

Percutaneous Treatment of Renal Cystic Nephroma

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ABSTRACT

Cystic nephroma is a rare, presumed benign, renal tumor that occurs in both children and adults. When its presence is suspected preoperatively, nephron-sparing surgery can be applied. We describe treatment of a cystic nephroma that is the first reported, to our knowledge, using endoscopic techniques.

INTRODUCTION

CYSTIC NEPHROMA is an unusual, presumed benign, renal tumor that occurs in both children and adults. The usual treatment until recently has been radical nephrectomy. We report a case that was treated using endoscopic techniques to preserve renal function.

CASE REPORT

A 53-year-old woman with no significant medical history and normal renal function was found to have an incidental right renal mass extending into the collecting system on a CT scan obtained to evaluate right upper-quadrant discomfort. Radical nephrectomy was recommended, but she presented to our clinic for a second opinion regarding less-invasive options, by which time, the presenting discomfort had resolved. The CT scan revealed an unusual mass with cystic components and extension into the renal pelvis (Fig. 1). Voided-urine cytology study was negative. With diagnostic flexible ureteroscopy, we noted a large, smooth, multiloculated mass that appeared to grow out from a middle calix. Biopsies were taken using a 3F cup biopsy device passed through the flexible ureteroscope, and a 3F flexible biopsy needle was used to puncture the wall of the mass. An aspirate of fluid from inside the mass and renal pelvic barbotage were submitted for cytologic analysis. Examination of the other calices demonstrated no abnormalities. The biopsy was interpreted as urothelium with granulomatous inflammation. The aspirate and pelvic wash contained atypical cells that were not diagnostic. Because laboratory analyses did not diagnose obvious malignancy, and on the basis of the ureteroscopic and radiologic appearance, we suspected an unusual intrapelvic extension of a benign cystic lesion. The patient requested the least-invasive approach possible to firmly establish the diagnosis.

We therefore performed percutaneous endoscopic resection

of the portion of the mass within the collecting system using a 24F resectoscope through a single upper-pole access tract. The endoscopic appearance was of a smooth-surfaced multilocular mass that had a spongy cut edge on resection, with unremarkable vascularity. The hematocrit on postoperative day 1 was 38.4% compared with 42.7% preoperatively. The resection and recovery were uncomplicated. Pathologic interpretation was cystic nephroma. A follow-up CT urogram 4 weeks later confirmed excision of the intrapelvic component of the mass (Fig. 2).

DISCUSSION

Cystic nephroma is a rare renal neoplasm characterized by multilocular cysts lined with epithelium but separated by fibrous septa. The cysts do not communicate with the collecting system. The lesion usually arises from the renal parenchyma, but cases with a predominant component within the collecting system have been reported.^{1,2} Two recent case reports documented curative excision of cystic nephroma involving the collecting system using open nephron-sparing surgical techniques,^{1,2} although partial nephrectomy had previously been performed for a parenchymal mass in a solitary kidney.³ To our knowledge, our case represents the first successful treatment of cystic nephroma using a percutaneous endoscopic approach. We have gained expertise in performing percutaneous resection of urothelial tumors within the collecting system⁴ and applied our experience in this case. We believe that the percutaneous approach is also appropriate in treating cystic nephroma when the mass predominantly involves the collecting system and there is a strong suspicion that the lesion will be benign. To our knowledge, our case represents the first treatment of cystic nephroma using a percutaneous endoscopic approach. Long-term follow-up imaging will be obtained because the natural history of cystic nephroma has not been well defined. Even with this apparently benign lesion, growth might well occur. If there is radiologic evidence of growth, we will recommend par-

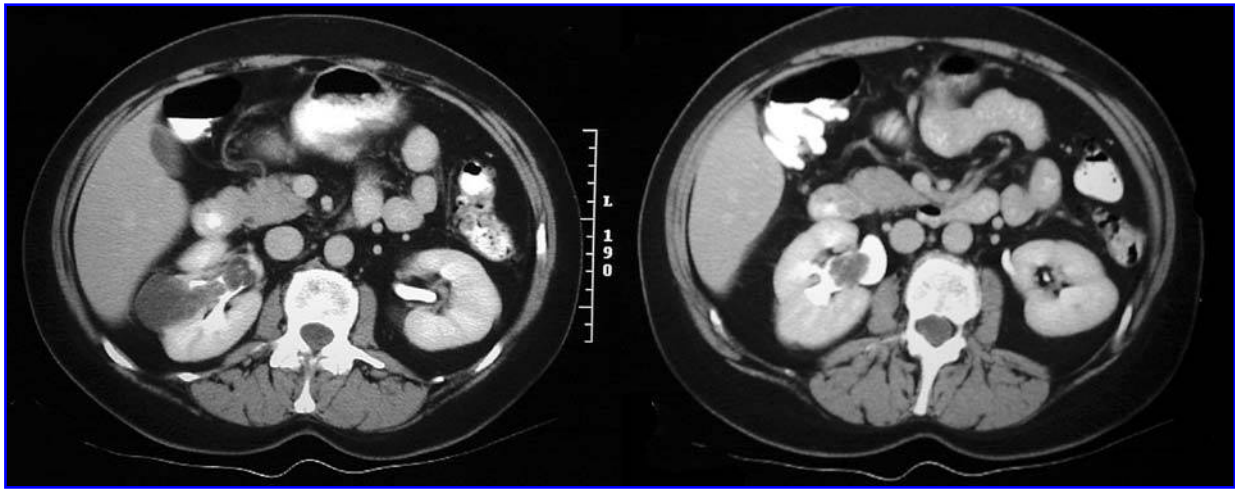


FIG. 1. Two CT images reveal unusual mass with both extension into renal pelvis and cystic components.

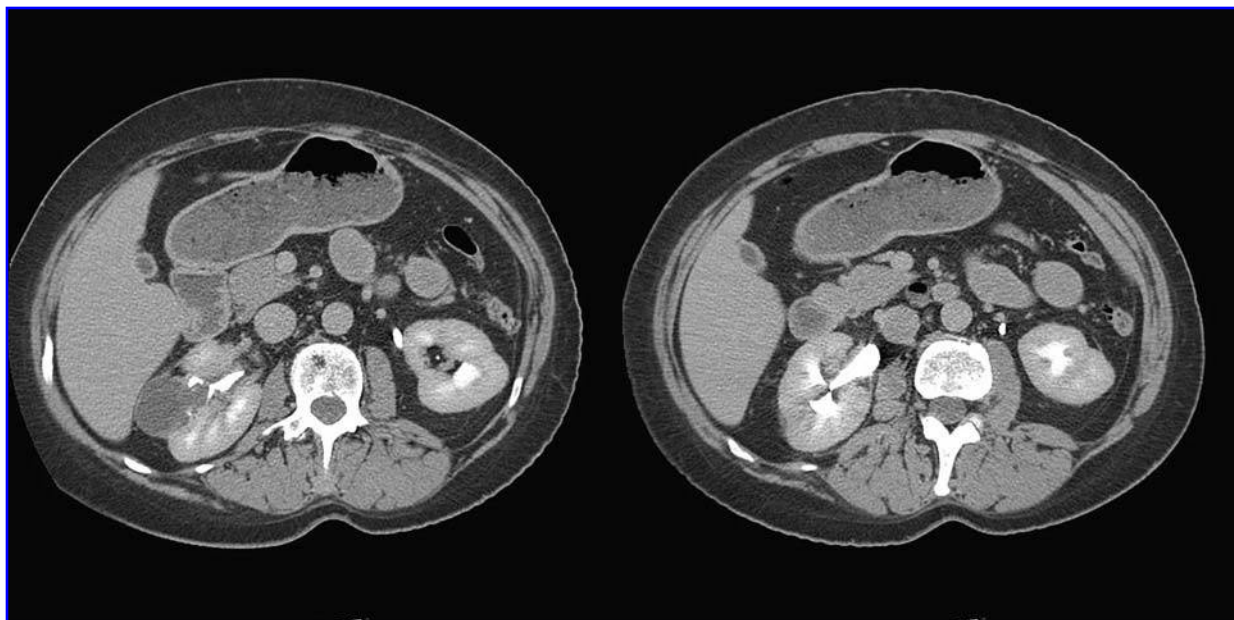


FIG. 2. Postprocedure CT images confirm resection of portions of mass that had extended into collecting system.

tial nephrectomy, given the unknown outcome of persistent cystic nephroma tissue.

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