Journal of Chemical Health Risks

www.jchr.org

JCHR (2025) 15(5), 1896-1898 | ISSN:2251-6727

Xanthogranulomatous Prostatitis Masquerading as Prostatic Adenocarcinoma: A Case Report

Hafsa Fatima [1]; Dayakar Surati [1]; Sri Lakshmi Kanthan P[1]; Navneethakrishnan Venkatachalam [1]; Saravanan Jamunathan [1] ;Senthil Kumar Thiagarajan [1*]

1. Department of Urology , SRM Medical College Hospital and Research Centre, SRM Institute of Science & Technology, Kattankulathur, Chengalpattu, Tamil Nadu, India.

(Received: 16 July 2025 Revised: 20 August 2025 Accepted: 29 September 2025)

KEYWORDS

Xanthogranulomatous prostatitis ; acute urinary retention ; Prostate specific antigen;Case report

ABSTRACT:

The Inflammatory pathologies of the prostate are rare benign conditions that may present a picture similar to prostatic adenocarcinoma. Xanthogranulomatous prostatitis (XGP) is a very rare subvariant of granulomatous inflammations of the prostate which mimics prostatic adenocarcinoma clinically, radiologically as well as biochemically. We report a case of a 74yr male who presented to the emergency with acute urinary retention (AUR). Diagnostic evaluation including imaging and Serum Prostate specific antigen (PSA) raised suspicion for prostatic adenocarcinoma. However, histopathology revealed extensive infiltration with foamy macrophages, multinucleate giant cells and chronic inflammatory cells, consistent with the diagnosis of XGP. This case underscores the importance of considering XGP in the differential diagnosis of prostatic masses to avoid unnecessary invasive treatments and highlights the role of histopathology in establishing a definitive diagnosis. The presentation of XGP in AUR has not been reported before in literature.

1. Introduction

Xanthogranulomatous prostatitis (XGP) is an extremely rare and benign condition of the prostate gland characterized by lipid laden macrophages, chronic inflammation and fibrosis. The first case was reported in 1986 in Poland by Miekos et al [1] and only 15 cases have been reported so far. XGP remains a diagnostic challenge due to its ability to clinically and radiologically mimic prostatic adenocarcinoma, thereby posing significant implications for patient management and treatment. The etiology of XGP is not well established, however several factors including bacterial infections, ductal obstruction and lipid metabolism disorders have been implicated. This report aims to present a rare case of XGP who presented to emergency in acute urinary retention, a presentation of XGP not reported so far.

2. Case Presentation: A seventy-four-year-old male presented in acute urinary retention to the ER. He had a history of increased frequency and urgency for the last one month. His comorbidities included both diabetes and hypertension since the last ten years. The examination of the abdomen was essentially normal. Digital rectal examination revealed the prostate to be asymmetrical and enlarged with a hard nodule in the right lobe. Biochemical tests were within normal limits. Serum PSA on admission was 14.68ng/ml. Repeat value after two weeks decreased to 6.85ng/ml. On ultrasound the prostate was 120cc with median lobe projecting into the bladder (Figure 1). A Multiparametric MRI revealed an enlarged prostate with a weight of 82gm and PIRADS 3 lesion.

A Transrectal ultrasound guided twelve core biopsy was performed. Histological analysis revealed lipid laden macrophages (also known as xanthoma cells), glandular atrophy and fibrosis.

Patient subsequently underwent transurethral resection of prostate, with intra op cystoscopy findings suggestive of grade III lateral lobes and grade III median lobe. Post op recovery was uneventful apart from complaints of urgency which subsided over two months. Final Histopathological report was confirmatory of Xanthogranulomatous prostatitis with glands showing many foci of cystic dilatation and chronic inflammatory cells including lymphocytes, plasma cells and foamy macrophages with giant cells (Figure 2). There was no evidence of malignancy.

Journal of Chemical Health Risks

www.jchr.org

JCHR (2025) 15(5), 1896-1898 | ISSN:2251-6727

3. Discussion

Xanthogranulomatous inflammation, a chronic inflammatory condition characterized by lipid laden macrophages was first described by Osterlind in 1944 [2]. It is commonly seen in gall bladder and kidney with xanthoganulomatous pyelonephritis being a well described entity. Xanthogranulomatous inflammation in the prostate is rare with less than 15 cases reported so far[3]. The exact causes of XGP remains unknown. Various factors implicated in the etiology include chronic bacterial infections, ductal obstruction, infection with mycobacterium tuberculosis, treponema pallidum, hyperlipidaemia etc [4].

In 1984 Epstein and Hutchin classified Granulomatous prostatitis into 5 groups based on aetiopathology:- 1) Idiopathic (non-specific); 2) Infective (specific); 3) Iatrogenic (post-surgery);4) Malacoplakia; 5) associated with systemic diseases and allergy.

An inflammatory nodular infiltrate consisting of lymphocytes, plasma cells and histiocytes is characteristic. The presence of foamy macrophages (lipid laded histiocytes) also known as xanthoma cells is a specific and distinctive feature of XGP [4]. On Immunohistochemistry B lymphocytes occur in a more peripheral location or form follicular structures while T lymphocytes are seen closely associated with the damaged epithelium. The hyper nephroid pattern of prostatic carcinoma (Gleason 4B) may cause a diagnostic confusion with xanthoma cells. Immunohistochemistry tests such as PSA, prostatic acid phosphatase (PAP), cytokeratin, leucocyte common antigen (LCA) and CD68 can help differentiate between them [5].

Distinguishing XGP from adenocarcinoma is difficult even with multiparametric MRI. (mpmri) Factors which should raise suspicion of XGP include- >50% of the prostate associated with infiltration of periprostatic fat or extracapsular extension, the presence of large areas of non-enhancement corresponding to caseous abscess and areas of rim enhancements. Diagnosis is usually in the sixth decade but may vary [6]. Clinical symptoms vary from LUTS to UTI. DRE may reveal a hard nodular prostate. PSA can be normal or maybe as high as 150ng/ml [2]. Confirmation of prostate malignancy maybe done by an immunological panel [7].

HPE is the most crucial and only confirmatory test at present for the confirmation of XGP.

XGP is managed conservatively unlike prostatic adenocarcinoma. Inflammation is self-limiting and resolves with time.

4. Conclusion:

Clinical, radiological and biochemical features are similar in both prostatic adenocarcinoma and Xanthogranulomatous prostatitis. Elevated PSA with abnormal digital rectal examination should be evaluated further with MRI and transrectal biopsy.

The differential diagnosis of high-grade prostatic carcinoma can be done with immunohistochemistry and histology. Conservative management is the treatment of choice with surgery being reserved for patients with bothersome LUTS. A coexisting carcinoma can be detected on close followup. Hence the confirmation of the diagnosis can only be done on precise histopathology. XGP is a rare diagnosis whose possibility should be borne in mind.

Refrences

1. Mikros E, Wlodarczyk W, Szram S. Xanthogranulomatous prostatitis. Int Urol Nephrol. 1986;18(4):433-437.
2. Rafique M, Yaqoob N. Xanthogranulomatous prostatitis: a mimic of carcinoma of prostate. World J Surg Oncol. 2006;4:30.
3. Mohan H, Bal A, Punia RP, Bawa AS. Granulomatous prostatitis—an infrequent diagnosis. Int J Urol. 2005;12(5):474-478.
4. Presti B, Weidner N. Granulomatous prostatitis and poorly differentiated prostatic carcinoma: their distinction with the use of immunohistochemical methods. Am J Clin Pathol. 1991;95(3):330-334.
5. Shukla P, Gulwani HV, Kaur S. Granulomatous prostatitis: clinical and histomorphic survey of the disease in a tertiary care hospital. Prostate Int. 2017;5(1):29-34.
6. Valsangkar RS, Singh DP, Gaur DD. Xanthogranulomatous prostatitis: rare presentation of a rare disease. Indian J Urol. 2012;28(2):204-205.
7. Pastore AL, Palleschi G, Fuschi A, et al. Hematospermia and xanthogranulomatous prostatitis: an unusual onset of a rare diagnosis. Can Urol Assoc J. 2013;7(11-12):E780-E783. doi:10.5489/cuaj.3879734.

Journal of Chemical Health Risks

www.jchr.org

JCHR (2025) 15(5), 1896-1898 | ISSN:2251-6727

Figures:

Figure 1: Depicting an enlarged median lobe protruding into the bladder and a foleys bulb in situ

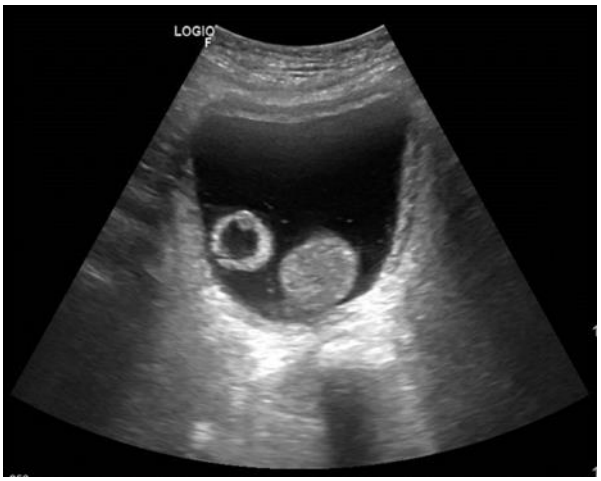

Figure 2: Depicting xanthoma cells.