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Prikaz slučaja /
Case report

EOSINOPHILIC CYSTITIS IN A PATIENT WITH HEMATURIA: A RARE CASE REPORT

EOZINOFILNI CISTITIS KOD PACIJENTA SA HEMATURIJOM: PRIKAZ RETKOG SLUČAJA

Ivo Vujichikj[1] and Mihail Penev[1]

[1] University Clinic for Urology, University Clinical Centre "Mother Theresa", Skopje, Republic of North Macedonia / Klinika za urologiju, Univerzitetski Klinički centar "Majka Tereza", Skoplje, Republika Severna Makedonija

Correspondence to:

Ivo Vujichikj,
University Clinic for Urology,
University Clinical Centre "Mother Theresa",
Skopje, Republic of North Macedonia.
Majka Tereza 17, 1000 Skopje.
Tel.+389 71 269 945.
E-mail: ivovujicic@yahoo.com.

Key words

Cystitis; eosinophilic; hematuria.

Ključne reči

Cistitis; eozinofilni; hematurija.

Abbrevations:

CT-computed tomography.
MRI-magnetic resonance imagining.

Abstract

Introduction: Eosinophilic cystitis is an unusual inflammatory disorder that can cause hematuria. Eosinophilic cystitis usually presents with lower urinary tract symptoms or hematuria which may lead to a diagnosis of urinary tract infections or bladder malignancy. The criterion standard for diagnosis of eosinophilic cystitis is by biopsy with histopathological examination. **Case report:** We report a rare clinical case of eosinophilic cystitis in an 82-year –old man. He presented to urologist with a five-day history of hematuria, dysuria and frequency of urination.An initial ultrasound scan of the urinary tract showed presence of 4 mm tumor mass of the posterior bladder wall, without signs of ureteral obstruction. The contrast CT scan revealed 6 mm hyperdense focus in the bladder, suggestive of bladder lesion.
Malignancy was suspected and he was offered an endoscopic treatment option under spinal anesthesia. Transurethral resection biopsy and hemostasis of the bladder wall was done. Microscopic evaluation showed lamina propria with moderate inflammatory infiltrate rich in eosinophils suggestive of eosinophilic cystitis. **Conclusion:** We reported a clinical case of eosinophilic cystitis diagnosed with transurethral biopsy of bladder in a patient with hematuria. It is important to be aware of this unusual disease, as accurate diagnosis with non-specific medical therapy can prevent possible complications.

INTRODUCTION

Eosinophilic cystitis is an unusual inflammatory disorder that can cause hematuria and is often misdiagnosed. The prevalence is unknown; however more than 200 cases have been reported in the literature so far (1). It is characterized with eosinophilic infiltration of all layers of the bladder wall, associated with fibrosis with or without muscle necrosis (2). The cause is unknown, but this rare condition has been associated in patients with atopies and allergies (1). Eosinophilic cystitis usually presents with lower urinary tract symptoms or hematuria which may lead to a diagnosis of urinary tract infections or bladder malignancy. The criterion standard for diagnosis of eosinophilic cystitis is by biopsy with histopathological examination.

The current report represents eosinophilic cystitis in a patient with hematuria which presented histologically after a transurethral biopsy of bladder lesion. Eosinophilic cystitis represents a differential diagnosis which needs to be considered in these cases, since despite an appropriate early diagnosis and non-specific medical therapy use; this type of infection might increase in a chronic disabling disease.

CASE REPORT

We report a rare clinical case of eosinophilic cystitis in an 82-year –old man. He presented to urologist with a five-day history of hematuria, dysuria and frequent urination. This was his first occurrence of hematuria and he was admitted in General Hospital in Prilep for diagnostic investigations. An initial ultrasound scan of the urinary tract showed presence of 4 mm tumor mass of the posterior bladder wall, without signs of ureteral obstruction (Figure 1). A 20 Fr 3-way catheter was inserted, and irrigation was performed. He was treated with antibiotics (ceftriaxone 2 g intravenous once daily and ciprofloxacin tablets 500 mg twice daily). He was transferred to University Clinic of Urology in Skopje for further diagnostic investigations and treatment.

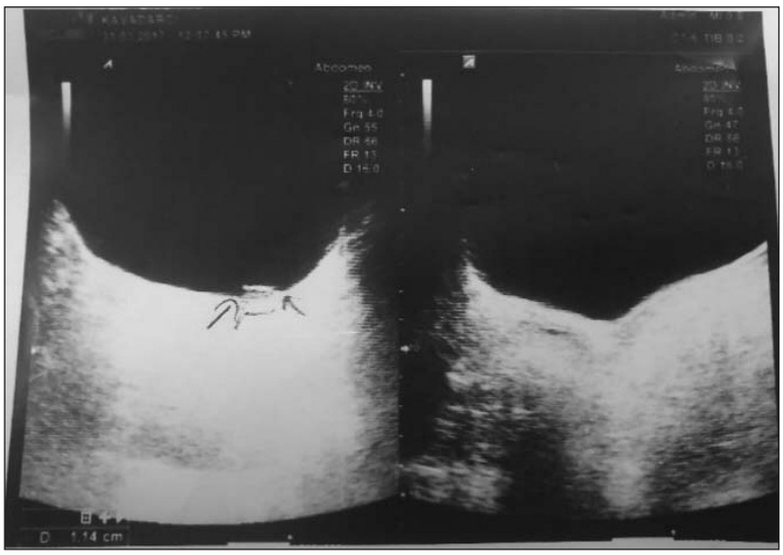

Figure 1. *Ultrasound showed presence of 4 mm tumor mass of the posterior bladder wall.*

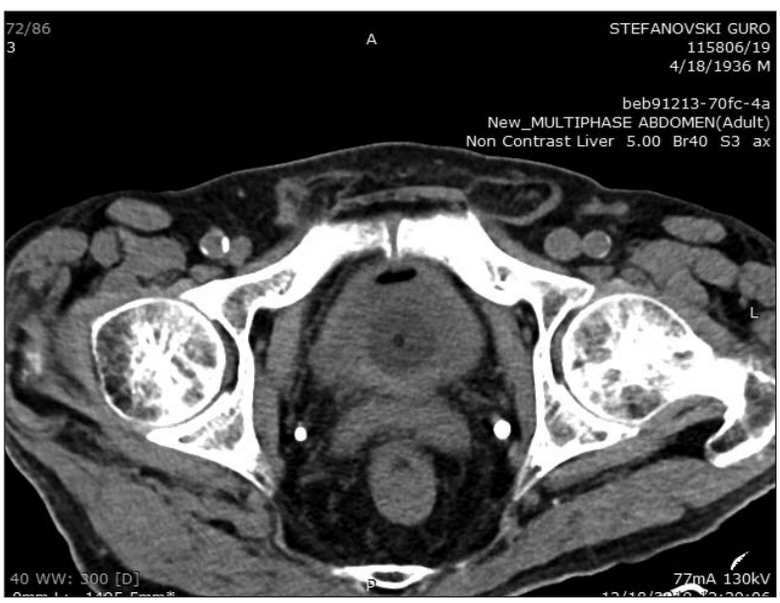

Figure 2. *CT scan showed presence of 6 mm tumor mass of the posterior bladder wall.*

On examination he was afebrile and hemodynamically stable. His blood pressure was 135/90 mmHg, with a pulse rate of 74 beats/minute. His past medical history was positive for essential hypertension, for which he was on bisoprolol 2,5 mg once daily and amlodipine 10 mg twice daily. He had known history of benign prostatic hyperplasia in the last five years, for which he was on tamsulosin 0,4 mg once daily. Digital rectal exam of prostate was unremarkable. Physical examination did not reveal any abnormalities. He denied any family history of genitourinary malignancy.

On admission, blood tests showed an elevated C-reactive protein (CRP) of 69,31 mg/l (reference range <6 mg/l) and anemia (Table 1). Other laboratory findings were in the reference range. He was transfused with one unit packed red blood cells and he was treated with intravenous antibiotic (ciprofloxacin intravenous 200 mg twice daily). The contrast CT scan revealed 6 mm hyperdense focus in the bladder, suggestive of bladder lesion (Figure 2).

Malignancy was suspected and he was offered an endoscopic treatment option under spinal anesthesia. Preoperatively he was referred to cardiologist for regulation of his blood pressure. Electrocardiography was performed and cardiologist reported 55% left ventricular ejection fraction. His antihypertensive therapy was continued. Intraoperatively cystoscopy revealed areas of patchy cystitis with bleeding on the posterior wall of the bladder with no focal lesion. Transurethral resection biopsy and hemostasis of the bladder wall was done. Microscopic evaluation showed lamina propria with moderate inflammatory infiltrate rich in eosinophils suggestive of eosinophilic cystitis. The patient was discharged home on second postoperative day with cleared urine without catheter and advice of antibiotic use with ciprofloxacin for 4 days. On subsequent follow up four weeks later the patient was well with no further episodes of hematuria.

DISCUSSION

Eosinophilic cystitis is benign and relatively rare inflammatory disease of the bladder first reported by Brown and Palubinskas in 1960 [3]. The incidence of eosinophilic cystitis is equal in both sexes in adults, but in pediatric population male are more commonly affected with a mean age of 6 years[4]. The cause of this disease is unknown, although it has been associated with various etiological factors, such as allergy, bladder trauma, bladder tumor, parasitic infections and chemotherapeutic agents[5]. The pathogenesis of eosinophilic cystitis involves antigen-antibody reaction, with subsequent mast-cell degranulation and muscle necrosis.

The most common symptoms of eosinophilic cystitis are urinary frequency, hematuria, dysuria and suprapubic pain. Less frequently symptoms are nocturia and urinary retention [4]. Eosinophilic cystitis, although rare, may be manifest with gastrointestinal symptoms (diarrhea and vomiting) and skin rashes [1,6]. Physical examination may find suprapubic tenderness or lower abdominal mass.

Urine analysis may show proteinuria and microscopic hematuria, but urine cultures are usually negative. Eosinophiluria is not diagnostic, as it is present in other renal and urological diseases[7]. In laboratory findings, eosinophilia is not specific, because it is found in approximately 50 % of patients with a history of allergy and atopy [7].

An ultrasonographic finding of eosinophilic cystitis is variable from thickening of bladder wall to mass formation. CT scans may demonstrate bladder tumor masses and hydronephrosis with ureteral filling defects in some cases [8]. Magnetic resonance imagining (MRI) has been used in eosinophilic cystitis patients with bladder masses, but there was no characteristic appearance [8].

Definitive diagnosis of this uncommon disease is confirmed by biopsy and histopathological examination. The histology can be grouped into the acute or chronic phase.

The acute phase shows tissue eosinophilia, mucosal edema, hyperemia, and muscle necrosis. In the chronic phase, eosinophilia is not as common, with variable chronic inflammation, and prominent scarring [9]. In this patient, histological acute phase was found.

If a pathogen was not isolated in urine culture, the treatment consists of antiinflammatory drugs and antihistamine drugs. Second line treatment consists of corticosteroids, and if there is no resolution cyclosporin-A and azathioprine are used [9]. Most cases of histologically verified eosinophilic cystitis will have a benign course with resolution with or without treatment as in our case, whereas some become chronic leading to bladder damage and renal failure.

CONCLUSION

In summary, we reported a clinical case of eosinophilic cystitis diagnosed with transurethral biopsy of bladder in a patient with hematuria. It is important to be aware of this unusual disease, as accurate diagnosis with non-specific medical therapy can prevent possible complications.

CONFLICT OF INTEREST:

The authors declare that there are not conflicts of interest.

Table 1. *Laboratory findings on admission*

Test	Result	Reference range
WBC (white blood cells) x10^9/L	8,9	4,00-9,00
RBC (red blood cells) x10^{12}/L	2,98	4,20-5,50
Hemoglobin g/L	85	120-180
Haematocrit (rv)	0,253	0,37-0,54
PLT (platelet count) x10^9/l	220	150-450
Glucose (mmol/l)	5,07	3,5-6,5
Urea (mmol/l)	7,6	2,7-7,8
Creatinine (umol/l)	107,43	45-109
Potassium (mmol/l)	3,9	3,8-5,5
Sodium (mmol/l)	142	137-145
Chlorides (mmol/l)	103	99-108
CRP mg/L	69,31	<6

Sažetak

Uvod*:* Eozinofilni cistitis je neobičan upalni poremećaj bešike koji može izazvati hematuriju. Obično se javlja sa simptomima donjeg urinarnog trakta što može pogrešno da nas dovede do dijagnoze infekcije mokraćnih puteva ili maligniteta bešike. Dijagnoza eozinofilnog cistitisa se postavlja na osnovu biopsije bešike sa histopatološkim nalazom. **Prikaz slučaja:** Prikazujemo redak klinički slučaj eozinofilnog cistitisa kod 82-godišnjeg muškarca. Uputio se kod urologa sa anamnezom petodnevne hematurije, dizurije i učestalim mokrenjem. Ultrazvučni pregled urinarnog trakta pokazao je prisustvo 4 mm tumorske mase zadnjeg zida bešike, bez znakova ureteralne opstrukcije. Kontrastni CT pokazao je 6 mm hiperdenznu promenu, što sugeriše leziju bešike. Posumnjali smo na malignitet i urađena mu je endoskopska intervencija pod spinalnom anestezijom. Urađena je transuretralna biopsija i hemostaza zida bešike. Histopatološki pregled pokazao je laminu propriju sa umerenim upalnim infiltratom eozinofilima koji ukazuje na eozinofilni cistitis. **Zaključak:** Prikazali smo klinički slučaj eozinofilnog cistitisa dijagnostikovanog transuretralnom biopsijom bešike kod pacijenta sa hematurijom. Važno je da budemo svesni ove retke neobične bolesti jer tačna dijagnoza sa lečenjem nespecifičnom medicinskom terapijom može sprečiti moguće komplikacije.

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