IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 10 Ser.4 (October. 2021), PP 09-12
www.iosrjournals.org

Clinical and Radiological Profile of Endobronchial Lesions on Fiberoptic Bronchoscopy

Dr.B.Girija Sindhu[1], Dr.V.N.Raju[2] ,Dr.Y.Gayatri Devi[3], Dr.B.Padmaja[4]
[1](Department of Respiratory Medicine, Andhra Medical College, Visakhapatnam, India)
[2](Department of Respiratory Medicine, Andhra Medical College, Visakhapatnam, India)

Abstract
Aim and Objectives*: To study the clinical and radiological profile of endobronchial lesions detected during bronchoscopy.*
Materials and Methods*: A cross-sectional retrospective observational study done in 48 patientsat Government hospital for chest and communicable diseases, Visakhapatnam. Demographic, clinical, and radiological profile was prepared for all patients above 18 years of age, and relevant blood and radiological investigations were conducted. Patients detected to have endobronchial lesion during fiberoptic bronchoscopy were selected for the study. Bronchial washings, bronchial biopsy, and bronchial brushing were done and sent for examination.*
Results*: Male patients were more in number (66.67%) with most of patients among 40 -60 years of age with mean age of the population 50.27 years. Most common symptom was cough (70.83%).Central mass lesion was most common radiological presentation(54.17%) .Endobronchial growth was most common endobronchial lesion (50%) with carcinoma lung most common diagnosis (70.83%). Squamous cell carcinoma was most common histopathological finding (37.15%).*
Conclusion*: Clinical, radiological and bronchoscopic profile of endobronchial lesion is an important information which helps clinician and pathologist to reach final diagnosis. Carcinoma lung is most common diagnosis made in our study as most common endobronchial lesions at age of our patients are malignant as reported in literature.*
Key Words: *FOB- Fiberoptic Bronchoscopy, endobronchial lesions, malignancy.*

Date of Submission: 29-09-2021 Date of Acceptance: 12-10-2021

I. Introduction

FOB has now become a very important tool in diagnosis and treatment of endobronchial lesions. Endobronchial lesion is any lesion, benign or malignant, arising from bronchial wall. Fiberoptic bronchoscopy informs us about types and number of lesions, involvement of bronchial segments, and may help in staging and mode of therapy for carcinoma. The present study was undertaken to study clinical, radiological, and histopathological profile of endobronchial lesions detected during bronchoscopy.

II. Materials And Methods

This is a cross sectional retrospective observational study done in 48 patients.All patients scheduled for fiberoptic bronchoscopy were evaluated with case history and detailed clinical examination. Following investigations were carried out: Hemoglobin, CT,BT, international normalized ratio if bleeding and clotting times are elevated or patients on anti-coagulants, sputum for AFB (acid fast bacillus) and CBNAAT(Cartridge-Based Nucleic Acid Amplification Test), and HIV (human immunodeficiency virus) test, HBsAg (Hepatitis B surface antigen). Patients were explained the procedure of FOB and consent was taken.All patients detected to have endobronchial lesions were included in the study.

Inclusion criteria:
All patients above 18 years of age undergoing fiberoptic bronchoscopy and detected to have endobronchial lesion at a tertiary carecenter.

Exclusion criteria:
(1) Lack of patient's consent for the study.
(2) HIV and HBsAg positive cases
(3) Deranged coagulation profile
(4) Compromised cardiovascular status

(5) Sputum for acid fast bacilli/CBNAAT positive cases

Study design

(1) A cross-sectional retrospective observational study to determine the clinical and radiological profile of endobronchial lesions and their pathological correlation.

(2) The sample size was 48 patients

Patients underwent bronchial washings, bronchial biopsy, and bronchial brushing. Bronchial washings were sent for ZiehlNeelsen stain and Mycobacterium tuberculosis culture sensitivity in Lowenstein Jensen medium, Gram's stain, culture sensitivity, fungal stain, and malignant cells. Bronchial brushing was sent for cytology. Bronchial biopsy specimens were sent for histopathological examination

III. Results

Age and sex distribution:

A total of 48 patients were included in the study. Of 48 patients, majority were males constituting about 66.67%(n=32) , females constituting about 33.33% (n=16) .Most of the patients. Most of the patients belonged to the age group 40-60 years with mean age of 50.27 years.

Symptomatology:

The predominant symptom in the study was cough in 70.8%(n=34) followed by breathlessness in 58.33%(n=28), chest pain in 41.66%(n=20), fever in 20.83%(n=10) , hemoptysis in 10.41%(n=5) and hoarseness of voice in 6.25%(n=3).

Table 1:SYMPTOMATOLOGY

Symptom	No. of patients	percentage
Cough	34	70.83%
Breathlessness	28	58.33%
Chest pain	20	41.66%
Hemoptysis	5	10.41%
Fever	10	20.83%
Hoarseness of voice	3	6.25%

Radiological presentation

In the study, the most common radiological presentation was central mass lesion in 54.17%(n=26) , followed by collapse in 27.08%(n=13) ,Pneumonia in 18.75%(n=9) .

Table 2: RADIOLOGICAL PRESENTATION

Type of lesion	No. of patients	percentage
Central Mass	26	54.17%
Collapse	13	27.08%
Pneumonia	9	18.75%

Bronchoscopic findings:

Flexible Fiberoptic bronchoscopy was done in all 48 patients in the present study. Of thesepatients**,** most commonfinding was endobronchial growth in 50% (n=24) followed by inflammatory changes in 29.17% (n=14) followed by atrophic mucosa, bronchostenosis, distorted anatomy in 20.83%(n=10).

Procedure and results:

Out of 48 patients, bronchial washings were done in all the patients with a positive yield of 16.66%(n=8) . Bronchial brushings were taken in 20 patients with a positive yield of 30%(n=6) and biopsy was done in 24 patients with a positive yield of 83.33%(n=20).

Table 3:PROCEDURE AND RESULTS

Procedure	**Positive**	**Percentage**
Bronchial washings	8/48	16.66%
Brushings	6/20	30%
Biopsy	20/24	83.33%

Histopathology and cytology

Among the 48 patients, most common cell type was squamous cell carcinoma in 37.5%(n= 18) followed by adenocarcinoma in 20.83%(n= 10) and small cell carcinoma in 6.25%(n= 3) and NSCLC in 6.25%(n=3)

Etiology

Among the 48 patients in this study, malignancy was the most common etiology in 70.83%(n=34) and benign conditions were present in 29.16%(n=14).In patients with malignancy, squamous cell carcinoma was the most common type.Tuberculosis was observed in 6.25%(n= 3) , non-specific inflammatory changes in 14.5%(n=7) and inconclusive in 8.33%(n= 4)

Table 4:ETIOLOGY

Etiology	No. of patients	Percentage
Malignancy	**34**	**70.83%**
Squamous cell carcinoma	18	37.5%
Adenocarcinoma	10	20.83%
Small cell carcinoma	3	6.25%
Non small cell carcinoma	3	6.25%
Benign	**14**	**29.16%**
Tuberculosis	3	6.25%
Non-specific inflammatory changes	7	14.5%
Inconclusive	4	8.33%

IV. Discussion

Endobronchial lesions are seen commonly during bronchoscopy. Bronchoscopy and the techniques used in bronchoscopy help in the diagnosis of the endobronchial lesions. Most of these lesions are malignant, but benign conditions can also be presented as endobronchial lesions. In the present study, the diagnostic yield of bronchoscopy is 77.08%. In a study done by Kondal Rao Kola et al , the diagnostic yield of bronchoscopy was 56.25. This may be due to the large study population in that study.

Table 5:COMPARISON OF DIAGNOSTIC YIELD OF FOB

STUDY	DIAGNOSTIC YIELD
Present study	77.08%
Kondal Rao kola et al study	56.25%

In the present study, there is a male preponderance of 66.67%. The mean age of the patients in the present study was 50.27 years. Most of them belonged to the age group of 41-60 years. This is similar to most of the previous studies.

In the present study, cough was the predominant symptom in 70.83% followed by breathlessness in 58.33%, chest pain in 41.66%, fever in 20.83% , hemoptysis in 10.41% and hoarseness of voice in 6.25%. In Sandeep Rana et al study,Most common complaint was cough in 48%, followed by breathlessness on exertion in 44%, chest pain in 34%. In Kondala Rao Kola et al study, cough is the most common symptom occurring in 81.25%, followed by shortness of breath in 56.25%. in majority of the studies, cough and breathlessness were the most common symptoms which is similar to the present study.

In the present study, the most common radiological presentation was central mass lesion in 54.17% , followed by collapse in 27.08% , pneumonia in 18.75%. In Sandeep Rana et al study the most common radiological finding was mass lesion which was detected in 52% patients, and collapse consolidation was found in 26% patients. In Kondal Rao Kola et al study, pneumonia was the most common radiological presentation 46.8% followed by mass in 37.5% and collapse in 15.6%.

In the present study, all the 48 patients underwent bronchoscopy. Among them most commonfinding was endobronchial growth in50% followed by inflammatory changes in 29.17% followed by bronchostenosis, atrophic mucosa, distorted anatomy in 20.83%. This was similar to the study done by Kondal Rao Kola et al in which endobronchial growth was the most common finding in 40% followed by inflammatory changes of the endobronchial lumen in 35%, and bronchostenosis, atrophic mucosa, distorted anatomy were found in 25%.

In the present study, during bronchoscopy, bronchial washings, brushings and biopsy were the procedures done. The positive yield of bronchial washings was 16.66% , for bronchial brushings it was 30% and for biopsy the positive yield was 83.33%.In Mak VH et al study biopsy gave a positive result in 76%, washings in 49.6%, brushing in 52%. Lam et al., reported the diagnostic yield of biopsy in 82% ofendobronchial lesions. In kondalrao kola et al study, Bronchial washings had a positive yield in 20%, endobronchial biopsy had a positive yield of 88.23% and bronchial brushings showed positive yield in 28% 0f the patients. Endobronchial biopsy had a highest yield in the present study which was similar to most of the previous studies.

In the present study most common pathology was malignancy in 70.83% followed by benign conditions in 29.16%. This was similar to a study done by srikanti Raghu et al on FOB as a diagnostic tool in endobronchial lesions. The most common histopathological finding in the present study was squamous cell carcinoma followed by adenocarcinoma. This was similar to study done by Sandeep Rana et al in which most common histopathological type of carcinoma was squamous cell carcinoma.

V. Conclusion

FOB was extremely useful in the diagnosis of endbronchial lesions. This study shows the worth of bronchoscopy to arrive at a diagnosis of endobronchial lesions. It is the mainstay of investigation for lung cancer. It also has a role in disease staging and for therapeutic interventions. Bronchoscopy had a positive yield in 77.08%. Endobronchial biopsy is the procedure with highest yield. Malignancy was the most common pathology. Among the histopathological variants, squamous cell carcinoma was the most common.

References

[1]. Rana S, Bhattacharyya BD, Katoch CD, Kishore K, Arora A. Clinical, radiological, and histopathological profile of patients with endobronchial lesions on fiber-optic bronchoscopy. The Journal of Association of Chest Physicians. 2018 Jul 1;6(2):53.

[2]. Kondala Rao Kola, HarshaKiranLalam ,Ramprasad Reddy Nandyala , SreeramKumar.K. Clinical and radiological profile of patients with endobronchial lesions. IP Indian Journal of Immunology and Respiratory Medicine, April-June, 2018;3(2):72-76.

[3]. Raghu S, Rachaputi CS, Somisetty LK. Flexible fiberoptic bronchoscopy (FOB) as a diagnostic tool in endobronchial lesions. Journal of Dr. NTR University of Health Sciences. 2016 Jul 1;5(3):173.

[4]. Mak VH, Johnston ID, Hetzel MR, Grubb C. Value of washings and brushings at fibreoptic bronchoscopy in the diagnosis of lung cancer. Thorax. 1990 May 1;45(5):373-6.

[5]. Lam WK, So SY, Hsu C, Yu DY. Fibreoptic bronchoscopy in the diagnosis of bronchial cancer: comparison of washings, brushings and biopsies in central and peripheral tumours. Clinical oncology. 1983 Mar 1;9(1):35-42.

[6]. Kulkarni G, Ambadekar S. Study of Clinicoradiological Profile of Patients Undergoing Fiberoptic Bronchoscopy. MVP Journal of Medical Sciences. 2017 May 22;4(1):70-4.

[7]. Halima KM, Makled SF, Basiony FS. Histopathological patterns of endobronchial lesions and the role of flexible fiberoptic bronchoscopy in their diagnosis. Al-AzharAssiut Medical Journal. 2020 Jul 1;18(3):284.

[8]. Munje RP, Gour SM, Vandana PB, Sonawane N, Atram J, Muley S. Clinicoradiopathological Profile of Lung Cancer in A Tertiary care hospital.

[9]. Wong PC, Lee J, Lam FM, Wong CF, Chau CH, Yew WW. Fibreoptic bronchoscopy in the diagnosis of lung cancer. Monaldi archives for chest disease= ArchivioMonaldi per le malattiedeltorace. 1999 Oct 1;54(5):394-8.

[10]. Jones AM, Hanson IM, Armstrong GR, O'DRISCOLL BR. Value and accuracy of cytology in addition to histology in the diagnosis of lung cancer at flexible bronchoscopy. Respiratory medicine. 2001 May 1;95(5):374-8.

[11]. Bodh A, Kaushal V, Kashyap S, Gulati A. Cytohistological correlation in diagnosis of lung tumors by using fiberoptic bronchoscopy: Study of 200 cases. Indian Journal of Pathology and Microbiology. 2013 Apr 1;56(2):84.

[12]. Arroliga AC, Matthay RA. The role of bronchoscopy in lung cancer. Clinics in chest medicine. 1993 Mar 1;14(1):87-98.

[13]. Gupta R, Chowdhary I, Singh P. Clinical, Radiological and Histological profile of Primary Lung Carcinomas. JK Science. 2015 Jul 1;17(3).

[14]. Sidhu K, Ahir GC, Bansal SK. Study of Clinical Profile and Fiber Optic Bronchoscopy Findings in Patients Diagnosed with Lung Cancer and Their Correlation with Histopathological Findings. JOURNAL OF CONTEMPORARY MEDICINE. 2015 Jan;3(1):145.

[15]. Liebler JM, Markin CJ. Fiberoptic bronchoscopy for diagnosis and treatment. Critical care clinics. 2000 Jan 1;16(1):83-100.

Dr.B.GirijaSindhu, et. al. "Clinical and Radiological Profile of Endobronchial Lesions on Fiberoptic Bronchoscopy." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(10), 2021, pp. 09-12.