HAEMOPTYSIS - INDICATIONS FOR BRONCHOSCOPY

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ABSTRACT

Fifty patients who were taken up for bronchoscopy for evaluation of haemoptysis have been studied retrospectively in order to confirm specific diagnosis, identify the bleeding site and find the incidence of malignancy and other lesions in lower respiratory tract. We encountered over all 30% diagnostic yield. Malignancy was found in 4% of our patients and overall diagnostic yield was higher (35.7%) in patients of more than 40 years of age as compared to that (26.6%) in patients younger than 40 years of age. Criteria and indications of bronchoscopic examination in haemoptysis have been described.

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KEY WORDS : Haemoptysis; Bronchoscopy.

Introduction

Haemoptysis is responsible for upto 15% of all pulmonary consultations [1]. It is a non-specific symptom having been reported in over 100 different disease entities [2]. Bronchoscopy is commonly performed for anatomic localization of bleeding site, finding the cause for bleeding and to exclude neoplasm. While there is agreement that patients with focal roentgenographic abnormalities suggestive of malignancy require bronchoscopic evaluation the indications for patients with normal or non-localizing roentgenographic abnormalities remain controversial. Some authors have found bronchogenic carcinoma in as many as 15% to 20% of bronchoscopies in patients with non-localizing or normal roentgenograms [3,4] and have recommended an aggressive approach to diagnosis. Others have found malignant risk much less and recommend a more conservative approach [5,6].

We reviewed our experience with bronchoscopy for haemoptysis to determine diagnostic yields in patients with and without radiographic abnormalities and also to determine the rates of bronchogenic carcinoma.

Material and Methods

We retrospectively reviewed the broncho-

scopy record of both in-patients and out-patients at Military Hospital, Jalandhar and Command Hospital, Chandigarh from Jul 89 to May 91. Records in which haemoptysis was listed as a major indication for bronchoscopy were selected for further review. During the period there were 50 patients in whom haemoptysis was listed as the major indication for bronchoscopy. Most of the procedures were done with fibre-optic bronchoscope under LA.

Patients had been fully examined clinically and routine investigations were done. Chest roentgenograms were classified as normal or focally abnormal. Specifically patients with a definite mass, cavity, pleural effusion or localized atelectasis were considered as having localizing abnormalities.

Information regarding age, sex, smoking history, duration of haemoptysis and bronchoscopic findings were extracted from the records. Data was analysed to determine the diagnostic yield with particular reference to age of patients.

Results

50 patients ranging in age from 20-70 years underwent bronchoscopy as part of evaluation for haemoptysis during the study period. The patients were predominantly male

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and approximately 66% were smokers; of the 50 patients, 6 had abnormal radiograph and 44 had normal chest roentgenogram. Abnormalities noted were lung abscess in two patients and pneumonia, bronchiectasis, mediastinal emphysema and tuberculosis in one each. Majority of the patients (31) being in military service were below 40 years of age and 19 were above 40 years of age.

The results of bronchoscopy by diagnosis are presented in Table-1 for patients with both normal and abnormal radiograph. Break-down by age in patients with normal radiograph is depicted in Table-2 and irrespective of chest radiograph in Table-3.

TABLE 1
Profile of bronchoscopic diagnosis in patients with hemoptysis

Findings	No of patients	Percentage
Normal	32	64%
Malignancy	2	4%
Bleeding site seen, no diagnosis established	6	12%
Tracheitis	1	2%
Bronchitis	4	8%
Trauma to trachea	1	2%
Bronchiectasis	1	2%
Tuberculosis	1	2%
Abscess	2	4%
Total	50 cases	

The overall diagnostic yield (specific diagnosis or bleeding site identified) was 36%.

TABLE 2
Bronchoscopic diagnosis by age in patients with normal radiograph

	Age less than 40 yrs	Age more than 40 yrs
Malignancy	0	2 (4%)
Tracheitis	0	1 (2%)
Bleeding site seen, no diagnosis	5 (10%)	1 (2%)
Bronchitis	3 (6%)	1 (2%)
Normal	22 (44%)	9 (18%)
Total	30	14

Neoplasm was identified in only 4% and bronchogenic carcinoma in only 2% of proce-

dures. Patients with carcinoma were in more than 40 yrs age group, had greater cumulative pack year smoking history and duration of haemoptysis was of more than 2 weeks duration.

TABLE 3
Bronchoscopic diagnosis by age irrespective of chest radiograph

	Age less than 40 yrs	Age less than 40 yrs
Malignancy	0	2 (4%)
Tracheitis	0	1 (2%)
Bleeding site seen, no diagnosis	5 (10%)	1 (2%)
Bronchitis	3 (6%)	1 (2%)
Tuberculosis	1 (2%)	0
Bronchiectasis	0	1 (2%)
Lung abscess	0	2 (4%)
Pneumonitis	0	1 (2%)
Trauma to trachea	0	1 (2%)
Normal	22 (44%)	9 (18%)
Total	31 (62%)	19 (38%)

Bronchoscopy was performed in 30 patients younger than 40 years of age with normal chest X-ray. The diagnostic yield was 26.6% compared with 35.7% in patients older than 40 years. A normal bronchoscopic examination was most common finding seen in 64% of bronchoscopies. A specific diagnosis other than bronchitis was found in only 8% of the procedures. These included one patient with trauma, one with tuberculosis and two with malignancy.

Discussion

In our review, patients with abnormal chest X-ray had a very high yield from bronchoscopy. Bronchogenic carcinoma however was found only in 4% procedures, a rate different from many previous studies. An expeditious bronchoscopy is clearly indicated in patients with haemoptysis and localizing abnormalities.

The indications for patients with normal chest X-ray are less clear. Earlier studies are at odds regarding the risk of bronchogenic carcinoma in this group of patients. Kallenbach [3], Zavala [4], Gong [6] and Richardson

et al [8] identified bronchogenic carcinoma in 16%, 22%, 7% and 13% of patients respectively with haemoptysis and normal chest X-ray. They recommend early bronchoscopy in unexplained haemoptysis. Others have reached a different conclusion. Ackert *et al* [9] found one neoplasm in 331 patients with haemoptysis and normal chest roentgenogram. Peter *et al* [5] suggested the following criteria to determine the need for bronchoscopy — presence of abnormal chest X-ray, age more than 40 years or haemoptysis lasting more than one week. More recently attempts at optimising bronchoscopic yield by identification of high risk patient have been undertaken by several investigators. Jackson *et al* [10] found bronchogenic carcinoma in 4.2% of their patients hence they suggested that bronchoscopy in patients younger than 40 years is not routinely indicated. Poe *et al* [11] identified bronchogenic carcinoma in 6% of 196 bronchoscopies for haemoptysis. They suggested the following criteria : older than 50 years, male sex, more than 40 pack year smoking history. Cortesc *et al* [12] have suggested substituting age 40 years old in Poe's criteria to increase diagnostic yield. Our findings according to this are shown in Table 3.

Routine bronchoscopy is associated with low morbidity and offers possible benefits of early diagnosis of carcinoma with greater likelihood of cure [12]. Therefore an aggressive approach in patients more than 40 years is justified. According to some workers where clinical examination and routine roentgenography does not reveal any abnormality, a case of haemoptysis should be subjected not only to bronchoscopy but bronchography and CT scan of thorax. This has resulted in encouraging diagnostic yield.

While identification of patients with bronchogenic carcinoma is the major indication for bronchoscopy in patients with haemoptysis, other potential indications include localization of bleeding site in case intervention is required, establishing a specific diagnosis, endobronchial intervention in

continued haemorrhage, excluding bronchitis and for reassurance in a small group of patients. A normal bronchoscopy in our study was the commonest finding a few showed inflammatory process whereas bleeding site could be identified in some. The most reasonable initial approach would thus appear to be observation after negative otolaryngologic examination and negative results of cytology of sputum reserving bronchoscopy for patients with persistent haemoptysis, those who develop focal abnormalities on chest X-ray or those with high risk of malignancy.

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