

Clinical Images

Squamous cell carcinoma arising from the pleura after pneumonectomy for squamous cell carcinoma of the lung

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KEYWORDS:

Pneumonectomy;
Empyema;
Eloesser;
Carcinoma;
Squamous;
Fistula;
Bronchopleural

Abstract

BACKGROUND: A 67-year-old Caucasian man had a right pneumonectomy for primary bronchogenic carcinoma in 1998. He developed a bronchopleural fistula that was managed with an Eloesser procedure. His appearance 6 years later has been published previously.

METHODS: We performed a case report and literature search.

RESULTS: In 2008, the patient still had a bronchopleural fistula and reported a new symptom: constant right chest pain. He had experienced extensive asbestos exposure and mesothelioma was suspected. Endoscopy via the Eloesser aperture revealed innumerable tumor nodules. Biopsies of the pleura revealed multifocal, well-differentiated, squamous cell carcinoma with histology that was distinctly different from that of the original lung cancer. The tumor progressed rapidly during work-up and invaded the spine. He received palliative treatment but died 4 months after the onset of chest pain. We conducted a literature search and found 9 previous reports of epidermoid carcinoma arising from the pleura in patients with a chronically draining empyema; 5 patients had a prior pneumonectomy.

CONCLUSIONS: Cancer can arise in areas of chronic inflammation such as osteomyelitis with a draining sinus, Crohn's disease, or chronic gastritis. Cases of squamous cell carcinoma arising from the pleura in patients with a chronically draining empyema cavity are extremely rare. We believe this is the sixth report in the literature of squamous cell carcinoma arising from the pleura in a patient with a chronic postpneumonectomy bronchopleural fistula. In vivo video footage of the involved pleura is available (<http://video.google.com/videoplay?docid=7638947955392235731>).

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Case presentation

A 67-year-old Caucasian man had a right pneumonectomy for primary bronchogenic carcinoma in 1998. He developed a bronchopleural fistula that was managed with an Eloesser procedure. His appearance 6 years later has been published previously.¹

In 2008, the patient still had a bronchopleural fistula and reported a new symptom: constant right chest pain. He had

experienced extensive asbestos exposure and mesothelioma was suspected. Endoscopy via the Eloesser aperture revealed innumerable tumor nodules. Biopsies of the pleura revealed multifocal, well-differentiated, squamous cell carcinoma with histology that was distinctly different from that of the original lung cancer. The tumor progressed rapidly during work-up and invaded the spine. He received palliative treatment but died 4 months after the onset of chest pain (Figs. 1–4).

We conducted a literature search and found 9 previous reports of epidermoid carcinoma arising from the pleura in patients with a chronically draining empyema; 5 patients had a prior pneumonectomy.

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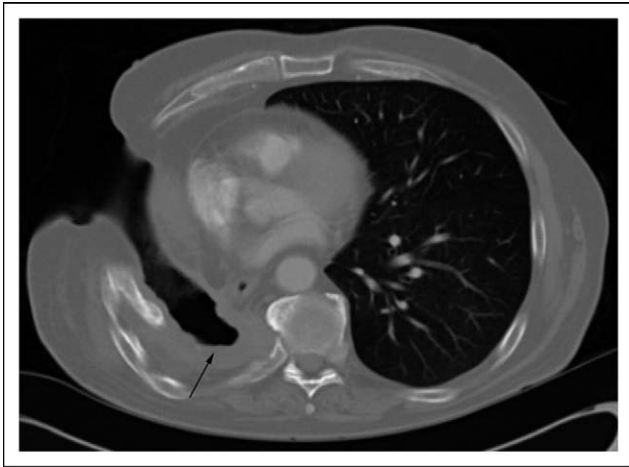


Figure 1 CT scan of the thorax 10 years after pneumonectomy at the level of the Eloesser flap shows the mediastinum shifted to the right with compensatory hyperinflation of the left lung. No evidence of left pulmonary mass, mediastinal mass, or adenopathy were noted. Pleural thickening is present in the right hemithorax (arrow).

Conclusions

Cancer can arise in areas of chronic inflammation such as osteomyelitis with a draining sinus, Crohn's disease, or chronic gastritis. Cases of squamous cell carcinoma arising from the pleura in patients with a chronically draining empyema cavity are extremely rare. We believe this is the

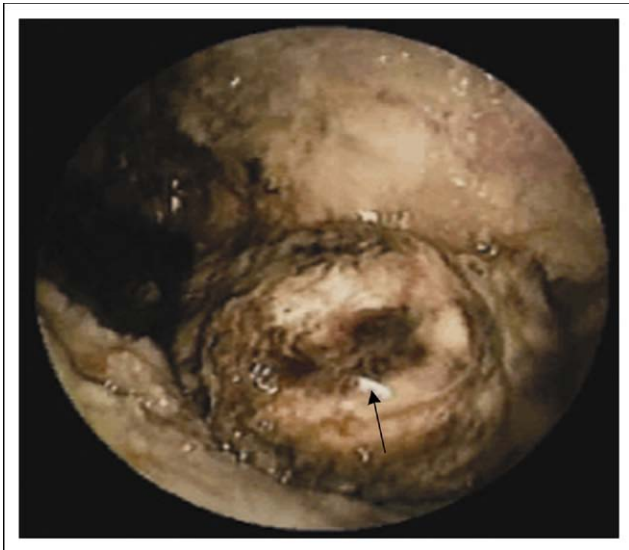


Figure 2 Endoscopic image of the pleura showing innumerable tumor nodules. The arrow indicates the site of the bronchopleural fistula.

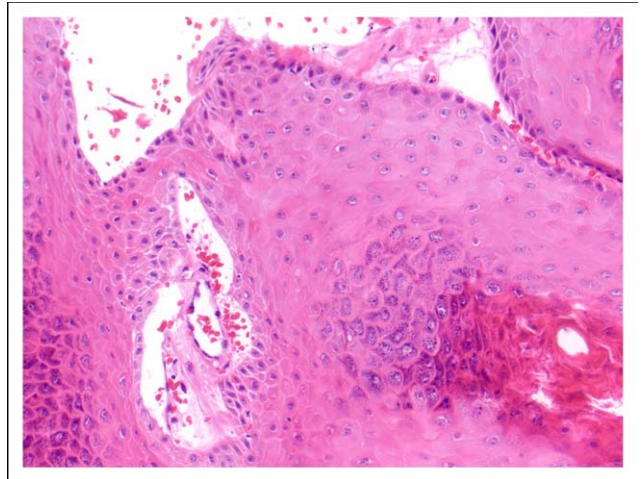


Figure 3 Pleural biopsy from 2008. H&E magnification, 200 \times . Keratinized, well-differentiated, squamous cell carcinoma. The cells display a stratified arrangement that is reminiscent of epidermis.

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Reference

1. Halling JD, Johnson FE. Eloesser procedure for post pneumonectomy bronchopleural fistula. *Am J Surg* 2004;187:100–1.

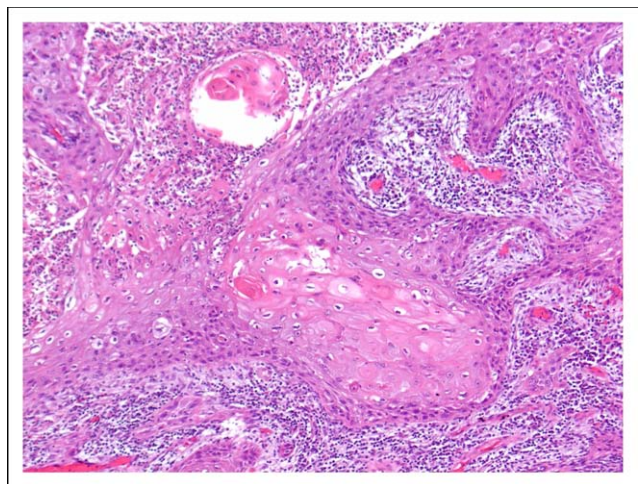


Figure 4 Pneumonectomy specimen from 1998. H&E magnification, 200 \times . Nonkeratinized, moderately differentiated, squamous cell carcinoma. No invasion of the pleura was noted.