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Role of Pleural Biopsy in Differencial Diagnosis of Exudative Pleural Effusion -Original Artical.

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ABSTRACT

INTRODUCTION-Exudative pleural effusion [PE] in previously healthy patient has posed a diagnostic problem; the general opinion is that 70-80% of such PE represents plural manifestation of tuberculosis .However multiplicity of etiology accounts for 20-30%. A bed side procedure that would quickly give diagnosis and at the same time not endanger the patient is anyway would be helpful for correct diagnosis is plural biopsy.

AIMS AND OBJECTIVE-

1] To study pattern of clinical presentation in case of PE due to DIFFERENT DISEASES.

2] To evaluate the importance of biochemical, cytology, and plural biopsy in arriving diagnosis.

3] Comparison between role of routine pleural fluid analysis or biopsy alone or combination of both in diagnosis of PE.

MATERIAL AND METHODS-we studied 60 patient of exudative plural effusion of age 15 to 65 yrs with Abrams needle of plural biopsy.

CONCLUSION-Tuberculosis is the commonest cause of PE followed by malignancy and post pneumonic. Fever, chest pain, dysponea, and dry cough are the commonest combination of symptoms. Combination of procedure of needle biopsy with cytology of plural fluid increases diagnostic yield in both tuberculosis and malignancy and should be routine.

KEYWORDS :

INTRODUCTION

Oxidative pleural effusion are distinguished from transudative effusion by measuring lactate dehydrogenase[LDH] and protein level in pleural fluid,etc.Exudative pleural effusion meet at least one of the following criterion.

1] Pleural fluid protein/serum protein >0.5
2] Pleural fluid LDH/serumLDH>0.6
3] Pleural fluid LDH more than two third of normal upper of serum.

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

MATERIAL AND METHODS

The present series comprise 60 patient of PE.A detailed history of patient was taken including age,sex,duration of illness as well of individual symptoms like cough,fever,chest pain, dysponea,haemoptysis,and loss of weight etc.Thorough 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.Xray 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.

Basis for etiological diagnosis was on presence of bacteria including M.tuberculosis 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 between21 yrs to 40 yrs [65%] highest in third decade 36.6%; mean age in TB was 36yrs, 57yrs in malignancy and 29yrs in Para pneumonic. Robertson [1954] [22] observed incidence of malignant effusion above 40yrs.Thiruvengaden [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 parapnumonic effusion may present in tuberculosis and malingnatbeffusion also. While characteristic pleuritic pain seen all parapneumonic effusion,84% in Tband dull pain even if large effusion. In case of malignancy.Cough with expectoration was constant in parapneumonic,81%intb usually dry,15%had heamoptsis as compaired with malignancy 50%.dyspnea 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% heammorhagic,64% hemorrhagic in malignancy.100%turbid in parapnemonic.Glucose level was lower in parapnemonic as compaired 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 85%.Various authors[13];[21]have reported better positive results when more than one specimen was subjected to study..RBC count can be very helpful in differentiating tuberculosis from malignancy. Light et al[1973][13] observed count >100000/cmm 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 h.influenza and E.coli[Crofton 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.findin 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[25],demonstrated tubercular bacilli in 16 of 23 cases [73%] ,no 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 effusions[mest [24]. [mathure[20].

In 28 cases out of 38 of tb biopsy confirmed the diagnosis,2 showed

normal tissue and 4 non specific inflammatory changes. This may be due tissue from an area of pleura without tubercular granulation.non specific changes may be from an area adjacent to tubercular granulation. Here lies importance of repeating biopsy.N.K.Jain in 2000 studied total 54 cases 33% were tuberculous,16% malignancy 3inadequet 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.

SUMMRY AND CONCLUSION

Tuberculosis is the commenst cause of pleural effusion followed by malignancy and post pneumonic, in that oerder.The commonest combination of symptoms is fever, chest pain, dysponea and dry cough. Characteristic pleuritic chest pain is feature of tuberculosis and post pneumonic while in malignant effusion it is constant and dullache. Mesothlial cells less than 1% usually associated in tuberculosis effusins.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.

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