CASE REPORT

Malakoplakia of the prostate diagnosed by elevated PSA level and transrectal prostate biopsy

Sacit Nuri Görgel a, Uğur Balcı a,*, Ayşegül Akder Sarı b, Murat Ermete b, Cengiz Girgin a, Çetin Dinçel a

a Department of 1st Urology, Ataturk Research and Training Hospital, Izmir, Turkey
b Department of Pathology, Ataturk Research and Training Hospital, Izmir, Turkey

Received 29 March 2010; accepted 15 June 2010
Available online 3 March 2011

KEYWORDS
Malakoplakia; Prostate; Tru-cut biopsy

Abstract
Malakoplakia is an inflammation which is thought to develop secondary to chronic Escherichia coli infections. Although often seen in the genitourinary tract, it can also be seen in colon, stomach, lung, liver, bone, uterus, and skin. In this case report, we present prostatic malakoplakia diagnosed by elevated prostate-specific antigen level and transrectal prostate biopsy. Copyright © 2011, Elsevier Taiwan LLC. All rights reserved.

Introduction
Malakoplakia is a rare inflammatory disorder that usually results from Escherichia coli infection of the genitourinary tract [1,2]. It most often occurs in the genitourinary tract; however, isolated cases have been reported in colon, stomach, lung, liver, bone, uterus, and skin [1]. Malakoplakia involvement of the prostate and bladder is often seen together in the genitourinary tract [3,4]. The malakoplakia of the prostate is an extremely rare condition [1,2,5]. Histological examination generally demonstrates histiocytes, other inflammatory elements, and Michaelis-Gutmann bodies [6–8].

Case presentation
A 65-year-old male patient admitted to our clinic with lower urinary tract symptoms and he has been catheterized because of acute urinary retention for 2 months. He had history of right inguinal hernia operation 2 years ago. His prostate-specific antigen level was 6.5 ng/mL, and urine examination showed microscopic hematuria and pyuria. E coli was the causative microorganism in his urine culture (10^5 cfu/mL E coli). Hemogram and blood biochemistry were found in normal ranges. Physical examination was normal. He had firm and nodular prostate in his digital rectal examination. Peripherally located hypoechoic areas in both prostate lobes were observed on transrectal ultrasonography, and prostate size was measured 51 cc (Fig. 1). Transrectal ultrasonography-guided 10-core prostate biopsy was performed. Histological evaluation revealed malakoplakia of the prostate. Transurethral resection of the prostate gland (TUR-P) was planned to resolve the
infravesical obstruction. Cystoscopy performed before TUR-P operation and cold cup biopsies were taken from hyperemic areas of the bladder. TUR-P was performed after cystoscopy. Prostate and bladder biopsy samples were evaluated separately. Final pathological diagnosis was malakoplakia for prostate specimens and cystitis for the bladder specimens. Malakoplakia detected 60% of resected prostatic tissue.

Prostate tru-cut biopsy specimens and TUR-P materials were evaluated with hematoxylin eosin stains and under light microscopy. Von Hansemann histiocytes called eosinophilic histiocytes, plasma cells, and infiltration of inflammatory cells including lymphocytes were observed between the prostate glands (Fig. 2). Extracytoplasmic and intracytoplasmic target-like Michaelis-Gutmann bodies were demonstrated by periodic acid-Schiff staining method (Figs. 3 and 4). This case, because of severe lower urinary tract symptom complaints that do not respond to medical treatment underwent TUR-P operation. We resected 40 g prostate tissue. His urine culture revealed E coli infection and ceftazidime 2 g three times daily was started for 7 days. His prostate-specific antigen level detected 1.5 ng/mL, and uroflowmetric results were at normal range (maximum uroflow rate: 22 mL/s and average uroflow rate: 16 mL/s) at postoperative third month. The patient had no complaints after 6 months of TUR-P and antibiotic therapy.

Discussion

Malakoplakia is an inflammatory process that usually results from E coli infections [1,2]. Wagner et al. [1] reported gram-negative bacteria such as E coli and Klebsiella pneumonia is often isolated from malakoplakia lesions, although other less common bacteria such as Rhodococcus equi may also be found. Prostatic malakoplakia was reported in diabetic patients with prostate and seminal vesicle abscess [9]. Patients with malakoplakia have isolated E coli infection rate of 80—90% in the urine cultures [4,10]. Similarly, the urine culture demonstrated E coli infection in the presented case. Some authors reported that malakoplakia may be associated with immunosuppression [1,6]. The definitive diagnosis of malakoplakia is made by biopsy and histopathological examination [2]. Histological examination generally demonstrates histiocytes, other inflammatory elements, and Michaelis-Gutmann bodies [6—8]. Michaelis-Gutmann bodies contain calcium hydroxyapatite and iron [9,11]. Because of this feature, Michaelis-Gutmann bodies also stain by von Kossa and Prussian blue [12]. Prostate and bladder involvements often seen simultaneously in the genitourinary tract, and isolated malakoplakia of the prostate is extremely rare [1—5]. Prostatic malakoplakia may simulate carcinoma on digital rectal examination with hard nodules [1,8,13]. When clinically the condition mimics the carcinoma of the prostate gland, the patient might undergo radical retropubic prostatectomy [14,15]. These

Figure 1. Peripherally located hypoechoic areas in both prostate lobes were observed on transrectal ultrasonography (arrows).

Figure 2. Sheets of large eosinophilic histiocytes (Von Hansemann Histiocytes) infiltrating between prostatic glands (hematoxylin and eosin, ×220).

Figure 3. Higher magnification reveals intracytoplasmic inclusions (Michaelis-Gutmann bodies; arrows) (hematoxylin and eosin, ×440).
cases may be misdiagnosed as carcinoma clinically, but the histology shows the correct diagnosis with the presence of Michaelis-Gutmann bodies in the proliferating histiocytes [8]. In our case, hard nodules were present in the digital rectal examination of the prostate.

Transrectal ultrasonography usually reveals hypoechoic peripheral zone lesions [7]. Peripherally located hypoechoic areas in both prostate lobes were observed on transrectal ultrasonography, and prostate size was measured 51 cc in the presented case. Long-term good results can be achieved with antibiotics in the treatment of malakoplakia, if there are no indications for operation [2,6,7]. Dohle et al. reported long-term fluoroquinolone treatment had success rate of 80–90% [16]. Niemierko and Kuzaka [2] reported that one patient was treated successfully with antibiotics and the other patient had acute urinary retention, and adenomectomy was performed. We believe that malakoplakia of the prostate can be treated successfully by antibiotic therapy and/or surgery.

References