Primary Squamous Cell Carcinoma of Pleura Masquerading as Tuberculous Abscess: A Rare Case Report and Review of Literature

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ABSTRACT

Primary pleural SCC is a rare pleural malignancy which has seldom been reported. Here we report a case of a 47 year male who presented with low grade fever, persistent chest pain and loss of appetite for 3 months along with a positive history of contact. CECT thorax demonstrated fluid collection in the pleural space along with fibrotic patch and cytology revealed extensive necrosis. Based on above findings provisional diagnosis of tuberculous abscess was made and subsequently anti-tuberculous treatment was started. Later on after 3 months patient again presented with similar complaints and physical examination revealed a bulging mass on back which was aspirated and sent for cytology which revealed features consistent with the diagnosis of poorly differentiated squamous cell carcinoma. This was later confirmed by CECT thorax, showing heterogeneous mass with pleural thickening and invasion. Histopathology eventually confirmed the diagnosis of primary pleural squamous cell carcinoma.

Key words: Cytology, Primary pleural squamous cell carcinoma, Tuberculous abscess

INTRODUCTION

Primary pleural squamous cell carcinoma (SCC) is a very rare entity and has been seldom reported. There are no recently reported cases and its incidence is also not much described in the literature. The patients in early stage of pleural SCC are usually asymptomatic and computed tomography shows local pleural thickening or small nodules hence it can easily be misdiagnosed as localized mesothelioma or any chronic granulomatous infection. The cause of this malignancy is dubious and there is lack of experience in the diagnosis and treatment of this disease. Pleural SCC is characterized by malignant tumor growth with infiltration into the surrounding tissues and metastasis. The delay in the diagnosis and appropriate treatment results in serious consequences and poor prognosis in these patients. We thereby report here an unusual interesting case report of primary pleural malignancy lacking any history of chronic pleural inflammation along with relevant literature surveillance.

CASE PRESENTATION

A 47 years old heavy smoker, farmer by occupation presented in the pulmonology outpatient clinic with low grade fever, persistent right-sided chest pain and loss of appetite for 3 months. A positive history of tubercular contact was present. The patient did not give any complains of cough or

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sputum production and haemoptysis. History of anti-
tubercular drug intake was absent.
Physical examination and chest roentgenograms revealed a
right sided pleural effusion. Contrast enhanced CT scan
demonstrated fluid collection in the pleural space overlying
posterior segment of right upper lobe suggestive of loculated
empyema along with fibrotic patch and paraseptal
emphysematous changes (Fig 1a). Biochemical analysis of
pleural fluid showed turbid effusion compatible with
exudates. Adenosine deaminase level was 36.02 U/L.
Further ultrasound guided aspiration was done which
revealed extensive necrosis along with few degenerating
cells (Fig2). Based on the imaging findings, a provisional
diagnosis of tuberculous abscess was made and
subsequently anti-tuberculous treatment was started.
However the patient did not respond to the treatment.
The patient again presented to the surgical outpatient clinic
after 3 months with a bulging mass on back which was
around (2.5x2cm). Chest CT showed large heterogeneous
enhancing cystic mass with solid components and few
calcific foci, involving the posterior segment of right lower
lobe with adjacent pleural thickening with evidence of bone
erosion of ribs and T8 vertebra with extension into the
intermuscular planes between intercostal muscles (Fig1b).
However, lung parenchyma was intact.
The mass was aspirated and sent for cytological examination
which revealed extensive necrosis and scattered highly
atypical squamous cells exhibiting hyperchromasia and
pleomorphic nuclei with coarse chromatin and dense
eosinophilic cytoplasm consistent with the diagnosis of poorly
differentiated squamous cell carcinoma (Fig 3a, 3b); Further
right thoracotomy was performed and tumor was resected
out and sent for histopathological examination. Multiple
sections revealed fibro collagenous tissue with infiltration by
sheets and nests of malignant cells with pleomorphic nuclei
and coarse chromatin along with few multinucleated cells
(Fig 4a). Few areas showed scattered cells showing
keratinisation in the background of extensive necrosis and
inflammation eventually confirming the diagnosis of primary
squamous cell carcinoma of pleura (Fig4b). The patient was
referred to radiotherapy clinic for further management. The
patient recovered well after receiving 6 cycles of
chemotherapy.
epidermoid carcinoma of the pleura following extra pleural pneumothorax in the absence of fistula had been reported by Bruce et al.1960 in five patients with a history of pulmonary tuberculosis.10

Pleural SCC is usually asymptomatic in the early stage until invasion does not take place in the surrounding structures. Symptoms like chest pain, cough, sputum production, weakness and weight loss occurs as the disease progresses, which more or less mimics the clinical features of tuberculosis. The lack of specific features makes it difficult to differentiate between early primary pleural SCC and tuberculous abscess on preoperative imaging examinations such as chest radiography and computed tomography. These imaging modalities can show the locations of the lesions but cannot distinguish the nature of lesion whether it’s benign or malignant. Whole-body 18 F-deoxyglucose (FDG)-positron emission tomography (PET) has emerged as a popular imaging modality in recent years to differentiate benign lesions from malignant as FDG uptake is very high in malignant tumors.9

The diagnostic utility of fine needle biopsy (FNB) for pleural tumors is now being widely accepted with the help of cell block preparations and ancillary studies.11 The reported rate of accurate diagnosis on CT-guided fine needle aspiration is about 45% in some series.12 However, transthoracic trucut needle biopsy could be a better choice as more tissue can be obtained from it for histological and immunohistochemical analysis.13

The characteristic cytological pattern of SCC is dispersed malignant cells showing pleomorphism, hyperchromasia, increased nuclear-cytoplasmic ratio with abundant cytoplasm having squamous differentiation in a background of necrotic debris. However misinterpreting the keratinisation as the cytoplasmic eosinophilia of necrosis is a common source of error. As a result diagnostic malignant cell is very difficult to find in the presence of acute inflammation and necrosis, especially in cavitating tumours. These aspirates simulate an abscess leading to false-negative diagnosis as occurred in our study. Hence a comprehensive search for malignant cells is recommended.

Local excision with intraoperative assessment of the surgical margins remains the treatment of choice for pleural nodule.14 The preferred procedure for excision is video assisted thoracic surgery (VATS) as it is minimally invasive. Open thoracotomy is indicated when tumor-free surgical margins cannot be obtained using VATS.12 Postoperative adjuvant therapy for pleural malignancy has seldom been reported in the literature. However radiation therapy could be of therapeutic value in cases of SCC complicated with chronic tuberculous empyema as they are usually inoperable because of poor pulmonary function.

CONCLUSION

The aim of this case report is to highlight the unique presentation of pleural SCC and to create awareness among the pathologists about this entity. SCC of pleura has a varied presentation which can develop as a cystic mass mimicking a chronic abscess in the absence of chronic inflammation like tuberculous empyema or any fistula. It is characterized by malignant tumor growth and more prone to metastasis, hence delays in the diagnosis and appropriate treatment; may lead to serious clinical consequences and poor outcome.
REFERENCES