

## Scalp swelling: An unusual presentation of small cell lung carcinoma

Sir,

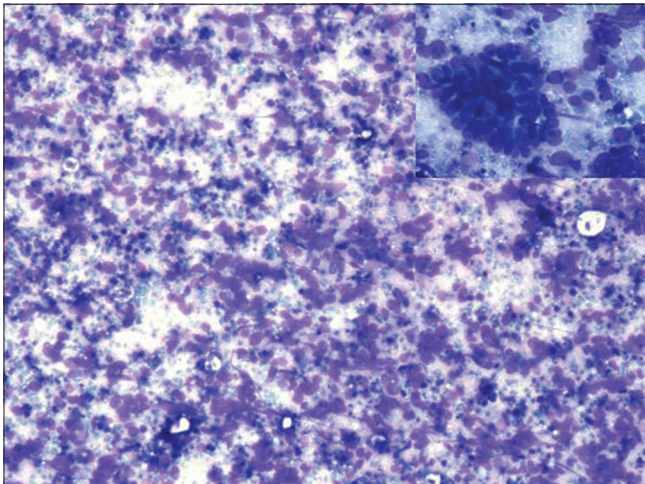
Some external features serve as warning signs for lung cancer. Scalp metastasis is a rare cutaneous manifestation of advanced stage of lung cancer. Though scalp metastasis from non small cell carcinoma has been reported previously, this presentation with small cell lung carcinoma (SCLC) has not been reported.<sup>[1]</sup> A 34-year-old male patient presented to the emergency department with complaints of low grade fever associated with productive cough and weight loss since last three months. He also complained of a painless progressive swelling over the right temporoparietal scalp region for last 1½ months. He had dyspnea on exertion for five days and hemoptysis for three days. Two months ago, local practitioner had prescribed antitubercular therapy for his productive cough and weight loss with no response. He was a chronic smoker since last 20 years, consuming two packs of cigarettes per

day. On examination, he had a suffused face, distended neck veins and engorged veins over both arms and chest. There was no significant lymphadenopathy. Scalp examination revealed a 7.2 cm × 4.3 cm, solitary, nontender, irregular, firm, but mobile growth in the right temporoparietal region [Figure 1]. On chest examination, there was decreased air entry on the right side. Routine blood investigations were normal. Chest radiographs (CXR) showed opacity in the right hilar and perihilar regions, which had increased in size over three months [Figure 2a and b]. Pleural fluid examination showed proteins 3.6 g/dl and glucose 88 mg/dl with total 10 leukocytes/μL. Pleural fluid was negative for adenosine deaminase. Contrast-enhanced computed tomography (CECT) chest revealed a well-defined heterogeneous enhancing soft tissue mass of 71 mm × 68 mm size in the right hilar and perihilar regions attenuating the right main bronchus; medially the mass was abutting the ascending aorta and engulfing the right main pulmonary artery. There was a gross pleural effusion of the right side.

On fine-needle aspiration cytology (FNAC) of the scalp swelling, May–Grünwald–Giemsa [Figure 3] and Papanicolaou (PAP) [Figure 4] stained smears revealed high cellularity with dispersed small to medium sized cells, showing



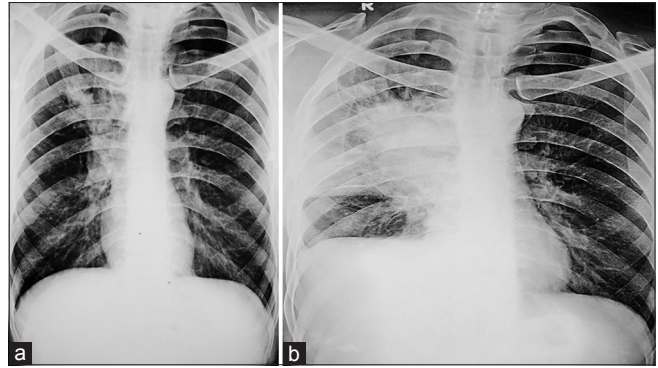
**Figure 1:** Scalp swelling (right temporoparietal)



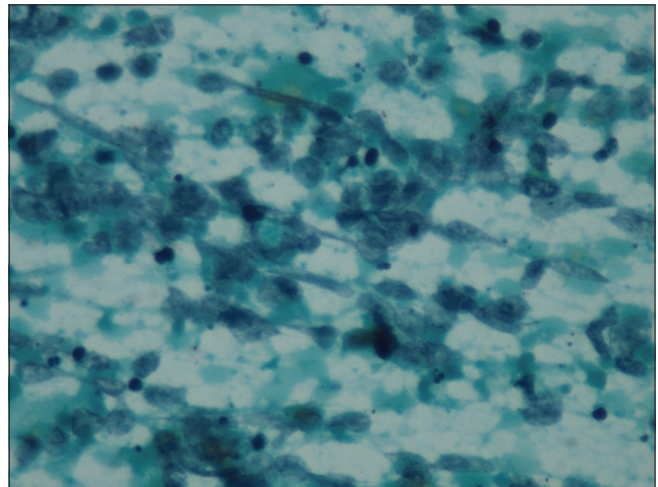
**Figure 3:** Photomicrograph of the fine-needle aspiration cytology smear shows high cellularity of small to medium sized cells with scant cytoplasm showing clustering against a dirty background. Inset shows a group of cells with prominent molding (May–Grunwald–Giemsa stain, ×100)

moderate degree of pleomorphism and few cells in clusters. These cells had scanty cytoplasm and showed prominent nuclear molding with fine granular chromatin and inconspicuous nucleoli; a few mitotic figures were seen among the tumor cells. Based on the morphologic features, a diagnosis of small round cell tumor, possibly small cell carcinoma was suggested. Immunocytochemistry for cytokeratin and synaptophysin on the PAP stained smears yielded positive results, confirming the diagnosis of small cell carcinoma.

A lung biopsy was planned, but the patient did not consent to the procedure. The patient was referred to the oncology unit for further management where he died of respiratory failure three days later.



**Figure 2:** (a) Chest radiograph showing small right hilar opacity, (b) Chest radiograph showing large right hilar opacity with right pleural effusion



**Figure 4:** Loosely clustered round cells with fine granular chromatin and variably conspicuous nucleoli with some showing streaking over a necrotic background (Papanicolaou stain ×400)

Lung cancer is the most common cancer among men while among women, it ranks fourth globally.<sup>[2]</sup> It is a leading cause of mortality worldwide. Cutaneous metastasis from the lung is rare and carries a bad prognosis.<sup>[3]</sup> Among all internal malignancies, lung carcinoma is the fastest to present as cutaneous metastasis with the mean time to presentation being 5.75 months.<sup>[4]</sup> Skin metastases in males mostly arise from melanoma, followed by cancers of the lung, colorectal region, oral cavity, or from an unknown site. In women, breast carcinoma is the most common source.<sup>[5]</sup> The most common lung cancer metastasizing to the skin is large cell carcinoma, followed by adenocarcinoma and small cell carcinoma, with squamous cell and epidermoid carcinoma being the least likely to metastasize to the skin.<sup>[6]</sup> Only 1-12% of patients with lung carcinoma develop cutaneous metastases, which usually involve the anterior aspect of chest, abdomen and head and neck areas.<sup>[6,7]</sup>

Mean survival is 3-4 months for patients who present with early cutaneous metastasis and the duration is further reduced in patients who develop a skin metastasis later in their disease process.<sup>[6-8]</sup> The overall 5-year survival in SCLC is about 5%;

for extensive-stage SCLC, the average 5-year survival rate of <1% and for limited-stage disease it is 20 months, with a 5-year survival rate of 20%.<sup>[9,10]</sup>

Cutaneous pointers to lung malignancy include clubbing, hypertrophic osteoarthropathy, acanthosis nigricans, dermatomyositis, and scleroderma.<sup>[11]</sup> Skin metastases may be the first manifestation of lung malignancy.<sup>[11,12]</sup>

In their series of patients with cutaneous metastases and lung cancer, Coslett and Katlic found that 87.5% of patients (seven out of eight) had primary tumors in the upper lobes of the lungs.<sup>[3,13]</sup> Similarly, Terashima and Kanaqawa also found that 64.7% of patients had primary tumors in the upper lobes of the lungs.<sup>[7]</sup> The tumors in these lobes have a greater tendency to metastasize to the skin, as cancer cells are likely to travel through the bloodstream; anatomic and gravitational differences affecting blood and lymphatic flow favor such hematogenous metastasis.<sup>[3,14]</sup>

Small cell lung carcinoma is a poorly differentiated tumor, strongly associated with smoking, and presents as a central mass with endobronchial growth. In our patient, we were unable to confirm the diagnosis of the primary site of scalp metastasis as the patient did not give consent for lung biopsy. However, the presence of superior vena cava syndrome, and CXR and CECT chest findings pointed to the diagnosis of lung malignancy in our patient. Furthermore, FNAC of the scalp lesion contributed to the diagnosis of small cell carcinoma. The present case emphasizes the atypical presentation of SCLC with late cutaneous metastasis that carries an unfavorable prognosis.

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