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Urology update

MRI, CT, OR ULTRASOUND?

MAGNETIC RESONANCE imaging (MRI) offers several advantages over other imaging techniques in urology, but computed tomography (CT) and ultrasound are still the techniques of choice in certain situations.

For example, CT scans are satisfactory for identifying kidney pathology such as local tumor extension, retroperitoneal adenopathy, and intra-abdominal metastatic disease, but MRI is superior for detecting adjacent organ invasion common with larger tumors. In addition, MRI can be performed in the sagittal, coronal, and oblique planes. And the most important use of MRI in kidney pathology is its ability to stage tumor invasion of vascular structures without the need for contrast medium.

In adrenal imaging, CT is somewhat limited compared with MRI, primarily because MRI produces better soft-tissue characterization, allowing for differentiation of adenoma, carcinoma, metastasis, and pheochromocytoma. But MRI is not necessary in cases of nonfunctional solid adrenal masses smaller than 3 cm, which are likely to be adenomas and can be adequately followed with serial CT scans.

MRI offers little or no advantage over CT or ultrasound for the diagnosis of bladder pathology. The most serious limitation of MRI is its inability to detect microscopic disease. Ultrasound and conventional MRI are equivalent for staging prostate cancer; however, accuracy for both is only 70%. MRI is very useful to anatomically delineate extraurologic pelvic tumors.

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Highlights from The Cleveland Clinic Foundation's continuing medical education symposium, "Advances in Urology."

Symposium director: Stevan B. Streem, MD, Department of Urology, The Cleveland Clinic Foundation.

CHRONIC CYSTITIS: CONSERVATIVE TREATMENT BEST

A CONSERVATIVE approach to treatment remains the best strategy for chronic interstitial cystitis. Intravesical instillation of dimethyl sulfoxide (DMSO) is the principal (and the only approved) treatment. At Temple University, DMSO 50 mL is administered with 5,000 units of heparin, 10 mg triamcinolone acetonide, and 44 mg bicarbonate. Treatments are weekly for 6 weeks. In one study of 73 patients in Philadelphia, 60% of patients responded, and two thirds who responded reported excellent relief of symptoms. One quarter of the patients were maintained with monthly treatments.

Some oral medications such as pentosan polysulfate, nalmefene, nifedipine, and hydroxyzine are showing promise. However, of all the oral treatments, amitriptyline has the most potential. Besides its H1 histaminergic receptor blocking activity, amitriptyline acts as an analgesic and sedative, both beneficial to patients with interstitial cystitis. Response rates of over 50% have been seen, with little tachyphylaxis.

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PERCUTANEOUS RENAL SURGERY: CURRENT ROLES

PERCUTANEOUS RENAL surgery still has its niche, despite extracorporeal shock-wave lithotripsy. Applications include treating stone disease in morbidly obese patients, treating large cystine stones and stones in patients with proximate calcified aneurysms, and debulking staghorn calculi. Percutaneous surgery is also indicated for the treatment of calyceal diverticula, ureteral stricture or fistula inaccess-

sible by a standard retrograde approach, and foreign body in the upper tract inaccessible to ureteroscopy. Percutaneous renal surgery is also indicated in cases of upper tract transitional cell carcinoma when conservative management is indicated or for treating primary or secondary ureteropelvic junction obstruction.

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ERECTILE IMPOTENCE: GOAL-DIRECTED TREATMENT

Keeping the patient's personal goals in mind is important in treating impotence. The initial workup should include a thorough history, physical examination, laboratory tests, and a discussion of treatment options. The history should focus on medical, surgical, social, marital, and sexual histories, drug and alcohol intake, and any previous workup and treatment. The physical examination should evaluate the patient for presence of a neurologic deficit, endocrine abnormality, vascular deficiency, and genital and prostatic disease. In testing for vascular function, the most effective in-office test is the combined intracavernous injection and stimulation test. If prompt and sustained erection develops, the patient has sufficient venous function and further workup is unnecessary. Cavernosometry and cavernosography are reserved for patients with poorly sustained erection in the presence of adequate arterial response. Doppler wave-form analysis, duplex or color Doppler ultrasound, radioisotope penography, cavernous arterial occlusion pressure, and pharmacologic arteriography may also be indicated and useful.

New therapies recently made available include oral medications, vacuum constriction devices, and intracavernous injection of vasodilators, making it possible to tailor therapy to an individual patient's problems and goals.

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DIAGNOSING RENAL TRAUMA

INTRAVENOUS pyelograms (IVPs) are normal in about 90% of all patients with suspected renal trauma and are only recommended in the following patients: those with penetrating injuries to the flank and abdomen prior to surgery; those with suspected blunt trauma, with gross hematuria or microhematuria and hypotension; or those with evidence of gross abdominal injury regardless of blood pressure and urinalysis. If the IVP is abnormal or inconclusive, computed tomography (CT) is indicated, especially if there is time before surgical exploration. IVP in trauma patients will indicate if the other kidney is normal, while the CT scan gives the best definition of the injury. Surgical exploration is indicated absolutely in patients with bleeding or an expanding or pulsatile hematoma, and it is indicated relatively for patients with major extravasations with severe collecting system disruption, non-viable renal tissue, vascular injury, or incomplete diagnosis with CT scan or IVP.

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