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Cause, Management and Outcome of Pneumothorax in Thoracic medicine department of a Tertiary care centre in South India

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***OBJECTIVE**: purpose of this study is to find the cause, management and outcome of patients presenting with pneumothorax in a thoracic medicine department*
***METHODS**: pneumothorax patients coming to treatment at thoracic medicine department at kilpauk medical college and GTHTM, otteri, Chennai during the period November 2019 to June 2021 were recruited and managed with appropriate intervention and outcome recorded. Patients of age above 12years were included.*
***RESULTS**: Total of 54 pneumothorax patients were evaluated for this study. The commonest management was intercostal drainage tube. The commonest cause and pulmonary tuberculosis. other causes include primary spontaneous tuberculosis, COPD, interstial lung disease and necrotising bacterial pneumonia.*
***CONCLUSION**: this study concludes that pulmonary tuberculosis and its related condition is the commonest cause of tuberculosis and intercostal drainage is commonest intervention for it in thoracic medicine department*
***Keywords:** pneumothorax, pulmonary tuberculosis, COPD, intercostal drainage, pleurodesis.*

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I. Introduction

Pneumothorax is a common respiratory emergency presenting to Thoracic Medicine. Department. It is defined as the presence of air in the pleural space[1]. Most of the studies on pneumothorax includes traumatic and non traumatic cases. In this study we are going to study the causes, management and outcome of pneumothorax patients presenting to Thoracic Medicine department which involves only non-traumatic cases. Non traumatic pneumothorax or spontaneous pneumothorax mostly occurs in diseased lung which makes the management relatively difficult compared to traumatic pneumothorax. Spontaneous pneumothorax may be either primary or secondary[2]. This study is to find the common causes, management and outcome of spontaneous pneumothorax.

II. Materials And Methods:

Pneumothorax patients (aged above 12 years presenting to thoracic medicine department at kilpauk medical college and GTHTM, otteri during the period of November 2019 to June 2021 were included in the study. These patients were admitted, managed and followed up till recovery/late complications. Clinical history including smoking history, Physical examination, CBC, chest skiagram, electrocardiogram, were done for all and CT chest/CECT chest was taken wherever necessary. Management depended upon the severity of the pneumothorax, clinical status of the patient that is based on degree of dyspnoea and oxygen level of the patient. Depending on the above mentioned criteria patients were treated with either with oxygen supplementation, needle aspiration, intercostal drainage, suction or combination of the these. HIV, Hbsag, and HCV status was ascertained before ICD insertion.

III. Results

A total of 58 patients were evaluated. Among the 58 patients 4 were found COVID positive hence referred to COVID ward and were not included in this study. In the remaining 54 cases males were 47 and females were 7. Mean age of the parcipants was 41.83 years with range from 16y to 70y. The age and sex distribution is given in the table-1. Pulmonary tuberculosis is the commonest cause of pneumothorax in this study, followed by primary spontaneous pneumothorax, COPD, ILD and necrotising pneumonia.

Among the pulmonary tuberculosis patients new cases and patients who lost to follow up with current microbiologically confirmed status were the major cause for pneumothorax followed by MDR patients, PT sequalae and INH monoresistance patients.

There were 4 cases of primary spontaneous pneumothorax 3 cases of COPD and one case of each ILD and necrotizing pneumonia.

All patients had to be treated with oxygen supplementation and intercostal drainage. None of the patients clinical condition required needle aspiration.

Oxygen treatment given to all patients initially and after intercostal drainage either to hasten pneumothorax absorption or to treat hypoxia.

The mean duration for pneumothorax expansion was 16.29 days in all. For pulmonary tuberculosis patients it was 17.34 days and for other causes 10.88 days. for smokers it was 16.6days and non-smokers it was 15.87 days.

Of the 54 cases 51 cases where successfully expanded.

Pleurodesis was done in all 51 patients with talc in 10 patients and iodopovidone in 41patients. No major complication of talc or iodopovidone pleurodesis was observed in this study.

In 3 cases treatment of pneumothorax was not successful. All were cases of pulmonary tuberculosis. One was due bronchopleural fistula and another was due to trapped lung, both were referred to cardio thoracic surgery for further surgical management. Third case died it was a case 45yr old female new sputum positive case with bilateral extensive consolidation presented with pneumothorax and respiratory failure, patient died after 11 days in spite of standard therapy including ICD, oxygen therapy and ATT.

Total of Four Complications were seen in this study were one case of surgical emphysema which was in a case of pulmonary tuberculosis.

Table-1: Age and Sex distribution of patients

Age(years)	Male	Female	total
12-18	0	2	2
18-40	21	2	23
40-60	19	2	21
>60	7	1	8
total	47	7	54

Table2: cause and sex distribution

Cause	Male	Female	total
Pulmonary tuberculosis	39	6	45
Primary spontaneous	4	0	4
COPD	2	1	3
ILD	1	0	1
Necrotizing pneumonia	1	0	1
total	47	7	54

Table:3 cause and age distribution

Cause	12-18	18 -40	40-60	>60	total
Pulmonary TB	2	19	20	4	45
Primary spontaneous	0	4	0	0	4
COPD	0	0	0	3	3
ILD	0	0	0	1	1
Necrotizing pneumonia	0	0	1	0	1
total	2	23	21	8	54

Table4: duration for expansion and cause

Cause	Duration
Pulmonary tuberculosis	17.34
others	10.88
Average	16.29
smokers	16.6
Non smokers	15.87

Table4: types of pulmonary tuberculosis causing pneumothorax

Type of ptb	Male	Female	total
New	18	2	20
Ltfu/relapse	11	2	13
Inh mono res	3	0	3
Mdr	4	0	4
xdr	0	0	0
Pt sequalae	4	1	5
Total	40	5	45

Table5: Outcome and causes

Cause	Expanded	BPF	Trapped lung	died	total
Pulmonary tb	**42**	**1**	**1**	**1**	**45**
Pri spon pneumo	**4**	**0**	**0**	**0**	**4**
Copd	**3**	**0**	**0**	**0**	**3**
Ild	**1**	**0**	**0**	**0**	**1**
Necrotising pneumo	**1**	**0**	**0**	**0**	**1**
total	**51**	**1**	**1**	**1**	**54**
Percentage	**94.44%**	**1.85%**	**1.85%**	**1.85%**	

Conclusion:

Pulmonary tuberculosis was the commonest of pneumothorax, in patients presenting to thoracic medicine department. Followed by primary spontaneous pneumothorax, COPD, ILD, necrotising pneumonia. Intercostal drainage is the commonest management used to treatment. High flow oxygen was used initially as well as concomitantly in most patients. Pleurodesis was done in all patients.

References:

[1]. PLEURAL DISEASES, Richard W.Light,MD.
[2]. BMJ best practice pneumothorax
[3]. Etiology, presentation and management outcome of pneumothorax Nisar Khan 1, Mohammad Salim Wazir, Mohammad Yasin, Jan Mohammad, J Ayub Med Coll Abbottabad. Jan-Mar 2005;17(1):62-4
[4]. Frequency and management outcome of pneumothorax patients. Khan N, Jadoon H, Zaman M, Subhani A, Khan AR, Ihsanullah M.J Ayub Med Coll Abbottabad. 2009 Jan-Mar;21(1):122-4. PMID: 20364759
[5]. Management of patients admitted with pneumothorax: a multi-centre study of the practice and outcomes in Hong Kong. Chan JW, et al. Hong Kong Med J. 2009. PMID: 19966346
[6]. Chadha TS, Cohn MA. Noninvasive treatment of pneumothorax with oxygen inhalation. Respiration 1983;44:147-52.
[7]. Northfield TC. Oxygen therapy for spontaneous pneumothorax. Br Med J 1971;4

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