CASE REPORT
Urooncology

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Primary Bladder Amyloidosis Mimicking Bladder Cancer: A Rare Case Report

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Abstract

Bladder amyloidosis is a rare condition that can mimic malignancy clinically and radiologically. A 44-year-old female patient was admitted to our clinic with macroscopic hematuria and dysuria. A 2-cm nodular lesion was detected next to the left ureteral orifice in the bladder on abdominal ultrasound. The lesions were excised via transurethral resection. Pathological examination revealed amyloidosis. After internal medicine evaluation, the patient was diagnosed with primary bladder amyloidosis, and it was decided to follow-up the patient with cystoscopy.

Keywords: Amyloidosis, bladder amyloidosis, bladder cancer, endoscopy, pathology

Introduction

Amyloidosis is a disease caused by the accumulation of amorphous proteins in many organs and tissues in the extracellular space. It is divided into two groups; primary and secondary amyloidosis. Primary amyloidosis is a systemic disease that can affect multiple organs and is caused by plasma cell dyscrasia (1). Although bladder amyloidosis is very rare, it can mimic bladder malignancy clinically and radiologically (2). Clinically, it can present with symptoms such as gross painless hematuria, microscopic hematuria, dysuria, and irritative voiding symptoms. A definitive diagnosis is made by histopathological examination of tissues that show Congo red staining and apple green fluorescence. We present a case of bladder amyloidosis, which is rarely reported in the literature.

Case Presentation

A 44-year-old female patient was admitted to our clinic with macroscopic hematuria and dysuria. The urine culture was sterile, and red blood cell 17/(HPF), leukocyte esterase (-), and protein (-) in urine test. The hemogram, kidney, and liver function tests were all within normal limits. A 2-cm nodular lesion was detected next to the left ureteral orifice in the bladder on abdominal ultrasound. Computed tomography (CT) urography revealed two nodular lesions measuring 9 and 4 mm next to the left ureteral orifice (Figure 1). A diagnostic cystoscopy was performed; two nodular bullous lesions measuring 15 mm and 5 mm next to the left ureteral orifice were removed via transurethral resection (TUR). Pathological examination revealed amyloidosis (Figure 2). The patient was consulted by the internal medicine and nephrology departments, and systemic amyloidosis was not considered. The patient was diagnosed with primary bladder amyloidosis, and it was decided to follow-up the patient with cystoscopy. Recurrence was detected during the first year of cystoscopy, and the pathological result revealed the presence of amyloidosis. The patient is currently followed up with annual cystoscopy. An informed consent patient consent was obtained.

Discussion

Amyloidosis is a rare disease caused by the accumulation of amorphous proteins in the extracellular space. It is classified as localized amyloidosis when it occurs in a single organ and as systemic amyloidosis when it occurs in multiple organs. Primary amyloidosis is caused by immune cell disorders, such as multiple myeloma and other immune cell anomalies (1). Secondary amyloidosis is a reactive condition caused by diseases leading to chronic inflammation and tissue destruction (3). While amyloidosis can accumulate anywhere in the urinary system, the bladder and kidney are the most commonly affected organs (4).

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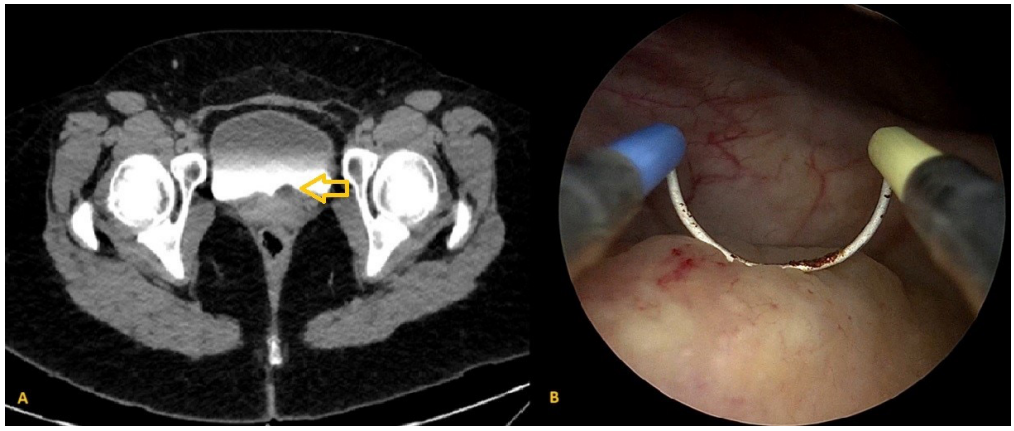

Figure 1. A nodular lesion in the lateral side of the left ureter orifice of the bladder (A. CT transverse section, B. Endoscopic images of nodular lesions in the bladder)

CT: Computed tomography

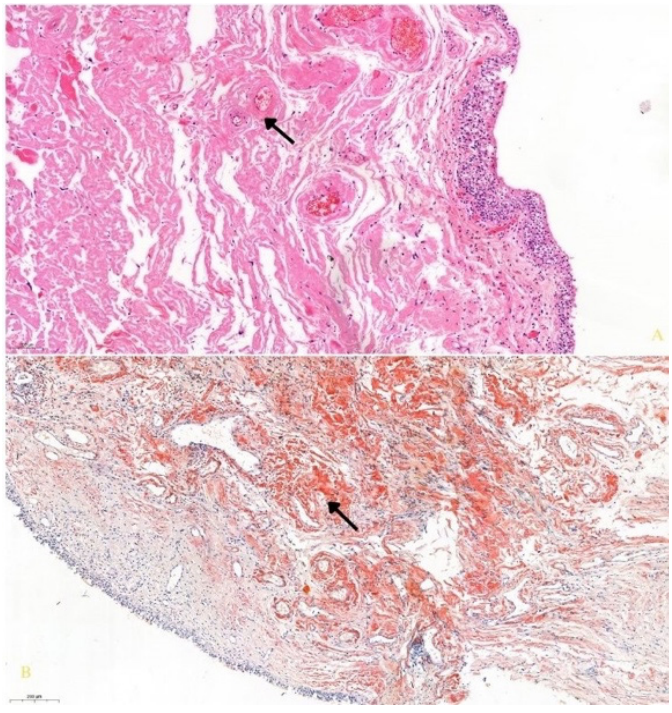

Figure 2. The histopathological staining of patient. A. Extracellular eosinophilic, amorphous, and homogeneous amyloid deposits with hematoxylin-eosin, B. Amyloid in Congo red appears orange-red when viewed under a transmitted-light microscope

Patients with bladder amyloidosis often present with common complaints, such as macroscopic painless hematuria (>80% of the patients), irritative urinary symptoms, and symptoms similar to cystitis (5). Ultrasonography and CT urography may detect mass lesions, filling defects, and wall thickening, which may mimic bladder malignancy (2,6). The lesion may appear polypoid or nodular during cystoscopy. Due to the similarity of symptoms and imaging findings to bladder malignancy, cystoscopy should be performed, and histopathological differential diagnosis should be made using TUR or biopsy (2). The diagnosis of amyloidosis is made by Congo red immunostaining, which gives an apple green reflection under polarized light (3). AL amyloidosis is the most common type encountered in bladder amyloidosis, but AA, ATTR and other types of amyloidosis can also be observed. Patients should also be evaluated for systemic amyloidosis. TUR is the first diagnostic and treatment method for primary bladder amyloidosis (7). In untreated cases, lesion's dimensional progression and obstructive uropathy can be detected during follow-up. Postoperative adjuvant treatment with colchicine and intravesical dimethylsulfoxide (DMSO) has been tried in many cases to prevent recurrence. Patients with diffuse multifocal bladder amyloidosis who could not be completely resected through TUR. The addition of colchicine may improve outcomes by mitigating local inflammation and leading to regression of the lesions. Moreover, intravesical treatment with DMSO every week or every 2 weeks for 3-6 months may dissolve insoluble amyloid fibrils and lead to symptom remission (8).

Patients with diffuse multifocal bladder amyloidosis who experience clinically insignificant improvement in symptoms may benefit from these treatments. Partial or total cystectomy may be required in some cases of bladder amyloidosis (9). For patients who are refractory to all treatments, cystectomy may be an option. Due to the high recurrence rate and diffuse involvement, periodic cystoscopy follow-up is required. Cystoscopy is recommended at 3 months after the first TUR and annually thereafter for the first and second years. In addition, cystoscopic evaluation should be performed if there is hematuria, irritative lower urinary symptoms, or symptoms similar to cystitis, which may indicate recurrence. There are cases of *de novo* urothelial carcinoma with localized amyloidosis (8). However, the optimal treatment and follow-up strategies for primary bladder amyloidosis are not clear in the literature (8). Progression of systemic amyloidosis in patients diagnosed with localized amyloidosis was 1% in all cases. Although rare, this condition must also be followed up from this perspective (8).

Conclusion

Primary bladder amyloidosis is a rare disease that clinically and radiologically mimics bladder malignancy. A definitive diagnosis should be made through histopathological examination. Patients should be referred for further evaluation of the possibility of systemic amyloidosis. Although it is a benign lesion, there is a risk of obstruction, recurrence, and *de novo* urothelial carcinoma. Therefore, follow-up should include interval cystoscopy and, if necessary, TUR.

Ethics

Informed Consent: Patient consent was obtained.

Footnotes

Authorship Contributions

Surgical and Medical Practices: C.S., V.Ş., E.B.T., O.B., Concept: C.S., V.Ş., E.B.T., O.B., Design: C.S., V.Ş., E.B.T., O.B., Data Collection or Processing: C.S., V.Ş., E.B.T., O.B., Analysis or Interpretation: C.S., V.Ş., E.B.T., O.B., Literature Search C.S., V.Ş., E.B.T., O.B., Writing: C.S., V.Ş., E.B.T., O.B.

Conflict of Interest: Ozan Bozkurt MD is section editor in Journal of Urological Surgery. He had no involvement in the peer-review of this article and had no access to information regarding its peer-review.

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