Primary amyloidosis of the bladder mimicking bladder tumor

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ABSTRACT

Amyloidosis is a benign, non-neoplastic disease characterized by the deposition of extracellular fibrillar protein in tissues or organs, which may be systemic or localized. Primary amyloidosis localized in the bladder is very rare in the literature and may mimic bladder cancer at presentation. A 31-year-old female patient consulted to our clinic and was diagnosed with primary bladder amyloidosis; intravesical dimethyl sulfoxide (DMSO) therapy was started. To the best of our knowledge, this patient represents the fourth case in the Turkish medical literature.

Key words: Amyloidosis; bladder tumor; dimethyl sulfoxide.

Introduction

Amyloidosis is a benign, non-neoplastic disease characterized by the deposition of extracellular fibrillar protein in tissues or organs, which may be systemic or localized.^[1] It can emerge as amyloid deposits in urinary tract, kidney, renal pelvis, bladder, urethra, and penile tissues.^[2] Primary amyloidosis localized in the bladder is a very rarely seen entity which was firstly reported by Solomin in 1987. Since then only 166 cases have been reported.^[3] On cystoscopic, and radiological examinations, it mimics bladder tumor, and as the gold standard diagnostic method microscopic examination of Congo red stained transurethral resection (TUR) specimens is used.^[4,5]

In this case report, primary amyloidosis of the bladder we detected in a young woman consulted to our clinic was analyzed. We aimed to demonstrate our algorithms we pursued in the diagnosis, therapy and follow-up of this disease which progresses with recurrences in addition to lack of any consensus on its treatment.

Case presentation

Our case report was written after approval of the patient had been obtained. Our 31-year-old patient with painful urination had been consulted to an external center nearly one month ago. Examinations performed detected a mass

lesion in the bladder, and it was biopsied through transurethral approach. The patient was told that the results of its histopathological examination might be compatible with amyloidosis, and referred to our clinic. When she consulted to our clinic, he gave an anamnesis of painful urination without any blood in urine. She was a smoker (5-pack-years), and had a history of cesarean delivery. Complete urinalysis revealed WBC (+), RBC (+++), protein (+++), 5 WBCs, and 25 RBCs per microscopic magnification. No microbial growth was observed on urine culture. On urinary system ultrasound, kidneys were unremarkable, and a soft tissue mass measuring 15 mm at its largest diameter with lobulated contours was observed on the posterior wall of the bladder involving an area of nearly 7 cm. On whole abdominal computed tomograms (CT) obtained a 5 cm- mass lesion was observed. Cystoscopic examination revealed a nearly 5- cm papillary trigonal mass lesion extending to right, and left lateral bladder walls, and surrounding ureteral orifices (Figure 1). Ureteral catheters were bilaterally implanted into orifices. Lesion in the bladder was resected completely using TUR. On postoperative 3. day ureteral catheters were removed. In histopathological analysis of hematoxylin-eosin (H&E) stained sections, deposits of intensely eosinophilic, acellular amorph material compatible with amyloid within lamina propria beneath the bladder epithelium were detected (Figure 2).

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Figure 1. Cystoscopic appearance of the tumor extending to the left lateral wall

Figure 2. Deposits of eosinophilic, acellular material in the lamina propria beneath vesacal epithelial layer (H&E x40)

Histopathological staining with crystal violet, and Congo red indicated presence of amyloid (Figure 3).

Then, the patient was consulted to the Department of Nephrology for systemic amyloidosis. Any mutation was not detected in Familial Mediterranean Fever (FMF) MEFV gene. In serologic tests, levels of complements C3, and C4 were within normal limits. In enzyme-linked immunosorbent assay (ELISA) anti DS DNA, in manual IFA (Immunofluorescent assay) C-ANCA, ANA, P-ANCA, and urine micrototal protein test results were within normal limits. Histopathological analysis of colonic, and renal biopsy specimens retrieved was unremarkable.

Intravesical dimethyl sulfoxide (DMSO) therapy, and oral colchicine treatment were planned with the diagnosis of iso-

Figure 3. Apple-green birefractance of amyloid deposits under polarized microscopy

lated vesical amyloidosis. However, when severe complaints of nausea-vomiting emerge, maintenance of treatment with intravesical DMSO was decided upon. During early postoperative follow-ups, irritative voiding problems disappeared, and any pathology was not seen in the first two periodic cystoscopic examinations. However, at postoperative 9th month, her severe urination complaints started again, and on cystoscopic examination, a recurrent tumor nearly 3 cm in size at the same location of the primary tumor was observed, and resected. Based on available literature data, re-TUR was planned if recurrent tumor was detected following DMSO treatment, and during cystoscopic controls.

Discussion

Isolated bladder amyloidosis is a very rarely reported disease which courses with painless hematuria, and irritative voiding symptoms, and might mimic bladder tumors.^[6] Even though a clear algorithm is not available about its treatment, higher recurrence rates can be seen.^[3] Wilkinson et al.^[6] detected post-TUR primary bladder amyloidosis in a 69-year-old female patient with complaints of painless hematuria dating back to 18 months ago. In this case, successful outcomes were reported with DMSO, and oral colchicine therapy, and cystoscopic follow-ups were recommended.

Patel et al.^[3] detected primary bladder amyloidosis in a 38-year-old patient, and applied 2 mg bid oral colchicine, and intravesical DMSO therapies. They didn't encounter any recurrent tumor on cystoscopic examination performed at the end of the first year. However, Tirzman et al.^[7] followed up 24 patients with localized bladder amyloidosis, and reported resolution of the disease in 25%, persistence of lesions in 21% , and recurrences in 54% of the patients. Following three years of disease-free

period, any episode of recurrence was not observed. In our patient, recurrence observed at 9. month suggested that the disease can progress with recurrences in its early phase.

The case with the longest follow-up period reported in the literature, had been followed up for 26 years with the indication of chronic primary bladder amyloidosis. During this period, TUR had been applied for 6-fold, and results of all histopathological analyses had been reported as amyloidosis. However his last cystoscopic examination revealed the presence of multiple solid nodular structures resembling yellow-colored adipose tissue localized on membranous urethra, and bladder right wall. Post-TUR histopathology report indicated transitional cell carcinoma (TCC) with muscular involvement, and amyloidosis. On CT, right hydronephrosis was detected, and he had undergone radical cystectomy, and ileal loop operation. Cystectomy specimen was reported as TCC with sarcomatoid differentiation, and amyloidosis. Besides histopathological examination of specimens harvested from lower end of the ureter had revealed areas compatible with amyloidosis, and any malignancy was not observed. The authors indicated that amyloidosis does not led to the development of bladder tumor, and during the follow-up period, bladder tumor emerges as an independent disease state.^[8]

As far as we can get relevant information, in our country, only 3 cases of isolated bladder amyloidosis have been reported. In a case reported by Demir et al.^[9] in the year 2000, amyloidosis was detected in a 57-year-old male patient who had undergone TUR with the initial diagnosis of bladder tumor. Since he was lost to follow up, further examinations, and investigations couldn't be performed. Another case of amyloidosis was reported by Çakıroğlu et al.^[10] in a 66-year-old female patient. On ultrasonograms of the patient who presented with painless hematuria, increase in the bladder wall thickness was detected. The patient had undergone TUR, and in histopathological specimens, patchy areas stained positively with Congo red were detected which led to the establishment of the diagnosis of bladder amyloidosis.

In the light of available literature data, post-TUR intravesical DMSA, and oral colchicine therapies are recommended in patients with established primary bladder amyloidosis.^[3,7] Though we also planned to use these treatment modalities, we only applied post-TUR intravesical DMSO for the patient who couldn't tolerate colchicine. During early postoperative follow-ups, irritative voiding problems disappeared, and any pathology was not seen in the first two periodic cystoscopic examinations. However, at postoperative 9th month, her severe urination complaints started again, and on cystoscopic examination tumor recurrence was observed. Based on available litera-

ture data, re-TUR was planned if recurrent tumor was detected following DMSO treatment, and during cystoscopic controls. Treatment to be administered in case of tumor recurrence in the future is not determined, and because of younger age of the patient radical approaches are debatable.

Informed Consent: Written informed consent was obtained from patients who participated in this case.

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