

Editorial Comment

Encrusted retained ureteral stents are a frustrating and difficult surgical challenge. Shock wave lithotripsy of the stent to loosen fragments, combined percutaneous and cystoscopic lithotripsy of the renal and bladder ends of the stent (which are usually the most encrusted), and open surgery have all been reported. The authors of this article demonstrate nicely that small caliber ureteroscopes can be used with great effectiveness to provide a less morbid, outpatient solution. The silk-loop retraction of the bladder end of the stent appears to be a great trick, as friction of the ureteroscope on the stent can sometimes be problematic as the ureteroscope is advanced up the ureter, and allowed use of a semi-rigid instrument with a pneumatic lithotrite. The next time you are faced with an encrusted ureteral stent, consider the ureteroscopic approach.

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IMAGING

Changing role of imaging-guided percutaneous biopsy of adrenal masses: evaluation of 50 adrenal biopsies

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Objective: Prior series of percutaneous imaging-guided biopsies of adrenal masses before the advent of dedicated CT and MRI of the adrenal glands have shown that 40-57% of adrenal masses biopsied were adenomas-benign lesions requiring no further evaluation or treatment. This study was performed to assess the effect of dedicated adrenal imaging with CT and MRI on the rate of percutaneous imaging-guided biopsies of adrenal masses.

Materials and Methods: We reviewed 50 consecutive adrenal mass biopsies performed during a 48-month period. The patient demographics, technique of biopsy, pathology results, and results of any prior dedicated adrenal imaging with MRI or CT protocols were noted.

Results: Only six (12%) of 50 biopsies were adenomas. Five of these six cases were preceded by dedicated adrenal CT or MRI. Thirty-five cases were metastatic disease, four were adrenal cortical carcinoma, three were pheochromocytoma, and two biopsies were nondiagnostic. Overall, 20 of 50 cases were preceded by a dedicated adrenal CT or MRI examination to exclude an adenoma; in 21 of the remaining 30 cases, the imaging characteristics before biopsy were inconsistent with the potential diagnosis of an adenoma and dedicated adrenal CT or MRI was not recommended.

Conclusion: The number of adrenal adenomas biopsied has declined markedly with the introduction of dedicated adrenal CT and MRI for adrenal adenomas. Percutaneous imaging-guided biopsy is useful in confirming the presence and nature of suspected metastatic deposits to the adrenal gland and in diagnosing or excluding adrenal adenomas in patients with equivocal imaging characteristics.

Editorial Comment

Most incidentally found adrenal masses are adenomas even in patients with known primary tumors. For this reason a well established radiologic work-up is currently used in this clinical setting. By using a dedicated

adrenal radiologic evaluation(CT without contrast, washout-CT and chemical shift imaging by magnetic resonance), nearly all adrenal masses can be correctly categorized as adenomas or non-adenomas. Thus, percutaneous adrenal biopsy may be indicated for the small percentage of lesions that remain indeterminate in nature after CT and MRI. Such lesions include those with a percentage of wash-out near 60% threshold or lesions that have increased in size at follow-up imaging in spite of their benign appearance at prior CT study. As shown in this publication the number of adrenal masses biopsied has significantly reduced and consequently the number of adrenal adenomas. For the same reason the number of unnecessary resection of adrenal incidentalomas has also declined.

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Voiding cystourethrography in boys. Does the presence of the catheter during voiding alter the evaluation of the urethra?

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Purpose: We determined whether the presence of the catheter during the voiding phase of voiding cystourethrography alters the evaluation of the urethra concerning the normal structures as well as pathological findings, especially posterior urethral valves.

Materials and Methods: A total of 123 males 3 days to 16 years old (median age 2.6 months) underwent voiding cystourethrography. Urethral catheterization was performed in all cases. Four views were taken during the voiding phase with and without the catheter in place. Only 80 patients had available results. These examinations were studied with special attention to the normal structures and pathological findings.

Results: A total of 36 examinations (45%) were normal. Pathological findings were observed in 44 patients (55%), with abnormal vesical findings and/or vesicoureteral reflux in 33 (41.25%). In 11 patients (13.75%) 12 urethral abnormalities were found (posterior urethral valves 3, hypospadias 4, prostatic utricle 1, verumontanum polyp 1, prune belly syndrome with urethral dilatation 1, imperforate anus with urethral fistula 1 and urethral duplication 1). In all cases excluding those involving hypospadias there was no difference between the views with and without the catheter. However, concerning the normal structures, the verumontanum and fossa navicularis were better delineated without the catheter in 27% and 33% of cases, respectively.

Conclusions: Our study shows that a urethral catheter does not alter the diagnosis of abnormalities of the posterior urethra but may hamper the observation of normal structures or abnormalities of the anterior urethra.

Editorial Comment

Voiding cystourethrography is the most common radiologic procedure performed in children for the investigation of urinary tract infection. This article brings back an issue which has not been recently discussed (1). It is a well established concept among radiologists that leaving the catheter in place during voiding cystourethrography does not prevent the diagnosis of urethral disease. The argument that the diagnosis of posterior urethral valves may be missed, due to the effacement of the valve by the catheter is not valid. The catheter should be left in place because simplifies the process of controlling contrast infusion until voiding

occurs. If we remove the catheter and after that the child is not able to void, it will be necessary to do a recatheterization. Another benefit is related to technical aspects of this procedure. Voiding cystourethrography is a cyclic procedure. Reflex voiding at the beginning of vesical infusion is not uncommon. When this happens although the urethra will be promptly evaluated, the lack of adequate bladder distention may prevent the detection of vesico-ureteral reflux. By leaving the catheter in place we will be able to refill the bladder in order to perform an adequate search for reflux. After studying the posterior urethra and bladder we can always remove the catheter in order to evaluate the anterior urethra.

Reference

1. Ditchfield MR, Grattan-Smith JD, de Campo J, Hutson J: Voiding cystourethrography in boys: does the presence of the catheter obscure the diagnosis of posterior urethral valves? *AJR Am J Roentgenol.* 1995;164: 1233-5.

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UROGENITAL TRAUMA

Nonoperative management of blunt renal trauma: a prospective study

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Despite the abundance of literature on nonoperative management (NOM) of blunt trauma to the liver and spleen there is limited information on NOM of blunt renal injuries. In an effort to evaluate the role of NOM 37 consecutive unselected patients with renal injuries (grade 1, four; grade 2, 12; grade 3, 11; grade 4, six; and grade 5, four) were followed prospectively over 30 months (March 1999 to September 2001). Patients without peritonitis or hemodynamic instability were managed nonoperatively regardless of the appearance of the kidney on CT scan. Six (16%) patients were operated on immediately but only two (5.4%) for the kidney (grades 3 and 5 respectively). Of the remaining 31 patients 26 (84%) were managed successfully without an operation (grade 1 or 2, 12; grades 3-5, 14). Five patients were taken to the operating room after a period of observation (3, 3.5, 9, 36, and 44 hours respectively) but only three for the kidney (grades 4 and 5). The overall failure rate was 16 per cent (5 of 31); the rate of failure specifically related to the renal injury was 9.6 per cent (three of 31). Compared with the patients with successful NOM the five patients with failed NOM were more severely injured (Injury Severity Score ≥ 15 in 80% vs 27%, $P = 0.04$), required in the first 6 hours more fluids (4.17 \pm 1.72 vs 1.87 \pm 1.4 liters, $P = 0.003$) and blood transfusions (2.40 \pm 2 vs 0.42 \pm 1.17 units, $P = 0.005$), and more frequently had a positive trauma ultrasound (80% vs 11.5%, $P = 0.005$). We conclude that NOM is the prevailing method of treatment after blunt renal trauma. It is successful in the majority of patients without peritonitis or hemodynamic instability and should be considered regardless of the severity of renal injury. Predictors of failure may exist on the basis of injury severity, fluid and blood requirements, and abdominal ultrasonographic findings and need validation by a larger sample size.