Isolated Tuberculous Abscess in Longissimus Muscle

Khaled Zitouna, Hend Riahi, Ahmed Goubantini, Maher Barsaoui
Departments of 1Orthopedics and Traumatology and 1Radiology, Medicine School of Tunis, Kassab Institute, 3Infectious Diseases, Medicine School of Tunis, La Rabta Hospital, Tunis, Tunisia

Abstract

Muscle’s tuberculosis (TB) without coexistent active skeletal involvement is very rare. We presented a case of tuberculous abscess of longissimus muscle in a young immunocompetent female. Magnetic resonance imaging showed a well-circumscribed lesion in the longissimus muscle. No bony abnormality was noticed. An ultrasound-guided biopsy revealed the presence of granulomatous features on cytological pathology. A good response was seen with antitubercular treatment. TB should be considered in the differential diagnosis of any unexplained soft-tissue swelling in people born in tubercular endemic areas. To the best of our knowledge, our observation is the third reported case in immunocompetent patient.

Keywords: Abscess, muscle, spine, swelling, tuberculosis

Case Report

A previously healthy 42-year-old woman presented with a painless mass over her right mid-back 9 weeks earlier. Swelling progressively enlarged but was not associated with pain or fever. No history of Koch’s contact, weight loss, anorexia, or back pain was noted.

The examination revealed a well-demarcated mass of moderate firmness that was approximately 7 cm in dimension [Figure 1]. There was no erythema or tenderness. There was no spinal tenderness or gibbus. The remainder of the physical examination was unremarkable. Spine radiographs showed soft-tissue opacity. Ultrasonography revealed a complex fluid hypoechoic lesion in the right paraspinal region and measuring 10 cm. There were multiple peripheral hyperechoic spots and no Doppler vascularization [Figure 2]. The chest radiograph was normal.

Magnetic resonance imaging (MRI) showed a low-signal intensity on T1-weighted image (WI) and high-signal intensity on T2 WI lesion. The peripheral wall of the abscess had a subtle hyperintensity on T1 WI and hypointensity on T2 WI. After gadolinium contrast injection, peripheral rim enhancement in this abscess wall was observed. There were no bone signal abnormalities [Figure 3].

Needle aspiration and ultrasound-guided biopsy of the abscess wall were performed. Histological examination revealed granulomatous inflammation, and caseous necrosis and culture results were positive.

The patient was put on an intensive phase of isoniazid (H), rifampicin (R), pyrazinamide (Z) and ethambutol (E) for 6 months. The response was excellent and the patient was discharged with a comment of incomplete recovery. A follow-up MRI scan showed an almost complete resolution of the lesion. The patient has been on a maintenance phase of isoniazid for another 4 months. Teleradiographic follow-up was normal.

Address for correspondence: Dr. Khaled Zitouna, Department of Orthopedics and Traumatology, La Rabta Hospital, 15 rue Djebel Lakhdhar 1007, Tunis, Tunisia. E-mail: kh.zitouna@laposte.net

ORCID: 0000-0003-4354-8124

How to cite this article: Zitouna K, Riahi H, Goubantini A, Barsaoui M. Isolated tuberculous abscess in longissimus muscle. Int J Mycobacteriol 2019;8:403-5.
Primary skeletal muscle involvement without coexisting active skeletal or extraskeletal TB is extremely rare. Any skeletal muscle can be affected. The most common site of involvement is the thigh. Most of the cases in the literature have shown the involvement of a single site. Isolated tubercles muscle abscesses have been reported: the teres minor, the biceps brachii, the right rectus femoris, the psoas, the rectus abdominis, and the gluteus maximus as well as the submasseteric space.

Erector spinae muscles TB is an extremely rare condition, only two cases were reported in a immunocompetent patient. A third observation was on renal transplant recipient.

The pathogenesis is still uncertain. It may result from the hematogenous dissemination of pulmonary tubercular lesions, contiguous infection from an underlying structure, direct traumatic inoculation, or altered immune status. In this patient, no clinical or radiological evidence of other structural involvement suggested direct inoculation. The rare occurrence of skeletal muscle TB has been associated with the high lactic acid content, high vascularity and blood flow, and the absence of reticuloendothelial and lymphatic tissue on muscles inhibiting mycobacterial growth.

The clinical presentation is nonspecific and may mimic other diseases, leading to diagnosis delay.

Certain clinical similitudes were noticed with the previous erector spinae muscles TB cases [Table 1]. Four cases originate from a country with a high TB burden. The diagnosis was made months after the onset of symptoms; in our patient, more than 2 months elapsed. Only one was immunocompromised. The main localization was lumbar.

MRI findings can help to suggest the diagnosis. On MRI examination, Mycobacterium tuberculosis myositis is characterized by low-signal intensity on T1WI and high-signal intensity on T2WI with peripheral rims showing subtle hyperintensity on T1WI and peripheral enhancement. MRI may be useful in the management of tubercular myositis in delineating the anatomical extent of muscle lesions and guiding the surgeons in debridement.

In this study, confirmation of the clinical diagnosis was obtained by histopathology and bacterial culture such for Garg et al. There is no consensus on tuberculous abscess treatment. Our patient was treated with percutaneous aspiration and medical treatment. With effective anti-tubercular therapy, the disease responds promptly to the medical treatment. However, a large abscess needs surgical drainage and debridement along with anti-tubercular therapy.

TB of the primary skeletal muscle should be considered in the differential diagnosis of painful back muscle swelling,
even if extremely rare, particularly in patients living in TB endemic areas.

MRI should be performed to exclude bone involvement. The gold standard for diagnosis is histology, with a mandatory microbiological confirmation. Medical treatment with abscess aspiration is the first-line. At least, 6-month regimen is recommended.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**

1. Sharma S, Mahajan RK, Myneedu VP, Sharma BB, Duggal N. Primary tubercular chest wall abscess in a young immunocompetent male. Case Rep Pulmonol 2014;2014:357456.

2. Enarson DA, Fujii M, Nakiela EM, Grzybowski S. Bone and joint tuberculosis: A continuing problem. Can Med Assoc J 1979;120:139-45.

3. Ozurek S, Atik A, Kose O. Erector spinae tubercular abscess. Asian Spine J 2015;9:829‑30.

4. Neogi DS, Bandekar SM, Chawla L. Skeletal muscle tuberculosis simultaneously involving multiple sites. J Pediatr Orthop B 2013;22:167‑9.

5. Sen RK, Triapathy SK, Das A. Isolated focal pyomyositis of teres minor: An unusual presentation of tuberculosis. Acta Orthop Traumatol Turc 2011;45:276‑9.

6. Trikha V, Gupta V. Isolated tuberculous abscess in biceps brachii muscle of a young male. J Infect 2002;44:265‑6.

7. Harrigan RA, Kauffman FH, Love MB. Tuberculous psoas abscess. J Emerg Med 1995;13:493‑8.

8. Ramakant D, Kalpana D, Keyur S. Tuberculosis abscess of rectus abdominis muscle. Indian J Tuberc 2004;51:231‑3.

9. Toda K, Yasunaga Y, Takemoto S, Terada Y. MR image and CT scan of a tuberculous abscess in the gluteus maximus muscle. Comput Med Imaging Graph 1998;22:425‑7.

10. Mascarenhas S, Tuffin JR, Hassan I. Tuberculous submasseteric abscess: Case report. Br J Oral Maxillofac Surg 2009;47:566‑8.

11. Garg B, Pannu CD, Poudel RR, Morey V. Isolated spontaneous primary tubercular erector spinae abscess: A case report and review of literature. Asian Spine J 2015;9:276‑80.

12. Eldahie KT, Al‑Hinai MM, Al‑Habbi HA, Al‑Hattali MS, Hassan O, Al‑Sukaiti R. A massive tuberculosis abscess at the erector spinae muscles and subcutaneous tissues in a young man. Sultan Qaboos Univ Med J 2013;13:601‑5.