Ureteroscopic Treatment of Upper Tract Neoplasms

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SUMMARY

Ureteroscopy is an essential step in the diagnosis and treatment of upper tract neoplasms. Most filling defects in the upper tract require endoscopic visualization and biopsy to direct treatment. Ureteroscopic treatment has had excellent success and a high recurrence rate and persistence of good renal function. Endoscopic surveillance is necessary to detect recurrences when they are small. Ureteroscopic tumor treatment includes mechanical removal, fulguration, and laser coagulation and resection. Large, extensive, and high-grade neoplasms may not be amenable to ureteroscopic treatment and can require percutaneous treatment or nephroureterectomy.

Key Words: Ureteroscopy; neoplasms; ureter; intrarenal neoplasms; lasers; biopsy; endoscopy.

INTRODUCTION

The ureteroscopic treatment of upper tract neoplasms has become possible only with the development of adequate endoscopes and instruments for tissue sampling and destruction. Initial ureteroscopic procedures for the diagnosis of upper tract neoplasms
expanded into ablative procedures for the actual treatment of the neoplasms (1). The concept of endoscopic treatment of transitional cell carcinoma (TCC) of the urothelium of the upper tract has a ready audience among urologists whose standard treatment of many bladder tumors has been endoscopic.

There are several limitations to the techniques of ureteroscopic treatment of upper tract tumors. With the instruments available, it is difficult to obtain adequate samples for accurate pathological evaluation and staging. The approach to diagnosis must be altered to include cytopathological techniques. Similarly, there are limitations to an extensive wide treatment of the lesion, particularly in the ureter where there is little room to avoid damage to the normal tissue. Endoscopic surveillance, which plays a crucial role in the management of bladder tumors is also an essential component in testing upper tract lesions.

As success has been observed with endoscopic treatment, the indications have expanded to include potentially more patients. Not only are patients with a solitary low-grade lesion in a solitary kidney eligible but also those with larger lesions, a normal contralateral kidney and even high grade lesions may be considered.

As experience grows with endoscopic techniques, we can expect to see more successful techniques and procedures and also to see refinement of patient selection to optimize treatment. As with bladder tumors, we expect to see the application and refinement of adjuvant therapy.

INDICATIONS

The ureteroscopic treatment of upper urinary tract neoplasms has expanded as the appropriate instruments have become available and experience with the techniques and the results have accumulated. In general, the aim of these procedures is to treat for cure or to manage upper tract neoplasms while preserving renal function. Thus, there are relative indications in different patients (see Table 1).

The strongest indication for minimally invasive endoscopic therapy is in patients suspected to have or proven to have a benign lesion. For example, large (>2 cm), smooth masses with a solitary base and no obstruction may be suspicious for a large fibroepithelial polyp. These lesions can be thoroughly biopsied and often removed at the base.

The ideal patient for ureteroscopic treatment of an upper tract neoplasm is a poor surgical risk with a solitary kidney or compromised renal function with a relatively small low-grade TCC. Initial experience and series with these patients demonstrated the feasibility of such treatment and also the development of treatment plans.

Other indications are patients with a larger tumor which cannot be resected in a single setting, but with compromised renal function or some other relative contraindication to surgical therapy which would render the patient anephric. Thus, an older patient with

<table>
<thead>
<tr>
<th>Relative</th>
<th>Strong</th>
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<tbody>
<tr>
<td>Mild renal insufficiency (including diabetes)</td>
<td>Solitary kidney</td>
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<tr>
<td>Patient’s preference</td>
<td>Compromised contralateral kidney</td>
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<td>Medical condition precluding nephroureterectomy</td>
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