

ΟΤΑΝ Η ΠΥΕΛΟΠΛΑΣΤΙΚΗ ΑΠΟΤΥΧΕΙ

Στυλιανός Θ. Γιαννακόπουλος

Αναπληρωτής Καθηγητής Ουρολογίας
Δημοκριτείου Πανεπιστημίου Θράκης



**ΔΕΝ ΥΦΙΣΤΑΤΑΙ ΣΥΓΚΡΟΥΣΗ
ΣΥΜΦΕΡΟΝΤΩΝ**



STEVAN B. STREAM
1949-2005

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

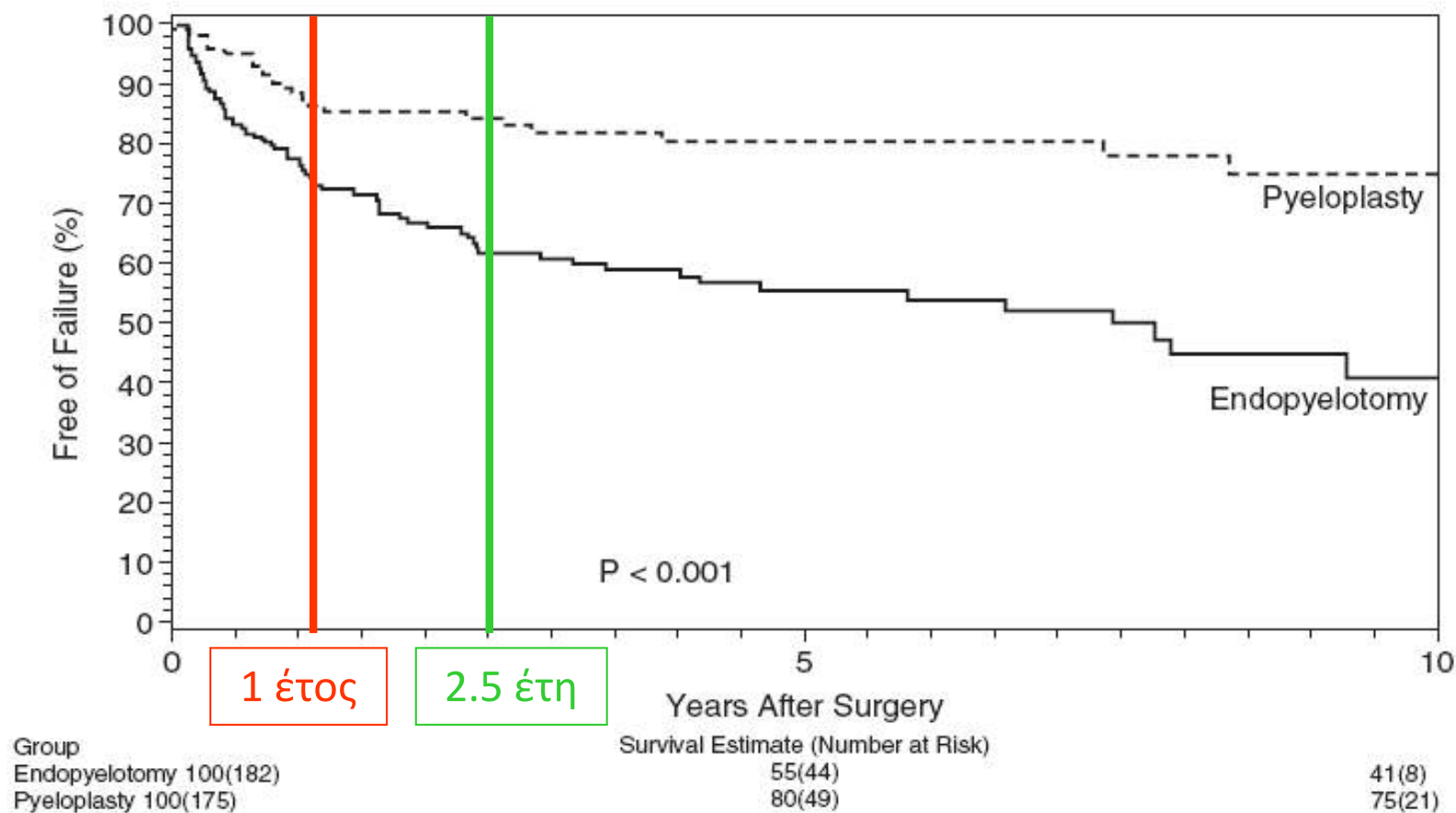


FIG. 1. Recurrence-free survival after endopyelotomy compared with pyeloplasty.

	ΕΝΔΟΠΥΕΛΟΤΟΜΗ N=182	ΠΥΕΛΟΠΛΑΣΤΙΚΗ N=175
ΠΟΣΟΣΤΟ ΕΠΙΤΥΧΙΑΣ	61%	82.3%
Follow-up	3.1 έτη (0.3-13.7)	3.9 έτη (0.3-20)
Estimated recurrence-free rate στα 3 έτη	63%	85%
Estimated recurrence-free rate στα 5 έτη	55%	80%
Estimated recurrence-free rate στα 10 έτη	41%	75%

The Minimally Invasive Treatment of Ureteropelvic Junction Obstruction: A Review of Our Experience During the Last Decade

Brent V. Yanke,* Costas D. Lallas,† Christopher Pagnani, David E. McGinnis
and Demetrius H. Bagley‡

From the Department of Urology, Thomas Jefferson University, Philadelphia, Pennsylvania

Purpose: The minimally invasive treatment of ureteropelvic junction obstruction has evolved during the last decade from endoscopic to laparoscopic and robotic. We review our 10-year experience with ureteropelvic junction obstruction, and report on our experience and followup.

Materials and Methods: We reviewed all patients treated during the last 10 years. There were 294 procedures performed with complete records on 273 patients including 128 retrograde endopyelotomies, 116 laparoscopic pyeloplasties and 29 robotic pyeloplasties. Technique for each procedure is reviewed. Statistical analysis was performed on all results. Variables evaluated were gender, age (younger than 41 vs 41 years or older), side (right or left), presence of crossing vessels, presence of a high insertion, primary or secondary procedure and whether prior endopyelotomy or pyeloplasty had been performed.

Results: Mean followup for endopyelotomy, laparoscopic pyeloplasty and robotic pyeloplasty was 20, 20 and 19 months, respectively, with success rates of 60.2%, 88.8% and 100%, respectively. On univariable analysis only the presence of crossing vessels or a high insertion was significant for laparoscopic pyeloplasty. On multivariable analysis age was significant for endopyelotomy and the presence of crossing vessels was significant for pyeloplasty. On Kaplan-Meier analysis failures were noted to occur after 5 years in both groups.

Conclusions: Laparoscopic pyeloplasty and robotic pyeloplasty are superior minimally invasive treatments for ureteropelvic junction obstruction. However, endopyelotomy can be used for select patients. Because of late failures patients who undergo either of these procedures should receive long-term followup.

Key Words: ureteral obstruction, laparoscopy, robotics

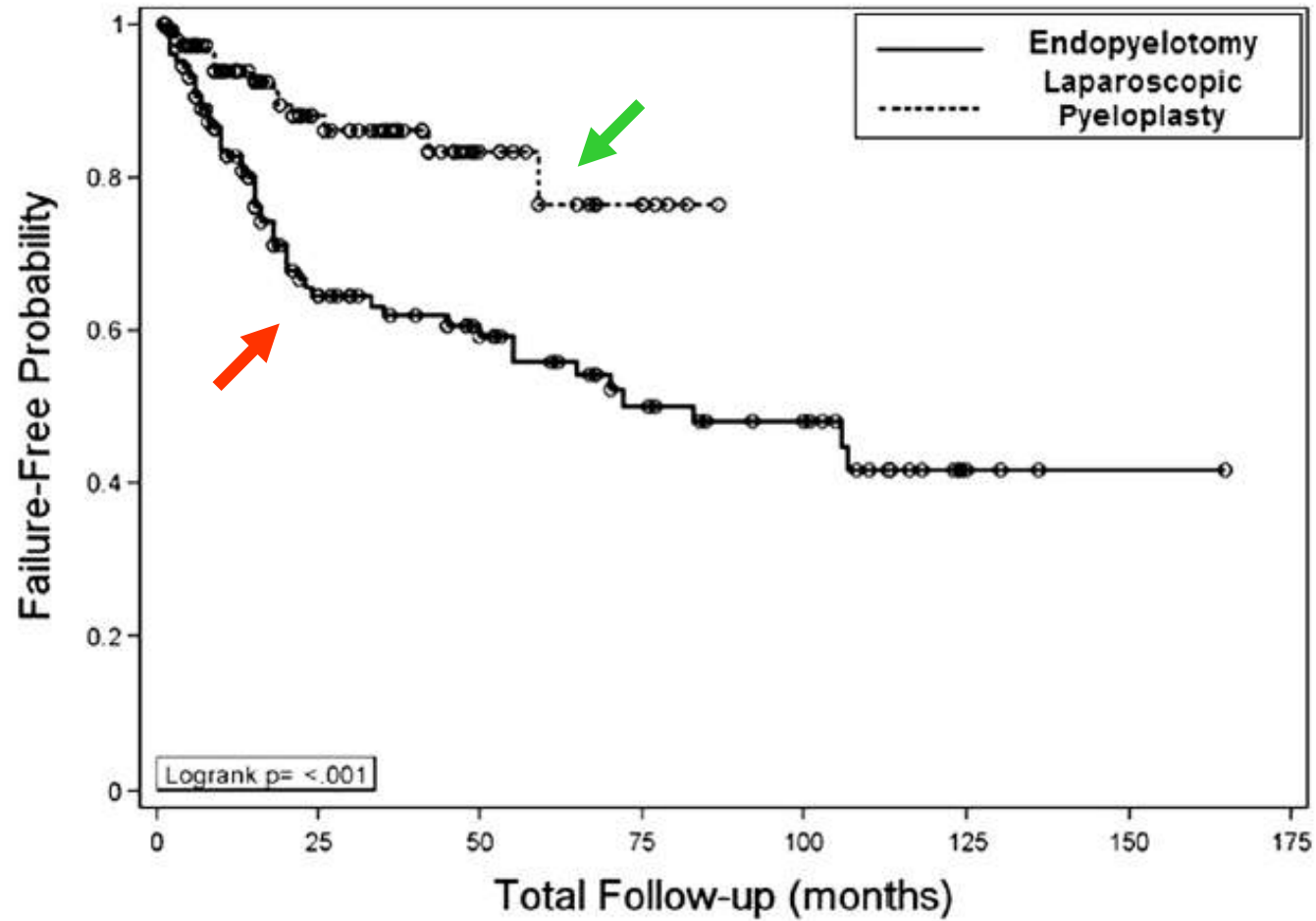


FIG. 2. Kaplan-Meier estimates of failure-free probability for endopyelotomy and laparoscopic pyeloplasty

Original Paper

Long-Term Results of Anderson-Hynes Pyeloplasty in 180 Adults in the Era of Endourologic Procedures

Çağatay Göğüş, Tamer Karamürsel, Zafer Tokatli, Önder Yaman, Erol Özdiler, Orhan Göğüş

Department of Urology, Ankara University, School of Medicine, Ankara, Turkey

Urol Int 2004; 73: 11

- Ανοικτή πυελοπλαστική σε 180 ενήλικες
- Μέσο follow-up 9.4 έτη (1-17)
- Ποσοστό επιτυχίας 91%
- Υποτροπές
 - 57% στο πρώτο τρίμηνο
 - 43% αργότερα

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

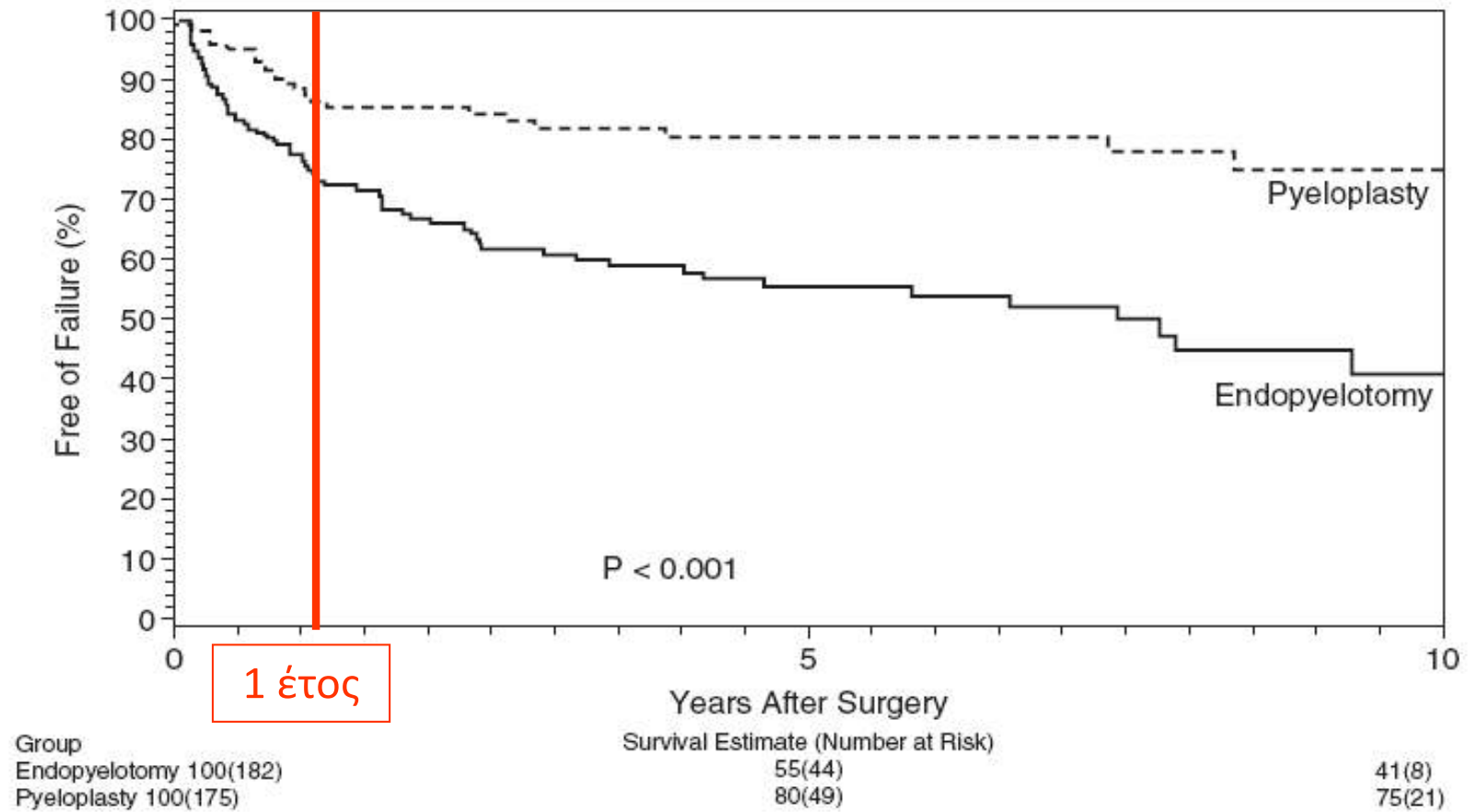


FIG. 1. Recurrence-free survival after endopyelotomy compared with pyeloplasty.

ΔΙΑΡΚΕΙΑ ΠΑΡΑΚΟΛΟΥΘΗΣΗΣ

- Πρέπει να είναι μακροχρόνια ανεξαρτήτως της χειρουργικής μεθόδου που εφαρμόστηκε

ΠΡΩΤΟΚΟΛΛΟ ΜΕΤΕΓΧΕΙΡΗΤΙΚΗΣ ΠΑΡΑΚΟΛΟΥΘΗΣΗΣ

ΟΥΡΟΛΟΓΙΚΗ ΚΛΙΝΙΚΗ ΔΠΘ



-
- Αφαίρεση stent 6-8 εβδομάδες μετεγχειρητικά
 - IVP και U/S ένα μήνα μετά την αφαίρεση του stent (δηλαδή περίπου στους 3 μήνες από το χειρουργείο)
 - Ραδιενεργό νεφρόγραμμα (DTPA ή MAG3) και U/S στους 6 μήνες από το χειρουργείο
 - IVP και U/S στους 12 μήνες από το χειρουργείο
 - Ακολουθώς U/S σε ετήσια βάση

**Ποια τα αίτια της Στένωσης
Πυελοουρητηρικής Συμβολής (ΠΟΣ);**

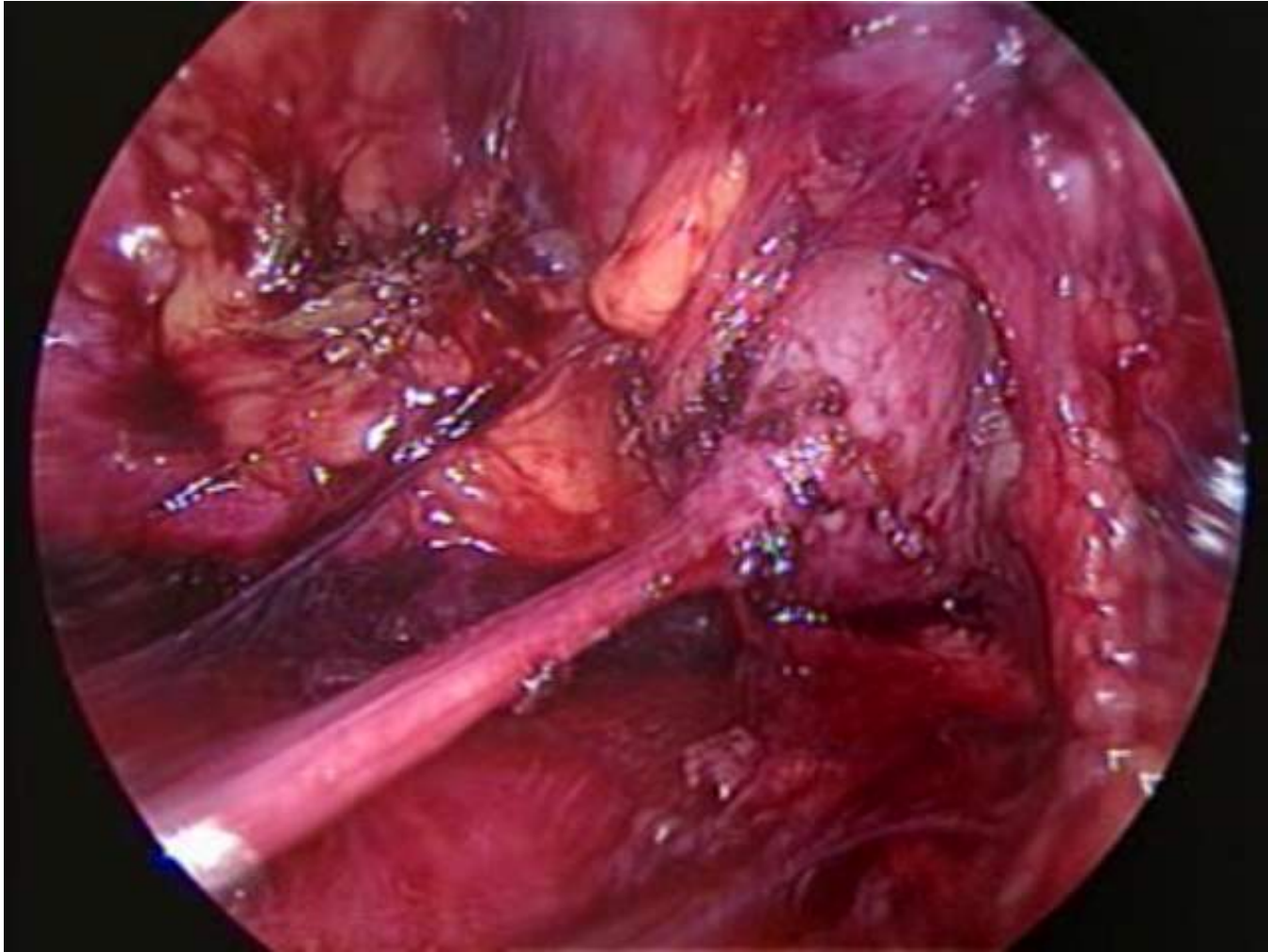
Αίτια Στένωσης ΠΟΣ

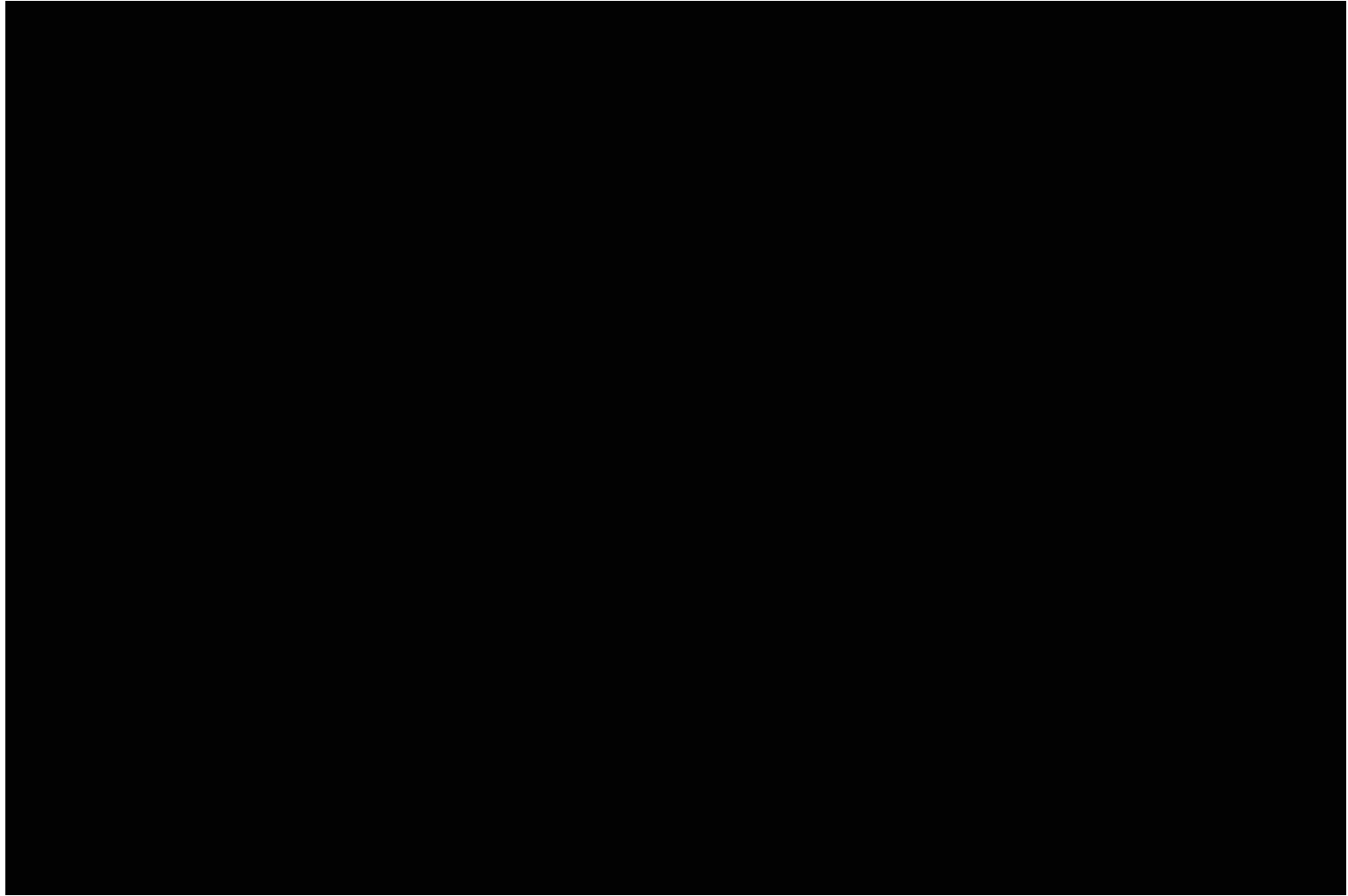
- Πρωτοπαθή
 - Ενδογενή
 - Εξωγενή
- Δευτεροπαθή

Πρωτοπαθή Αίτια Στένωσης ΠΟΣ

- Ενδογενή
 - Παρουσία «δυσλειτουργικού» τμήματος ουρητήρα στο επίπεδο της ΠΟΣ
 - Αληθές στένωμα
 - Βαλβίδες ουρητήρα (fetal folds of Ostling)
 - Ουρητηρικοί πολύποδες
 - Όγκοι







Πρωτοπαθή Αίτια Στένωσης ΠΟΣ

- Εξωγενή
 - Υψηλή έκφυση (αίτιο ή αποτέλεσμα; πιθανόν σημαντικότερη ως αίτιο σε ανωμαλίες θέσεις και/ή σχήματος του νεφρού)
 - «Έκτοπα» αγγεία
 - Ινώδεις ταινίες / συμφύσεις
 - Αυξημένη νεφρική κινητικότητα σε αλλαγές θέσεις
 - Όγκοι

1. Park & Bloom. Urol Clin North Am 1998; 25: 161

2. Koff S. Urol Clin North Am 1990; 17: 263

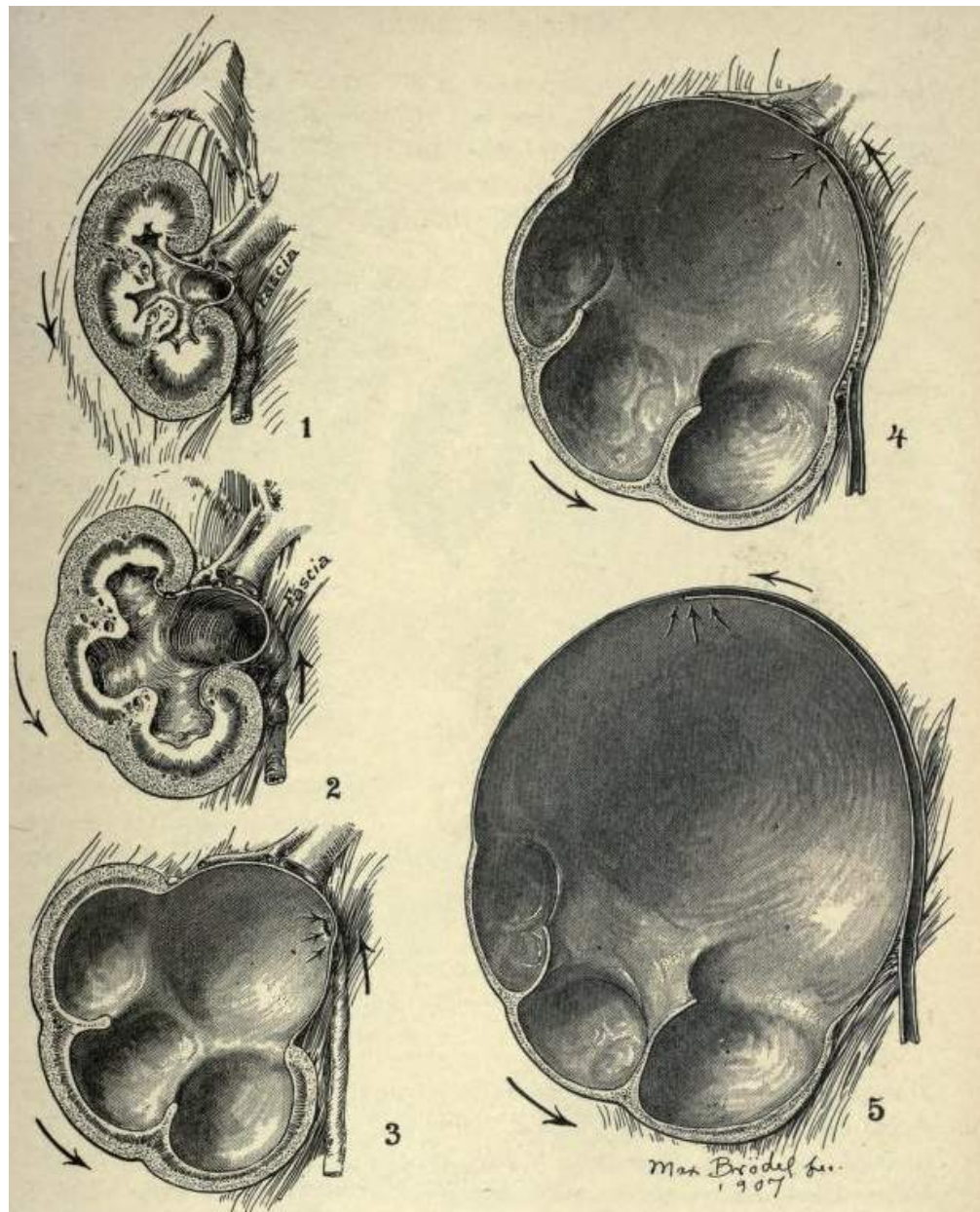


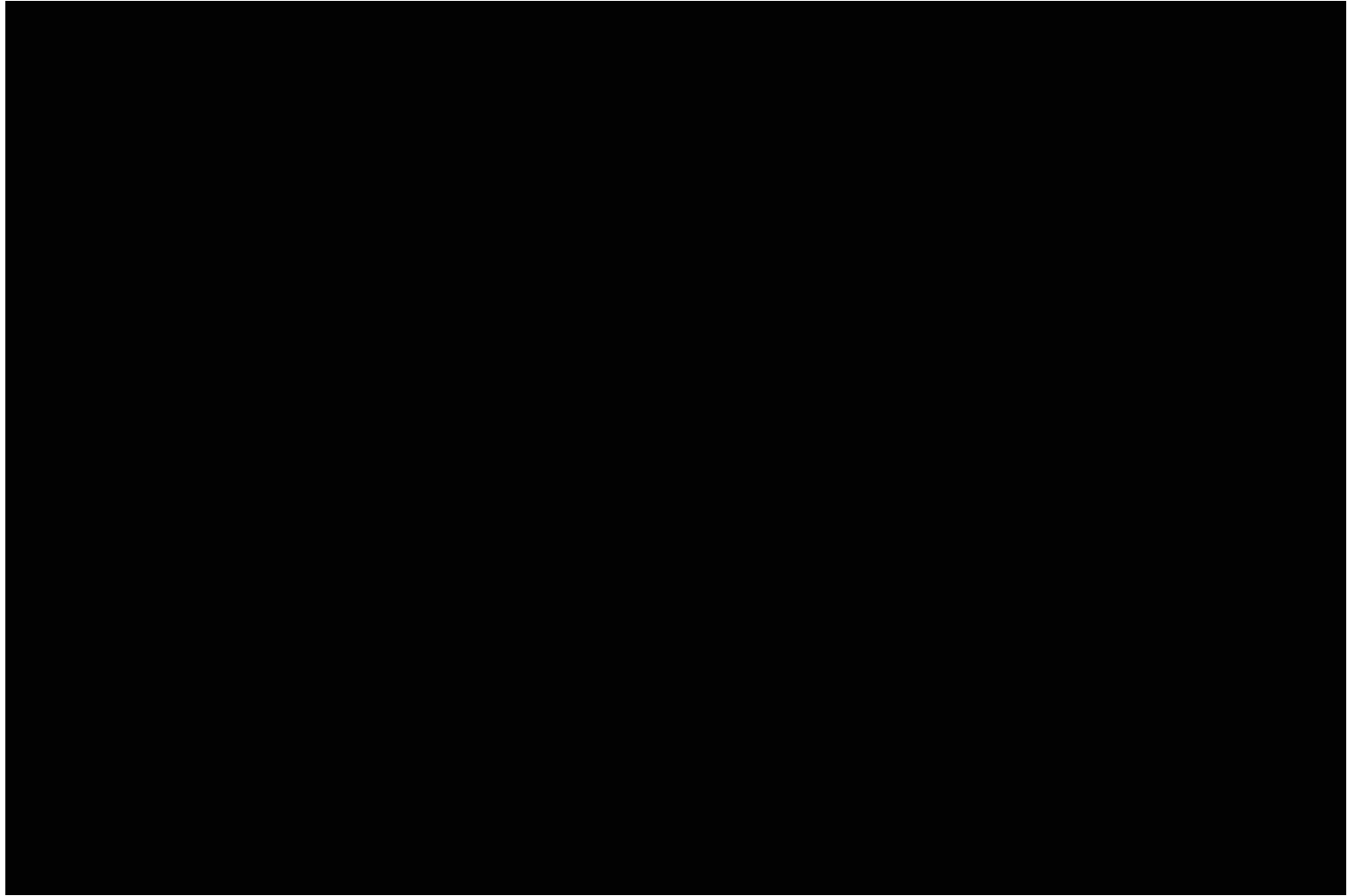
FIG. 256.—SERIES OF FIVE DRAWINGS FROM ACTUAL CASES, SHOWING TRANSFORMATION OF MOVABLE KIDNEY INTO LARGE HYDRONEPHROSIS. The kidney not only descends, but swings over toward the middle line, as shown by arrows. The surface of the kidney is the rim, and the attachment of renal vessels to the great vascular trunks the hub of a wheel. This results in a gradual ascent of the uretero-pelvic junction, which causes a kink and valve formation. Once started, the conditions grow automatically worse.

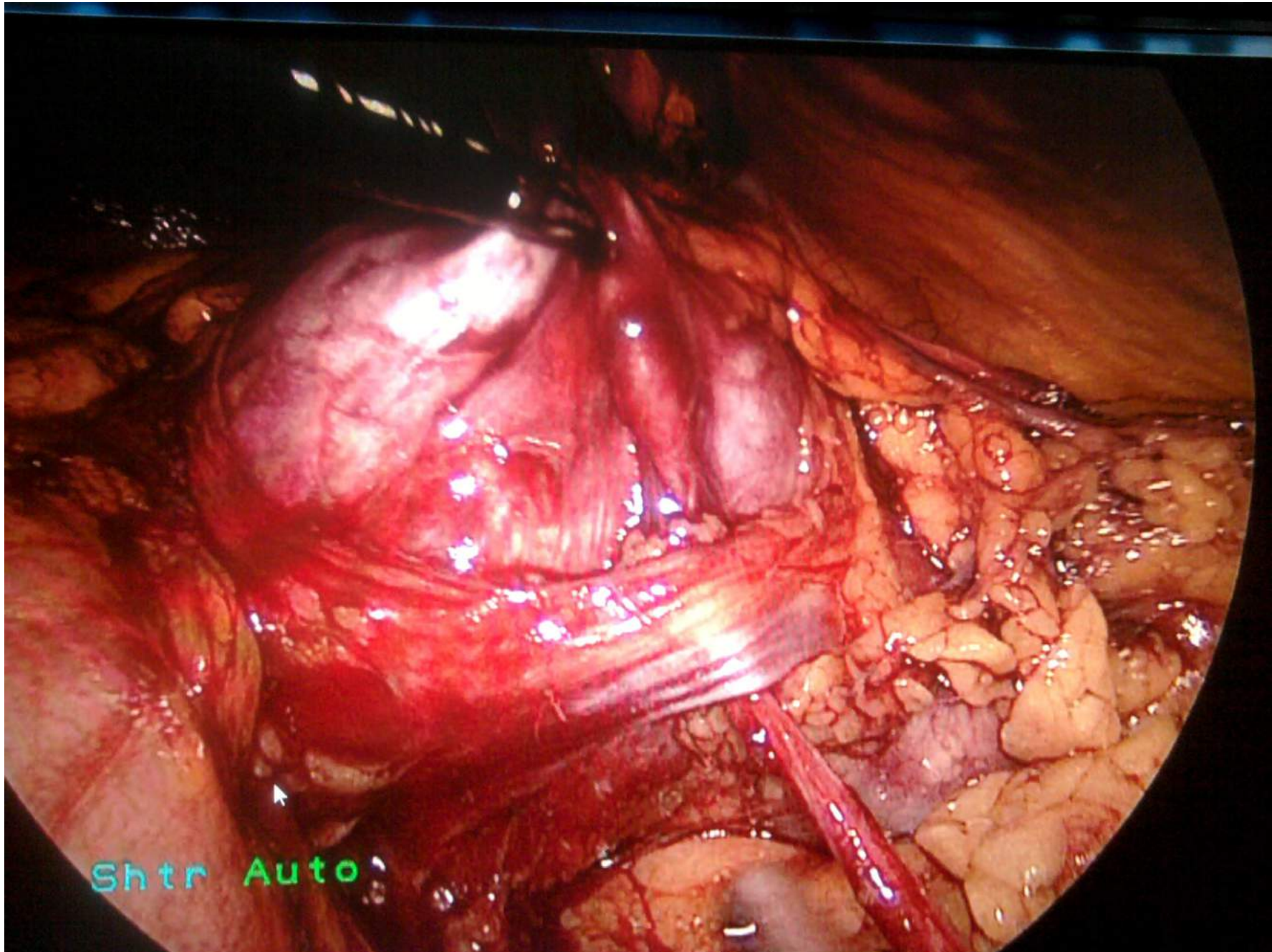
Πρωτοπαθή Αίτια Στένωσης ΠΟΣ

- Εξωγενή
 - Υψηλή έκφυση (αίτιο ή αποτέλεσμα; πιθανόν σημαντικότερη ως αίτιο σε ανωμαλίες θέσεις και/ή σχήματος του νεφρού)
 - «Έκτοπα» αγγεία
 - Ινώδεις ταινίες / συμφύσεις
 - Αυξημένη νεφρική κινητικότητα σε αλλαγές θέσεις
 - Όγκοι

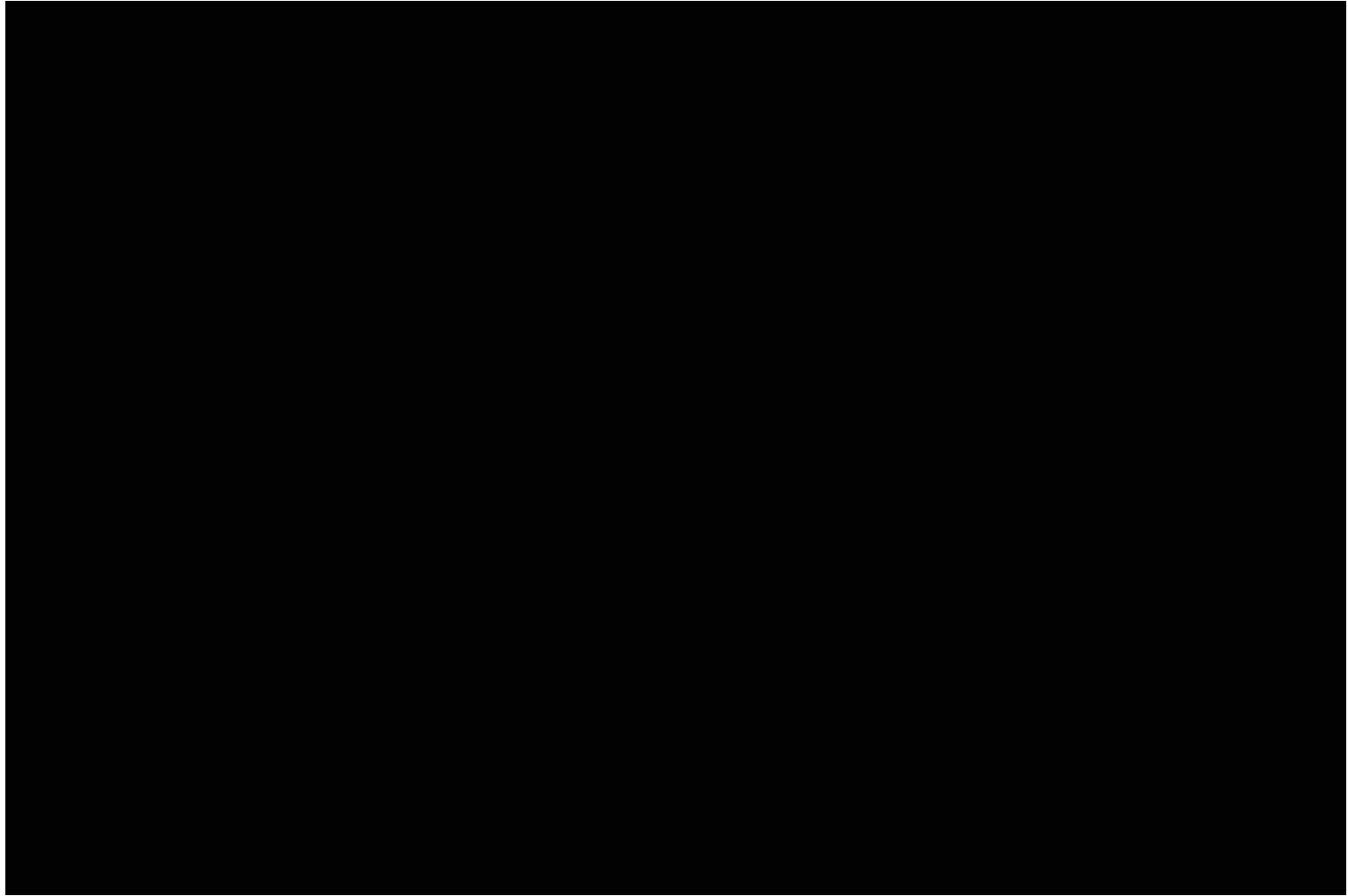
1. Park & Bloom. Urol Clin North Am 1998; 25: 161

2. Koff S. Urol Clin North Am 1990; 17: 263



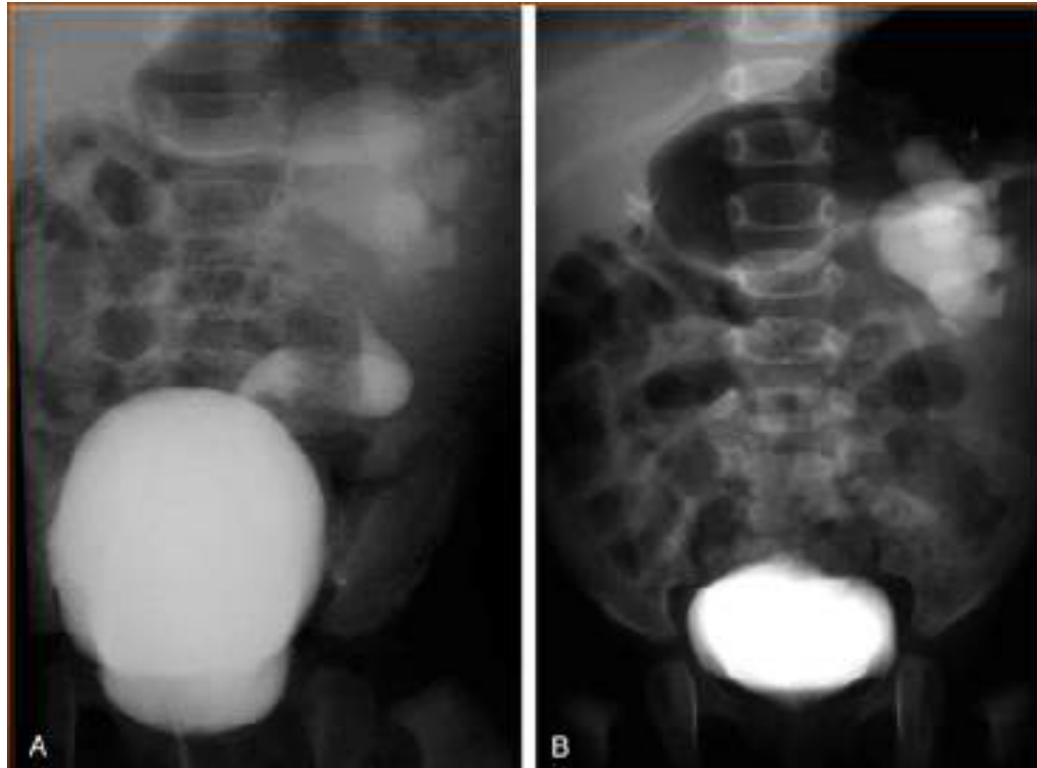


Shtr Auto



Δευτεροπαθή Αίτια Στένωσης ΠΟΣ

- «Ουλή» λιθιασικής αιτιολογίας
- Ιατρογενές τραύμα (ενδοσκοπική επέμβαση, ανοικτό χειρουργείο, προηγούμενη επέμβαση διόρθωσης στένωσης ΠΟΣ)
- Κυστεοουρητηρική παλινδρόμηση



ΠΡΩΤΟΠΑΘΗΣ ΣΤΕΝΩΣΗ

N=140

Ενδογενής «στένωση»*	110 (79%)
«Έκτοπα» αγγεία*	16 (11%)
Ανώμαλη έκφυση*	10 (7%)
Ινώδεις ταινίες*	4 (3%)

ΥΠΟΤΡΟΠΗ ΣΤΕΝΩΣΗΣ ΜΕΤΑ ΑΠΟ ΕΠΕΜΒΑΣΗ

N=11

Ενδογενής «στένωση»	5 (45%)
«Έκτοπα» αγγεία	0 (0%)
Ανώμαλη έκφυση	4 (36%)
Ινώδεις ταινίες	2 (18%)

*Κύριο αίτιο. Στις περισσότερες περιπτώσεις
συνυπήρχαν επιπρόσθετα αίτια με δευτερεύοντα ρόλο.



Laparoscopic management of recurrent ureteropelvic junction obstruction following pyeloplasty: a single surgical team experience with 38 cases

Francesco Chiancone¹, Maurizio Fedelini¹, Luigi Pucci¹, Clemente Meccariello¹, Paolo Fedelini¹

¹ *Urologic Clinic, AORN Cardarelli Hospital, Naples, Italy*



Surgical indication:

Recurrence of UPJO	28 (73.7%)
Recurrence of UPJO and abnormal crossing vessel	4 (10.5%)
Twisted anastomosis	2 (5.3%)
Recurrence of UPJO and incorrect angle of the anastomosis	4 (10.5%)

Mean±SD

Mean stricture length (cm)	0.99±0.45
----------------------------	-----------

Short Communication**Robot assisted laparoscopic pyeloplasty in patients of ureteropelvic junction obstruction with previously failed open surgical repair**

Ashok K Hemal, Saurabh Mishra, Satyadip Mukharjee and Manav Suryavanshi

Department of Urology, All India Institute of Medical Sciences, New Delhi, India

Table 1 Demographic profile of patients

	Age/sex	Side	Duration since previous pyeloplasty	Renal function	Intraoperative findings
1	16 years/M	Left	10 months	22.5%	Crossing vessel
2	12 years/M	Left	22 months	32%	Adhesions, surrounding fibrosis
3	20 years/F	Right	6 months	18%	Adhesions , surrounding fibrosis
4	26 years/M	Left	14 months	45.4%	Adhesions , surrounding fibrosis
5	36 years/M	Left	11 months	40.4%	Crossing vessels
6	14 years/F	Left	9 months	28.5%	Adhesions, 2 cm upper ureter stricture
7	14 years/M	Right	8 months	22%	Redundant pelvis, folded at UPJ
8	13 years/F	Right	10 months	36.8%	Adhesions , fibrosis
9	10 years/M	Left	3 months	44%	Adhesions, fibrosis
Mean	17.9 years		10.3 months	32.2%	

**Πώς τίθεται η διάγνωση της υποτροπής
μετεγχειρητικά;**

ΚΡΙΤΗΡΙΑ ΕΠΙΤΥΧΟΥΣ ΑΠΟΤΕΛΕΣΜΑΤΟΣ

- Εξαφάνιση των συμπτωμάτων
- Βελτίωση της εικόνας στις απεικονιστικές εξετάσεις



ΠΡΙΝ



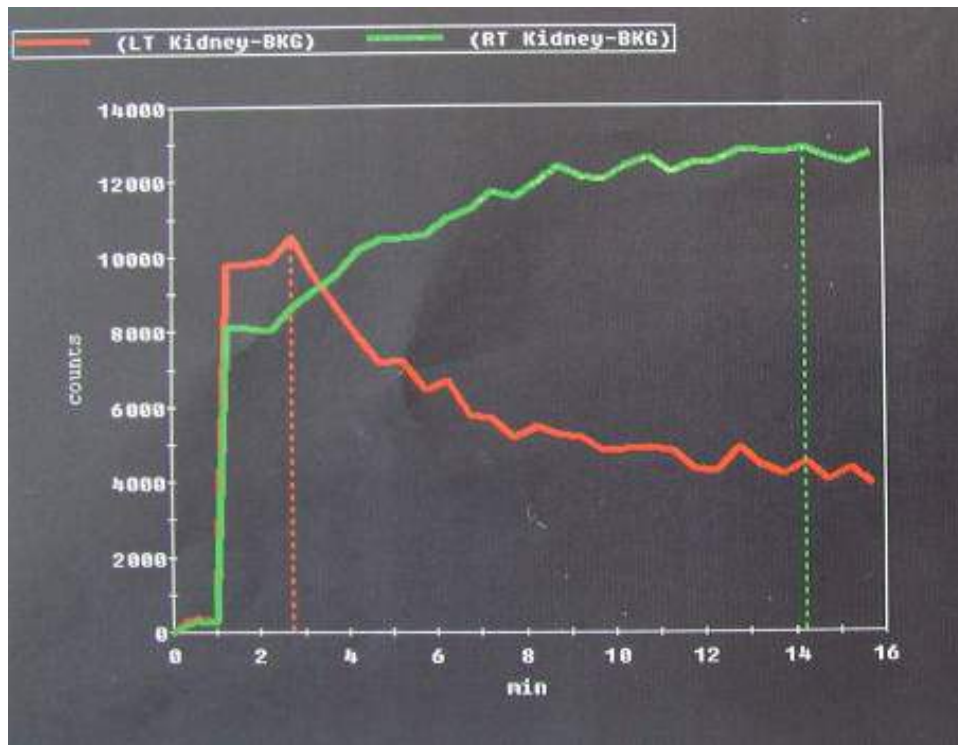
ΜΕΤΑ



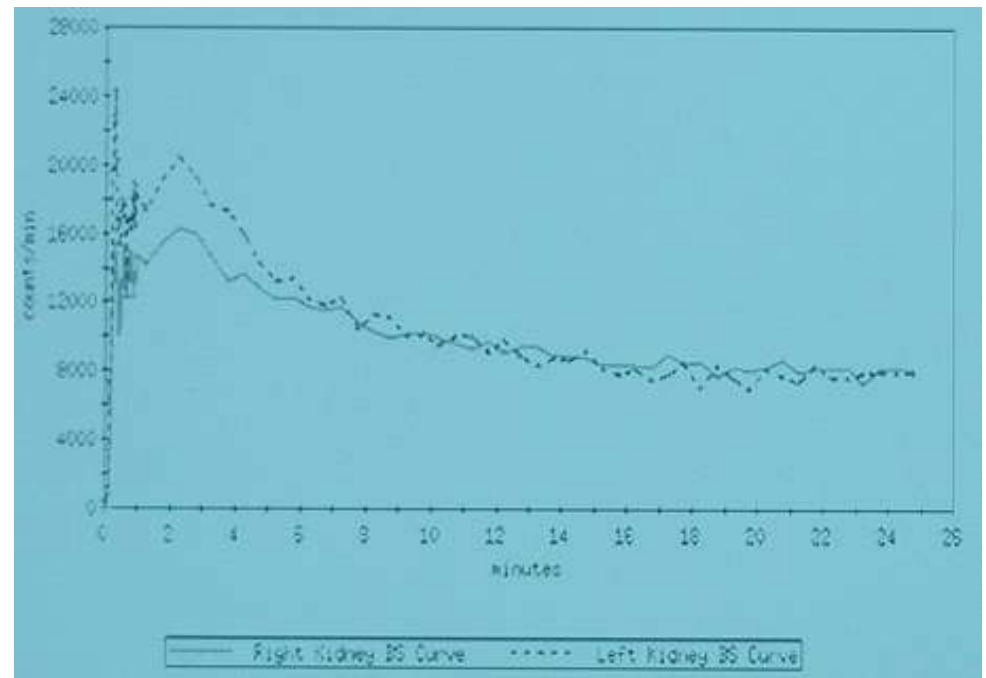
ΠΡΙΝ



ΜΕΤΑ



ΠΡΙΝ



ΜΕΤΑ



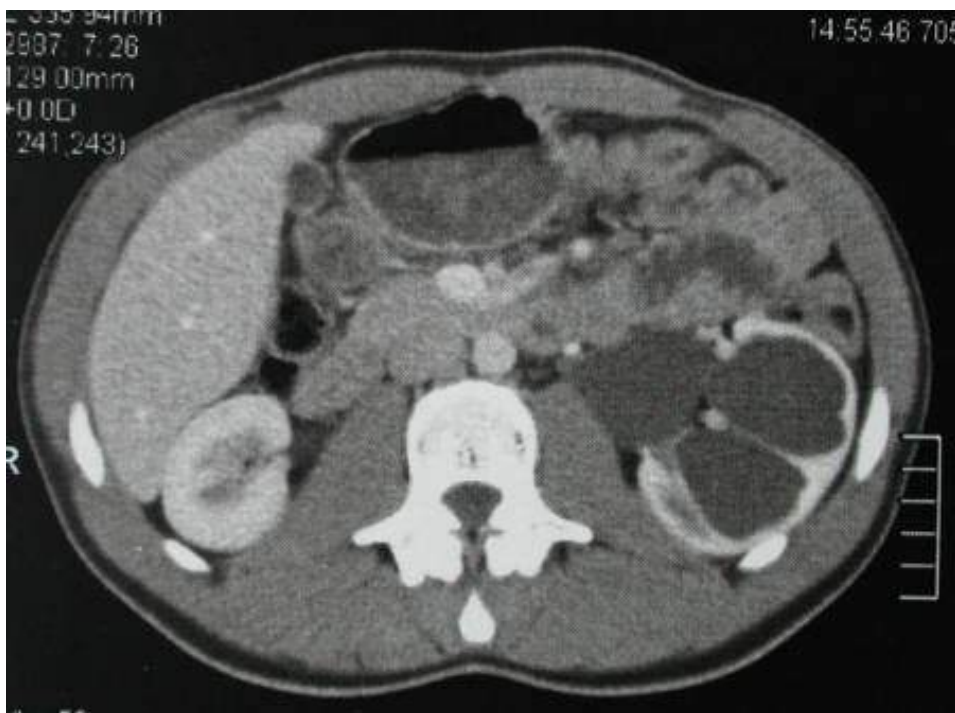
ΠΡΙΝ



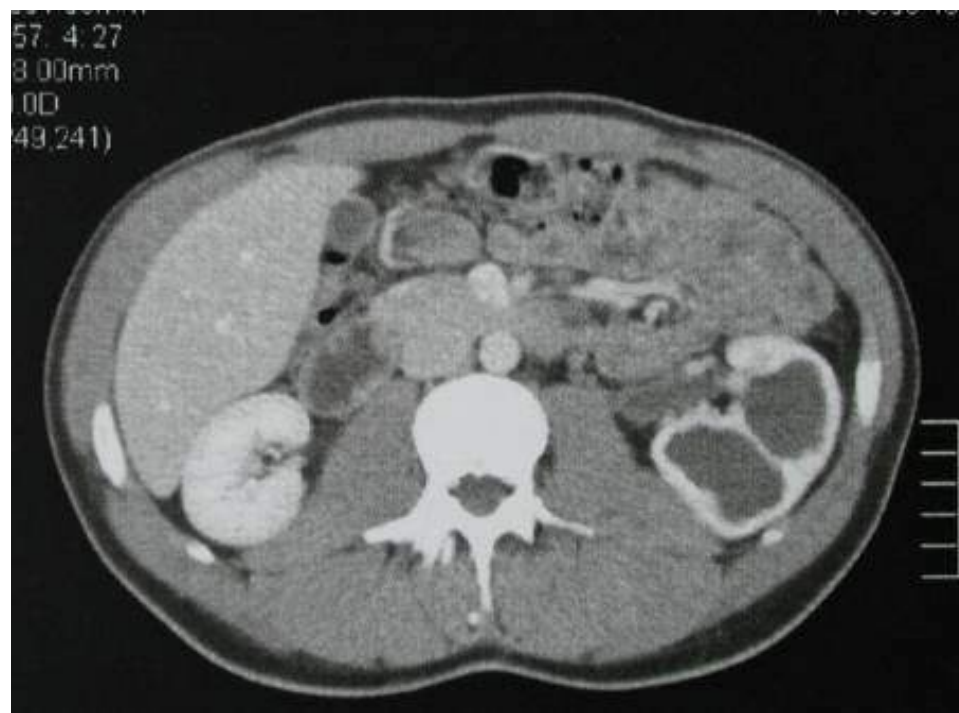
ΜΕΤΑ

ΨΕΥΔΩΣ ΑΠΟΦΡΑΚΤΙΚΗ ΕΙΚΟΝΑ ΣΤΟ ΡΑΔΙΕΝΕΡΓΟ ΝΕΦΡΟΓΡΑΜΜΑ

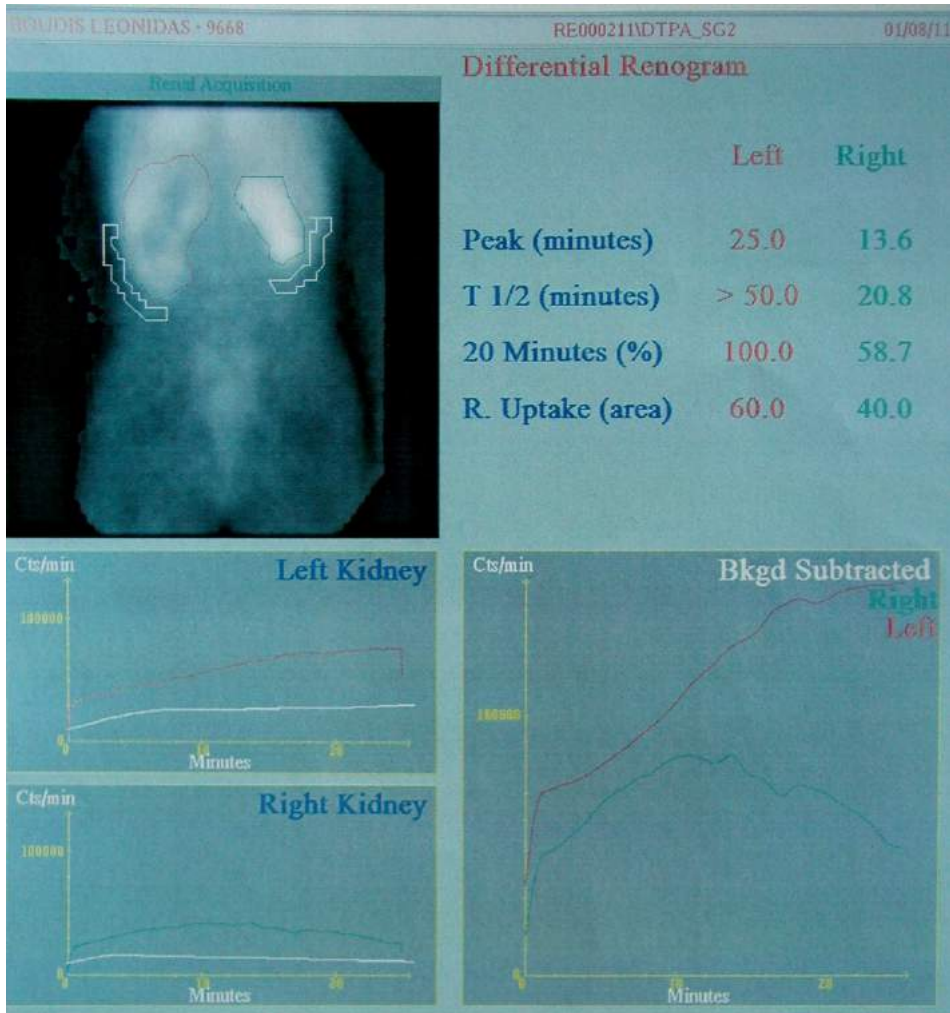
- Σε συστήματα με μεγάλη διάταση προεγχειρητικά
- Σε απώλεια νεφρικής λειτουργίας που συνεπάγεται φτωχή ανταπόκριση στο Lasix
- Σε κακή ενυδάτωση του ασθενούς
- Σε μη εφαρμογή σταθερού πρωτοκόλλου κατά τη διενέργεια της εξέτασης πριν και μετά την επέμβαση



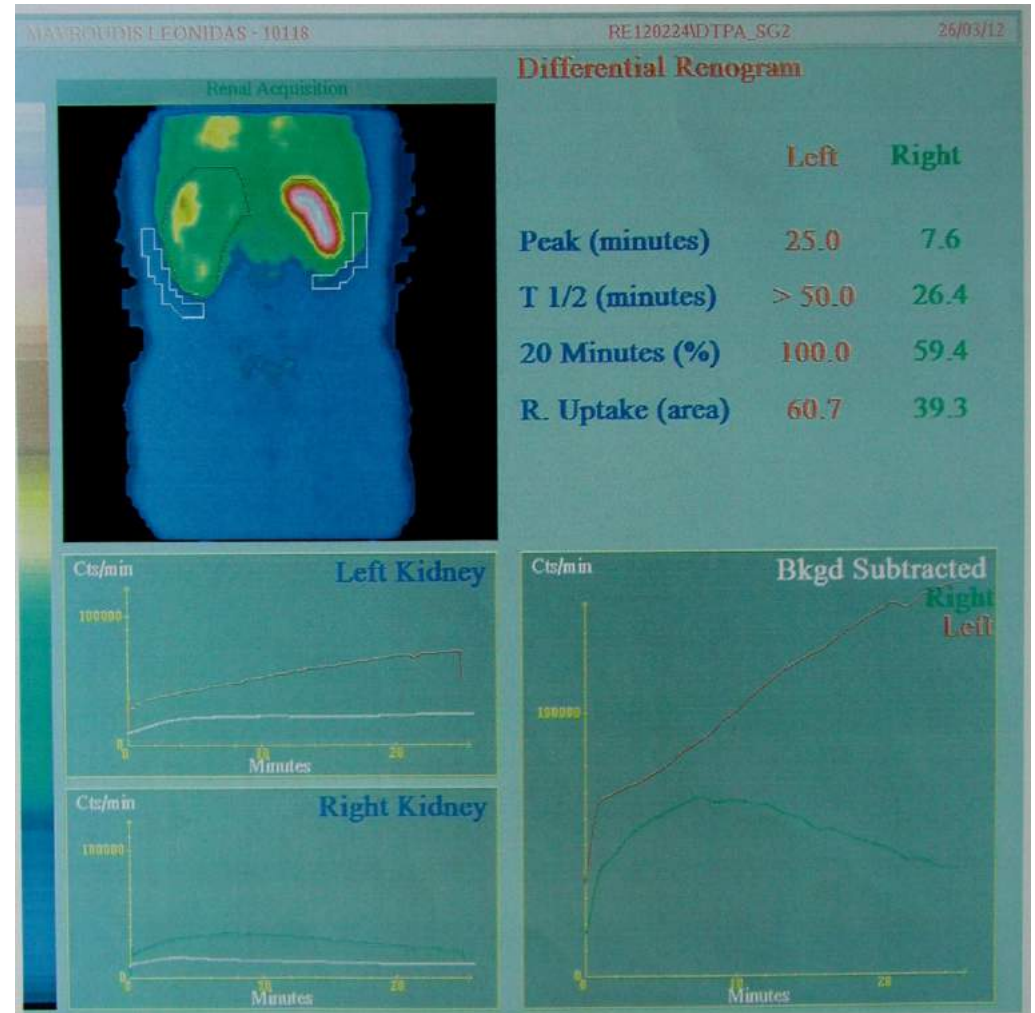
ΠΡΙΝ



ΜΕΤΑ



ΠΡΙΝ



ΜΕΤΑ

03.005;01 +C
XP -120.0mm
+00.0°
10mm
42.0cm
x= +1.89cm
y= +0.00cm
STND

TZAMAL

A

22; F
1999/08/02 12:16:49

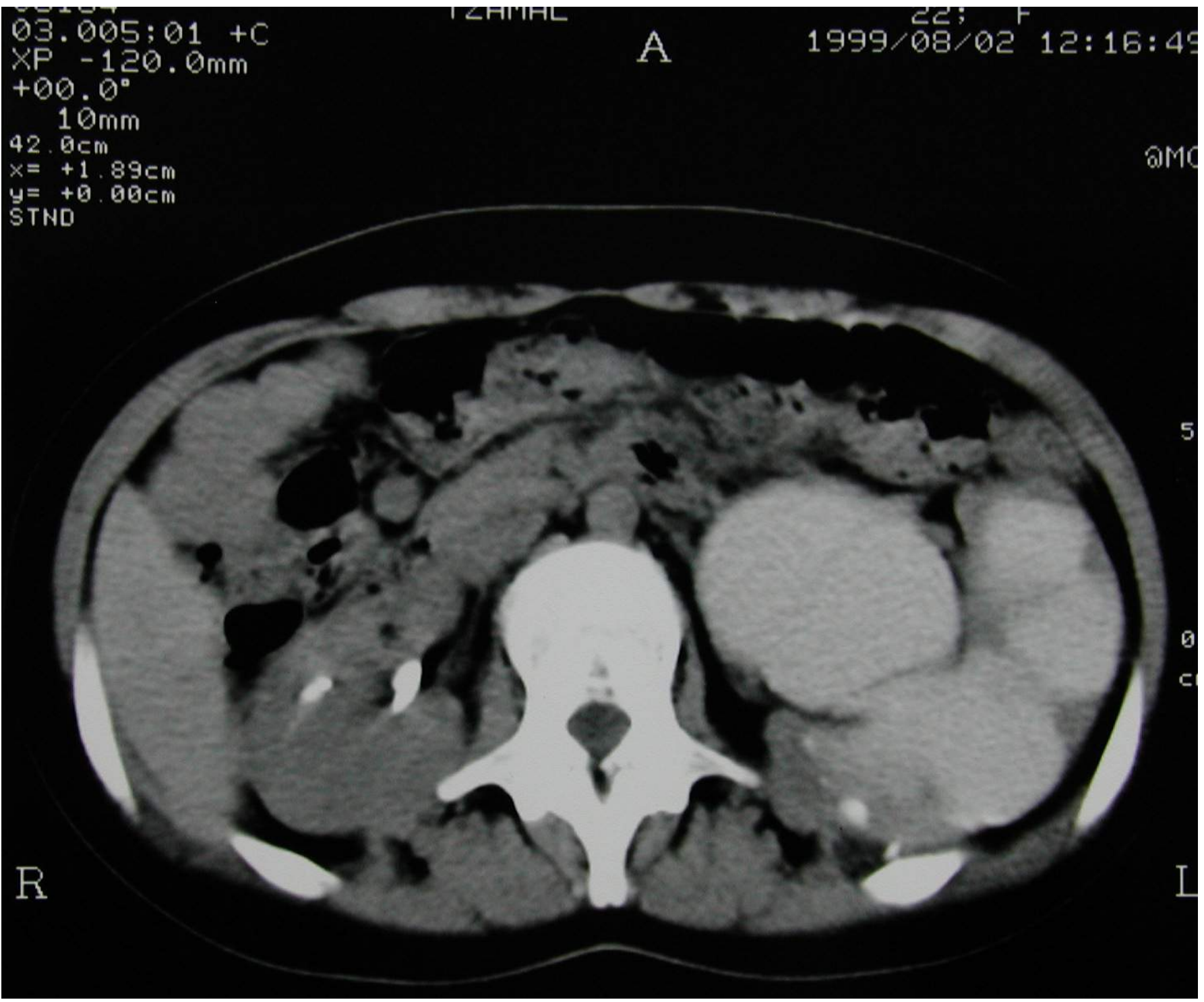
@MC

5

0
c

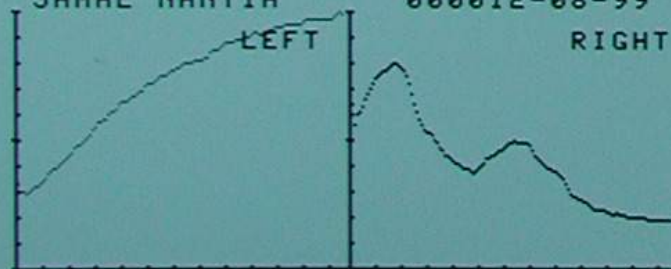
R

L

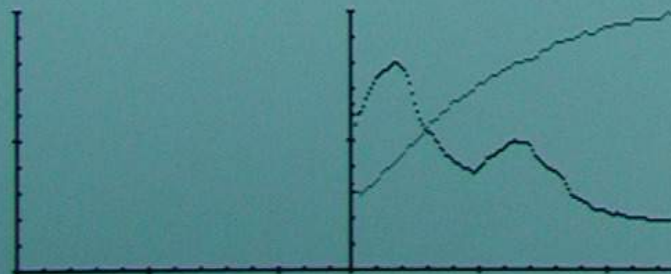




RENOGRAPHY 2 DATE:03/08/1999
INSTITUTE : ASKLIPIOS
JAMAL NANTIA 000012-08-99



METHOD Y, DIRECT BCKGND SUBTRACT



RENOGRAPHY 2 DATE:03/08/1999
INSTITUTE : ASKLIPIOS
JAMAL NANTIA 000012-08-99

DISTRIBUTION OF FILTRATION (%)
LEFT 033 RIGHT 067

TIME TILL MAXIMUM (MIN)
LEFT 33.3 RIGHT 04.8

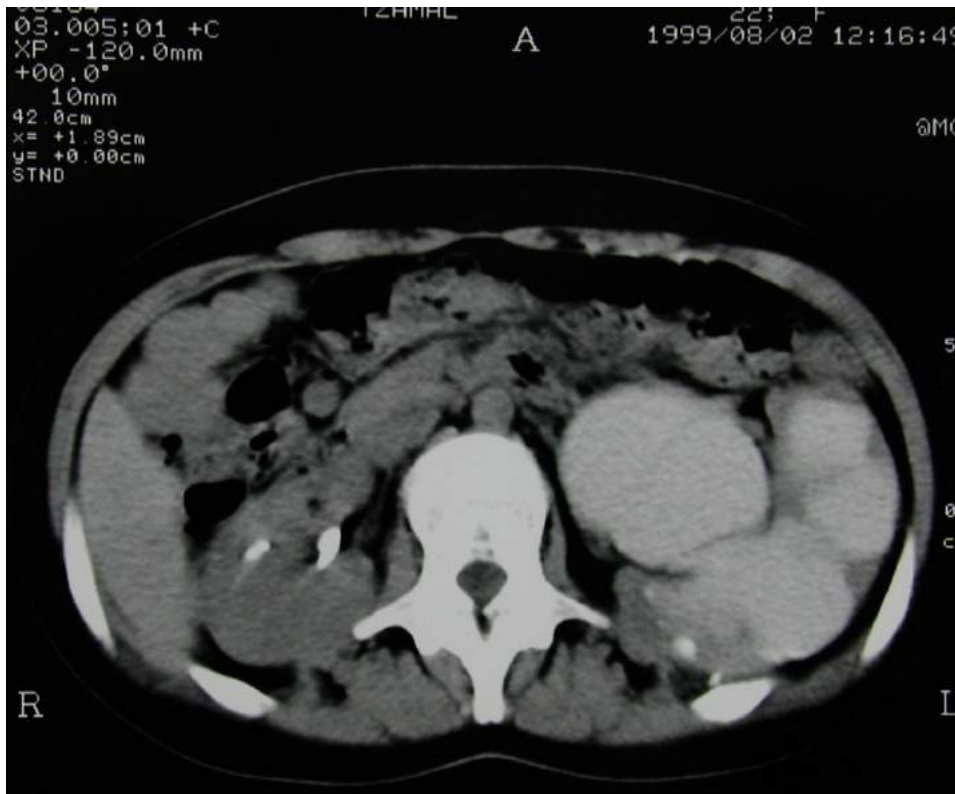
RESTACTIVITY AFTER 20 MIN. (%)
LEFT 083 RIGHT 053

CALCULATION METHOD : Y
DIRECT BACKGROUND SUBTRACTED

DATE 03-08-1999
TIME 14:14

POST INJ TIME
000.0 HR

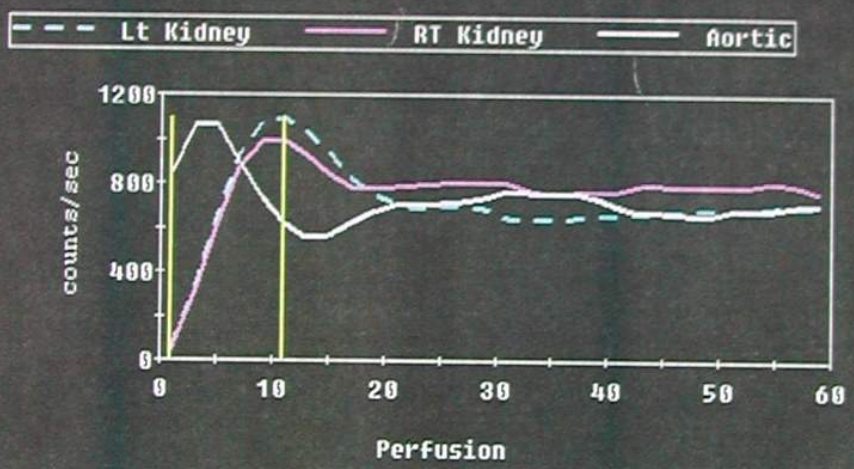
JAMAL NANTIA
000012-08-99



ΠΡΙΝ



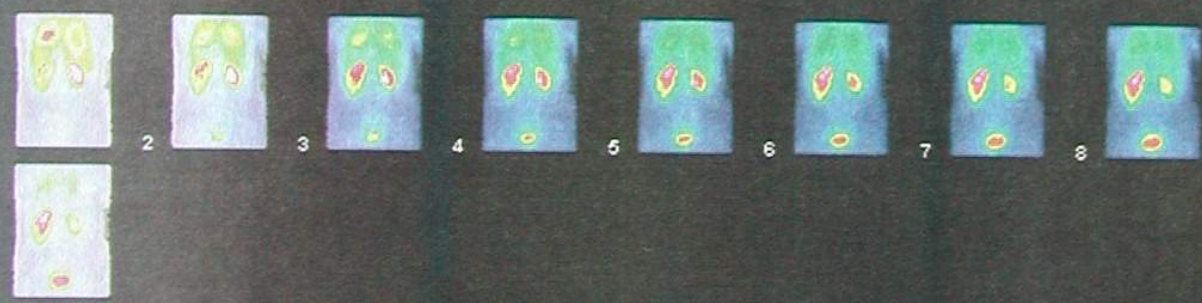
ΜΕΤΑ



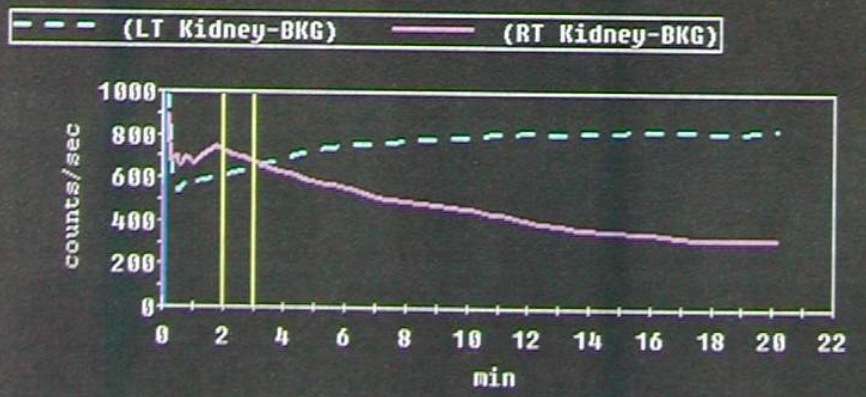
GFR ml/min: 121.61
 Scaled GFR ml/min: 109.84
 Mean normal GFR for age: 112.
 Lower limit of GFR for age: 86.

Kidney	Left	Right
Kidney Area (cm ²)	115.23	80.9
Kidney depth (cm)	6.91	6.96
Perfusion% (Int)	51.57	48.43
Perfusion% (Slo)	52.19	47.81
Uptake% (Int)	47.07	52.93
GFR:	57.24	64.37

Perfusion 0-30s



Time to peak:	19.73	1.73
Peak to 1/2 peak:	NA	12.
Diuretic T1/2:	NA	12.



Uptake Interval

Function

C TZAMAL NANTIA

A

PLATON DIAGNOSTIC

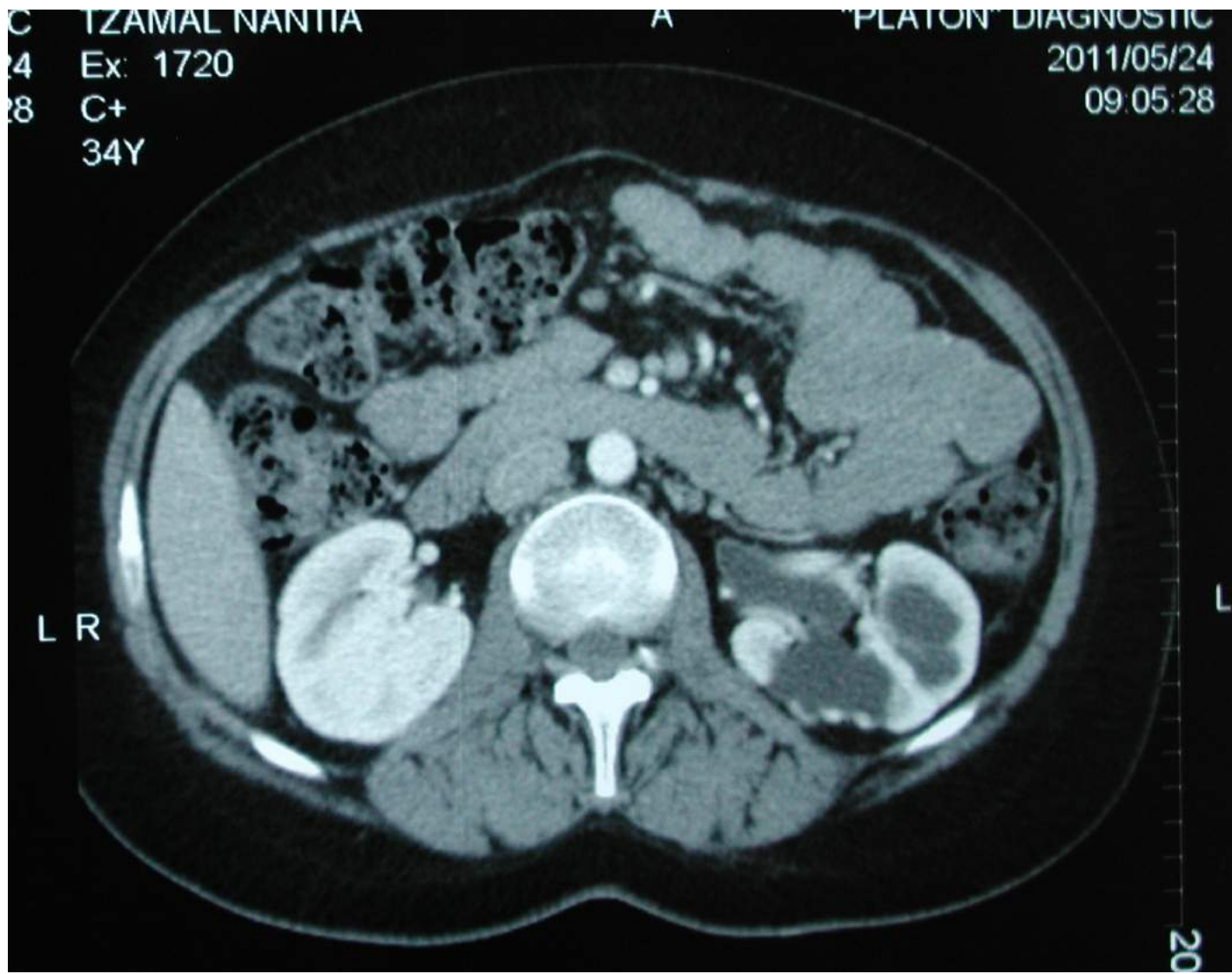
4 Ex: 1720

2011/05/24

8 C+

09:05:28

34Y



L R

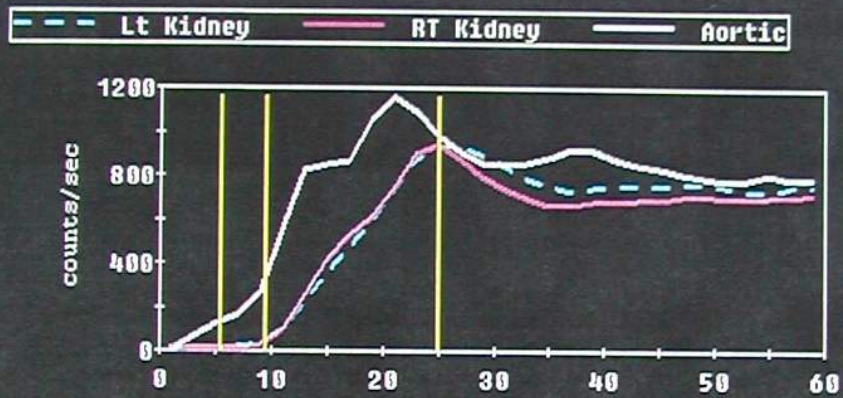
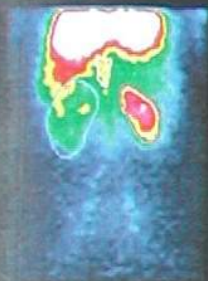
20



ΠΡΙΝ



ΜΕΤΑ

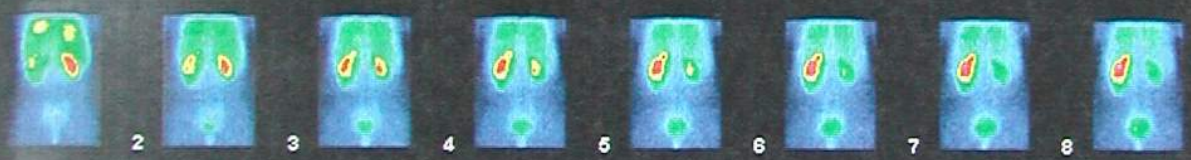


GFR ml/min: 120.17
 Scaled GFR ml/min: 108.54
 Mean normal GFR for age: 109.
 Lower limit of GFR for age: 84.

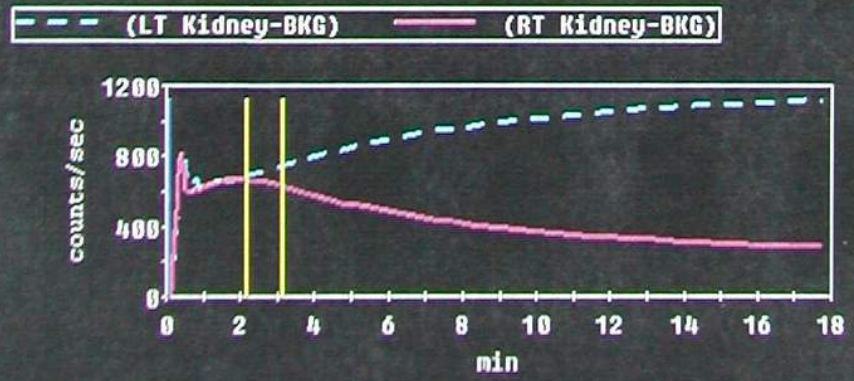
Kidney	Left	Right
Kidney Area (cm ²)	121.77	63.74
Kidney depth (cm)	6.91	6.96
Perfusion% (Int)	48.68	51.32
Perfusion% (Slo)	49.83	50.17
Uptake% (Int)	52.33	47.67
GFR:	62.88	57.29

Perfusion 0-30s

Perfusion

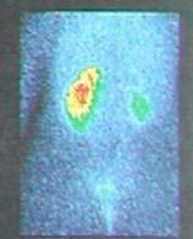


Time to peak: 17.09 1.59
 Peak to 1/2 peak: NA 10.5
 Diuretic T1/2: NA 10.5



take Interval

Function



Postvoid Image

Υποχώρηση συμπτωμάτων: ΝΑΙ
Βελτίωση στον απεικονιστικό έλεγχο: ΝΑΙ



ΕΠΙΤΥΧΙΑ

Υποχώρηση συμπτωμάτων: ΟΧΙ
Βελτίωση στον απεικονιστικό έλεγχο: ΌΧΙ



ΑΠΟΤΥΧΙΑ

Υποχώρηση συμπτωμάτων: ΝΑΙ

Βελτίωση στον απεικονιστικό έλεγχο: ΌΧΙ



Ραδιενεργό νεφρόγραμμα



Βελτίωση του T1/2 και σταθερό ή βελτιωμένο
ποσοστό λειτουργίας σύστοιχου νεφρού



ΕΠΙΤΥΧΙΑ

Υποχώρηση συμπτωμάτων: ΌΧΙ*

Βελτίωση στον απεικονιστικό έλεγχο: ΝΑΙ



Πιθανή αποτυχία



Περαιτέρω έλεγχος με ραδιενεργό
νεφρόγραμμα και ανιούσα πνευμογραφία

*Αποκλείστε άλλα αίτια των συμπτωμάτων

ΘΕΡΑΠΕΥΤΙΚΕΣ ΕΠΙΛΟΓΕΣ ΜΕΤΑ ΑΠΟΤΥΧΗΜΕΝΗ ΠΥΕΛΟΠΛΑΣΤΙΚΗ

- Συντηρητική αντιμετώπιση
- Τοποθέτηση stent (ως τελική θεραπεία)
- Διαστολή με μπαλόνι
- Ενδοπυελοτομή
- Επαναληπτική (redo) πυελοπλαστική
- Ουρητηροκαλυκκοστομία

ΘΕΡΑΠΕΥΤΙΚΕΣ ΕΠΙΛΟΓΕΣ ΜΕΤΑ ΑΠΟΤΥΧΗΜΕΝΗ ΠΥΕΛΟΠΛΑΣΤΙΚΗ

- Συντηρητική αντιμετώπιση
- Τοποθέτηση stent (ως τελική θεραπεία)
- Διαστολή με μπαλόνι
- Ενδοπυελοτομή
- Επαναληπτική (redo) πυελοπλαστική
- Ουρητηροκαλυκκοστομία

ΘΕΡΑΠΕΥΤΙΚΕΣ ΕΠΙΛΟΓΕΣ ΜΕΤΑ ΑΠΟΤΥΧΗΜΕΝΗ ΠΥΕΛΟΠΛΑΣΤΙΚΗ

- Συντηρητική αντιμετώπιση
- Τοποθέτηση stent (ως τελική θεραπεία)
- Διαστολή με μπαλόνι
- Ενδοπυελοτομή
- Επαναληπτική (redo) πυελοπλαστική
- Ουρητηροκαλυκκοστομία

Failed Pyeloplasty in Children: Revisiting the Unknown

Rodrigo L. P. Romao, Martin A. Koyle, Joao L. Pippi Salle, Abdulhakim Alotay, Victor H. Figueroa, Armando J. Lorenzo, Darius J. Bagli, and Walid A. Farhat

UROLOGY 2013; 82: 1145

Table 5. Modalities of reintervention after pyeloplasty with respective success rates

Procedure	Number of Interventions	Success Rate
Double J stent	16	2/16; 6%
Endopyelotomy	18	9/18; 50%
Redo pyeloplasty	13	12/13; 92%
Ureterocalicostomy	4	4/4; 100%

ΘΕΡΑΠΕΥΤΙΚΕΣ ΕΠΙΛΟΓΕΣ ΜΕΤΑ ΑΠΟΤΥΧΗΜΕΝΗ ΠΥΕΛΟΠΛΑΣΤΙΚΗ

- Συντηρητική αντιμετώπιση
- Τοποθέτηση stent (ως τελική θεραπεία)
- Διαστολή με μπαλόνι
- Ενδοπυελοτομή
- Επαναληπτική (redo) πυελοπλαστική
- Ουρητηροκαλυκτοσμία

Table 2 - Results of balloon disruption series in which $n \geq 50$

	Method	<i>n</i>	Follow-up, mo	Primary success rate	Secondary success rate
Webber [20]	Balloon	76	≤120	67%	NS
Lewis-Russell [21]	Balloon	58	≤115	67%	NS
Osther [22]	Balloon	77	29 (1-72)	25% age < 18 yr 57% age > 18 yr	NS
Mean				58%	NS
Preminger [23]	Acucise	58	8 (1-18)	74%	82%
Kim [24]	Acucise	77	12 (NS)	78% overall	NS
Mean				76%	82%
Values are mean or median (range).					
NS = not stated.					

Laparoscopic Redo Pyeloplasty After Failed Open Surgery

Pejman Shadpour, Ramin Haghighi, Robab Maghsoudi, Masoud Etemedian

Purpose: To report our experience in treating patients with failed previous open pyeloplasty by transperitoneal laparoscopic pyeloplasty.

Materials and Methods: Eleven patients with previous failed open pyeloplasty were reviewed, all of whom had undergone transperitoneal laparoscopic pyeloplasty. All procedures were performed by a single team. Depending on the anatomic situation, either dismembered or a flap technique was utilized. Subsequent follow-up was by ultrasonography initially, and diuretic renal scintigraphy and/or intravenous urography at least 12 months after the re-operation. Data were collected from the medical records.

Results: The study group consisted of 7 men and 4 women with the mean

ΛΑΠΑΡΟΣΚΟΠΙΚΗ REDO ΠΥΕΛΟΠΛΑΣΤΙΚΗ

Σε 10/11 περιστατικά: επιτυχία

1 περιστατικό με αποτυχία της redo πυελοπλαστικής «διεσώθη» με balloon dilatation + stenting

Balloon dilation for failed pyeloplasty in children?

Duan H^{1,2}, Zhu W^{1,2}, Zhong W^{1,2}, Li X^{1,2}, Zeng G^{1,2}.

Author information

Abstract

OBJECTIVE: Pyeloplasty is considered the gold standard treatment for ureteropelvic junction obstruction (UPJO). However, the failure rate of pyeloplasty is as high as 10% and repeat pyeloplasty is more difficult. This study aimed to evaluate the efficacy of balloon dilatation for failed pyeloplasty in children.

MATERIALS AND METHODS: Between 2011 and 2017, 15 patients, aged 6 months to 14 years, were treated with balloon dilation for restenosis of UPJO after a failed pyeloplasty. Ultrasound and intravenous urography were used to evaluate the primary outcome. Success was defined as the relief of symptoms and improvement of hydronephrosis, which was identified by ultrasound at the last follow-up.

RESULTS: All patients successfully completed the operation, 13 patients by retrograde approach and 2 patients by antegrade approach. Thirteen patients were followed for a median of 15 (4 to 57) months and 2 patients were lost to follow-up. Resolution of the hydronephrosis was observed in 5 cases. The anteroposterior diameter (APD) of the pelvis decreased by an average of 12.4 ± 14.4 mm. Eight patients needed another surgery. The average postoperative hospital stay was 1.78 ± 1.4 days. Two patients experienced fever after balloon dilation. No other complications were found.

CONCLUSIONS: Balloon dilatation surgery is safe for children, but it is not recommended for failed pyeloplasty in that group of patients, owing to the low success rate.

ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ	15
ΧΑΘΗΚΑΝ ΣΤΟ FOLLOW-UP	2
ΔΙΑΡΚΕΙΑ FOLLOW-UP	15 (4-57) μήνες
ΕΠΙΤΥΧΙΑ	5 / 13 (38,5%)

Balloon dilation for failed pyeloplasty in children?

Duan H^{1,2}, Zhu W^{1,2}, Zhong W^{1,2}, Li X^{1,2}, Zeng G^{1,2}.

⊕ Author information

Abstract

OBJECTIVE: Pyeloplasty is considered the gold standard treatment for ureteropelvic junction obstruction (UPJO). However, the failure rate of pyeloplasty is as high as 10% and repeat pyeloplasty is more difficult. This study aimed to evaluate the efficacy of balloon dilatation for failed pyeloplasty in children.

MATERIALS AND METHODS: Between 2011 and 2017, 15 patients, aged 6 months to 14 years, were treated with balloon dilation for restenosis of UPJO after a failed pyeloplasty. Ultrasound and intravenous urography were used to evaluate the primary outcome. Success was defined as the relief of symptoms and improvement of hydronephrosis, which was identified by ultrasound at the last follow-up.

RESULTS: All patients successfully completed the operation, 13 patients by retrograde approach and 2 patients by antegrade approach. Thirteen patients were followed for a median of 15 (4 to 57) months and 2 patients were lost to follow-up. Resolution of the hydronephrosis was observed in 5 cases. The anteroposterior diameter (APD) of the pelvis decreased by an average of 12.4 ± 14.4 mm. Eight patients needed another surgery. The average postoperative hospital stay was 1.78 ± 1.4 days. Two patients experienced fever after balloon dilation. No other complications were found.

CONCLUSIONS: Balloon dilatation surgery is safe for children, but it is not recommended for failed pyeloplasty in that group of patients, owing to the low success rate.

ΘΕΡΑΠΕΥΤΙΚΕΣ ΕΠΙΛΟΓΕΣ ΜΕΤΑ ΑΠΟΤΥΧΗΜΕΝΗ ΠΥΕΛΟΠΛΑΣΤΙΚΗ

- Συντηρητική αντιμετώπιση
- Τοποθέτηση stent (ως τελική θεραπεία)
- Διαστολή με μπαλόνι
- Ενδοπυελοτομή
- Επαναληπτική (redo) πυελοπλαστική
- Ουρητηροκαλυκκοστομία

ΕΝΔΟΠΥΕΛΟΤΟΜΗ (ΔΙΑΔΕΡΜΙΚΗ - ΟΥΡΗΤΗΡΟΣΚΟΠΙΚΗ)

ΣΧΕΤΙΚΕΣ ΑΝΤΕΝΔΕΙΞΕΙΣ

- ΜΕΓΑΛΗ ΥΔΡΟΝΕΦΡΩΣΗ (III-IV ΒΑΘΜΟΥ)
- ΠΟΣΟΣΤΟ ΛΕΙΤΟΥΡΓΙΑΣ ΣΥΣΤΟΙΧΟΥ ΝΕΦΡΟΥ <25%
- ΜΗΚΟΣ ΣΤΕΝΩΣΗΣ >2cm
- ΥΠΑΡΞΗ ΕΚΤΟΠΟΥ ΑΓΓΕΙΟΥ (:)

1. Van Cangh et al. J Urol 1994; 151: 934
2. Yanke et al. J Urol 2008; 180: 1397

ΕΝΔΟΠΥΕΛΟΤΟΜΗ

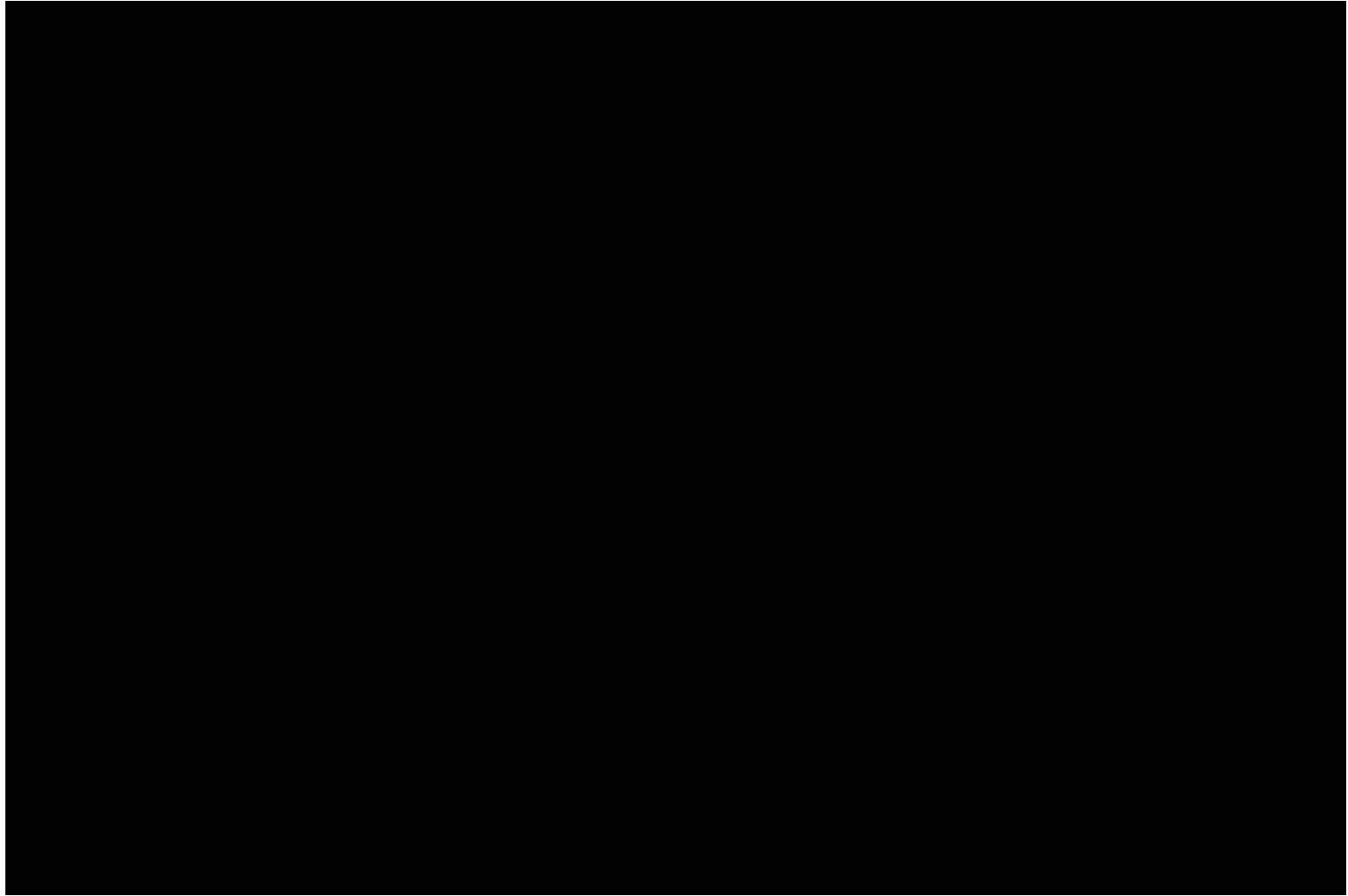
ΠΟΣΟΣΤΑ ΕΠΙΤΥΧΙΑΣ

- ΠΡΩΤΟΠΑΘΗΣ ΣΤΕΝΩΣΗ: 65-90%
- ΔΕΥΤΕΡΟΠΑΘΗΣ ΣΤΕΝΩΣΗ: 67-91%

ΕΝΔΟΠΥΕΛΟΤΟΜΗ ΜΕΤΑ ΑΠΟΤΥΧΗΜΕΝΗ ΠΥΕΛΟΠΛΑΣΤΙΚΗ

	ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ	FOLLOW-UP	ΠΟΣΟΣΤΑ ΕΠΙΤΥΧΙΑΣ
Braga et al 2007	18 (παιδιατρικοί ασθενείς)	47 μήνες	39%
Park et al. 2008	9	47,2 μήνες	66,7%
Veenboer et al. 2011	10 (παιδιατρικοί ασθενείς)	20 μήνες	70%
Romao et al 2013	18	NA	50%
Vannahme et al. 2013	30	50,3 μήνες	66,7%
Swearingen et al 2016	29	40,2 μήνες	34%
Abdrabuh 2018	27 (παιδιατρικοί ασθενείς)	20 μήνες	81,5%





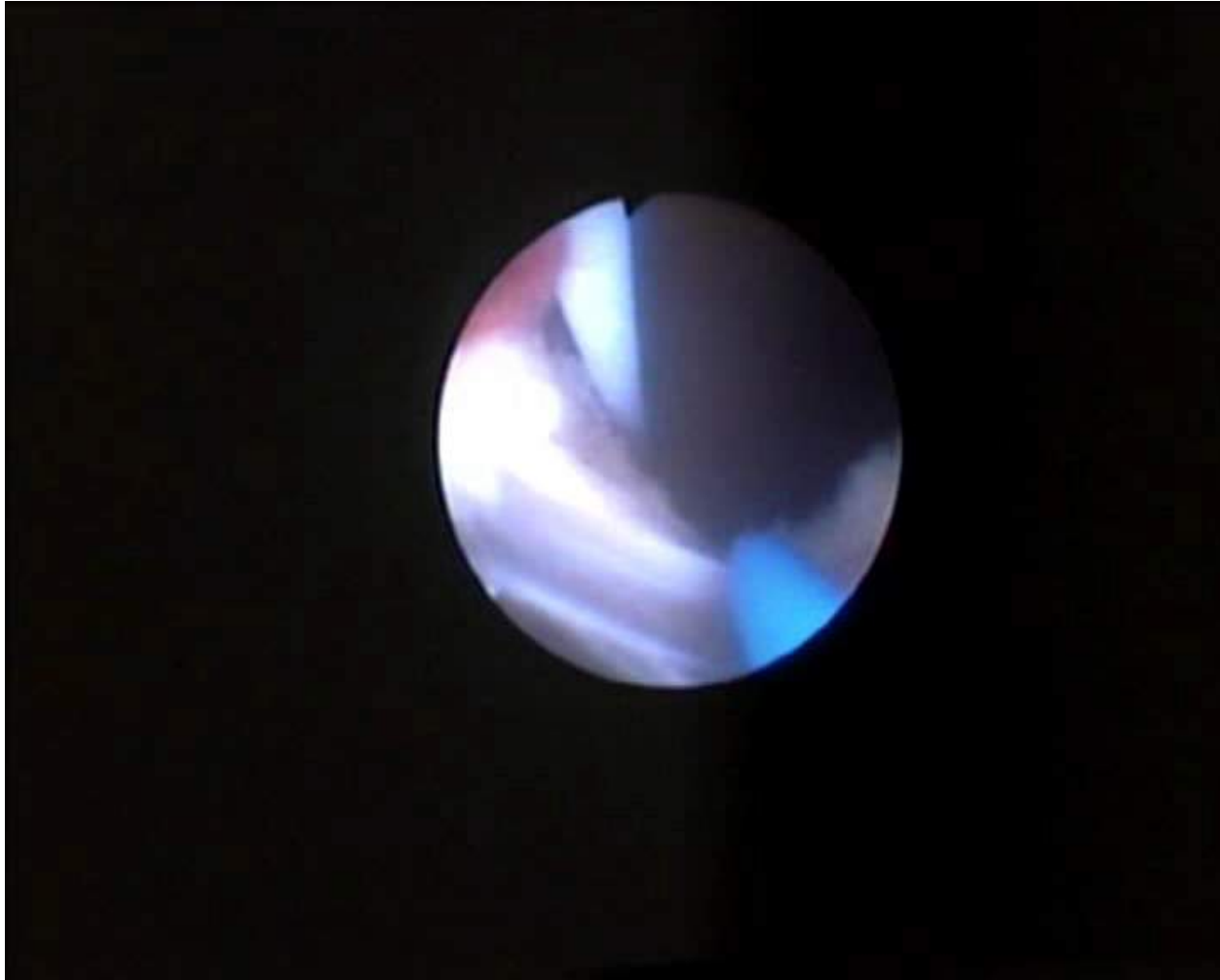
VIDEO 1



VIDEO 2



VIDEO 3



VIDEO 4



ΑΡΝΗΤΙΚΟΙ ΠΡΟΓΝΩΣΤΙΚΟΙ ΠΑΡΑΓΟΝΤΕΣ ΣΤΗΝ ΕΝΔΟΠΥΕΛΟΤΟΜΗ ΔΙΑΣΩΣΗΣ

Failed Pyeloplasty in Children: Comparative Analysis of Retrograde Endopyelotomy Versus Redo Pyeloplasty

**Luis H. P. Braga, Armando J. Lorenzo, Sean Skeldon, Sumit Dave, Darius J. Bagli,
Antoine E. Khoury, Joao L. Pippi Salle and Walid A. Farhat***

From the Division of Urology, Hospital for Sick Children, Toronto, Ontario, Canada

- Υδρονέφρωση grade IV
- Μήκος στενώματος > 1cm
- Ηλικία <4 έτη
- Η ποσοστιαία συμμετοχή της νεφρικής μονάδας στη συνολική νεφρική λειτουργία δεν ήταν προγνωστικός παράγοντας

ΑΡΝΗΤΙΚΟΙ ΠΡΟΓΝΩΣΤΙΚΟΙ ΠΑΡΑΓΟΝΤΕΣ ΣΤΗΝ ΕΝΔΟΠΥΕΛΟΤΟΜΗ ΔΙΑΣΩΣΗΣ



Endopyelotomy versus redo pyeloplasty for management of failed pyeloplasty in children: A single center experience

Abdrabuh M Abdrabuh ^{a,*}, Elsayed M Salih ^a, Mahmoud Aboelnasr ^a, Hussein Galal ^a, Abdelbasset El-Emam ^a, Tarek El-Zayat ^{a,b}

^a Department of urology, Al-Azhar university Hospitals, Cairo, Egypt

^b Department of Radiodiagnosis, Al-Azhar university Hospitals, Cairo, Egypt

- Υδρονέφρωση grade IV
- Μήκος στενώματος > 1,5 cm

ΑΡΝΗΤΙΚΟΙ ΠΡΟΓΝΩΣΤΙΚΟΙ ΠΑΡΑΓΟΝΤΕΣ ΣΤΗΝ ΕΝΔΟΠΥΕΛΟΤΟΜΗ ΔΙΑΣΩΣΗΣ

International Journal of Urology (2008) 15, 490–494

doi: 10.1111/j.1442-2042.2008.02035.x

Original Article: Clinical Investigation

Long-term outcome of secondary endopyelotomy after failed primary intervention for ureteropelvic junction obstruction

Jinsung Park, Wan S Kim, Bumsik Hong, Taehan Park and Hyung K Park

Department of Urology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

- Υδρονέφρωση grade IV
- Σημαντική απόφραξη ($T\frac{1}{2} > 20$ min)

ΘΕΡΑΠΕΥΤΙΚΕΣ ΕΠΙΛΟΓΕΣ ΜΕΤΑ ΑΠΟΤΥΧΗΜΕΝΗ ΠΥΕΛΟΠΛΑΣΤΙΚΗ

- Συντηρητική αντιμετώπιση
- Τοποθέτηση stent (ως τελική θεραπεία)
- Διαστολή με μπαλόνι
- Ενδοπυελοτομή
- Επαναληπτική (redo) πυελοπλαστική
- Ουρητηροκαλυκκοστομία

ΕΠΑΝΑΛΗΠΤΙΚΗ (REDO) ΠΥΕΛΟΠΛΑΣΤΙΚΗ

	ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ	FOLLOW-UP	ΠΟΣΟΣΤΑ ΕΠΙΤΥΧΙΑΣ
Sundaram et al 2003	36	10	83%
Braga et al 2007	14 (παιδιατρικοί ασθενείς)	33,1 μήνες	100%
Romao et al 2013	13	NA	92%
Vannahme et al. 2013	11	50,3 μήνες	90,9%
Abraham et al 2014	16	29,9 μήνες	93,3%
Swearingen et al 2016	11	40,2 μήνες	100%
Chiancone et al 2017	38	42,5 μήνες	92,1%

Long-Term Follow-Up for Salvage Laparoscopic Pyeloplasty After Failed Open Pyeloplasty

Edan Y. Shapiro, Jane S. Cho, Arun Srinivasan, Casey A. Seideman, Chad P. Huckabay, Sero Andonian, Benjamin R. Lee, Lee Richstone, and Louis R. Kavoussi

Table 1. Patient characteristics and follow-up information

Patient No.	Sex	Age	Side	Prior Surgery	Interval (mo)	Postoperative Imaging	Operative Time (min)	EBL (mL)	CV	Repair Type
1	F	50	L	Open	18	Renal scan	249	300		Y-V
2	F	19	L	Open	117	Renal scan	80	20	+	Y-V
3	M	19	L	Open	14	Renal scan	240	100		Y-V
4	F	44	L	Open (×2)	34	Renal scan, RGP	264	50	+	AH
5	M	29	L	Open	134	IVP (obstructed)	188	100		AH
6	M	21	L	Open	163	Renal scan	181	50		AH
7	M	36	R	Open	88	Renal scan	223	100		AH
8	F	39	R	Open	24	IVP	249	100		Z-plasty
9	F	28	R	Open, AE	16*	Renal scan, US	160	125		AH

AE = antegrade endopyelotomy; AH = Anderson-Hynes; CV = crossing vessel; EBL = estimated blood loss; IVP = intravenous pyelogram; RGP = retrograde pyelogram; US = ultrasound.

* Time interval between failed endoscopic repair and salvage laparoscopic pyeloplasty.

Summarized outcomes of laparoscopic pyeloplasty in patients with secondary PUJO

Study	Patient numbers	Operative time (mean)	Median follow-up (months)	Mean hospital stay (days)	Success (%)
Sundaram 2003	36	372	10	2.9	83
Piaggio 2007	6	290	7	2.5	80
Basiri 2007	18	254	14	7.2	77
Shapiro 2009	9	204	66	2.1	89
Shadpour 2011	11	208	24	3.6	90

PUJO=Pelviureteric junction obstruction. (In a further study 27 patients underwent laparoscopic pyeloplasty for secondary PUJO but outcome data was mixed with patients with primary PUJO and therefore is not included in the Table 1)

Laparoscopic management of recurrent ureteropelvic junction obstruction following pyeloplasty

George P. Abraham, Avinash T. Siddaiah, Krishnamohan Ramaswami, Datson George, Krishanu Das

Department of Urology, Lakeshore Hospital and Research Centre, Kochi, Kerala, India

Table 3: Comparison of outcome between laparoscopic repair of recurrent PUJO and primary UPJO

Variable	Redo pyeloplasty (n=15)	Pyeloplasty for primary UPJO (n=75)	P value
Age (years)	16.03±11.53	26.09±12.3	0.0035
Preoperative GFR (ml/min)	29.49±6.08	36.83±6.76	0.0001
Operative time (h)	191.25±24.99	145±22.89	0.0001
Hospital stay (days)	3.2±0.45	3.3±0.54	NS
Follow-up duration (months)	29.9±18.5	33.5±17.95	NS
Success rate %	93.3	100	-

VIDEO

ΕΠΑΝΑΛΗΠΤΙΚΗ (REDO) ΛΑΠΑΡΟΣΚΟΠΙΚΗ

ΠΥΕΛΟΠΛΑΣΤΙΚΗ ΣΕ ΑΣΘΕΝΕΙΣ

ΜΕ ΠΡΟΗΓΗΘΕΙΣΑ

ΑΠΟΤΥΧΗΜΕΝΗ ΠΥΕΛΟΠΛΑΣΤΙΚΗ

Χαλήλ Αρήφ, Εγγίν Κιγιτζή, Ζήσης Νάστος, Βίκτωρ Παναγιωτακόπουλος,
Χρήστος Καλαϊτζής, Σταύρος Τουλουπίδης, Στυλιανός Γιαννακόπουλος

Salvage treatment employed for secondary PUJO following laparoscopic pyeloplasty

Series	Failures (%)	Salvage treatment number					Number patients salvaged
		Conservative	Endoscopic repair	Lap pyeloplasty	Open pyeloplasty	Simple nephrectomy	
Maynes 2008	7 (8)	3	1	0	0	1	-
Moon 2006	6 (4)	2	2	0	1	0	-
Mufarrij 2008	6 (5)	0	2	2	0	2	4
Rassweiler 2007	8 (6)	0	4	0	3	1	-
Szydelko 2012	3 (5)	1	1	0	2	0	2
Varkarakis 2004	10 (4)	0	9	1	2 (after failed endoscopic)	0	10

PUJO=Pelviureteric junction obstruction



Contents lists available at ScienceDirect

Journal of Pediatric Surgery

journal homepage: www.elsevier.com/locate/jped surg



Endopyelotomy versus redo pyeloplasty for management of failed pyeloplasty in children: A single center experience

Abdrabuh M Abdrabuh ^{a,*}, Elsayed M Salih ^a, Mahmoud Aboelnasr ^a, Hussein Galal ^a,
Abdelbasset El-Emam ^a, Tarek El-Zayat ^{a,b}

^a Department of urology, Al-Azhar university Hospitals, Cairo, Egypt

^b Department of Radiodiagnosis, Al-Azhar university Hospitals, Cairo, Egypt

ΕΠΕΜΒΑΣΗ	ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ	ΠΟΣΟΣΤΑ ΕΠΙΤΥΧΙΑΣ
REDO ΠΥΕΛΟΠΛΑΣΤΙΚΗ	16	15/16 (93,8%)
ΕΝΔΟΠΥΕΛΟΤΟΜΗ ΔΙΑΣΩΣΗΣ	27	22/27 (81,5%)

Table 4
Comparative analysis between EP and RP.

	Overall (43 Pts)	EP (27 pts)	RP (16 pts)	P-value
Mean hospital stay (days)*	2.1	1	5	p < 0.001
Mean months follow-up	20	17	21	
Complications	1	0	1	
Preoperative Hydronephrosis				.053
Successful	37	22	15	
Failed	6	5	1	
Postoperative Hydronephrosis				0.072
Improved No. (%)	27 (62.8)	14 (51.9)	13 (81.2)	
Stable No. (%)	10 (23.3)	8 (29.6)	2 (12.5)	
Worsened No. (%)	6 (14)	5 (18.5)	1 (6.25)	
SRF				0.304
Improved No. (%)	23 (53.5)	13 (48.1)	10 (62.5)	
Stable No. (%)	15 (34.9)	10 (37)	5 (31.3)	
Worsened No. (%)	5 (11.6)	4 (14.8)	1 (6.3)	
Parenchymal thickness				0.123
Improved No. (%)	28 (65.1)	15 (55.6)	13 (81.3)	
Stable No. (%)	10 (23.3)	8 (29.6)	2 (12.5)	
Worsened No. (%)	5 (11.6)	4 (14.8)	1 (6.3)	
Renal drainage				0.379
Improved No. (%)	25 (58.1)	16 (59.3)	9 (56.3)	
Stable No. (%)	12 (27.9)	6 (22.2)	6 (37.5)	
Worsened No. (%)	6 (14)	5 (18.5)	1 (6.3)	
No. successful procedures + (%)	37 (86)	22 (81.5)	15 (93.8)	p < 0.38

The management of secondary pelvi-ureteric junction obstruction – a comparison of pyeloplasty and endopyelotomy

Milena Vannahme, Sunil Mathur, Kim Davenport*, Anthony G. Timoney and Francis X. Keeley Jr

*The Bristol Urological Institute, Southmead Hospital, North Bristol NHS Trust, Bristol, and *Cheltenham General Hospital, Gloucestershire Hospitals NHS Foundation Trust, Cheltenham, Gloucestershire, UK*

ΕΠΕΜΒΑΣΗ	ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ	ΠΟΣΟΣΤΑ ΕΠΙΤΥΧΙΑΣ
REDO ΠΥΕΛΟΠΛΑΣΤΙΚΗ	11	10/11 (90,9%)
ΕΝΔΟΠΥΕΛΟΤΟΜΗ ΔΙΑΣΩΣΗΣ	30	20/30 (66,7%)

Definitive Management of Failure After Pyeloplasty

Ryan Swearingen, Sapan Ambani, Gary J. Faerber, David A. Bloom, J. Stuart Wolf Jr. ✉



ΕΠΕΜΒΑΣΗ	ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ	ΠΟΣΟΣΤΑ ΕΠΙΤΥΧΙΑΣ
REDO ΠΥΕΛΟΠΛΑΣΤΙΚΗ	11	11/11 (100%)
ΕΝΔΟΠΥΕΛΟΤΟΜΗ ΔΙΑΣΩΣΗΣ	29	10/29 (34%)

Failed Pyeloplasty in Children: Comparative Analysis of Retrograde Endopyelotomy Versus Redo Pyeloplasty

Luis H. P. Braga, Armando J. Lorenzo, Sean Skeldon, Sumit Dave, Darius J. Bagli, Antoine E. Khoury, Joao L. Pippi Salle and Walid A. Farhat*

From the Division of Urology, Hospital for Sick Children, Toronto, Ontario, Canada

ΕΠΕΜΒΑΣΗ	ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ	ΠΟΣΟΣΤΑ ΕΠΙΤΥΧΙΑΣ
REDO ΠΥΕΛΟΠΛΑΣΤΙΚΗ	14	14/14 (100%)
ΕΝΔΟΠΥΕΛΟΤΟΜΗ ΔΙΑΣΩΣΗΣ	18	7/18 (39%)

Failed Pyeloplasty in Children: Revisiting the Unknown

Rodrigo L. P. Romao, Martin A. Koyle, Joao L. Pippi Salle, Abdulhakim Alotay, Victor H. Figueroa, Armando J. Lorenzo, Darius J. Bagli, and Walid A. Farhat

UROLOGY 2013; 82: 1145

Table 5. Modalities of reintervention after pyeloplasty with respective success rates

Procedure	Number of Interventions	Success Rate
Double J stent	16	2/16; 6%
Endopyelotomy	18	9/18; 50%
Redo pyeloplasty	13	12/13; 92%
Ureterocalicostomy	4	4/4; 100%

Laparoscopic pyeloplasty versus open pyeloplasty for recurrent ureteropelvic junction obstruction in children

A.M. Abdel-Karim, A. Fahmy, A. Moussa, H. Rashad, M. Elbadry, H. Badawy, A. Hammady



	Redo laparoscopic pyeloplasty	Redo open pyeloplasty	<i>P</i> -value
Number of patients	24	15	
Mean age, years (range)	13.2 (5–17)	11.8 (2–14)	NS
Previous pyeloplasty (open/laparoscopic)	22/2	14/1	NS
Operative time (minutes)	211.4±32.2	48.8±16.6	0.002
Hospital stay (days)	4 (2–6)	6 (3–8)	0.046
Success rate (%)	91.6%	100%	NS
Complications (%)	20.8	20%	NS

intervals between the initial pyeloplasty and subsequent interventions are depicted in Table 4. According to our data, there was no evidence that procedures undertaken earlier after an unsuccessful pyeloplasty led to a higher success rate (27 months vs 17 months for successful vs unsuccessful reintervention procedures, respectively; $P = .13$).

Salvage Laparoscopic Pyeloplasty in the Worst Case Scenario: After Both Failed Open Repair and Endoscopic Salvage

BRIAN M. LEVIN, M.D., and S. DUKE HERRELL, M.D.

TABLE 1. PATIENT CHARACTERISTICS

<i>Patient</i>	<i>Previous surgery</i>		<i>Diuretic T_{1/2} (min)</i>		<i>OT (min)</i>	<i>BL (mL)</i>	<i>CV</i>	<i>RM</i>	<i>Type of repair</i>
	<i>Open</i>	<i>Endoscopic</i>	<i>Preop.</i>	<i>Postop.</i>					
1	+	2 BD, RE	>20	7	275	150	+	+	AH
2	+	2 BD, RE	>20	4	419	100	+	+	Flap
3	+	2 BD	>20	24	294	25	+	+	Flap
4	+	2 A	>20	7	253	250	-	+	AH
Mean		2.25	>20	10.5	310	131			

Abbreviations: OT = operative time, BL = blood loss, CV = crossing vessels, RM = renal mobilization, AH = Anderson-Hynes, BD = balloon dilatation, RE = retrograde endopyelotomy, A = Acucise™.

Short Communication**Robot assisted laparoscopic pyeloplasty in patients of ureteropelvic junction obstruction with previously failed open surgical repair**

Ashok K Hemal, Saurabh Mishra, Satyidip Mukharjee and Manav Suryavanshi

Department of Urology, All India Institute of Medical Sciences, New Delhi, India

ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ ΜΕ ΥΠΟΤΡΟΠΗ ΜΕΤΑ ΠΥΕΛΟΠΛΑΣΤΙΚΗ	5
ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ ΜΕ ΥΠΟΤΡΟΠΗ ΜΕΤΑ ΠΥΕΛΟΠΛΑΣΤΙΚΗ ΚΑΙ ΕΝΔΟΠΥΕΛΟΤΟΜΗ ΔΙΑΣΩΣΗΣ	4
ΔΙΑΡΚΕΙΑ FOLLOW-UP	Not reported
ΕΠΙΤΥΧΙΑ	5/5
	4/4
	(100%)





Πρηνής Θέση

25 ΛΕΠΤΑ

R



Θία Θέση

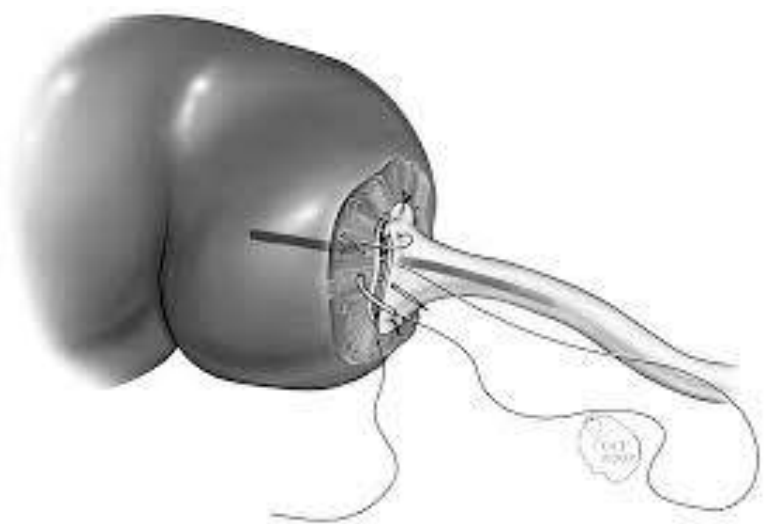
ΛΕΠΤΑ

ΕΞΑΝΔΡΟΥΠΟΛΗΣ

ΜΠΟΣΤΑΤΖΙ ΜΕΜΕΤ

ΘΕΡΑΠΕΥΤΙΚΕΣ ΕΠΙΛΟΓΕΣ ΜΕΤΑ ΑΠΟΤΥΧΗΜΕΝΗ ΠΥΕΛΟΠΛΑΣΤΙΚΗ

- Συντηρητική αντιμετώπιση
- Τοποθέτηση stent (ως τελική θεραπεία)
- Διαστολή με μπαλόνι
- Ενδοπυελοτομή
- Επαναληπτική (redo) πυελοπλαστική
- Ουρητηροκαλυκκοστομία



ΟΥΡΗΤΗΡΟΚΑΛΥΚΟΣΤΟΜΙΑ

	ΑΡΙΘΜΟΣ ΑΣΘΕΝΩΝ	FOLLOW-UP	ΠΟΣΟΣΤΑ ΕΠΙΤΥΧΙΑΣ
Shah et al 2004	25	38 μήνες	88% (22/25)
Romao et al 2013	4	Not reported	100%
Arap et al 2014	6	30 μήνες	100%
Gite et al 2016	3	6-36 μήνες	100%
Srivastava et al 2018	72	60,3 μήνες	69,5% (50/72)



Ureterocalicostomy for Reconstruction of Complicated Ureteropelvic Junction Obstruction in Adults: Long-Term Outcome and Factors Predicting Failure in a Contemporary Cohort

Devarshi Srivastava, Sanjoy K. Sureka, Priyank Yadav, Ankur Bansal, Shashikant Gupta, Rakesh Kapoor,

M.S. Ansari, and Aneesh Srivastava

ΠΡΟΓΝΩΣΤΙΚΟΙ ΠΑΡΑΓΟΝΤΕΣ ΕΠΙΤΥΧΙΑΣ ΤΗΣ ΟΥΡΗΤΗΡΟΚΑΛΥΚΟΣΤΟΜΙΑΣ

Table 4: Comparison of descriptive data between patients with succesful and failed ureterocalicoatomy

Parameters	Successful(n= 50)	Failed (n=22)	P value
<i>Age (years)</i>	25.4 ± 9.4	27.5 ± 10.2	0.633
GFR of operated kidney (n) <20ml/min >20ml/min	11 39	18 4	0.0001
Cortical thickness of operated kidney (n) <5 mm >5 mm	7 43	20 2	0.0001
Renal size on USG (n) <15 cm >15 cm	33 17	16 6	0.784
Baseline Creatinine (mg/dL)	0.9 ± 0.4	1.7 ± 0.5	0.006

bold p values are statistically significant

ΕΥΧΑΡΙΣΤΩ