

## Surgical images: soft tissue

### Tension pyopneumothorax

#### Presentation

A 49-year-old man had a productive cough, chills, fever, weakness, exertional dyspnea and pleuritic chest pain for 4 weeks. The patient was afebrile. Breath sounds were diminished over the right chest area. The patient's leukocyte count was  $45 \times 10^9/L$ . Chest radiographs (Fig. 1) showed apical pneumothorax, an air-fluid level with opacity of the right lower chest field and mediastinal shift to the left. Computed tomography of the chest (Fig. 2) confirmed the presence of a large homogeneous fluid collection in the right chest field, pneumothorax and mediastinal shift to the left, with some gas adjacent to the compressed lung.

The patient was treated with broad-spectrum antibiotics. A large-bore chest tube was placed. Several litres of foul-smelling fluid were evacuated from the chest under high pressure. Cultures were polymicrobial and grew both aerobes and anaerobes. *Streptococcus viridans* and *Peptococcus* were isolated in cultures from



FIG. 1. Chest radiographs of a 49-year-old man: posteroanterior view (left) and lateral decubitus view (right).

this patient. The patient was again treated with broad-spectrum antibiotics, and a thoracostomy tube was placed.

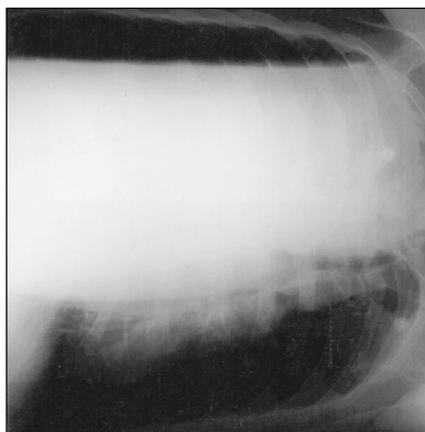
What is the diagnosis?

#### Diagnosis

Tension pyopneumothorax is a rare cause



FIG. 2. Computed tomographic image of the same patient's chest.



of pulmonary symptoms that has been seen in patients with a ruptured esophagus,<sup>1</sup> lung necrosis<sup>2</sup> and a postpneumonectomy bronchopleural fistula.<sup>3</sup> Tension pyopneumothorax has also been seen as a complication of pneumonia and empyema.<sup>4,5</sup> We have treated one other patient with tension pyopneumothorax secondary to pneumonia and empyema.

We assume that the pneumothorax and shift of the mediastinum resulted from positive pressure due to gas from the *Peptococcus*, a gas-producing organism, accumulated in the pleural space.

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