Figure 2 Submucosal carcinoid tumour showing a trabecular arrangement of cells typical of a foregut carcinoid. (Haematoxylin and eosin, low magnification.) The insert (bottom right) shows numerous intracytoplasmic neuroendocrine granules present in the carcinoid cells (black dots) (Grimelius method, high magnification).

Waldum *et al*⁵ suggest that the diffuse form of gastric carcinoma may be derived from ECL cells. They propose that the occasional mixed tumours seen in the stomach,⁹ of which this is the equivalent in the oesophagus, could occur by proliferation of a more primitive cell than the committed ECL cell or be the result of paracrine effects of mediators

released by the endocrine cells themselves. This raises the possibility that ECL cells could be important in the origin of other oesophageal adenocarcinomas. This is of particular relevance in Barrett's oesophagitis as omeprazole is a standard therapy for this condition and long term treatment with this drug causes ECL hyperplasia and development of carcinoid tumours in rats.¹⁰

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Suture granuloma simulating lung neoplasm occurring after segmentectomy

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Abstract

A suture granuloma was resected which developed after segmentectomy of a squamous cell carcinoma of the lung and radiologically mimicked a neoplasm. This report emphasises that although the appearance of the lesion may be typical for malignancy, the possibility of a benign suture granuloma should be considered, especially if the lesion appears shortly after surgery.

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The occurrence of a suture granuloma after resection of lung tissue is very rare compared

with surgery in other organs. We present a case of a suture granuloma which developed three months after resection of a lung neoplasm and mimicked local tumour recurrence.

Case report

A 64 year old white man presented with productive cough and fever. The chest radiograph showed right upper lobe collapse. Bronchoscopy revealed obstruction of the right upper lobe bronchus by a squamous cell carcinoma. The tumour was staged T₁N₀M₀ (stage I) and the patient underwent a right upper lobectomy with an uneventful post-operative course. Fourteen months later a routine follow up chest radiograph showed a small well defined round lesion, 15 mm in diameter, localised in the apical segment of the right lower lobe. Bronchoscopic examination showed patent bronchi but brush cytology from the right lower lobe yielded squamous carcinoma cells. This was considered to be a second primary cancer and staging procedures did not show spread. The patient underwent a second thoracotomy and segmental resection was performed. The edges of the lung were sutured with continuous 3/0 silk. The pathological specimen showed 0.2 cm of tumour free tissue around

Figure 1 Computed tomographic scan three months after the second thoracotomy showing a 2 cm lesion with irregular spiculated borders in the posterior segment of the right lower lobe.

the mass. The postoperative course was uneventful.

Three months after the second thoracotomy a follow up chest computed tomographic scan showed a 2 cm oval lesion with spiculated borders located in the posterior segment of the right lower lobe (fig 1). Staging showed this lesion to be isolated with no evidence of spread. In view of the possibility of this lesion being a recurrence as a result of unsatisfactory resection, the patient under-

went further resection of the remaining lung. At thoracotomy a hard irregular mass was palpated in the posterior aspect of the right lower lobe. Macroscopically the lesion consisted of grey elastic tissue which microscopically proved to be a suture granuloma (fig 2). No signs of malignancy were found in the resected lung. The postoperative course was complicated by a bronchopleural fistula which closed with conservative treatment and since then the patient has been well.

Discussion

Suture granulomas are quite common after surgical procedures such as splenectomy, gastrectomy, colectomy, herniorrhaphy, prostatectomy, cholecystectomy, brain surgery, and bladder surgery.¹⁻⁹ The occurrence of a suture granuloma mimicking a tumour in the lung is very rare. Reviewing the literature we found only one case mentioned which followed resection of metastatic nodules in the lung from a synovial sarcoma.¹⁰

In this case several points may be emphasised. The shape of the lesion on the computed tomographic scan which consisted of a spiculated mass (fig 1) was typical for malignancy and was misleading. The speed with which the lesion developed after surgery, however, should have suggested the possibility of a benign process and a suture granuloma should have been considered. This could have been confirmed by a fine needle aspiration before surgery or by frozen sections at thoracotomy.

The rarity of this complication in the lung compared with the development of tumour recurrence after segmental resection would make the differentiation between the two quite challenging. Our experience should encourage clinicians to pursue the diagnosis and not rush into unnecessary resection.

Figure 2 Micrograph showing fragments of suture material surrounded by hard connective tissue, giant cells, and mild chronic inflammatory reaction.

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