

# Paraspinal tuberculosis mimicking malignancy

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## ABSTRACT

يعد الدرن المحيط بالفقرات حالة سريريّة نادرة. نستعرض هنا حالة مريض ذكر سعودي يبلغ من العمر 18 عاماً، الذي قدم مع الصورة السريرية للكتلة محيطة بالنخاع والفقرات والتي تبين أنها بسبب الدرن. نشأت الكتلة من أنسجة محيطة بالنخاع والعضلات وغزت فقرات C6 و C7. في البداية، كان الأمر مثيراً شبهة للورم السرطاني. وأكدت عينة الأنسجة تشخيص السل. تم علاج المريض بنجاح مع العلاج المضاد للسل. ومن المهم أن ندرك أن الدرن المحيط بالفقرات يمكن أن يحاكي الورم الخبيث.

Tuberculosis (TB) of the paraspinal muscles is a rare clinical entity. We present a case of an 18-year-old, Saudi male patient presenting with the clinical picture of a paraspinal mass that turned out to be paraspinal TB. It originated from the paraspinal tissues and muscles, and invaded the C6 and C7 vertebrae. Initially, it was highly suspicious for malignancy. A biopsy confirmed the diagnosis of TB, and the patient was treated successfully with anti-TB therapy. It is important to be aware that paraspinal TB can mimic malignancy.

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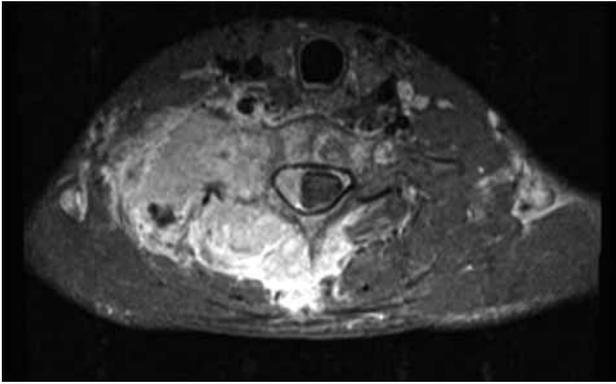
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Tuberculosis (TB) is the second leading infectious cause of death worldwide; up to one-third of the world's population is infected.<sup>1</sup> Tuberculosis of the head and neck forms nearly 10% of all extrapulmonary manifestations of the disease.<sup>2</sup> Its most common manifestation in the head and neck region is cervical lymphadenopathy, frequently involving the posterior triangle, and in particular the supraclavicular lymph node groups.<sup>1</sup> It is well known that TB in the head and neck region can occur either within the lymph nodes or extra-nodally, such as in the larynx, oral cavity, parotids, and nose.<sup>2</sup> Other sites reported include parotid gland, middle ear, external auditory canal, nasopharynx, and maxillary sinus.<sup>3,4</sup> A high index of suspicion can help direct the patients' workup to achieve early diagnosis and appropriate treatment.<sup>2,3</sup> Our objective in presenting this particular case is to highlight the importance and increase the awareness of the general otolaryngology society to this disease and the possibility of TB mimicking malignancy.

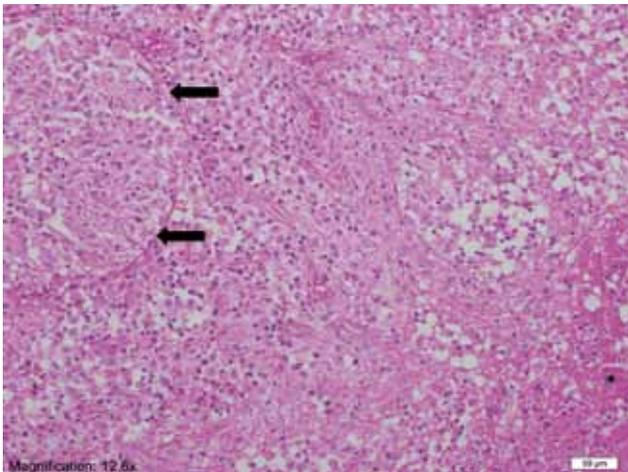
**Case Report.** An 18-year-old, Saudi, otherwise, healthy male patient, presented with right-sided neck pain and mass, associated with numbness of the arm and fingers of 2-months duration. There was no history of fever, night sweats, fatigue, or contact with TB patients. He reported mild loss of appetite and weight loss. There was no history of any pulmonary complaints or family history of malignancy or TB. Examination showed right-sided hypoesthesia in the C6-T1 dermatomes and hyper-reflexia. The chest was clear to auscultation. Laboratory investigations were all within normal ranges. An MRI was carried out (Figure 1) and the results showed large right posterior paraspinal mass at C6-7 level with intraspinal epidural extension and early compression of the spinal cord. Cervical incisional biopsy confirmed the diagnosis of TB (Figure 2). He was started on 4 antituberculous medications: isoniazid, rifampin, ethambutol, and pyrazinamide. On follow-up 3 months later, he continued on 2 drugs only; namely, isoniazid and rifampin, for an overall duration of one year.



**Figure 1** - T1-weighted MRI image showing a large right posterior paraspinal mass at C6-7 level (hyperintense whitish soft tissue) with intraspinal epidural extension and early compression of the spinal cord.



**Figure 3** - T1-weighted MRI image post-treatment showing no evidence of residual disease.



**Figure 2** - Photomicrograph showing an epithelioid granuloma (arrows) and necrosis (\*) suggestive of TB. Hematoxylin & eosin stain. 12.6X magnification.

Five months post-therapy cessation, an MRI showed complete regression of the disease (**Figure 3**).

**Discussion.** No clear gender preference has been identified as some studies of extrapulmonary TB have shown a female preponderance, yet in some studies the gender distribution has been more even.<sup>3,4</sup> Another study, showed the male to female ratio to be 2:1.1 The median age of patients diagnosed with Mycobacterium TB infection was 46 years.<sup>1</sup> In other studies of head and neck TB, the mean age of the patients has varied between 32-53 years.<sup>4</sup> Paraspinal TB mimicking malignancy is a rare clinical entity, and there are less than one hundred cases reported in the literature.<sup>4</sup> Few reports addressed

TB related paraspinal pathology. Alex et al<sup>5</sup> reported an extensive paraspinal abscess complicating TB spondylitis. Crooks et al<sup>6</sup> also reported a TB paraspinal abscess that was mistaken for mediastinal lymphadenopathy. Goldenberg and colleagues<sup>7</sup> reported a case of bilateral paraspinal abscesses. A report from Spain, reported a cervical vertebral TB simulating a peritonsillar abscess.<sup>8</sup> Wierzba et al<sup>9</sup> reported a case of vertebral body lesion with infiltration of paraspinal tissues that resembled a neoplastic metastasis. Uncommon occurrence and lack of very clear characteristic symptoms of head and neck TB can lead to misdiagnosis.<sup>10</sup> In the head and neck region, TB can present without constitutional symptoms, mimicking a malignancy and thus making its differential diagnosis more challenging.<sup>4</sup> Some studies have found that fine needle aspiration (FNA) has a high diagnostic yield of more than 80%; while a negative FNA should call for an excisional biopsy.<sup>1-4</sup> Radiological investigation is helpful when TB of the head and neck is suspected, but confirmation of diagnosis requires a histopathological specimen.<sup>2</sup> Although Mantoux test is used for TB screening, it was not carried out in our patient as the diagnosis was not suspected before the biopsy, and was not needed after the confirmatory biopsy. Microbiological examination is difficult in extrapulmonary TB, because of the low concentration of pathogens in specimens.<sup>10</sup> Although the definitive diagnosis is based on culture, treatment is often commenced based on histological features.<sup>1</sup> Medical therapy with anti-TB drugs is the mainstay of treatment.<sup>2,10</sup>

In conclusion, this report was generated to increase the awareness of the general otolaryngology society

to this disease and the possibility of TB mimicking malignancy.

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