Case Report

T-cell lymphoma masquerading as extrapulmonary tuberculosis: case report and review of literature

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Abstract

It is often difficult to establish confirmatory diagnosis in cases of extrapulmonary tuberculosis (TB) because of its paucibacillary nature and difficulty in accessing the involved organs. In several cases, empirical anti-tubercular treatment is started, and the patient is followed-up closely for response. In countries with high prevalence of TB, it is a reasonably good strategy and works most of the times. However, catastrophe may occur when aggressive lymphomas masquerade as TB.

Keywords: Abdominal tuberculosis, empirical anti-tubercular therapy, peripheral T-cell lymphoma

Introduction

Extrapulmonary tuberculosis (TB) is a common condition presenting to any general outpatient department (OPD) in India. Quite often, it poses diagnostic difficulty because of clinical presentation and radiological findings similar to those in other conditions like lymphoma and sarcoidosis.[1] Histopathological and microbiological confirmation, though the gold standard for diagnosis of extrapulmonary TB has certain limitations. Quite often, there are problems of negative yield, technical difficulty in accessing the involved organ, risks inherent to invasive procedures, etc., It is not uncommon for a primary care physician to start anti-tubercular treatment on clinical suspicion supported by radiological findings, without establishing a tissue diagnosis. We discuss a case in which empirical anti-tubercular therapy (ATT) was started on the basis of clinical and radiological findings but the disease progressed aggressively without giving much time to act.

Case Report

A 21-year-old-male was referred to our hospital with complaints of insidious onset, gradually progressive pain in the right inguinal region for the last 1-month along with low grade, intermittent fever with evening rise in temperature for the last 2 weeks. The patient had anorexia and experienced significant weight loss. For these complaints, he was investigated in a nearby hospital. Ultrasound examination of abdomen revealed enlarged mesenteric lymph nodes. Fine-needle aspiration cytology (FNAC) of these lymph nodes showed scant lymphoid tissue. He was given a trial of intravenous antibiotics without much improvement. Subsequently, ATT was started.

At the time of the initial examination at our hospital, the patient was febrile and had mild tachycardia and pallor. Patient walked with a limp, and there was flexion deformity at the right hip joint along with fullness in the upper thigh. There was no discrete swelling. Abdominal examination revealed guarding and tenderness in the right iliac fossa. There was no organomegaly or palpable lump. Other systemic examination was unremarkable. Investigation reports showed mild anemia, neutrophilic leukocytosis, very high erythrocyte sedimentation rate (more than 100 mm/1st h), mildly elevated alkaline phosphatase and hypoalbuminemia. Other investigation reports were noncontributory.

Based on history, clinical examination and investigations, provisional diagnosis of psoas abscess with possible tubercular etiology was considered. ATT was continued and intravenous antibiotics were started for the probable secondary infection as evidenced by a neutrophilic leukocytosis. Contrast-enhanced

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computed tomography (CECT) revealed bulky right ilio-psoas muscles with an ill-defined retroperitoneal (RP) soft tissue mass, medial to the psoas muscle and abutting the right common iliac vessels [Figure 1]. No fluid collection was seen. The possibilities considered at this stage were TB (iliopsoas myositis) and lymphoma. Magnetic resonance imaging of spine and lower abdomen showed infiltrative involvement of iliopsoas and homogeneously enlarged iliac lymph nodes [Figure 2] that encased right lower ureter, causing moderate hydro-ureteronephrosis. There was no evidence of spondylodiscitis or abscess formation. The differential diagnoses considered were granulomatous (TB, histoplasmosis) disease (with myositis and lymphadenitis) or malignancy (lymphoma).

An ultrasound guided FNAC from the involved muscles was done but was inconclusive. Since the enlarged lymph nodes were close to vessels and the patient was sick, biopsy was postponed and it was decided to continue ATT based on clinico-radiological features, under close, follow-up. During next 2 weeks of hospital stay, the patient showed improvement in terms of response of fever and decrease in total leucocyte count. He was discharged on category I ATT as per DOTS recommendations and advised to follow-up after 2 weeks.

However, patient presented to the medical OPD within 10 days of discharge with complaints of increasing abdominal pain, vomiting, and jaundice for last 5 days. On abdominal examination, diffuse guarding and tenderness with sluggish bowel sounds were noted. Investigations revealed mild anemia, marked neutrophilic leukocytosis and direct billirubinemia with elevated levels of transaminases. An erect abdominal radiograph was normal. CECT abdomen showed increase in the bulkiness of right iliopsoas muscle, increased size of RP soft tissue mass and iliac lymph nodes. In addition, there were multiple mesenteric soft tissue masses/lymph nodes with contiguous involvement of the wall of second and third parts of the duodenum, and moderate ascites [Figure 3]. Considering the rapid progression of the disease, possibility of lymphoreticular malignancy with sub-acute intestinal obstruction was considered highly probable. The patient was managed conservatively with intravenous fluids, antibiotics, and continuous nasogastric aspiration. Upper gastrointestinal endoscopy showed edematous mucosa with areas of ulceration, induration, and luminal narrowing at third segment of duodenum. Multiple duodenal punch biopsies were taken. His condition deteriorated, with increasing abdominal distension, sepsis, and septic shock and he succumbed to his illness on 10th day of hospitalization. As no definitive diagnosis had been arrived at till that time, postmortem liver and lymph node biopsies were performed.

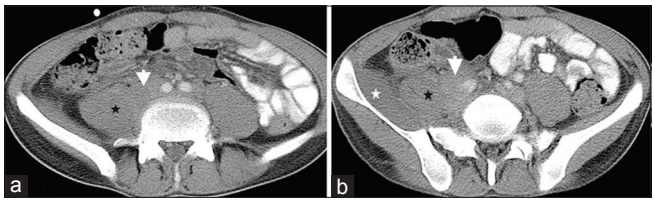

Figure 1: Axial contrast-enhanced computed tomography sections of lower abdomen and pelvis (a and b) show bulky heterogeneous right psoas (black asterisk) and right iliacus muscles (white asterisk). Additional ill-defined soft tissue is seen medial to right psoas (arrow head), going along right iliac vessels

Histopathological examination of duodenal biopsy [Figure 4] showed multiple mucosal fragments with a dense infiltrate in the lamina propria. Histomorphological and immunohistochemical features suggested a diagnosis of peripheral T-cell lymphoma, not otherwise specified (PTCL, NOS). Liver biopsy showed infiltration by a neoplasm with similar histomorphological and immunohistochemical features.

Discussion

Extrapulmonary TB and lymphoma could be quite similar in clinical presentation, and radiological findings and have been reported to cause difficulty in diagnosis.[1,2] Non-Hodgkin lymphoma (NHL) is heterogeneous in presentation, course and prognosis. Based on the characteristics of the disease at the time of presentation and patients' life expectancy, NHL is divided into indolent and aggressive groups. While patients with indolent disease can survive for years even without specific treatment, patients with aggressive disease usually succumb to their illness within a span of months.[3,4]

As an independent prognostic factor, T-cell lymphoma is more aggressive in the course and poorer in prognosis than B-cell lymphomas.[5] PTCL, a type of T-cell lymphoma has poor response to treatment and short survival.[6] In the present case,

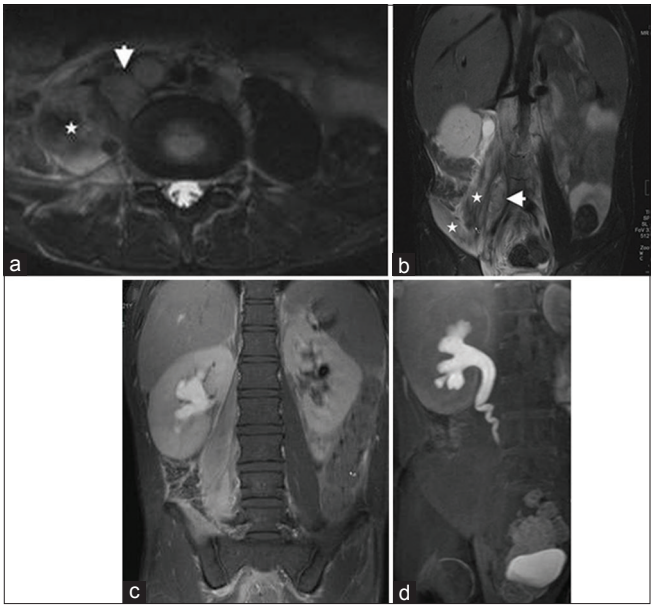

Figure 2: Axial (a) and coronal (b) T2-weighted magnetic resonance imaging (MRI) show that right psoas and iliacus muscles are bulky and show abnormal hyperintensity (asterisks). Coronal contrast-enhanced MRI image (c) shows abnormal heterogeneous enhancement of right psoas and iliacus muscles. There is right sided moderate hydronephrosis with dilated proximal ureter (likely due to obstruction by enlarged lymph nodes), clearly depicted on delayed post-gadolinium coronal maximal intensity projection image (d)

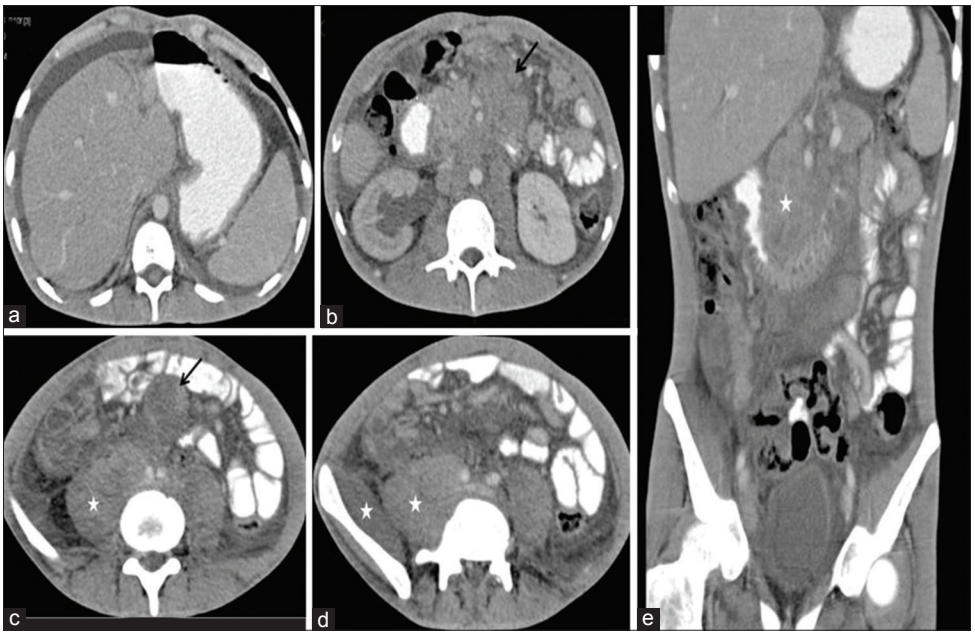

Figure 3: Axial contrast-enhanced computed tomography (CECT) images (a-d) show presence of ascites and multiple confluent ill-defined mesenteric mass lesions (arrows). Right psoas and iliacus have become bulkier (asterisks). Coronal CECT image (e) shows contiguous extension of mesenteric mass lesions into the duodenum with resultant mucosal fold thickening of second part of duodenum. Also, note is made of thickening of right lateral bladder wall in (e)

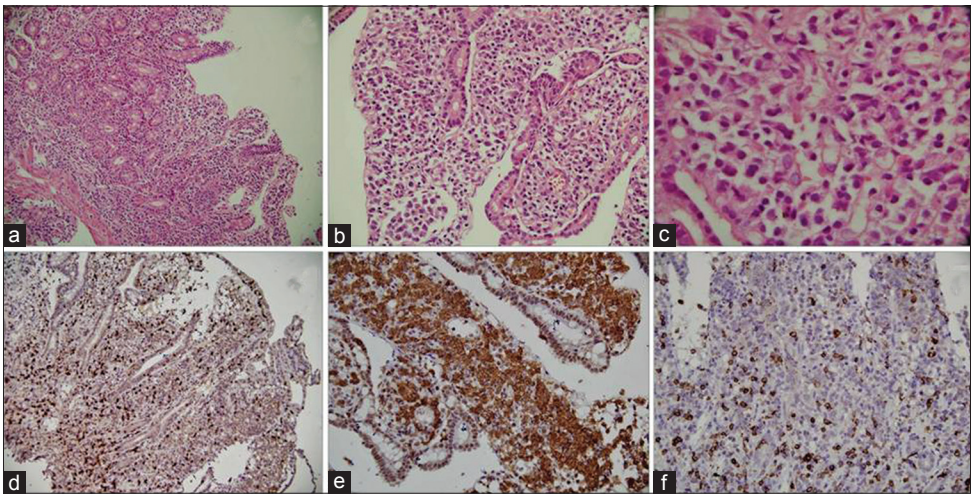

Figure 4: Photomicrographs showing fragments of duodenal mucosa with infiltration of lamina propria by atypical lymphoid cells ([a] H and E, ×100). The cells are medium-sized with moderate pleomorphism, vesicular to hyperchromatic nuclei and conspicuous nucleoli ([b] H and E, ×200). Small lymphocytes, eosinophils are seen interspersed within the malignant cells ([c] H and E, ×400). The malignant lymphoid cells are focally positive for CD3 ([d] IHC, ×100), diffusely immunopositive for CD4 ([e] IHC, ×200), and focally for CD8 ([f] IHC, ×200)

the disease (PTCL, NOS) involved skeletal muscle, genitourinary tract, gastrointestinal tract (GIT) and liver. Significant muscular involvement with insignificant lymph node enlargement is an uncommon presentation of lymphoma (reported in 1.4% cases) of which 1.1% occurs in NHL.[7] Muscular involvement in lymphoma usually occurs as a part of disseminated disease or extension from localized disease of lymph node or bone. Primary involvement of muscle is rare and more commonly seen in AIDS related NHL.[8] The muscles, which are commonly involved in NHL are iliopsoas, para-spinal muscles and muscles of the extremities. Muscular involvement in lymphomas occurs commonly with lymphomas of B-cell lineage. However, there are few reports of muscle involvement in T-cell anaplastic large cell lymphomas.[9]

In the present case, there was evidence of unilateral psoas involvement on CT scan. Although histological evidence of muscular involvement could not be established, radiological images of the present case were fairly suggestive of spillage of disease from nodal tissue to adjacent muscles. In one study, 15% of patients with nodal disease in lymphoma also had gastrointestinal involvement; however, at autopsy, 50% of cases were found to have gastrointestinal involvement.[10] Intestinal

involvement is usually multifocal and is associated with the disease in the Waldeyer's ring. However, involvement of GIT by PTCL, NOS, is less commonly reported.[11]

Hepatomegaly and jaundice in NHL are fairly common and multifactorial in origin. Direct infiltration of portal tracts is known to occur in indolent lymphomas while aggressive group presents with hepatic mass lesion.[12,13] In our patient, infiltration of portal tracts was present at the postmortem biopsy.

Renal involvement in lymphomas is fairly common at autopsy but seldom causes overt disease. Most common involvement of the genitourinary system occurs in the form of RP ureteric obstruction.[14] Other manifestations include glomerulonephritis, renal vein thrombosis, and grossly enlarged kidneys by direct involvement; involvement of testes, bladder, and ovary have also been reported in PTCL, NOS.[11,15,16]

Peripheral T-cell lymphoma is mostly reported from countries of far east but Indian studies report a much higher incidence of disease.[11] PTCL is a very aggressive disease with poor response to therapy and has short survival. Treatment regimens usually contain anthracycline-based chemotherapeutic agents or newer agents, but this rarely changes the outcome.[17] Another study on PTCL shows that total leukocyte count more than 11,000/cumm, age >60 years, failure to achieve complete remission and albumin of <3.5 g/dl are associated with poor prognosis.[18] Though our patient was young, he had leukocytosis and hypoalbuminemia and had a rapidly fatal course.

Conclusion

In a country like India, where prevalence of TB is still high, many doubtful cases of lymphoma may often get treated initially as TB by the primary care physicians. The diagnosis of TB or lymphoma solely on the basis of radiological investigations and clinical findings may not always be correct and no matter how suggestive the clinical picture, all efforts should be made to confirm the diagnosis using microbiological and/or histopathological examination. If clinical circumstances compel an empirical ATT trial, it should always be given under close follow-up.

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