



Role of Bronchoscopy in Malignant Pleural effusion

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ABSTRACT

The aim of this study was to assess the role of Bronchoscopy in plural effusion in cancer condition. Pleural effusion is one of the commonest problems with which patients present to the hospital. Around a million patients worldwide develop pleural effusion each year. This is a Prospective and Observational Study. All patients diagnosed to have pleural effusion by xray, clinical examination and ultrasound examination of pleura if needed will undergo informed. All 32 patients underwent bronchoscopy procedure, 30 patients had endobronchial mass and biopsy was done which was positive for malignancy and 2 patients had bronchial wash cytology positive for malignancy We conclude that bronchoscopy has a definite role in the etiological diagnosis of pleural effusion.

Key Words: Bronchoscopy, xray, Pleural effusion and Malignancy

INTRODUCTION

Flexible bronchoscopy is an invasive procedure that is utilized to visualize the nasal passages, pharynx, larynx, vocal cords, and tracheal bronchial tree. It is utilized for both the diagnosis and treatment of lung disorder[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 causes more persistent undiagnosed exudative pleural effusions than any other cause. It should be emphasized that there is no huge hurry to establish this diagnosis, however, because the presence of the effusion indicates that the patient has metastases to the pleura and the malignancy cannot be cured surgically, most malignant pleural effusions are attributable to tumors that cannot be cured with chemotherapy, and there is no evidence that attempts to create a pleurodesis early improve the quality of the patient's life.

When patients with pleural effusions attributable to the most common types of tumors are analyzed, some interesting observations can be made. The tumor that causes the highest number of pleural effusions is lung cancer⁵. When patients with lung cancer are first evaluated, approximately 15% have a pleural effusion⁶ , but 50% of patients with disseminated lung cancer develop a pleural effusion[5] . The tumor that causes the second highest number of pleural effusions is breast cancer [5] . Patients with breast carcinoma rarely present with a pleural effusion. The mean interval between the diagnosis of the primary tumor and the appearance of a pleural effusion is 2years[7] . Hematologic malignancies (lymphomas and

leukemias) cause the third highest number of malignant pleural effusions. Approximately 10% of patients with Hodgkin's lymphoma and 25% of patients with non-Hodgkin's lymphoma have pleural effusions at presentation.

In the present study we used bronchoscope to find out the causes of pleural effusion cancer patients.

MATERIALS AND METHODS

I. Experimental Design

Thirty two patients in the age group of 20-70 admitted in the unit of T.B and Pulmonary Medicine, Sri Ramachandra University, Porur, Chennai, Tamil Nadu for the study. The conducted study was a Prospective, Observational Study. This includes 21 were males and 11 were females. Patients demographic data, including sex, age, and mild to moderate effusion were recorded.

II. Statistical Analysis

Data were analyzed using the SPSS software package, version 17.0 (SPSS Inc., Chicago, Illinois, USA).

Quantitative data were expressed using range, mean, SD, and median, whereas qualitative data were expressed as frequency and percentage. P value was assumed to be statistically significant at 0.05.

III. ETHICAL CONCERN

Ethical clearance was obtained from the Ethical committee meeting conducted at Sri Ramachandra Medical College, Chennai, Tamil Nadu.

RESULTS

1. Presentation according to SEX in Pleural effusion Cancer Patients

Table 1 shows the presentation according to age in Pleural effusion Cancer Patients This table demonstrates the percentage of male and female in pleural effusion cancer patients attending Sri Ramachadra Medical College, Porur, Chennai. The percentage of presentation according to male and Female were respectively 66%and 34%.

	Frequency	Percent	Valid Percent	Cumulative percent
Valid				
Male	21	66	66	66
Female	11	34	34	100
Total	32	100	100	

2. Presentation according to Smokers in Pleural effusion Cancer Patients

Table 2 shows the presentation according to smokers in Pleural effusion Cancer Patients This table demonstrates the percentage of smokers and non smokers in pleural effusion cancer patients. The percentage of presentation according to Smokers and non smokers were respectively 59%and 41%.

	Frequency	Percent	Valid Percent	Cumulative percent
Valid				
Smokers	19	59	59	59
Non Smokers	13	41	41	100
Total	32	100	100	

3. Presentation according to side of Effusion in Pleural effusion Cancer Patients

Table 3 shows the presentation according to side of effusion in Pleural effusion Cancer Patients This table demonstrates the percentage of side of effusion in pleural effusion cancer patients. The percentage of presentation according to Right side and Left side were respectively 69%and 31%.

	Frequency	Percent	Valid Percent	Cumulative percent
Valid				
Right	22	69	69	69
Left	10	31	31	100
Total	32	100	100	

4. Type of malignancy in Pleural effusion Cancer Patients

Out of 32 patients diagnosed with malignancy, 11 patients had adenocarcinoma (34.4 %), 8 patients had small cell lung cancer (25 %), 2 patients had carcinoid (6.3 %), 6 patients had squamous cell lung cancer (18.8 %), 3 patients had metastatic lung cancer (9.4 %) and 2 patients had unclassifiable (6.3 %)

	Frequency	Percent	Valid Percent	Cumulative percent
Adenocarcinoma	11	34.4	34.4	34.4
Small cell	8	25	25	58.2
Carcinoid	2	6.3	6.3	64.5
Squamous	6	18.8	18.8	83.3
Metastatic Non Small Cell	3	9.4	9.4	92.7
Unclassifiable	2	6.3	6.3	100
Total	32	100	100	100

DISCUSSION

In our prospective study totally 32 patients were included of whom 21 (66%) were males and 11 (34 %) were females. (Table 1) Interestingly All the male patients were smokers and female patients non-smokers (Table 2). Right sided pleural effusion was present in 22 patients and left sided effusion was present in 10 patients. (Table :3)

In this study, all 32 patients underwent bronchoscopy procedure, 30 patients had endobronchial mass and biopsy was done which was positive for malignancy and 2 patients had bronchial wash cytology positive for malignancy. Therefore totally 32 patients were proved to have malignancy and all of them had exudative effusion.

The results of this study coincides with article, which also highlights malignancy as main cause. In a retrospective study Steven H. Feinsilver et al⁸ found that the yield of diagnosing malignancies by FOB in patients with malignant pleural effusion is slightly higher. Hence it is helpful in searching the primary tumour.

Arnab maji et al⁹ have included total of 568 patients, carcinoma of lung was the most commonest cause of malignant pleural effusion and bronchoscopy guided biopsy was given the highest yield of histological diagnosis (84.6%). Out of 32 patients diagnosed of malignancy in my study, 21 were males and 11 were females, all male patients were smokers.

Out of 32 patients, only 9 patients had history of hemoptysis .Chest xray revealed no mediastinal shift in 28 patients and only 4 had mediastinal shift to opposite side.

The following are the histological types of malignancy noted in 32 patients **PRIMARY:** Adenocarcinoma - 11 patients (34.4 %) Squamous cell lung cancer - 6 patients (18.8 %)

Small cell lung cancer - 8 patients (25 %) Carcinoid - 2 patients (6.3). **SECONDARY:** Metastatic lung cancer -3 patients (9.4 %). **UNCLASSIFIABLE:** 2 patients (6.3 %)(Table:4)

This study illustrates among 32 patients, 27 patient are diagnosed to have primary bronchial malignancy and these results were similar to R.W.Heaton et al¹ discussed, they included totally 32 patients, 14 patients proved malignancy primary bronchial : 9; secondary 2, unknown primary were 3.

CONCLUSION

We conclude that bronchoscopy has a definite role in the etiological diagnosis of pleural effusion. In the present era of evidence based medicine we can go for a safer intervention like fiberoptic bronchoscopy if the cases of pleural fluid analysis are inconclusive.

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