

Suspected Lower Urinary Tract Trauma
EVIDENCE TABLE

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
1. Dreitlein DA, Suner S, Basler J. Genitourinary trauma. <i>Emerg Med Clin North Am</i> 2001; 19(3):569-590.	12	N/A	Review diagnosis and management of genitourinary trauma.	Diagnosis and treatment of external genitals injures when done promptly results in excellent long-term outcome.	4
2. Morey AF, Iverson AJ, Swan A, et al. Bladder rupture after blunt trauma: guidelines for diagnostic imaging. <i>J Trauma</i> 2001; 51(4):683-686.	13	53	Multicenter study, focused literature review of retrospective series to establish guidelines for diagnostic imaging for bladder rupture in the blunt trauma victim with multiple injuries.	The combination of pelvic fracture and gross hematuria is an indication for immediate cystography in blunt trauma victims. Existing data do not support lower urinary tract imaging in all patients with either pelvic fracture or hematuria alone.	2
3. Flancbaum L, Morgan AS, Fleisher M, Cox EF. Blunt bladder trauma: manifestation of severe injury. <i>Urology</i> 1988; 31(3):220-222.	15 (injury patterns)	29	To present cases of patients with bladder injuries requiring operative treatment resulting from blunt trauma.	The most common features were hypotension (68%) and gross hematuria (97%). 86% of the injuries was from motor vehicle accidents. Pelvic fractures occurred in 93% and intra-abdominal injuries in 48% of patients. The majority of ruptures (72%) were intraperitoneal.	3
4. Rehm CG, Mure AJ, O'Malley KF, Ross SE. Blunt traumatic bladder rupture: the role of retrograde cystogram. <i>Ann Emerg Med</i> 1991; 20(8):845-847.	13	21 (20 had cystography 7 had CT)	Retrospective review to evaluate importance of microscopic and gross hematuria and the role of retrograde cystography and CT in the diagnosis of blunt traumatic bladder rupture.	Significant (more than 50 RBCs/high-power field) hematuria is the principal indication for evaluation for blunt bladder injury, and retrograde cystography is the diagnostic procedure of choice. CT is neither sensitive nor specific enough as primary diagnostic modality.	3
5. Jankowski JT, Spirnak JP. Current recommendations for imaging in the management of urologic traumas. <i>Urol Clin North Am</i> 2006; 33(3):365-376.	12	N/A	Review current recommendations for imaging in urologic traumas.	Choice of modality is based on mechanism of injury and patient presentation. For pelvic injuries and gross hematuria, CT cystography or conventional cystography is recommended. For scrotal trauma when physical exam is inconclusive, US is recommended. For patients with penetrating trauma to the external genitalia, retrograde urethrography is recommended.	4
6. Corriere JN, Jr., Sandler CM. Diagnosis and management of bladder injuries. <i>Urol Clin North Am</i> 2006; 33(1):67-71, vi.	12	N/A	Review diagnosis and treatment of injuries to the bladder.	Diagnosis is made by a retrograde static cystogram performed by filling the bladder with contrast through a urethral catheter.	4

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7. Andrich DE, Day AC, Mundy AR. Proposed mechanisms of lower urinary tract injury in fractures of the pelvic ring. <i>BJU Int</i> 2007; 100(3):567-573.	13	168 (108 pelvic ring fractures 60 acetabular fractures)	Review case notes and radiographs of patients to examine whether specific pelvic fractures pattern help predict the presence and type of injuries to the lower urinary tract.	27 (25%) of 108 had a lower urinary tract injury documented either radiologically or as an intraoperative finding. Pelvic fracture pattern alone does not predict the presence of a lower urinary tract injury. The pattern of injury to the soft tissue envelope and specifically to the ligaments supporting the lower urinary tract offers the best correlation with the observed lower urinary tract injury.	2
8. Cass AS. Diagnostic studies in bladder rupture. Indications and techniques. <i>Urol Clin North Am</i> 1989; 16(2):267-273.	12	N/A	Review indications and techniques in the diagnosis of bladder rupture.	Retrograde cystogram with bladder filling of 400 ml of radiopaque dye followed by a washout film will diagnose intraperitoneal and extraperitoneal ruptures of the bladder. False-negative cystograms occur with penetrating injuries of the bladder when only 250 ml or less of contrast medium is used to fill the bladder.	3
9. Sezhian N, Rimal D, Suresh G. Isolated intraperitoneal bladder rupture following minor trauma after alcohol ingestion. <i>South Med J</i> 2005; 98(5):573-574.	14	1	To describe a case of intraperitoneal bladder rupture in a 41-year-old male caused by trauma from a fall after alcohol ingestion.	Signs of peritonitis appeared the following day, and emergency CT revealed intraperitoneal rupture. Laparotomy revealed a laceration of the bladder in the fundus.	4
10. Bigongiari LR, Zarnow H. Traumatic, inflammatory, neoplastic and miscellaneous lesions of the bladder. <i>In: Medical radiology of the lower urinary tract.</i> Lang EK ed. Berlin: Springer-Verlag. 1994:70-147.	15	N/A	Book chapter.	N/A	N/A
11. Schneider RE. Genitourinary trauma. <i>Emerg Med Clin North Am</i> 1993; 11(1):137-145.	12	N/A	Examine genitourinary trauma and patients at risk for urology injury, review physical findings and describe present radiographic procedures that allow for proper diagnosis and treatment.	A retrograde urethrogram is the diagnostic procedure of choice in all cases of suspected urethral injury. Recommends retrograde cystography or retrograde CT cystography for suspected bladder injury.	4

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12. Brewer ME, Wilmoth RJ, Enderson BL, Daley BJ. Prospective comparison of microscopic and gross hematuria as predictors of bladder injury in blunt trauma. <i>Urology</i> 2007; 69(6):1086-1089.	9	8,026	To prospectively demonstrate that bladder imaging is required for gross hematuria and unnecessary for microscopic hematuria.	<ul style="list-style-type: none"> • 1ST arm—214 patients had cystography for microscopic hematuria, and no bladder injuries were identified; 78 patients underwent cystography for gross hematuria, and 21 bladder injuries were identified. • 2ND arm—308 patients presented with microscopic hematuria, none of whom underwent cystography, and 91 patients underwent cystography for gross hematuria, with 15 bladder injuries identified. • Presence of gross hematuria demonstrated 100% sensitivity and 98.5% specificity as a screening test for bladder injury. No bladder injuries were missed. 	1
13. Fuhrman GM, Simmons GT, Davidson BS, Buerk CA. The single indication for cystography in blunt trauma. <i>Am Surg</i> 1993; 59(6):335-337.	8	26 patients with bladder trauma retrospective evaluation	Two studies were completed to define indications for cystography in blunt trauma. 1st study—Retrospective. 2nd study—Randomized prospective study.	<ul style="list-style-type: none"> • 11 patients had pelvic fractures and no hematuria. 109 patients had microscopic hematuria and a 39 % incidence of coexistent pelvic fractures. 31 patients had gross hematuria and a 26% incidence of pelvic fracture. Bladder injuries were seen in this group. • Cost analysis of the prospective study revealed a potential savings of \$26,322 if gross hematuria had been the sole indication for cystography in blunt trauma. 	1
14. Hochberg E, Stone NN. Bladder rupture associated with pelvic fracture due to blunt trauma. <i>Urology</i> 1993; 41(6):531-533.	13	103 10-bladder rupture	To identify risk fractures with cystography for bladder rupture.	Since 90% of the patients do not have bladder rupture, cystography may be safely reserved for those patients with pelvic fracture with significant pubic arch involvement, gross hematuria, and hemodynamic instability.	3
15. Gomez RG, Ceballos L, Coburn M, et al. Consensus statement on bladder injuries. <i>BJU Int</i> 2004; 94(1):27-32.	15	N/A	Recommendations by an International Consensus panel on bladder injuries. Experts describe blunt, penetrating and iatrogenic injuries and their management.	Combined intraperitoneal and extraperitoneal ruptures are present in 5%-8% of all bladder ruptures and mainly diagnosed during surgery. Important to have prompt diagnosis and treatment. A static or CT cystogram can be used for diagnosis.	2
16. Sandler CM, Hall JT, Rodriguez MB, Corriere JN, Jr. Bladder injury in blunt pelvic trauma. <i>Radiology</i> 1986; 158(3):633-638.	13	97 61-film studies for review	Review clinical and radiologic findings in patients with bladder injury secondary to blunt pelvic trauma.	All cases (n=55) of extraperitoneal rupture were demonstrated cryptographically. Study proposes a classification of bladder injury based on cystographic patterns of extravasations.	2

* See Last Page for Key

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17. Vaccaro JP, Brody JM. CT cystography in the evaluation of major bladder trauma. <i>Radiographics</i> 2000; 20(5):1373-1381.	12	N/A	To review CT cystographic technique and the characteristic imaging features of types of bladder injury.	CT cystography is highly accurate as an adjunct to routine abdomino-pelvic CT in the trauma setting.	3
18. Chapple CR. Urethral injury. <i>BJU Int</i> 2000; 86(3):318-326.	12	N/A	Review management and diagnosis of urethral injury.	CT (preferably spiral CT) is the first choice for evaluating intra abdominal urinary tract trauma. This provides an accurate evaluation of the kidneys	3
19. Hemal AK, Dorairajan LN, Gupta NP. Posttraumatic complete and partial loss of urethra with pelvic fracture in girls: an appraisal of management. <i>J Urol</i> 2000; 163(1):282-287.	14	5 (4 had suprapubic cystostomy 1-primary repair failed)	Review literature and analyze cases of post-traumatic urethral injuries and pelvic fracture in girls.	3 patients with complete urethral loss had a more severe degree of pelvic fracture. More severely displaced pelvic fracture is associated with greater urethral loss and requires more complex repair. Cases of partial urethral injury without much displacement are better managed by primary repair of the transected urethra.	4
20. Venn SN, Greenwell TJ, Mundy AR. Pelvic fracture injuries of the female urethra. <i>BJU Int</i> 1999; 83(6):626-630.	3a	12	To review pelvic fracture urethral injuries in women.	Pelvic fracture urethral injuries usually occur in females than in males. The most severe injuries were associated with complete rupture of the urethra and a distraction defect.	3
21. Ingram MD, Watson SG, Skippage PL, Patel U. Urethral injuries after pelvic trauma: evaluation with urethrography. <i>Radiographics</i> 2008; 28(6):1631-1643.	12	N/A	To review role of urethrography in the evaluation of urethral injuries.	Although CT is usually used for the initial imaging evaluation of patients with polytrauma, urethral injury is better assessed and classified by using urethrography.	4
22. Colapinto V, McCallum RW. Injury to the male posterior urethra in fractured pelvis: a new classification. <i>J Urol</i> 1977; 118(4):575-580.	13	15	Propose a new classification of membranous urethral rupture in cases of fractured pelvis. <ul style="list-style-type: none"> • Type 1: The prostate or urogenital diaphragm is dislocated but the membranous urethra is merely stretched and not severed. • Type 2: The membranous urethra is ruptured above the urogenital diaphragm at the apex of the prostate. • Type 3: The membranous urethra is ruptured above and below the urogenital diaphragm. 	Study recommends a more widespread use of retrograde urethrography in patients with a suspected posterior urethral rupture.	3
23. Goldman SM, Sandler CM, Corriere JN, Jr., McGuire EJ. Blunt urethral trauma: a unified, anatomical mechanical classification. <i>J Urol</i> 1997; 157(1):85-89.	12	N/A	Review urological, emergency radiological and urological textbooks to propose a simple, anatomically based classification of blunt urethral injury.	The proposed classification is valid and includes all of the common types of blunt urethral injuries.	2

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24. Sandler CM, Goldman SM, Kawashima A. Lower urinary tract trauma. <i>World J Urol</i> 1998; 16(1):69-75.	12	N/A	Review and illustrate bladder and urethral injuries, including their mechanisms of injury, imaging diagnosis, systems for classification, and the accuracy/pitfalls of the diagnostic methods. Emphasis is on lower urinary tract injuries.	Lower urinary tract injuries resulting from high speed, wide impact blunt trauma is the most common mechanism of lower urinary tract injury encountered in civilian practice.	4
25. Corriere JN, Jr., Sandler CM. Management of the ruptured bladder: seven years of experience with 111 cases. <i>J Trauma</i> 1986; 26(9):830-833.	13	111 patients (95—from blunt trauma 16—from penetrating injuries)	Review radiographs of ruptured bladder during a 7-year period to confirm the presence and type of bladder injury and assess post-treatment cystogram.	39 patients with extraperitoneal bladder injuries were treated with only catheter drainage. 8 died before institution of therapy. Patients with bladder ruptures may be treated with simple catheter drainage and clinical evaluation.	2
26. Sandler CM, McCallum RW. Injuries of the urethra. In: <i>Clinical Urology</i> . Pollack HW, ed. Philadelphia, Pa: Saunders Company. Volume 2:1522-1534.	15	N/A	Book chapter.	N/A	N/A
27. Stine RJ, Avila JA, Lemons MF, Sickorez GJ. Diagnostic and therapeutic urologic procedures. <i>Emerg Med Clin North Am</i> 1988; 6(3):547-578.	12	N/A	Review urologic procedures useful for the diagnosis and management of urinary tract disorders. Examine urinalysis, diagnostic radiologic modalities and urologic procedures.	Retrograde cystourethrography is recommended for evaluation of the lower urinary tract. It should be performed whenever urethral or bladder injury is suspected. US is not usually recommended on an emergency basis despite its many advantages.	4
28. Baniel J, Schein M. The management of penetrating trauma to the urinary tract. <i>J Am Coll Surg</i> 1994; 178(4):417-425.	12	N/A	Review management of penetrating trauma to the urinary tract.	IVP correctly diagnosed 16% of the cases while retrograde cystography demonstrated all perforations. Retrograde cystography is recommended in the assessment of injury to the bladder.	3
29. Corriere JN, Jr., Sandler CM. Management of extraperitoneal bladder rupture. <i>Urol Clin North Am</i> 1989; 16(2):275-277.	13	41	To describe the management of extraperitoneal bladder rupture.	Static cystogram is the only way to diagnose the lesion definitely.	3

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30. Carroll PR, McAninch JW. Major bladder trauma: the accuracy of cystography. <i>J Urol</i> 1983; 130(5):887-888.	10	51	To study accuracy of retrograde cystography in diagnosing traumatic bladder rupture.	<ul style="list-style-type: none"> Extravasation was observed in 32 cases for which retrograde cystograms were available, including 3 (9%) in which additional infusion of contrast medium was required to demonstrate extravasation. Of the 32 cystograms 4 (13%) showed rupture on the drainage film only. If drainage radiographs and adequate distension of the bladder with contrast medium had been omitted, the rate of diagnostic accuracy of the cystogram would have been reduced to 79%. If attention is paid to adequate distension of the bladder with contrast material and to obtaining drainage films, diagnostic retrograde cystography for trauma should be almost totally accurate and delays or errors in diagnosis should be rare. 	2
31. Festini G, Gregorutti S, Reina G, Bellis GB. Isolated intraperitoneal bladder rupture in patients with alcohol intoxication and minor abdominal trauma. <i>Ann Emerg Med</i> 1991; 20(12):1371-1372.	14	2	Present cases of bladder rupture in intoxicated patient after minor abdominal trauma and without evidence of associated injuries.	<ul style="list-style-type: none"> When a bladder rupture is clinically suspected, retrograde urethrography is recommended before retrograde cystography. IVY has a low accuracy rate (15%-25%), although specificity is high. Abdominal US is recommended in patients with suspected bladder rupture to exclude associated visceral lesions and/or peritoneal blood or urine. 	4
32. MacMahon R, Hosking D, Ramsey EW. Management of blunt injury to the lower urinary tract. <i>Can J Surg</i> 1983; 26(5):415-418.	13	33	Review cases of bladder rupture.	23 of 24 diagnosed by cystography. 5 of 23 (22%) diagnosed by IVP. Cystography found to be reliable. Suprapubic cystostomy and delayed treatment of any resulting stricture is recommended when patient is ill or the surgeon inexperienced in urethral surgery.	3
33. Bonavita JA, Pollack HM. Trauma of the adult bladder and urethra. <i>Semin Roentgenol</i> 1983; 18(4):299-306.	12	N/A	To review diagnosis of trauma of the adult bladder and urethra.	Retrograde urethrography is the only safe and reliable method of diagnosing posterior urethral injury.	4

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34. Werkman HA, Jansen C, Klein JP, Ten Duis HJ. Urinary tract injuries in multiply-injured patients: a rational guideline for the initial assessment. <i>Injury</i> 1991; 22(6):471-474.	13	866 patients (72 with urinary tract injuries)	Develop rational guideline for initial assessment of urinary tract injuries in multiply-injured patients.	<ul style="list-style-type: none"> • More than 35 RBC/HPF in the sediment or macroscopic hematuria were found in patients with serious lesions of the urinary tract. • All major injuries were demonstrated by the emergency intravenous urogram. • US showed contusions of the kidney or bladder and rupture of the kidneys, but were not reliable in diagnosing ruptures of the bladder. 13 (8%) of 155 patients with a pelvic fracture had lower urinary tract injuries. • All urethral lesions were detected with a retrograde urethrogram. • Propose a rational guideline, which guarantees diagnostic accuracy of serious injuries of the urinary tract after blunt trauma, with little interference with the resuscitative and diagnostic procedures in severely injured patients. 	2
35. Goletti O, Ghiselli G, Lippolis PV, et al. The role of ultrasonography in blunt abdominal trauma: results in 250 consecutive cases. <i>J Trauma</i> 1994; 36(2):178-181.	10	250	Prospective study to determine accuracy of US in detecting abdominal lesions and free fluid collections in patients with blunt abdominal trauma.	<ul style="list-style-type: none"> • For spleen injuries, sensitivity was 93%, specificity 99 %, PPV 93%. • For liver injuries, sensitivity was 80%, specificity 100%, PPV 100%. • For kidney lesions, sensitivity was 100%, specificity 100%, PPV 100%. • US is recommended in patients with blunt abdominal trauma. 	2
36. Power N, Ryan S, Hamilton P. Computed tomographic cystography in bladder trauma: pictorial essay. <i>Can Assoc Radiol J</i> 2004; 55(5):304-308.	12	N/A	Review use of CT cystography in the classification of bladder trauma.	CT cystography is recommended for polytraumatized patient. It is quicker, more convenient and involves a lower radiation dose to the patient if performed as part of the initial CT than conventional cystography.	3

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37. Deck AJ, Shaves S, Talner L, Porter JR. Computerized tomography cystography for the diagnosis of traumatic bladder rupture. <i>J Urol</i> 2000; 164(1):43-46.	10	316	Retrospective review to determine accuracy of CT cystography for diagnosis of bladder rupture. Surgical exploration was used as gold standard.	<ul style="list-style-type: none"> • 44 had diagnosis of bladder rupture; 42 had CT cystograms indicating bladder rupture. 28 had formal bladder exploration; 23 (82%) had operative findings that exactly matched the CT cystogram interpretation. • CT cystography for bladder rupture: sensitivity 95%, specificity 100%, CT cystography for intraperitoneal rupture: sensitivity 78% specificity 99%. • Recommends CT cystography over plain film cystography in patients having CT for other injuries associated with blunt trauma. 	2
38. Deck AJ, Shaves S, Talner L, Porter JR. Current experience with computed tomographic cystography and blunt trauma. <i>World J Surg</i> 2001; 25(12):1592-1596.	10	316	Retrospective review to establish sensitivity and specificity of CT cystography for the diagnosis of bladder rupture in patients with blunt abdominal and pelvic trauma using operative findings as gold standard.	<ul style="list-style-type: none"> • Sensitivity and specificity of CT cystography for detection of bladder rupture were 95% and 100%, respectively. Sensitivity and specificity for intraperitoneal rupture were 78% and 99% respectively. • Recommends CT cystography over plain film cystography for patients undergoing CT evaluation for other blunt trauma-related injuries. 	2
39. Mee SL, McAninch JW, Federle MP. Computerized tomography in bladder rupture: diagnostic limitations. <i>J Urol</i> 1987; 137(2):207-209.	14	2	Prospective study to determine if CT is as accurate as retrograde cystography in the diagnosis of bladder rupture.	CT showed no evidence of opacified urinary extravasation in one patient and only subtle evidence in the other. Cystography revealed gross intraperitoneal extravasation of opacified urine in both patients. Recommends retrograde cystography as test in suspected bladder rupture.	4
40. Pao DM, Ellis JH, Cohan RH, Korobkin M. Utility of routine trauma CT in the detection of bladder rupture. <i>Acad Radiol</i> 2000; 7(5):317-324.	10	54 patients (2 blind readers)	Retrospective blinded review to determine the frequency with which CT fails to depict bladder rupture, the potential utility of delayed CT scans, and whether these findings might be useful in determining which patients may require subsequent cystography.	Absence of pelvic fluid on trauma CT scan indicates that bladder rupture is unlikely. Even when a partially opacified bladder is passively distended, bladder injury may be present despite the absence of contrast material extravasation.	2
41. Hsieh CH, Chen RJ, Fang JF, et al. Diagnosis and management of bladder injury by trauma surgeons. <i>Am J Surg</i> 2002; 184(2):143-147.	13	51	Retrospective review to analyze how bladder injuries have been managed as part of multiple traumas.	33 patients had abdominal CT, but only 20 were correctly diagnosed with accuracy of 60.6%. 24 patients had retrograde cystogram, with accuracy of 95.9% (23 of 24). Retrograde cystogram was performed in fewer than half of the patients (24 of 51), which means it is not feasible in many situations.	3

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42. Horstman WG, McClennan BL, Heiken JP. Comparison of computed tomography and conventional cystography for detection of traumatic bladder rupture. <i>Urol Radiol</i> 1991; 12(4):188-193.	9	25	To compare conventional cystograms and CT examinations for detection of traumatic bladder rupture.	5 of 25 had bladder ruptures. All 5 were detected by both CT and conventional cystogram. If properly performed, CT is as sensitive for detection of bladder injuries as conventional cystography.	2
43. Lis LE, Cohen AJ. CT cystography in the evaluation of bladder trauma. <i>J Comput Assist Tomogr</i> 1990; 14(3):386-389.	10	10 cases of ruptured bladder	To evaluate CT cystography with at least 350 cc distention.	CT cystography is at least as accurate as plain film cystography in assessing bladder trauma.”	2
44. Quagliano PV, Delair SM, Malhotra AK. Diagnosis of blunt bladder injury: A prospective comparative study of computed tomography cystography and conventional retrograde cystography. <i>J Trauma</i> 2006; 61(2):410-421; discussion 421-412.	9	CT with conventional cystography– (212 patients 19 had bladder rupture) CT without conventional cystography– (283 patients 27 had bladder rupture)	To prospectively assess accuracy of CT cystography by comparing it with conventional retrograde cystography for the diagnosis of blunt bladder injury.	<ul style="list-style-type: none"> • For CT with conventional cystography, CT cystography sensitivity and specificity was 95% and 100%, respectively; for conventional cystography, sensitivity and specificity were 95% and 100%, respectively. • For CT without conventional cystography, sensitivity and specificity of CT cystography for bladder rupture in these patients were both 100%. • Authors conclude that CT cystography is equivalent to conventional cystography for detecting the presence or absence of blunt bladder injury. 	1
45. Ali M, Safriel Y, Sclafani SJ, Schulze R. CT signs of urethral injury. <i>Radiographics</i> 2003; 23(4):951-963; discussion 963-956.	12	N/A	To evaluate CT scans of patients with pelvic fractures and urethrographically proved posterior urethral injuries and CT scans of patients with similar pelvic fractures who did not have urethral injuries.	CT is the accepted frontline imaging modality for blunt abdomino-pelvic trauma.	4
46. Chou CP, Huang JS, Wu MT, et al. CT voiding urethrography and virtual urethroscopy: preliminary study with 16-MDCT. <i>AJR</i> 2005; 184(6):1882-1888.	9	13 men 14 CT exams	CT voiding urethrography exams were prospectively performed with 16-MDCT to demonstrate CT voiding urethrography and CT virtual urethroscopy.	The full urethral structure was clearly shown by CT voiding urethrography and virtual urethroscopy in all patients. The results of CT voiding urethrography and conventional methods correlated closely with the urethral diseases being imaged.	3
47. Kim B, Kawashima A, LeRoy AJ. Imaging of the male urethra. <i>Semin Ultrasound CT MR</i> 2007; 28(4):258-273.	12	N/A	To describe imaging techniques, anatomy, and findings of various urethral and periurethral pathology in the male.	Cross-sectional imaging techniques of US, CT and MRI have been increasingly used for urethral and periurethral abnormalities in recent times. These studies are useful as an adjunctive tool in patients with the complex anatomical derangements.	4

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48. Koraitim MM, Reda IS. Role of magnetic resonance imaging in assessment of posterior urethral distraction defects. <i>Urology</i> 2007; 70(3):403-406.	9	21 men	To determine value of MRI in the assessment of posterior urethral distraction defects. Compared MRI and urethrographic findings and correlated with operative findings. MRI findings were also correlated with the incidence of posttraumatic impotence.	On MRI, the length of urethral defect and type of prostatic displacement could be correctly determined in 86% and 89% of the patients, respectively. MRI precisely delineated the extent of scar tissue and revealed the presence of paraurethral false tracks in 3 patients. MRI also showed avulsion of the corpus cavernosum, as well as lateral prostatic displacement in all 6 patients with posttraumatic impotence.	2

Evidence Table Key

Study Type Key

Numbers 1-7 are for studies of therapies while numbers 8-15 are used to describe studies of diagnostics.

1. Randomized Controlled Trial — Treatment
2. Controlled Trial
3. Observation Study
 - a. Cohort
 - b. Cross-sectional
 - c. Case-control
4. Clinical Series
5. Case reviews
6. Anecdotes
7. Reviews

8. Randomized Controlled Trial — Diagnostic
9. Comparative Assessment
10. Clinical Assessment
11. Quantitative Review
12. Qualitative Review
13. Descriptive Study
14. Case Report
15. Other (Described in text)

Strength of Evidence Key

- Category 1 - The conclusions of the study are valid and strongly supported by study design, analysis and results.
- Category 2 - The conclusions of the study are likely valid, but study design does not permit certainty.
- Category 3 - The conclusions of the study may be valid but the evidence supporting the conclusions is inconclusive or equivocal.
- Category 4 - The conclusions of the study may not be valid because the evidence may not be reliable given the study design or analysis.