

Original Research Paper**Role of computed tomography guided transthoracic aspiration in diagnosing bronchogenic carcinoma**AUTHORS: *Dr. Praveena.S¹, Dr. Fahima Begam²*¹(*Department of pulmonary medicine, Assistant Professor*)²(*Department of general medicine, Assistant Professor*)**Corresponding Author:** *Dr fahima Began (Department of general medicine, Assistant Professor)***Article Received:** 01 January 2022 **Revised:** 15 January 2022**Accepted:** 25 January 2022**ABSTRACT:**

Introduction: Bronchogenic carcinoma is the second most commonest cancer in both men & women next to colon carcinoma and breast carcinoma respectively. Though first noted in USA and European countries, now turned into world wide epidemic with increasing use of tobacco. **Objectives:** 1. To study the computed tomography findings in bronchogenic carcinoma 2. To assess the role of CT guided FNAC in diagnosing bronchogenic carcinoma **Materials & methods:** This descriptive study included 100 consecutive patient suspicious of bronchogenic carcinoma admitted through outpatient block in the department of pulmonary medicine during the period of June 2021 to December 2021. They are subjected to computed tomography, fine needle aspiration and sent for histopathological examination and the findings are correlated. **Results:** 60-70 years age group is commonly affected with bronchogenic carcinoma. Commonest aetiological factor is smoking. Mass lesion is commonest computed tomography finding. Right sided lesion are more common than left. Most of the lesions are presented with irregular margins. CT guided FNAC was done in all cases but yield was obtained in 65% of cases. Adenocarcinoma is commonest histopathological finding. **Conclusion:** Computed tomography which is the best noninvasive investigation that clearly defines the size, contour, extent of bronchogenic carcinoma and also helps in staging the bronchogenic carcinoma. CT guided fine needle aspiration cytology is simple and safe technique in diagnosing bronchogenic carcinoma.

INTRODUCTION:

Lung cancer accounts for 6.8% of all malignancies in India. Thus primary carcinoma of lung is a major health problem with a general grim progression. Hence considered as a world wide epidemic. Bronchogenic carcinoma has a multifact presentation. In nearly half of the cases it presents as a solitary pulmonary nodule or mass. In 1/3rd cases it appears as parenchymal consolidation mimicking lobar pneumonia. In remaining of cases it may present as collapse, intrabronchial growth, pleural effusion(33%), central lymphnode metastasis(20%), lymphangitis carcinomatosa associated with non metastatic complications. CT has added tremendous insight into disorders of the lungs, mediastinum & chest wall. Crosssectional image depicted by CT provide a image added dimension in the investigation of chest pathology and the increased resolution permits identification of many findings that are not visible on the plain radiograph. Malignant nodules identifiable on chest radiograph are of size 0.8-1cm in diameter although nodules 0.5-0.6 cms are occasionally be seen . It is estimated that 27 doublings are needed to reach 0.5 cm,

the smallest detectable lesion on chest xray. By the time a nodule is 1 cm in diameter, it represents 30 doublings twice and about 1 million tumour cells, thus delaying the diagnosis. Hence this study aims at evaluating the success rate of CT guided fine needle aspiration cytology in diagnosis of primary or metastatic bronchogenic carcinoma. While TTNB provides core biopsy material from pulmonary nodules for histological sampling, TTNA also gives good yield with lesser complications.

MATERIALS AND METHODS:

This observational descriptive study included 100 patients suspicious of bronchogenic carcinoma admitted in inpatient block in department of pulmonary medicine during the period of June 2021 to December 2021.

Inclusion criteria:

All the patients with history suggestive of bronchogenic carcinoma on clinical & radiological ground, were admitted and selected for computed tomography and later subjected to histopathological sampling by transthoracic needle aspiration.

Exclusion criteria:

The following patients are excluded from the study:

- 1.patients diagnosed in other institutions
- 2.patients admitted with suspicious of lung carcinoma and later diagnosed as benign tumour
- 3.patients having lung metastasis with primary other than bronchogenic carcinoma

RESULTS:

Males are commonly affected with bronchogenic carcinoma. Age group of 60-70 years are more

Table 1: AGE

Age in years	No. of patients	Percentage
41-50	10	12
51-60	30	30
61-70	40	40
71-80	12	10
>80	8	8

susceptible to bronchogenic carcinoma. Smoking stands as a commonest aetiological factor accounting to 70% of cases. Mass lesion with irregular margins is the commonest finding on computed tomography. Adenocarcinoma accounting to 55% of cases is the commonest histopathological finding. CT guided FNAC is the more accurate test with a good yield of 67%.

Table 2: GENDER DISTRIBUTION

	No. of patients	Percentage
Males	80	80
Females	20	20

Table 3: SMOKING STATUS

	No . of patients	Percentage
Smokers	70	70
Nonsmokers	30	30

Table 4 : RADIOLOGICAL FINDINGS

X-Ray findings	No. of patients	Percentage
Mass lesion	60	60
Hilar adenopathy	30	30
Rib erosion	8	8
Pleural effusion	25	25

Table 5 : COMPUTED TOMOGRAPHY FINDINGS

Radiological findings	No . of patients	Percentage
Irregular margins	80	80
lobulation	60	60
Smooth margins	12	12
Cavitation	15	15
Calcification	27	27
Air bronchogram	8	8
Pleural effusion	25	25
Chest invasion	12	12
Superior venacaval obstruction	5	5

Table 6: HISTOPATHOLOGICAL FINDINGS

Type	No. of patients	Percentage
Adenocarcinoma	45	55
Squamous cell carcinoma	15	25
Small cell carcinoma	7	8
Typing not possible	23	12

DISCUSSION:

The clinicopathological picture is studied in 100 cases of bronchogenic carcinoma during the period of June 2021 to December 2021. The role of CT guided TTNA in diagnosing bronchogenic carcinoma is also evaluated. The peak incidence occurs in 6th decade. The incidence was 40% in 61-70 years age group followed by 30% in 51-60 years age group, 12% in 71-80 years age group, 10% in 41-50 years age group and 8% in > 80 years age group. This study is coinciding with the study done by Haque AK et al.,¹ According to this study bronchogenic carcinoma is more common in males accounting to 80% while it is only 20% in females. Our study is supported by the evidence of study done by Haque AK et al.,¹ Smoking is the commonest etiological factor in this study affecting in 70% of the cases. The findings are concomitant with studies done by Chockalingam A et al.,⁴ Among chest X ray findings mass lesion is the most common finding accounting to 60% followed by hilar lymphadenopathy with 30%, rib erosion accounting to 8%, pleural effusion in 25% of cases. Marked irregular margins is the characteristic finding in 80% cases followed by lobulation in 60% of cases. Cavitation is seen in 15% of the cases and calcification in 15% of cases. SVCO is seen in 5% of cases. Transthoracic needle aspiration is done in all cases but results were obtained in 67% of cases. Remaining 23% of cases were indeterminate. Out of 67%, 45% were adenocarcinoma, 15% were of squamous variety, 7% were small cell carcinoma. Similar findings were found in studies done by Elon Gale.M.etal.,²

CONCLUSION:

Computed tomography is the best noninvasive investigation which clearly defines the size, contour, extent of bronchogenic carcinoma and also helps in staging of bronchogenic carcinoma. Computed tomography guided transthoracic aspiration cytology is simple and safe technique in diagnosing bronchogenic carcinoma

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