



ROLE OF PLEURAL FLUID CYTOLOGY WITH PLEURAL BIOPSY IN DIAGNOSIS OF PLEURAL EFFUSIONS

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ABSTRACT

The present study aimed at a detailed cytological and histopathological evaluation of all pleural fluids in the Department of Pathology, Dr Patnam Mahender Reddy Institute of medical, sciences, chevella, during the period of one year between feb 2024 to feb 2025. All fluids are stained with giemsa , hemotoxyllin and eosin and pleural biopsy specimens after fixation in 10% buffered formalin, processed and then stained with Hematoxyllin & Eosin to study various histopathological patterns and compare the results. Most common pathology identified was granulomatous inflammation.

KEYWORDS : Pleural fluid, inflammation.

INTRODUCTION

Pleural fluid is an ultrafiltrate of plasma.

Pleural effusion is the accumulation of fluid in the pleural space between the lungs and chest wall. It can be caused by both neoplastic and non-neoplastic conditions, such as pneumonia, tuberculosis, and malignancy

AIMS AND OBJECTIVES

To study the incidence of non-neoplastic and neoplastic pleural effusions in the department of pathology during period of one year from february 2024 to february 2025.

To compare the diagnostic efficacy of pleural fluid cytology and pleural biopsy in the evaluation of pleural effusions.

METHODOLOGY

- A retrospective (1year) study done on patients of february 2024 to february 2025 admitted with pleural effusion.
- A total of 40 Cases, which came for both pleural cytology and pleural biopsy, were only included in the study.
- Cytological findings were correlated with the histopathology.

OBSERVATIONS AND RESULTS

HISTOPATHOLOGY RESULTS

Non specific inflammation	20 %
Granuloma	40%
neoplastic	40%

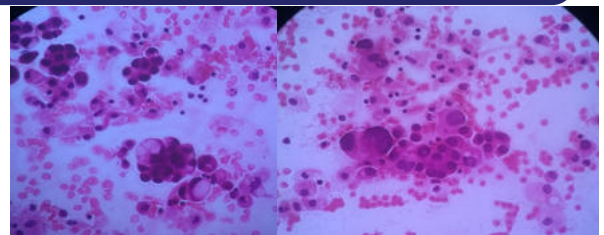
In non neoplastic effusions granulomatous inflammation is the most common cause.

Histological Type In Neoplastic Effusions

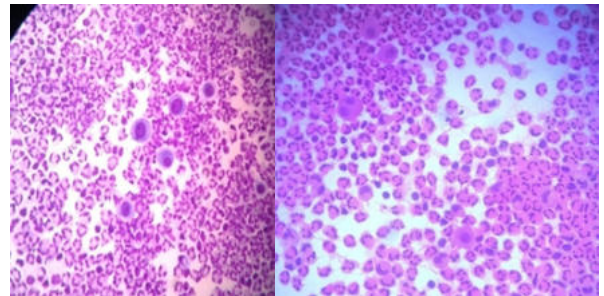
Histological type	No of cases
Squamous carcinoma	8 cases
Adenocarcinoma	6 cases
Small cell carcinoma	1 case

Cytology Cases Correlating With Histopathology

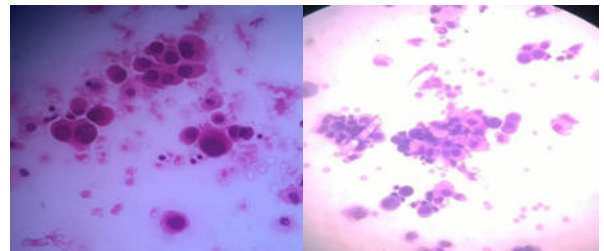
Cases	Cytology	Histopathology	Histopathology not correlated
Negative for malignancy	24	22	02
Positive for malignancy	16	15	1 case of mesothelioma unfortunately we could not get pleural biopsy
Total	40	37	



1 & 2 -Pleural fluid- Adenocarcinoma

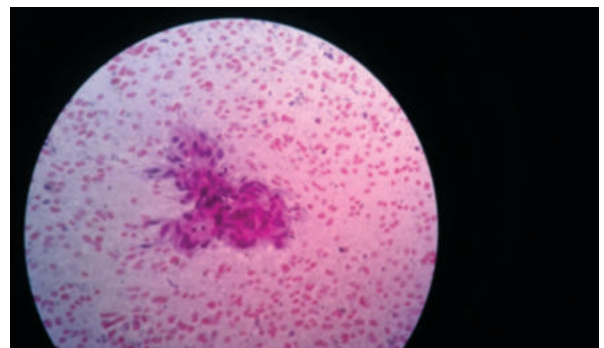


3 & 4 -Pleural fluid- neutrophils (Giemsa - Hemotoxyllin and Eosin)



5-Pleural fluid-Squamous cell carcinoma

6 - Pleural fluid - Mesothelioma



7-Pleural biopsy -Epithelioid cells forming granulomas

DISCUSSION

In the present study, pleural effusions are studied by using a comparative approach of routine cytosemears using both giemsa and hemotoxyllin - eosin stain with pleural biopsy. In the present study, the predominant lesions detected in the various fluids were inflammatory (24 cases), while malignancy was detected in 16 cases.

Comparison Of Present Study With Other Studies

	Present Study	Archana et al	Sujathan K et al
TOTAL CASES	40	150	85
INFLAMMATORY CASES	24 (60%)	90 (63 %)	63 (74%)
MALIGNANT CASES	16(40%)	60 (37%)	21(26%)

	Present Study	Archana et al	Sujathan K et al
Total Cases	40	150	85
No Of Cases Correlating With Histology	37(92.5%)	141(94%)	76(89.4%)
No Of Cases Not Correlating With Histology	2(5%)	9(6%)	9(10.6%)
1 case of mesothelioma , unfortunately we could not get pleural biopsy			

The diagnostic accuracy of the present study correlates well with Archana et al, 2012.

CONCLUSION

- Majority of cases are in the age group of 41-50years.
- Inflammatory effusions outnumbered the malignant cases.

Granulomatous inflammation is a common cause of inflammatory effusions

- 51-60 yrs – commonest age group for malignancy
- Malignant pleural effusion was more common in males.
- Squamous cell carcinoma is the most common in malignant effusions in the present study.
- Squamous cell carcinoma is most common in males in the present study.

Adenocarcinoma is common in females in the present study.

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