Volume : 4 | Issue : 12 | December 2015 • ISSN No 2277 - 8179

Research Paper

Study of Clinical Profile of 50 Cases of Pneumothorax

Medical Science

KEYWORDS : pneumothorax, intercostals drainage, ICD

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ABSTRACT

BACKGROUND:Pneumothorax is defined as presence of air in the pleural cavity. It is an important respiratory emergency. Management should be according to the urgency and etiological factors. Here is the study to know the clinical profile of the patients of pneumothorax.

METHODS:Fifty cases were enrolled in study. Only patients with pure pneumothorax on chest x-ray were included in the study. Patients with hydro-pneumothorax or pyo-pneumothorax were not taken into consideration. Detailed observation and clinical study was carried out.

RESULTS: 15 were from age group 21-30 years. 43 patients were male. Majority of them presents with right sided pneumothorax (58%). Commonest presentation was cough followed by dyspnoea. Intercostal drainage tube insertion was carried out in 25 patients while in 18 patients, intracath insertion with under water seal was done, 7 patients were managed conservatively.

CONCLUSION: Acute presentation of spontaneous pneumothorax is more common in male with right side more predominant and higher in smoker and tuberculosis patients. X-ray at onset is the single most important investigation. Intercostal drainage with under water seal is the treatment choice.

INTRODUCTION:

Pneumothorax is defined as presence of air in pleural cavity. It is an important respiratory emergency which we come across in clinical respiratory medicine. It is important to have detailed knowledge about it as proper and timely management can save a person's life.

It may be due to lung disease or unknown cause i.e. spontaneous pneumothorax, may be due to blunt or penetrating chest trauma i.e. traumatic pneumothorax, intentional introduction of air in pleural cavity i.e. artificial pneumothorax. Artificial and traumatic pneumothorax are not to be considered here.

Spontaneous pneumothorax is usually an acute respiratory emergency, though rarely it may be found accidently on chest x rays when patient is totally asymptomatic. Management should be according to the urgency and etiological factors.

The following aims were kept in view during present study.

- To know the age and sex incidence.
- To obtain relationship of smoking with pneumothorax.
- To study clinical presentation of pneumothorax.
- To detect underlying lung pathology if any.
- To emphasize the importance of radiological and other investigations as an aid to diagnosis and management.
- To decide various mode of treatment.

MATERIALS AND METHOD:

Fifty cases were enrolled in present study at Department Of Pulmonary Medicine, B.J.Medical College, Civil Hospital, Asarwa, Ahmedabad from AUGUST 2012 to AUGUST 2014 as indoor cases. Only patients with pure pneumothorax were included in the study. Cases presenting with hydro-pneumothorax or pyo-pneumothorax were not taken into consideration. Detailed observation and clinical study of spontaneous pneumothorax were carried out.

Each patient was interrogated in detail regarding the history and symptoms. Thereafter thorough clinical examinations of all the symptoms were made. All the patients were investigated systemically. Haematological, radiological and bacteriological investigations were also carried out with a view to identify probable etiology and estimate the extent of pneumothorax. Response to various modes of treatment like Intercostal drainage tube insertion, plastic cannula insertion etc was recorded.

RESULTS & DISCUSSION:

Out of 50, 43 patients were male and only 7 patients were female. 16 (32%) patients were between ages 21-30 years, only 2 patients had age above 60 (Table-1). this is comparable with other studies. Most common presenting symptoms were cough (96%) and dyspnoea (94%) followed by chest pain (82%), fever (28%) and haemoptysis was present in only 8% of patients (Table-2). 70% patients were either presently smoker or ex smoker. In present study, on radiological quantification, large size pneumothorax (>2 cm rim present between the lung edge and chest wall at level of hilum) seen in 70% while small size pneumothorax (< 2 cm rim present between the lung edge and chest wall at level of hilum) seen in 30% patients. 58% patients had right sided, 38% patients had left sided pneumothorax and 4% patients had bilateral pneumothorax. Probable etiology of spontaneous pneumothorax studied by different authors is shown in the Table-3. In the present series the commonest cause of pneumothorax is tuberculosis followed by chronic bronchitis with emphysema. Indian series of Yediyurappa Parmar and Boghani also shows similar results of higher incidence of pneumothorax. They observed that in west the commonest cause of pneumothorax is rupture of subpleural apical bleb, but tuberculosis continues to the commonest etiological factor in India. The management of pneumothorax by different authors is shown in Table-4. The most common intervention is intercostal drainage tube insertion which is comparable to other studies. In present series the newer technique plastic needle was used and it gives good results as compare with needle aspiration and to some extent intercostals drainage tube.

CONCLUSION:

Acute presentation of spontaneous pneumothorax is more common in male and with right side more predominant. The incidence is also higher in smoker and tuberculosis patients. X-ray at onset is the single most important investigation. Intercostal drainage with under water seal is the treatment choice.

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TABLE-1
Age distribution of cases of spontaneous pneumothorax by different authors

Age in years	Hyde 200 cases 1963 (%)	Levy 170 cases 1966 (%)	Aby-holm 229 cases 1975 (%)	Par-mar 392 cases 1982 (%)	Boghani 40 cases 1984 (%)	Jan-meja 100 cases 1994 (%)	Pre-sent series 50 cases 2014 (%)
0-20	2.5	7	8.3	24.6	5.0	04	12
21-30	55.5	28.2	40.6	33.3	42.5	42	32
31-40	22.0	27.0	19.2	22.9	15.0	24	20
41-50	10	14.1	10.5	11.6	15.0	10	20
51-60	5.5	12.3	9.6	5.5	20.0	10	12
Over 61	4.5	11.3	11.8	2.1	2.5	10	4
Below 40	80	62.2	68.1	80.8	62.5	70	55

TABLE-2
Clinical features of spontaneous pneumothorax by different authors

Age in years	Hyde 200 cases 1963 (%)	Severi 219 cases 1977 (%)	Boghani 40 cases 1984 (%)	D.gupta 60 cases 2005 (%)	Present series 50 cases 2014 (%)
Dyspnoea	82	78	77.5	91	94
Cough	-	69	97.5	68	96
Chest pain	95	78	85.0	83	82
Fever	5	-	37.5	-	28
Haemop-tysis	-	6.5	7.5	-	8

TABLE-3
Etiology of spontaneous pneumothorax by different authors

Etiology	Lenox 94 cases 1962 (%)	Levy 170 cases 1966 (%)	Yedurap-pa 15 cases 1971 (%)	Par-mar 392 cases 1982 (%)	Bogha-ni 40 cases 1984 (%)	Present series 50 cases 2014 (%)
Tuberculosis	9.5	2.9	66.7	59.7	60.0	66
Chronic bronchitis with emphy-sema	17.8	20.6	2.3	9.7	20.0	18
Primary	51.6	21.2	-	-	15.0	8
Bronchial asthma	5.3	7.0	-	-	2.5	2
Emphysema-tous bulla	10.63	9.4	-	0.7	2.5	-
Pyogenic lungs dis-eases	1.06	0.6	-	20.2	00	2
Pulmonary infection	-	-	6.7	-	00	-
Pulmonary carcinoma	-	0.6	6.7	-	00	2
Pneumonia	4.2	-	-	-	00	2
Pulmonary fibrosis	5.3	-	-	-	00	-
Unknown	-	36.5	6.7	9.7	00	-

TABLE-4
Management of spontaneous pneumothorax by different authors.

Procedure used	Le-nox 94 cases 1962 (%)	Hyde 200 cases 1963 (%)	Levy 170 cas-es 1966 (%)	Par-mar 392 cases 1982 (%)	Bogha-ni 40 cases 1984 (%)	Shoaib 23 cases 2004 (%)	Pre-sent series 50 cases 2014 (%)
Intercos-tals drain-age tube	32.97	3.5	69.4	50.3	72.5	84.2	50
Plastic needle	-	-	-	-	-	62.9	36
Needle aspiration	2.7	5.	8.8	14.4	22.5	-	-
Conserva-tive	32.97	85.5	21.8	4.5	5.0	-	14
others	22.86	-	-	26.4	-	-	-

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