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Short Reports

Liposarcoma of the trachea

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Tumours of the trachea are rare and this is especially true of the non-epithelial tumours, most of which are benign. We report a patient in whom a tracheal liposarcoma was diagnosed during investigation for a bronchial carcinoma.

Case report

A 76-year-old man was referred with haemoptysis, breathlessness, and increasing fatigue. He appeared healthy, but squeaky wheezes were heard over the left upper hemithorax. Investigations showed that the ESR was raised to 117 mm in the first hour, blood test results were normal, and Mantoux reaction was negative.

The chest radiograph showed a round lesion measuring 5×5·5 cm in the superior portion of the left upper lobe. Bronchography showed a peripheral filling defect in the apicoposterior segment of the left upper lobe and a polypoid filling defect in the trachea. At bronchoscopy a small polypoid structure with a diameter of almost 1 cm was observed (fig 1) in the left dorsolateral area of the lower third of the trachea, about 2 cm above the ostium of the left main bronchus. Biopsy specimens were taken from this smooth tumour and also from a stenosis in the left apical segmental bronchus. The histology showed lipomatous tissue from the trachea and a moderately differentiated squamous cell carcinoma in the bronchus. During a second bronchoscopy the tracheal tumour was completely removed. There was no evidence of metastasis from either tumour, and a left upper lobectomy was performed. Bronchoscopy was repeated one month and six months after the operation, and multiple biopsy specimens were taken from the tracheal mucosa. Twelve months after the operation the patient is in good health without evidence of recurrence.

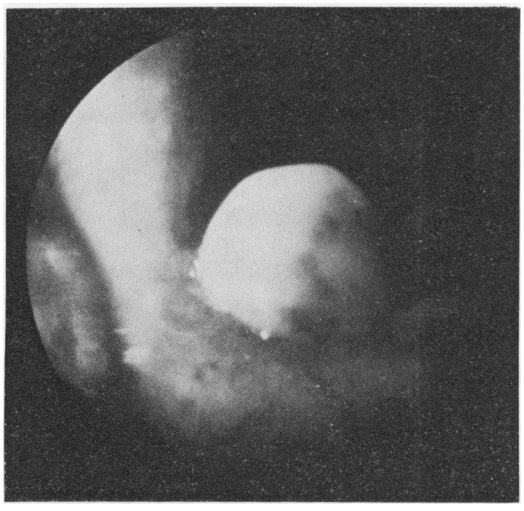

Fig 1 *Bronchoscopic picture of polypoid tumour in trachea.*

PATHOLOGICAL FINDINGS

The initial biopsy specimens from the trachea showed polypoid mucosa covered with respiratory epithelium. Locally there were some metaplastic changes, but no epithelial dysplasia. Directly under the epithelium there was a large area consisting of mature adipose tissue without cellular or nuclear atypia. Histological examination of the complete tumour, however, showed next to the mature adipose tissue, extremely cellular areas in which there was obvious atypia. The cytoplasm of these cells was finely vacuolated, and some of the nuclei also contained vacuoles. The nuclei were large, polymorphic, and varied in size. In some areas there was moderate mitotic activity. A well-differentiated liposarcoma was diagnosed (fig 2).

The biopsy specimen from the apical segment bronchus and the histological examination of the lobectomy specimen showed a moderately differentiated squamous cell carcinoma. There was no invasion of the pleura and bronchial border and the regional lymph nodes were free from metastasis.

Discussion

Tumours of the trachea are rare, and there is no clear indication in published reports of their frequency. In the past 10 years we have found a ratio of six primary tracheal to 3400 bronchial tumours. Most of them are primary epithelial tumours, squamous cell carcinomas being the most frequent. The other neoplasms

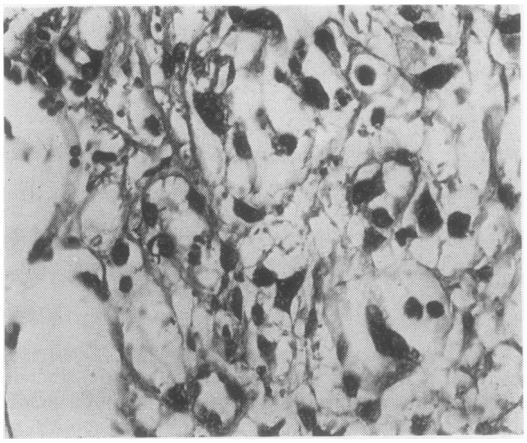

Fig 2 *Histological picture of malignant part of lipomatous tracheal tumour. (Haematoxylin and eosin ×560.)*

that can be found in the trachea are, in descending order of frequency, adenoid cystic carcinoma, muco-epidermoid carcinoma, and carcinoid. Secondary tumours may arise through direct infiltration from primary neoplasms in surrounding structures, such as larynx, bronchus, oesophagus, and thyroid. Metastasis (Garces *et al*, 1974) is rare but can arise from tumours in breast, colon, and kidney.

In comparison with epithelial tracheal tumours, non-epithelial neoplasms are exceedingly rare and are usually benign. They can arise from all mesenchymal tissues that are found at this site. Only a few malignant mesenchymal neoplasms have been reported (Fallahnejad *et al*, 1972; Mori *et al*, 1977; Roncoroni *et al*, 1973). We believe that our case is the first reported liposarcoma of the trachea. Our findings of areas of mature adipose tissue bordering on obviously malignant tissue explain why the initial biopsy led to the diagnosis of lipoma. Furthermore, it is well known that the histological differentiation between lipoma and a highly differentiated liposarcoma can be extremely difficult.

The combination of a mesenchymal tumour of the trachea and a bronchus neoplasm had not previously been reported. However, combined epithelial, tracheal, and bronchial tumours have been described (Hajdu *et al*, 1970). Such small tracheal neoplasms are usually found only by chance either during clinical investigation for other reasons or during necropsies.

References

Fallahnejad, M, Harrell, D, Tucker, J, Forest, J, and Blakemore, W S (1972). Chondrosarcoma of the trachea. *Journal of Thoracic and Cardiovascular Surgery*, **65**, 210–213.

Garces, M, Tsai, E, and Marsan, R E (1974). Endotracheal metastasis. *Chest*, **65**, 350–351.

Hajdu, S I, Huvos, A G, Gooner, J T, Foote, F W, and Beattie, E J (1970). Carcinoma of the trachea. *Cancer*, **25**, 1448–1456.

Mori, K, Cho, H, and Som, M (1977). Primary "flat" melanoma of the trachea. *Journal of Pathology*, **121**, 101–105.

Roncoroni, A J, Puy, R J M, Goldman, E, Fonseca, R, and Olmedo, G (1973). Fibrosarcoma of the trachea with severe tracheal obstruction. *Thorax*, **28**, 777–781.

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