Mucoepidermoid carcinoma of the lung: a rare entity

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Abstract

A 38-year-old lady presented with mild fever and dry cough of 1 week duration. Her chest X-ray showed right middle lobe collapse and consolidation. CT thorax revealed a mass in the right middle lobe. Subsequent bronchoscopy showed a growth completely occluding the right middle lobe bronchus and extending proximally into bronchus intermedius. Right bilobectomy (middle and lower lobes) with lymphadenectomy was performed. All the histomorphological features were suggestive of a low-grade mucoepidermoid carcinoma (MEC). MEC is one of the very rare neoplasms of the lung comprising <1% of all lung tumours. Low-grade MEC has a better prognosis than high-grade tumour, the latter being similar to that of non-small-cell lung carcinoma.

INTRODUCTION

Mucoepidermoid tumours (MEC), a type of salivary gland tumours, are one of the very rare neoplasms of the lung comprising <1% of all lung tumours [1]. They have an equal sex distribution with a slight predilection for men and have an age range of 3–78 years with 50% of tumours occurring in individuals <30 years. Most patients present in the third and fourth decade of life [1]. Here, we present such a rare case encountered during our clinical practice.

CASE REPORT

A 38-year-old lady presented with mild fever and dry cough of 1 week duration. Patient was treated for pulmonary tuberculosis 4 years ago. She was a non-smoker. There was no significant family history. Her chest X-ray showed right middle lobe collapse and consolidation with a mass in the right paracardiac region. CT thorax revealed a mass in the right middle lobe (Fig. 1a and b). Subsequent bronchoscopy showed a growth completely occluding the right middle lobe bronchus and extending proximally into the bronchus intermedius. Bronchoscopic biopsy was suggestive of myoepithelioma. A second opinion also raised the possibility of neuroendocrine tumour.

FDG PET CT scan showed tracer uptake in a 5.5 × 5.8 × 5.2 cm mass in the right middle lobe and infra hilar region with complete collapse of right middle lobe, and in right hilar lymph nodes (T2N1M0). In view of this, right-sided bilobectomy (middle and lower lobe) with mediastinal lymphadenectomy was performed (Fig. 2). Histopathology revealed a tumour composed of cells arranged in lobules, sheets and focal glandular pattern separated by fibrocollagenous stroma (Fig. 3). The tumour cells showed bland vesicular oval nuclei with abundant eosinophilic cytoplasm. Few of the tumour cells were mucin secreting. The lymph nodes, a total of 27 in all, exhibited only reactive changes. All the histomorphological features were suggestive of a low-grade salivary epithelial type of neoplasm in keeping with MEC. Further immunohistochemistry revealed CK positivity with Vimentin and S-100 negativity, favouring the diagnosis of MEC. The prognosis of low-grade MEC is excellent. Hence no adjuvant therapy was given. The patient remained asymptomatic with stable chest radiology at 1-year follow-up.
DISCUSSION

MEC is a rare malignant tumour of bronchial tree. Its origin was first described in 1952 by Smetana and Liebow [2]. It accounts for <1% of all lung tumours [1]. This tumour has been reported to occur in relatively young persons. There appears to be no association with cigarette smoking or other risk factors for bronchial carcinoma such as asbestos exposure [3]. Our patient was a 38-year-old female, non-smoker.

MEC generally occurs in the central bronchial region. In our patient, the tumour was arising from middle lobe bronchus. The common clinical symptoms and signs include cough, haemoptysis, bronchitis, wheezing, fever, chest pain and rarely clubbing of the fingers [4]. Histologically these tumours are similar to those originally described in the major salivary glands and are believed to originate from the minor salivary glands lining the tracheobronchial tree [5].

Grossly, the tumour size at diagnosis ranges from 0.5 to 6 cm with an average size of ~2.2 cm in the reported literature. They are soft, polypoid and pink-tan in colour, often with cystic changes and a glistening mucoid appearance [3].

On the basis of morphological and cytological features, tumours are divided into low and high-grade types. Low-grade tumours are dominated by cystic changes and solid areas typically comprising of small glands, tubules and cysts of mucin secreting and columnar epithelial cells with infrequent mitotic activity. Often non-keratinizing squamoid cells are also seen in a sheet-like pattern with intercellular bridges. High-grade MEC is very rare and show a predominance of intermediate and squamoid cells predominate with a minor component of mucin secreting elements. They demonstrate nuclear atypia with brisk mitotic activity and a high nuclear to cytoplasmic ratio [3].

The clinical picture of MEC is similar to that of asthma, COPD or pneumonia. Hence one should keep in mind of this rare entity in patients who are unresponsive to regular treatment. Low-grade MEC has a much better prognosis than high-grade tumour, the latter being similar to non-small-cell carcinoma [3]. Radical surgery similar to lung cancer treatment is performed for MEC. Patients with low-grade MEC have a good prognosis, with a 5-year survival rate of 95% and adjuvant treatment is unnecessary.
CONFLICTS OF INTEREST STATEMENT
None declared.

REFERENCES