

**American College of Radiology**  
**ACR Appropriateness Criteria®**

## Radiologic Management of Urinary Tract Obstruction

**Variant 1:** Urinary diversion after remote history of cystectomy for cancer. No fever, normal white blood cell (WBC) count and urine output. Loopogram shows no reflux into distal ureters. CT shows new moderate bilateral hydronephrosis.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Medical management without decompression	Usually not appropriate	Expert Consensus	N/A	N/A	3	3	0	0	0	0	0	0	0	0	0
Retrograde ureteral stenting	May be appropriate	Limited	N/A	N/A	4	4	0	0	0	0	0	0	0	0	0
		References		Study Quality											
		14 (20472267)		4											
		12 (10795614)		4											
		13 (16979745)		3											
PCN (includes PCNU)	Usually appropriate	Strong	N/A	N/A	7	n/a	0	0	0	0	0	0	0	0	0
		References		Study Quality											
		23 (19853233)		4											
		18 (8136591)		3											
		27 (9542016)		4											
		20 (14514833)		4											
		30 (9440851)		4											
		28 (6718717)		4											
		17 (8186603)		4											
		16 (9314366)		3											
		25 (10091780)		2											

[illegible]

**Variant 2:** Seven-day history of right flank pain, fever, and leukocytosis. Urinalysis positive for blood and infection. CT scan shows a 10 mm calculus in the mid right ureter without hydronephrosis.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Medical management without decompression	Usually not appropriate	Expert Consensus	N/A	N/A	2	2	0	0	0	0	0	0	0	0	0
Retrograde ureteral stenting	Usually appropriate	Strong	N/A	N/A	8	8	0	0	0	0	0	0	0	0	0
		References		Study Quality											
		33 (26662171)		1											
		40 (24698195)		1											
		41 (23795789)		2											

[illegible]

**Variant 3:** Pregnant patient (20 weeks) with 3-day history of left flank pain, fever, and leukocytosis. Urinalysis positive for infection. Ultrasound shows new, moderate left hydronephrosis.



		References	Study Quality														
		54 (22315095)	2														
		55 (19278608)	4														
		56 (15533473)	2														
		57 (15851050)	3														
PCN (includes PCNU)	Usually appropriate	Strong	N/A	N/A	8	n/a	0	0	0	0	0	0	0	0	0	0	0
		References	Study Quality														
		68 (23666587)	2														
		69 (23164390)	2														
		64 (2261404)	4														
		66 (2025771)	4														
		65 (1916512)	1														
		25 (10091780)	2														
		4 (1407920)	2														
		58 (3721300)	4														
		6 (2442872)	4														
		59 (20728326)	4														
		60 (20419970)	2														
		61 (21481096)	1														
		62 (21319508)	2														
		63 (18042018)	2														
		67 (8428414)	2														
		70 (19338533)	2														
Percutaneous antegrade ureteral stenting (with or without safety nephrostomy)	Usually appropriate	Limited	N/A	N/A	8	8	0	0	0	0	0	0	0	0	0	0	0
		References	Study Quality														
		71 (19945660)	4														
PCN (includes PCNU) followed by delayed surgery	May be appropriate	Limited	N/A	N/A	4	n/a	0	0	0	0	0	0	0	0	0	0	0
		References	Study Quality														









## Appendix Key

A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

**Appropriateness Category:** The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

**SOE:** Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References:** The citation number and PMID for the reference(s) associated with the recommendation.
- **Study Quality:** The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

**RRL:** Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

**Rating:** The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

**Median:** The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

**Final tabulations:** A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at [www.acr.org/ac](http://www.acr.org/ac).