



## HISTOMORPHOLOGICAL STUDY OF POSTMORTEM SPECIMENS AT JHALAWAR MEDICAL COLLEGE -A 2 YEAR PROSPECTIVE STUDY

### Pathology

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### ABSTRACT

Medico-legal autopsies are conducted in cases of sudden, suspicious and unnatural deaths. Various findings related or unrelated to the cause of death, rare diseases as well as hereditary conditions that would require genetic counseling were noticed during a medico-legal autopsy. It also focuses on the establishment of the cause, time and the circumstances of death. The present study was formulated to assess the importance of the histopathological examination of the viscera in postmortem specimens. The specimens were selected from medico-legal autopsies irrespective of the cause of death. Extensively autolysed specimens were excluded from the study as they could not be interpreted. This prospective observational study was carried out in the Department of Pathology in Jhalawar medical college, Jhalawar for a period of 2 years, consisting of 180 cases.

### KEYWORDS

Histopathology, postmortem specimen, medico-legal autopsies

#### INTRODUCTION

Autopsies serve as a cornerstone in clinical and medico-legal investigations, offering vital insights into the cause of death, disease progression, and diagnostic discrepancies. Histopathological examination of postmortem tissues plays an essential role in cases where gross examination is inconclusive. It helps confirm clinical suspicions, uncover hidden pathologies, and provide data for medical education and quality control. The brain, heart, lungs, liver, spleen and kidneys are commonly evaluated organs in postmortem histology due to their high disease burden and contribution to mortality [1][2].

#### AIMS AND OBJECTIVES

The primary aim of the study is to evaluate the histomorphological findings in postmortem specimens received at the Department of Pathology, Jhalawar Medical College. The objective is to determine the utility of histopathological analysis in establishing cause of death and enhancing medical understanding. [3]

#### MATERIAL AND METHODS

This prospective observational study analyzed postmortem tissue samples received in the department of pathology, Jhalawar medical college, Jhalawar. Routine processing and staining techniques, including Hematoxylin and Eosin (H&E), were used for microscopic evaluation. The organs studied included the brain, heart, lungs, liver, spleen and kidneys. Findings were documented, and comparisons were made with gross observations and clinical history when available. [4]

#### INCLUSION CRITERIA-

The subjects were selected from the medico-legal autopsies irrespective of cause of death

#### EXCLUSION CRITERIA-

Extensively autolysed specimens were excluded from study as they could not be interpreted

#### RESULTS

The present study consisted of a series of 180 autopsy cases from Jhalawar medical college conducted over a period of 2 years. The internal organs of total 180 autopsies were sent for histopathological examinations. [graph/table-1] displays the spectrum of lesions noted at autopsy.

Out of total 180 cases, 139 (77.22%) were males and 41 (22.78%) were females. The maximum cases were from age group 31-40 years followed by 21-30 years age group.

Brain: Congestion (44%) was the most common finding whereas, subarachnoid hemorrhage (1%) was the least common [5][6].

Heart: Frequent findings were atherosclerosis (19.56%), followed by myocyte injury (4.89%), and ventricular hypertrophy (3.26%), whereas myocarditis constitute only one percent of cases.

**Lungs:** Histopathology revealed features of ARDS, chronic

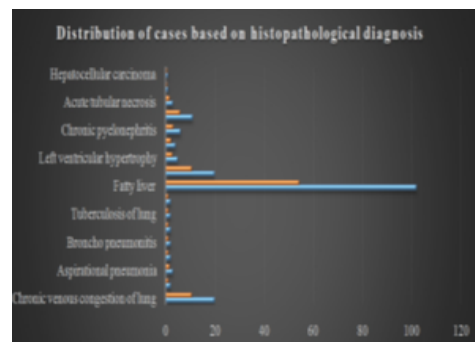
bronchitis, emphysema, asthma, and interstitial lung diseases. Infections ranged from bacterial pneumonias to tuberculosis and abscess formation. Most common pathology was pulmonary edema (37.27%) followed by pneumonia (25%) [9][10].

Liver: Conditions observed included hepatic cirrhosis, hepatitis, steatohepatitis, chronic passive congestion, and granulomatous inflammation. Liver abscesses and hepatocellular carcinoma were also noted. Most commonly observed pathology was fatty changes (56.67%) followed by portal triaditis (10%) [11][12].

Kidneys: Most common pathology observed was tubular necrosis (13.04%) followed by glomerulosclerosis (11.96%). The other findings which were observed were pyelonephritis (6%), benign nephrosclerosis (1.09%) and simple renal cyst (1%) respectively.

**Spleen:** The commonest lesion was congestion (57.95%), followed by caseating and epithelioid cell granuloma in (0.57%)

#### GRAPH 1: DISTRIBUTION OF CASES BASED ON HISTOPATHOLOGICAL DIAGNOSIS



**TABLE - 1** DISTRIBUTION OF CASES ACCORDING TO HISTOPATHOLOGICAL DIAGNOSIS

DIAGNOSIS	CASES NO	PERCENTAGE
CHRONIC VENOUS CONGESTION OF LUNGS	20	10.46
LOBAR PNEUMONIA	2	1.06
ASPIRATIONAL PNEUMONIA	3	1.59
INTERSTITIAL PNEUMONIA	2	1.06
BRONCHOPNEUMONIA	2	1.06
BRONCHITIS	2	1.06
TUBERCULOSIS OF LUNGS	2	1.06
CHRONIC VENOUS CONGESTION OF LUNGS	2	1.06
FATTY LIVER	102	54.25
HEPATITIS	20	10.64

LEFT VENTRICULAR HYPERTROPHY	5	2.66
ATHEROSCLEROSIS OF AORTA	4	2.13
CHRONIC PYELONEPHRITIS	6	3.19
GLOMERULOSCLEROSIS	11	5.85
ACUTE TUBULAR NECROSIS	3	1.59
HEPATOCELLULAR CARCINOMA	1	0.53

## DISCUSSION

Histopathological study of autopsies was of great immense value in improving the vision and diagnostic step for clinical assessment. Present cross sectional study was conducted for a period of two years on 180 cases to accentuate the significance of histopathological examination of viscera in post-mortem specimens which not only aid in ascertaining cause of death but also various rare diagnosis were made. It was analysed that maximum cases were seen in age group of 21-40 years which was in concordance with many previous studies as shown in table while Shah Saloni N et al reported maximum number of cases in 51- 60 year age group.

**TABLE 2: COMPARISON OF AGE WISE DISTRIBUTION IN VARIOUS STUDIES**

Study	Age group (21-40 group )
Tayal et al <sup>14</sup>	47.15%
Divya Sharma et al <sup>14</sup>	52.3%
Sapna patel et al <sup>13</sup>	48.5%
Sarangthem et al <sup>15</sup>	50%
Present study	49.44%

## LIMITATIONS

1. Being a single centre study, where subjective observation/opinion by forensic experts conducting autopsies played a major role in referring cases for histopathological examination contributing to bias. Also increases the risk that the results solely reflect the local situation and this must be taken into consideration before the results are generalized to other regions. So, a multi-centric large-scale study may provide clear picture.

2. Only a part of the organ was received for the histopathological study. However, if this shortcoming is overcome, histopathological reporting would be more precise and would help much more to understand the cause of death.

3. The absence of antemortem clinical and pathological data makes it difficult to correlate histopathological findings with cause of death.

## CONCLUSION

Facilities of histopathological examinations of the autopsied tissues are available only in small number of institutions which often leads to delay and damages to the autopsy tissue samples. Also, factors like inadequate sampling, improper fixation and failure to send representative sections leads to contradiction between autopsy finding and histopathological examination. The histopathological examination helps in establishing the final cause of death. Present study concluded that lungs are the most common organ involved followed by lesion of liver. Pulmonary edema is the most common pathology analysed in lung, can be a cause of death. Autopsy examination of the organs and histopathological examination of post mortem specimens helps to arrive at the final cause of death. A detailed and both prospective as well as retrospective studies on prevalence of certain diseases in the community might help to figure out actual prevalence figures as well as monitoring certain disease process.

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