Surgical Management of Stones: American Urological Association/Endourological Society Guideline, PART II



Dean Assimos, Amy Krambeck, Nicole L. Miller, Manoj Monga, M. Hassan Murad, Caleb P. Nelson, Kenneth T. Pace, Vernon M. Pais, Jr., Margaret S. Pearle, Glenn M. Preminger, Hassan Razvi, Ojas Shah and Brian R. Matlaga

From the American Urological Association Education and Research, Inc., Linthicum, Maryland

Purpose: This Guideline is intended to provide a clinical framework for the surgical management of patients with kidney and/or ureteral stones. The summary presented herein represents Part II of the two-part series dedicated to Surgical Management of Stones: American Urological Association/ Endourological Society Guideline. Please refer to Part I for introductory information and a discussion of pre-operative imaging and special cases.

Materials and Methods: A systematic review of the literature (search dates 1/1/1985 to 5/31/2015) was conducted to identify peer-reviewed studies relevant to the surgical management of stones. The review yielded an evidence base of 1,911 articles after application of inclusion/exclusion criteria. These publications were used to create the Guideline statements. Evidence-based statements of Strong, Moderate, or Conditional Recommendation were developed based on benefits and risks/burdens to patients. Additional directives are provided as Clinical Principles and Expert Opinions when insufficient evidence existed.

Results: The Panel identified 12 adult Index Patients to represent the most common cases seen in clinical practice. Three additional Index Patients were also created to describe the more commonly encountered special cases, including pediatric and pregnant patients. With these patients in mind, Guideline statements were developed to aid the clinician in identifying optimal management.

Conclusions: Proper treatment selection, which is directed by patient- and stonespecific factors, remains the greatest predictor of successful treatment outcomes. This Guideline is intended for use in conjunction with the individual patient's treatment goals. In all cases, patient preferences and personal goals should be considered when choosing a management strategy.

Key Words: nephrolithiasis; ureteroscopy; nephrostomy, percutaneous

GUIDELINE STATEMENTS

Treatment of Adult Patients with Ureteral Stones. 7. Patients with uncomplicated ureteral stones ≤ 10 mm should be offered observation, and those with distal stones of similar size should be offered MET with α -blockers.

(Index Patient 3) (Strong Recommendation; Evidence Strength: Grade B)

Natural history studies have shown that the likelihood of spontaneous stone passage correlates with stone size and location.¹ Several pharmacologic agents for medical expulsive therapy, including α_1 receptor

Abbreviations and Acronyms

EHL = electrohydraulic lithotripsy

MET = medical expulsive therapy

PCNL = percutaneous

nephrolithotomy

 $\mathsf{SWL} = \mathsf{shock}\mathsf{-wave} \ \mathsf{lithotripsy}$

 $\mathsf{URS} = \mathsf{ureteroscopy}$

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antagonists and calcium-channel blockers, have recently been tested for their ability to change the natural history of ureteral calculi by increasing spontaneous passage rates. The Panel's metaanalysis showed superior stone free rates in patients with <10 mm distal ureteral stones treated with α -blockers (77.3%) compared to placebo or no treatment (54.4%) (OR 3.79, 95% CI 2.84-5.06) (fig. 1). This effect was largely accounted for by trials in which tamsulosin 0.4 mg was administered daily in patients with <10 mm distal ureteral calculi.²

8. Clinicians should offer reimaging to patients prior to surgery if passage of the stone is suspected or if stone movement will change management. Reimaging should focus on the region of interest and limit radiation exposure to uninvolved regions. (Clinical principle)

Author_Year	a-Blocker/ event	a-Blocker/ n	Control/ event	Control/ n	9 OR (95% CI)	% Weigh
Gurbuz, 1947	52	105	3	35	10.47 (3.02, 36.30)	2.99
Cervenakov, 2002	41	51	32	53	2.69 (1.11, 6.51)	4.12
Autorino, 2005	28	32	19	32	4.79 (1.35, 16.94) 2	2.94
Yilmaz, 2005	67	86	15	28	3.06 (1.24, 7.52)	4.06
De Sio, 2006	45	50	27	46	6.33 (2.12, 18.92) 3	3.42
Erturhan, 2007	22	30	12	30	4.13 (1.39, 12.27)	3.43
Lojanapiwat, 2008	27	50	1	25	28.17 (3.53, 224.67)	1.50
Nardi Pedro, 2008	25	34	27	35 🔶	0.82 (0.27, 2.46) 3	3.41
Sayed, 2008	40	45	23	45	7.65 (2.55, 22.95) 3	3.41
Wang, 2008	51	64	17	31	3.23 (1.27, 8.22) 3	3.95
Agrawal, 2009	52	68	12	34	5.96 (2.42, 14.64)	4.07
Hermanns, 2009	39	50	40	50 🔶	0.89 (0.34, 2.32)	3.84
Porpiglia2, 2009	37	46	22	45	4.30 (1.69, 10.94) 3	3. 9 5
Salem, 2009	52	58	32	56	6.50 (2.40, 17.62) 3	3.73
Abdel-Meguid, 2010	61	82	42	79	2.56 (1.32, 4.97)	4.96
Ahmed, 2010	48	60	14	30	4.57 (1.76, 11.90) 3	3.87
Al-Ansari, 2010	41	50	28	50	3.58 (1.44, 8.91)	4.02
Vincendeau, 2010	46	66	43	63	1.07 (0.51, 2.26)	4.64
Zehri, 2010	23	33	12	32	3.83 (1.37, 10.75) 3	3.62
Aldemir, 2011	25	31	11	29	6.82 (2.13, 21.85) 3	3.21
Maitra, 2012	37	50	15	50	6.64 (2.77, 15.93)	4.16
Rahim, 2012	37	45	22	45	4.84 (1.85, 12.65) 3	3.85
Woo Heon, 2012	82	107	16	34	3.69 (1.64, 8.28)	4.40
Bajwa, 2013	23	30	11	30	5.68 (1.84, 17.49) 3	3.32
Phukan, 2013	51	60	12	30	8.50 (3.07, 23.52)	3.66
Lin, 2014	33	35	20	33	→ 10.73 (2.19, 52.54) 2	2.21
Fuyrk, 2015	140	166	127	155	1.19 (0.66, 2.13) 5	5.27
Overall (I-squared = 57.7%, p = 0.000)					3.79 (2.84, 5.06) 1	100.00
NOTE: Weights are	from random	effects analy	ysis	I .5 Favors contro	1 2 5 10 15 30 45 OI Favors MET	

Forest plot: Odds ratio of stone free rate for distal ureteral stones <10 mm in patients receiving any a-Blocker vs. Control

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