

Case report

Tuberculous abscesses of the quadriceps femoris muscle without osseous involvement

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Introduction

Tuberculosis is a disease caused by *Mycobacterium tuberculosis*, which primarily affects the lung. Involvement of muscles in the tuberculous process without coexisting active skeletal or extrasketal tuberculosis is rarely seen. We present a case of primary intramuscular cold abscesses in the left quadriceps femoris muscle with no underlying bone lesion related to the diseased muscle.

Case report

A 48-year-old male presented with a soft tissue mass over his left thigh region which had been gradually enlarging over an 8-week period. Although the patient had been experiencing an aching sensation over the soft tissue, he had experienced no limitation of movement in either his left hip or knee joints. There was no history of pulmonary complaints, haemoptysis, weight loss or night sweats.

Examination revealed three cystic lesions over his left thigh region measuring 15 × 4 × 3 cm, 10 × 8 × 4 cm and 10 × 6 × 3 cm respectively (Figure 1). Within the substance of the quadriceps femoris muscle,

the overlying skin was normal with no sinuses, echymosis or rash. There was no limitation of movement of the left lower limb, the peripheral pulses were normal and there was no neurological defect.

A clinical examination and radiographic findings showed an intact bone. A magnetic resonance imaging (MRI) scan (Figures 2a and 2b) showed three cystic lesions within the substance of the left quadriceps femoris muscle, consistent with a soft tissue tumour. Chest X-ray, complete blood count and blood chemistry tests were all within normal limits.

Surgery revealed three cystic cavities each filled with about 250 mL of pus. These were aspirated and sent for smear and culture. Excision of the cystic lesions was performed by debridement of the cavities and the insertion of three drains for a few days.

Histopathological findings showed necrotizing granulomas, cultures of which produced *Mycobacterium tuberculosis*.

After the operation, the patient was given antituberculous chemotherapy for a 6-month period (isoniazid 300 mg, rifampicin 300 mg, pyrazinamide 500 mg and pyridoxine 50 mg).

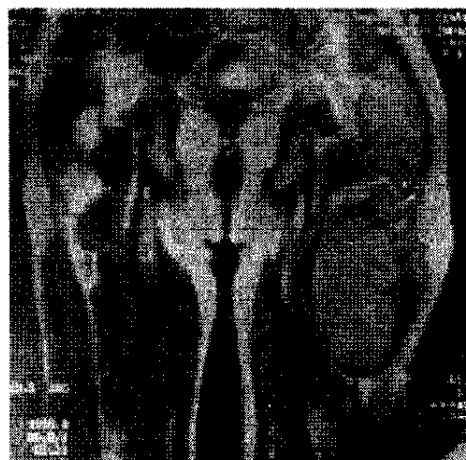
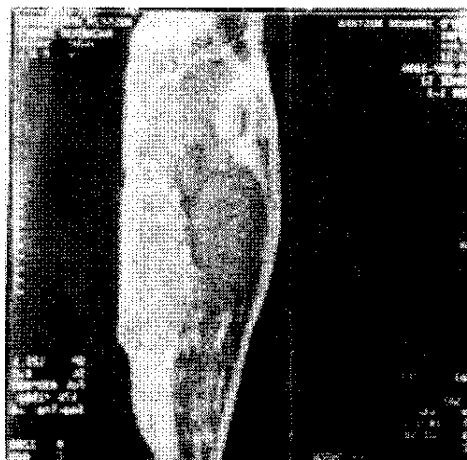
The cavities resolved within 3 months and the patient resumed normal activities.

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Figure 1 Patient with left thigh cystic masses of 2 months duration



Figures 2a (left) and 2b Magnetic resonance images of left thigh region demonstrate a three-cystic lesion within the substance of the quadriceps femoris muscle. The hip joint and left femur bone are intact. The cysts measured $15 \times 4 \times 3$ cm, $10 \times 8 \times 4$ cm and $10 \times 6 \times 3$ cm respectively

Discussion

Tuberculosis of soft tissue can occasionally occur as it does in tuberculous bursitis, tenosynovitis in tuberculous spondylitis secondary to involvement of neighbouring bone [1,2]. However, selective primary muscular involvement without osseous involvement is rare.

Although the infection is presumed to spread to the musculoskeletal system through a focus, the prevalence of active pulmonary tuberculosis coexisting with musculoskeletal tuberculosis is only about 29% [3].

A few reports have indicated that primary tuberculosis in muscle may be transmitted by syringes [4,5]. The infected patients in these reports were infants and children. It was subsequently discovered that the infections had one of two causes: either a nurse who had pulmonary tuberculosis gave the patient an injection and passed on the disease, or an infected needle was reused on other patients thus spreading the tubercle bacilli [4,5]. We were unable to find other causes that could explain the primary involvement of muscle with tuberculosis without osseous or bursal involvement.

In our patient, the abscesses were in the left thigh region. The hip joint, the proximal end of the femur and the knee joint were normal as shown by the MRI scan and chest X-ray.

The bursa around the ischial tuberosity and the greater trochanter bursa are the most common bursae to be affected by tuberculous bursitis, and these were found to be free of infection and not related to the muscles involved.

Because of its multiplanar capability and good contrast for soft tissue, MRI is ideal to evaluate soft tissue masses, including inflammatory and infectious diseases [6].

Conclusion

Although a primary intramuscular cold abscess is rare, it can occur. In this case, after the abscesses had been drained, the surrounding tissues had been debrided and the patient had received 6 months of antituberculous chemotherapy, the outcome was excellent with no evidence of coexistent active skeletal or extraskelatal tuberculosis. The pathogenesis of these intramuscular tubercular abscesses is still not clear.

References

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