TRANSURETHRAL REMOVAL FOR SUCCESSFUL DIAGNOSIS OF BLADDER MALAKOPLAKIA: A RARE CASE REPORT

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Abstract: Introduction: Malakoplakia is a rare granulomatous inflammatory disorder of infectious etiology that most often involves the urinary tract. Because it is so rare and can present in several different ways, malakoplakia poses a difficult diagnostic challenge.

Case report: We report an unusual clinical case of bladder malakoplakia in a 75-year-old man. He presented to urologist with hematuria, burning on urination, urinary urgency and frequency. Cystoscopy evaluation revealed yellowish polypoid lesion with easy bleeding in the trigone of the bladder. Microscopic evaluation showed acidophilic, foamy histiocytes (Von Hansemann cells) admixed with Michaelis-Gutmann inclusions. The final postoperative diagnosis was malakoplakia of the bladder.

In conclusion, we reported a case of malakoplakia of the bladder diagnosed with minimally invasive approach by transurethral resection. It is important to be aware of this rare granulomatous disease as accurate diagnosis with antibiotic treatment can prevent possible complications.

Key words: Malakoplakia, Bladder, Transurethral resection.

INTRODUCTION

Malakoplakia is a rare granulomatous inflammatory disorder of infectious etiology, that usually affects genitourinary system, mainly bladder in 60-80 % of cases (1). The prevalence is unknown; however more than 700 cases have been studied so far (2). This rare disease should be considered in patients with recurrent coliform urinary infections, in immunocompromised patients and transplant recipients. It can be asymptomatic, or presents with painless hematuria, urinary tract infections, septicemia, acute renal failure or complications of end stage renal failure (3). The pathophysiology of malakoplakia is uncertain, it is believed that it represents an unusual granulomatous response to bacterial infection (3). Clinically, as well as radiologically malakoplakia produces tumor-like lesions that are able to mimic malignant neoplasms, thus confirmation can only be achieved histologically.

The current report represents malakoplakia of bladder which presented histologically after a transurethral removal of bladder lesion. Malakoplakia represents a differential diagnosis which needs to be considered in these cases, since despite an appropriate early antibiotic long-term use; this type of infection might increase fast and significantly.

CASE REPORT

We report an unusual clinical case of bladder malakoplakia in a 75 year old man. He presented to urologist with a four-month history of hematuria, burning on urination, urinary urgency and frequency. Patient also had significant history of recurrent urinary tract infections (UTI) with Escherichia coli in the last nine months. His past medical history was positive for essential hypertension in the last four years, for which he was on atenolol. He denied any family history of genitourinary malignancy.

On admission, laboratory examinations (Table 1) were in the reference range. Urine analyses showed no signs of proteinuria but increase number of leukocytes and erythrocytes. Urine culture grew Escherichia coli, sensitive to quinolones. His blood pressure was 130/80 mm Hg, with a pulse rate of 74 beats/min. An initial ultrasound scan of the urinary tract showed presence of 2.5 mm tumor mass of the posterior bladder wall (Figure 1), without signs of ureteral obstruction. The contrast CT scan revealed hyperdense focus in the bladder...
Figure 1. Ultrasound of the bladder shows mass of the posterior bladder wall

Figure 2. CT scan shows hyperdense focus of the bladder

Figure 3. Foamy macrophages and Michaelis-Gutmann (MG) bodys. (H&E stain magnification 400x)

measuring 2.5 x 1.5 mm (Figure 2). Cystoscopy evaluation revealed atypical yellowish polypoid lesion with easy bleeding in the trigone of the bladder. Malignancy was suspected and transurethral resection of the lesion was performed under spinal anesthesia. The patient was discharged home on first postoperative day with advice of antibiotic use with ciprofloxacin for 4 days and monthly follow-up. Microscopic evaluation showed acidophilic, foamy histiocytes (Von Hansemann cells) admixed with Michaelis-Gutmann inclusions (Figure 3). The final postoperative diagnosis was malakoplakia of the bladder.

**DISCUSSION**

Malakoplakia is benign and very rare chronic inflammatory granulomatous disease that mostly occurs

| Test                          | Result | Reference range |
|-------------------------------|--------|-----------------|
| WBC (white blood cells) x10^9/L | 6.4    | 4.00-9.00       |
| RBC (red blood cells) x10^{12}/L | 4.48   | 4.20-5.50       |
| Haemoglobin g/L               | 148    | 120-180         |
| Haematocrit (rv)              | 0.460  | 0.37-0.54       |
| PLT (platelet count) x10^9/L   | 261    | 150-450         |
| Glucose (mmol/l)              | 5.07   | 3.5-6.5         |
| Urea (mmol/l)                 | 4.8    | 2.7-7.8         |
| Creatinine (umol/l)           | 78     | 45-109          |
| Potassium (mmol/l)            | 5.2    | 3.8-5.5         |
| Sodium (mmol/l)               | 139    | 137-145         |
| Chlorides (mmol/l)            | 106    | 99-108          |
| CRP mg/L                      | 5      | < 6             |
in the genitourinary system. Malakoplakia mostly affects the bladder, prostate, ureter, kidney, female genital tract and retroperitoneal tissue (3). In general, malakoplakia of the urinary tract more frequently affects men above 50 years old (4). Cases of malakoplakia with involvement of the gastrointestinal tract and other visceral organs like lungs, bones, brain, conjunctiva, skin and tonsils have been described in the literature (5, 6, 7).

Diagnosis of malakoplakia is still challenging because it presents clinically with a wide spectrum of symptoms depending on organs involved. The symptoms of bladder malakoplakia, as in our case, are hematuria, and signs of urinary tract infection, mimicking malignancy (2). Bladder malakoplakia has also been found in association with bladder tumors with or without a history of infection (8). Urethral malakoplakia can manifest with urethral obstruction and formation of structure. Renal malakoplakia may present with fever, flank pain and tumor-mass. Extensive pelvic malakoplakia has the potential to spread throughout the retroperitoneum and can cause renal failure if both ureters are compromised (9).

Bacterial infection and immunocompromised status are believed to be related to the development of malakoplakia. Escherichia coli is the most commonly isolated bacteria in urine culture in approximately 80% of cases (10). In addition to this microorganism, other possible factors are described, such as Klebsiella, Proteus, Mycobacterium, Staphylococcus and fungi (6). The pathophysiology of malakoplakia is uncertain, it included certain microorganism involvement such as gram-negative coliforms and defective phagocytosis in monocytes and macrophages (11). This results in accumulation of bacterial degradation products in monocytes and macrophages and developing granulomas. The bacterial degradation products persist in phagolysosomes and become mineralized; resulting in characteristic intracellular inclusions called Michaelis-Gutmann bodies (11). Intraluminal protrusion of bladder mucosa occurs due to accumulation of macrophages in the lamina propria (2), as in this case. Since this disease is rare and presents with hematuria, it is often misdiagnosed as malignancy.

Most bladder lesions may be detected by radiographic techniques (ultrasound, computed tomography and magnetic resonance). Contrast computed tomography is an important diagnostic investigation in upper urinary tract malakoplakia and can be presented with hydrourerther and multiple hyperdense masses.

The diagnosis of malakoplakia is verified by biopsy and histopathological examination. The treatment consists of transurethral resection of the affected site and appropriate antibiotics according to result of antibiogram test from urine culture. The best antibiotics are those that achieve high intracellular antibiotics levels such as fluoroquinolones and thrimethoprim-sulfamethoxasol (12). Persistence of malakoplakia may require resection.

**CONCLUSION**

In conclusion, we reported a case of malakoplakia of the bladder diagnosed with minimally invasive approach by transurethral resection. It is important to be aware of this rare granulomatous disease as accurate diagnosis with long term antibiotic treatment can prevent possible complications.

**Abbreviations**

CT — computed tomography.
H&E — hematoxylin and eosin stain.

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**Sažetak**

**TRANSURETRALNA RESEKCIJA MOKRAČNE BEŠIKE ZBOG USPEŠNE DIJAGNOZE MALAKOPLAKIJE: PRIKAZ SLUČAJA**

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**Uvod:** Malakoplakija je redak granulomatozni inflamatorni poremečaj infektivne etiologije koji najčešće obuhvata urinarni trakt. Obzirom da je retka bolest i može se manifestovati na više različitih načina, malakoplakija predstavlja ozbiljan dijagnostički izazov.

**Prikaz slučaja:** Prikazujemo redak klinički slučaj malakoplakije bešike kod 75-godišnjeg muškarca.
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