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**COMMUNICATIONS:****5. URINARY TRACT TUBERCULOSIS: CASE SERIES****Dr. M.A. Taher****ABSTRACT**

Urinary tract tuberculosis is a rare disease and therefore, we like to report the following cases.

**Key words** Radionuclide renogram, ultrasonogram, tuberculosis.

**INTRODUCTION**

World Health Organization (WHO) estimates there are 10 million new cases of all forms of tuberculosis (TB.) in the world yearly, particularly in developing countries. Extrapulmonary TB. accounts for 33% of the cases, and the genitourinary type, CNS and tuberculous meningitis are the next most frequent, respectively. The doubling time of mycobacterium is 20 to 24 hours (E. coli doubling time is 20 minutes), therefore renal tuberculosis is often silent and the non invasive imaging tests ultra-sonogram (USG) and nuclear medicine scan may help in the management as depicted by the cases reported here.

**CASE 1**

A male, aged 60 years, complained of painless hematuria, cough and general weakness. Chest X-ray showed bilateral infiltrations in mid-zones of both lungs. Urinalysis revealed sterile pyuria and microscopic hematuria. Abdominal ultrasonography showed multiple cysts and irregular echotexture in left kidney and mild calyceal dilation in right kidney. Nuclear medicine renal scan (Technetium 99 metastable diethylene triamine pentaacetic acid, Tc-99m DTPA) confirmed non-visualized left kidney and compensatory hypertrophy of right kidney and dilated upper right ureter. Antibiotic therapy with

cephalosporin did not improve the symptoms of the patient. Tuberculin test was positive and a combination of antituberculous drugs made the patient symptom-free.

**CASE 2**

A man of 35 years came with the complaints of urgency and frequency of micturition for four months. His past history includes having appendectomy 1 year ago and a course of anti-tuberculous drugs 2 years ago. DTPA renogram showed poorly functioning right kidney (Fig. 1) and normally functioning left kidney. USG showed small (4 cm dia.) right renal cyst and thickened urinary bladder mucosa. Vesical biopsy revealed features suggesting tuberculosis. Anti-tuberculous drugs make him symptom-free.

**DISCUSSION**

In renal tuberculosis, follow-up radionuclide renograms are recommended initially at about 1 mo. and then at 3-6 mo. intervals, depending on the site of tuberculosis in the renal tract.<sup>1</sup> Das et al.<sup>2,4</sup> found bilateral renal disease in 30% cases, but Premkumar and colleagues<sup>3</sup> could not show contralateral disease with either CT or sonography. In our case 1, compen-

satory hypertrophy of the contralateral kidney was noted in the nuclear scan and in our Case 2, although USG showed a small cyst in right kidney, but DTPA renogram showed poorly functioning right kidney. The multi-imaging approach, radioimmunoassay (RIA) and polymerase chain reaction (PCR) may clarify the diagnosis within 24 hours.<sup>5</sup> Only 30% of patients with urinary tract tuberculosis (TB.) have an abnormal chest radiograph and only 50% have a history of tuberculous infection.<sup>6-9</sup> The ultrasound appearance of urinary TB., may be (1) calycectasis, pyelocalycectasis or ureterectasis (depending on the side of scarring /obstruction); (2) papillary or medullary cavitation; (3) cortical scarring; (4) generalized parenchymal thinning (advanced disease), (5) calcification (strong reflections with acoustic shadowing); and (6) a thick-walled, contracted bladder (from scarring). Obviously, these findings are diverse and nonspecific, but Tb should be a particular consideration when hydronephrosis and papillary or medullary cavitation are confined to one or a few major calyces (due to infundibular scarring), or when the calyces are diffusely dilated but the renal pelvis is not seen (due to scarring). Uncommonly, the granulomatous reaction replaces the renal parenchyma, generating a nonfunctioning 'putty' kidney that may appear relatively normal sonographically. Urinary Tb. may present as a hypoechoic 'mass' identical to focal bacterial nephritis or a small benign or malignant tumor.<sup>10</sup> Ultrasound guided skinny needle aspiration of collecting system (or a mass, if present) is of value in patients in whom standard urine cultures are negative for acid-fast bacilli.<sup>4</sup> Tuberculosis in a horse-shoe kidney may mimic a malignant tumor.<sup>11</sup> Tuberculosis of the glans penis is a rare disease and may simulate carcinoma.<sup>12</sup>

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