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Case Report

Multifocal tuberculosis: Many faces of an old menace

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ABSTRACT

Tuberculosis continues to be a major health problem, and is among the leading causes of morbidity and mortality worldwide. Pulmonary tuberculosis is the commonest and epidemiologically the most important type of tuberculosis as the source of spread in the community. Some patients presenting with pulmonary tuberculosis also have associated multifocal extra-pulmonary tuberculosis and vice versa. Among these patients, some have predisposing factors for the development of disseminated tuberculosis, such as a heavy Mycobacterial load, weak or impaired innate or acquired immunity owing to diabetes, immune therapies, substance abuse or AIDS. Multifocal tuberculosis is characterized by the presence of large multifocal tuberculosis areas in the same or different adjacent or distant organs. This study presents a series of 20 patients with multifocal tuberculosis.

Materials and methods: The patients' records were reviewed to locate those with multifocal tuberculosis as well as pulmonary tuberculosis during the period between 4/2003 and 12/2010. A total of 1,388 patients with confirmed open pulmonary tuberculosis were admitted at the tuberculosis center within the Dammam Medical Complex. Out of this group of patients, 20 cases (1.5%) were found to have multifocal tuberculosis.

Conclusion: Multifocal tuberculosis is observed both in immunocompetent as well as in those with weak or compromised immune systems. A thorough physical examination is required even in those confirmed pulmonary cases of tuberculosis to suspect and find extra-pulmonary involvement, because it is important from the management and prognostic perspective. The ultimate outcome under DOTS (directly observed treatment short course) was good in the majority of these cases, and only a few of them required surgical intervention.

Introduction

Dammam Medical Complex is a referral center for the whole of Eastern Saudi Arabia where all cases of open pulmonary tuberculosis are referred from government and private hospitals and are admitted for isolation until they are rendered non-infectious under DOTS (directly observed therapy short course). Among the 1,388 patients admitted with open pulmonary tuberculosis, 20 of the patients also presented with multi-focal tuberculosis. Their case histories are reported below along with some of their radiological images.

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Case 1

A 49-year-old Saudi male presented with a history of fever, cough, weight loss, dull pain at the back of his upper chest indicating lung involvement. CT scan of his spine reported thoracic vertebrae T 8–9 lesions, with spinal cord involvement complicating to mild spastic paraparesis (Pott's disease) with upper motor neuron signs and abnormal gait. A 3 cm swelling (cold abscess) was visible at his lower thoracic region. He responded very well to the standard initial intensive four-drug directly observed therapy short course (DOTS) anti-TB treatment. The duration of treatment was 18 months, without any major surgical intervention. He had mild persisting weakness using walking assistance in the form of a cane for some time. This mild residual weakness improved with physiotherapy treatment. Since this patient was a local resident of Dammam, he often has been seen coming to the hospital as a visitor and now is fully ambulant without the use of a walking device. His chest X-ray and CT spine scan is shown below in Fig. 1A and B.

Case 2

A 42-year-old Saudi male schoolteacher known to have secondary epilepsy (as a result of head trauma sustained after a fall 5 years ago), presented with a fever, poor appetite, a cough, blood-stained sputum, and a backache for 3 months and was admitted with sputum-positive pulmonary tuberculosis; a CT scan of his spine reported involvement of the T-9 vertebra with a small paravertebral abscess. The patient had a moderate degree of spastic paraparesis owing to Pott's disease. Response to anti-TB treatment was remarkable. At the end of 18 months of treatment, the patient was totally ambulant and asymptomatic without requiring any kind of surgical intervention at least during his follow-up. His chest X-ray and MRI is shown below in Fig. 2A and B.

Case 3

A 51-year-old Filipino male, a known diabetic for 10 years, presented with a fever, weight loss, abdominal distension, and per rectal bleeding for 1 week. This patient was admitted initially to another hospital where he was provisionally diagnosed as having ulcerative colitis and underwent a partial colectomy; he had a bout of hemoptysis and was found to have an abnormal chest X-ray and was subsequently referred to this center and was diagnosed with open tuberculosis, multifocal tuberculosis involving the lungs, ileocecal intestine peritoneum and para-aortic lymphadenopathy reported on a CT-scan. He developed sub-acute intestinal obstruction at 3 months of treatment and required surgical intervention. In literature 2–3% of patients with tuberculosis are said to have isolated colon involvement. His onward stay in the hospital was uneventful and he responded well to initial intensive phase 4-drug anti-TB treatment and adjuvant steroids. His chest X-ray and abdominal surgical scars are shown below in Fig. 3A and B.

Case 4

A 28-year-old Saudi male presented with fever, weight loss, mild dry cough and a swelling on the front of his right upper chest, and limping of the left lower limb. He was diagnosed with multifocal tuberculosis, with a swelling (cold abscess) on the right lateral side of the upper sternum at the third rib (costo-sternal junction), weeping sinus over the right cervical 2.5 cm lymph node. Parasternal abscess was treated with incision and drainage under the umbrella of anti-TB treatment after completion of 2 months of initial 4-drug intensive phase. CT scan findings showed osteomyelitis of sternum (arrow) and adjacent cold abscess, small left paravertebral abscess at L5 level along with left hip joint tuberculous arthritis. Patient responded well to anti-TB treatment onwards. He was known to have grand mal epilepsy since childhood (patient had gum hypertrophy due to chronic use of phenytoin). His chest X-rays posteroanterior (PA) and lateral views, along with gum hypertrophy is shown below in Fig. 4A–C.

Case 5

A 21-year-old Yemeni male presented with cough, fever, exertional shortness of breath. He was diagnosed with bilateral open pulmonary tuberculosis, left-sided tuberculous empyema requiring intercostal under water seal drainage. A CT scan revealed a lesion on the T 7–8 thoracic spine and a right psoas abscess, with ipsilateral sacroiliitis. This patient was

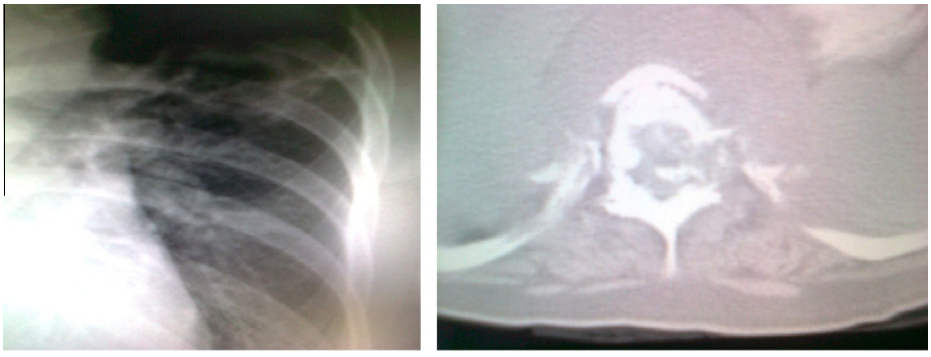

Fig. 1 – (A) Chest X-ray showing left sided tuberculous infiltrates. (B) CT scan-showing spinal tuberculosis leading to Pott's disease.