

Arghir Oana-Cristina¹, Trenchea Mihaela², Iliescu Mădălina¹, Galie N.³, Ciobotaru Camelia¹

Post traumatic painful shoulder – a delayed clinical feature of upper lobe lung cancer in a 74 year-old male. - case report -

¹ Faculty of Medicine-University “Ovidius” Constanța, Romania

² CMI Pneumology, Medgidia, Romania

³ National Institute of Pneumology “Marius Nasta” Bucharest, Romania

ABSTRACT

A 74 year old Caucasian man, presents with a 6 week history of right sided chest pain including traumatic related painful right shoulder. Shoulder minor contusion was diagnosed and partial managed by symptomatic treatment associated to rehabilitation. The pain was initially eased with nonsteroidal anti-inflammatory drug (NSAID) use and finally changed worsening. He has evidence of moderate COPD on spirometry and has been commenced on inhalers. An invasive primitive adenocarcinoma lung cancer was confirmed by chest CT scan and lymphnode biopsy through mediastinoscopy.

Keywords: adenocarcinoma lung cancer, painful right shoulder

Introduction

The painful shoulder caused by compromised shoulder movement is a very common condition encountered in the rheumatology clinic being related with rotator cuff disorders, glenohumeral disorders, acromioclavicular joint disease and referred neck pain [1]. Self reported prevalence of painful shoulder is estimated to be from 16 to 26% [2] and recent studies suggest that recurrence and chronic evolution are common in primary care [3,4]. Rotator cuff tendinopathy is the most frequent cause of shoulder pain (85%) revealed by a traumatic history in young people and atraumatic one in elderly people [1]. Pain could be arising from the shoulder or from elsewhere. Referred pain is considered a kind of red flag for myocardial infarction or chronic ischemia, as well as for apical lung cancer. The occurrence of unilateral pain in the neighboring shoulder of a Pancoast Tobias lung cancer is a known clinical feature but is often misdiagnosed as “neuralgia”, “artralgia” or “rheumatism” in routine medical practice. Musculoskeletal symptoms may be the first sign of primary or metastatic lung cancer disease because of the predilection for skeletal metastasis [5]. So, initial musculoskeletal complaints could be related to an unidentified lung cancer. The malignant invasion of brachial plexus caused by lung cancer induced an ipsilateral pain shoulder. Thoughtful

Mihaela Trenchea

E-mail address: mtrenchea@yahoo.com

evaluative rehabilitation procedure and clinical investigative decision making, combined with the use of appropriate differential diagnostic tests may allow timely identification of primary or metastatic disease.

Case report

We report a 74-year-old Caucasian man presented to the Balneology department of Clinical Emergency County Hospital, Constanta, Romania, complaining of a persistent right shoulder pain for the past 6 weeks following a minor traumatism. On physical examination, the patient had small limitations in range of motion isolated in both arms, with difficulty in extension of the right arm with internal rotation and positive Hawkins test. Despite the initial improvement under therapy with nonsteroidal anti-inflammatory drug (NSAID), the pain became worse and worse. Radiological examination for suspected arthralgia was completed with a chest film which revealed opacity in the right upper lobe (Figure 1a). Post primary pulmonary tuberculosis was suspected and in the 8th of November, 2011, the patient was admitted in Constanta Clinical Pneumophthysiology Hospital.

He was a heavy pack 30 years smoker and had in his medical history an episode of acute community-acquired pneumonia in 1970, a bladder polyp surgery in 2004, and mild to moderate COPD [forced expiratory volume in one second= FEV1: 2.52 L (78%); forced vital capacity= FVC: 3.88L; and the ratio FEV1/FVC=65%] 3 months previously detected by spirometry. There was no significant family or personal history of cancer or tuberculosis. The patient denied any weight loss or cough, but declared asthenia, odynophagia, progressive dyspnea and right thoracic pain. He was in a moderate distress caused by the painful shoulder and upper right thorax, and physical exam revealed right cervical adenitis and finger clubbing. His lungs were clear to auscultation. The patient's temperature was 37.2°C, his heart rate had a regular rhythm measured at 72

bpm, and his blood pressure was moderate increased 160/80 mm Hg. Laboratory examination including blood cell count, glucose, liver enzymes had normal levels. The erythrocyte sedimentation rate was 38 mm/hr (normal range, <20 mm/hr for men). Contrast enhanced CT scan of the chest performed in the 11th November 2011 revealed a 86/64/25 cm lung mass sub pleural localized in the right upper and lower lobe with ill defined margins but well-circumscribed lytic lesions of 7th right rib (Figures 1 b,c,d). Signs of chest wall invasion include tumor extension into the pleural space and chest wall. The patient refused fiber bronchoscopy and or minim invasive surgical methods and he was discharged without performing bronchial and/or lung biopsy. Mediastinoscopy with lymphnode biopsy performed in «Marius Nasta» Pneumology Romanian National Institute of Bucharest, facilitate the positive diagnosis of lung adenocarcinoma.

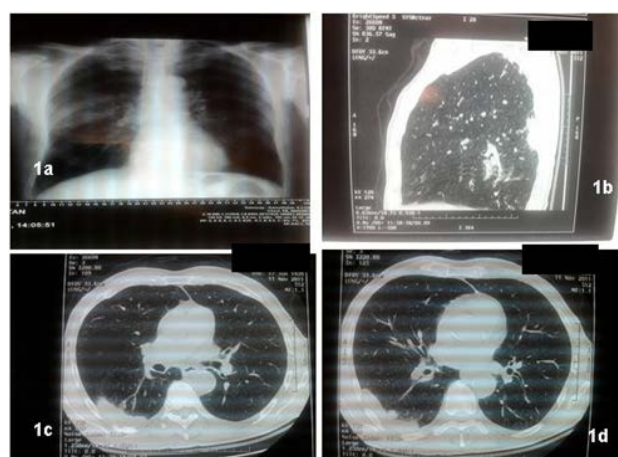


Figure 1 - 1a: Postero-anterior chest radiography performed on November 8, 2011 shows flattening of both hemidiaphragms and nonhomogenous triangle opacity, with ill defined margins localized in middle area of right hemithorax; 1b,c,d: Axial computed tomography (CT) scan of the chest performed on November 11, 2011 reveals mediastinal lymphadenopathy, pulmonary emphysema, apical and posterior right pleural thickening and a peripheral invasive solid lung tumour > 8mm in greatest dimension (25/86/64 mm) with chest wall involvement and bone destruction (right 7th rib). Lung mass appears homogenous with spiculated margins, in the right upper lobe and Fowler segment of the right lower lobe which invades chest wall.

Discussions

Lung cancer experienced since the second half of the twentieth century, a true epidemic development, firstly in industrialized countries, and more recently in developing countries. In our era, lung cancer is the most common type of cancer diagnosed annually in 1.6 million of people all over the world and over 90% are symptomatic patients and experienced two to three symptoms on average [6].

In most cases, the onset of lung cancer is masked by symptoms which are attributed to other diseases such as: chronic bronchitis, respiratory virus diseases, pulmonary tuberculosis, intercostal neuralgia, rheumatic disease. Apical localization of lung tumors and pain in the satellite homolateral shoulder joint was mentioned initially by Pancoast in 1932. Shoulder pain associated with apical lung carcinoma has preoccupied the medical world since the 50s, indicating insufficient knowledge of pathology painful shoulder syndrome [7]. Referring to peak lung tumors, Auster specify the correct diagnosis of lung cancer late [7]. Little is known about the pathway from early symptoms to diagnosis for patients with lung cancer because disease is silent until the advanced stages and symptoms are rarely suggestive [8].

Nature of pain in the shoulder, its radiation associated with muscle weakness and decreased sensibility of the affected upper limb and the general state change require differential diagnosis of shoulder pain.

A population based case control study of 247 cases of primary lung cancer versus 1235 controls was undertaken in UK, from 1998 to 2002 by Hamilton W. et al and some symptoms and classical presentation as hoarseness, stridor, shoulder pain, superior cava vein obstruction were not identified [9]. Moseley and Auster considere that upper lobe tumors are often misdiagnosed as “neuralgia” or “neuritis” until the ribs and cervicothoracic vertebral junction became so grossly destroyed that even palliation was almost hopeless [7]. Delay in the diagnosis of lung cancer may be the cause of premature death.

A retrospective study of hospitalizations for lung cancer performed in Clinical Pneumophtisiology Hospital, Constanta, between 01.01.2003 - 30.04.2004, revealed interceptions late in stages III and IV in 67.3% of patients and the prevalence of painful shoulder syndrome in 26.5% [10].

Metastatic carcinomatous arthritis is rare but can reveal lung cancer, mimicking rheumatoid or septic arthritis [11]. However, in the absence of trauma history a painful shoulder may incidentally reveal joint metastases [11]. Carcinomatous arthritis is a rare disease and its symptomatology is atypical, response to treatment is lacking and X-ray suggests a destructive process [11].

Conclusions

We do not have the confirmation of the etiology of the right shoulder involvement. The only bone destruction revealed by CT scan was the rib litic metastases. The painful shoulder syndrome was the clinical feature which contributed to imagistic discovery of the lung cancer.

Clinical implication of reported case. A number of entities with location in the various organs and systems without direct connection to the shoulder, may show pain clinic referrals. In this group are included thoracic visceral lesions such as peripheral lung cancer, apical lung tumors Pancoast Tobias.

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