Cases of stent failure that did not undergo PNT placement included 18 (13.0%) UU at a mean of 52.4 days (range 3 to 128). A total of 90 (89.1%) patients had metastatic cancer at stenting with 32.2% dead at 5.8 months (range 1 to 32). Univariate and multivariate analyses identified cancer diagnosis, baseline creatinine greater than 1.3 mg/dl and post-stent systemic treatment as predictors of stent failure. Proximal location of compression and treatment creatinine greater than 3.11 mg/dl were marginal predictors of failure on univariate analysis, while proximal location of obstruction was also marginally significant on multivariate analysis. No predictors were identified for early stent failure (less than 1 week).

Conclusions: At almost 1 year followup stent failure due to extrinsic compression occurred in nearly half of treated patients. Analysis of data revealed a diagnosis of cancer, baseline mild renal insufficiency and metastatic disease requiring chemotherapy or radiation as predictors of stent failure. Managing extrinsic compression by retrograde stenting continues to be a practical but guarded decision and should be tailored to each patient.

**Editorial Comment**

The article reviews a common clinical situation, that being placement of a ureteral stent for extrinsic ureteral obstruction. Almost half of the patients treated with ureteral stents failed within the first year, which is remarkably similar to prior reports. In the later years of this current series the success rate improved to greater than 60%. This might be due to different stent materials, but unfortunately the chart review was such that the authors could not reliably assess this factor. It makes sense that a stiffer and less compressible stent would fare better in this situation. Although one small series suggested that a stiffer stent maintained patency longer (1), this has yet to be confirmed in other series. An internal stent has attractiveness over a percutaneous nephrostomy tube for long-term management, but this approximately 50% failure rate must be acknowledged when counseling patients and when performing follow-up.

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## IMAGING

**Baseline staging of newly diagnosed prostate cancer: a summary of the literature**

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Purpose: Staging for prostate cancer often includes bone scanning and computerized tomography (CT). We systematically reviewed the published evidence for these tests.

Materials and Methods: We searched MedLine for articles on these investigations in newly diagnosed cases of prostate cancer. Data were pooled based on prostate specific antigen (PSA), grade and tumor stage.

Results: Among 23 studies examining the role of bone scan metastases were detected in 2.3%, 5.3% and 16.2% of patients with PSA levels less than 10, 10.1 to 19.9 and 20 to 49.9 ng/ml, respectively. Scanning detected metastases in 6.4% of men with organ confined cancer and 49.5% with locally advanced disease. Detection rates were 5.6% and 29.9% for Gleason scores 7 or less and 8 or greater, respectively. Among 25 studies CT documented lymphadenopathy in 0 and 1.1% of patients with PSA less than 20 and 20 ng/ml or greater, respectively. CT detection rate was 0.7% and 19.6% in patients with localized and locally advanced disease, respectively. Detection rates in patients with Gleason scores 7 or less and 8 or greater were 1.2% and 12.5%, respectively. These risks were typically much greater on pathological evaluation.

Conclusions: Patients with low risk prostate cancer are unlikely to have metastatic disease documented by bone scan or CT. Therefore, these investigations should not be standard practice. However, patients with PSA 20 ng/ml or greater, locally advanced disease, or Gleason score 8 or greater are at higher risk for bone metastases and should be considered for bone scan. CT may be useful in patients with locally advanced disease or Gleason score 8 or greater but appears not to be of benefit in patients with increased PSA alone.

**Editorial Comment**

This is a very useful summary of the literature regarding the value of performing CT and bone scan in patients with newly diagnosed prostate cancer. Although these data is not new, this study clearly emphasizes that these tests should be done only in patients with high risk of presenting nodal or bone metastasis (PSA > 15 or Gleason score above 7 or clinical stage T3-4). In this group of patient, bone scan should be the first test to be done. If negative, CT of the abdomen and pelvis should be the next step. Since lymph node size does not correlate with the presence of metastasis, any abnormal lymph node demonstrated by CT should be further biopsied (CT-guided lymph node biopsy). Previous study has shown that in asymptomatic patients with newly diagnosed prostate cancer and serum PSA levels of less than 20 ng/ml, the likelihood of positive findings on abdominal/pelvic CT is extremely low (< 1%). In the USA, elimination of staging abdominal/pelvic CT in these patients would reduce medical expenditures for prostate cancer management by $20-50 million per year (1). In our opinion, it would be more beneficial to perform an endorectal MR imaging in the group of patients with moderate or high risk of harboring extraprostatic disease. This test is the best one available for adequate local staging of the disease. Endorectal MR imaging of the prostate has remarkable strength in the prediction of extra-prostatic extension of the disease and plays an important role in the evaluation of prostate cancer particularly when evaluated by an uroradiologist (2).

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**Patient radiation dose at CT urography and conventional urography**

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Purpose: To measure and compare patient radiation dose from computed tomographic (CT) urography and conventional urography and to compare these doses with dose estimates determined from phantom measurements.

Materials and Methods: Patient skin doses were determined by placing a thermoluminescent dosimeter (TLD) strip (six TLD chips) on the abdomen of eight patients examined with CT urography and 11 patients examined with conventional urography. CT urography group consisted of two women and six men (mean age, 55.5 years), and conventional urography group consisted of six women and five men (mean age, 58.9 years). CT urography protocol included three volumetric acquisitions of the abdomen and pelvis. Conventional urography protocol consisted of acquisition of several images involving full nephrotomography and oblique projections. Mean and SD of measured patient doses were compared with corresponding calculated doses and with dose measured on a Lucite pelvic-torso phantom. Correlation coefficient (R(2)) was calculated to compare measured and calculated skin doses for conventional urography examination, and two-tailed P value significance test was used to evaluate variation in effective dose with patient size. Radiation risk was calculated from effective dose estimates.

Results: Mean patient skin doses for CT urography measured with TLD strips and calculated from phantom data (CT dose index) were 56.3 mGy +/- 11.5 and 54.6 mGy +/- 4.1, respectively. Mean patient skin doses for conventional urography measured with TLD strips and calculated as entrance skin dose were 151 mGy +/- 90 and 145 mGy +/- 76, respectively. Correlation coefficient between measured and calculated skin doses for conventional urography examinations was 0.95. Mean effective dose estimates for CT urography and conventional urography were 14.8 mSv +/- 90.0 and 9.7 mSv +/- 3.0, respectively. Mean effective doses estimated for the pelvic-torso phantom were 15.9 mSv (CT urography) and 7.8 mSv (conventional urography).

Conclusion: Standard protocol for CT urography led to higher mean effective dose, approximately 1.5 times the radiation risk for conventional urography. Patient dose estimates should be taken into consideration when imaging protocols are established for CT urography.

**Editorial Comment**

CT urography is an evolving concept and developing technique, which combine the ultimate diagnostic capabilities of intravenous urography and CT. In many institutions, intravenous urography has already been replaced by CT urography to evaluate patients with hematuria and other genitourinary conditions. This paper emphasizes the most important drawback of this technique, which is related to the radiation exposure. In our institution the miliamper seconds (mAs) settings are chosen depending upon clinical indication and patients' age and body habitus. Recent studies have shown that low-dose (reduced mAs) unenhanced CT is appropriate for the diagnosis of ureteral stones. Similarly efforts have been made in order to perform a low-dose protocol for CT urography. The standard protocol for multislice CT urography usually include 4 phases of imaging [noncontrast, arterial phase (25-30 seconds after intravenous injection of contrast); nephrographic phase (100 seconds) and excretory phase (180 seconds)]. In order to obtain a significant reduction in patient effective radiation dose without deterioration of imaging quality one should optimize the number of phases to be done and also do not include the kidneys and the pelvis in every phase. This can be done by adequate adjustment of the technical parameters to the patient's weight and clinical situation. To obtain good results with a low-dose

CT urography protocol is possible. Since CT urography is still an evolving technique we believe that further improvement of an optimized protocol will be developed very soon.

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## UROGENITAL TRAUMA

**Traumatic rupture of the urinary bladder: is the suprapubic tube necessary?**

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Background: Although surgical principles are well accepted for the treatment of an intraperitoneal or extraperitoneal rupture of the urinary bladder, the type and number of drainage catheters needed to obtain a satisfactory outcome with minimal patient morbidity have yet to be determined.

Methods: This was a retrospective review of data on injured patients with the diagnosis of an intraperitoneal or extraperitoneal rupture of the urinary bladder from penetrating or blunt trauma.

Results: Of the 51 patients identified, 28 were treated with suprapubic and transurethral catheters, whereas 23 received a transurethral catheter only. Complications and catheter duration times were similar regardless of type of bladder injury or drainage catheter used ($p > 0.5$).

Conclusion: These data suggest that there are similar outcomes and complication rates for patients treated with suprapubic and transurethral catheters versus transurethral catheter only. Transurethral catheters alone seem effective in draining all types of bladder injuries.

**Editorial Comment**

For many years, by habit, many of us have been placing suprapubic tubes (SPT) at the time of open bladder repair. However, this is only one of many papers that advocate using only a urethral catheter alone in these patients (1-3). It appears that using a urethral Foley catheter alone allows for low complications with minimal morbidity. The rate of urinary tract infection, in this study at least, is identical between both groups. In no cases in this small group of 51 patients did a patient seem to “require” the SPT (either as a “safety valve” or to facilitate irrigation).

Although I agree that most bladder injuries may be treated with urethral catheterization alone, there are some theoretical benefits to using a SPT. Patients with SPTs get their urethral catheters removed 11 days earlier in this series (with continued drainage via SPT), which may be more comfortable for the patient. Also, the suprapubic catheter allows for a theoretic “safety valve” if the urethral catheter becomes clogged or inadvertently dislodged, although this was not necessary in this series.

There are probably some uncommon cases where a suprapubic tube would be prudent. In cases of severe ongoing hematuria which is observed in the operating room, or in cases of truly devastating bladder injuries (such as close range shotgun wounds to the bladder), an SPT might help to maximize bladder drainage, especially in the unrepairable or unreliably repaired bladder. Otherwise, the data is clear: after bladder repair, consider using just a urethral catheter. We tend to use a 2-way catheter, as we feel that continuous bladder