Netherlands
The Journal of Medicine

A large soft tissue mass of the chest wall

L.F.M. Beenen[1]*, M.K.E. Koolen[2], J.J. Hoogerwerf[3], N.W.L. Schep[2]

Department of [1]Radiology, [2]Trauma Unit Surgery, and [3]Medicine, Academic Medical Centre, Amsterdam, the Netherlands, *corresponding author: tel: +31 (0)20-5669111, e-mail: L.F.Beenen@amc.uva.nl

CASE REPORT

After collapsing in the street, a 48-year-old African man was presented to our shock room. The patient had been suffering from productive cough, shortness of breath, nightly sweating and weight loss for five months. He arrived from a trip to Nigeria three days before. He was previously diagnosed with type 2 diabetes mellitus and hypertension. Physical examination showed a 20 cm large subcutaneous swelling on the right chest wall, diminished breath sounds over the right lung, tachypnoea of 29 breaths/min, tachycardia of 110 beats/min, normal blood pressure (145/90 mmHg), and a temperature of 38.0 °C. Oxygenation was 100% with 15 l O_2. The abdomen was not tender, traumatological and neurological examinations were normal. Laboratory findings: haemoglobin 4.6 mmol/l, leucocytes 4.9 x 10^9/l , platelets 325 x 10^9/l, serum creatinine 163 µmol/l, sodium 126 mmol/l, albumin 28 g/l and C-reactive protein 42.5 mg/l. Liver-associated enzyme levels were normal. Blood gases showed pH of 7.51 with PCO_2 4.0 kPa and HCO_3 24.4 mmol/l.

Anteroposterior chest X-ray showed a large soft tissue shadow overlying right-sided consolidations and pleural fluid (*figure 1*). Chest CT showed a large intra- and extrathoracic fluid collection (*figure 2*).

Figure 1. *Chest X-ray showing a large right-sided soft tissue shadow, pulmonary consolidations and pleural fluid*

Figure 2a. *Chest CT in mediastinal setting (2a) showing a right-sided pleural collection with rim enhancement with a breakthrough fistula into a large prepectoral subcutaneous collection*

WHAT IS YOUR DIAGNOSIS?

See page 89 for the answer to this photo quiz.

ANSWER TO PHOTO QUIZ (PAGE 86)

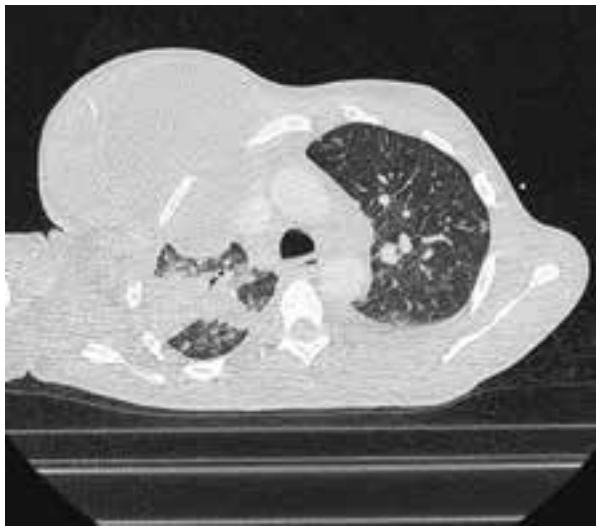
A LARGE SOFT TISSUE MASS OF THE CHEST WALL

DIAGNOSIS

Tuberculous empyema necessitatis.

Contrast-enhanced CT of the chest showed a right-sided empyema with breakthrough into a large prepectoral collection, the 'empyema necessitatis'.[1] Also large consolidations in the right lung, bilateral randomly spread intrapulmonary nodules and mediastinal lymphadenopathy were observed.
Subsequently pus was aspirated from the prepectoral swelling. Culture was positive for *Mycobacterium tuberculosis*, as was a sputum culture. The patient was put into quarantine, a chest tube was inserted for drainage of the abscess, and quadruple therapy in combination with pyridoxine was started.
Eight days later he was transferred to another hospital for further treatment. Mantoux screening ordered by the public health authority was negative for all caretakers involved.

Figure 2b. *In lung setting (2b) large consolidations in the right lung, bilateral randomly spread intrapulmonary nodules and mediastinal lymphadenopathy are observed*



Tuberculosis is a common, world-wide, airborne infectious disease caused by *Mycobacterium tuberculosis*.[2] Following ingestion by alveolar macrophages in the distal airways, the disease is controlled in most immunocompetent people. When not controlled, active disease i.e. primary or 'open' tuberculosis will follow, with accompanying malaise, persistent cough, haemoptysis, fever and weight loss. In a later stage caseinating granulomas can form. Secondary tuberculosis occurs when a silent disease progresses to an active disease, usually in immunodeficient people. In the Netherlands the incidence of tuberculosis nowadays is stable at ± 6.1 per 100,000, mostly in non-native inhabitants.[3] Mortality is around 6%.[4] As symptoms can be insidious, tuberculosis is not always easily recognised.[2]
Our patient showed a large swelling of the chest wall. Differential diagnosis of unilateral chest swelling consists of haematoma, chest wall tumours (lipoma, lymphoma, metastasis, sarcoma) and infectious diseases or abscesses from chest wall, pleural, pulmonary or mediastinal origin. Tuberculosis accounts for most cases of empyema necessitatis, but other organisms such as *Actinomyces* and *Nocardia* can also be responsible.
If a patient presents with insidious pulmonary symptoms, a high index of suspicion for tuberculosis is required and preventive measures against spreading should be taken.

REFERENCES

1. Andreu J, Caceres J, Pallisa E, Martinez-Rodriguez M. Radiological manifestations of pulmonary tuberculosis. Eur J Radiol. 2004;51:139-49.
2. Frieden TR, Sterling TR, Munsiff SS, Watt CJ, Dye C. Tuberculosis. Lancet. 2003;362:887-99.
3. KNCV Tuberculosefonds. Kerncijfers 2010. URL: www.kncvtbc.nl (15 November 2011).
4. Slump E, Erkens CGM, Kalisvaart NA, van Rest J, Šebek M, van Soolingen D. Tuberculose in Nederland 2009, Surveillancerapport over de tuberculose situatie in Nederland. Den Haag: KNCV Tuberculosefonds; 2010.