Gross calcification within the prostate gland and its significance and treatment

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A 60-years-old male presented to us with a history of obstructive voiding symptoms for one year. He had past history of pulmonary tuberculosis 15 years back. On examination, the urinary bladder was palpable. Digital rectal examination revealed that grade III prostatomegaly with multiple hard nodules. Routine examination of urine showed microscopic hematuria with plenty of pus cells. Urine culture showed no growth on ordinary as well as mycobacterial culture for tubercular bacilli. Serum PSA was 6.3 ng/ml. Ultrasonography of KUBP region showed heterogeneous prostatomegaly with multiple areas of calcification. Weight of prostate was 63 gms. Trans-rectal ultrasonography (TRUS) guided prostatic biopsy revealed benign prostatic hyperplasia. Plain X-ray of KUB showed gross prostatic calcification (Fig. 1). At cystoscopy, he was found to have an obstructive prostate and the prostatic urethra had a calculus embedded in it.

Patient underwent Trans-urethral resection of prostate (TURP) using standard diathermy loop and continuous flow 26 Fr resectoscope sheath. Stones which appeared during resection were manipulated into urinary bladder. Smaller stones were aspirated out through resectoscopic sheath while larger stones were fragmented there with pneumatic lithotripsy and then aspirated out. Prostatic biopsy showed benign prostatic hyperplasia. Stone analysis of calculi showed mixture of calcium phosphate (76%) and calcium carbonate (24%). On fol-

low-up after one year, no new calculi developed in prostate and there is no voiding problem.

Discussions

True prostatic calculi are uncommon in men younger than 40 yrs of age. The majority of cases occur in men above 50 yrs [1]. The incidence of prostatic calculi range from 7% upon histopathological examination of operative specimen [2] to 99% in autopsy specimen examined by imaging techniques [3]. Calculi are seen mainly in the border zone between the middle and postero-lateral lobes of the prostate. Prostatic calculi appear to be unrelated to the development of adenocarcinoma, but if calculi are present, they are typically seen peripheral to the tumors [3].

Gross calcification and calculus formation is arbitrarily defined as that which occupies an area of $>3\text{cm}^2$ on a standard X-ray of the pelvis. Such calcification is rare at any age [4].

The true prostatic calculi may form by two related mechanism with obstruction and stasis of prostatic fluid as common factor in both. These mechanism are calcification of corpora amylacea and simple precipitation of prostatic secretion [1].

Prostatitis is a common predisposing factor, but prostatic calculi have been reported in association with prostatic hypertrophy, prostatic carcinoma [2], after radiotherapy for carcinoma of prostate [5], after prostatectomy [6], onychosis [7] and hematospermia [8]. These prostatic calculi are commonly asymptomatic. Patient usually present with symptoms of associated disease. These prostatic calculi vary in numbers, ranging from single to several hundred. The chemical analysis of most of these stones reveals either calcium phosphate or calcium carbonate like in our case [9].

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Fig. 1 Plain X-ray showing gross prostatic calcification

Recurrent dystrophic calcification in a prostate gland previously affected by gross calcification is an indication for appropriate metabolic investigations [4]. Symptoms attributed to prostatic calculi are rare and include reduction of the urinary stream, lower back and leg pain, recurrent passage of calculi after TURP and orchitis [1]. Prostatic calculi rarely present as a clinical problem and their diagnosis is usually obtained by plain radiology or Trans-rectal ultrasonography (TRUS) [10].

Silent asymptomatic prostatic calculi requires no treatment. Treatment is offered to patient when either these stones are symptomatic or for the associated pros-

tatic disease. Treatment usually involves transurethral resection of prostate (TURP), although ESWL with suprapubic percutaneous extraction has been described [11]. Large prostatic calculi should be treated and extracted as aggressively and completely as possible at the first intervention to avoid the necessity of repeat intervention.

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