Case Report

Granulomatous prostatitis with raised prostate-specific antigen levels; mimicker of malignancy

Dolly Prashant[1], Viplav Prashant[2], Siddhi Sainik[3], Amitabh Sahu[4]

From [1]Assistant Professor, Department of Pathology, Government Medical College, Kabirdham, [2]Associate Professor, Department of Biochemistry, Government Dental College, [3]Associate Professor, Department of Obstetrics and Gynaecology, Maa Padmavati Institute of Medical Sciences, Raipur, [4]Associate Professor, Department of Anaesthesia, Abhishek I Mishra Memorial Medical College and Research, Bhilai, Chhattisgarh, India

ABSTRACT

Granulomatous prostatitis is a rare and distinctive form of prostatitis that can be misdiagnosed clinically as carcinoma, radiologically by ultrasound, and histopathologically. It is quite uncommon in needle biopsy cases, with an incidence of <1%. Furthermore, it is a rare localized inflammatory condition of the prostate that forms a localized lesion/nodule and is associated with raised prostate-specific antigen levels. Almost exclusively diagnosed by histological examination. Classification includes non-specific granulomatous prostatitis, infectious granulomas, post-surgical granulomas, systemic granulomatous prostatitis, xanthogranulomatous prostatitis, and malakoplakia prostatitis.

Key words: Carcinoma, Granulomatous prostatitis, Localized, Prostate-specific antigen

Granulomatous prostatitis is a rare and distinctive form of prostatitis that can be misdiagnosed clinically as carcinoma [1,2], radiologically by ultrasound [3], and histopathologically [4], so it is necessary to confirm the diagnosis and rule out a malignant component. It accounts for about 0.8–1% of prostatitis as compared to other benign lesions of the prostate [5]. Benign hyperplasia of the prostate is the most common benign tumor of the male and is associated with nodular enlargement of the prostate with a mild rise in prostate-specific antigen (PSA) values. Furthermore, it is associated with Lower urinary tract symptoms, including obstructive symptoms (hesitancy, intermittent stream, and straining); urinary bladder irritation symptoms (frequency, urgency, and urge incontinence); and urinary retention (whether acute or chronic). Granulomatous prostatitis is associated with similar symptoms along with firm and fixed nodular enlargement on digital rectal examination with raised PSA values.

We present a case of a male in his late 70s who presented with obstructive symptoms and raised PSA values. Clinically, there was suspicion of malignancy, which was supported by digital rectal examination and radiological examination, so further related investigations were done, which ruled out malignancy, and a diagnosis of granulomatous prostatitis was made. Therefore, for cases with raised PSA values and suspicion for malignancy, granulomatous prostatitis should be taken into consideration.

CASE REPORT

A male patient in his late 70s presented with complaints of increased frequency, intermittent dribbling, and nocturia for 1 month.

General examination and vitals of the patient were within the normal range. On per rectal examination, a firm and fixed nodule was observed, and PSA values were 58 ng/mL, favoring malignancy.

For confirmation, radiological investigations (transrectal ultrasound and magnetic resonance imaging) were carried out, and it revealed a hypoechoic lesion favoring adenocarcinoma. Transurethral resection of the prostate chips was submitted for confirmation of diagnosis.

Histological examination was negative for malignancy, and it revealed the presence of well-formed and ill-defined granulomas surrounded by chronic inflammatory cells, Langhans giant cells, and foreign body giant cells; however, necrosis was not seen/noted (Fig. 1a-g). Based on histological features, a diagnosis of non-necrotising granulomatous prostatitis was made. Further clinicoradiological and microbiological investigations were advised for confirmation of cause. This patient had no symptoms of metastases such as

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Correspondence to: Dr. Viplav Prashant, A-1, Rajiv Nagar, Raipur, Chhattisgarh, India. E-mail: drviplav2004@gmail.com

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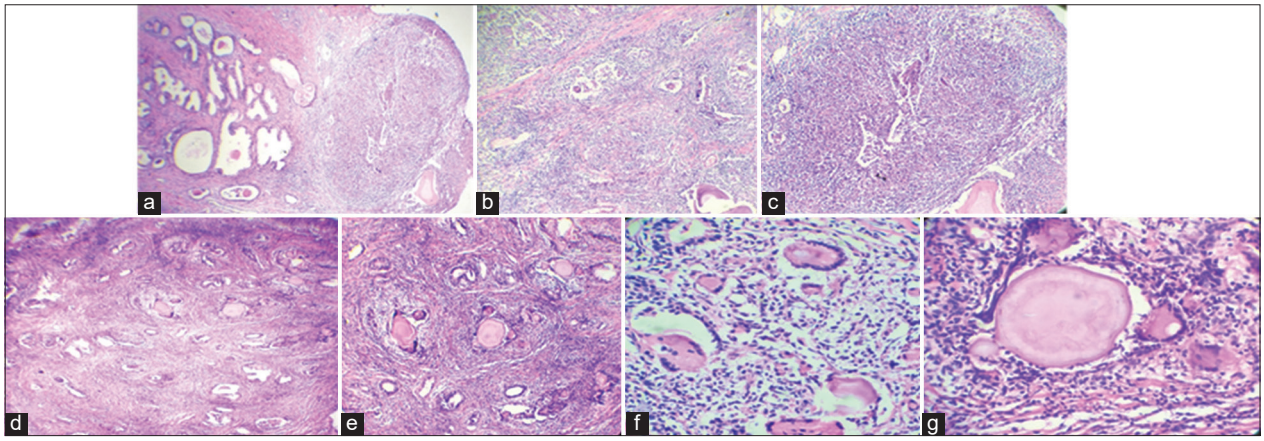


Figure 1: (a) Well-formed granuloma; ×4, (b) granuloma, langhans giant cells, and chronic inflammation; ×10, (c) well-formed granuloma; ×10, (d) ruptured ducts, with granulomatous reaction, ×4, (e) well-formed granuloma; ×10, (f) granuloma, langhans giant cells, ×40, (g) granuloma, langhans giant cells, ×40

weight loss, bone pain, or decreased appetite, and a bone scan showed no evidence of metastases.

Acid-fast bacilli (AFB) stains of tissue blocks were done in addition to other microbiological investigations (Fig. 2a and b). The results were negative for AFB bacilli.

A complete course of antibiotics was advised as treatment, which included tablet Falox 500 mg twice daily for 7 days and tablet Forcan 150 mg once daily for 5 days along with other supportive medications, and PSA values were to be assessed for further management.

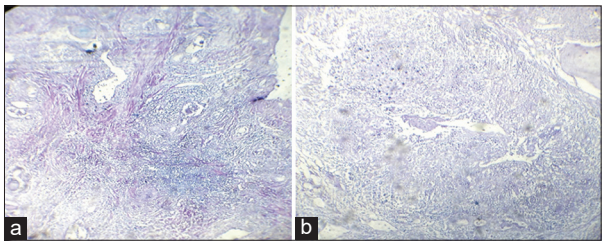


Figure 2: (a) Stain on the same slide, ×10, (b) acid-fast bacilli stain on the same slide, ×40

DISCUSSION

Granulomatous prostatitis accounts for about 0.8–1% of prostatitis as compared to other benign lesions of the prostate [5]. It is quite uncommon in needle biopsy cases, with an incidence of <1% [6]. Chronic inflammation in the prostate is usually focal, patchy, and mild [7-9]. Acute and chronic inflammation of the prostate can elevate serum PSA levels, and consideration should therefore be given to reporting inflammation.

As granulomatous prostatitis can be misdiagnosed clinically as carcinoma, radiologically by ultrasound, and histopathologically, this situation was similar to that of our case in terms of clinical and radiological examination. Most cases (three-quarters) of granulomatous prostatitis are of non-specific type, which probably represents a response to spilled prostatic secretions secondary to duct/acinar rupture [10]. Microscopically, the typical picture of non-specific granulomatous prostatitis is a lobulocentric, non-caseating, granulomatous inflammatory cell infiltrate with a mixed population of histiocytes, lymphocytes, neutrophils, eosinophils, plasma cells and multinucleated giant cells. Necrosis should not be seen [5].

Most other cases of granulomatous prostatitis are due to Bacillus Calmette-Guerin (BCG) treatment for bladder carcinoma and post-biopsy/resection granulomas, which are more common in larger tissue samples. These latter granulomas, which appear to form in response to altered and cauterized prostatic epithelium, stroma, secretions and/or urine, have a characteristic fibrinoid central zone surrounded by palisading epithelioid histiocytes and fibroblasts [11]; however, no such history of prior BCG treatment was available in our case. Infectious causes of granulomatous prostatitis other than BCG prostatitis are rare and include infectious granulomatous prostatitis due to bacteria (mycobacteria, including tuberculosis [12-14] and brucellosis), spirochetes (syphilis), parasites (schistosomiasis), virus (herpes zoster), and fungi.

Predisposing conditions for prostatic fungal infection include immunosuppression, prolonged use of antibiotics, diabetes mellitus, malignancy, and an indwelling catheter. The histological examination in our case did not reveal any caseous necrosis; therefore, tubercular origin of the lesion was apparently ruled out. However, microbiological investigations were done to rule out an infectious cause. AFB was not seen on AFB stain of tissue blocks.

As granulomatous prostatitis is a mimicker of carcinoma prostate, clinically, radiologically, and histopathologically, close monitoring and follow-up of our patient was done. Concomitant prostate cancer was not observed in our patient.

CONCLUSION

Granulomatous prostatitis raises concern as it is associated with obstructive symptoms along with firm and fixed nodular enlargement on digital rectal examination with raised PSA values mimicking malignancy. However, close clinical follow-up and overall work-up including microbiological and histological correlation are required to approach a confirmatory diagnosis, thereby alleviating misdiagnosis and its consequences.

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