Renal Tuberculosis Presenting as Thigh Abscess

Anantharaman Dharmapalan · R. Vijaykumar ·
Sumanth Bhoopal

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Abstract Tuberculosis is one of the major health problems in India. Genitourinary tuberculosis, 20 % of all extrapulmonary tuberculosis, is the most common extrapulmonary system to be affected by this disease. Kidney is the most common genitourinary organ to be affected. A 50-year-old female presented with renal tuberculosis presenting as right upper thigh abscess, an uncommon presentation managed effectively by anti-tubercular therapy (ATT) and nephroureterectomy.

Keywords Renal · Tuberculosis · Thigh · Abscess

Introduction

Tuberculosis despite the presence of various national programs and effective chemotherapy remains a nemesis. Renal tuberculosis commonly presents as frequent painless micturition, and has a wide spectrum of pathological changes from classic calcified lesions, papillary necrosis, strictures to autonephrectomy characterized by extensive calcification, perinephric abscess which can present as a psoas abscess. This can track along the psoas fascia and present as an abscess in the thigh.

Case Report

A 50-year-old female presented with a right thigh swelling of 1 month and pain in the same swelling of 15 days. She also had evening rise of temperature and constant backache

which subsided after the thigh swelling appeared. Her husband had pulmonary tuberculosis 15 years ago.

A 15 × 10 cm cystic swelling with cross-fluctuation across the inguinal ligament into the corresponding iliac fossa was found in the right thigh (Fig. 1). Another cystic swelling was found just above the iliac crest in the region of the inferior lumbar triangle. A mass was palpable in the right lumbar region on deep inspiration. The spine was normal. A provisional diagnosis of psoas abscess of likely tubercular aetiology was made with the source from the thoracolumbar spine. Investigations revealed positive tuberculin test, pyuria and negative urine culture. X-ray LS spine showed calcified right kidney and right upper ureter (Fig. 2).

Computed tomography revealed diffuse right renal and upper ureteric calcification, and right psoas abscess extending to the mid-thigh with another abscess in right quadratus lumborum muscle tracking to the lateral abdominal wall, causing a subcutaneous abscess just above the right iliac crest. No excretion of dye was noted in the right kidney. The left kidney was normal (Fig. 3).

Right thigh and inferior lumbar abscesses were drained in a non-dependent position. Culture of pus revealed no growth; smear was negative for acid fast bacilli (AFB). The thigh wound persisted as a sinus. The patient was started on ATT of four drugs under the CAT I DOTS regime. After 4 weeks of ATT, the patient underwent right nephroureterectomy by a flank incision through the bed of the 12th rib and ATT was continued. The sinus tract in the thigh healed subsequently. Histopathology showed features of chronic pyelonephritis of tubercular aetiology (Fig. 4).

Discussion

Incidences of tuberculosis in India are 1.8 million/year, 1/5th of which is extrapulmonary tuberculosis. Renal tuberculosis

A. Dharmapalan (✉) · R. Vijaykumar · S. Bhoopal
MVJ Medical College and Research Hospital,
Hoskote,
Bangalore, Karnataka 562114, India
e-mail: meetdrananth@yahoo.co.in

Fig. 1 Right thigh abscess

Fig. 2 Calcified right kidney and upper ureter

Fig. 3 **a** Contrast CT showing right psoas abscess. **b** Further extension towards thigh

(15–20 % of extrapulmonary tuberculosis) is the most common cause for GUTB [1]. Patients in developing countries have advanced disease compared to developed countries [2]. The most important symptoms of renal tuberculosis are frequent painless micturition and urgency. A high index of clinical suspicion and repeated investigation with radiological evidence can lead to the diagnosis [3].

Debilitating disease, diabetes, corticosteroids, immunosuppressive therapy, AIDS are risk factors. Pathological changes include cortical calcification or cavitary lesions resulting in papillary necrosis, thereby involving the pelvicalyceal system and eventually autonephrectomy with renal scarring, extensive calcification and pyonephrosis (putty kidney). Perinephric abscess may form at this stage and ureteric calcification can occur [4].

Sterile pyuria and microscopic haematuria occur in 50 % of patients. AFB is difficult to isolate in urine smears, hence urine culture for mycobacterium is warranted but 6 to 8 weeks of waiting is a disadvantage [3]. CECT has arguably replaced IVU as the imaging modality of choice for the diagnosis and evaluation of genitourinary tuberculosis. CT findings are not specific and must be correlated with the clinical features [5].

The mainstay of medical line of treatment of tuberculosis involves administration of multiple drugs in a short course as envisaged by RNTCP, an application in India of directly observed treatment short course (DOTS) strategy since 1997 [6].

Surgery has become an adjuvant to medical therapy in the treatment of genitourinary tuberculosis and should be delayed until medical therapy has been administered for at least 4 to 6 weeks [3]. The indications for nephrectomy are extensive disease involving the whole kidney, together with hypertension and PUJ obstruction and coexisting renal carcinoma. Earlier nephrectomy was done for non-functioning kidney [7], now it is not mandated that non-functioning kidneys must be excised if the patients are otherwise asymptomatic [1, 3].

Fig. 4 **a** Gross specimen of the diseased right kidney and upper ureter. **b** Cut section of specimen showing irregular contracted kidney with parenchyma converted into cystic spaces filled with caseous material

Nephrectomy is commonly performed through an open approach, given the difficult dissection due to inflammation and scarring. However, in experienced hands it can be performed laparoscopically [8]. In our case, open nephroureterectomy was done to alleviate symptoms, reduce the disease burden and help heal persistent sinus.

Conclusions

Renal tuberculosis has a varied clinicopathological manifestation and requires a high degree of suspicion to diagnose in the initial stages. This patient presented with an abscess in the right upper thigh due to tracking of the pus along the psoas muscle. The pus was externally drained by a non-dependent drainage in the thigh and after 4 weeks of the DOTS CAT I regime of ATT, right nephroureterectomy was done with effective removal of foci of tuberculosis in the right kidney.

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