

Lung Cancer presenting as Pneumonia in Pregnancy

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Citation

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Abstract

A 37 year old female with B human chorionic gonadotropin(B-HCG) secreting occult lung carcinoma presenting with cough, dyspnoea and CXR infiltrate was diagnosed as having pneumonia till she presented few months later with advanced disease. Lung Cancer could secrete various hormones including B HCG, Anti diuretic hormone, Para thyroid hormone related peptide (1, 2, 3). Young females presenting with suspicious infiltrate on Chest X ray and who need CT scan of the chest are likely to have Urine pregnancy tests which being B-HCG based is likely to be positive in B HCG secreting Lung cancer. These could delay a potentially important investigation and lead to misdiagnosis and early closure. Though this confusion is logical it has so far not been reported for Lung cancer to be diagnosed as having pneumonia in pregnancy only to be subsequently diagnosed as having Large cell Lung Cancer. It is thus important to consider Lung cancer with B-HCG secretion as an important differential in young females with similar presentation as it could have long term implications in patients' management.

INTRODUCTION

Lung cancer is one of the leading causes of cancer deaths in both men and women (4). Increasingly it is being diagnosed in young (<40 years) population (5). As with any cancer early diagnosis and treatment is the key to favourable outcome. Here we present a case of young female with large cell B- HCG secreting Lung cancer misdiagnosed initially as Pneumonia in pregnancy

CASE REPORT

A 37 year old woman with no significant past medical history and a 20 pack year smoking history presented initially with a 1 week history of cough, dyspnoea on exertion and low grade fevers. Her last menses was 8 weeks before presentation; normally she could have menses anywhere from 4-6 weeks interval

On admission to the hospital she was alert awake and oriented. She had a low grade fever of 100.4F; tachycardia with pulse rate of 106 and tachypneic with a respiratory rate of 20. Chest examination was significant for coarse crackles in the left upper and middle lobe. Other physical examination was normal.

Her laboratory data was significant for WCC of 12,000 cells/mcL and a CXR showing left upper lobe infiltrate and possible left hilar lymphadenopathy(Figure 1). CT Chest was planned due to unusual location of infiltrate and hilar lymphadenopathy but was then cancelled as the urine

pregnancy test came back positive. Serum B- HCG done then was 206mIU/ml (normal <5mIU/ml). Patient was given diagnosis of pneumonia and early pregnancy and was discharged with a 2 week course of Amoxicillin and with gynaecology follow up. The patient was subsequently lost to follow up and returned 2 months later with worsening symptoms and significant weight loss. Repeat CXR revealed an interval increase in the size of the opacity now revealing possible mass and metastatic nodules in right lung. Urine pregnancy test was again positive with B- HCG level of 10,273mIU/ml. US pelvis was negative for pregnancy. CT Chest done revealed a 12 x 11 cm mass in left upper lung field with multiple metastatic nodules in both the Lung fields (Figure 2-3).

Bronchosopic biopsy of the mass was done which revealed a poorly differentiated non-small cell lung cancer(NSCLC) with large cells staining positive with anti-B-hCG antibodies suggestive of Large cell Lung cancer secreting B- HCG(Figure 4). Patient was discharged post biopsy to be followed up later with oncologist with a plan to begin chemotherapy but she presented 2 weeks later to ER with severe SOB and was diagnosed to have malignant pericardial effusion with tamponade physiology; 900 ml of hemorrhagic fluid was drained by pericardiocentesis.. The patient subsequently deteriorated clinically and died before any chemotherapy could be initiated.

Figure 1

Figure 1: CXR on initial presentation suggestive of Left upper Lobe pneumonia with hilar lymphadenopathy

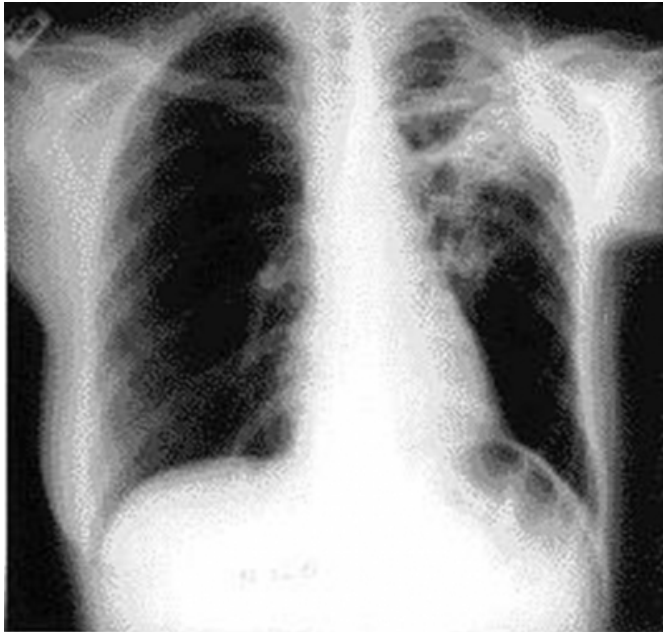


Figure 2

Figure 2: CT Scan of Chest on Repeat presentation showing large Left upper Lobe Mass

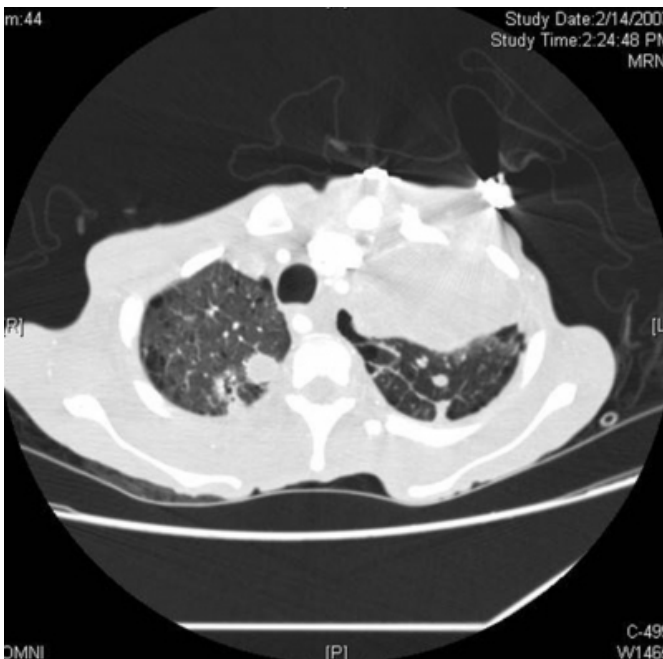


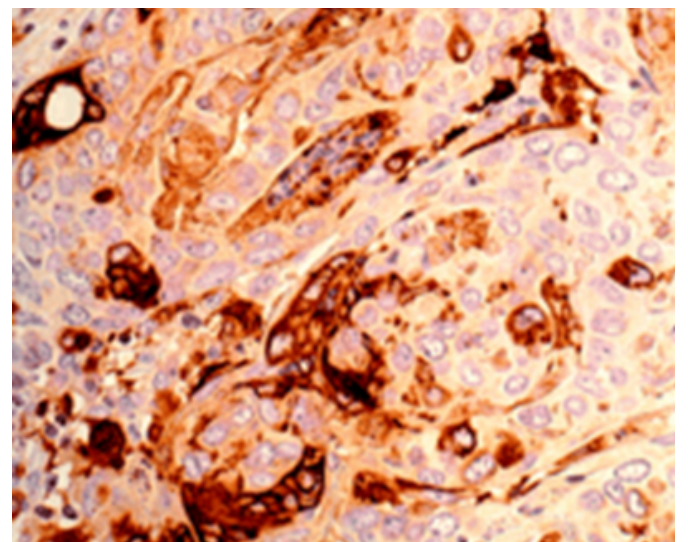
Figure 3

Figure 3: CT scan of the Chest showing Large left Upper Lobe Mass and multiple metastatic nodules in the Right Lung



Figure 4

Figure 4: Lung biopsy showing poorly differentiated NSCLC staining +ve with Anti B-HCG antibodies



DISCUSSION

Lung cancer is the second most common cancer in both males and females combined together and occurs at the rate of 68 per 100,000 persons per year (6). It is relatively uncommon for lung cancers to present below the age of 40 years and accounts for only 3 % of all the lung cancer patients (7). . Histopathologically adenocarcinoma account

for 46-54%, Small cell cancer 16-28%, Squamous cell cancer (SCC) 12-16% and Large cell undifferentiated cancer 8-12% in these subgroup of patients (7,8). All the articles describing lung cancer in young patients concluded that fewer SCCs but more adenocarcinomas were found in this group of patients (7,8). This can be explained by the fact that pulmonary SCC usually develops after a long smoking history. The role of smoking in carcinogenesis in the younger generation remains unclear, although several authors concluded that women were more susceptible to smoking than men (9,10). The median survival for young patients with lung cancer was 1 year with 2 and 5 year survivals of 30% and 18% respectively and depends on the stage at presentation, performance status, duration of symptoms and wt. loss and does not correlate with histological type of cancer(8).

B-HCG is not found in normal men and levels are <5 in normal non pregnant pre menopausal females (11). Elevated levels of B-HCG>100mIU/ml are seen in pregnancy, choriocarcinoma, germ cell tumours (gonadal and extra gonadal), seminomatous and non seminomatous testicular cancers and rarely Lung and gastrointestinal cancers (12). False positive results are seen in hypogonadal states and marijuana use(11). Serum B-HCG is elevated in 7-21% of patients with non small cell lung cancer (NSCLC) (13, 14). However positive immunohistochemical staining for B-hCG, is reported in 9% to 84% of patients with NSCLC (1,15). The highest percentage of B-HCG secretion around 93% is reported in Large cell variant of NSCLC which is thought to be secondary to high glycogen content of the these cells(16).

While secondary amenorrhea and pseudopregnancy is a potential presentation of lung cancer, there has been only one case report of the same which was in a young female who had adenocarcinoma of lung (17). To our knowledge this is the first case report of large cell lung cancer presenting as pregnancy with pneumonia and with levels of B HCG >10,000.

In our patient despite the results of urine pregnancy tests and CXR findings the failure to respond to antibiotics and worsening symptoms and CXR findings, negative pelvic ultrasound for pregnancy prompted the search for alternate diagnosis. Subsequent CT Chest and bronchoscopic biopsy revealed the diagnosis but crucial time was lost. Pt died 4 months after initial presentation.

As incidence and prevalence of Lung cancer increases in young females, physicians are more likely to encounter similar case scenarios. It is thus important to consider Lung cancer as a differential diagnosis in young females presenting with amenorrhea and suspicious lesions on CXR.

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