CASE REPORT

Chondrosarcoma of the lobar bronchus with prolonged postoperative survival

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Chondrosarcoma of the lobar bronchus with prolonged postoperative survival. P.C. Azimullah, J.P. Teengs, E.J. Boerma. ©ERS Journals Ltd 1994.

ABSTRACT: Primary chondrosarcoma originating from the bronchus is very rare. We describe the case of a 71 year old man with a large chondrosarcoma originating from the left lower lobe bronchus.

The tumour was resected and, in contrast to most patients with such tumours, this patient is well, without complaints or abnormalities on X-ray or computed tomographic (CT) scan, 3 yrs after surgery.

Tumour characteristics, symptoms, diagnosis and treatment are discussed. Radical surgical resection is the treatment of choice.

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Case report

The 71 yr old patient, who had smoked for 50 yrs, had suffered from chest pain since 1983. He had consulted a cardiologist, who found no abnormalities, and chest fluoroscopy was normal at that time. One year later, he also developed slight dyspnoea during exercise. Two weeks before referral to our hospital, in March 1991, he had productive cough, slight haemoptysis, and left-sided chest pain.

At physical examination, there was a dullness over the lower part of the left lung, with diminished breath sounds. Chest X-ray and computed tomographic (CT) scan revealed a large, space occupying tumour in the left thorax, fixed to the diaphragm, with central calcification. Enlarged mediastinal lymph nodes were not found.

Laboratory examinations showed no abnormalities, with the exception of an erythrocyte sedimentation rate of 108 mm·h⁻¹. Bone scan demonstrated increased uptake in the left hemithorax, but no evidence of skeletal involvement. Flexible bronchoscopy showed external compression of the left main bronchus and the lingular bronchus. The left lower lobe bronchus was completely obstructed. Transbronchial and transthoracic aspirations were negative for tumour cells.

At operation, the left lower lobe was replaced by a 12 cm large, spherical, encapsulated tumour of bony consistence, adherent to the diaphragm, pericardium and aorta (fig. 1). Resection of the left lower lobe and the tumour was performed. The macroscopic resection margin at the origin of the lingular bronchus was 1.5 cm. During the resection of the tumour, greyish friable tissue was split from the mediobasal side of the tumour.

Fig. 1. – The surface inside the chondrosarcoma of the lower lobe of the left lung.

Radicality of the resection margins of the bronchus could not be judged at frozen section examination of the bronchial cartilage. The bronchial mucosa was free from tumour.

Histological examination revealed a well-differentiated chondrosarcoma originating from the bronchial cartilage of the left lower lobe bronchus, with central calcifications, and invasion of the pleura. The multilobular architecture of the chondroid tissue was disturbed by chaotically spread clusters of mature and polymorph chondrocytes with double nuclei (fig. 2). Obvious mitotic cells could not be found. The cartilage at the resection margin of the bronchus contained some chondrocytes with double nuclei, so that radicality was questionable. No metastases were found in the adjacent lymph nodes.

Fig. 2. — Microscopic examination of the tumour shows well differentiated, mature, multinodular, chondroid tissue, with mixed cellularity and binuclear chondrocytes bordering the bronchus.

Postoperative recovery was uncomplicated, and 3 yrs after surgery the patient had no complaints and no signs of malignancy on chest X-ray or CT scan.

Discussion

Primary chondrosarcoma originating from an intrapulmonary bronchus is very rare. Some 20 cases have been described [1–6]. In the literature, a distinction is made between centrally-located tracheobronchial tumours and peripherally-located tumours [1–9]. The tracheobronchial tumours are sharply demarcated and slow-growing. They spread mainly locoregionally, and extrathoracic dissemination is unusual. The peripheral tumours grow rapidly, invading the great vessels of the chest, and disseminate widely [3, 4].

Symptoms may consist of cough, dyspnoea and chest pain. In both groups, symptoms often arise insidiously, as a result of compression of lung or bronchus from the expanding tumour. Eventually, there may be pleural or lymph node involvement [3, 4, 7].

Diagnosis of this tumour may be difficult because of the diversity in clinical expression. Malignancy is sug-

gested by chest X-ray, CT scan and macroscopic findings at operation. The bone scan is normal in most cases. Bronchoscopy and biopsy may be of value [2, 3, 7–9], but was not contributive in our case.

Histopathologic examination shows mature chondrocytes, calcifications and some double nuclei [5].

The treatment of choice is surgical resection [2, 6, 7, 9], but the size of the resection margin is open to question, since frozen section examination is unreliable for evaluation of radicality at operation. In our case, the double nuclei at the resection surface of the bronchial cartilage were found only at postoperative tissue examination. Neither radiotherapy nor chemotherapy have proved to be of value [7].

Few patients survive more than one year [2], fortunately our patient did. The prognosis seems to differ between the tracheobronchial tumour and the peripheral tumour [1–4, 7, 9]. The tracheobronchial tumour appears to have a better prognosis, possibly because of earlier onset of symptoms or less aggressive biological behaviour [1, 3, 4, 7, 9].

Death is often caused by the space-occupying effect of the tumour, with locoregional spread to surrounding tissue and lymph nodes.

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