Editorial

Novel magnetic resonance imaging scoring system for diagnosis of spinal tuberculosis

Spinal tuberculosis (ST) is an ancient disease and the causal agent *Mycobacterium tuberculosis* (MTB) is still detectable in the bones of Egyptian mummies.[1] Moreover, ST represents 50% of skeletal forms, 50-60 % of extrapulmonary TB, 1-5 % of all TB cases and continues to be a fatal disease in industrialized and under developing countries.[2,3] ST causes major bone destruction and deformity, which could induce untreatable neurologic deficit and devastating situation in the case of diagnosis delays.

Indeed, for avoiding the severity of the related complications, the early diagnosis is the main priority for the management of ST. The diagnosis of ST is not easy and in almost cases, the illness manifest in advanced stages.[4]

The conventional techniques of diagnosis are based on the radiological, hematological, histological and bacteriological examinations.[5] Unfortunately, more than 50% of the vertebra should be destroyed before the formation of the lesions (during six months) to be seen on a plain radiograph.[3,6] The conventional bacteriological examination by bacterial culturing is the gold standard, but it requires long incubation time and the maximal sensitivity of culture in almost ST cases is 80%.[7] The histological diagnosis requires vertebral biopsy, which is an invasive process and needs good experts. Further, the hematological tests are based on erythrocyte sedimentation rate (ESR) and total leukocyte counts (TLC), which are not specific tests for the confirmation of ST. Moreover, there are many molecular techniques that decreased the time of diagnosis, detection, identification of MTB and drug susceptibility pattern, but a percutaneous vertebral biopsy should be obtained for the fulfillment of molecular assay, especially if there is no confirmation of MTB infection from another site of the body.[7]

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Currently, the increase in the number of diagnosed cases of ST is probably due, at least in part; to better diagnosis, notably with the widespread use of magnetic resonance imaging (MRI) and computed tomography (CT) in industrialized countries but their high costs limit their use in the low income countries.

Prompt imaging is very important for the diagnosis of ST, especially in patients with persistent back pain.[4] The interpretation of spinal MRI is the most sensitive method and may reveal intraosseous involvement earlier than other modalities.[6] Several studies recommended the use of MRI for the early diagnosis of ST,[2,6] but the lack of guidance on the appropriate interpretation could complicate the diagnosis and pose a great problem for the accurate diagnosis.[4]

Furthermore, the MRI must be repeated for ST patients, because skeletal abnormalities could persist during the treatment,[2] especially in the relapse cases that commonly represent Multi drug resistant TB strains (MDR TB).

In the manuscript entitled: Novel MRI scoring system for diagnosis of spinal tuberculosis, the authors described an attempt for the diagnosis of ST based on MRI scoring system and they stated that MRI of the vertebral lesions could enhance the diagnosis of tuberculosis and non tuberculosis pathologies and consequently reduce the dependency on histopathologic diagnosis or invasive method for early initiation of chemotherapy.[8]

In conclusion, the follow up of ST patients could be improved by the combination of the conventional laboratory assays and imaging MR techniques for better diagnosis and the initiation of anti tuberculosis drugs is mandatory in the early stage of infection.

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References

1. Ziskind B, Halioua B. Tuberculosis in ancient Egypt. Rev Mal Respir 2007;24:1277-83.
2. Le Page L, Feydy A, Rillardon L, Dufour V, Le Hananff A, Tubach F, *et al*. Spinal tuberculosis: A longitudinal study with clinical, laboratory, and imaging outcomes. Semin Arthritis Rheum 2006;36:124-9.
3. Desai SS. Early diagnosis of spinal tuberculosis by MRI. J Bone Joint Surg Br 1994;76:863-9.
4. Cormican L, Hammal R, Messenger J, Milburn HJ. Current difficulties in the diagnosis and management of spinal tuberculosis. Postgrad Med J 2006;82:46-51.
5. Almeida Al. Tuberculosis of the spine and spinal cord. Eur J Radiol 2005;55:193-201.
6. Moore SL, Rafii M. Imaging of musculoskeletal and spinal tuberculosis. Radiol Clin North Am 2001;39:329-42.
7. Colmenero JD, Ruiz-Mesa JD, Sanjuan-Jimenez R, Sobrino B, Morata P. Establishing the diagnosis of tuberculosis vertebral osteomyelitis. Eur Spine J 2012 [Epub ahead of print].
8. Chandrasekhar YBVK, Rajesh A, Purohit AK, Jyotsna RY. Novel MRI scoring system for diagnosis of spinal tuberculosis: A preliminary report. J Neurosci Rural Pract 2013;4:122-8.

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