Mucoepidermoid Carcinomas Presented as Lobar Pneumonia

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Mucoepidermoid carcinomas (MECs) had always been recognized as salivary gland tumors mainly steming from parotid and submandibular salivary glands. Later, studies showed that MECs can occur in bronchus, esophagus, lacrimal glands, pancreas, thymus, and thyroid gland. MECs in bronchus are usually centrally located and are proposed to originate from submucosal minor salivary-type glands in large airways. However, MECs are rare neoplasms accounting for only 0.1–0.2% of primary lung cancers.[1] Here, we report a case of MEC presented as lobar pneumonia in the lower lobe of the right lung.

A 30-year-old male presented with fever, cough, and occasional white sputum. Chest X-ray results showed patchy clouding opacity in the lower lobe of the right lung. Therefore, the patient was diagnosed as having lobar pneumonia. After treatment with antibiotics for one week, however, he still had fever and there was no obvious absorption observed in chest X-ray. When he came to our hospital, blood routine examination showed that the white cells were 15.43×10^9/L and the neutrophils accounted for 80%. Erythrocyte sedimentation rate was 20 mm/h. The tumor markers (male) revealed that sugar chain antigen 724 was 23.87 U/ml (normal <10 U/ml). There was no obvious abnormality of T-spot, liver function, blood fat, kidney function, ion, and so on. Lung computed tomography (CT) scans were performed, and tracheal nodular soft-tissue shadow was seen in the right lower lobar bronchus [Figure 1a]. Bronchoscopy observed partial effacement of the right lower lobe bronchus by a polypoid tissue [Figure 1b], which was in favor of MEC of lung in histopathology. Subsequently, lobectomy via thoracotomy was performed, and low-grade MEC of lung (T2aN0, IB) was confirmed by pathology. The neoplasm was composed of sheet-like and glandular neoplastic cells embedded in abundant loose fibrovascular stroma. Approximately 80% of the cells were of intermediate type, 10% were mucous-producing cells, and 10% were epidermoid-type cells. The predominant populations of neoplastic cells were polygonal with distinct cell borders, a moderate amount of eosinophilic-to-amphophilic lacy cytoplasm, and an irregularly round-to-oval nucleus possessing vesiculate chromatin and 1–2 prominent nucleoli. This cell type was intermediate between epidermoid and mucous-producing cells. The mucous-producing neoplastic cells formed acinar structures containing swollen cells with abundant clear cytoplasm and round central nuclei, or nuclei displaced to the periphery (signet-ring cells). Epidermoid cells were present individually or in nests, with abundant eosinophilic cytoplasm. Occasionally, individual epidermoid cells possessed lamellar cytoplasmic keratinization or larger compact lamellations of keratin (keratin pearls) [Figure 1c]. No complementary treatments were administered following the surgery. The lung CT scans and bronchoscopy evaluations showed that there was no recurrence within two years after the surgery. Long-term follow-up will be carried out on this patient.

As a malignant tumor of bronchial gland origin, MEC can occur over a broad age range. Symptoms are primarily those of bronchial irritation and obstruction, and include cough, wheezing, hemoptysis, postobstructive pneumonia, and bronchial asthma. The more worrisome constitutional symptoms of pain, weight loss, and malaise reflect potential aggressiveness of these tumors. In the present case, obstructive pneumonia is the main symptom. Although chest X-ray is the first-line radiological test in the evaluation of patients with symptoms of airway obstruction, the results are rarely conclusive;[2] for instance, tracheal lesions are usually missed. Especially for this patient as a young male, the risk of having malignant tumor is quite low. Therefore, when pneumonia was not absorbed after antibiotic treatment,

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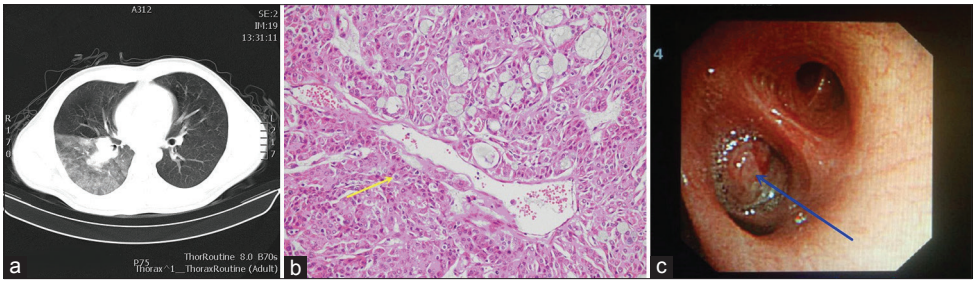

Figure 1: Chest computed tomography scan showing tracheal nodular soft-tissue shadow and patchy clouding opacity in the lower lobe of the right lung (a); bronchoscopy observed partial effacement of the right lower lobe bronchus by a polypoid tissue (b); the mucoepidermoid carcinoma confirmed by pathology (c).

it is necessary to perform chest CT scan or, if necessary, bronchoscopy.[3]

MECs of lung are often treated by lobectomy, sleeve resection, local resection, segmental resection, or even endoscopic removal. In this case, the patient had the operation of lobectomy by a standard posterolateral thoracotomy. Most patients with this disease have a favorable outcome after a complete resection.[4] Metastasis of low-grade MEC of lung is rare, and low-grade MECs have a much better prognosis than high-grade carcinomas,[5] with a 5-year survival rate of 95%. Adjuvant treatment is usually considered unnecessary. However, this disease may recur in distant organs in a small subset of patients according to a long-term follow-up study. A review of 173 salivary gland MECs noted that distant metastases affected 16 patients (9.2%), most frequently in the lungs.[4] Therefore, long-term follow-up is necessary for patients to monitor disease progression.

MEC of the lung is a rare malignant neoplasm. Combining the result of lung CT scan with histopathology obtained by bronchoscopy is the main way to make the diagnosis. Complete surgical resection is still an effective treatment for pulmonary MEC. Patients with low-grade MECs can be expected to be cured following complete resection. However, as metastasis could still occur, though in relatively low proportion of patients, it is necessary to follow up disease progression for long term.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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