

CASE REPORT

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Retrograde Laser Ablation for Upper Urinary System Tumors: A Case Report

Üst Üriner Sistem Tümörlerinde Retrograde Lazer Ablasyon: Olgu Sunumu

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ABSTRACT

Introduction: Upper urinary tract tumors constitute a small portion of urothelial carcinomas. After diagnosis, the gold standard treatment is nephroureterectomy-partial cystectomy. Kidney-sparing surgical methods appear as alternative treatment in single-focal, small, low-grade and stage tumors. we aimed to review the literature and the retrograde laser ablation treatment we applied to the urothelial tumor located in the distal ureter.

Case: The patient who applied to us with the complaint of right flank pain that has been going on for 2 days. In the ultrasound and computed tomography (CT) interpretations of the patient was a mass extending in the distal right ureter. After that, a polypoid mass obstructing the ureteral lumen was observed approximately 1 cm from the right orifice in the distal part of the ureter, and the mass was enucleated with holmium laser. We continue patient's control every three months.

Discussion and Conclusion: The standard treatment method for ureteral tumors is nephroureterectomy and partial cystectomy, but conservative treatments are on the agenda for low-grade, single-focal tumors below 1 cm. Low morbidity and preservation of renal functions are the advantages of endoscopic methods. According to oncological results, recurrence and survival rates are satisfactory in selected cases. As a result, retrograde laser ablation techniques can be applied safely, as in our case, in selected patients who will not disrupt their regular follow-up, taking into account the tumor location, number and stage.

Keywords: Ureteral Tumors, Urothelial Carcinoma, Laser Ablation, Kidney-Sparing Surgery, Nephroureterectomy.

ÖZET

Giriş: Üst üriner sistem tümörleri, ürotelyal karsinomların küçük bir kısmını oluşturur ve tanı konulduktan sonra altın standart tedavisi nefroureterektomi- parsiyel sistektomidir ancak tek odaklı, küçük, düşük grade ve evreli tümörlerde böbrek koruyucu cerrahi yöntemler alternatif tedavi olarak karşımıza çıkmaktadır. Bu olgumuzda üreter distalinde bulunan ürotelyal tümöre uyguladığımız retrograde lazer ablasyon tedavisini ve literatürü gözden geçirmeyi amaçladık.

Olgu: İki gündür devam eden sağ yan ağrısı şikayeti ile tarafımıza başvuran hastanın yapılan ultrason ve bilgisayarlı tomografi raporlarında distal üreterde solid kitle saptandı. Kitlenin üreter orifisinin bir cm uzağında ve lümeni tıkadığı görüldü ve kitle holmium lazerle enükle edildi. Hastanın rutin kontrolleri 3 aylık periodlar halinde devam etmekte.

Tartışma Ve Sonuç: Üreter tümörlerinde standart tedavi yöntemi nefroureterektomi ve parsiyel sistektomidir ancak düşük dereceli, bir cm altında, tek odaklı tümörlerde konservatif tedaviler gündeme gelmektedir. Böbrek fonksiyonlarının korunması ve düşük morbidite düzeyi endoskopik yöntemlerin avantajlarıdır. Onkolojik sonuçlara bakıldığında, sağ kalım ve rekürrens oranları yüz güldürücüdür. Sonuç olarak seçilmiş, düzenli takiplerini aksatmayacak hastalarda tümör yeri, sayısı, evresi göz önünde bulundurularak retrograde lazer ablasyon teknikleri olgumuzda da olduğu gibi güvenle uygulanabilir.

Anahtar Kelimeler: Üreter Tümörleri, Ürotelyal Karsinom, Lazer Ablasyon, Böbrek Koruyucu Cerrahi, Nefroureterektomi.

INTRODUCTION

Upper urinary tract tumors constitute 5-10% of all urothelial carcinomas (1). In addition to etiological factors such as age, gender and race, the most important cause is smoking (2). Ureteral tumors are seen in men and frequently in the distal ureter (3). Ureter tumors are 95% transitional cell carcinomas. A small portion consists of squamous cell and adenocarcinomas (4). Ureter tumors can be found bilaterally in 2% and simultaneously with bladder tumors in 2% (5). The gold standard treatment is nephroureterectomy and partial cystectomy. Kidney-sparing surgeries; It is mandatory in patients with solitary kidneys, bilateral tumors, impaired renal function, and patients who cannot undergo surgery due

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to comorbidities (6). Apart from these cases, conservative treatment methods can be used in low-grade, single-focal tumors smaller than 1 cm, according to EAU guidelines (7). In this case, we aimed to explain the retrograde ureteroscopic laser ablation treatment we applied to our patient with renal colic symptoms.

CASE

A 57-year-old male patient applied to us with the complaint of right side pain that has been going on for 2 days. He has no comorbidities and no history of surgery. He has a 60-pack-year smoking history. In the ultrasound and computed tomography (CT) interpretations of the patient, who had previously described hematuria once before, there was a mass extending in the distal right ureter. Therefore, ureterorenoscopy was planned. A polypoid mass obstructing the ureteral lumen was observed approximately 1 cm from the right orifice in the distal part of the ureter, and the mass was enucleated with the help of a rigid ureterorenoscope and holmium laser at the junction with the ureteral wall. Close follow-up of the patient continued with the diagnosis of low-grade non-invasive ureteral carcinoma. CT-urography and ureterorenoscopy checks continue every 3 months.

DISCUSSION AND CONCLUSION

The standard treatment method for ureteral tumors is nephroureterectomy and partial cystectomy, but conservative treatments are applied for low-grade, single-focal tumors below 1 cm (8). Conservative treatments include segmental resection, antegrade or retrograde endoscopy, and adjuvant topical agents (8).

After Goodman described ureteroscopy in 1984, kidney-sparing endoscopic approaches for ureteral tumors began to important (9). Low morbidity and preservation of renal functions are the advantages of endoscopic methods and represent an alternative to nephroureterectomy in selected patients (10).

Rigid and flexible ureterorenoscopes are advantageous in the diagnosis and treatment of ureteral tumors. In combination with holmium YAG or neodymium YAG lasers, it helps in tissue removal in selected cases. Holmium YAG laser is often preferred in laser ablation treatment due to its low tissue penetration. The most common complication after laser ablation has been reported to be stricture with a rate of 12% (11).

There are three surgical techniques described for retrograde laser ablation. The first is to remove the tumor tissue by pulling it with forceps or a basket and then coagulate the tumor base. In the second technique, the tissue within the lumen is resected. The third technique is fulguration of the base after biopsy is taken from the tumor. The technique recommended in European guidelines is the biopsy and fulguration technique. In addition, the use of a double j catheter is recommended by the guideline to avoid ureteral stricture (12).

Considering the oncological results, recurrence after kidney-sparing approach has been reported as 29-74% in series with medium and short follow-up (13). Recurrence in the bladder after laser ablation has been reported as 40%. Tumor progression was found to be around 15% in some series (14).

Keeley et al. reported that recurrence developed at a rate of 25% in grade 1 patients and 45% in grade 2 patients after retrograde ureteroscopic tumor ablation (13). In another study, it was reported that the five-year disease-specific survival rate was 91.6% for low-grade tumors and 37.5% for grade 3 (15). These reports show that laser ablation is a suitable method for low-stage and grade tumors.

As a result, retrograde laser ablation techniques can be applied safely, as in our case, in selected patients who will not disrupt their regular follow-up, taking into account the tumor location, number and stage.

DESCRIPTIONS

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