CASE REPORT

Tuberculosis of the Prostate and Seminal Vesicles

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ABSTRACT
We report a rare manifestation of tuberculosis of the prostate and seminal vesicles without involvement of the rest of the genito-urinary tract. A 27-year-old male initially presented with clinical and laboratory evidence of pulmonary tuberculosis. Two weeks later, the patient developed dysuria. Ultrasound abdomen showed an enlarged prostate and seminal vesicles with irregular hypoechoic areas and hypervascularity. Transrectal ultrasound showed similar findings. Computed tomography showed enlargement of the prostate and both seminal vesicles; ring-enhancing lesions were evident in the prostate. Transrectal ultrasound-guided prostate biopsy showed caseating granulomas with Langerhans’ giant cells suggestive of tuberculosis.

Key Words: Granuloma; Prostate; Prostatitis; Seminal vesicles; Tuberculosis, urogenital

INTRODUCTION
Granulomatous prostatitis is an uncommon entity. It is broadly divided into non-specific, infective, and iatrogenic (post surgical) forms. Tuberculosis of the prostate is almost always secondary to tuberculosis elsewhere in the body and is commonly associated with tuberculous involvement of the genito-urinary tract. We present a rare case of tuberculosis of the prostate and seminal vesicles without involvement of kidneys, ureters, or bladder. Imaging findings are also highlighted.

CASE REPORT
A 27-year-old male, who initially presented with fever and cough, developed dysuria 2 weeks later. Chest radiograph revealed consolidation of the posterior segment of right upper lobe and right pleural effusion. Rectal examination revealed grade II prostatomegaly and mild tenderness. Prostate enzymes were within normal limits. The Mantoux test and sputum microscopy for tuberculosis were positive.

Intravenous urography revealed normal kidneys,
collecting systems, and ureters with mild urinary bladder base elevation, which was probably secondary to prostatomegaly (Figure 1). Transabdominal and transrectal ultrasound showed an enlarged prostate with irregular hypoechoic areas in the parenchyma on both sides and enlarged seminal vesicles with heterogenous hypoechoic areas bilaterally, more prominent on the right. Colour Doppler showed hypervascularity of the prostate and seminal vesicles (Figures 2 and 3). Computed tomography (CT) revealed enlargement with irregular ring-enhancing hypodense areas involving the prostate and both seminal vesicles (Figure 4). Both kidneys were normal in the precontrast, nephrographic and excretory phases of the CT. No calculi, pelvicycalceal dilatation or parenchymal abscesses were seen.

Transrectal ultrasound-guided biopsy of the prostate showed caseating granulomas with Langerhans’ giant cells suggestive of tuberculosis. The patient responded well to antituberculous treatment.

DISCUSSION
Tuberculous involvement of the prostate is rare and is usually secondary to involvement of other sites, especially the upper urogenital tract. Tuberculosis of the prostate without involvement of kidneys and ureters is extremely rare. Routes of prostatic involvement are descending infection from upper urinary tract, lymphatic or haematogenous spread and rarely ascending infection through urethra. Granulomas develop just beneath the mucosa and spread through the transition zone. Abscess formation follows with caseation, cavitation, and fibrosis. Rupture into periprostatic space, urethra, and rectum etc can occur. Occasionally perineal fistulae can occur. Haemospermia is an important clinical symptom. On rectal digital examination, there may be

Figure 1. Intravenous urography showing the urinary bladder base elevation with normal collecting systems and ureters.

Figure 2. Abdominal ultrasonography showing enlarged prostate with abscess formation and hypervascularity of the parenchyma.

Figure 3. Transrectal ultrasonography showing prostatic abscesses.
asymmetric enlargement of the lobes of the prostate or a nodular fibrotic gland.

Transabdominal and transrectal ultrasound of the involved prostate and seminal vesicles often reveal enlarged and hypervascular, irregular hypoechoic areas. On CT, irregular hypodense areas may be noted and ring enhancement is seen in cases with abscess formation. The prostate may also be calcified and in late stages, shrunken and fibrotic. In T2-weighted magnetic resonance images, multiple hyperintense areas may be noted in the gland, which are iso- to hypo-intense in T1 images and show ring enhancement if there is abscess formation. In addition, T2 images may show diffuse radiating streaky areas of low signal intensity in the prostate, known as the ‘water melon-skin’ appearance.

Pyogenic prostatic abscesses also have a similar radiological appearance, though the finding of calcification or fibrosis should suggest tuberculosis. The fibrotic form of tuberculous prostatitis may mimic carcinoma both clinically and radiologically, though in the former condition, the gland is often shrunken and calcified. This might aid in differentiation.

Diagnosis can be confirmed by positive cultures, Ziehl-Nielsen staining or histopathological examination of samples from transrectal ultrasound-guided biopsies, transurethral prostatic resection chips, needle biopsies or suprapubic prostatectomy specimens. Polymerase chain reaction of urine is highly sensitive and specific, but fails to differentiate between active and latent infection and is best used in combination with cultures and staining.

Tuberculous infection of the prostate and seminal vesicles is a well-defined entity. This is a unique case of prostatic and seminal vesicle tuberculosis without involvement of bladder or kidneys, and illustrates the classical imaging features of the condition using various imaging modalities.

REFERENCES