

ΛΙΘΙΑΣΗ ΤΟΥ ΟΥΡΟΠΟΙΗΤΙΚΟΥ

ΔΙΑΔΕΡΜΙΚΗ ΚΑΙ ΑΝΟΙΚΤΗ ΧΕΙΡΟΥΡΓΙΚΗ ΕΠΕΜΒΑΣΗ

Στυλιανός Θ. Γιαννακόπουλος
Αν. Καθηγητής Ουρολογίας
Δημοκριτείου Πανεπιστημίου Θράκης



PERCUTANEOUS PYELOLITHOTOMY

A New Extraction Technique

I. Fernström and B. Johansson

*From the Department of Diagnostic Radiology and Urology,
Karolinska sjukhuset, Stockholm, Sweden*

(Submitted for publication September 15, 1975)

Abstract. Recurrent renal calculous disease is often troublesome to treat because of technical difficulties associated with reoperation. Attempts to dissolve the stones by irrigation with various solutions has not had much success. A new extraction technique has therefore been devised whereby the stones can be removed through a percutaneous nephrostomy under radiological control. Three cases are described.

Surgery in patients with recurrent renal stones is a risky and sometimes dangerous procedure because of fibrosis and distorted anatomy after previous op-

After removal of the stone a nephrostomy catheter was maintained for 3 days and only removed when the patient was radiologically stone-free and unhindered passage of contrast to the ureter was seen.

CASE REPORT

Case 1

A 36-year-old man was first operated upon with a right-sided pyelolithotomy in 1970. There were no postoperative complications but in 1972 recurrence of stones necessitated reoperation, described as a difficult procedure because of massive adhesions around the renal pelvis. Two

Nomenclature in PCNL or The Tower Of Babel: a proposal for a uniform terminology

David Schilling · Tanja Hüsch · Markus Bader · Thomas R. Herrmann · Udo Nagele ·
Training and Research in Urological Surgery and Technology (T.R.U.S.T.)-Group

Term	Definition
<i>PCNL-systems</i>	
Conventional PCNL	Sheath diameter >22 F Closed/open irrigation
miniPCNL	Sheath diameter \leq 22 Ch Closed/open irrigation
MIP	Sheath diameter 16.5 Ch Continuous low-pressure irrigation
Ultra-mini PCNL	Sheath diameter 11–13 Fr Closed/open irrigation
Mini-micro	Sheath diameter 8 Fr
Micro-PCNL	Sheath diameter <5 Fr Closed irrigation

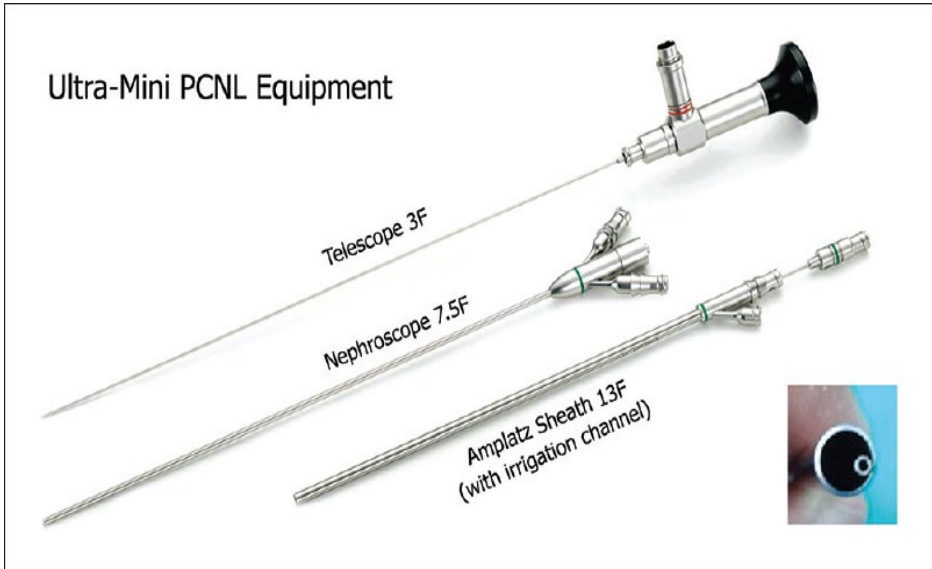
STANDARD PCNL
>20fr



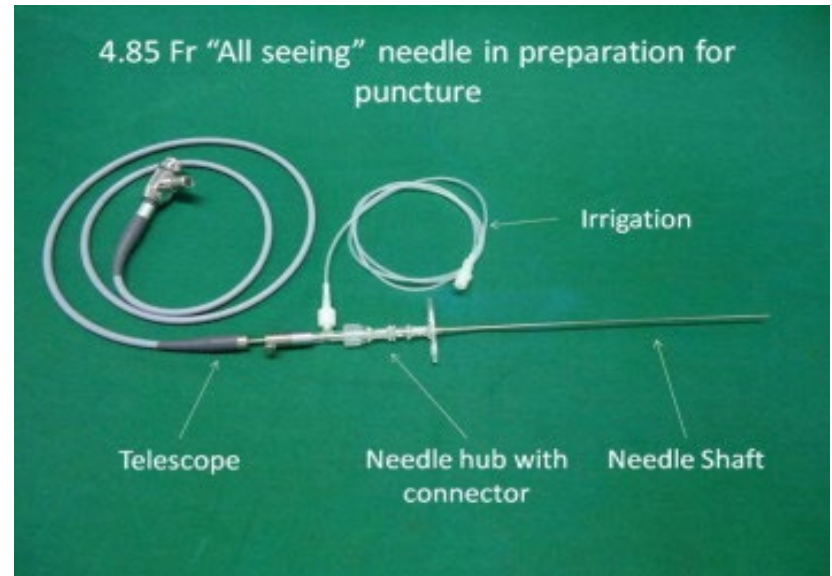
MINI PCNL
14-20fr



SUPER/ULTRA MINI
PCNL
11-13fr



MICRO PCNL/
mini MICRO PCNL 4.85-8fr



ΘΕΣΗ ΑΣΘΕΝΟΥΣ



ΠΡΗΝΗΣ



ΥΠΤΙΑ

CROES STUDY: ΠΡΗΝΗΣ 80,3%

ΥΠΤΙΑ 19,7%

Prone Versus Supine Percutaneous Nephrolithotomy: What Is Your Position?

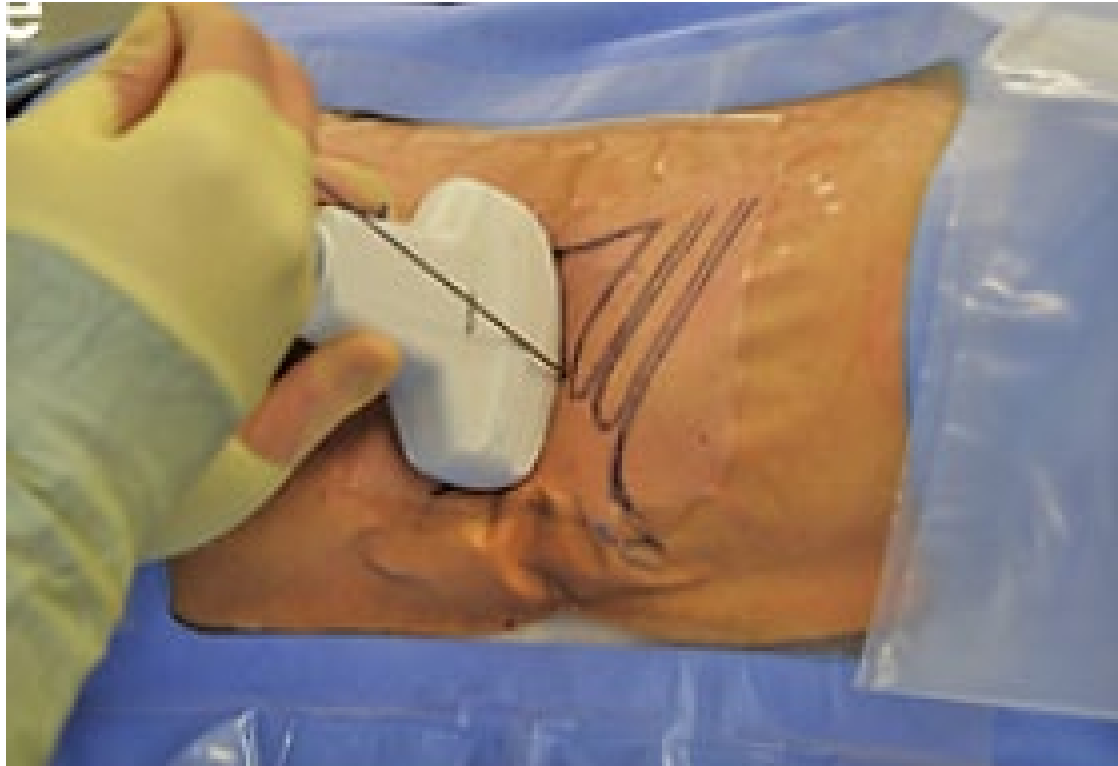
Roshan M. Patel¹ · Zhamshid Okhunov¹ · Ralph V. Clayman¹ · Jaime Landman¹

The most important factor in selecting a prone or supine approach is the experience of the surgical team

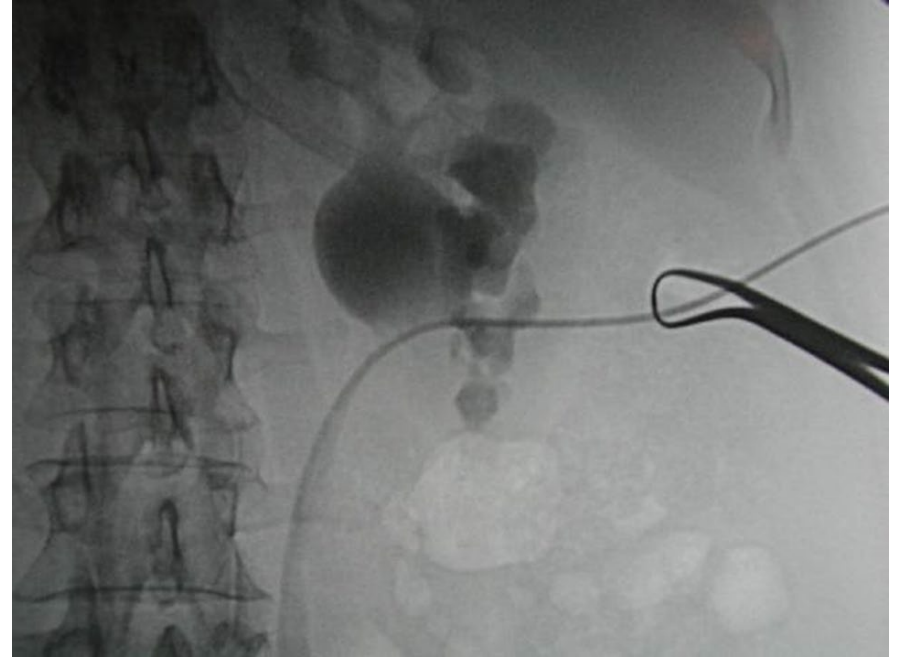
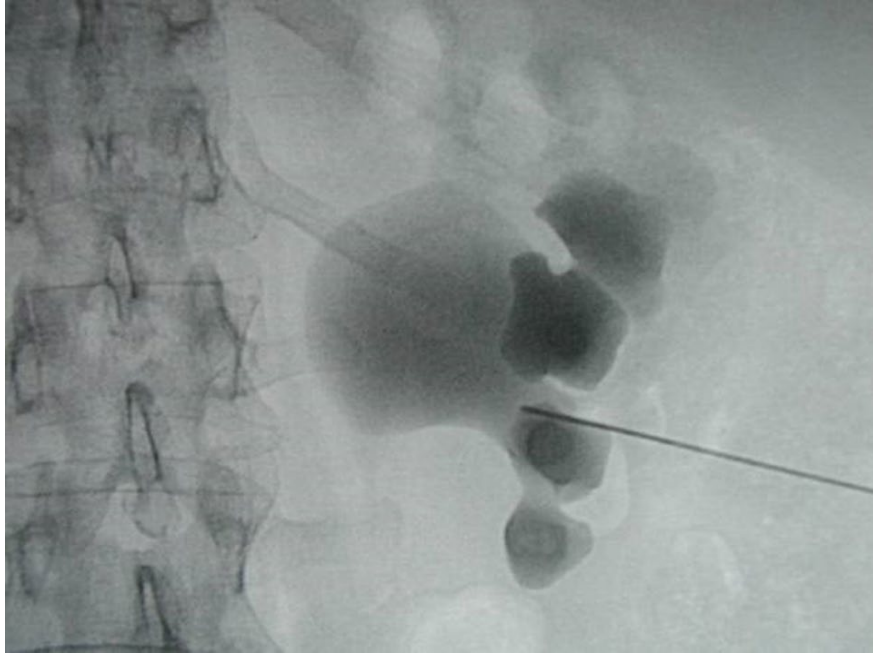
ΜΕΘΟΔΟΣ ΑΡΧΙΚΗΣ ΠΑΡΑΚΕΝΤΗΣΗΣ

- Με χρήση ΥΠΕΡΗΧΩΝ
- Με χρήση ΑΚΤΙΝΟΣΚΟΠΗΣΗΣ
- Με ΕΝΔΟΣΚΟΠΙΚΗ ΚΑΘΟΔΗΓΗΣΗ

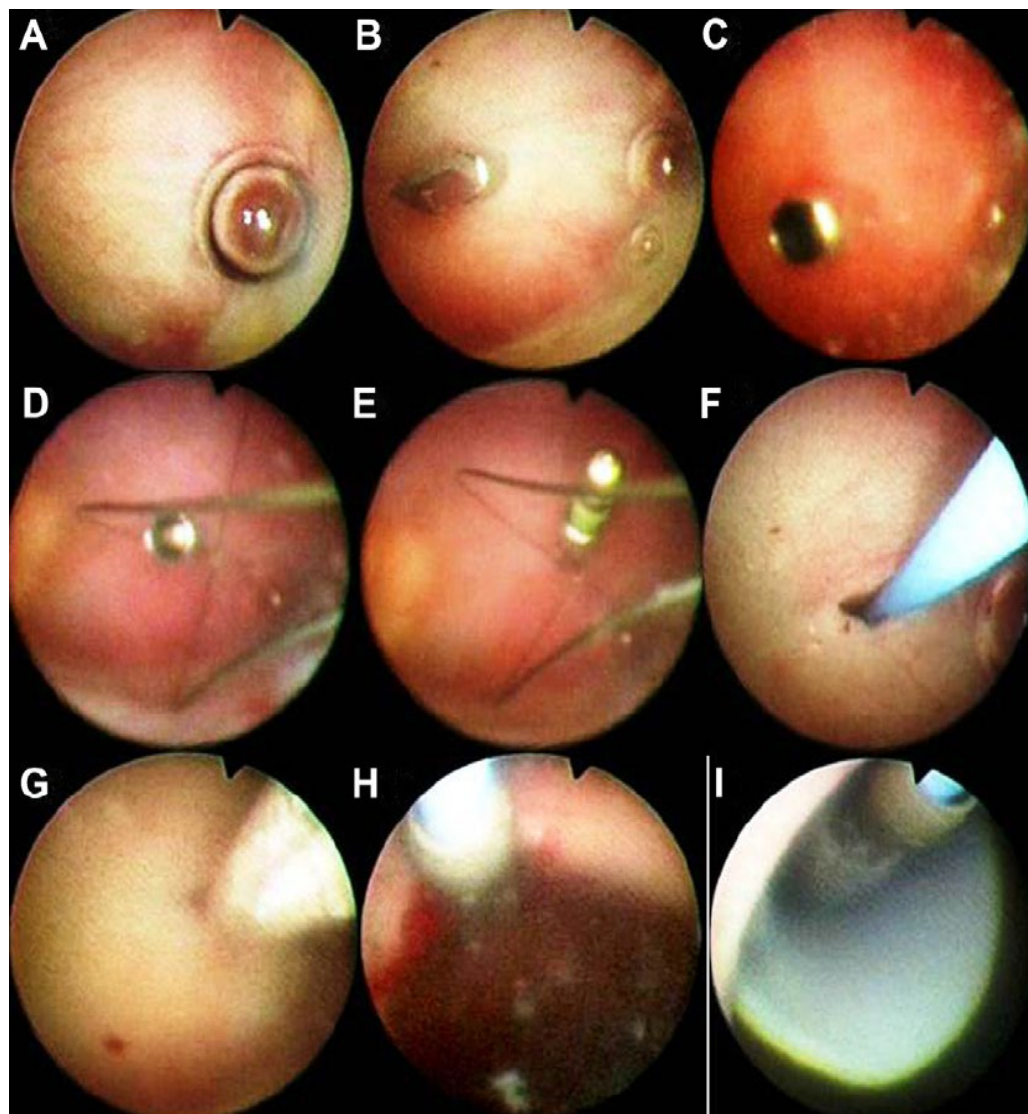
ΜΕ ΥΠΕΡΗΧΟΓΡΑΦΙΚΗ ΚΑΘΟΔΗΓΗΣΗ



ΜΕ ΑΚΤΙΝΟΣΚΟΠΗΣΗ

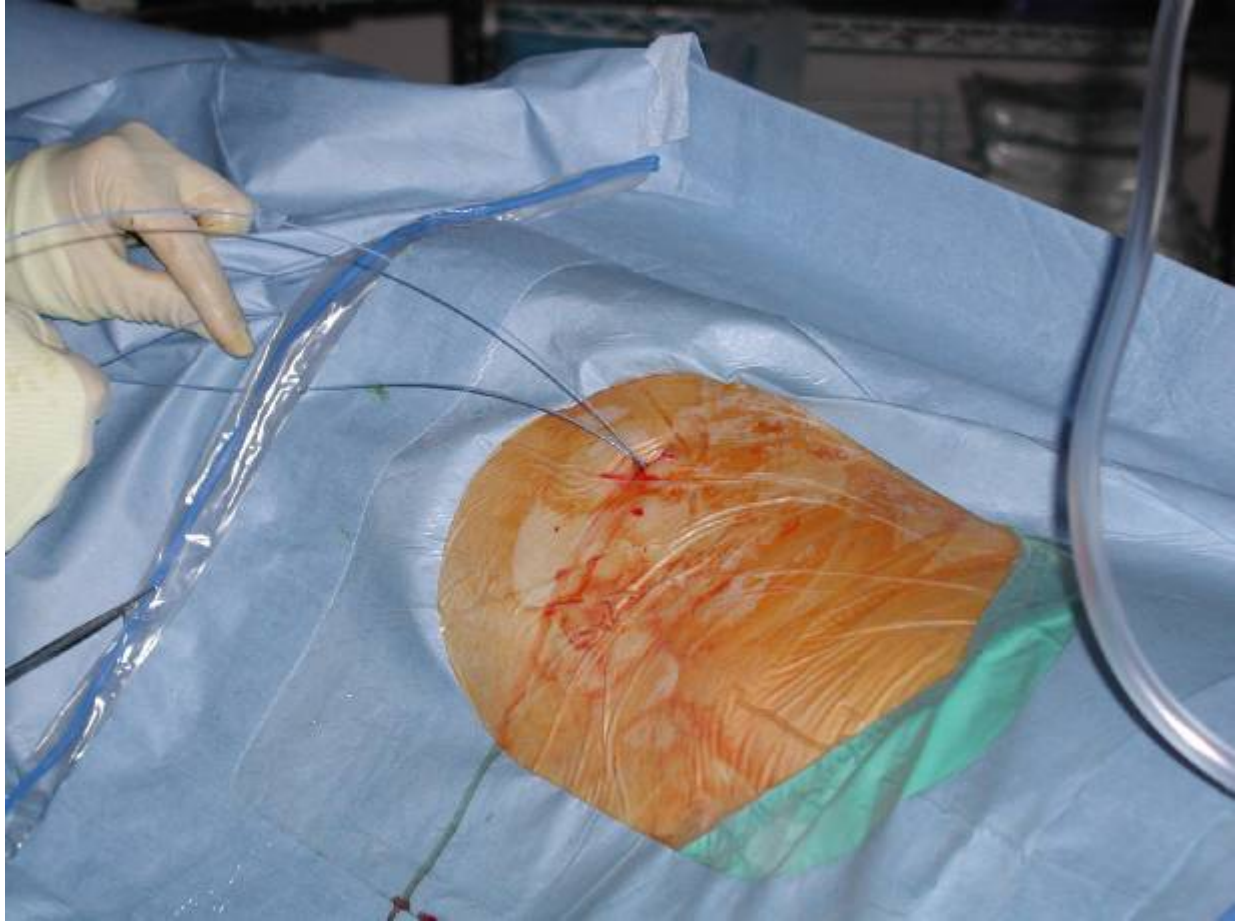


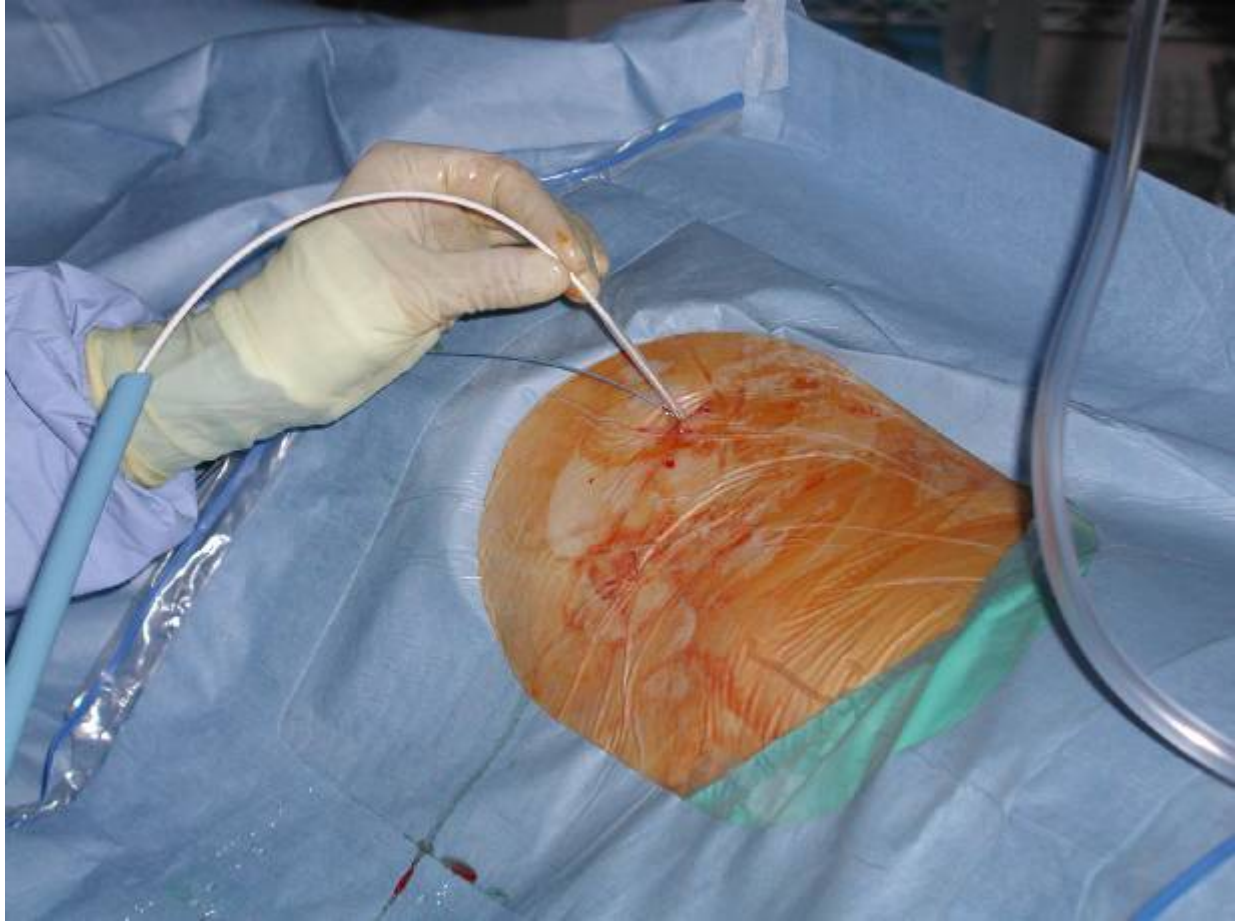
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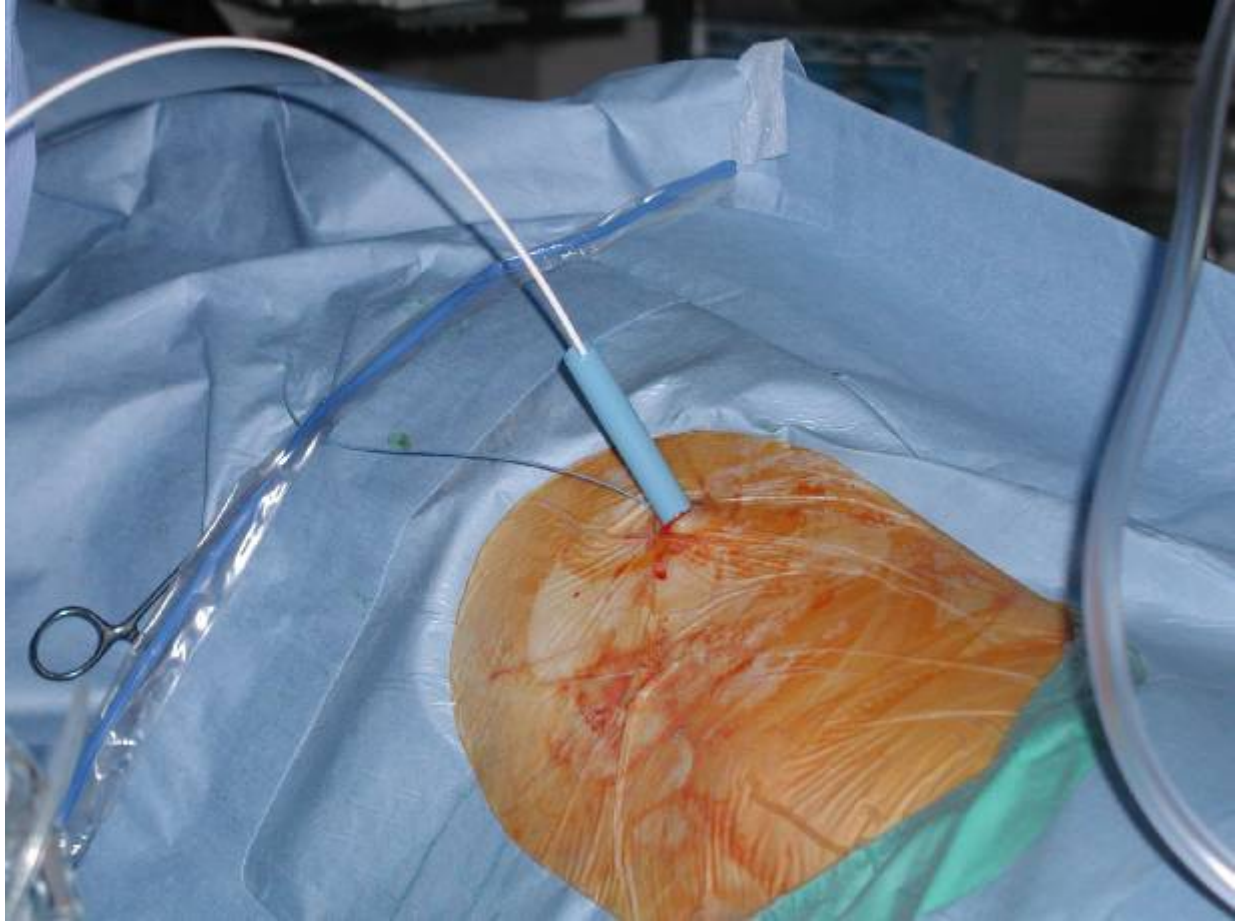


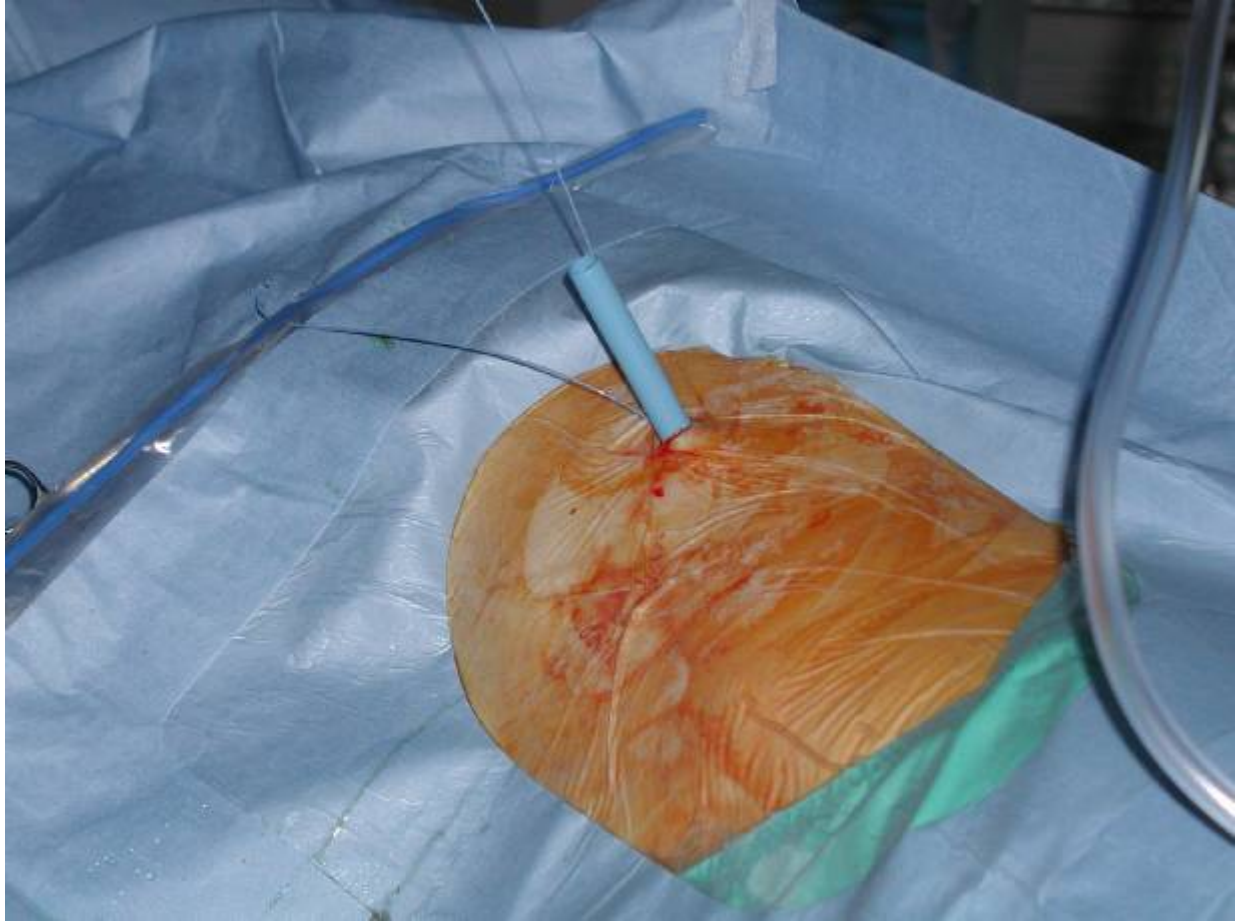










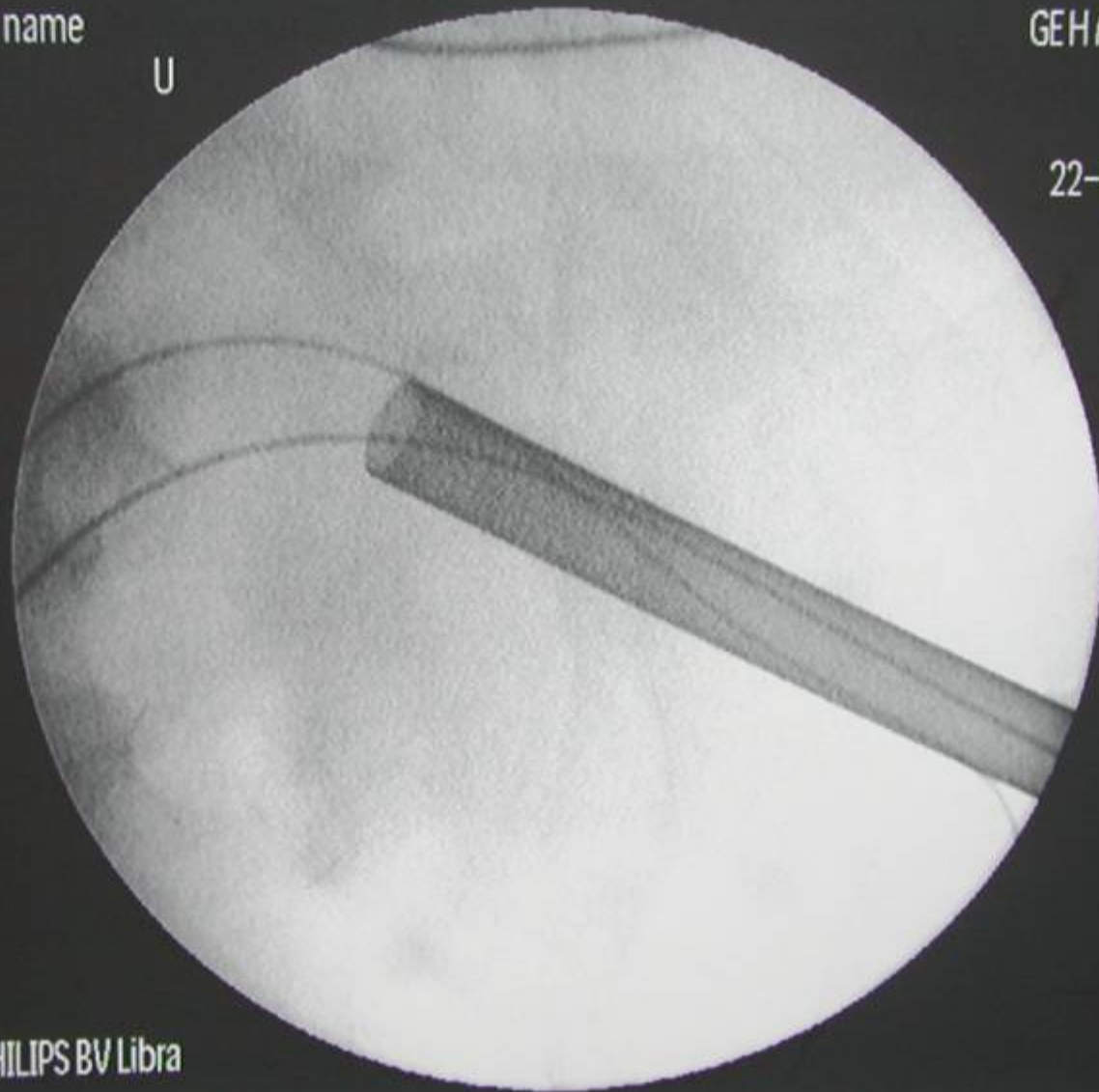


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GEH ALEXADROYPOLIS

22-07-2005 13:47



PHILIPS BV Libra



ΠΑΡΟΧΕΤΕΥΣΗ ΤΟΥ ΣΥΣΤΗΜΑΤΟΣ ΣΤΟ ΤΕΛΟΣ ΤΗΣ ΕΠΕΜΒΑΣΗΣ

Urinary diversion

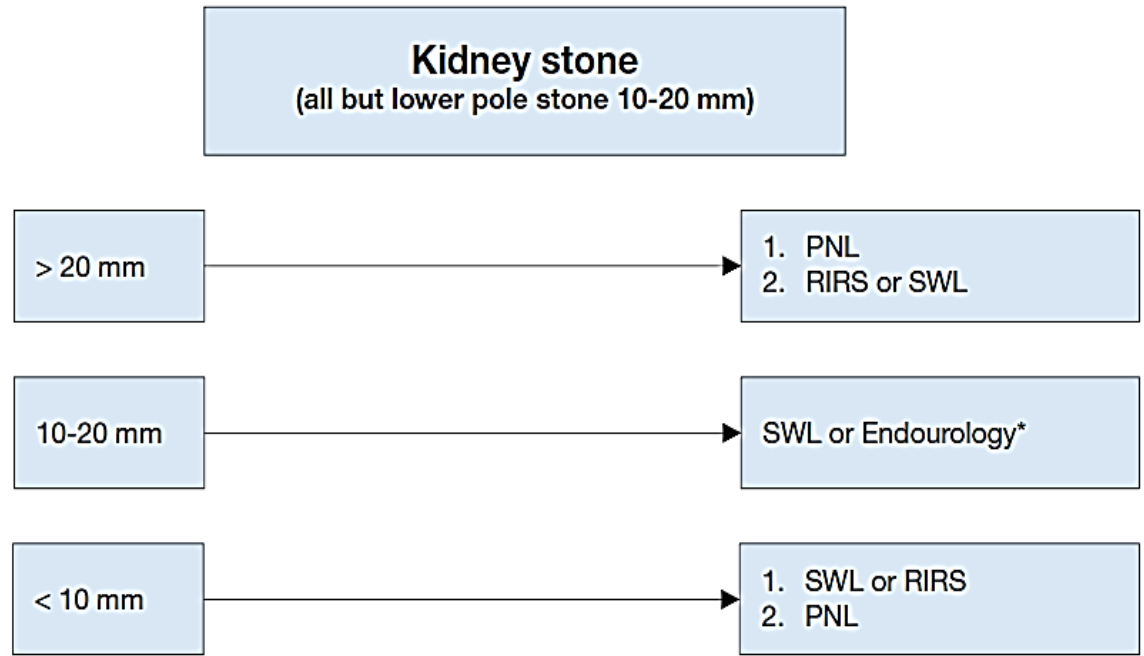
u	DT	Double tube: nephrostomy tube and ureteral stent
	TU	Tube: only nephrostomy tube
	TL	Tubeless: only ureteral stent
	TT	Totally tubeless: no stents in place
	TT _a	Removal of ureteric catheter within procedure ^a
	TT _b	Removal of ureteric catheter within 24 h

Tract treatment^b

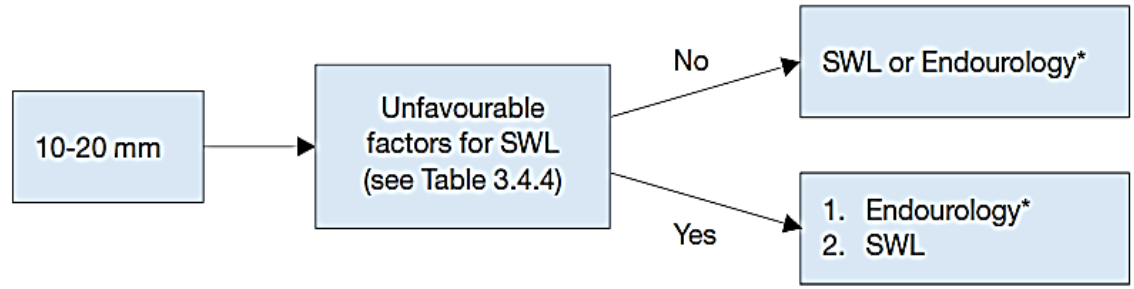
t	SL	Sealed: closure of access tract
	NS	Not sealed: no closure of the tract

^a Before admission to the ward

^b Only applies for tubeless or totally tubeless technique



Lower pole stone
> 20 mm and < 10 mm: as above



ΕΝΔΕΙΞΕΙΣ

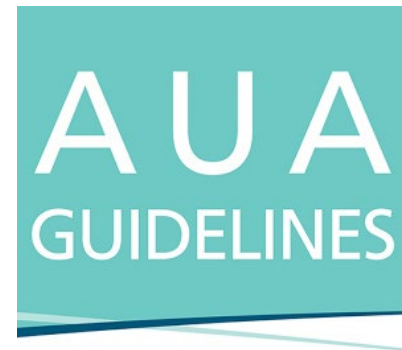
1. ΚΟΡΑΛΛΙΟΕΙΔΕΙΣ ΛΙΘΟΙ
2. ΛΙΘΟΙ >2 cm
3. ΛΙΘΟΙ ΚΑΤΩ ΚΑΛΥΚΑ >1 cm
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7. ΕΙΔΙΚΕΣ ΠΕΡΙΠΤΩΣΕΙΣ

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American
Urological
Association



2017

As recommended in the 2005 AUA guideline on the Management of Staghorn Calculi, PCNL should also be the first treatment utilized for most patients with staghorn calculi.⁴

Multi-session retrograde endoscopic lithotripsy of large renal calculi in obese patients

Wheat C. Jeffery, Roberts W. William, Wolf Jr Stuart J., ;

Department of Urology, University of Michigan Health System, Ann Arbor, Michigan, USA

Dec 2009 (Vol. 16, Issue 6, Pages(4915 - 4920)

PMID: 20003667

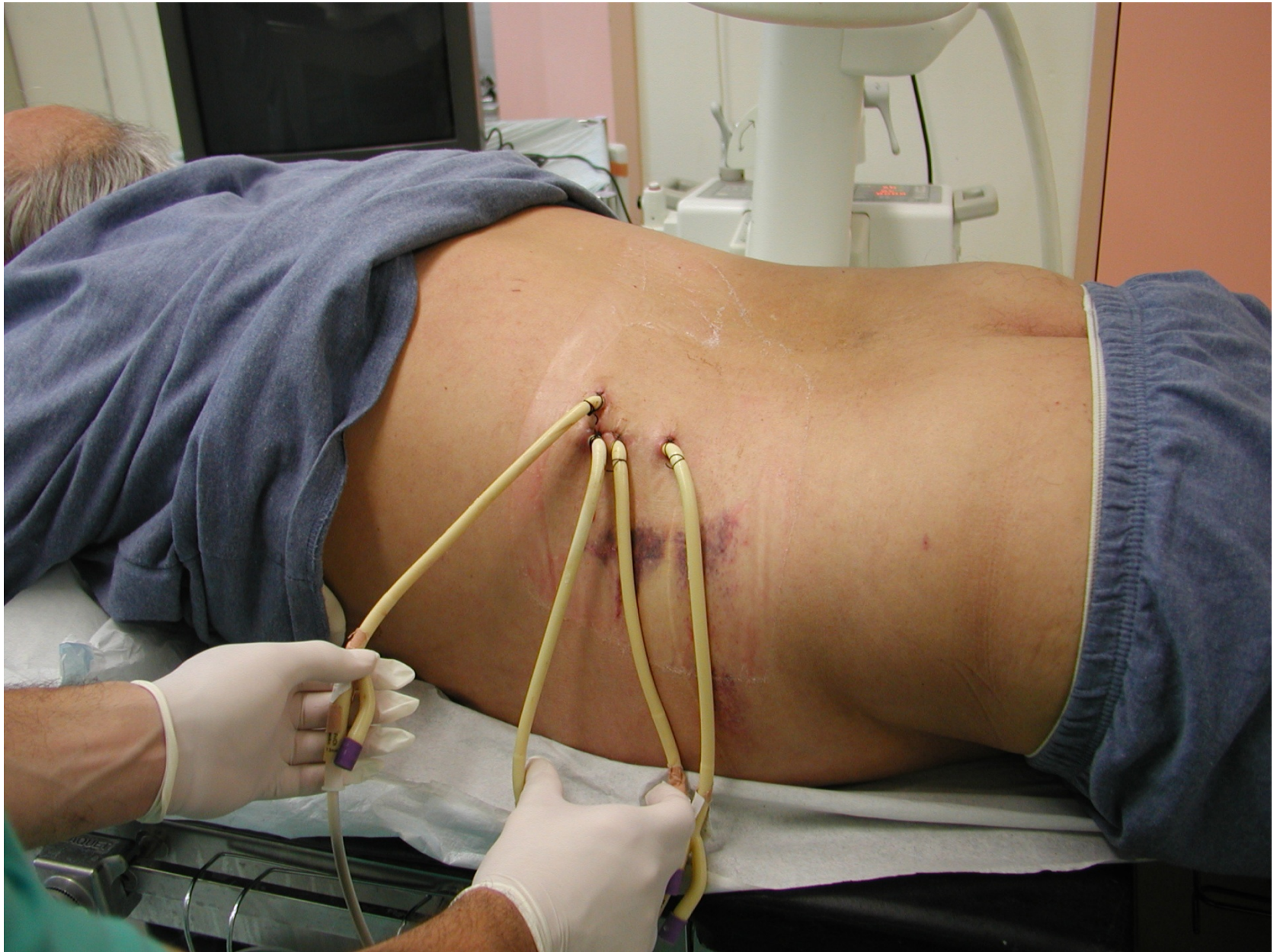
Συνολικά 9 ασθενείς εκ των οποίων 6 με κοραλλιοειδείς λίθους
Ποσοστό ελεύθερων λίθου 33%, με μ.ο. 2,3 συνεδρίες ανά ασθενή

ΔΙΑΔΕΡΜΙΚΗ ΛΙΘΟΤΡΙΨΙΑ ΓΙΑ ΚΟΡΑΛΛΙΟΕΙΔΕΙΣ ΛΙΘΟΥΣ

ΣΥΓΓΡΑΦΕΙΣ	ΑΡΙΘΜΟΣ ΝΕΦΡΙΚΩΝ ΜΟΝΑΔΩΝ	ΑΡΙΘΜΟΣ ΕΠΕΜΒΑΣΕΩΝ	ΕΛΕΥΘΕΡΟΙ ΛΙΘΟΥ
Lam et al	91	2,7	87%
Snyder et al	75	1,2	87%
Winfield et al	23	2,7	86%
Kahnoski et al	52	2,6	85%
Schulz et al	90	2,7	77%
Al-Kohlany et al	43	2,1	74%

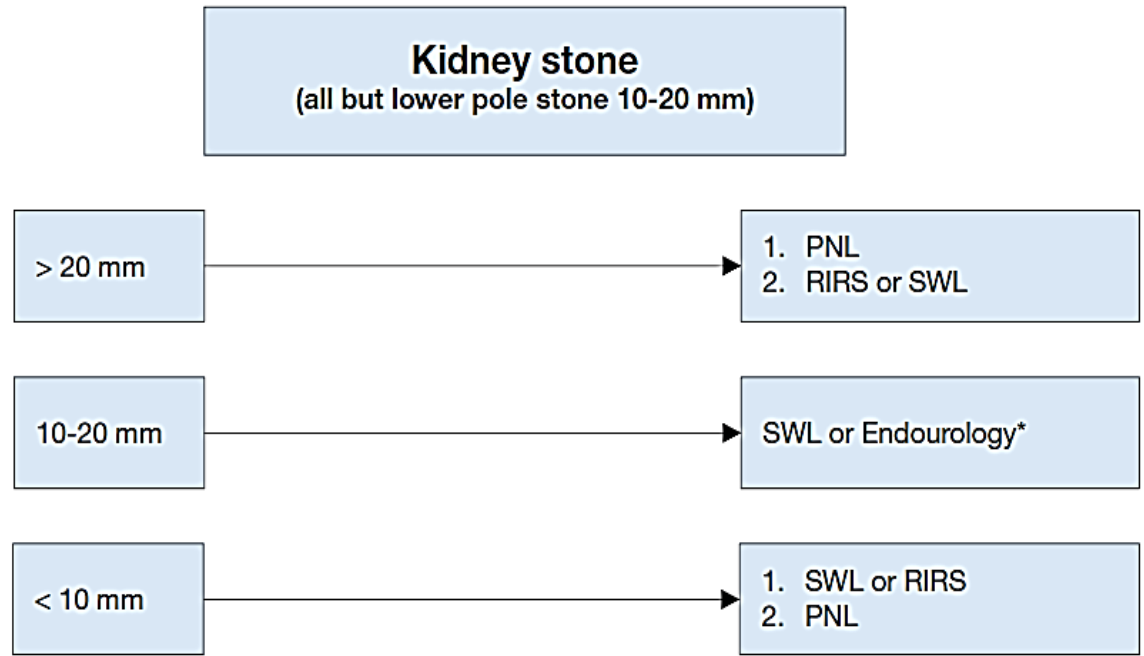




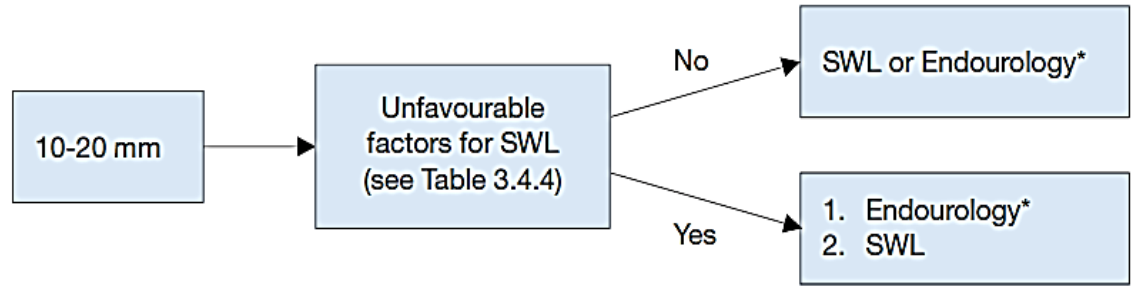


ΕΝΔΕΙΞΕΙΣ

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7. ΕΙΔΙΚΕΣ ΠΕΡΙΠΤΩΣΕΙΣ



Lower pole stone
> 20 mm and < 10 mm: as above



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

Abbreviations and Acronyms

EHL = electrohydraulic lithotripsy
MET = medical expulsive therapy
PCNL = percutaneous nephrolithotomy
SWL = shock-wave lithotripsy
URS = ureteroscopy

Accepted for publication May 23, 2016.
The complete guideline is available at <http://www.auanet.org/common/pdf/education/clinical-guidance/Surgical-Management-of-Stones.pdf>.
This document is being printed as submitted independent of editorial or peer review by the editors of *The Journal of Urology*®.

Guideline Statement 22

In symptomatic patients with a total renal stone burden >20 mm, clinicians should offer PCNL as first-line therapy. (Index Patient 8) Strong Recommendation; Evidence Level Grade C

TABLE 4 Review of the literature on RIRS treatment of kidney stones >2 cm

Authors	<i>n</i>	Stone size	Operative time	Mean number of procedures	Overall success rate	Complications
Breda <i>et al.</i> [6]	15	20–25 mm	83.3	2.3	93.3	1 fever 2 gross haematuria
El-Anany <i>et al.</i> [11]	30	>2 cm	85	1.0	77	1 haematuria 2 fever
Grasso <i>et al.</i> [16]	51	>2 cm	–	1.3	91.0	1 pyelonephritis 1 haematuria 1 cerebrovascular accident
Riley <i>et al.</i> [17]	22	2.5–5 cm	72	1.8	90.9	1 urosepsis
Mariani [18]	15	2–4 cm	47	1.5	92.0	1 colic
Breda <i>et al.</i> [19]	27	>2 cm	66	1.6	85.1	1 significant bleeding 1 ureteral perforation
	24	<2 cm	61	1.2	100	1 pyelonephritis 4 UTI
Hyams <i>et al.</i> [20]	120	2–3 cm	74	1.1	85	1 urethral perforation 1 febrile UTI 2 steinstrasse 1 subcapsular haematoma 1 fever 1 acute urinary retention 1 pyelonephritis
Mariani [21]	16	41–97 mm	49	2.4	88.0	3 fever 3 steinstrasse 1 pneumonia
Present study	34	2–4 cm	58.2	1.2	88.2	1 fever 1 urosepsis 1 steinstrasse

Comparison of percutaneous nephrolithotomy and retrograde flexible nephrolithotripsy for the management of 2–4 cm stones: a matched-pair analysis

Tolga Akman, Murat Binbay, Faruk Ozgor, Mesut Ugurlu, Erdem Tekinarslan, Cem Kezer, Rahmi Aslan and Ahmet Yaser Muslumanoglu

Department of Urology, Haseki Training and Research Hospital, Istanbul, Turkey

Accepted for publication 13 June 2011

TABLE 2 Comparison of perioperative and postoperative data in PCNL and RIRS patients

	PCNL	RIRS	P
Mean operation duration ± SD (min)	38.7 + 11.6 (14–60)	58.2 + 13.4 (30–85)	<0.001
Mean fluoroscopic screening time ± SD (min)	4.9 ± 2.1 (1–12)	1.8 ± 0.6 (0.7–3)	<0.001
Mean hospitalization time ± SD (h)	61.4 ± 34.0 (24–192)	30.0 ± 37.4 (18–192)	<0.001
Mean drop in haemoglobin level ± SD (g/dL)	1.65 ± 1.20 (0.1–5)	0.29 ± 0.17 (0.0–0.5)	<0.001
Complications			
Fever	2	1	0.72
Sepsis	–	1	
Need for blood transfusion	2	–	
Prolonged urine leakage	1	–	
Steinstrasse	–	1	
Increase in creatinine levels	–	1	
STONE-FREE	91.2%	73,5% (1η συνεδρία) 88,2% (2η συνεδρία)	

Retrograde Intrarenal Surgery versus Percutaneous Lithotripsy to Treat Renal Stones 2-3 cm in Diameter

Kursad Zengin,¹ Serhat Tanik,¹ Nihat Karakoyunlu,²
Nevzat Can Sener,³ Sebahattin Albayrak,¹ Can Tuygun,² Hasan Bakirtas,¹
M. Abdurrahim Imamoglu,¹ and Mesut Gurdal¹

¹Department of Urology, Medical Faculty, Bozok University, Yozgat, Turkey

²Department of Urology, Ministry of Health, Diskapi Education and Research Hospital, Ankara, Turkey

³Department of Urology, Ministry of Health, Numune Education and Research Hospital, Adana, Turkey

	Group 1	Group 2	P
Age (years)	45.6	48.3	0.546
Stone diameter (cm)	2.6	2.3	0.151
Gender (M/F)	34/40	38/42	
BMI (kg/m ²)	30.35	31.58	0.095
Stone-free rate (%)	95.5	80.6	0.061
Operative time (min)	63	81	<0.001
Fluoroscopy time (s)	38	18	<0.001
Change in creatinine level (mg/dL)	0.24	0.11	0.039
Decrease in hemoglobin level (mg/dL)	1.4	0.3	<0.001
Hospital stay (days)	2.3	1.1	0.032

TABLE 2: Complications assessed using the modified Clavien grading system.

	Group 1	Group 2
Grade 1	5	3
Grade 2	3	4
Grade 3		
A	1	0
B	1	0
Grade 4		
A	0	0
B	0	0
Grade 5	0	0
Total	10 (8.8%)	7 (13.5%)

A Randomized Controlled Study to Analyze the Safety and Efficacy of Percutaneous Nephrolithotripsy and Retrograde Intrarenal Surgery in the Management of Renal Stones More Than 2 cm in Diameter

Piotr Bryniarski, Ph.D., Andrzej Paradysz, Ph.D., Marcin Zyczkowski, Ph.D., Andrzej Kupilas, Ph.D., Krzysztof Nowakowski, M.D., and Rafał Bogacki, M.D.

TABLE 3. POSTOPERATIVE CHARACTERISTICS OF ANALYZED GROUPS OF PATIENTS

	<i>PCNL group (n=32)</i>	<i>RIRS group (n=32)</i>	<i>P value</i>
OR time, min, mean (SD)	100.1 (29.9)	85 (17.6)	0.02
Hemoglobin, g/dL, mean (SD) ^a	12.3 (1.4)	13.5 (1.2)	0.002
Hematocrit, %, mean (SD) ^a	35.1 (4.1)	37.3 (4)	0.06
Hemoglobin drop, %, mean (SD)	11.8 (6.6)	6.4 (5.7)	< 0.001
Hematocrit drop, %, mean (SD)	12.7 (7.7)	7 (6.6)	< 0.001
Blood transfusion, No. (%)			
Yes	5 (15.6)	1 (3.1%)	0.08
No	27 (84.3)	31 (96.8%)	
Presence of stone at radiography, no. (%) ^b			
Yes	6 (18.75)	16 (50)	0.008
No	26 (81.25)	16 (50)	
VAS, points, mean (SD) ^c	3.5 (0.4)	2.5 (0.6)	0.002
Pethidine hydrochloride, mg, mean (SD) ^d	317.1 (192)	160.9 (101.3)	< 0.001
Pain treatment, d, mean (SD)	2.65 (1.4)	1.1 (0.4)	< 0.001
Fever >38°, no. (%)			
Yes	9 (28.1)	8 (25)	0.7
No	23 (71.8)	24 (75)	
Hospital stay, d, mean (SD)	11.3 (4.4)	6.8 (3.4)	< 0.001
Presence of stone at radiography, no. (%) ^e			
Yes	2 (6.25)	8 (25)	0.03
No	30 (93.75)	24 (75)	

A Randomized Controlled Study to Analyze the Safety and Efficacy of Percutaneous Nephrolithotripsy and Retrograde Intrarenal Surgery in the Management of Renal Stones More Than 2 cm in Diameter

Piotr Bryniarski, Ph.D., Andrzej Paradysz, Ph.D., Marcin Zyczkowski, Ph.D., Andrzej Kupilas, Ph.D., Krzysztof Nowakowski, M.D., and Rafał Bogacki, M.D.

RE-TREATMENT RATE

PCNL

RIRS

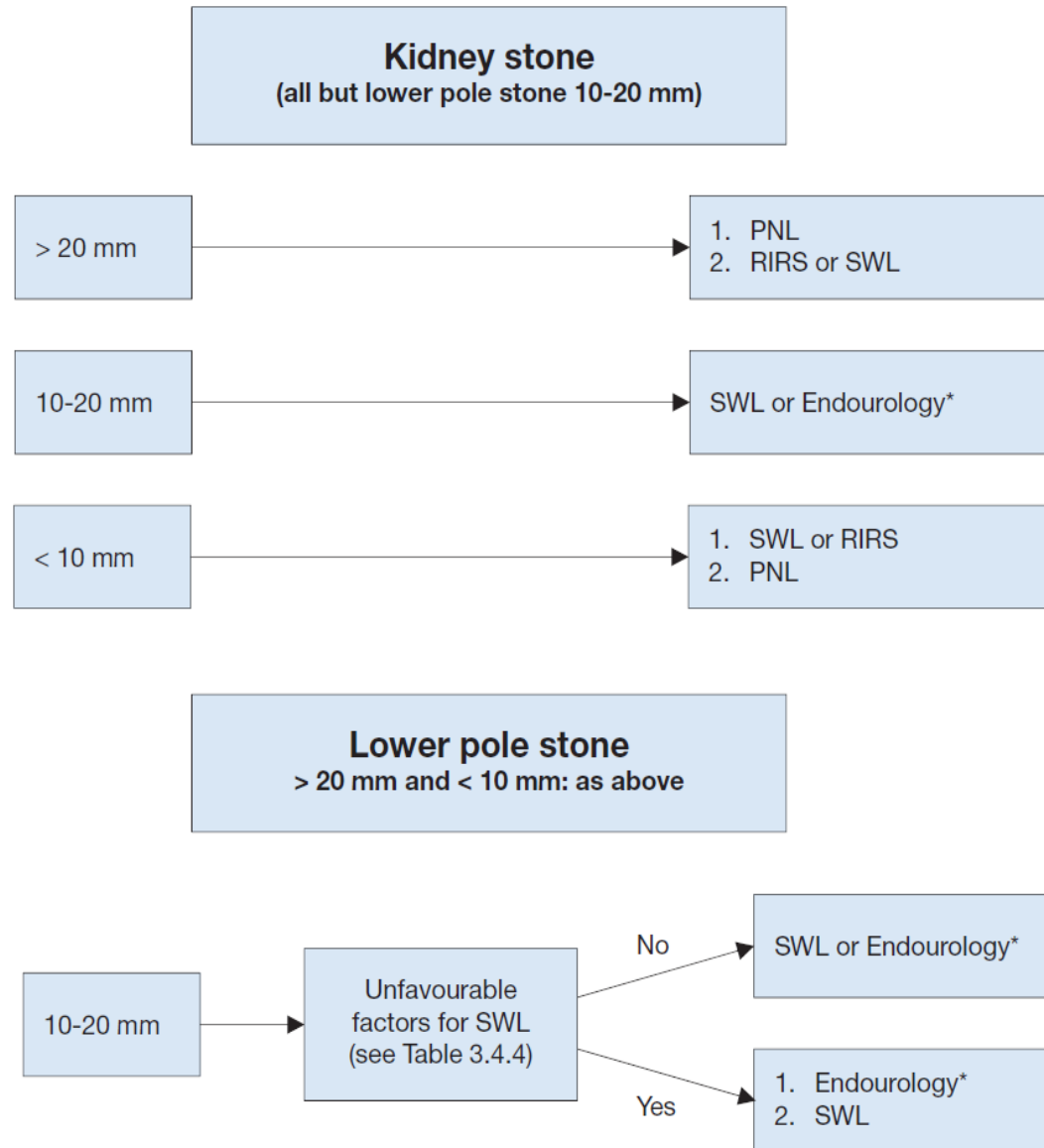
6,25%

12,5%

ΕΝΔΕΙΞΕΙΣ

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Figure 3.4.1: Treatment algorithm for renal calculi



Retrograde Intrarenal Surgery Versus Percutaneous Nephrolithotomy Versus Extracorporeal Shockwave Lithotripsy for Treatment of Lower Pole Renal Stones: A Meta-Analysis and Systematic Review

Wei Zhang, MD,^{1*} Tie Zhou, MD, PhD,^{1*} Tengyun Wu, MD,^{2*} Xiaofeng Gao, MD, PhD,¹ Yonghan Peng, MD,¹ Chuanliang Xu, MD, PhD,¹ Qi Chen, PhD,³ Ruixiang Song, MD,¹ and Yinghao Sun, MD, PhD¹

EUROPEAN UROLOGY 67 (2015) 612–616

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Platinum Priority – Brief Correspondence

Editorial by Jacob M. Patterson and Nicholas J. Rukin on pp. 617–618 of this issue

Systematic Review and Meta-analysis of the Clinical Effectiveness of Shock Wave Lithotripsy, Retrograde Intrarenal Surgery, and Percutaneous Nephrolithotomy for Lower-pole Renal Stones

James F. Donaldson^{a,*}, Michael Lardas^a, Duncan Scrimgeour^a, Fiona Stewart^b, Steven MacLennan^b, Thomas B.L. Lam^{a,b}, Samuel McClinton^{a,b}

^aDepartment of Urology, Aberdeen Royal Infirmary, Aberdeen, UK; ^bAcademic Urology Unit, University of Aberdeen, Aberdeen, UK

Retrograde Intrarenal Surgery Versus Percutaneous Nephrolithotomy Versus Extracorporeal Shockwave Lithotripsy for Treatment of Lower Pole Renal Stones: A Meta-Analysis and Systematic Review

Wei Zhang, MD,^{1*} Tie Zhou, MD, PhD,^{1*} Tengyun Wu, MD,^{2*} Xiaofeng Gao, MD, PhD,¹ Yonghan Peng, MD,¹ Chuanliang Xu, MD, PhD,¹ Qi Chen, PhD,³ Ruixiang Song, MD,¹ and Yinghao Sun, MD, PhD¹

- Η PCNL είχε το υψηλότερο stone-free rate σε σχέση με RIRS και SWL
- Καμία διαφορά στο ποσοστό επιπλοκών, αν και μετάγγιση αίματος έλαβε χώρα μόνο σε ασθενείς με PCNL
- Η PCNL είχε την πιο παρατεταμένη νοσηλεία
- Η SWL είχε το υψηλότερο re-treatment rate

ΕΝΔΕΙΞΕΙΣ

1. ΚΟΡΑΛΛΙΟΕΙΔΕΙΣ ΛΙΘΟΙ
2. ΛΙΘΟΙ >2 cm
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7. ΕΙΔΙΚΕΣ ΠΕΡΙΠΤΩΣΕΙΣ



ΠΡΟΒΛΗΜΑΤΑ ΤΗΣ ΕΝΔΟΠΥΕΛΟΤΟΜΗΣ

- Χαμηλότερα ποσοστά επιτυχίας από την πυελοπλαστική
- Ποσοστά επιτυχίας που μειώνονται σε βάθος χρόνου

1. Yanke et al. J Urol 2008; 180: 1397
2. Dimarco et al. J Endourol 2006; 20: 707

First Prize

Long-Term Success of Antegrade Endopyelotomy Compared with Pyeloplasty at a Single Institution

DAVID S. DIMARCO, M.D.,¹ MATTHEW T. GETTMAN, M.D.,¹ SHAWN M. MCGEE, M.D.,¹
GEORGE K. CHOW, M.D.,¹ ANDREW J. LEROY, M.D.,² JEFF SLEZAK, M.S.,³
DAVID E. PATTERSON, M.D.,¹ and JOSEPH W. SEGURA, M.D.¹

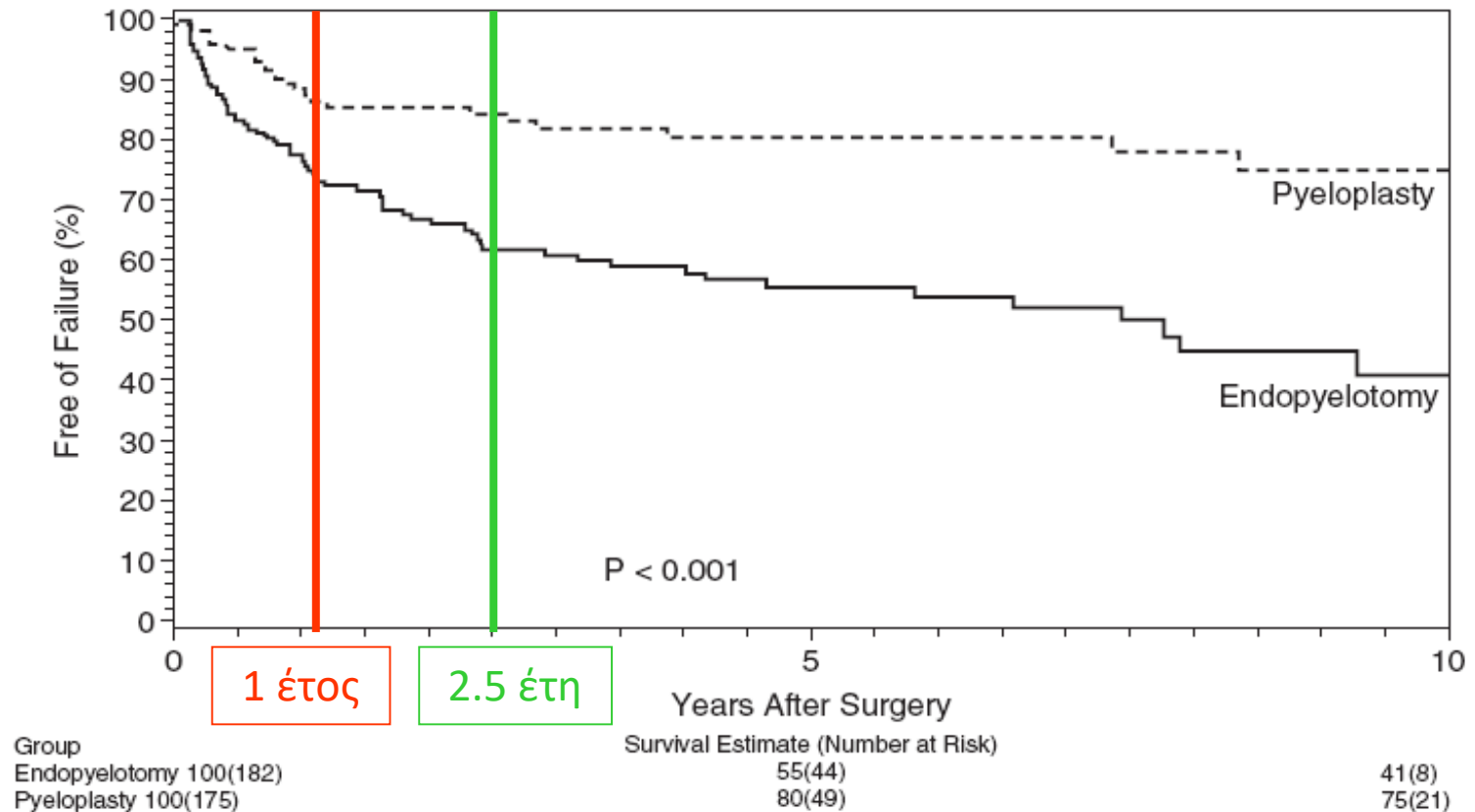


FIG. 1. Recurrence-free survival after endopyelotomy compared with pyeloplasty.

Simultaneous laparoscopic management of ureteropelvic junction obstruction and renal lithiasis: the combined experience of two academic centers and review of the literature

This article was published in the following Dove Press journal:

Research and Reports in Urology

20 May 2014

[Number of times this article has been viewed](#)

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Introduction: Approximately one out of five patients with ureteropelvic junction obstruction (UPJO) present lithiasis in the same setting. We present our outcomes of simultaneous laparoscopic management of UPJO and pelvic or calyceal lithiasis and review the current literature.

Methods: Thirteen patients, with a mean age of 42.8 ± 13.3 years were diagnosed with UPJO and pelvic or calyceal lithiasis. All patients were subjected to laparoscopic dismembered Hynes–Anderson pyeloplasty along with removal of single or multiple stones, using a combination of laparoscopic graspers, irrigation, and flexible nephroscopy with nitinol baskets.

Results: The mean operative time was 218.8 ± 66 minutes. In two cases, transposition of the ureter due to crossing vessels was performed. The mean diameter of the largest stone was 0.87 ± 0.25 cm and the mean number of stones retrieved was 8.2 (1–32). Eleven out of 13 patients (84.6%) were rendered stone-free. Complications included prolonged urine output from the drain in one case (Clavien grade I) and urinoma formation requiring drainage in another case (Clavien grade IIIa). The mean postoperative follow-up was 30.2 (7–51) months. No patient has experienced stone or UPJO recurrence.

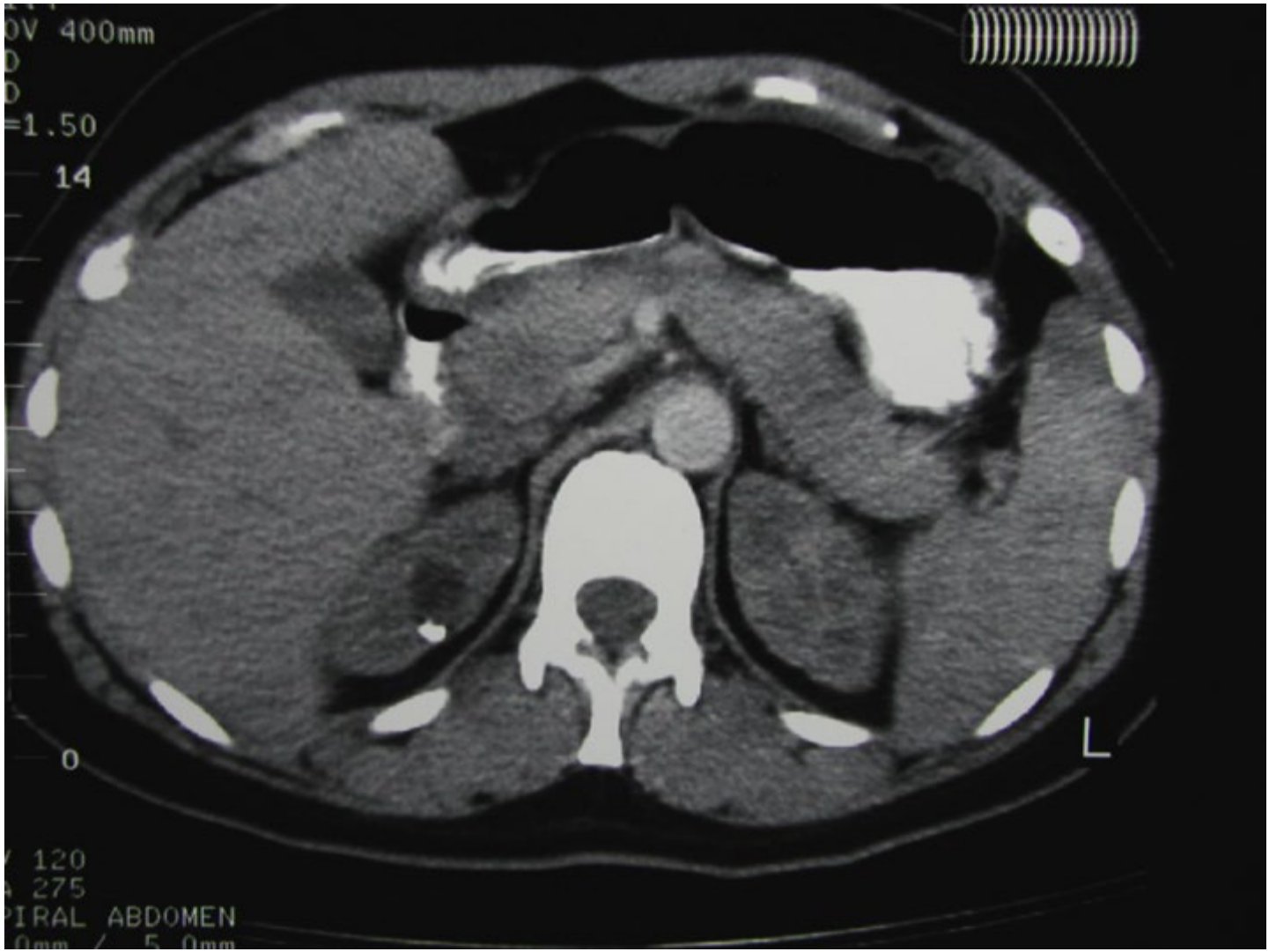
ΕΝΔΕΙΞΕΙΣ

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7. ΕΙΔΙΚΕΣ ΠΕΡΙΠΤΩΣΕΙΣ

ΔΙΑΔΕΡΜΙΚΗ ΑΝΤΙΜΕΤΩΠΙΣΗ ΚΑΛΥΚΙΚΩΝ ΕΚΚΟΛΠΩΜΑΤΩΝ

ΕΝΔΕΙΞΕΙΣ

- ΣΥΜΤΩΜΑΤΙΚΑ ΕΚΚΟΛΠΩΜΑΤΑ
(επιπλεγμένα με λιθίαση)
- ΟΠΙΣΘΙΑ ΘΕΣΗ



OV 400mm

1.50

14

0

120

275

PIRAL ABDOMEN

0mm / 5.0mm

L

ΔΙΑΔΕΡΜΙΚΗ ΑΝΤΙΜΕΤΩΠΙΣΗ ΚΑΛΥΚΙΚΩΝ ΕΚΚΟΛΠΩΜΑΤΩΝ ΜΕ ΛΙΘΙΑΣΗ

- Ελεύθεροι λίθου: 76-100%
- Εξαφάνιση εκκολπώματος 60-100%

1. Cohen & Preminger. Urol Clin North Am 2000
2. Canales & Monga. Curr Opin Urol 2003; 13: 255

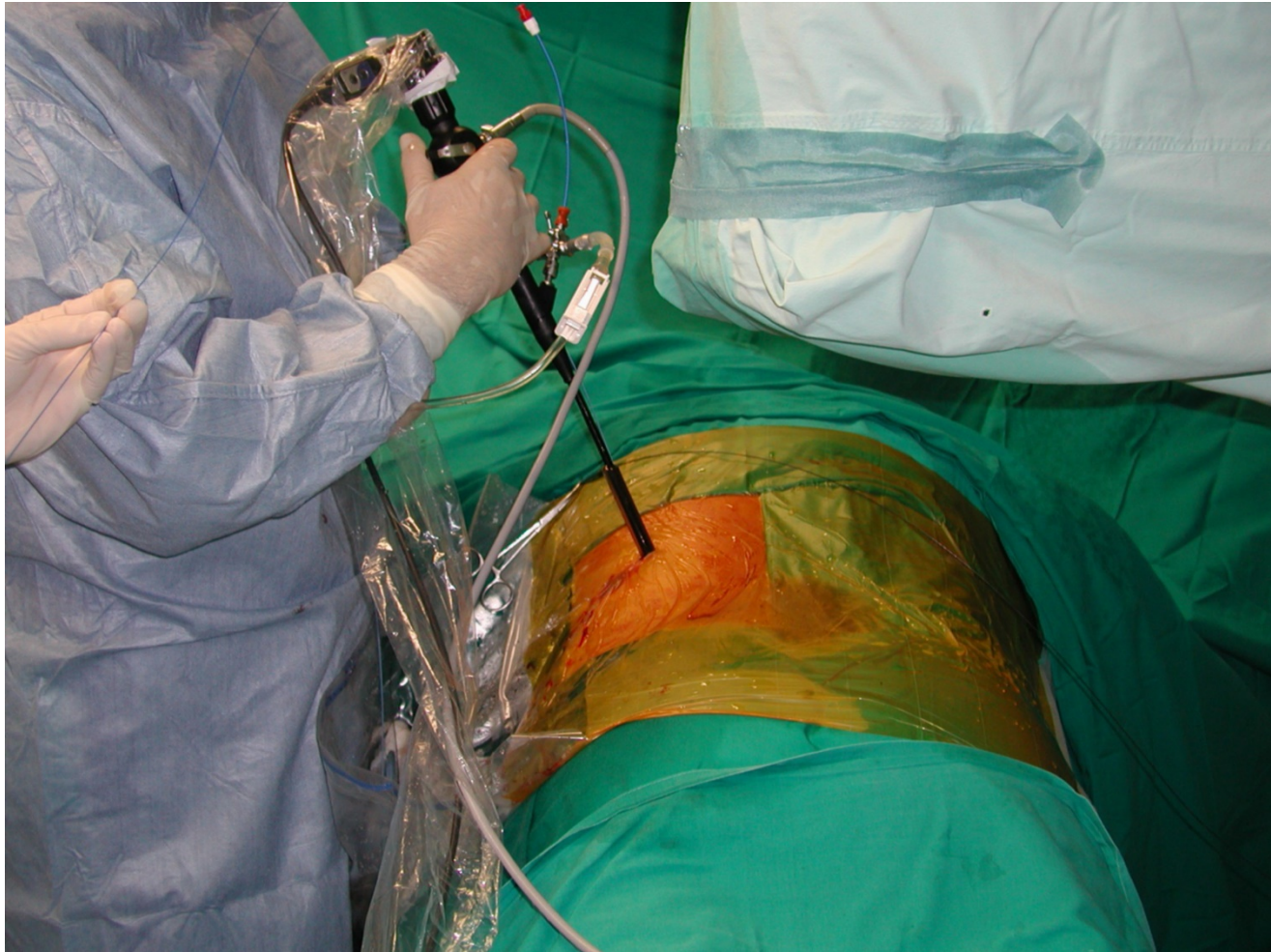






ΕΝΔΕΙΞΕΙΣ

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7. ΕΙΔΙΚΕΣ ΠΕΡΙΠΤΩΣΕΙΣ

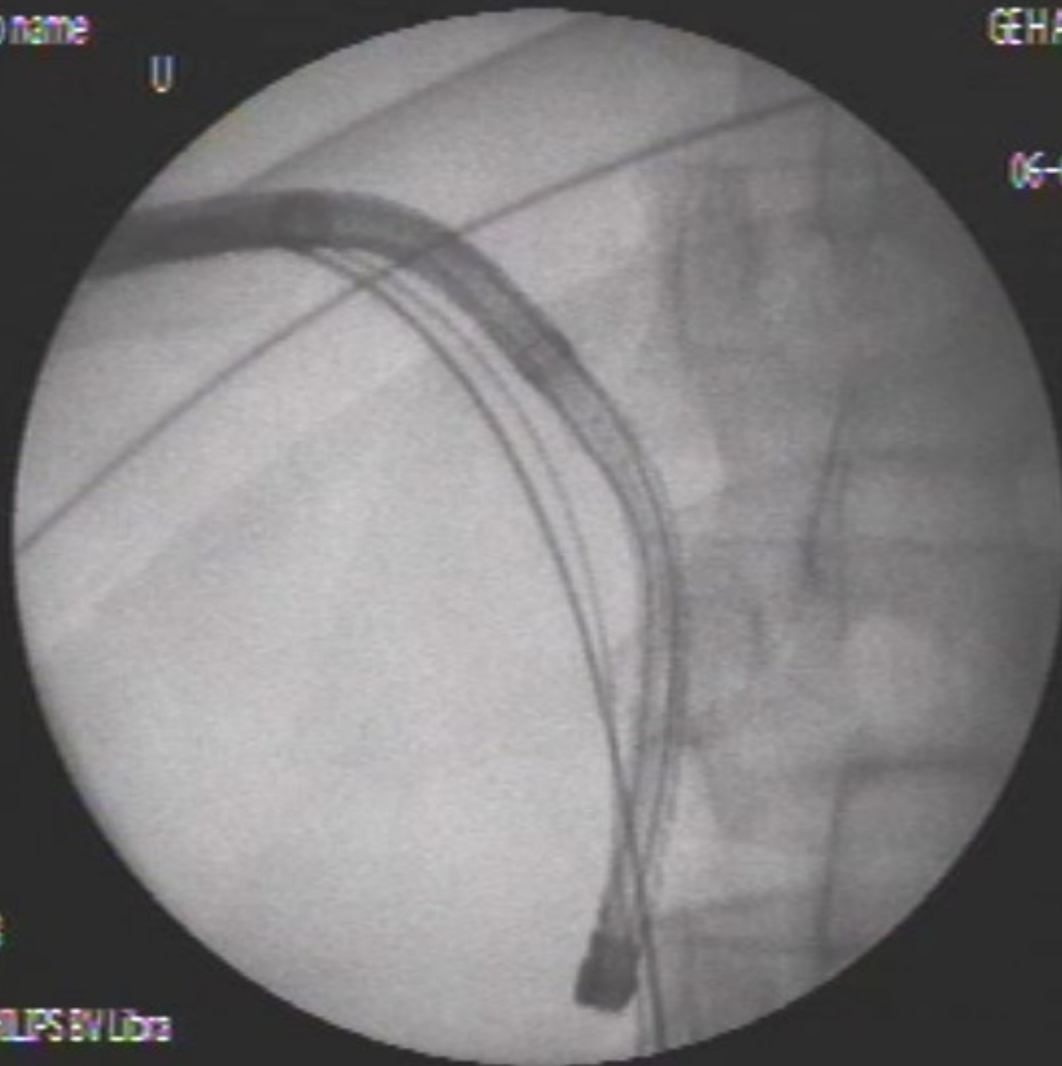


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PHILIPS BV Libra



Ureteroscopic Lithotripsy versus Laparoscopic Ureterolithotomy or Percutaneous Nephrolithotomy in the Management of Large Proximal Ureteral Stones: A Systematic Review and Meta-Analysis

Tao Wu^a Xi Duan^b Shulin Chen^a Xuesong Yang^a Tielong Tang^a Shu Cui^a

^aDepartment of Urology, and ^bDepartment of Dermatovenereology, Affiliated Hospital of North Sichuan Medical College, Nanchong, China

plication rate between URS and PCNL. **Conclusion:** URS should be considered standard therapy for treating large proximal ureteral stones.

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3.4.3.1.4.2 Percutaneous antegrade ureteroscopy

Use percutaneous antegrade removal of ureteral stones as an alternative when shock wave lithotripsy is not indicated or has failed, and when the upper urinary tract is not amenable to retrograde ureterorenoscopy.

Strong

ΕΝΔΕΙΞΕΙΣ

1. ΚΟΡΑΛΛΙΟΕΙΔΕΙΣ ΛΙΘΟΙ
2. ΛΙΘΟΙ >2 cm
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7. ΕΙΔΙΚΕΣ ΠΕΡΙΠΤΩΣΕΙΣ

ΕΙΔΙΚΕΣ ΠΕΡΙΠΤΩΣΕΙΣ

1. ΛΙΘΙΑΣΗ ΣΕ ΜΕΤΑΜΟΣΧΕΥΘΕΝΤΑ ΝΕΦΡΟ
2. ΛΙΘΙΑΣΗ ΣΕ ΕΚΤΟΠΟΥΣ-ΑΝΩΜΑΛΟΥΣ ΝΕΦΡΟΥΣ

Minimally invasive treatment of renal transplant nephrolithiasis

**He-jia Yuan¹ · Dian-dong Yang¹ · Yuan-shan Cui¹ · Chang-ping Men¹ · Zhen-li Gao¹ ·
L. Shi¹ · Ji-tao Wu¹**

Received: 6 December 2014 / Accepted: 25 March 2015
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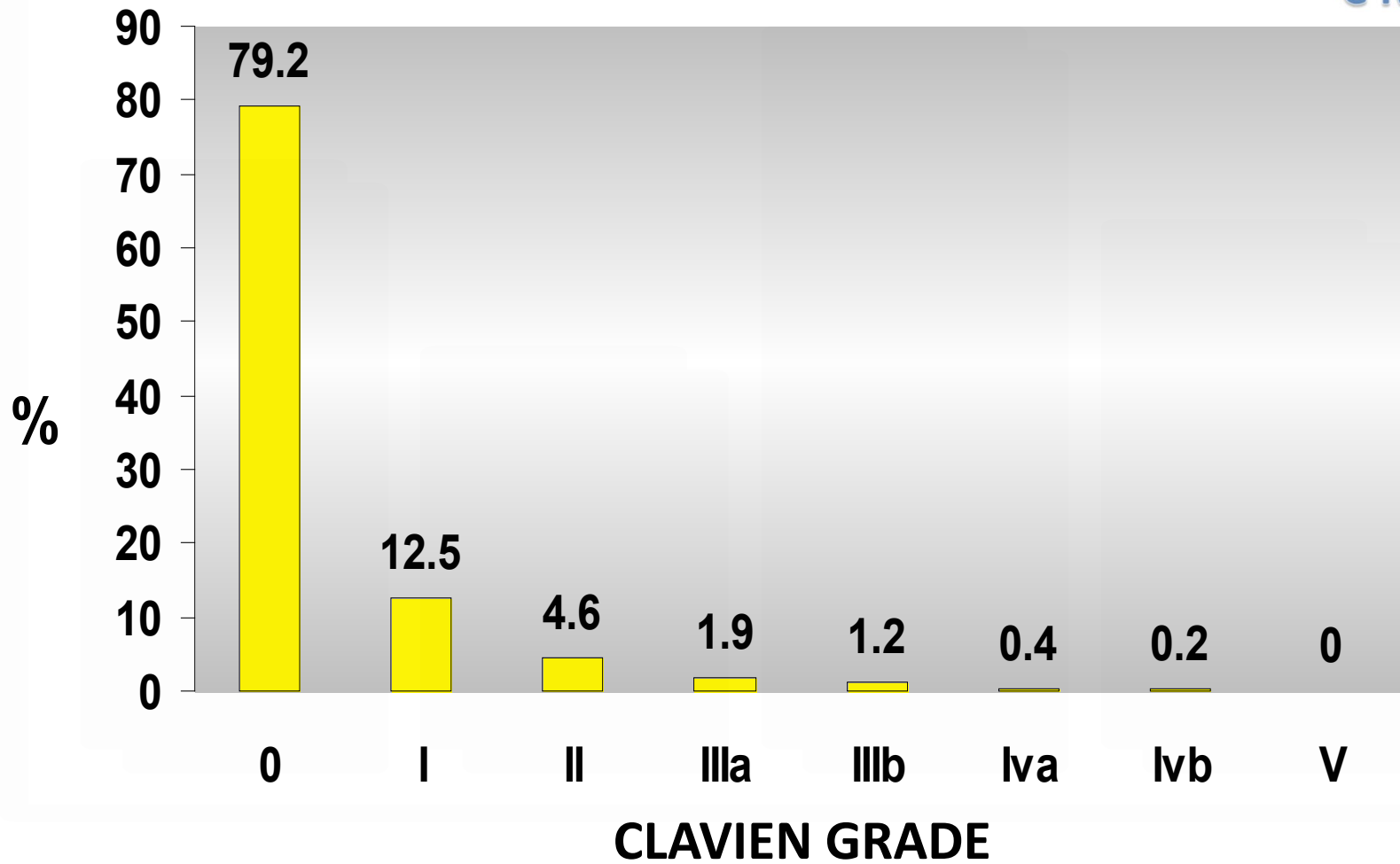
Table 2 Urolithiasis description and operative procedure

No.	Stone location	Stone size (cm)	Stone composition	Therapeutic intervention	Length of stay (days)	Follow-up (months)	Outcome
1	Distal ureter	0.8 × 0.6	Not studied	F-URS	5	56	Functioning
2	Pelvic	1.2 × 0.8	Not studied	SWL × 2	–	11	Functioning
3	Pelvic	1.7 × 1.6	Calcium oxalate	PCNL	7	72	Functioning
4	Proximal ureter	0.4 × 0.5	Struvite	Passed	–	15	Functioning
5	Pelvic	1.3 × 1.1	Not studied	SWL × 2	–	37	Functioning
6	Pelvic	2.4 × 1.7	Uric acid	PCNL	6	49	Functioning
7	Pelvic	2.1 × 2.4	Calcium oxalate	PCNL	9	78	Functioning
8	Distal ureter	0.8 × 0.6	Struvite	F-URS	4	17	Functioning
9	Distal ureter	0.5 × 0.6	Not studied	F-URS	4	12	Functioning
10	Proximal ureter	0.6 × 0.5	Calcium oxalate	SWL × 1	–	3	Functioning
11	Proximal ureter	1.2 × 0.9	Struvite	SWL × 1	–	6	Functioning
12	Distal ureter	0.9 × 0.9	Calcium oxalate	F-URS	3	22	Functioning
13	Proximal ureter	0.3 × 0.5	Calcium oxalate and uric acid	Passed	–	7	Functioning
14	Pelvic	1.9 × 1.7	Uric acid	PCNL	5	33	Functioning
15	Pelvic and distal ureter	3.1 × 2.6	Calcium oxalate	PCNL + F-URS	10	24	Functioning
16	Pelvic	2.2 × 1.7	Calcium oxalate	PCNL	7	42	Functioning
17	Proximal ureter	1.3 × 1.5	Calcium oxalate and uric acid	SWL × 4	–	67	Functioning
18	Pelvic	1.6 × 1.8	Not studied	SWL × 2+F-URS	6	43	Functioning
19	Pelvic	3.5 × 2.7	Calcium oxalate	PCNL	11	64	Functioning

SWL shock wave lithotripsy, PCNL percutaneous nephrolithotomy, F-URS flexible ureteroscopy

ΕΠΙΠΛΟΚΕΣ PCNL

- **ΕΠΙΠΛΟΚΕΣ ΑΠΟ ΤΟ ΝΕΦΡΟ**
 - ✓ Αιμορραγία
 - ✓ Διάτρηση πυελοκαλυκτικού
 - ✓ Αποκοπή ουρητήρα
 - ✓ Στενώματα καλύκων
- **ΣΗΨΗ**
- **ΕΠΙΠΛΟΚΕΣ ΑΠΟ ΤΟ ΘΩΡΑΚΑ**
 - Υδροθώρακας
 - Πνευμοθώρακας
 - Τρώση πνεύμονα
- **ΤΡΩΣΗ ΠΑΡΑΚΕΙΜΕΝΩΝ ΟΡΓΑΝΩΝ**
 - ❖ Παχύ έντερο
 - ❖ Λεπτό έντερο
 - ❖ Ήπαρ
 - ❖ Σπλήνας
- **ΥΠΕΡΦΟΡΤΩΣΗ ΜΕ ΥΓΡΑ**
- **ΑΠΟΤΥΧΙΑ ΕΙΣΟΔΟΥ ΣΤΟ ΠΥΕΛΟΚΑΛΥΚΙΚΟ**



Επιπλοκές	13.6 %	(n=628)
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Αιμορραγία	7.9 %	(n=366)
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Διάτρηση	3.2 %	(n=147)
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Υδροθώρακας	1.9%	(n=86)
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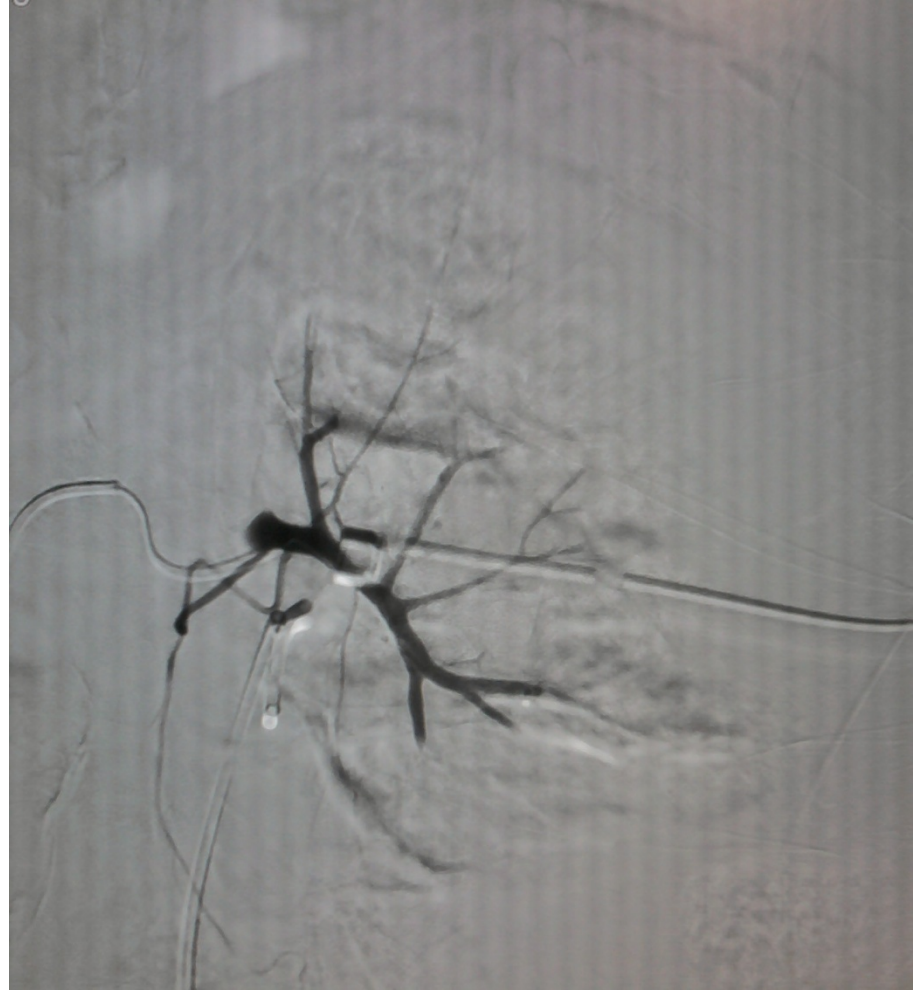
Αποτυχία	1.7 %	(n=80)
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ΕΠΙΠΛΟΚΕΣ ΑΠΟ ΤΟ ΝΕΦΡΟ

- ✓ Αιμορραγία (ποσοστά μετάγγισης 2,6-12,3%)
- ✓ Διάτρηση πυελοκαλυκικού
- ✓ Αποκοπή ουρητήρα
- ✓ Στενώματα καλύκων

1. Seitz C et al. Eur Urol 2012; 61: 146
2. de la Rosette J et al. J Endourol 2011; 25: 11
3. Akman T et al. J Endourol 2011; 25: 327



ΑΝΟΙΚΤΗ ΧΕΙΡΟΥΡΓΙΚΗ ΣΤΗ ΛΙΘΙΑΣΗ

3.4.11.1 *Summary of evidence and guidelines for laparoscopy and open surgery*

Recommendations	Strength rating
Offer laparoscopic or open surgical stone removal in rare cases in which shock wave lithotripsy (SWL), (flexible) ureterorenoscopy and percutaneous nephrolithotomy fail, or are unlikely to be successful.	Strong
Perform surgery laparoscopically before proceeding to open surgery.	Strong
For ureterolithotomy, perform laparoscopy for large impacted stones when endoscopic lithotripsy or SWL has failed or is contraindicated.	Strong

ΕΥΧΑΡΙΣΤΩ

