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DIAGNOSTIC UTILITY OF BRONCHOSCOPY IN PATIENTS WITH PLEURAL EFFUSION OF INDETERMINATE ORIGIN

Pulmonary Medicine

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ABSTRACT

Pleural effusion is one of the commonest problems with which patients present to the hospital. Many studies have reported that in relatively large numbers of patients with pleural effusion,definite diagnosis could not be made, despite extensive investigations.Bronchoscopy has low diagnostic yield in pleural effusion, unless the pleural effusion is secondary to an obstructing lesion in the airway or patient has associated haemoptysis, or effusion is associated with parenchymal radiographic abnormality. This observational prospective study was carried out in 22 patients recruited over 18 months duration at a tertiary care centre. Out of 22 patients, 8 patients were having neoplastic endobronchial growth and one patient was diagnosed to have *Aspergillosis* in Bronchoscopic biopsy and presented as Endobronchial growth.So the Diagnostic yield of bronchoscopy in this study was 40.9%.

KEYWORDS

Pleural effusion ,Bronchoscopy ,Malignant, Haemoptysis, Endobronchial Growth

INTRODUCTION:

Bronchoscopy is a "diagnostic and therapeutic procedure that permits for direct visualization of tracheo-bronchial lumen and procurement of samples with the help of Bronchoscope,a specialized optical device.Flexible television endoscopes with a small camera on its tip were developed allowing for improved imaging quality and electronic data. It is one of the gold standard investigations in pulmonary medicine. Technique of Bronchoscopy has evolved rapidly and chest physicians, anesthetists and cardiothoracic surgeons worldwide routinely perform bronchoscopy in variety of clinical conditions.[1]

Pleural effusion is one of the commonest problems with which patients present to the hospital. Aetiologies of these effusions may be diverse and it depends on the incidence of tuberculosis in the region where the study is conducted. In developing countries like India with a high incidence of tuberculosis, the commonest causes of pleural

effusion include tuberculosis, neoplasia, congestive cardiac failure and pneumonia[2]. Many studies have reported that relatively large numbers of patients with pleural effusion in whom a definite diagnosis could not be made, despite extensive investigations.[3,4] There is no doubt that malignancy is one of the most common cause of undiagnosed exudative pleural effusions. It should be emphasized that there is no urgency to establish this diagnosis, because the presence of the effusion indicates that the patient has metastases to the pleura and the malignancy cannot be cured surgically.

MATERIALS AND METHODS:

This prospective study was carried out in specialized Pulmonary unit of tertiary level Government Medical college & Hospital having well equipped intensive respiratory unit from January 2014 to June 2015.

Study design: Prospective Observational study

Inclusion Criterias:

- Age >13 years
- Patients with Exudative pleural effusion[5], the cause of which remain undiagnosed despite detailed clinical evaluation,all necessary pleural fluid analysis,all imaging work up.

Exclusion Criterias:

- Age < 13 years
- Resting hypoxemia
- Myocardial infarction, angina, unresolving arrhythmia
- Patients with acute respiratory failure requiring ventilator support
- Acute exacerbation of COPD
- Bleeding diathesis
- Congestive cardiac failure
- All Transudative pleural effusion(by Light's criteria[5])

All patients with exudative pleural effusion[5] were evaluated in detail to find out its cause.After detailed clinical evaluation,Pleural fluid was investigated microbiologically,cytologically and biochemically to know the etiology.All necessary imaging work up was done to arrive at etiological diagnosis.

Those patients,in whom this etiological work up was unyielding,were included in the study population of Pleural effusion of indeterminate origin.The patients in study population were prepared for Fibreoptic bronchoscopy (FOB) using Pentax Fiberoptic Bronchoscope (FB-18P).Under all aseptic precaution and informed consent patient underwent FOB and endobronchial biopsy was taken if any endobronchial growth seen.

RESULTS:

22 patients were included in the study after satisfying inclusion and exclusion criterias.They underwent FOB and biopsy was optained if any endobronchial growth seen.

Out of 22 patients,endobronchial growth was seen in 9 patients.Biopsy was taken from the endobronchial growth which was subjected for histopathological and microbiological evaluation.Out of 9 patients with endobronchial growth,8 patients were found out to be malignant and one patient was diagnosed to have *Aspergillosis* in Bronchoscopic biopsy and presented as Endobronchial growth.

DISCUSSION:

In this study,out of 22 patients with pleural effusion of indeterminate origin,9 patients had endobronchial growth on Bronchoscopy which were later characterized as malignant in 8 patients and Aspergillosis in one patient.So in this study diagnostic yield of Bronchoscopy in patients with pleural effusion of indeterminate origin was 40.9%(9/22) and in almost all cases the cause was malignant.

In a Study by D. Jurado Gamez et al[6] in 1995 the yield of bronchoscopy in indeterminate pleural effusion was 29%. Presence and absence of cough and x-ray appearance has major role to play.

Prabhudesai and Mahashur et al. [7] in 1993 had showed in their study that yield of the Bronchoscopy in patients with malignant pleural effusion was 36.5%, which is nearer to our yield of 40.9%.

Feinsilver, A.A. Barrows and S. Sbraman[8] in 1986 demostrated that yield of lung cancer in patients with malignant pleural effusion was 29%, which was, much less than our study.

CONCLUSION:

Bronchoscopy can be a very helpful and informative in patients with pleural effusion of indeterminate origin.It can give a fair yield and can give etiological diagnosis in a significant number of cases.Diagnostic yield of bronchoscopy in this study was 40.9% and in almost all cases the cause was Malignancy.

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