A VERY RARE ENTITY OF BENIGN PROSTATIC INFLAMMATION: XANTHOGRANULOMATOUS PROSTATITIS

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ABSTRACT

Prostatitis is a commonly seen clinical entity in daily urological practice. Xanthogranulomatous type prostatic inflammation is a highly rare clinical entity that can resemble prostatic adenocarcinoma in clinical studies and digital rectal examination (DRE). Definitive diagnosis is only possible with histopathological examination of transrectal ultrasound (TRUS)-guided prostate biopsies or surgical specimens. In this case report we describe a 57-year-old male patient who was consulted with our department for an incidentally detected contrast enhanced prostatic lesion on abdomino-pelvic computerised tomography (CT) scan performed for the investigation of acute abdominal pain at the accident and emergency department. DRE revealed a very stiff and nodular enlargement of the right prostate lobe, suggesting prostate cancer. No additional intra-abdominal pathologic lesion was detected on the CT scan. His abdominal pain resolved with conservative management and the patient was discharged thereafter. Following his admission to our outpatient clinics in the following weeks, his serum prostate-specific antigen level was measured as 0.88 ng/mL. TRUS-guided needle biopsies of the prostate were performed, which revealed xanthogranulomatous prostatitis.

Keywords: Xanthogranulomatous prostatitis, inflammation, benign, prostate.

INTRODUCTION

Prostatic inflammation is commonly detected in our daily urological practice; either bacterial causes or non-bacteriologic aetiologic factors have been described.[1] Granulomatous or xanthogranulomatous type prostatitis are rare clinical entities, usually diagnosed incidentally following prostate biopsy, transurethral resection (TUR), or complete surgical removal.[2-6] Aetiologic factors for the development of granulomatous prostatitis have been suggested as the presence of fungal infections,[7,8] intravesical Bacillus Calmette-Guérin (BCG) vaccine therapy,[7] systemic tuberculosis,[9] autoimmune disorders,[10] and surgery.[11] The average age of the patients is early sixties; however, it can be detected in patients in their twenties as well as in the very elderly.[12]

Xanthogranulomatous prostatitis is a very rare condition that is reported in very limited numbers of literature. Mohan et al.[8] have reviewed 1,353 prostate specimens and reported only 2 cases (0.15%) of xanthogranulomatous prostatitis. Single case reports are also available in the literature.[2-5] Herein, we present an asymptomatic patient who had consulted to our outpatient clinics for an incidentally detected prostatic mass appearance in an abdominal computerised tomography (CT) scan and was diagnosed with xanthogranulomatous prostatitis.

CASE REPORT

A 57-year-old male patient was consulted within our department for an incidentally detected contrast

enhanced lesion in his prostate that was detected in an abdomino-pelvic CT scan, while he was investigated for acute abdominal pain aetiology at the accident and emergency department of our hospital. His acute abdominal pain was resolved with conservative management and the patient was discharged. In the following weeks he was admitted to our outpatient clinics. He did not have any urological symptoms. There was no prior history of previous prostatitis or intravesical BCG therapy for bladder cancer. Physical examination revealed no unusual findings. Digital rectal examination (DRE) revealed a very stiff and enlarged prostate gland, particularly on the right side. His complete blood count and biochemistry tests were within normal limits. There were 2/high power field (HPF) erythrocytes and 35/HPF leukocytes with leukocyte esterase +3 in urine analysis. Urine culture was sterile. His serum prostate-specific antigen (PSA) level was 0.88 ng/mL. Abdomino-pelvic CT scan was re-evaluated and a solid area with contrast enhancement in posterolateral of the right lobe of the prostate was seen (Figure 1). There were no enlarged abdominal or pelvic lymph nodes (LNs). Ciprofloxacin 500 mg bid was administered for 7 days for pyuria before prostate biopsy.

We performed transrectal ultrasound (TRUS)-guided 10-core prostate biopsies. Prostate volume was 48 cc with homogenous parenchymal appearance. Histopathological examination of the needle biopsies revealed dense xanthogranulomatous inflammation of the prostate, characterised with loose cohesive histiocytes forming well circumscribed clusters with benign appearing nuclei, and without prominent nucleoli with foamy vacuolated cytoplasms. Xanthoma cells were positive for CD68 after immunohistochemistry staining (Figures 2 and 3).

DISCUSSION

Prostatitis is a common clinical entity, and diagnosis depends on laboratory tests in addition to the presence of symptoms. Granulomatous prostatitis was described for the first time in the early 1940s as something which can mimic prostate cancer.[13] Infectious and non-infectious aetiologic factors have been suggested as the aetiologic factors associated with granulomatous prostatitis.[1,14] Granulomatous prostatitis is an infrequent subtype of prostatitis and its aetiology has been suggested to include intravesical BCG therapy, *Mycobacterium tuberculosis* infection,

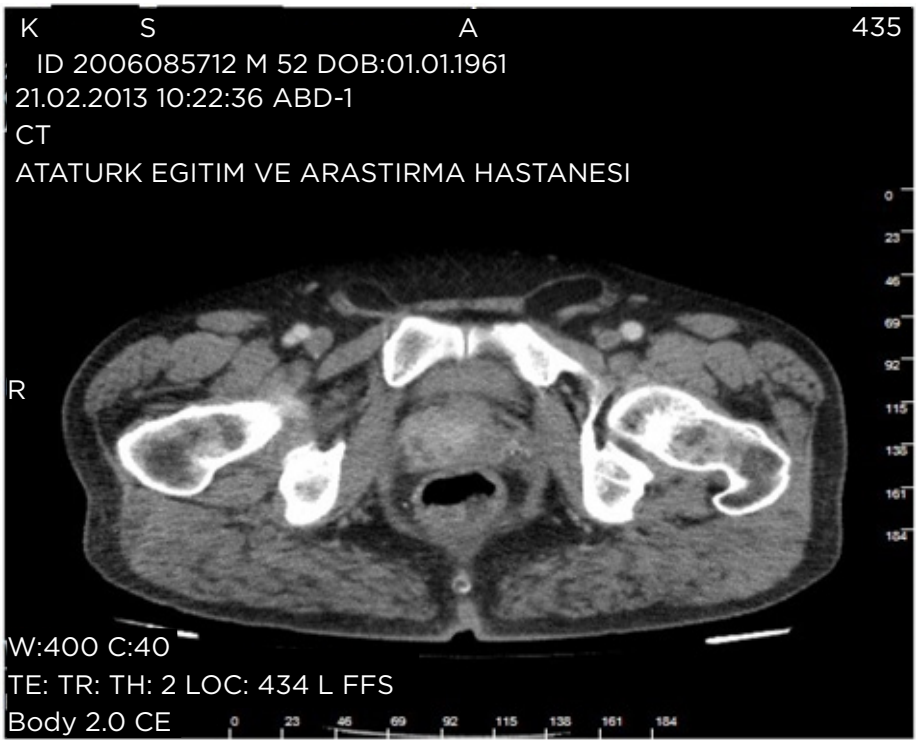

Figure 1: Abdomino-pelvic computerised tomography (CT) showing widespread contrast enhancement in the prostate.

autoimmunity associated with HLA-DR15 expression, and surgery.[7-11] Granulomatous prostatitis can be classified into six groups including nonspecific, infectious, iatrogenic, xanthogranulomatous, malacoplakia, and associated with systemic granulomatous disease and allergy.[6] Non-specific granulomatous prostatitis is the most common granulomatous prostatitis subtype.

Xanthogranulomatous prostatitis is an even rarer clinical entity, and to the best of our knowledge only a few cases have been reported in published English literature, as our search using Pubmed/Medline suggested.[2-5] Lower urinary tract symptoms (LUTS) are usually observed in patients with granulomatous prostatitis.[2-5] However, our case was asymptomatic. Serum PSA levels may be elevated as a consequence of the presence of prostatic inflammation.[3,5] In our case, PSA level of the patient was normal. In addition to LUTS, acute urinary retention and fever are also reported and are related with granulomatous prostatitis.[6] Our patient did not have fever but urine analysis was consistent with urinary tract infection that might also suggest prostatitis.

Abnormal DRE was also reported by others in granulomatous prostatitis that might suggest prostate cancer.[3,5,6] In our case, a very stiff and enlarged prostate gland was palpated on DRE that led us to perform TRUS-guided prostate biopsies. Presence of a hypoechoic pattern was reported on TRUS images related with granulomatous prostatitis.[5] However, we did not observe a hypoechoic area on TRUS in our case. Elevation of serum PSA levels might also suggest a presence of prostate cancer; however, most of these elevations are usually temporary and decrease to normal limits with the disappearance of the prostatic inflammation.[12] Likewise, in our case, serum PSA level was normal.

Radiologic imaging modalities including TRUS, CT, and magnetic resonance imaging (MRI) may be used in the diagnosis although there is not any specific pattern for granulamatous prostatitis. In our case, an abdominal CT scan was performed that showed contrast enhanced nodular areas and air levels in the prostate. Lee et al.[2] recently described MRI characteristics of xanthogranulomatous prostatitis as hypointense appearing in the peripheral zone with central cystic lesion on Tesla 1 (T1)-weighted enhanced MRI, and hyperintense bilateral peripheral zones on T2-weighted images.

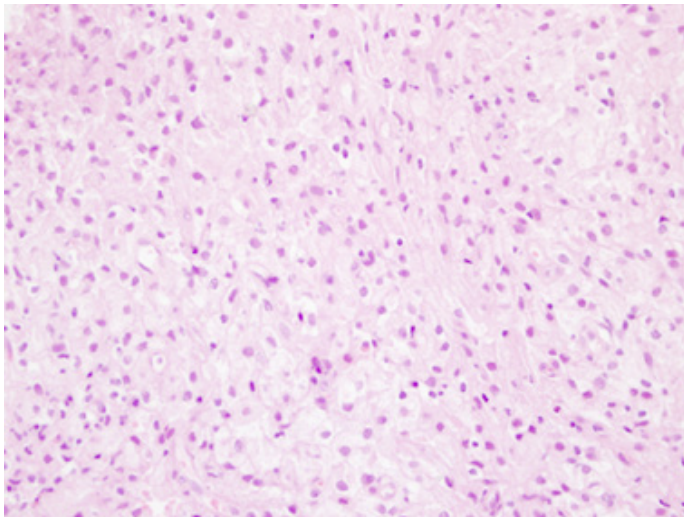

Figure 2: Light microscopic appearance of xanthogranulomatous prostatitis showing diffuse infiltration of foamy cells and lymphocytes (haematoxylin and eosin [H&E] X40).

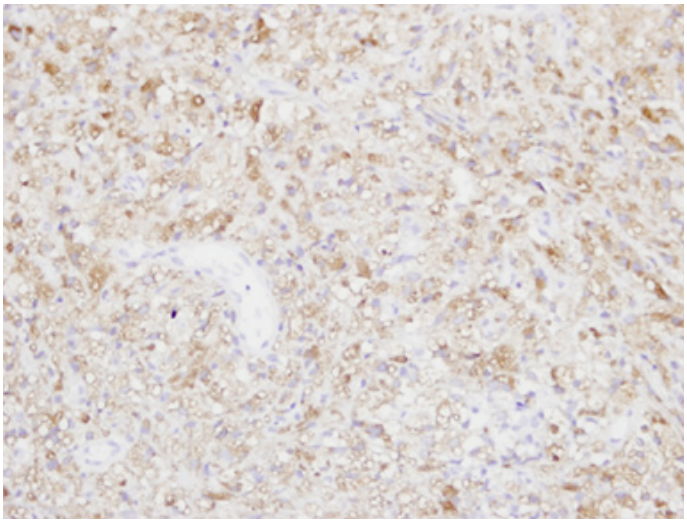

Figure 3: Light microscopic appearance of xanthogranulomatous prostatitis, foamy cells demonstrate positive immunohistochemical staining with CD68 (haematoxylin and eosin stain [H&E] X40).

Xanthogranulomatous prostatitis should be differentiated from foamy cell prostatic carcinoma and high-grade prostatic carcinoma that might both include histiocytic infiltration. Histiocytes could be stained with CD68 immunohistochemically that could be used to differentiate from prostate cancer. In our case, no tumoural infiltration or atypical prostatic glands were detected on microscopic evaluation. Histiocytic infiltration generally occurs as a reaction due to the presence of prostatic

secretions that leak from the perforated prostatic glands in the presence of trauma and/or infection. However, prostate cancer might coexist that should also be taken into account.

Definitive diagnosis is only possible after histopathological evaluation with TRUS-guided prostate biopsies or following TUR of the prostate.[5,6] Granulomatous prostatitis might mimic prostate cancer in terms of radiological, biochemical, and DRE findings.[1,14] However, some rare tumours of the prostate, such as the neuroendocrine tumour, might present with normal serum PSA values that should also be kept in mind in the differential diagnosis in addition to prostate adenocarcinoma.[15] Prostatic involvement by concomitant systemic tuberculosis might also be possible, particularly in the endemic areas that need further investigation for tuberculosis.[8] Xanthogranulomatous prostatitis had to be differentiated from foamy gland prostatic carcinoma with immunohistochemical findings, benign appearing nuclei, and lack of glandular formation.

Very recently, Pastore et al.[16] from Italy, reported five cases with xanthogranulomatous prostatitis, and all patients had recurrent episodes of haematospermia, LUTS, increased serum PSA level, and a suspicious DRE. Prostate biopsy was performed in all patients that were negative for xanthogranulomatous prostatitis. Following TUR of the prostate, histopathologic diagnosis of xanthogranulomatous prostatitis was made in all patients. Miekoś et al.[17] stated that this rare entity might have unspecific clinical symptoms, therefore, the correct diagnosis might be difficult to make even for an experienced urologist. Differential diagnosis could include benign and malignant prostatic diseases.

Treatment is usually made by TUR of the prostate in the presence of significant LUTS.[3-6,16] In our patient, we did not employ any treatment because our patient was asymptomatic.

CONCLUSION

Xanthogranulomatous prostatitis is a very rare clinical entity. Patients usually present with LUTS; however, asymptomatic presentation is also possible. DRE, serum PSA, and radiologic imaging modalities are used in the diagnosis. Histopathologic verification is mandatory for definitive diagnosis and is usually made by TRUS-guided prostate biopsies. TUR of the prostate could be employed in symptomatic patients.

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