

## A Study of Histopathology of Lungs And Liver in Brought Dead Cases of A Tertiary Care Center of Bihar

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### Abstract

**Introduction:** Autopsy is a procedure that aids to identify the changes occurring in the organs which helps to establish the cause of death and time of death. It also helps to study the ante-mortem as well as postmortem aspect of death. The importance of the study is that it highlights the pattern of various lesions in the lung and liver which are seen in the medico legal and neonatal autopsies along with histopathological examination, which were either incidental or the direct cause of the death. **Methodology:** A retrospective descriptive study of the medico legal autopsies was carried out in the Department of Forensic Medicine and Toxicology, Darbhanga Medical College & Hospital, Laheriasri, Bihar, India for a period of six Months that was from August 2021 to January 2022. Medico legal autopsies during that period, irrespective of age and sex, were included in this study. A total of 30 medico legal autopsies were conducted in the study period in which part of lung and liver were sent for pathological examination. **Results:** A total of 30 specimens of part of lung were received during the period of study. Histopathological examination was carried out in each case. Out of these, 7 specimens of lung were poorly preserved and autolyzed. Majority of the samples came from male corpses. Out of the total liver specimens (i.e., 30 cases), most of the cases on histopathological examination showed sinusoidal and vascular congestion. Grossly, these liver specimens appeared unremarkable. **Conclusion:** This study highlights the importance of histopathological report in lung and liver autopsy cases, especially in the cases where histopathology findings were incidental and were not considered at the time of death.

**Key Words:** Histopathology, Lungs, Liver, Brought Dead Cases.

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### Introduction

Autopsy is a procedure that aids to identify the changes occurring in the organs which helps to establish the cause of death and time of death. It also helps to study the ante-mortem as well as postmortem aspect of death[1]. The medico legal autopsy helps to study the untreated disease process or the diseases about which the person was unaware during his or her lifetime and do not clinically show any symptoms. Histopathological examination of the autopsied specimen helps to highlight many incidental findings. These serve as important learning tools for the pathologists as well as for the forensic experts[2]. Autopsy of various organs is often followed by histopathological examination. However, some pitfalls can delay or make it impossible to give final histopathological report. Few of these pitfalls are poorly preserved tissue, delay in carrying out autopsies, improper sampling, improper preservation and delay in the transportation of the specimen. Microscopic examination however, is still a very useful method to study the disease process[3]. Both lung and liver constitute the site of many diseases. Some of these give rise to symptoms. Many pathological processes are clinically asymptomatic and are hence picked upon autopsy and histopathological examination. The lungs and liver are involved in various kinds of inflammatory, neoplastic and other lesions[4, 5].

The importance of the study is that it highlights the pattern of various lesions in the lung and liver which are seen in the medico legal and neonatal autopsies along with histopathological examination, which were either incidental or the direct cause of the death.

### Methodology

A retrospective descriptive study of the medico legal autopsies was carried out in the Department of Forensic Medicine and Toxicology, Darbhanga Medical College & Hospital, Laheriasri, Bihar, India for a period of six Months that was from August 2021 to January 2022. Medico legal autopsies during that period, irrespective of age and sex, were included in this study. A total of 30 medico legal autopsies were conducted in the study period in which part of lung and liver were sent for pathological examination. The entire specimen was sent to the department preserved in 10% formalin along with clinical details and gross findings. The tissues were processed for the histological examination. All the histological sections were stained with Haematoxylin and Eosin stain and examined.

### Results

A total of 30 specimens of part of lung were received during the period of study. Histopathological examination was carried out in each case. Out of these, 7 specimens of lung were poorly preserved and autolyzed. Age distribution has been shown in figure 1. Majority of the samples came from male corpses. The variety of findings was seen on histopathological examination of lungs (Table 1). Out of the total liver specimens (i.e., 30 cases), most of the cases on histopathological examination showed sinusoidal and vascular

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congestion. Grossly, these liver specimens appeared unremarkable. Other finding has been tabulated in table 3.

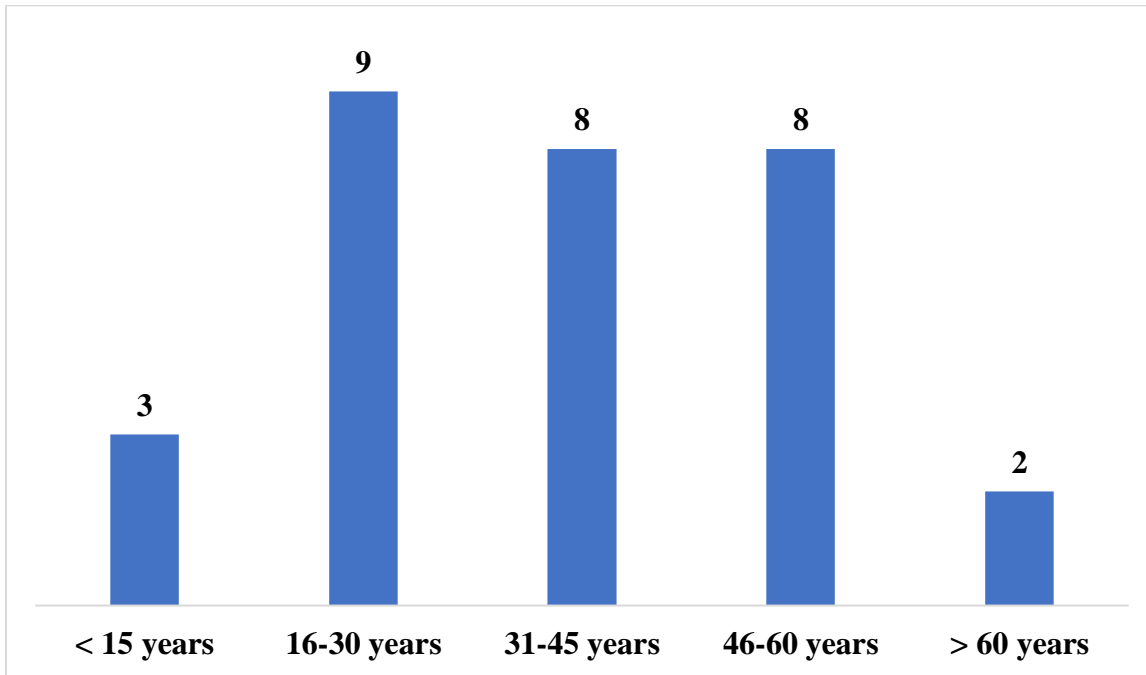


Fig. 1: Bar diagram showing age distribution of the corpses undergoing autopsies

Table 1: Pathological findings of the lung specimen

Findings	< 15 years	16-30 years	years	46-60 years	> 60 years
Emphysema	-	-	2	2	-
Bronchopneumonia	-	3	-	2	-
Diffuse alveolar edema, congestion	2	5	3	1	-
Tubercular pneumonia	-	-	2	1	1
Bronchopneumonia with multiple lung abscess	1	1	-	2	1
Interstitial pneumonia	-	-	1	-	-

Table 2: Pathological findings of the liver specimen

Findings	< 15 years	16-30 years	years	46-60 years	> 60 years
Sinusoidal and vascular congestion	3	6	3	3	1
Cirrhosis	-	-	2	2	1
Steatosis	-	-	1	1	-
Chronic hepatitis	-	1	1	1	-
CVC liver	-	1	1	-	-
Epithelioid cell granuloma	-	1	-	-	-
Adenocarcinoma liver	-	-	-	1	-

**Discussion**

In the present study, lung lesions were seen predominantly in males. Khare P et al., and Bal MS et al., also found lung lesions more in males than females with male: female ratio as 2.7:1 and 4:1 respectively in their studies[1, 5]. The majority of cases in the present study belonged to 16 - 30 years followed by both 31 to 45 and 46 - 60 years. However, the majority of the lung samples in study by Khare P et al., belonged to autopsies carried out in adults between 16 to 60 years age group[1]. Most of the cases were of diffuse alveolar oedema, congestion followed by bronchopneumonia, emphysematous change, and bronchopneumonia with lung abscesses, tuberculous pneumonia, and interstitial pneumonia. Khare P et al., showed congestion and oedema to be the commonest finding found on histopathological examination of lung specimens in his study followed by changes in the interstitium, inflammation (pneumonia, granuloma and fungal), emphysematous change, acute respiratory distress syndrome, hyaline membrane disease and meconium aspiration[1]. Diffuse alveolar oedema and congestion were also observed by many authors to be the commonest finding in their series

of cases[6, 7] which correlated with the prevalence seen in the present study. Tubercular pneumonia was seen in 13.3% cases in present study. Kandy NC et al., found tuberculous changes in lungs in 15.78% cases in their study[8]. Patel S et al., found 3.46% cases of lung tuberculosis in all the cases and one having extra pulmonary involvement in addition to the lung tuberculosis[2]. In the present study, sinusoidal and vascular congestion was reported in maximum number of cases (46.7%) followed by cirrhosis (16.7%). Maximum cases of cirrhosis and steatosis were seen between 31-60 years of age. Fatty change liver (39%) constituted maximum number of cases among the liver lesions in the study done by Bal MS et al.,[5]. Other pathological findings in liver in his study were cirrhosis, congestion, hepatitis and malignancy. Devi M et al., reported cirrhosis to be the commonest liver disease (25%) followed by chronic hepatitis (22%)[6]. Alagarsamy J et al., reported fatty change, Chronic Venous Congestion (CVC), cirrhosis of liver, neoplasm and hepatitis with CVC in the histopathological examination of liver specimen[9]. Tsokos M et al., studied 45 cases of sudden death [10]. They reported cirrhosis in all cases. Voinova LV showed that steatosis was mostly

related to alcohol and cirrhosis was mostly associated with viral diseases[11]. Few other studies showed hepatic steatosis to be the commonest finding[5, 12-14]. Present study showed granulomatous hepatitis in one case. Soutoudehmanesh R et al., found granulomatous hepatitis in 0.2% of cases in his study[15].

### Conclusion

This study highlights the importance of histopathological report in lung and liver autopsy cases, especially in the cases where histopathology findings were incidental and were not considered at the time of death.

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