



Malakoplakia mimics urinary bladder cancer: A case report

Malakoplakija imitira karcinom mokraćne bešike

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Abstract

Introduction. Malakoplakia is an unusual and very rare chronic inflammatory disease. In bladder especially it can mimic malignancy and lead to serious misdiagnosis. **Case report.** We presented a case of a middle-aged woman with persistent macrohematuria and cystoscopically polypoid bladder mass that resembled a neoplastic process. The final diagnosis was based on cystoscopic biopsy and microscopic findings of acidophilic, foamy histiocytes with the presence of Michaelis-Gutmann inclusions which are characteristic for diagnosis of malakoplakia. Immunohistochemistry confirmed diagnosis by demonstrating CD68-positive macrophages. **Conclusion.** Urinary bladder malakoplakia should be considered in patients with persistent urinary tract infections and tumor mass at cystoscopy. Early identification with prompt antibiotic treatment can be helpful in avoiding unnecessary surgical interventions and in preventing development of possible complications.

Key words:

malakoplakia; urinary bladder; diagnosis, differential; urinary bladder neoplasms; immunohistochemistry.

Apstrakt

Uvod. Malakoplakija je neobična i veoma retka hronična zapaljenska bolest koja može imitirati maligni tumor u mokraćnoj bešici i dovesti do pogrešne dijagnoze. **Prikaz bolesnika.** Predstavljena je bolesnica srednjih godina sa perzistentnom makrohaturijom i cistoskopskim nalazom polipoidne mase nalik na neoplastični proces. Krajnja dijagnoza je postavljena na osnovu cistoskopske biopsije i mikroskopskim nalazom acidofilnih, penastih histiocita u kojima su uočene Michaelis-Gutmann-ove inkluzije, karakteristične za malakoplakiju. Imunohistohemijaska analiza potvrdila je dijagnozu, prikazujući prisustvo CD68 pozitivnih makrofaga. **Zaključak.** Malakoplakiju mokraćne bešike trebalo bi uzeti u obzir kod bolesnika sa upornim infekcijama urinarnog trakta i prisutnom tumorskom masom na cistoskopiji. Rano postavljanje dijagnoze i blagovremena primena antibiotika mogu sprečiti nepotrebne hirurške intervencije i razvoj mogućih komplikacija.

Ključne reči:

malakoplakija; mokraćna bešika; dijagnoza, diferencijalna; mokraćna bešika, neoplazme; imunohistohemija.

Introduction

Malakoplakia is an unusual and very rare chronic, inflammatory disease which may be presented as a plaque or a nodule. The clinical presentation of malakoplakia varies and depends on the affected organ. In bladder, especially, it can lead to misdiagnosis of a malignant condition¹⁻³. Even though it usually occurs in the genitourinary tract, it has been described in almost all body organs. It should be pointed out that various organs can be affected simultaneously⁴⁻⁶. The disease is more frequent in immunocompromised patients².

In the past twenty years a single case of urinary bladder malakoplakia has not been seen at the Institute of Pathology in the town of Niš. According to these clinical data, we presented middle-aged woman diagnosed with malakoplakia of

the urinary bladder highlighting pathological aspects, since histopathology was the most important in establishing the correct diagnosis.

Case report

A 53-year-old female was presented with general weakness, low-grade fever and difficulties in urination. She was a non-smoker and non-alcoholic. On physical exam she was normotensive, eupneic, cooperative and in good general condition. She reported minor weight loss in the past few weeks. She was not diabetic. No significant medical family history was noted in the patient. In clinical anamnesis, she had a persistent infection with *Esherichia coli* in the last two years. She was sent to the Institute of Urology for further ex-

amination due to constant changes in urine color, urgency and difficulty in micturition over the past few months.

Urine analysis showed albuminuria, macrohematuria, pyuria and significant bacteriuria. Cystoscopy revealed multiple foci of thickened mucosa of the bladder that resembled a neoplastic mass. Yellowish polypoidal lesions of the bladder, 2 to 3 cm in size, were removed from trigonal area, left ureteric orifice, posterior wall and bladder roof.

Histologically, on hematoxylin and eosin (HE) staining, aggregates of large macrophages with fine eosinophilic granular cytoplasm (von Hanseman cells) (Figure 1A) admixed with basophilic inclusions (Michaelis-Gutmann bodies) (Figure 1B) and infiltrated by dense collections of lymphocytes, and plasma cells were seen in *lamina propria* of urinary bladder. The macrophages were immunohistochemically negative for cytokeratin (Figures 1C, 1D) and positive for CD68 (Figures 1E, 1F). Immunohistochemical examination of proliferative activity measured by Ki-67 in malakoplakia was negative. Pearls staining demonstrated deposition of calcium in Michaelis-Gutmann inclusions (Figure 2).

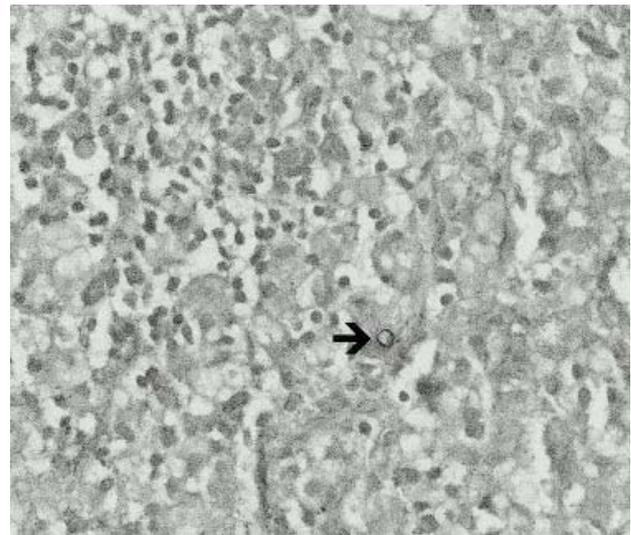


Fig. 2 – Malakoplakia, Michaelis Gutmann inclusion (black arrow) (Pearls staining, $\times 400$).

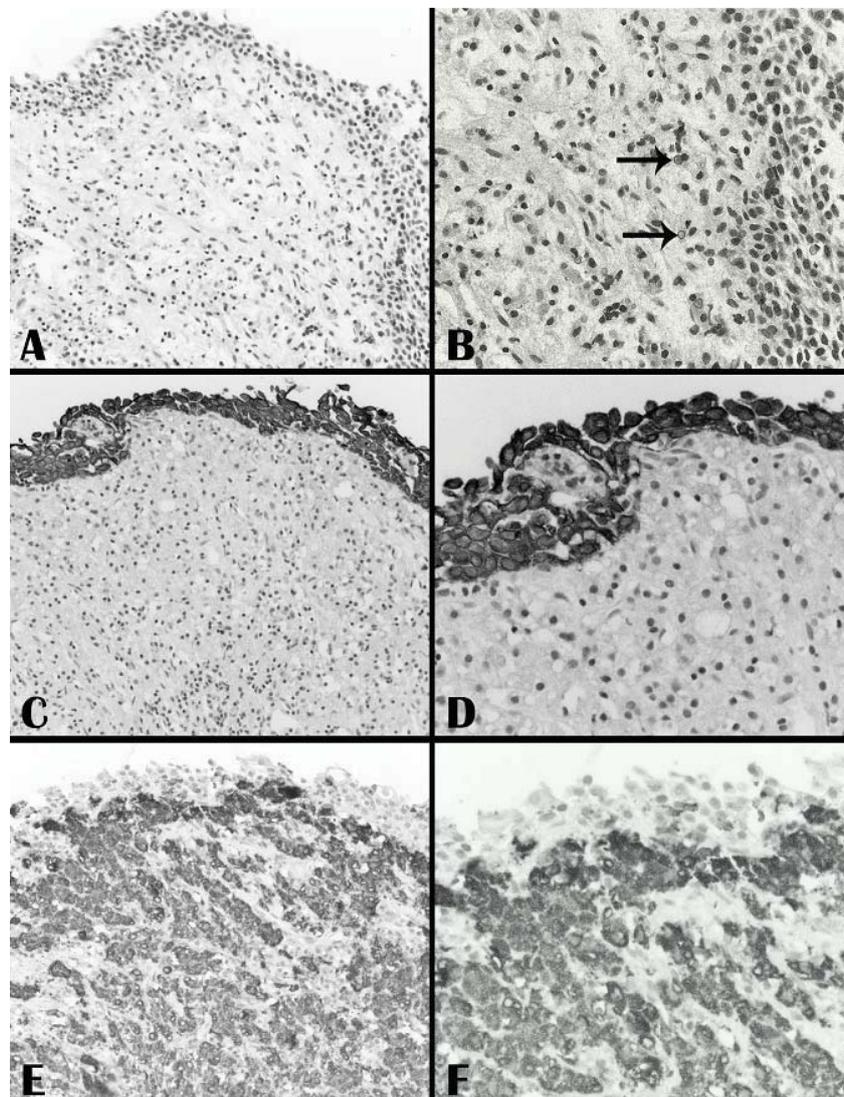


Fig. 1 – A) Malakoplakia. Normal urothelium and von Hanseman's cells (HE, $\times 200$); B) Black arrows show Michaelis-Gutmann bodies (HE, $\times 400$); C) Normal urothelium positive and von Hanseman's cells negative for cytokeratin ($\times 200$) and D) ($\times 400$); E) Von Hanseman's cells positive for CD68 ($\times 200$) and F) ($\times 400$).

Discussion

The first case of malakoplakia was described by von Hansemann who introduced the term "malakoplakia"⁷. Malakoplakia is a chronic inflammatory disorder that occurs mostly in the genitourinary tract with a special affinity for bladder. Although malakoplakia in genitourinary tract is four times more common in women, in general, men above the age of 50 years are more frequently affected⁵.

The symptoms of bladder malakoplakia are hematuria and irritative voiding symptoms such as frequency, hesitancy and dysuria^{1,2,5}. Macroscopically, as clinically, malakoplakia can simulate tumors or abscesses, like we presented in this case.

The accurate pathogenesis has not been fully clarified, but it is thought to be a result of chronic infections by coliforms in patients with chronic weariness or immunosuppression¹. The etiopathogenesis of malakoplakia appearance mainly include damaged host defenses and deficient phagocytosis. Inadequate killing of bacteria, most commonly *Escherichia coli*, as a consequence of a defect in monocytes and macrophages phagolysosomal activity, results in an accumulation of bacterial degradation products and a granulomatous reaction⁸. However, partially digested bacteria accumulate in macrophages, eventually become mineralized, forming the pathognomonic calcified intracellular inclusions called Michaelis-Gutmann bodies. Nevertheless, infectious etiology often remains only a suspicion as patients sometimes have scarce symptoms and Gram staining does not always succeed in revealing any bacteria^{1,2}. Malakoplakia can be associated with inflammatory bowel disease which sup-

ports the theory that the malakoplakia is a consequence of chronic inflammation and altered regulation of the immune response⁹.

Abundant accumulation of macrophages in *lamina propria* of urinary bladder causes the intraluminal protrusion of bladder mucosa, like we presented in this particular case. Since this clinical entity is very rare and nearly always occurs with dramatic hematuria it can easily be misdiagnosed.

According to the aforementioned we emphasize that the final diagnosis of malakoplakia is based only on cystoscopic biopsy and microscopic findings of characteristic acidophilic, foamy histiocytes with the presence of Michaelis-Gutmann inclusions. Immunohistochemistry demonstrates CD68-positive macrophages.

Conclusion

Urinary bladder malakoplakia should be considered in immunocompromised or patients with neglected, persistent urinary tract infections and tumor mass at the cystoscopy. Early identification with prompt antibiotic treatment can be helpful in avoiding unnecessary surgical interventions and in preventing development of possible complications.

Declaration of interest

The authors declare no conflict of interest.

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