Pulmonary infiltrates and skin lesions

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A 60-year-old man, a heavy smoker, was hospitalised because of a three-month history of pleuritic chest pain, dry cough and weight loss. He had lost 20 kg in weight and suppurative skin lesions began appearing on the chest wall. His medical history was unremarkable. On examination he was cachectic (44 kg) and pale. His temperature was 37.8°C. Important physical findings of the chest and neck are shown in figure 1. The axillary and neck nodes were enlarged and tender. Clubbing was present. Chest auscultation disclosed decreased breath sounds bilaterally, with no rales or ronchi. Non-tender, soft, small skin masses were observed and palpated on the chest wall. A chest X-ray and computed tomography (CT) scan were performed (figures 2 and 3).

Figure 1

Figure 2

Figure 3

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Questions

- 1 What are the most prominent physical findings shown in figure 1?
- 2 Describe four radiologic findings shown in figures 2 and 3.
- 3 Name the two most likely differential diagnoses in this case.

Answers

QUESTION 1

In the middle of the left clavicle a small mass can be observed. On palpation, it was soft and non-tender. Such a finding can fit the description of 'cold abscess'. Furthermore, multiple sinuses on the anterior chest wall and neck can be observed. The sinus on the sternum is covered by dried crusted secretions.

QUESTION 2

The chest X-ray shows a right upper lung infiltrate and an osteolytic lesion of the ninth rib (arrow). On CT scan, a left pleural effusion and a sinus communicating the pleural space and anterior soft tissue infiltrate of the chest wall (arrow) can be observed.

QUESTION 3

The osteolytic lesion of the ninth rib makes the diagnosis of malignancy very appealing. However, the presence of a lung infiltrate, pleural effusion, skin sinuses and 'cold abscesses' should suggest an infectious process. Although uncommon in the present day, the particular association of pleuropulmonary disease with chest sinuses spontaneously draining an empyema, or a soft tissue mass, may be quite typical of both tuberculosis and actinomycosis.^{1,2} In addition, bone involvement may be a manifestation of localised or disseminated disease found in both entities. Nocardiosis, mucormycosis and blastomycosis are other rare diseases in which these clinical manifestations have been described.²⁻⁵

Discussion

The diagnosis in this case was reached easily by needle puncture of one of the 'cold abscesses'

which revealed several acid-fast bacilli, later identified as *Mycobacterium tuberculosis*. The patient was treated with isoniazid, rifampicin and pyrazinamide, and after a two-year follow-up period, he is doing well. The protean manifestations of tuberculosis have been well appreciated for centuries. Two particular presentations of disease in this case are noteworthy. The first was the osteolytic lesion of the ninth right rib, initially considered to be of neoplastic origin.

Skeletal tuberculosis accounts for 1–2% of all cases of tuberculosis and, particularly when manifesting as a multifocal disease, it may mimic malignant disease both clinically and radiologically.⁴ The second unusual presentation was empyema burrowing through the parietal pleura and spontaneously discharging its content. This is consistent with what was previously described as 'empyema necessitatis', a well-known complication of chronic empyema before the antibiotic era.^{3, 7-11} In the 1940s *M. tuberculosis* was responsible for 73% of empyema necessitatis.³ In the past 10 years, tuberculosis has resurged as one of the most important communicable diseases and is responsible for about 27% of preventable deaths worldwide.¹¹ Clinically, it should suffice to say that in the 1990s, as in the 1890s, any puzzling multisystem disease may turn out to be tuberculosis.

Final diagnosis

Tuberculosis.

Keywords: empyema necessitatis, tuberculosis, scrofula

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