Original Research

Analysis of Clinico-radiological Profile of Patients with Bronchogenic Carcinoma at a Tertiary Care Hospital

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Abstract
Background:Bronchogenic carcinoma is the leading cause of death from cancer in men and women. The present study was conducted for assessing the clinico-radiological profile of patients with bronchogenic carcinoma.
Materials and Methods:100 patients with confirmed diagnosis of bronchogenic carcinoma by histopathological examination of material obtained by transthoracic needle aspiration, pleural fluid aspiration, or lymph node fine-needle aspiration cytology (FNAC) were included in the study. Patients with only radiological diagnosis of bronchogenic carcinoma (without histopathological confirmation) were not included in the study. Clinico-radiological profile of the subjects had been evaluated. Statistical analysis was conducted using SPSS software.
Results: Among 92 subjects, cough was evident. Chest pain was seen in 63 subjects. Haemoptysis and dyspnoea were visible in 53 and 73 subjects, respectively. Constitutional symptoms were evident in 85 subjects. Pallor was seen in 19 subjects. Clubbing and external lymphadenopathy was seen in 73 and 19 subjects, respectively, and engorged neck veins were evident in 11 cases.A radiographic analysis identified thoracic abnormalities, primarily soft-tissue density mass lesions (61 cases). Other findings included hilar enlargement, costophrenic angle blunting, tracheal deviation, and nodular patterns.
Conclusion: The most common clinical manifestation of bronchogenic carcinoma was chest pain, followed by haemoptysis. The most common clinical sign among the patients was engorged neck veins. Among few subjects, distant metastasis was also seen.
Keywords: Bronchogenic Carcinoma, Clinical Profile.

INTRODUCTION

Lung cancer is the leading cause of cancer death around the world.[1,2] The statistics reflect data from 2007 and, therefore, likely underestimate the current lung cancer burden. Lung cancer has been the most common cancer worldwide since 1985, both in terms of incidence and mortality.[2] Globally, lung cancer is the largest contributor to new cancer diagnoses (1,350,000 new cases and 12.4% of total new cancer cases) and to death from cancer (1,180,000 deaths and 17.6% of total cancer deaths).[3-5]

Although the cause of this malignancy is probably multifactorial, approximately 85% of lung cancer deaths are attributable to cigarette smoking. Patients may present with symptoms of airway obstruction caused by central tumors, symptoms related to direct tumor invasion of surrounding structures, or symptoms produced by distant metastases. There are four major cell types: adenocarcinoma, squamous cell carcinoma, undifferentiated large cell carcinoma, and small cell carcinoma. Adenocarcinoma and undifferentiated large cell carcinoma are generally peripheral lesions manifesting as solitary nodules or masses, whereas squamous cell carcinoma and small cell carcinoma are typically central and may manifest as hilar masses, atelectasis, or pneumonia.[3- 6] This

study was conducted to evaluate the clinico-radiological profile of patients with bronchogenic carcinoma.

MATERIALS AND METHODS

The study comprised of 100 subjects. All patients with confirmed diagnosis of bronchogenic carcinoma by histopathological examination of material obtained by transthoracic needle aspiration, pleural fluid aspiration, or lymph node fine-needle aspiration cytology (FNAC) were included in the study. Patients with only radiological diagnosis of bronchogenic carcinoma (without histopathological confirmation) were not included in the study. Clinico-radiological profile of the subjects had been evaluated. Statistical analysis was conducted using SPSS software.

RESULTS

In this study, there were 100 subjects, of which, 75 were male and 25 were female (table 1).Among 92 subjects, cough was evident. Chest pain was seen in 63 subjects. Haemoptysis and dyspnoea were visible in 53 and 73 subjects, respectively. Constitutional symptoms were evident in 85 subjects. Pallor was seen in 19 subjects. Clubbing and external lymphadenopathy was seen in 73 and 19 subjects, respectively, and engorged neck veins were evident in 11 cases (table 2). A radiographic analysis revealed (table 3)various thoracic abnormalities in a group of patients. The most common finding was soft-tissue density mass lesions, observed in 61 cases. Other notable patterns included hilar enlargement (22 cases), costophrenic angle blunting (15 cases), and pulling of the hemidiaphragm (11 cases). Additionally, tracheal deviation was seen in 14 cases, mediastinal widening in 6 cases, and a nodular pattern in 8 cases. A cavity with an air-fluid level, a potential indication of an abscess or cyst, was present in 3 cases.

Table 1: Gender-wise distribution of subjects.

Gender	Number of subjects	Percentage
Males	75	75
Females	25	25
Total	100	100

Table 2: Clinical manifestations of subjects.

CLINICAL SYMPTOMS	Number of subjects	Percentage
Cough	92	92
Chest pain	63	63
Haemoptysis	53	53
Dyspnoea	73	73
Constitutional symptoms	85	85
CLINICAL SIGNS		
Pallor	19	19
Clubbing	73	73
External lymphadenopathy	19	19
Engorged neck veins	11	11

Table 3: Radiographic pattern

Radiographic pattern	Number	Percentage
Soft-tissue density mass lesion	61	61
Hilar enlargement	22	22
Costophrenic angle blunting	15	15
Pulling of hemidiaphragm	11	11
Tracheal deviation	14	14
Mediastinal widening	6	6
Nodular pattern	8	8
Cavity with air-fluid level	3	3

DISCUSSION

Carcinoma of the lung is a serious public health problem. At present it is the most common visceral carcinoma in males and in many institutions 10 per cent of all autopsies are performed for deaths from this disease.[4,5] In men 50 to 60 years of age, one of every three deaths results from bronchogenic carcinoma.

Progressive survival extension and increasing cigarette smoking has led to a numerical rise of patients with primary lung cancer in India. It is in accordance with the epidemiological data from western countries, which shows rising prevalence of the disease in Indian population.[6] Smoking is the cause for more than 85% of the bronchogenic carcinoma cases.[7,8] According to the world health

organization (WHO) classification formulated in 1999; there are six major types of malignant epithelial non-small cell lung carcinoma (NSCLC) and small cell lung carcinoma (SCLC).[9] The proportions of histopathological cell types of lung cancer vary with changes in social and other environmental factor.

Among 92 subjects, cough was evident. Chest pain was seen in 63 subjects. Haemoptysis and dyspnoea were visible in 53 and 73 subjects, respectively. Constitutional symptoms were evident in 85 subjects. Pallor was seen in 19 subjects. Clubbing and external lymphadenopathy was seen in 73 and 19 subjects, respectively, and engorged neck veins were evident in 11 cases. Squamous cell carcinoma and adenocarcinoma was seen in 43 percent and 39 percent of the patients respectively. Rawat J et al[10] T evaluated the clinicopathological profile of the lung cancer in hilly state of Uttarakhand. They performed a retrospective analysis of histopathologically proven cases of bronchogenic carcinoma admitted in their hospital from January 1998 to August 2005. Their study included 203 patients with confirmed cases of lung cancer. Male to female ratio was 8.2:1. The common age group being 40-60 years, 9.86% of the patients were less than 40 years old age. Smoking was found to be the main risk factor in 81.77% patients. The most frequent symptom was cough (72.90%) followed by fever (58.12%). The most common radiological presentation was mess lesion (46.31%). Smoking still remains the major risk factors in pathogenesis of lung cancer.Wang P et al [11] analysed the characteristics and time trends of newly diagnosed lung cancer cases during the past 5 years in East China. The data came from an academic tertiary care hospital of East China. Patients who were newly diagnosed as lung cancer from 2011 to 2015 were enrolled. All new cases got pathological supports by lung biopsy or surgery. Tumor staging was performed according to the seventh edition of the tumor node metastasis (TNM) classification of malignant tumors. The patients' disease information was collected from the database of the hospital information system (HIS). From 2011 to 2015, aggregately 5,779 patients, including 3,719 males and 2,060 females, were diagnosed as lung cancer. Smoking rate in male patients reached 80.2%, while it was only 2.7% in females. EGFR mutation existed in 66% of female and 37% of male patients with ADC. This study demonstrates the clinicopathologic characteristics of lung cancer patients from East China, including histologic composition, staging proportion, smoking prevalence and gene mutation status. During the past 5 years, the proportion of ADC has increased gradually whereas SCC decreased.Doval DC et al[12] analysed the clinical profile of non-small cell lung cancer (NSCLC) patients treated in a single unit at a tertiary cancer care centre. A large group of the patients (57.1%) were present/reformed smokers. The major histological type was adenocarcinoma (60.9%), of which 22.8% patients were found to be epidermal growth factor receptor positive. Anaplastic lymphoma kinase rearrangement positivity rate was 4.8%. Furthermore, 68% patients had Stage 4 disease. Upfront palliative chemotherapy (CT) was offered in 61.8% patients and pemetrexed with platinum compounds was the main CT regimen (46.6%). Partial response was achieved in 45.7% patients, whereas stable disease was observed in 10.9% cases. Median progression-free survival was 5 months and overall survival was 55% at 36 months. NSCLC forms the largest subgroup of lung cancer with the patients presenting with advanced stages of disease. This area needs to be explored for the early detection and subsequently the radical treatment of the patients. Personalized approach may be considered for the management of lung cancer by identifying new predictive and prognostic biomarkers of this disease.[12]

CONCLUSION

The most common clinical manifestation of bronchogenic carcinoma was chest pain, followed by haemoptysis. The most common clinical sign among the patients was engorged neck veins. Among few subjects, distant metastasis was also seen.

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