
CASE REPORT

Tuberculosis of the Prostate and Seminal Vesicles

J Joseph, H Narayanan, H Babu, A Praveen

Department of Radio-diagnosis, Trivandrum Medical College, K-11B, Kailas Nagar, Kesavadasapuram, Trivandrum, Kerala, India 695011

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

中文摘要

前列腺及精囊腺結核病

J Joseph, H Narayanan, H Babu, A Praveen

本文報告一例前列腺及精囊腺結核病但泌尿生殖道其餘部分無受累的案例。一名27歲男性，臨床及實驗室數據最初顯示有肺結核病。兩星期後症狀發展為排尿困難。腹部超聲檢查顯示其前列腺及精囊腺增大，並有不規則低回聲區及血管增生。經直腸超聲檢查有相似發現。電腦斷層亦同樣發現病人前列腺及精囊腺增大，前列腺內有明顯環狀強化病灶。經直腸超聲引導下前列腺活檢，證實其內有乾酪化樣肉芽腫及Langerhans巨細胞，提示為結核病。

INTRODUCTION

Granulomatous prostatitis is an uncommon entity. It is broadly divided into non-specific, infective, and iatrogenic (post surgical) forms.¹ 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.² 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,

*Correspondence: Dr John Joseph, K-11B, Kailas Nagar, Kesavadasapuram, Trivandrum, Kerala, India 695011.
Tel: (91) 009 447467795; Email: johnjosephjj@yahoo.co.in*

Submitted: 25 Jan 2010; Accepted: 30 Mar 2010.



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

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, pelvicalyceal 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.² Routes of prostatic involvement are descending infection from upper urinary tract, lymphatic or haematogenous spread and rarely ascending infection through urethra.² 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.³ Haemospermia is an important clinical symptom. On rectal digital examination, there may be

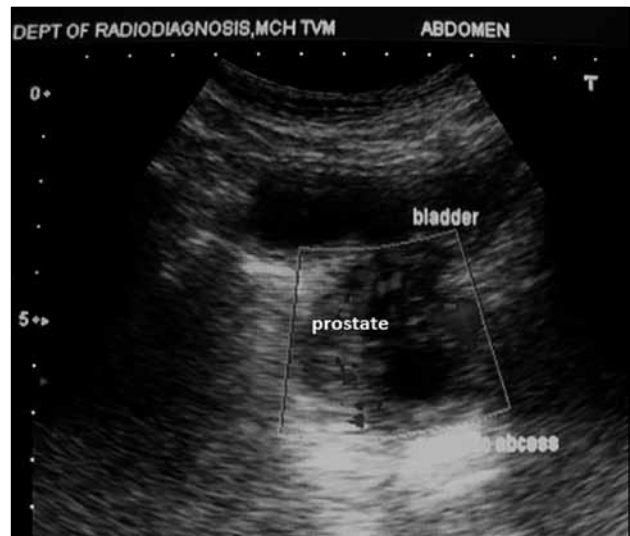


Figure 2. Abdominal ultrasonography showing enlarged prostate with abscess formation and hypervascularity of the parenchyma.

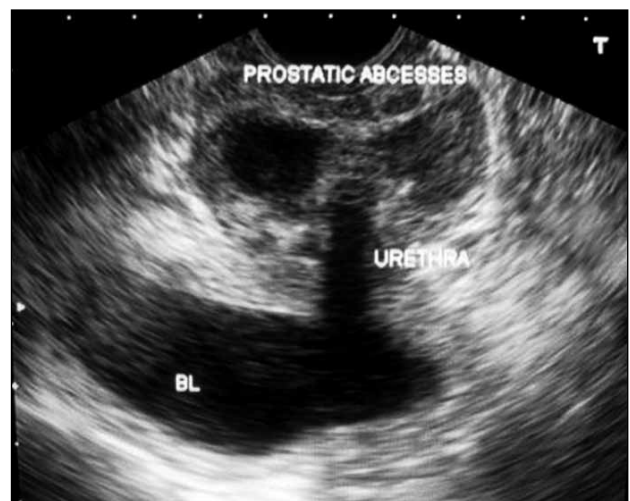


Figure 3. Transrectal ultrasonography showing prostatic abscesses.

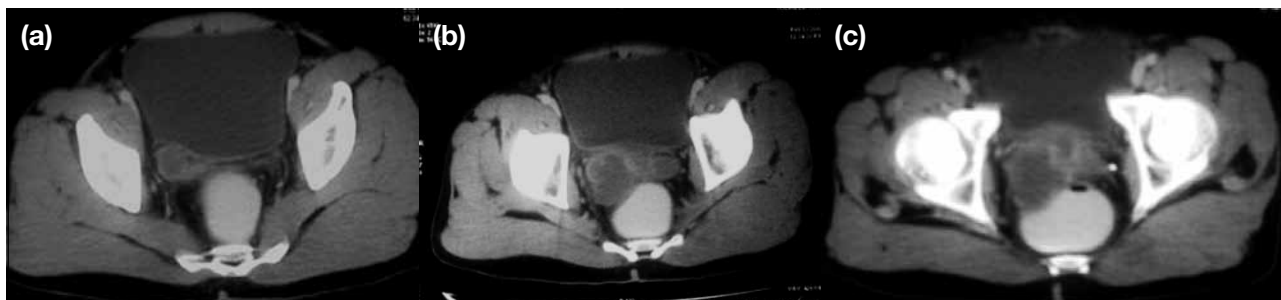


Figure 4. Contrast-enhanced computed tomograms showing an enlarged prostate and seminal vesicles with ring-enhancing lesions.

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.⁴ 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.⁵ 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.⁵

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.⁶

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

1. Punia RA, Mohan H, Bawa AS. Granulomatous prostatitis — an infrequent diagnosis. *Indian J Urol.* 2002;19:16-9.
2. Bhargava N, Bhargava SK. Primary tuberculosis of the prostate. *Indian J Radiol Imaging.* 2003;13:236-7.
3. Grainger & Allison’s diagnostic radiology. 5th ed. Elsevier; 2008: 900-1.
4. Stillwell TJ, Engen DE, Farrow GM. The clinical spectrum of granulomatous prostatitis: a report of 200 cases. *J Urol.* 1987;138:320-3.
5. Engin G, Acunaş B, Acunaş G, Tunaci M. Imaging of extrapulmonary tuberculosis. *Radiographics.* 2000;20:471-88.
6. Gupta N, Mandal AK, Singh SK. Tuberculosis of the prostate and urethra: A review. *Indian J Urol.* 2008;24:388-91.