Unusual presentation of lung cancer as skeletal muscle and subcutaneous metastases

Sir,

Metastases involving the brain, bone, liver, adrenal glands, and lymph nodes are well known in lung cancer. It is rare to have soft tissue metastasis in a lung cancer, with a reported overall incidence of 2.3%. Skeletal muscle or subcutaneous metastasis could be an initial presentation of an occult primary lung cancer. A high index of suspicion is necessary in these cases as soft tissue metastases are not only rare but also carry poor prognosis.

A 67-year-old woman, a nonsmoker, presented with a painless and slow growing swelling in the right suprascapular region. She noticed it for the past 1 month. There was no history of tuberculosis. She had no chest pain, loss of weight, or loss of appetite. On examination, the mass was located in the suprascapular region, approximately 3 cm × 3 cm in size, immobile and nontender with normal overlying skin. There was also a lymph node palpable in the left side of the neck. Her blood pressure was 139/70 mmHg, pulse was 81/min, and respirations were 19/min. Systematic review of other systems was unremarkable.

Chest radiograph of the patient showed a spiculated right supra hilar opacity highly suspicious for a lung tumor. Computed tomography (CT) of neck and chest showed peripherally-enhancing lesions with central low attenuation involving the left levator scapulae muscle (correlating to the clinically-suspected lymph node), subcutaneous tissue of right suprascapular region at T1 vertebral level (corresponding to the clinically palpable suprascapular mass). There was a central necrotic mass in the upper lobe of the right lung (Figure 3). Biopsy of the lung lesion revealed squamous cell carcinoma. Her sputum was negative for acid-fast bacilli.

CT of the abdomen (images not shown) revealed further lesions in the left erector spinae, right rectus abdominus and left gluteus medius muscles. There were also focal lesions in liver and head of pancreas. The patient was given chemotherapy consisting of three cycles of gemcitabine and carboplatin. Follow-up CT at 3 months and 5 months intervals showed further worsening of primary lesion and metastases involving the lung and liver, with the appearance of multiple bone metastases. The patient was switched to new regimen consisting of...
three cycles of gemcitabine and cisplatin. Due to the progression of metastases, she eventually developed functional decline, sepsis, and desaturated. Supportive care was given. She died approximately 8 months after the initial diagnosis.

Metastasis involving the skeletal muscle is rare, with lung carcinoma being the most common primary. Prevalence of muscle metastases in lung cancer varies from 0% to 0.8%.² Pop et al.³ found 114 cases of nonsmall cell lung cancer with skeletal muscle metastases in a literature search (during the period 1946–2007). Pain was the most frequent presentation (83%) of muscle metastasis and about 78% of muscle metastases were palpable at the time of presentation. Other modes of presentations include painless lump and asymptomatic masses seen accidentally following trauma.²,³ In our patient, the presentation was painless swelling in subcutaneous tissue (suprascapular region) and skeletal muscle (levator scapulae muscle). Surov et al.,⁴ in their retrospective study using PubMed search and database of their institution, analyzed a total of 461 patients with skeletal muscle metastases from various primaries. They described five different imaging features of muscle metastasis. Type I - round to oval mass with homogeneous enhancement, Type II - lesions with peripheral enhancement and central low attenuation, Type III - diffuse infiltration with inhomogeneous enhancement, Type IV - intramuscular calcifications, and Type V - intramuscular bleeding. They also emphasized that metastasis with Type II imaging feature occurred more often in lung cancer compared to other primaries, which was also present in our patient. Tuoheti et al.,⁵ described the presentation of muscle metastasis as a painful mass with peritumoral enhancement on imaging that favors metastasis than sarcoma. Acute local presentation, signs of sepsis, and history of intravenous drug abuse are useful features that help differentiate abscess from muscle metastasis.³ No clear distinction is available in the literature between cutaneous and subcutaneous metastases.¹ The incidence of skin metastasis from lung cancer varies between 1% and 12%⁶ with chest, back, abdomen, head and neck region being the frequent sites.⁷,⁸ In patients with multiple soft tissue metastases, chemotherapy is the main-stay of treatment option.³,⁷ Our patient, unfortunately, did not respond to chemotherapy and died 8 months after the initial diagnosis. Patients presenting with skin or muscle mass as initial presentation of lung cancer have a poor prognosis, and high index of suspicion is necessary in such cases to look for occult primary lung malignancy.

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Conflicts of interest
There are no conflicts of interest.
Case Letters

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 Superior mediastinal syndrome secondary to Pott's spine in a child

Sir,

Superior mediastinal syndrome (SMS) in children is a medical emergency necessitating prompt intervention often involving multimodality approach.

A 9-year-old appropriately immunized boy presented with complaints of fever, nonproductive cough, loss of appetite, and weight loss for 2 months, with exertional dyspnea and orthopnea for 7 days. There was no history of noisy breathing, difficulty in swallowing, weakness or pain over limbs, back pain, bleeding or blood component therapy, or contact with tuberculosis (TB). He was hemodynamically stable but had mild tachypnea with suprasternal retraction which further increased on the supine position. There was fullness over the face and neck, with dilated veins over the neck. Multiple, painless, soft, nonmatted cervical lymph nodes of around 1 cm × 1 cm were present over bilateral anterior triangle of the neck with mild pallor. His anthropometric parameters were within normal limits, and systemic examination revealed hepatomegaly and biphasic wheeze on auscultation over bilateral lung fields. There was no tenderness or deformity over the spine, and nervous system examination was essentially normal. Skiagram of the chest showed mediastinal widening, right middle lobe infiltrates, and right-sided minimal pleural effusion. Complete blood counts revealed only mild microcytic and hypochromic anemia, but renal and liver function parameters were within normal limits. A diagnosis of SMS was considered and further investigations were commenced. Fine needle aspiration cytology (FNAC) from cervical lymph nodes was reported as reactive lymphoid hyperplasia. A contrast-enhanced computed tomography (CT) scan of the thorax and abdomen showed a large, multiloculated abscess in the mediastinum causing compression over trachea, esophagus, superior vena cava (SVC) anteriorly, and destruction of vertebra posteriorly [Figure 1a and b]. The right middle lobe alveolar infiltrates and minimal pleural effusion were also confirmed. Abdomen was essentially normal. Contrast-enhanced magnetic resonance imaging (MRI) of the spine revealed destroyed D1 and D2 vertebra replaced by intraosseous abscess, multiple paravertebral collections from C2 to D5 vertebral level with epidural abscess at C6–D4 level causing compression of the spinal cord. C5–D4 vertebrae had altered marrow signal intensity with postcontrast enhancement along with subtle signal changes in the cord [Figure 2], and screening of the brain was normal. A diagnosis of disseminated TB with Pott's spine causing spinal cord compression and...