CASE REPORT

Unveiling Rarity: A Case Report on Mucoepidermoid Carcinoma of Lung

Anita Singh, KC Goswami, Shalija Kotwal, Avinash Rajra

Abstract

Primary salivary gland-type tumours of the lung (PSGT) are very rare and constitute less than 1% of all primary lung tumours and commonest subtype of PSGT is pulmonary mucoepidermoid carcinoma (PMEC). We present such a case in 28-year-old male with history of fever, haemoptysis and dyspnoea, he had gross pallor, thin built and his x-ray showed opacity in left lower zone. His CECT chest showed endobronchial mass and PET-CT was suggestive of bronchial carcinoid. Final diagnosis of PSGT was confirmed with help of histopathology and immuno-histochemistry. We aim to emphasize the importance of this rare tumour as close differential of carcinoid tumour.

Key Words

Mucoepidermoid, Lung Mass, Salivary Gland, Carcinoid tumour.

Introduction

Mucoepidermoid carcinoma (MEC) is a type of carcinoma most frequently seen in parotid and submandibular salivary glands and rarely can also arise from minor salivary glands of the oral cavity and premaxillaryarea. According to the World Health Organization's (WHO) lung tumor classification, primary salivary gland-type tumors of the lung (PSGT) are very rare and constitute less than1% of all primary lung tumors.[1,2] The most common subtype of PSGT is pulmonary mucoepidermoid carcinoma (PMEC) which is malignant salivary gland type tumor mainly consists of mucin-secreting cells, squamoid cells, and intermediate-type cells.

PMEC was first reported by Smetana *et al*. in 1952[3] and is believed to have origin from the minor salivary glands lining the tracheobronchial tree.Low grade tumors have excellent results as they can be completely resected. We present a young male with prolonged fever with haemoptysis turning out to have PMEC, lung.

Case Report

A young 28-year-oldmale daily wager, presented with fever and haemoptysis for one month. Patient had history of grade III dyspnoea, weight loss and poorappetite. On thorough physical examination he had thin built, gross pallor. His pulse and B. P were normal. His hemoglobin was 8.0 gm/dl while other biochemical parameters were normal. His chest x-ray (CXR) demonstrated diffuse opacity in the left lower zone of lung. CECT Chest showed endobronchial mass lesion in left lower lobe bronchus with complete atelectasis of left lower lobe with mucoid bronchogram giving impression of bronchial carcinoid tumor and PET-CT showed a soft tissue density nodular lesion in left lobe bronchus. Bronchial biopsy showed histopathological features of poorly differentiated

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squamous cell carcinoma. Pneumonectomy of left lung was done and tissue specimen was sent for histopathological examination to the department of pathology of our hospital.On cut section, unifocal, a well circumscribed whitish firm growth measuring 3.5X2.5X2 cm was identified in left lobe bronchus (*Fig.1*). Microscopy sections revealed tumor characterized by combination of mucous secreting, squamous and intermediate cell type. There was presence of glandular elements, mucin secreting cells and nests of squamoid and intermediate cells. The degree of nuclear pleomorphism was mild and significant number of mitotic figures were also present. Histological grade was

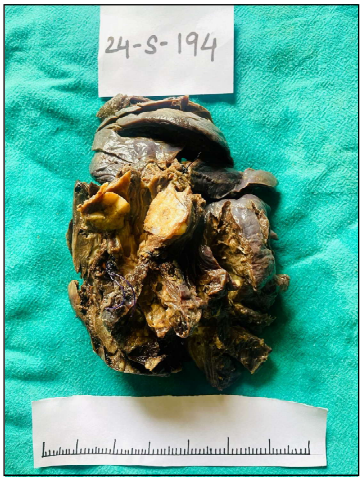

Fig 1. Gross feature:Pneumonectomy specimen of left lung showing unifocal, well circumscribed whitish firm mass in left lower lobe bronchus.

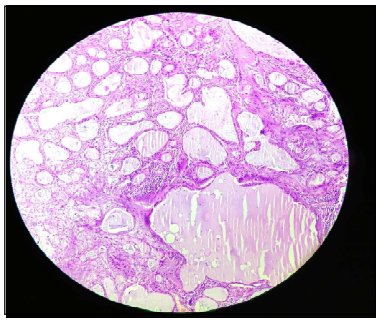

Fig 2(a) Microscopic findings of tumour section from haematoxylin-eosin stain (x 20) showing areas of gland formation along with mucoid cells, squamoid cells and intermediate cells.

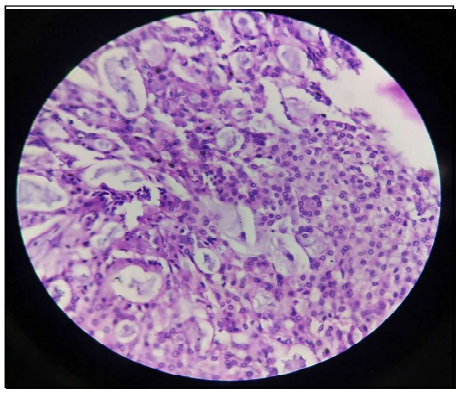

Fig 2(b) Sections from hematoxylin and eosin stain 40x showing predominance of intermediate cell (arrow)and glandular structures.

intermediate.No lympho vascular invasion and perineural invasion was identified. Pleural, bronchial and vascular margins were free of tumor. Lymph nodes were also free of tumor. Pathological staging was pT1cpN0 (*Fig. no. 2a, & 2b*).

On immunostaining, glandular structures were positive for CK7 and negative for TTF1, P40, P63, Napsin, Synaptophysin and Chromogranin.

Discussion

Though PMEC is sporadic, it is of great clinical significance because of its potential for aggressive behaviour and variable prognosis. The tumor arises from bronchial glands in the central airways, particularly in the main bronchi and trachea, and a combination of wheezing, cough, haemoptysis and dyspnoea are the most common symptom. Histologically, the pattern of proliferation of cells in MEC is cystic or cystic papillary. They may be graded into low, intermediate or high-grade malignancy based on five parameters: (i) proportion of cystic and solid elements, (ii) neural invasion, (iii) necrosis, (iv) anaplasia and (v) mitotic rate.[4] The low-grade tumors can have a long natural history and rarely metastasize, while the high-grade tumors can be very aggressive and prone to local invasion and early metastasis.[5] Diagnosis of this entity is generally made on histological features due to lack of precise clinical and imaging features. PMEC must be differentiated from adenosquamous carcinoma especially in tiny biopsy specimens obtained through fibreoptic bronchoscopy or lung puncture.

Mucoepidermoid carcinoma of a lung has got diverse histological composition, ranging from mucin secreting cells to squamous and intermediate cells. The diagnosis

of MEC is sometimes challenging. According to the WHO Classification, criteria more typical of high-grade mucoepidermoid tumors include: (i) exophytic endobronchial growth, (ii) surface epithelium lacking changes of in situ carcinoma, (iii) absence of individual cell keratinization and squamous pearl formation and (iv) transitional area to low-grade MEC.[6] Ours case was of intermediate grade.

15 cases were reported to be low grade and 3 were highgrade type tumors in one series on MEC.All low-grade tumors that had been resected were alive at the last follow-up (the mean follow-up period was 4.7 years) while all three high-grade tumors were fatal within 16 months.[7]

Complete surgical resection and lymph node dissection have been considered critical for long-term survival in patients with PMEC in some studies. Some authors have described that patientwith positive lymph node metastases, positive tumor margins, or patients with a high-grade type should undergo postoperative chemotherapy.[8]

Conclusion

We describedan intermediate grade of PMEClung who presented with fever, haemoptysis and dyspnoea, was presumably diagnosed as poorly differentiated squamous cell carcinoma lung on bronchial biopsy, but after histopathological examination of pneumonectomy specimen and IHC,it turned out to be PMEC, lung.

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