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# Renal Tuberculosis Masquerading as Renal Cystic Disease A Case Report

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***Abstract***

*Genitourinary tuberculosis is third most common type of extrapulmonary tuberculosis. We report a 31- year-old women with severe kidney function loss, radiologically left renal cystic disease with <10% perfusion was suspected but turned out that the renal failure was secondary to renal tuberculosis in histopathological examination. This article is to emphasize high level of clinical suspicion of renal tuberculosis.*

**Keywords:** *Surgical procedures, Dentistry, Renal failure, Dental treatments, Patients, Health professionals*

## 1. Introduction

Tuberculosis is a current public health problem, remaining the most common worldwide cause of mortality from infectious disease, with estimated global incidence of 8 to 10 million/year. Genitourinary tuberculosis is the most frequent type of extrapulmonary tuberculosis; however, the diagnosis can be missed due to lack of clinical signs and symptoms of renal tuberculosis. Hence here is a CT suspected case of cystic kidney disease with < 10% perfusion. Post nephrectomy, it was diagnosed as renal tuberculosis which would have altered the course of treatment. The difficulty in diagnosing extra pulmonary tuberculosis can be attributed to the poor access of disseminated lesions, the fact of patients being usually pauci-bacillary and lower rate sof bacteriological positivity.

### Case Summary

A 31-year-old female presented with umbilical hernia without any symptoms of fever, night sweats. No previous history or family history of tuberculous disease. The physical examination showed palpable pallor and BP of 140/90 mmhg and systemic examination revealed reducible hernia. No tenderness, no abdominal mass, no organomegaly. Once primary radiographic examinations were altered, computed tomographies of the abdomen was performed and shows multiple left renal cystic disease and a complex left ovarian cyst. Renal perfusion of left kidney was 7.95% and perioperatively pyonephrosis was identified Renal perfusion of right kidney was 93.05%. No significant perfusion was seen in left kidney. Hence Nephrectomy was performed and specimen was sent for histopathological examination.

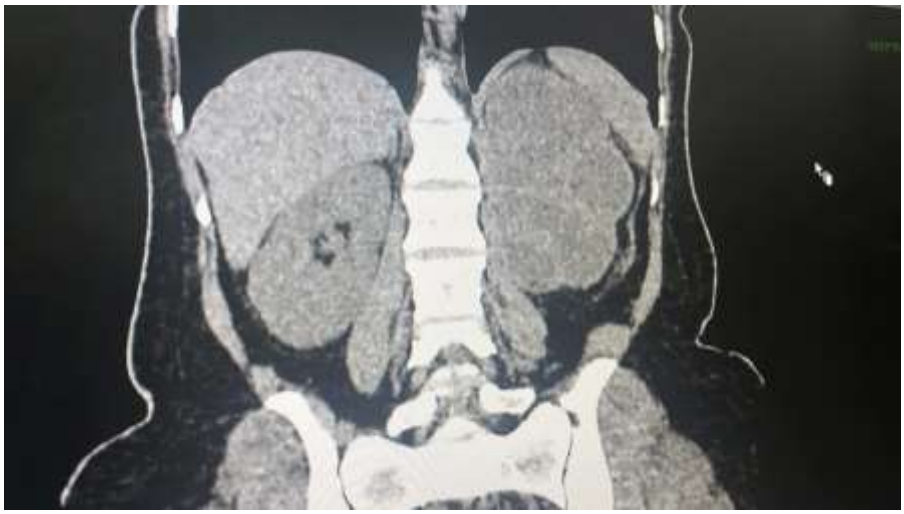

**Figure 1:** Computed tomography of the abdomen and pelvis without contrast showing left multiple renal cysts

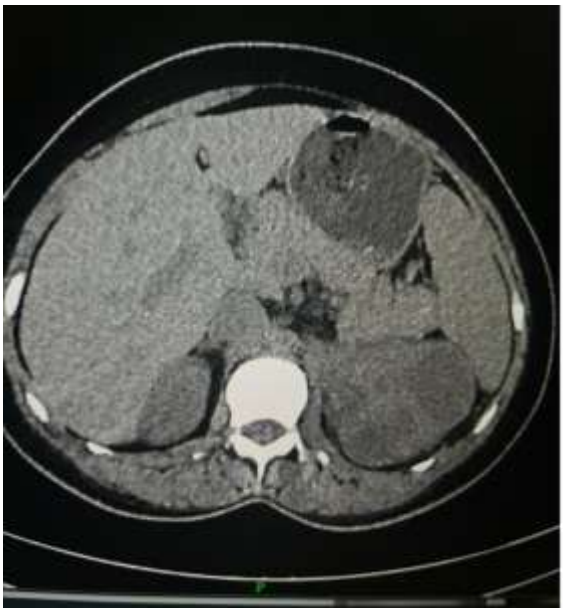

**Figure 2:** Axial view of computed tomography abdomen demonstrating multiple left renal cysts

**Gross**

Received a 8 x 8.5x 4.5 cm kidney. Grey brown thickened nodular fragment. Cut section multiple thick walled cyst filled with necrotic debris.

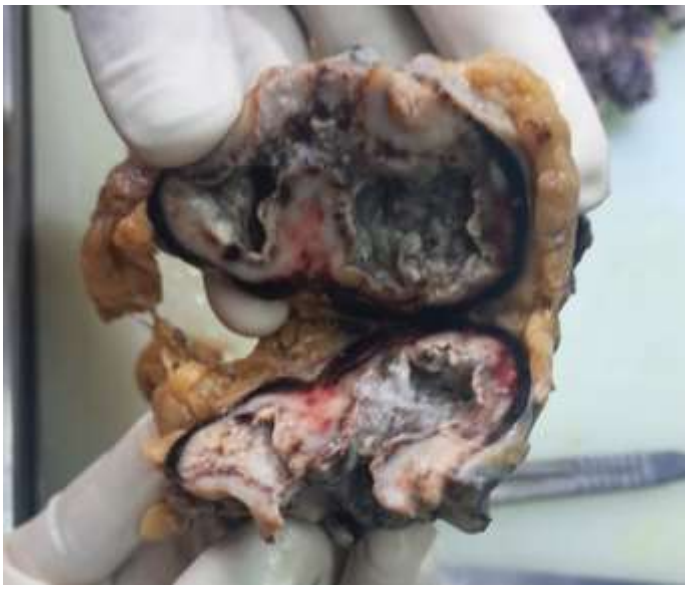

**Figure 3:** Left kidney showing multiple thick-walled cyst filled with necrotic debris

**Microscopic Features**

Histopathological examination shows granulomas with central caseation surrounded by epithelioid cells and langhan's giant cells along with diffuse lymphocytic infiltration. The renal parenchyma is compressed at the periphery showing residual glomeruli and atrophic tubules.

**Impression**

Tuberculous nephritis of left kidney

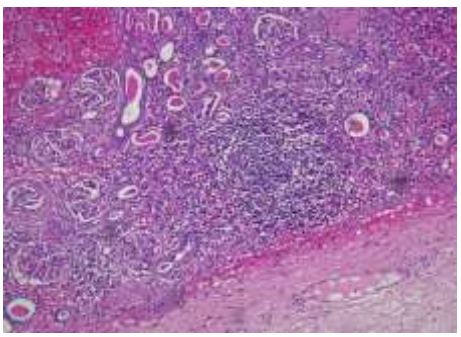

**Figure 4:** Thyroidization of tubules with adjacent normal renal parenchyma

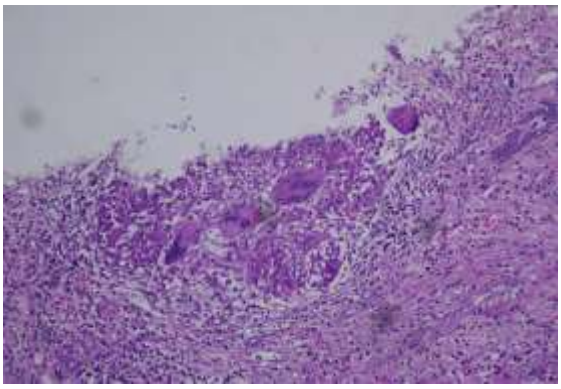

**Figure 5:** Granuloma formation in renal parenchyma

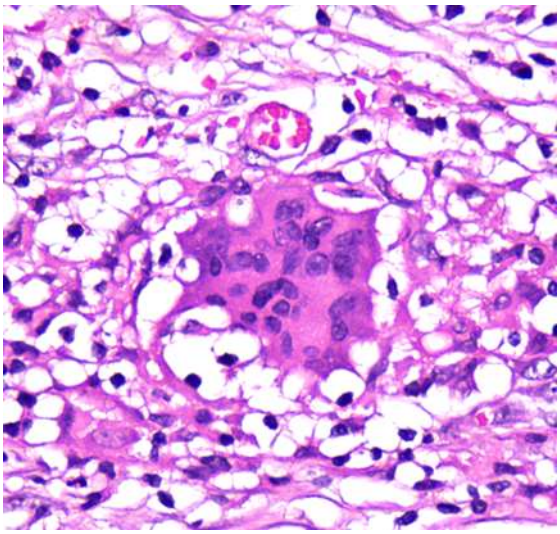

**Figure 6:** Multinucleated langhan's giant cell

## 2. Results and Discussion

Urogenital tuberculosis is diagnosed in 1.1–1.5% of all tuberculosis cases and in 5–6% of cases of extrapulmonary tuberculosis [2]. This infection is usually a consequence of local reactivation following hematogenous dissemination of Mycobacterium tuberculosis to the renal cortex during primary pulmonary infection. The renal cortex is also frequently involved with miliary tuberculosis when multiple granulomas are present. The high oxygen tension of the renal cortex is favorable for renal localization. The clinical presentation of urogenital tuberculosis consists of mostly nonspecific symptoms such as frequent urination, pyuria, dysuria, flank pain, fever, and weight loss. Routine works up of genito-urinary tuberculosis (GUTB) includes collection of three consecutive residual-void morning urine samples which are then sent for routine analysis as well as acid fast bacilli (AFB) culture. Sterile pyuria is the characteristic finding on urine analysis. AFB smear positivity from urine analysis of a 24-hour specimen provides presumptive diagnosis of GUTB. AFB culture takes 6-8 weeks but it is the confirmatory test. Laboratory tests however are not indicative of the severity or extent of the disease. In extremely rare cases however GUTB may present as cystic lesions of variable size, with the clinical and radiological findings suggestive of renal cystic disease and renal failure, the patient consequently undergoes surgical removal of the involved kidney whose histopathological examination unexpectedly establishes the diagnosis of tuberculosis. The role of nephrectomy in GUTB is limited and dependent on the status of the collecting system. While multi-drug therapy is the treatment of choice, it does not halt the development, and progression of strictures. Even after surgical treatment the patient must receive anti-tuberculous multi-drug therapy.

## 3. Conclusion

urogenital tuberculosis is a challenging extrapulmonary manifestation of Mycobacterium tuberculosis. Diagnosis relies on thorough urine analysis and AFB culture. While surgical interventions like nephrectomy may be considered in certain cases, anti-tuberculous therapy remains essential for effective management. The complexity of the disease underscores the importance of a comprehensive and multidisciplinary approach.

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