

Successful surgical management of carcinoma lung in an 80 year old male

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Abstract

We report a case of 80 year old male admitted to the hospital with dry cough for one month and chest pain for 20 days. His physical examination revealed no significant abnormality. Hematological and biochemical findings were also normal. Chest X-Ray showed a rounded opacity in the right upper lobe of lung. Finally, it was diagnosed as squamous cell carcinoma by CT guided fine needle aspiration cytology. Segmentectomy of the right upper lobe (including lesion) by a right sided thoracotomy was done. Repeat histopathology confirmed the diagnosis as well as tumor invasion free excised margin. Patient's recovery was uneventful. Patient was discharged on 15th post-operative day with the advice for further follow-up. Thus, we conclude that it was a case of carcinoma lung which was successfully managed by surgical intervention due to judicious suspicion, adequate evaluation and measures in time.

Introduction

The incidence of squamous cell carcinoma is around 30% of lung cancers. It occurs close to large airways. The differentiation is clinically important as non-small cell carcinoma has higher survival rate than small cell carcinoma.

The treatment of choice for the patient of early stage lung cancer (Stage I and II, non-small cell lung cancer) is the complete surgical resection.¹ Minimal invasive approach is safe and effective. Thoracoscopic lobectomy gives similar result as conventional lobectomy. Though lobectomy is the treatment of choice in early stage of lung cancer, however, recent evidence suggests that sub lobar resection, specially anatomic segmentectomy, may be the surgical procedure of choice, not only for patients with poor cardio-pulmonary reserve but also for those with early stage non-small cell lung cancer (NSCLC).²

There is no survival advantage of lobectomy over extended segmentectomy. It requires long-term follow-up. Extended segmentectomy is more acceptable for the treatment of T1NoMo non-small cell lung cancer of 2 cm or smaller.^{3,4}

In this case, we performed anterior segmentectomy as lung cancer was in early stage. Though the patient was old, maximum extent of normal lung tissue was preserved for better survival.

Case Report

An 80 year old normotensive, nondiabetic male was admitted into the National Institute of

Chest Diseases and Hospital. During admission he presented with dry cough for one month and right sided chest pain for 20 days. But patient had no complains of fever, hemoptysis, dyspnoea, anorexia or significant weight loss. Patient's pain was dull aching in nature in right chest having no radiation or spreading. Pain was relieved by taking analgesics. He was non alcoholic, but smoker for about 20 years, although quieted smoking 1 year back. His smoking index was 7.5 pack years. There was no relevant occupational history or systemic complains. On examination patient was of average body built. Anemia, cyanosis, jaundice, clubbing, edema was absent. No groups of lymph nodes were palpable including supraclavicular lymph nodes. Other systemic examinations were normal. Chest radiograph showed a dense rounded opacity in the right upper lobe suggesting a bronchial neoplasm without any evidence of hilar lymphadenopathy (Figure 1).

Computed tomography scan showed a heterogeneous contrast enhancing small mass lesion noted in right upper lobe compressing the adjacent lung. There was no mediastinal lymphadenopathy. Bony thorax was normal (Figure 2).

Fine needle aspiration cytology (FNAC) from described lesion concluded that it was squamous cell carcinoma. Bronoscopic findings were normal. Liver function and renal functions was normal and other hematological and biochemical investigations were within normal limit except ESR which was 47 mm in 1st hour. Spirometry was done to get the forced vital capacity (2.38 L; 77% of predicted value), forced



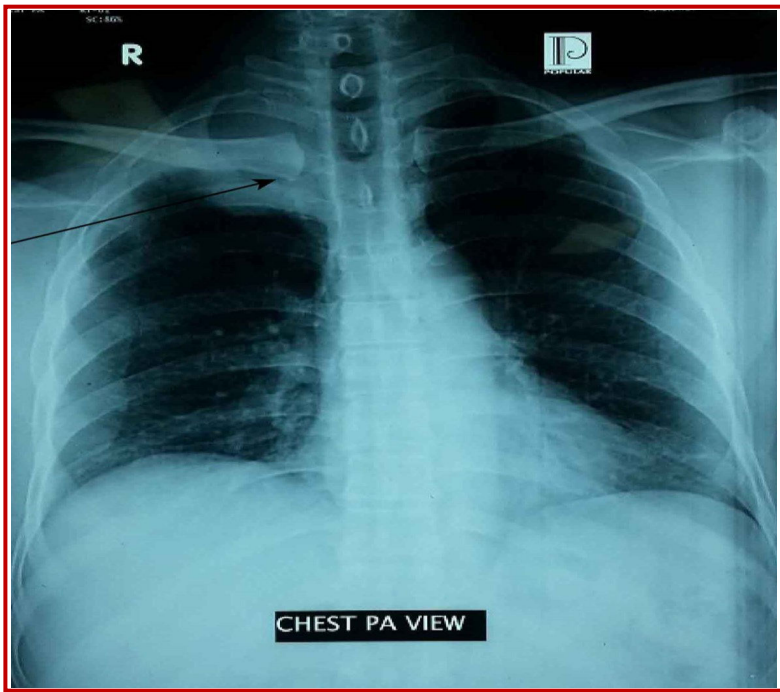


Figure 1: X-Ray chest P/A view showing a radio-opaque shadow in the right upper lobe (marked by arrow)

expiratory volume in one second (FEV₁; 1.55 L; 72% of predicted value). The FEV₁/FVC ratio was 65%. After adequate pre-operative evaluation, routine and specific investigations for surgery were done. Chest was opened by standard right postero-lateral thoracotomy incision. A hard mass found in right upper lobe, in the area of the right anterior segment,

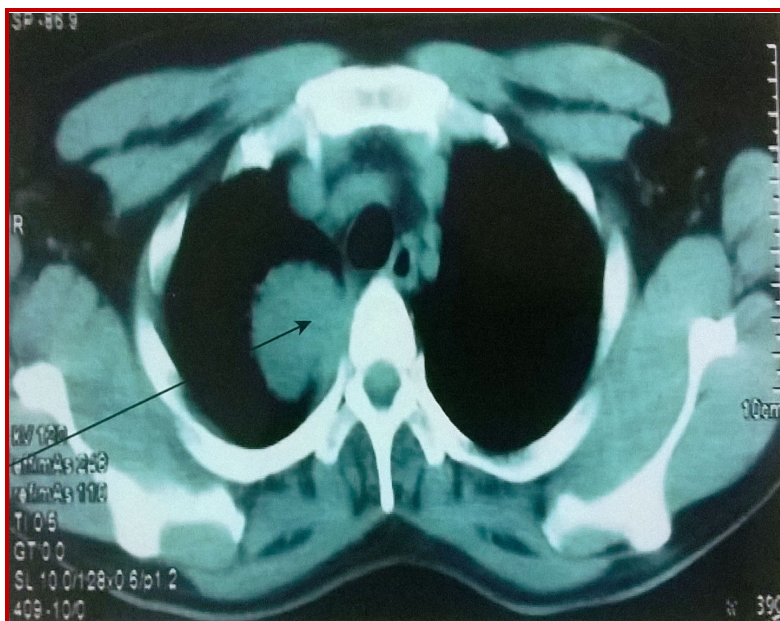


Figure 2: CT scan of the chest showing hyperdense mass lesion at the right upper lobe (marked by arrow)

measuring about 2 x 2 cm. There was no enlargement of hilar or interlobar lymphnodes. As it was a confined lesion having no involvement of lobar bronchus, right anterior segmentectomy was done. Chest was closed ensuring homeostasis and keeping two chest drain tube in situ. Post-operative period was relatively unevenful. X-ray showed complete expansion of right lung with no residual space. Histopathology of resected specimen showed squamous cell carcinoma, Grade II, and margins were free of tumor invasion (Figure 3).

Patient was discharged with further follow-up after one month doing chest X-ray P/A view. Patient also advised to attend Oncology Department for further management.

Discussion

The incidence of lung cancer is highest in older men and women. The rate rises steeply from around age 40 and peak in those aged 80 and older.² In this case the age of the patient was 80 years which is supported by similar above study.

About 80-90% of cases of lung cancer are due to long-term exposure to tobacco smoke. However, 10-15% of cases have no history of smoking.³ In our reported case patient had long-term exposure to tobacco. Other precipitating factor could not be rule out.

Signs and symptoms which may suggest lung cancer include- shortness of breath, cough, fever, hemoptysis, weight loss, fatigue and clubbing of fingernail. Chest pain, bone pain, superior vena cava obstruction and difficulty in swallowing may develop due to the cancer mass compression on the adjacent structures.² Our patient presented with few symptoms like dry cough and right sided chest pain as lesion was confined and in early stage, so other presentations dissimilar to above report.

Chest radiograph is the important investigation when one suspect a case of lung cancer. There may be an obvious mass, widening of the mediastinum, collapse, con-solidation or pleural effusion.^[8] In our case, we found a rounded opacity in upper zone of right lung.

CT imaging provided more information about the type and extent of disease. Assessment of mediastinal lymph nodes also aided by chest CT. Toloza and colleagues^{9,10} meta-analyzed 20 studies on 3,438 patients and showed an overall 57% sensitivity and 82% specificity. Therefore, staging of the mediastinum and therapeutic decisions should not be based solely on the results of the CT. In this case, CT scan of chest showed a mass lesion in right upper lobe.

Bronchoscopy is another diagnostic tool. If endo-



Figure 3: Microscopic picture of FNAC from upper lobe of the right lung indicating squamous cell carcinoma (marked by arrow)

bronchial tumor can be visualized, direct biopsy/brushing has been shown to have sensitivity of 80 to 100%¹¹ as with sputum cytology. Bronchoscopy is much more likely to be successful in diagnosis of central lesions compared with peripheral lesions. In this case bronchoscopy revealed no endobronchial lesion.

Percutaneous transthoracic CT guided needle biopsy is becoming popular for the detection of early stage of lung cancer. The results are positive in 90% of cases, with a low false positive rate of $\leq 2\%$.¹² In our patient, CT guided FNAC from the lesion revealed it was a case of squamous cell carcinoma.

Diagnosis and staging of lung cancer are often performed concurrently. The purposes of any staging classification are the assessment of prognosis and assignment of therapy. Staging system for lung cancer is based on a tumor-node-metastasis (TNM). Although in our case we had not done any staging preoperatively. But depending on preoperative findings we attempted to determine the stage in this case. Considering the size of tumors, absence of nodal involvement or distant metastasis it can be called a **T1N0M0**.

Surgical resection is the treatment of choice in early stage of NSCLC. Lobectomy with complete mediastinal lymphadenectomy or limited resection is the gold standard for treating early stage NSCLC. It can be performed through a traditional approach thoracotomy or thoracoscopic (Video Assisted

Thoracoscopic Surgery-VATS) procedure. VATS has emerged as a safe and effective alternative approach. There is significant heterogeneity of the data in the literature on perioperative outcome; some studies demonstrate better perioperative outcomes for VATS patients, some favor thoracotomy patients, and other show no significant difference between the two approaches.¹³ Debate continued regarding lobectomy with lymph node dissection versus lesser resections, particularly anatomic segmentectomy for early lung cancer. In 2006, a non-randomized Japanese prospective study showed the results of the sub lobar resection group were compared those of the lobar resection group, disease-free and overall survival in both groups at 5 years (86.0% and 89.6% for the sub lobar group and 83.4% and 89.1% for the lobar resection group, respectively.). The local recurrence rate was 4.9% in the sub lobar group and 6.9% in the lobectomy group.¹⁴ Anatomic segmentectomy causes less trauma, less pain, quicker recovery, preservation of good residual lung function, which could save the patient the maximum extent of normal lung tissue and reduce lung function loss and help patients recovery.¹⁵ In our patient considering the age and stage we performed lesser resection-segmentectomy of right upper lobe which supports above reports.

Ethical Issue

Written and signed informed consent from the guardian was taken for publishing this case report.

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