ORIGINAL RESEARCH PAPER

Volume-8 | Issue-7 | July - 2019 | PRINT ISSN No. 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

TO STUDY BRONCHOSCOPIC FINDINGS IN VARIOUS LUNG PATHOLOGIES

Pulmonary Medicine

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ABSTRACT

Bronchoscopy is a "diagnostic and therapeutic procedure that permits for direct visualization of tracheo-bronchial lumen with the help of Bronchoscope,a specialized optical device. Fiberoptic Bronchoscope is one of the most important advances in the field of pulmonary medicine. Till now, numbers of techniques other than thoracotomy have been developed for indeterminate lung diseases but none have greater impact than fiberoptic bronchoscopy. Apart from visualizing tracheobronchial tree,it permits sampling and therapeutic interventions.

This observational prospective study was carried out in a tertiary care hospital with specialized Pulmonary unit equipped with intensive respiratory unit, pulmonary function testing (PFT) lab with facilities of DLCO and Fiberoptic Bronchoscopy unit with video assistance.The aim of the study was to analyse the bronchoscopic findings of patient presenting with various respiratory complains

This study was carried out in 95 patients having varity of respiratory complaints recruited over one and half year's duration after applying inclusion and exclusion criterias. In our study most common finding of Bronchoscopy was Endobronchial grwoth in 36 (37.89%) patients. Other findings were vocal cord abnormalities in 26 (27.37%) patients, inflammation in 21 (22.11%) patients, extrinsic compression in 6 (6.32%) patients, concentric narrowing in 5 (5.266%), mucosal seeding in 3 (3.16%) patients,and mucosal rugosity in 2 (2.15%). Foreign body and leukoplakia were observed in one patients each. Normal bronchoscopy was seen in 19 (20.00%) patients.

KEYWORDS

PFT,DLCO,Fibreoptic Bronchoscopy, Tracheobronchial tree, Vocal cord abnormalities

INTRODUCTION

Fiberoptic bronchoscopy (FOB) is an important entity in the armamentarium of procedures listed in diagnosis of respiratory problems.[1] It is a universally accepted procedure both in the diagnosis and therapy of various pulmonary disorders. This procedure allows careful inspection of the bronchial tree for endobronchial lesion and foreign body and also helps in recovery of deep respiratory secretions,brushing and biopsy, which is useful in diagnosis of uncommon infections, neoplasm and other non infectious causes. FOB not only helps in assessing the disease area but also provides better bacteriological and histological yield thus helping to reach a definite diagnosis.[1,2]

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, pulmonary function testing (PFT) lab with facilities of DLCO and Fiberoptic Bronchoscopy unit with video assistance.

This study was carried out in 95 patients recruited over one and half year's duration. Cases were selected from patients attending outpatient department, patients admitted in wards, intensive respiratory units and patients referred to us by various departments with variety of respiratory complaints. Patients were recruited with following inclusion and exclusion criteria.

Inclusion criteria

- Age ≥ 13 years
- Non resolving consolidation
- Pleural effusion of undetermined origin
- Lung abscess
- Collapse and consolidation
- Suspected neoplastic lesion on radiology
- Willing to participate in study

Exclusion criteria

- 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

Patient Evaluation

After initial screening, and signing of informed consent form, patient were further evaluated. According to the study protocol, detailed *clinical history* regarding the onset and progress of the disease was taken. Symptoms studied in detail were cough, chest pain, fever, breathlessness, haemoptysis, change in voice, weight loss, anorexia, symptoms of superior vena cava obstruction, smoking habits, past history of the diabetes, hypertension, and tuberculosis.

The *general examination* was carried out with special reference to oral hygiene, cyanosis, lymphadenopathy, clubbing, & hypertrophic pulmonary osteoarthropathy.

After clinical examination, detailed *examination of the respiratory system* was carried out and provisional diagnosis was made. All other systems were thoroughly examined. Patients underwent following examinations before Bronchoscopy such as:

- *Blood investigations* like blood sugar level, liver function test, kidney function test and complete haemogram consisting of haemoglobin. Complete blood count and erythrocyte sedimentation rate were done in all patients.
- *Sputum examination* such as Grams, Z-N staining and sputum cytology for malignant cells was done in all patients.
- *X-ray chest* PA and lateral view done in all patients and HRCT and CT Chest with contrast were done when necessary.
- *Ultrasonography* abdomen, pelvis and chest were done in all patients and in whom lesion was localized on ultrasonography, ultrasonography guided transthoracic fine needle aspiration cytology was done for histological typing and nature of the lesion.
- *Electrocardiogram* was done in all patients of Anesthesia fitness.
- *Indirect laryngoscopy* was done in all patients to rule out vocal cord abnormality.
- *Pleural fluid examination* for 1) cytology 2) Gram, Z-N stain and culture, sugar Lactate dehydrogenase, Proteins was done in cases with pleural effusion.
- *Lymph node fine needle aspiration cytology* done in patients having lymphadenopathy.

After all investigations, preanaesthetic checkup and written, informed consent, patients were prepared for bronchoscopy.

RESULTS

This study was carried out in tertiary Government hospital with specialized pulmonary care unit in 95 patients who had symptoms like cough, fever, breathlessness. These patients had various radiological features. Out of 95 patients 56 were proved to be having malignant disease and 39 were having non malignant disease Majority of patients 57 (60%) in this study were in 51-70 age group. Mean age of patients having lung cancer was 56.73. Mean age group of all patients in the study was 52.26. Youngest patient diagnosed malignant was 35 years age group and oldest one was 75 years age group.

One patient had one or more finding on Bronchoscopy. In our study most common finding of Bronchoscopy was Endobronchial grwoth in 36 (37.89%) patients. Other findings were vocal cord abnormalities in 26 (27.37%) patients, inflammation in 21 (22.11%) patients, extrinsic compression in 6 (6.32%) patients, concentric narrowing in 5 (5.266%), mucosal seeding in 3 (3.16%) patients,and mucosal rugosity in 2 (2.15%). Foreign body and leukoplakia were observed in one patients each. Normal bronchoscopy was seen in 19 (20.00%) patients.

DISCUSSION

Most common Bronchoscopic finding in this study was Endobronchial growth in 36 patients (37.89%). Remaining diagnosed findings by order of reducing frequency were vocal cord abnormalities (26, 27.37%), inflammation (21, 22.11%), external compression (6, 6.32%). The other findings were concentric bronchial narrowing, mucosal seeding and mucosal rugosity, and foreign body. Leukoplakia was found in one patient who had vocal cord abnormality. The bronchoscopy was normal in 19 (20.0%) patients. Singh R, et al[3] in 2008 reported endobronchial growth (30.57%) as most common finding followed by normal bronchoscopy in 29% of patients. Inflamed mucosa and purulent secretions were observed in 9.8% of patients, extrinsic compression in 3.59% of patients, leukoplakia in 0.53% of patients. Other rare observations were necrotic material, carbon deposits and vocal cord palsies. In another study, Manickam TG, et al.[4] in 1995 reported intraluminal growth in 15.6% and foreign body in 1.4% of patients. Kiranjit et al (2015)[5] from India reported that fiberoptic bronchoscopy was diagnostic in 40% cases. Pulmonary TB was detected in 12%, malignancy in 27% and 1% had intra-bronchial aspergilloma.

Thus it can be concluded that Bronchoscopy is an important tool to evaluate patients with various lung pathologies.It helps not only to visualize tracheobronchial tree but also to retrieve samples for investigations.

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