

Epidemiological, Clinical and Etiological Profiles of Pleural Effusions: Experience of department of Pneumology, Mohammed VI University Hospital of Oujda-About 138 cases

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ABSTRACT

Pleural effusion is an abnormal collection of fluid in the pleural cavity. This study was designed to evaluate the clinical and etiological profile of patients with pleural effusion. A total of 138 cases (January 2016 to April 2019), the average age was 52 years, men predominated as women. The majority of the effusions are exudative and right-sided. About the etiologies are dominated by malignancy causes (32%) secondly the tuberculosis (31%) and cardiac etiologies (13%) with no apparent cause (9%). Despite the predominance of neoplastic etiologies in our series, tuberculosis remains the common etiology of pleural effusion whose evolution is favourable.

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Introduction

Pleural effusion is an abnormal collection of fluid in the pleural space. It is a frequent clinical condition observed in pulmonary pathology.

The etiological spectrum of pleural effusion depends on the geographical region and the local incidence of different diseases that cause pleural effusions.

In the developed countries the common causes of pleural effusion in adult are cardiac failure, malignancy and pneumonia, whereas in developing countries tuberculosis and parapneumonic effusions are more prevalent. [1, 2, 3]

Lung cancer is the most common metastatic tumor to the pleura in men, while breast cancer is the most common tumour in women. Together, both cancers account for majority of all malignant effusions. [4]

Pleural effusion due to tuberculosis develops from a delayed hypersensitivity reaction to mycobacteria in the pleural space following rupture of a sub pleural caseous focus, and is common in areas of tuberculosis endemicity. [5]

Tuberculosis pleural effusion may occur during primary infection, when it tends to affect younger individuals in areas with a high prevalence of tuberculosis, or it may be recognized as a manifestation of disease reactivation, particularly affecting older patients [3, 6].

Pneumonia is associated with an exudative pleural effusion, is the most common cause of pleural effusion in young patients.

The majority resolves with antibiotic treatment, but a certain number will progress to an infected pleural space. [6]

The present study was designed to evaluate the Clinical and etiological profile of patients with Pleural Effusion.

Material and methods

This was a descriptive study in the Department of pneumology in University Hospital Mohamed VI, Oujda, Morocco.

The data was taken from medical record section.

A total of 138 cases from January 2016 to April 2019, therefore period three years and four months.

All our patients presented pleurisy on thorax with a pleural puncture which confirmed the existence of pleural effusion.

Results

During the period, 138 patient's folders were analyzed.

Average age was 52 years; the maximum age was 87 years while the minimum was 16 years.

The study covers 84 men and 54 women; with male to female ratio of 1.52. (Table 1)

Table 1. Distribution of patients on the basis of age and sex.

Age group	Number			Percent
	Males	Females	Total	
<20	4	1	5	4%
20-29	8	7	15	11%
30-39	11	8	19	14%
40-49	9	5	14	10%
50-59	19	11	30	22%
60-69	18	10	28	20%
70-79	10	7	17	12%
≥80	5	5	10	7%
Total	84(59%)	54(41%)	138	100%

The major symptoms found in these patients were basithoracic pain (41% of cases), dry cough (36% of cases), dyspnea (28% of cases, and haemoptysis (7% of cases). (Table 2)

Table 2. Clinical presentations of patients with pleural effusion.

Symptoms	percentage	No.
Basithoracic pain	41 %	57
Dry cough	36 %	50
Dyspnea	33 %	46
haemoptysis	7 %	10
Others (asthenia , fever)	5 %	7

About the side of pleural effusion: right (50% of cases), left (32% of cases) and bilateral (18% of cases). (Fig. 1). Abundance of pleural effusion: moderate in 43% of cases, large in 30%, low in 22% of cases, and 5% of cases with massive pleurisy.

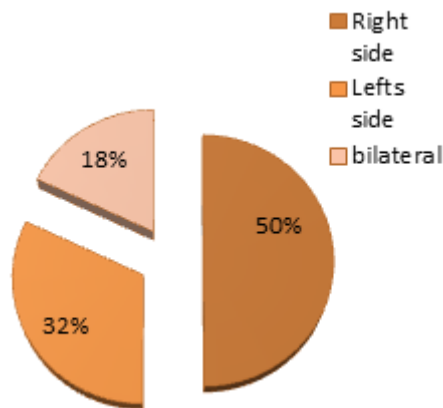


Figure 1 . Side of pleural effusion in our study.

The pleural puncture performed in all patients , concerning the study of the fluid punctured: it was transudative in 24% and exudative in 76% of the cases; the appearance of liquid: pale yellow in 30% , yellow in 17%, sero-haematic in 19%, haematic in 11%, clear in 6% ,trouble in 13% and purulent in 4% of cases .(Table 3)

Table 3. Characteristics of pleural effusion.

	characteristic	percent
Abundance	Moderate	43%
	Large	30%
	Low	22%
	Massive	5%
Nature of pleural fluid	Transudative	24 %
	Exudative	76 %
Appearance of pleural fluid	Pale yellow	30 %
	Yellow	17 %
	Sero-haematic	19 %
	Haematic	11 %
	Clear	6 %
	Trouble	13 %
	Purulent	4 %

Pleural biopsy was performed in 62% of cases, etiologies are dominated by neoplastic causes (44 cases or 32%), secondly there is tuberculosis (43 cases or 31%) and cardiac etiologies (18 cases or 13) and infections (14 cases or 10%), chronic kidney and chronic liver diseases were observed in 6 cases of pleural effusion (4%) with no apparent cause in our study for 13 cases (9%). (Fig. 2)

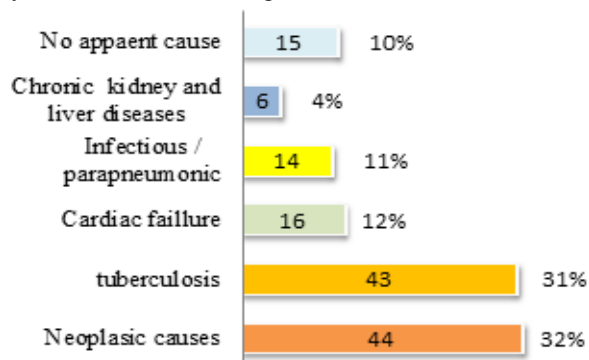


Figure 2. Etiology of pleural effusions in patients.

The antibiatic treatment is started for 35%, while 30% of our patients have benefited from non-specific antibiotic therapy and thoracic drainage for 12 patients (8 %). the third

of patients (31% of cases) have been referred for oncology management for possible chemotherapy and /or radiotherapy.

Discussion

Our study represents clinical patterns and etiological profile of patients with pleural effusion was hospitalized in department of pneumology at Mohamed VI university hospital of Oujda (Morocco).

The average age of patients in this study (52 years), men predominated as women

This was similar to those described in other studies [7-11]

The common symptoms were basithoracic pain (41% of cases), dry cough (36% of cases), dyspnoea (33% of cases), A study done by Porcel and Vives also showed these symptoms to be common in such patients, same result in study by Charma et al. in southern Rajasthan (India) , [12,13]

Majority of Pleural fluid were right sided (50%) followed by left sided (32%) and bilateral pleural effusion (18%). These results were similar in other studies done in Arabia Saudi, Ethiopia India [8, 14, 15]

Most of the pleural fluids were exudates (76 %) with Tuberculosis and Malignancy as two most common etiologies.

Malignancy was found in third party of our patients (32%) in our study followed by tuberculosis effusion (31%).

A study done in Peshawar and Malaysia found Malignancy as second most common cause in patients of pleural effusion with Tuberculosis leading the list.

Most of the patients were of more than 40 yrs of age and smoking history was present in majority of them. [16, 17]

Tuberculosis was the leading cause of pleural effusion in majority of young patients (68%).

Similar results were shown in a study done in Iraq with Tuberculosis as the leading cause with majority of cases occurring in young adults [18]. A similar study done in Ghana, Nigeria and Qatar also showed Tuberculosis as the most common cause. [2, 19, 20]

In our study, no diagnosis could be made in 13 patients despite performing a pleural biopsy.

More detailed epidemiologic studies are required to improve understanding of the burden of pleural effusion

Knowledge of etiological pattern helps to plan relevant investigations in patients with pleural effusion and reduces the delay in diagnosis.

Conclusion

Pleural effusion is a common clinical problem in Pneumology, who's the tuberculosis, malignancy and pneumonia are the leading causes.

Despite the slight predominance of neoplastic etiologies in our series, tuberculosis remains the common etiology of pleural effusion whose evolution is favourable after a well-followed treatment.

It remains to emphasize that a multidisciplinary approach is needed for an early diagnosis and adequate management.

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All authors contributed to the writing of this manuscript.

Conflict of interest:

None

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