*Original Article*

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# A 3year Retrospective Histopathological Study of Autopsy Findings

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**Abstract**

An autopsy consists of a post-mortem examination to discover the cause of death or the extent of disease. And a thorough examination of a corpse to determine the cause and manner of death and to evaluate any disease or injury. *Aims:* To determine the histopathological findings related or unrelated to the cause of death and to highlight various incidental and interesting microscopic findings in autopsies. *Methods and Material:* Retrospective study for three year was carried out. Organs of total of 389 autopsies were received. Various his-topathological findings were observed in 183 cases. *Results:* Out of the various organ received for histopathological examination, pulmonary edema, Atherosclerosis, Pneumonia Chronic venous congestion of liver, Cloudy change in kidney lesions were commoly observed few incidental malignancies like case of renal cell carcinoma, meninigioma, nonhodgkins lymphoma etc. were observed. *Conclusions:* pulmonary edema is commonest finding followed by atherosclerosis. Incidental histopathological findings may or may be not be contributing to cause of death ,but they help in academics and research purpose.

**Keyword:** AUTOPSY.

## Introduction

The term "autopsy" derives from the Ancient Greek autopsia, "to see for oneself", derived from autos ("one-self") and opsis ("eye"autopsy means making a personal inspection. Usage of this word is however restricted to pathological sense i.e dissection of dead body to determine through observation the cause of death or nature of disease.

Despite the decline in autopsy numbers, autopsy data continues to embellish the medical literature.

Many organs such as those of CNS are not available by other means accounting for importance of autopsy in research field of neuropathology and academic purpose.

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*There are Two Main Types of Autopsy*

1. Clinical Autopsy.
2. Medicolegal autopsy.

*Aims and Objective*

1. To study histopathological spectrum of lesions encountered in autopsy .
2. To highlight various incidental and interesting microscopic findings.

## Material and Method

Retrospective study of histopathological lesions encountered in autopsies which include both clinical and medicolegal from year 2013-2015.

The organs relevant to case which were sent for histopathological examination. In most of the cases we received lungs, heart, liver, spleen, kidney,brain.

Grossing of organs and tissue processing was done in routine manner, gross and microscopic finding were taken into consideration.

All sections were stained with Hematoxylin & Eosin, at time special stains were applied.

## Results

The results obtained as follows the study population ranges from 04 months upto 90 years with 226 males and 163 females. Significant finding were found in 183 cases out of 389 cases studied.

**Table 1:** Sex wise distribution of cases

| Gender | No. of cases |
|---|---|
| Male | 226 |
| Female | 163 |

**Table 2:** Age wise distribution of cases

| Age group(years) | No. of cases |
|---|---|
| 0-10 | 9 |
| 11-20 | 45 |
| 21-30 | 80 |
| 31-40 | 56 |
| 41-50 | 62 |
| 51-60 | 56 |
| 61-70 | 40 |
| 71-80 | 29 |
| 81-90 | 12 |
| Total | 389 |

**Table 3:** All histopathological findings in autopsies

| Sr. No. | Microscopic findings | No. of cases |
|---|---|---|
| 1 | Pulmonary oedema | 40 |
| 2 | Atherosclerosis | 31 |
| 3 | Pneumonia | 24 |
| 4 | cvc lung | 15 |
| 5 | Cloudy change kidney | 14 |
| 6 | CVC liver | 12 |
| 7 | Steatohepatitis | 8 |
| 8 | Left ventricular hypertrophy | 8 |
| 9 | Alveolar hemorrhages | 4 |
| 10 | Chronic pyelonephritis | 4 |
| 11 | Cirrhosis | 8 |
| 11 | Pulmonary tuberculosis | 6 |
| 12 | Myocardial infarction | 5 |
| 13 | Encephalitis | 2 |
| 14 | Cerebral infarct | 2 |

**Table 4:** Incidental finding in cases

| Sr. No | Incidental Findings | No. of cases |
|---|---|---|
| 1 | Renal cell carcinoma( sarcomatoid variant) | 1 |
| 2 | Adenocarcinoma of lung | 1 |
| 3 | Meningioma | 1 |
| 4 | Squamous cell carcinoma of cervix | 1 |
| 5 | Hepatocellular carcinoma of liver | 1 |
| 6 | Non hodgkins lymphoma | 1 |

**Table 5:** Incidental malignancies encountered in cases:

| Sr. No. | Incidental findings | No. of Cases |
|---|---|---|
| 1 | Atherosclerosis of coronaries and aorta | 33 |
| 2. | cirrhosis | 9 |
| 3 | Myocardial infarction | 9 |
| 4 | Chronic pyelonephritis | 8 |
| 5 | Miliary tuberculosis | 2 |
| 6 | Aspergillosis invading brain tissue | 1 |
| 7 | Placenta accreta | 1 |
| 8 | Cerebral malaria | 1 |
| 9 | Hydatid cyst in liver | 1 |

## Result

The present study consisted of 389 autopsies sent for histopathological examination from year 2013 to 2015, amongst 389 autopsies studied 183 autopsies showed significant finding.

Pulmonary edema was the most common finding encountered followed by interstitial pneumonitis, and atherosclerosis .

In respiratory system most common finding was pulmonary edema, followed by pneumonia ,others lesions encountered were CVC lung, interstitial pneumonitis, emphysema, tuberculosis, cases of snake bite showed alveolar hemorrhages. one case of adenocarcinoma in noted non hodgkins lymphoma nodule metastatic deposit was noted incidentally in lung with mets in liver and kidney (Figures 1 to 21).

In hepatobiliary system most common finding was Cvc liver followed by steatohepatitis, 9 cases of cirrhosis were noted, other lesions were hepatitis, malaria. Hepatocellular carcinoma was diagnosed in HbsAg positive 62yr old male. CVC spleen was most common finding in spleen.

In urinary system most common finding was cloudy change in kidney, followed by chronic pyelonephritis.

A 75 yrs old unknown male brought unconscious to hospital and died within one hour.

Histopathologicalexamination finding of Sarcomatoid renal cell carcinoma with distant metastasis in lungs .

Immunohistochemistry confirmed the Sarcomatoid variant of Renal Cell Carcinoma (Figures 1 to 10).

**Fig. 1:** Lt.Kidney with attached tumor mass at lowerpole

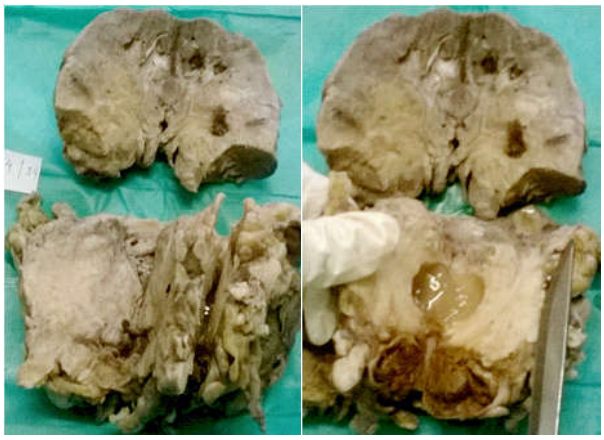

**Fig. 2,3:** C/S of kidney showing mucin filled cystic area and grayish white tumor mass

Cut section of kidney (Figure 2, 3):

Shows grayish white tumor mass of size 6x5x4 cms along with cystic area of size 2x2 cms filled with mucinous material. At places areas of hemorrhages and necrosis seen.

**Fig. 4:** Lung pieces showing nodular metastatic deposits

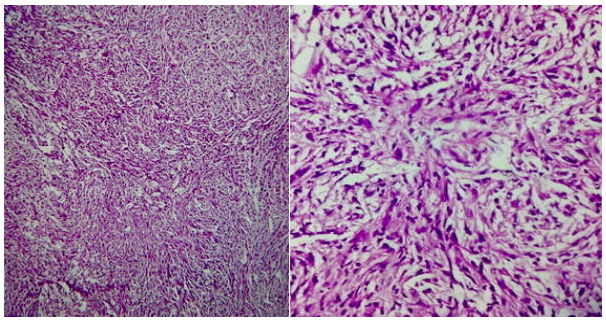

**Fig. 5(10X) H&E & Fig. 6(40X) H&E:** Section shows spindle shaped tumor cells with pleomorphic nuclei and prominent nucleoli arranged in sheets, bundles

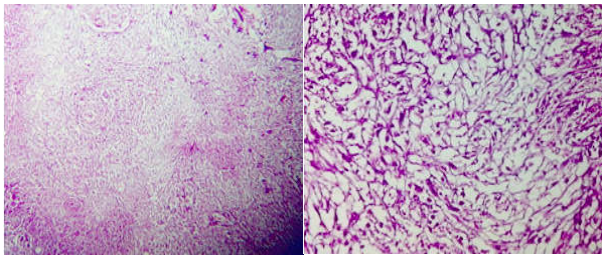

**Fig. 7(10X)H&E, Fig. 8 (40X)H&E:** Section shows conventional renal cell carcinoma

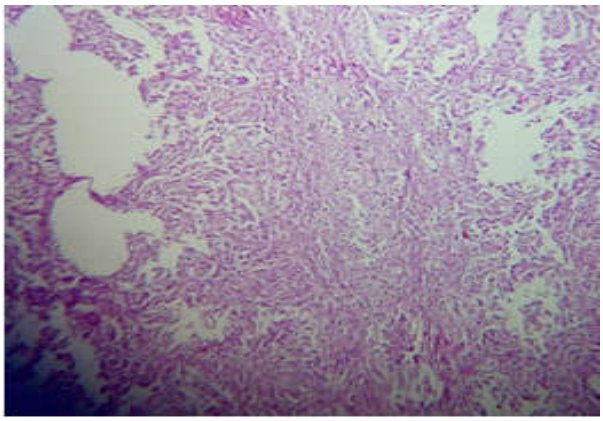

**Fig. 9:** Lung section showing foci of spindle Shaped tumor cells

*V. Immunohistochemistry*

The tumor cells are immunoreactive for EMA,Vimentin,CD10.

And immunonegative for pancytokeratin AE1/AE3,PAX8,GATA3.

- EMA immunoreactivity indicates epithelial nature of tumor cells.
- Vimentin immunoreactivity indicates mesenchymal origin.
- CD10 is strongly and diffusely expressed by Renal cell carcinoma.

**Fig. 10:** Stain for vimentin shows Immunoreactivity

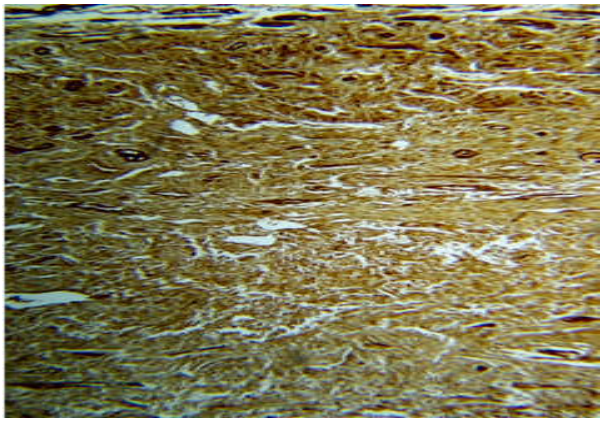

**Fig. 11:** Stain for EMA shows strong immunoreactivity

**Fig. 12:** Stain for CD10 shows strong immunoreactivity

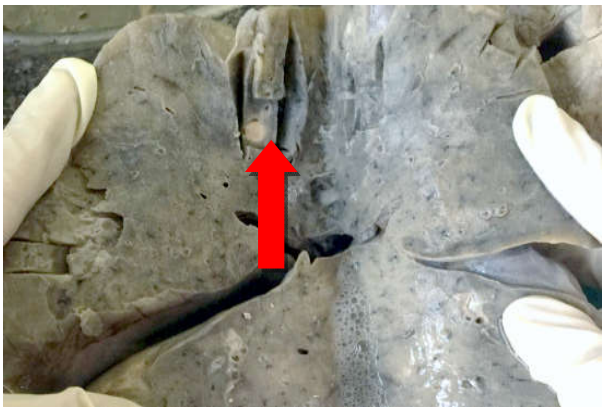

**Fig. 13:** Gross-nodule of 0.5x0.5cm in Rt. lobe, pleura shiny

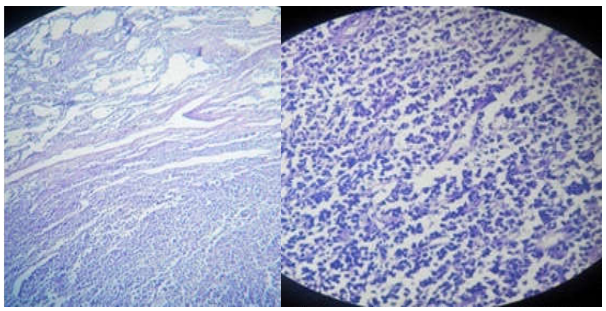

**Fig. 14(10x), Fig. 15(40x):** tumor cells comprising of lymphocytes, histocyte and few plasma cells arranged in diffuse sheets. Tumor cells have hyperchromatic nuclei with prominent nucleoli having scanty blue cytoplasm

**Fig. 16:** Liver Gross showing ,multiple nodule of varying size large of 1.5x1.5cm

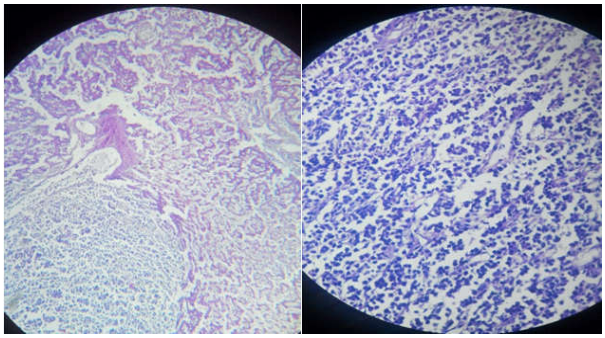

**Fig: 17(10x) Fig. 18(40x):** Section shows dilated, congested hepatic sinusoids arraged in chords showing focal inflammatory infiltrate with few areas showing hemorrhages & congested blood vessels along with infiltration of tumor tissue

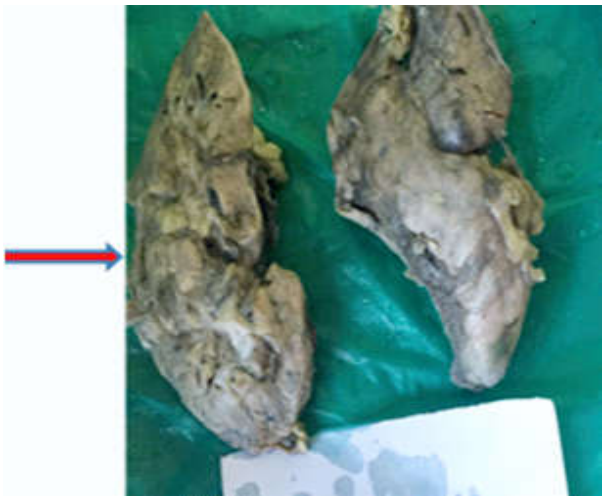

**Fig. 19:** KIDNEY
Gross-multiple nodule
of 0.5X0.5cm at capsule

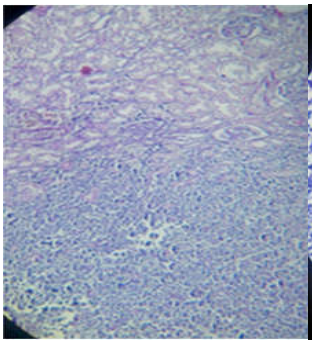

**Fig. 20:** Scanner view

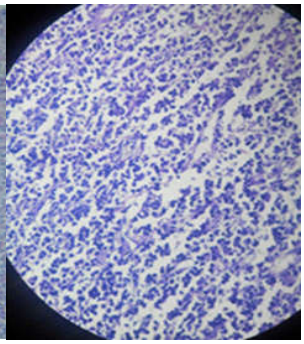

**Fig. 21:** High power view

Shows glomeruli and tubules cut across in various planes. There is Presence of tumore cells comprising of lymphocytes, histiocytes And few plasma cells arranged in diffuse sheets

## Discussion

Advances in diagnostic technology have not reduced the value of autopsy and goal directed autopsy remains a vital component for the study and evaluation of disease process and serves as tool for quality assurance. Histopathological examination of autopsies quite often reveal some natural diseases, the presence of which may trigger issues association of with trauma, work, crime etc.and its relative contribution towards death especially in cases of sudden death [7].

In our study we found the most common histopathological finding was Pulmonary edema which is similar to result with study of Sulegoan R et al 2015 , and second most common finding was atherosclerosis which is most common finding in study of Sarvaiya et al 2014.

We retrospectively reviewed histopathological findings of four major viscera (Heart, Lungs,Liver and kidneys) and noted the most common finding in them , in lung most common finding was which is similar to finding by soiero AM et al 2011. Pneumonia constitute second most common histopathological pattern close to findings of Hjorn et al 1995.

In liver the circulatory disturbances in the form of chronic venous congestion and acute sinusoidal congestion was the most common lesion, followed by steatohepatitis second most common finding similar to study of Smita SP et al 2014, steatosis of liver was most common finding in study Amarapurkar et al 2007 and sarita nibhoria et al 2013. In kidney most common finding was cloudy change of kidney.In heart most common finding was atherosclerosis of coronaries and aorta similar with finding of study of sulegoan R et al 2015,Nada et al 2015.

## Conclusion

Histopathology is an important and time proven way to find out lesions of internal viscera often asymptomatic and obscured on gross examination of organs. Incidental histopathologic and Gross findings in autopsies may not be found to influence the cause of death but nonetheless reveal many interesting facts related to epidiemiology of a disease as well as influence of gender and age related factors in causation of certain pathological changes e.g., atherosclerosis.

A detailed and both prospective as well as retrospectives stud-ies on prevalence of certain diseases in the community might help to find out actual prevalence figures as well as a useful data in controlling/monitoring certain disease processes.

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