanthomatosis involving small intestine (H&E,x100)
Fig 2b- diffuse xanthomatosis involving liver (H&E,x100)
Fig 2c- adrenal calcification (H&E, x100)
Fig 2d- cells showing Oil Red O positivity (Oil Red O, x100)

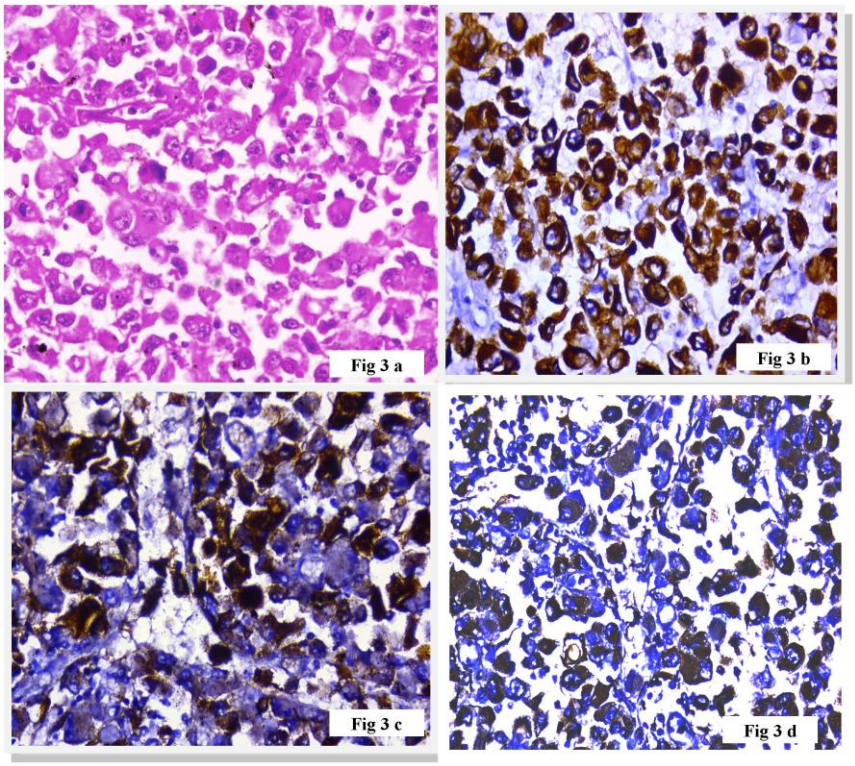

Fig 3a-Extra renal rhabdoid tumor (H&E,x400)
Fig 3b-Cells showing Cytokeratin positivity (CK, x400)
Fig 3c-Cells showing EMA positivity (EMA, x400)
Fig 3d-Cells showing Vimentin positivity (Vimentin, x400)

Fig-4: Right coronary sinus showing left and right coronary ostia

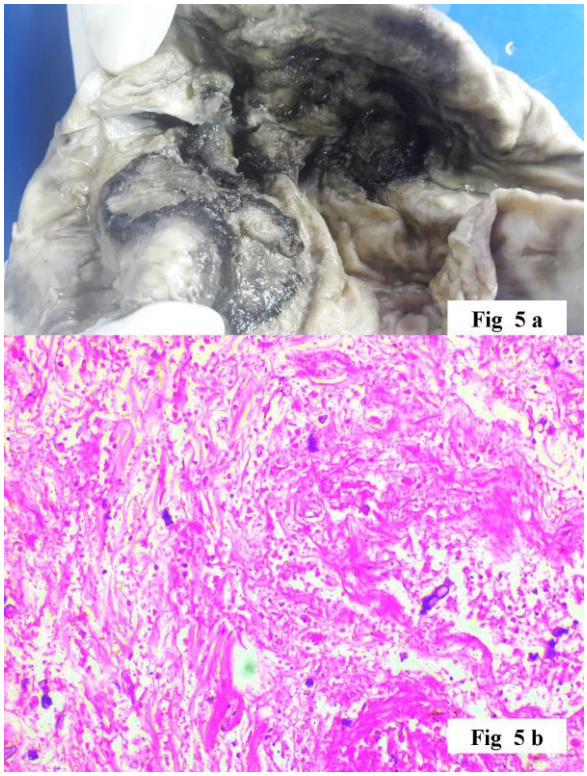

Fig 5a-Stomach showing mucosal ulcerations
Fig 5b- Fungal hyphae of Mucormycosis invading gastric mucosa (H&E,x100)

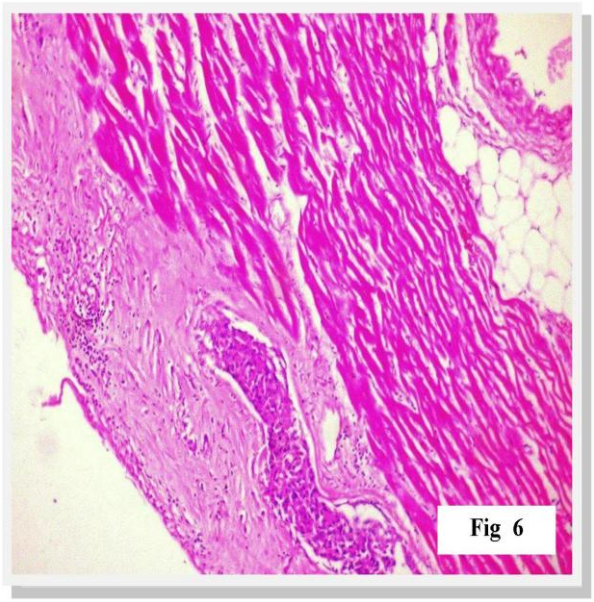

Fig-6: Pericardium showing mesothelial proliferations (H&E,x100)

DISCUSSION

Medicolegal autopsies in most cases do not have any known history.A routine histopathological examination of medicolegal autopsies may reveal various histopathological findings not related to the cause of death. Autopsy also aids in the diagnosis of previously undiagnosed diseases. Many studies were done for finding out incidental findings at autopsy which were mainly of academic interest [2, 3].

Significant and interesting findings in different systems were analysed and tabulated. Six cases are discussed in detail in this case series as these are rare and seldom reported.

Case No: 1

Wolman's disease is a rare condition that affects neonates due to an inborn error of lipid metabolism. It is an autosomal recessive genetic disorder caused by a deficiency of an enzyme lysosome acid lipase characterised by diffuse xanthomatosis and adrenal calcification. A similar case has been reported in a one month old baby [7]. It is important to recognize the disease because it is often fatal in the first year of life [7]. Recognition and correct diagnosis of this disease is essential for early genetic testing, adequate genetic counselling and family planning.

Case No: 2

Peripartum cardiomyopathy is usually a dilated cardiomyopathy which can cause heart failure which occurs during the last month of pregnancy up to 5 months postpartum [8]. Complications of peripartum cardiomyopathy include cardiogenic shock, thromboembolism and arrhythmias [9] Our patient had dilated cardiomyopathy which was complicated by

lymphocytic myocarditis which turned fatal. Similar cases has been reported where myocarditis was a complication rather than cause of death [10]. Increased awareness of this condition is needed to reduce the mortality rate.

Case No: 3

Extra renal malignant rhabdoid tumors are rare and highly aggressive tumours of infancy and childhood. It involves deep axial location such as neck and paraspinal areas characterised histologically by tumour cells with plasmacytoid appearance. These cells are positive for Cytokeratin, Vimentin and EMA.

Most common site of extra renal rhabdoid tumor is the brain but it can occur throughout the rest of the body as well, where it is even rarer and deadlier [11].

Case No: 4

Left main coronary artery or left anterior descending coronary artery arising from the right sinus of Valsalva or right coronary artery is referred to as an anomalous aortic origin of a coronary artery. Khalighi K et al., has described a similar case in an athlete [12] Compression of the vessel during strenuous exercise may give rise to fatal outcomes like myocardial ischemia, ventricular arrhythmias, and sudden cardiac death [12]. Congenital coronary anomalies of wrong sinus origin has been reported as the second most common cardiovascular cause of sudden death in young athletes [13].

Identification of these anomalies during life can be difficult because patients often do not experience warning symptoms and ECGs are usually normal. Athletes who have complaints of exertional syncope should be investigated for coronary artery anomalies.

Case No: 5

Gastrointestinal mucormycosis is associated with high mortality rate. The fungus has a predilection for vessel walls of both arteries and veins [14]. This angioinvasive property of the fungus is responsible for extensive infarction of the intestinal walls because of thrombosis of the vessels [14]. Early and antemortem diagnosis of gastrointestinal mucormycosis will help in reducing the high mortality rate [15].

Case No: 6

Mesothelial hyperplasia may be an incidental finding in patients with underlying heart diseases like chronic pericarditis or rheumatic heart disease. The mesothelial cells form tumour like masses within the pericardial space. Special staining should be done to rule out metastatic carcinoma.

CONCLUSION

Analysis of gross and microscopy of autopsy specimens received in histopathology lab revealed various incidental and interesting lesions in different systems. Coronary arterial disease, myocarditis and pneumonia were the commonest findings. Histopathological analysis aids in diagnosing previously undiagnosed diseases which may or may not have contributed to death. Histopathological study will contribute to ascertain the cause of death in healthy asymptomatic individuals as well as to confirm diagnosis of diseases which were diagnosed ante mortem.

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