Section: General Medicine

Case Series

EXTRAPULMONARY TUBERCULOSIS: A CASE SERIES OF UNUSUAL PRESENTATIONS OF TUBERCULOSIS

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Abstract

Tuberculosis (TB) is an airborne bacterial disease caused by Mycobacterium tuberculosis. While it predominantly affects the lungs, it can also involve any organ. Diagnosing Extra-Pulmonary Tuberculosis (EPTB) is uniquely challenging because of its wide range of clinical presentations. This report discusses ten complex cases of EPTB. These cases had no prior exposure to the organism, no known comorbidities, and were immunocompetent. The wide range of clinical presentations of EPTB results in diagnostic and treatment challenges. Therefore, it is essential to consider tuberculosis in the differential diagnosis, especially in high-prevalence areas, until excluded. Early treatment is essential for a favorable outcome.

INTRODUCTION

Tuberculosis (TB) is a contagious infectious disease caused by Mycobacterium tuberculosis. While it predominantly affects the lungs, it can also involve any organ in the body. Extra-pulmonary tuberculosis (EPTB) refers to TB that affects any organ other than the lungs. EPTB can present with a wide range of clinical manifestations, making diagnosis challenging.[1,2]

This study presents a case series of 10 patients with EPTB who presented with diagnostic and management complexities. The cases had no prior exposure to the organism, no known comorbidities, and were immunocompetent.[3,4]

The diagnosis of EPTB is largely based on clinical suspicion. However, several diagnostic tests can be used to confirm the diagnosis. These include the Mantoux test, QuantiFERON-TB Gold test, acid-fast bacilli (AFB) smear and culture, and polymerase chain reaction (PCR) test.[5,6]

The treatment of EPTB is similar to the treatment of pulmonary TB. Patients with EPTB typically receive a combination of anti-tuberculosis drugs for 6-9 months.[7,8]

Early diagnosis and treatment of EPTB are essential to improve patient outcomes. It is important to consider tuberculosis in the differential diagnosis of a wide range of clinical presentations, even in patients with no known risk factors for the disease.[9,10]

CASE SERIES

Figure 1 Disseminated tuberculosis

Case 1: Disseminated tuberculosis

A 24-year-old female with no known comorbidities presented with two weeks of high-grade fever, cough with whitish sputum, frontal headache, and body pain. The patient was conscious and oriented, with

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stable vital signs. Local examination showed a 4 x 4 cm soft, warm, non-tender swelling on the right side. She also had Multiple non-pruritic Erythematous scaly lesions over her extremities and trunk. Abdominal ultrasound revealed hepatomegaly and massive splenomegaly. Chest X-ray showed increased broncho vascular markings. A neck ultrasound indicated bilateral necrotising cervical lymphadenopathy. FNAC confirmed granulomatous lymphadenitis with AFB positivity. The Mantoux test showed a 15 mm induration. Fundus examination revealed iridocyclitis. A patient diagnosed with or disseminated TB with iridocyclitis a rare manifestation.

Case 2: TB peritonitis

A 39-year-old man presented with a two-month history of cough and low-grade fevers, abdominal tightness and distention for two weeks. Vitals were stable, and systemic examination showed a distended abdomen. Laboratory tests showed leukocytosis (13,700 cells/mL), elevated ESR (84 mm/hr), and CRP level (6.8 mg/dL). Ultrasound of the abdomen revealed gross ascites, and a CT scan showed thickening and nodularity of the omentum, mesentery infiltration, and gross ascites without visible lymphadenopathy. A Mantoux test was done, and it was negative. Diagnostic tapping of the ascitic fluid revealed an elevated leukocyte count with lymphocytic predominance. The patient's ascitic fluid sample tested positive for Quantiferon TB Gold and diagnosed TB peritonitis.

Case 3: TB meningitis

A 28-year-old woman reported severe headaches, vomiting, confusion, a mild fever, and fatigue for two weeks. On examination, the patient appeared lethargic, with stable vital signs and a temperature of 100.4F. Neurologically, she had neck stiffness, photophobia, and a positive Brudzinski's sign. Blood tests were within normal ranges. CT scan and MRI demonstrated basal meningeal enhancement and hydrocephalus. CSF analysis revealed elevated leukocytes, primarily lymphocytes, and increased protein levels, reduced glucose levels. A CSF PCR confirmed the presence of MTB DNA. Mantoux Test showed a 12mm induration. The patient received a diagnosis of tuberculous meningitis. Along with ATT, Corticosteroids were administered to reduce brain inflammation.

Case 4: Pott's disease

A 35-year-old had progressively worsening back pain and stiffness along with fatigue, a mild fever, night sweats, reduced appetite and unintended weight loss for four months. On examination, the patient appeared pale and tired. Vitals were stable except for a temperature of 100.4F. Orthopaedic examination revealed reduced spinal mobility, lower thoracic and upper lumbar spine tenderness and paraspinal mass. MRI of the spine revealed vertebral destruction, paraspinal abscess, and substantial cord compression. Mantoux Test showed a 15 mm induration. A CT-guided biopsy confirmed the presence of Mycobacterium tuberculosis in the spinal tissue. The patient was with Pott's disease. ATT and thoracolumbosacral orthosis (TLSO) brace were advised, and Surgical intervention was considered due to the extent of vertebral destruction and cord compression.

Case 5: genitourinary TB

A 42-year-old female had lower abdominal pain, dysuria, and abnormal vaginal bleeding, and unintentional weight loss and fatigue for the past six months. On examination, the patient appeared pale and tired with stable Vital signs. A gynaecological examination revealed tenderness and a palpable mass in the lower abdomen. Pelvic ultrasound identified a thickened endometrial lining and bilateral adnexal masses. Urine analysis showed microscopic hematuria. Mantoux Test was positive with a 10 mm induration. An endometrial biopsy revealed granulomatous inflammation with the presence of acid-fast bacilli, and an abdominal CT scan showed enlarged and calcified pelvic lymph nodes and an infiltrative lesion in the endometrium. The patient was diagnosed with genitourinary tuberculosis, with a particular focus on the endometrium and adnexa.

Case 6: gastrointestinal tuberculosis

A 50-year-old male complained of abdominal pain, persistent diarrhoea, low-grade fever, reduced appetite and unintended weight loss over the past six months. On examination, the patient had stable vital signs, appeared pale and had signs of wasting. The patient had Abdominal tenderness, especially in the right iliac fossa, and a palpable mass. Colonoscopy Showed ulcers and thickening in the cecum and terminal ileum. Stool Examination Revealed occult blood and acid-fast bacilli. Mantoux Test showed a 12 mm induration. Biopsy of Intestinal Lesions Indicated granulomatous inflammation and acid-fast bacilli were observed. The patient was diagnosed with tuberculosis of the gastrointestinal tract, specifically involving the cecum and terminal ileum.

Case 7: Tuberculosis of the liver

A 45-year-old presented to the emergency department with a four-month history of right upper abdominal pain, low-grade fever, mild jaundice, persistent fatigue and weight loss over the past few months. On examination, the patient had stable vitals and appeared icteric, with mild hepatomegaly and right upper abdominal tenderness. Abdominal Ultrasound Revealed hepatomegaly with a hyperechoic focal lesion in the liver. Mantoux Test: Positive with a 15 mm induration. Blood Tests: Elevated liver enzymes (ALT and AST), high ESR and CRP. Liver Biopsy Showed granulomatous inflammation with acid-fast bacilli. The Patient was diagnosed with hepatic tuberculosis.

Case 8: cutaneous tuberculosis

A 28-year-old visited the OPD with a five-month history of a progressively worsening skin condition. She had multiple painful skin lesions and discharging sinuses on her left forearm. On examination, the patient had stable vital signs, multiple erythematous nodules, ulcerations, and purulent discharging sinuses on her left forearm. Skin Biopsy Showed

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granulomatous inflammation with caseation necrosis. Mantoux Test showed a 14 mm induration. The patient was diagnosed with cutaneous tuberculosis, specifically presenting as lupus vulgaris.

Case 9: tuberculous arthritis

A 35-year-old male came to the medical clinic with complaints of persistent left knee pain and swelling for the past six months. He also had a low-grade fever, night sweats, and unintentional weight loss during this time. On examination, the patient had stable vital signs and a visibly swollen left knee with a limited range of motion. Knee X-ray Showed joint effusion and periarticular osteoporosis. Mantoux Test showed a 16 mm induration. Synovial fluid aspiration from the knee showed increased leukocytes and positive acid-fast bacilli. The Patient was diagnosed with tuberculous arthritis of the knee joint.

Case 10: tuberculous lymphadenitis

A 35-year-old had a three-month history of persistent low-grade fever, night sweats, fatigue, and unintended weight loss, swelling and discomfort in left cervical lymph nodes. On examination, the patient had stable vitals, appeared pale and had palpable, non-tender, and enlarged lymph nodes in the left cervical region. Ultrasound of the Neck Showed multiple enlarged lymph nodes. FNAC Revealed granulomatous inflammation with acid-fast bacilli. Mantoux Test on the Aspirated Lymph Node Showed a strong positive reaction. The patient was diagnosed with TB lymphadenitis involving cervical lymph nodes.

DISCUSSION

Tuberculosis can affect different parts of the body, not only the lungs. This is called extrapulmonary tuberculosis (EPTB). EPTB cases accounted for 16% of the 7.5 million incident cases worldwide in 2019. EPTB can be either primary (at the site of initial infection) or secondary (disseminated), which usually occurs due to hematogenous or lymphatic spread of bacteria from the primary organ, reactivation of latent TB (LTBI), ingestion of infected sputum, or spread locally from adjacent organs. The diagnosis and treatment of EPTB are challenging. Most cases show constitutive symptoms such as fever, weight loss, night sweats, or malaise with specific systemic symptoms based on the organ affected. In general, symptomatic patients are subjected to radiologic imaging of the infected organs to evaluate and plan a more accurate and specific diagnostic test. EPTB is often a challenge to diagnose and treat. It is a common opportunistic infection in people with HIV/AIDS and other immunocompromised conditions such as diabetes and malnutrition. There is not much data from clinical trials in EPTB, and most information on diagnosis and treatment comes from pulmonary tuberculosis.

CONCLUSION

EPTB presents a diverse range of clinical manifestations, creating significant complexities in both diagnosis and treatment. Therefore, it is essential to consistently consider tuberculosis as an initial working diagnosis, particularly in areas where tuberculosis is prevalent unless ruled out. Consequently, initiating treatment promptly is vital to enhance the likelihood of a favorable response.

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