Role of Pleural Biopsy in Differential Diagnosis of Exudative Pleural Effusion - Original Article.

INTRODUCTION
Exudative pleural effusion are distinguished from transudative effusion by measuring lactate dehydrogenase (LDH) and protein level in pleural fluid. Exudative pleural effusion meet at least one of the following criterion:
1. Pleural fluid protein/serum protein > 0.5
2. Pleural fluid LDH/serum LDH > 6.6
3. Pleural fluid LDH more than two standard upper of serum.

We studied only exudative PE by the above criteria [1].

MATERIAL AND METHODS
The present series comprise 60 patient of P.E.A detailed history of patient was taken including age, sex, duration of illness as well of individual symptoms like cough, fever, chest pain, dyspnea, haemoptysis, and loss of weight etc. Thoracic clinical examination for presence of other systemic disease.

Each case was subjected to routine blood test for Hb, TLC, DLC, and ESR. Sputum examination for gram and ZN staining for three occasion. Culture for pyogenic organism in suspected cases only. X-ray chest in each case and CT scan as per need. Pleural fluid examination for Gross appearance, protein, sugar, cytology including malignant cells. Direct smear for GM and ZN staining. Pleural biopsy using Abrams needle was done in all cases.

The basis for etiological diagnosis was on presence of bacteria including Mycobacterium and cytology for malignant cell in sputum; pleural fluid and plural biopsy. In some cases broncoscopy, lymph node biopsy bone marrow (in leukemia) was basis for diagnosis.

DISCUSSION
Maximum cases were between 21 yrs to 40 yrs (65%) highest in third decade 36.0%; mean age in TB was 36 yrs, 57 yrs in malignancy and 29 yrs in Para pneumonic. Robertson [1994] [22] observed Incidence of malignant effusion above 40yrs. Thiruvengadan [1961] [23] also recorded the same. Incidence in present series 63% tuberculous, 23% malignancy 3.3% parapneumonic and 10% miscellaneous. Relative frequency of different cases varies.

Fever was common in parapneumonic effusion may present in tuberculosis and malignatbifellusion also. While characteristic pleuritic pain seen all parapneumonic effusion. 84% in Tb and dull pain even if large effusion. In case of malignancy, cough with expectoration was constant in parapneumonic, 81% in Tb usually dry, 15% had haemoptysis as compared with malignancy 50%, dyspepsia was a feature of massive effusion due to any cause, weight was significant in malignancy 92% and 47% in tuberculosis.

ESR was raised in all was not useful in differentiation of diagnosis. 73% in TB clear fluid, 15% turbid and 10% hemorrhagic in malignancy, 100% turbid in parapneumonic. Glucose level was lower in parapneumonic as compared to TB and malignancy. Cytology wise lymphocytic predominance was seen in tuberculosis and malignancy both while 100% in parapneumonic showed neutrophils. Malignant cells in effusion is very useful tool in diagnosis. We found malignant cell in 65%. Various authors [11], [21] have reported better positive results when more than one specimen was subjected to study, CBC count can be very helpful in differentiating tuberculosis from malignancy. Light et al [1973] [13] observed count >10000/ccm most often in malignancy. As per as bacteriological examination of sputum or pleural fluid is concerned demonstration of bacteria in fluid is not definite proof as a causative agent in parapneumonic effusions especially in case of Hemophilus and E.coli. [Cohen and Douglas] [3] they also observed that it not common for causal organism to be cultured from pleural fluid as the patient is always almost on antibiotics. The basis of non tuberculosis bacilli emphasizes the need of plural biopsy as our study.

11 cases of TB effusion showed positive smear for tubercular bacilli and 6 out of 11 showed X-ray lesion of TB and on Gram stain showed E.coli. In our series not a single pleural fluid specimen showed positive for tuberculosis bacilli while other author demonstrated 30% case of TB positive of pleural fluid. Close [1946] [21], demonstrated tubercular bacilli in 16 of 23 cases (73%). An author subsequently has been able to get such high positive results from pleural fluid histopathological examination of punch biopsy of pleura is most reliable diagnostic technique in establishing the diagnosis in pleural effusion [mest [24]. [mathure [28]].

In 28 cases out of 38 of tb biopsy confirmed the diagnosis, 7 showed normal tissue and 4 non specific inflammatory changes. This may be due tissue from an area of pleura without tubercular granulation, non

Keywords: Pleural biopsy, Exudative effusion, Tuberculosis, Malignancy.
specific changes may be from an area adjacent to tuberculous granulation. Here lies importance of repeating biopsy.N.K.Jain in 2000 studied total 54 cases 33% were tuberculous, 16% malignancy 3 inadequate tissue. In our study of 60 cases 23% tuberculous, 8% malignancy 10% chronic inflammation and in 6 inadequate tissue.

Most studies advocate repeated biopsy if first or second sample is negative.JAPI (2000 vol48 no8-776-780) demonstrated that visceral pleural biopsy by Prabhudesai technique is superior to parietal pleural biopsy and is safe and easily lea rent.

SUMMARY AND CONCLUSION
Tuberculosis is the commonest cause of pleural effusion followed by malignancy and post pneumonic, in that order. The commonest combination of symptoms is fever, chest pain, dyspnea and dry cough. Characteristic pleuritic chest pain is feature of tuberculosis and post pneumonic while in malignant effusion it is constant and dull ache. Mesothelial cells less than 1% usually associated in tuberculosis effusion. Combination of pleural biopsy with cytology increases diagnostic yield in both tuberculosis and malignancy. Repeat biopsy is helpful in case of normal or inconclusive report. In some patients inspite of all investigation an etiological diagnosis can be established followed conservatively.

REFERENCES