Original Research Article

Histopathological study of lung in autopsy cases: a prospective study

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ABSTRACT

Background: Present days the air pollution and other environmental inhalants, chemical cum toxic substances become uncontrollable. The lungs are involved in a number of infectious, inflammatory and occupational diseases. But involved in almost all cases of terminal events due to cardiovascular causes. Autopsy is an important tool in identifying the cause and manner of death and hence to establish the preventive methods. The aim of this study was to analyse the findings by the histopathological examination in lung tissue received in autopsy specimens.

Methods: This study is a prospective study done on 100 autopsy cases received in the Department of Pathology, Chengalpattu medical College for a period of 6 months during July to December 2013. Gross findings were noted during autopsy and specimen was subjected to routine processing and Hematoxylin and Eosin Stain. Histopathological findings were noted.

Results: Of the 100 cases, 40% shows pneumonia, 28% shows congestion, 16% shows emphysema, 2% shows normal finding. 14% cases show overlapping. Males were more commonly affected than females.

Conclusions: From this study of autopsy specimens of lung the most common findings were pneumonia, emphysema, and congestion. Pneumonia was found to be the most common finding in the study. We should plan to prevent the causes and reduce the prevalence of pneumonia. Educational counseling should be given on exposure of environmental pollutants to the people.

Keywords: Autopsy, Pneumonia, Emphysema, Environmental pollutants

INTRODUCTION

The importance of lung disease in the overall perspective of pathology and clinical medicine cannot be overemphasized. Present days air pollution and other environmental inhalants, chemical cum toxic substances & chronic bronchitis become uncontrollable.[1] Many millions of people around the world are affected by preventable pulmonary diseases.[2]

The lungs are affected by numerous infectious, inflammatory, occupational and neoplastic conditions,[3] but they are secondarily involved in almost all terminal events.[4] Hence it is important to identify the leading cause of death to establish preventive methods. Autopsy is an important complementary tool to evaluate disease or injury that may be present and to determine the cause and manner of a person's death.[5]

Aims and objectives

The aim of this study was to analyse the findings by the Histopathological examination in lung tissue received in Autopsy specimens.

METHODS

This is a Prospective study conducted on 100 cases received during the period of 6 months from July to December 2013 in pathology department of Chengalpattu medical college in collaboration with Forensic medicine department.

Inclusion criteria

All those in who post mortem was done

Exclusion criteria

Known HIV cases

The medical history and clinical history were traced. The gross findings were recorded from autopsy, bits from lesions if any or from random areas were taken and fixed in 10% formalin and submitted for histopathological examination after tissue processing. Routine Haematoxylin and Eosin stains were used for staining. The histopathological findings were tabulated.

RESULTS

Of the 100 cases, 40% shows pneumonia, 28% shows congestion, 16% shows emphysema, 2% shows normal finding. 14% cases show overlapping. The results are summarized and tabulated in Table 1 and 2 and Figure 1.

Table 1: Distribution of the cases among different age groups.

Age (Years)	11-20	21-30	31-40	41-50	51-60	>60	Total
Pneumonia	6	13	15	3	1	2	40
Congestion	1	11	4	9	2	1	28
Emphysema	1	4	3	2	4	2	16
Overlapping	1	3	3	4	2	1	14
Normal	1	-	1	-	-	-	2
Total	10	31	26	18	9	6	100

Table 2: Sex wise distribution of lung lesions.

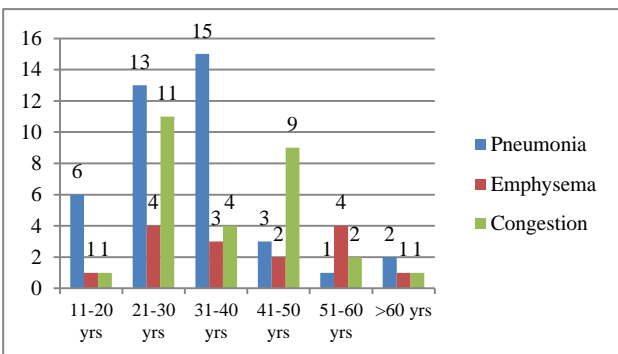|	Male	Female	Total
Pneumonia	24 (60%)	16 (40%)	40
Congestion	15 (53.5%)	13 (46.5%)	28
Emphysema	13 (81.2%)	3 (18.8%)	16
Overlapping	8 (57.1%)	6 (42.9%)	14
Normal	2 (100%)	-	2
Total	62	38	100

Figure 1: Distribution of the cases among different age groups.

Of the 40 Pneumonia cases (Figure 2), males {24 cases (60%)} were commonly affected than females {16 cases (40%)}. Most commonly affected age group is 31-40 years followed by 21-30 years.

Out of the 100 cases, 28 showed congestion (Figure 4). Among the congestion cases, 15 (53.5%) cases were males, 13 (46.5%) were female. Congestion is seen predominantly in the 3rd decade. 16 out of 100 cases were emphysema (Figure 3) out of which 13 (81.2%) were male and 3 (18.8%) female; commonly seen in 3rd and 6th decade. 14% cases showed overlapping.
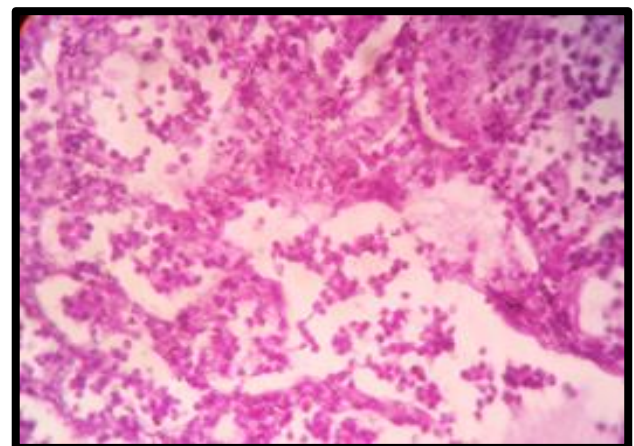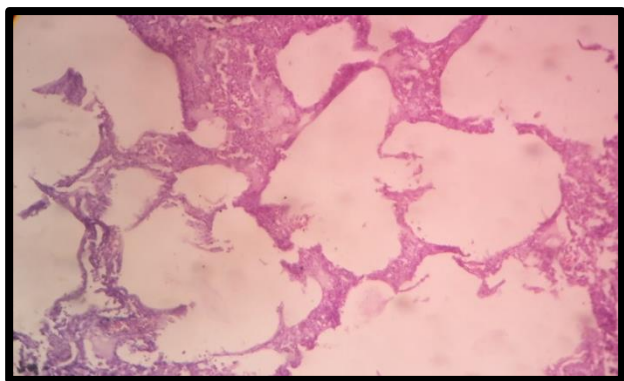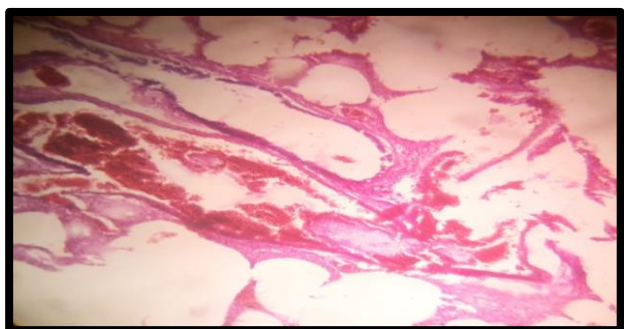

Figure 2: Pneumonia.

Figure 3: Emphysema.
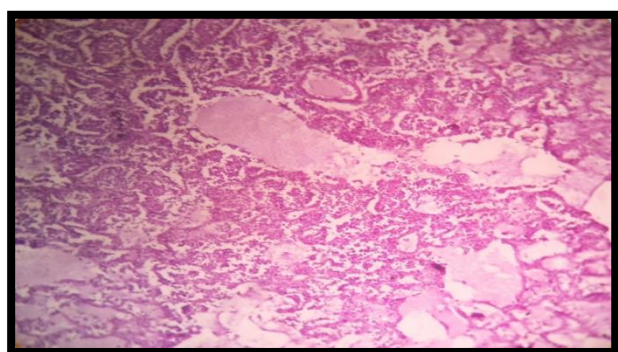

Figure 4: Congestion with pneumonia.
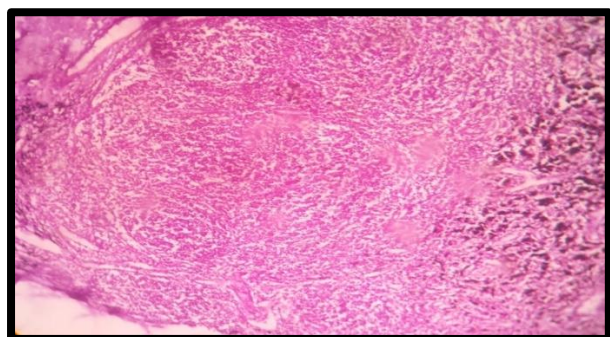

Figure 5: Shock lung.

Figure 6: Lung abscess.

One of the case was lung abscess (Figure 6) with pneumonia, 2 were pneumonia with diffuse alveolar damage (Figure 5), and one case of bronchiectasis with pneumonia. Rests of the cases were pneumonia with emphysema or congestion.

DISCUSSION

The results of the study showed that Pneumonia is the commonest disease affecting males (60%) more frequently than females (40%) and seen predominantly in the 4th decade. This is similar to the study by Chauhan G et al, Selvam V et al, and Fang et al, which showed pneumonia in 15%, 10.1% and 15% cases respectively.[1,2,6]

In the present study, Emphysema was seen in 16 cases, of which 13 (81.2%) were male and 3 (18.8%) were female and commonly seen in 3rd and 6th decade. Among which 58% cases were associated with history of smoking. This is comparable to the study by Chauhan et al, and Selvam V et al, where emphysema was seen in 7.76% and 46.2% of cases respectively.[1,2] In the study by Chauhan et al and Niazi et al, the association with smoking was high which is in concurrence with the present study.[2,7]

In the current study, Congestion is seen in 28 cases, of which 15 (53.5%) were male, 13 (46.5%) were female which is similar to study by Chauhan et al.[2] And overlapping findings were found in 14 cases and 2 cases were normal which is comparable with study by Selvam V et al, which showed normal findings in 7.4%.[1]

CONCLUSION

The current study shows the incidence of lung lesions in the Chengalpattu population. From this study of autopsy specimens of lung the most common findings were pneumonia, emphysema, and congestion. Pneumonia was found to be the most common finding in the study. Pattern of incidental findings in lung is almost similar to that of many other studies. We should plan to prevent the causes and reduce the prevalence of pneumonia. All the factories and industries should take care of their respective employees for undergo medical checkup periodically. Educational counselling should be given on exposure of environmental pollutants to the people.

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