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Chest swelling in a patient from West Africa

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A 24-year-old man from West Africa, with no significant past medical history, presented to the emergency department with a soft, cold and painful swelling on the anterior chest wall, along the mid-axillary line (Figure A).

The mass progressively increased over a period of 2 months along with fatigue, weight loss, mild fever and spinal lumbar pain. No cough, dyspnea or recent trauma were reported. Blood tests demonstrated a mild increase of inflammatory markers with normal white cells count. A computed tomography of the thorax described a 9 per 7 cm necrotic lesion of the third rib and a bone rarefaction of the fourth lumbar vertebra; no lymphadenopathy or pleuro-pulmonary lesions were reported. Ultrasound-guided aspiration revealed yellow-brown odourless fluid (Figure B). Bacterial cultures and cytologic examination of the fluid were negative. Acid-fast bacilli microscopy was positive for *Mycobacterium* and nucleic acid amplification test confirmed *Mycobacterium* infection. Serologic test for human immunodeficiency virus was negative. A four-drug antituberculosis regimen was started. Mycobacterial culture demonstrated an infection by *Mycobacterium africanum*, sensitive to all anti-tuberculosis agents. After six months of specific treatment, the patients displayed a complete resolution of the symptoms, weight gain and euthermia along with a complete reduction of the thoracic swelling.

Cold abscess is an infectious fluid collection that lacks the classical signs of inflammation (rubor and calor)[1]. It is usually associated with tuberculosis or fungal infections. Cold abscess represents an uncommon expression of extrapulmonary tuberculosis and is usually associated to other skeletal manifestations of disease[2].

Diagnosis of tuberculosis of the chest wall is challenging. Acid fast bacilli smear or culture is positive in only 30-50% of aspirated fluids; nucleic acid amplification test increases the sensitivity to more than 80%. Histological analysis of the specimen after surgical excision is considered the gold standard test, in case of negative results after fluid aspiration [3].

Treatment for chest wall tuberculosis with cold abscess is controversial and limited evidences are currently available in the comparison between medical and surgical therapy. Some authors consider surgical resection mandatory [4], however others suggested a first-line medical therapy with or without drainage, followed by surgical intervention in case of persistence of the abscess after 2-3 months of medical treatment [3]. Considering the complete clinical response to medical therapy combined with percutaneous drainage, surgical resection was considered not necessary in this patient.

There is no consensus on the optimal duration of antimicrobial therapy, however most of the authors suggest 6 to 9 months of medical treatment [3]. Considering the not-negligible percentage of recurrence and the absence of surgical resection, we prolonged antimicrobial therapy up to a total of 9 months.

Mycobacterium africanum, widely spread in West Africa, is part of the *Mycobacterium tuberculosis* complex[5]. Clinical presentation is indistinguishable from *Mycobacterium tuberculosis* and antibiotic treatment is identical[6].

Figure: Tuberculous cold abscess and correspondent CT scan

(A) Soft, cold and painful swelling on the anterior chest wall, along the mid-axillary line. (B) Yellowbrown odourless fluid obtained from ultrasound-guided aspiration (C-D) Thoracic CT scan showing the abscess of the third rib

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