BRONCHOGENIC CARCINOMA CASES PRESENTED TO CAIRO UNIVERSITY HOSPITAL IN THE LAST 10 YEARS

Thesis

For fulfillment of master degree in chest diseases and tuberculosis

Submitted By

Abdullah Ahmed Ali AL-asri

M.B., B.Ch

Supervised By

Prof. Dr. Yosri M. Kammel Akl

Professor of Chest Medicine
Faculty of Medicine Cairo University

Dr. Raef Hosny Emam

Assist. Prof. of Chest Medicine
Faculty of Medicine
Cairo University

Faculty of Medicine
Cairo University

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ABSTRACT

Objective: The aim of this study is to evaluate the clinico-pathological profile of the bronchogenic carcinoma cases in the department of chest Medicine of Cairo University Hospital.

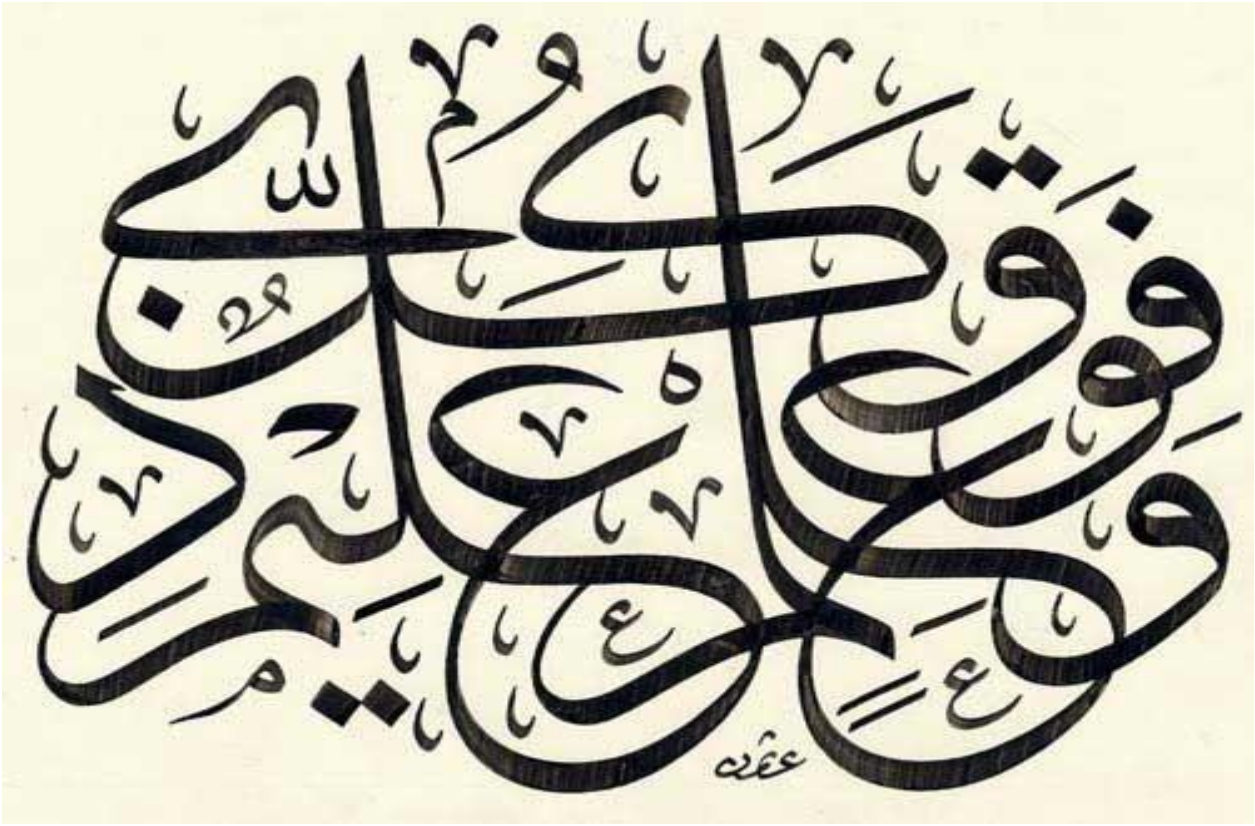
Material and Methods: This retrospective study was carried out in the department of chest Medicine of Cairo University Hospital, in which four hundred and four (404 cases) confirmed cases of bronchogenic carcinoma were included in this study. These patients were admitted during the last 10 years. Data regarding demographics, smoking , histology, clinical presentation, radiographic findings, The method of diagnosis and stage of the disease were obtained from their files.

Results: Our study included 404 of confirmed cases of bronchogenic carcinoma. Male to female ratio was 4.6:1. The highest incidence of bronchogenic carcinoma was in the sixth and seventh decades of life (63.6 %). the majority of cases occur in the age >40 years (94.1 %) while in age <40 years, the incidence was 5.9 % . The smoking was found to be the main risk factor in 75.7% patients. The cough was the most common symptom found in 347 patients (85.9 %), followed by dyspnea in 276 patients (68.3%). The most common radiological finding was mass lesion (49.8%). The majority of cases were diagnosed by fibro-optic bronchoscopy (68.1 % of all cases). Four types of bronchogenic carcinoma were found: squamous cell carcinoma 37.4%, adenocarcinoma 29.5%, small cell carcinoma 14.9%, large cell carcinoma 7.2% and undifferentiated carcinoma 11.1 % . In females, a denocarcinoma was the predominant cell type (54.2%) while in males, a squamous cell carcinoma was predominant cell type (42.5%). Most cases were diagnosted in late stages of the diaease.

Conclusion: Bronchogenic carcinoma is more frequent beyond the middle age. It is more frequent in males than females. Smoking still the major risk factors in pathogenesis of bronchogenic carcinoma . Adenocarcinoma is more common in females and was the most frequent tumour in non-smokers. while in males, a squamous cell carcinoma still the predominant cell type.

Key words: Bronchogenic carcinoma, Smoking, Bronchoscopy, Squamous cell carcinoma, Adenocarcinoma

بسم الله الرحمن الرحيم



(سورة يوسف- 76)

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Abdullah Ahmed ALasri

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LIST OF ABBREVIATION

ACCP	American College of Chest Physicians
BAC	Bronchoalveolar cell carcinomas
COPD	Chronic obstructive pulmonary disease
CT	Computed tomography
EBUS	Endobronchial ultrasound
EGFR	Epidermal growth factor receptor
ETS	Environmental tobacco smoke
EUS	Endoscopic ultrasound
FNA	Fine needle aspiration
FOB	Fibreoptic bronchoscopy
GRPR	Gastrin-releasing peptide receptor
GTP	Guanosine triphosphate
ILD	Interstitial lung disease
IPF	Idiopathic pulmonary fibrosis
LOH	Loss of heterozygosity
MRI	Magnetic resonance imaging
NSCLC	Non- Small cell lung carcinoma
PAHs	Polycyclic- aromatic hydrocarbons
PET	Positron emission tomography
Rb	Retinoblastoma gene
RCT	Randomized controlled trial
SCC	Squamous Cell Carcinoma
SCLC	Small cell lung carcinoma
SIADH	syndrome of inappropriate antidiuretic
SSc	Systemic sclerosis
TKIs	Tyrosine kinase inhibitors
TNM	Tumor-node-metastasis
TSNAs	Tobacco-specific N-nitrosamines
VATS	Video-assisted thoracic surgery
VEGF	vascular endothelial growth factor

CONTENTS

INTRODUCTION & AIM OF THE WORK

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At the end of the 20th century, Bronchogenic Carcinoma had become one of the leading causes of preventable death. It was a rare disease at the start of that century, but exposures to new etiologic agents and an increasing life span combined to make lung cancer a scourge of the 20th century. Lung cancer is the most common malignancy in the worldwide and is the leading cause of cancer deaths in men and women ***(Alberg et al., 2007).***

Lung cancer was the most commonly diagnosed cancer as well as the leading cause of cancer death in males in 2008 globally. Among females, it was the fourth most commonly diagnosed cancer and the second leading cause of cancer death. Lung cancer accounts for 13% (1.6 million) of the total cases and 18% (1.4 million) of the deaths in 2008. ***(Jemal et al., 2011)***

A number of risk factors for lung cancer have been identified, but the overwhelmingly dominant one is exposure to tobacco smoke, with about 90% of patients being smokers or ex-smokers Consequently, measures aimed at controlling tobacco use offer the best prospect for reducing the risk of, and mortality from, the disease. Even after lung cancer has been diagnosed, the prognosis may be improved for some patients if they stop smoking. ***(SIGN, 2005)***

Although most cases of lung cancer are due to tobacco smoke, 25% of lung cancer cases worldwide are not attributable to smoking .Other risk factors include: radon or asbestos exposure, air pollution, genetic factors, Radiation

,diet, (lung cancer that occurs in families) socioeconomic status and presence of acquired lung disease(fibrotic disorders) . ***(Brambilla and Gazdar, 2009)***

Lung cancer occurs in multiple histologic types as classified by conventional light microscopy. The four major types include squamous cell carcinoma, adenocarcinoma, large cell carcinoma, and small cell undifferentiated carcinoma; together, these four types of lung cancer account for >90% of lung cancer cases. The prognosis for patients with bronchogenic carcinoma is poor, with an overall 5 years survival of 10%-15%. In general, patients with squamous cell carcinoma have the best prognosis; those with adenocarcinoma and undifferentiated large cell carcinoma have an intermediate prognosis**. *(Alberg et al., 2007)***

Bronchogenic carcinoma, unfortunately, is usually recognized late in its natural history. In large part, this reflects the peculiarities of pulmonary anatomy. A pulmonary nodule could grow for a considerable period of time, and potentially spread outside the lung, before it would cause symptoms. Initial presenting symptoms in patients with lung cancer may be respiratory related, but are often constitutional and attributable to metastatic disease.

Cough is reported to be the most common presenting symptom of lung cancer; other respiratory symptoms include: dyspnea, chest pain, hemoptysis, dysphagia, wheezing and stridor. Nonspecific systemic symptoms, including: anorexia, weight loss, fever fatigue and symptoms related to metastatic disease. The chest radiograph plays a pivotal role in the recognition of lung cancer. Certainly, in the asymptomatic patient an abnormality on the chest radiograph would be the first clue to the presence of lung cancer. In patients

with symptoms related to the primary tumor, the chest radiograph may often strongly support a suspicion of carcinoma of the lung. ***(Spiro et al., 2007)***

Lung cancer is frequently suggested from chest X-ray findings: eg a solitary pulmonary nodule, pulmonary or hilar mass, poorly resolving pneumonia or pleural effusion. CT scanning should be performed prior to further diagnostic investigations, including bronchoscopy, and the results used to guide the investigation that is most likely to provide both a diagnosis and stage the disease to the highest level. Histological or cytological confirmation of the diagnosis is desirable, though not always possible, and can be achieved by a variety of methods: image guided percutaneous biopsy, bronchoscopy, mediastinoscopy or thoracoscopy. Tissue diagnosis should be followed by subtyping of the cancer according to the current WHO classification. It may not be possible to use this classification fully if biopsy specimens or cytology samples are small, and in most instances designation as SCLC or NSCLC is sufficient for planning further management. The management of patients with an incomplete diagnosis should be discussed by the multidisciplinary team. No evidence was identified supporting the use of blood tests, eg tumour markers, in the diagnosis of lung cancer. ***(SIGN, 2005)***

The optimal treatment of lung cancer depend on accurate disease staging, which is based on tumor size, site, regional nodal involvement, and presence of metastasis .While surgery remains the optimal treatment for early stage non–small cell lung cancer (NSCLC). Recent clinical trials have shown a survival benefit with adjuvant chemotherapy in patients with resected NSCLC Radiotherapy has a well documented effect in palliating thoracic

symptoms and, in selected patients with non-small cell lung cancer, it may be curative. It can also be useful in treating locally symptomatic metastases . chemotherapy is used in unresectable disease, and a combination of therapies may also be used. ***(Chhatwani et al., 2009)***

AIM OF THE WORK

The aim of this retrospective study is to: review the confirmed cases of bronchogenic carcinoma in the department of chest Medicine of Cairo University Hospital. during the last 10 years (2001-2010) .

REVIEW OF LITERATURE