



Traitement des calculs du calice inférieur : urétéroscopie souple vs NLPC

Gaëlle Fiard

Service d'Urologie et de la transplantation rénale – CHU Grenoble

Nadia Abid

Service d'urologie et chirurgie de la transplantation – Hôpital Edouard
Herriot – CHU Lyon



Faut-il traiter les calculs du calice inférieur?

Guidelines on Urolithiasis

Statement	LE
It is still debatable whether renal stones should be treated, or whether annual follow-up is sufficient for asymptomatic caliceal stones that have remained stable for 6 months.	4

Recommendations	GR
If renal stones are not treated, periodic evaluation is recommended (after 6 months and yearly follow-up of symptoms and stone status [US, KUB or CT]).	A*

**Upgraded based on panel consensus.*

Recommendations	GR
Renal stones should be treated in the case of growth, formation of de novo obstruction, associated infection, and acute or chronic pain.	A*
Comorbidity and patient preference need to be taken into consideration when making treatment decisions.	C

**Upgraded based on panel consensus.*

Faut-il traiter les calculs du calice inférieur?

BJUI
BJU INTERNATIONAL

Outcomes of long-term follow-up of patients with conservative management of asymptomatic renal calculi

Li-Tsa Koh, Foo-Cheong Ng and Kok-Kit Ng

Department of Urology, Changi General Hospital, Singapore

Accepted for publication 20 January 2011

85 calculs suivis pendant 46 mois en moyenne

TABLE 1 Outcomes according to initial location of stone

Location of stone	Upper pole % (n/N)	Middle pole % (n/N)	Lower pole % (n/N)	P value
Incidence of spontaneous passage	11.5 (3/26)	36.4 (8/22)	16.2 (6/37)	0.092
Incidence of intervention	3.8 (1/26)	18.2 (4/22)	2.7 (1/37)	0.068
Incidence of progression	50 (13/26)	40.9 (9/22)	45.9 (17/37)	0.787

Faut-il traiter les calculs du calice inférieur?

TABLE 2 Outcomes according to initial size of stone

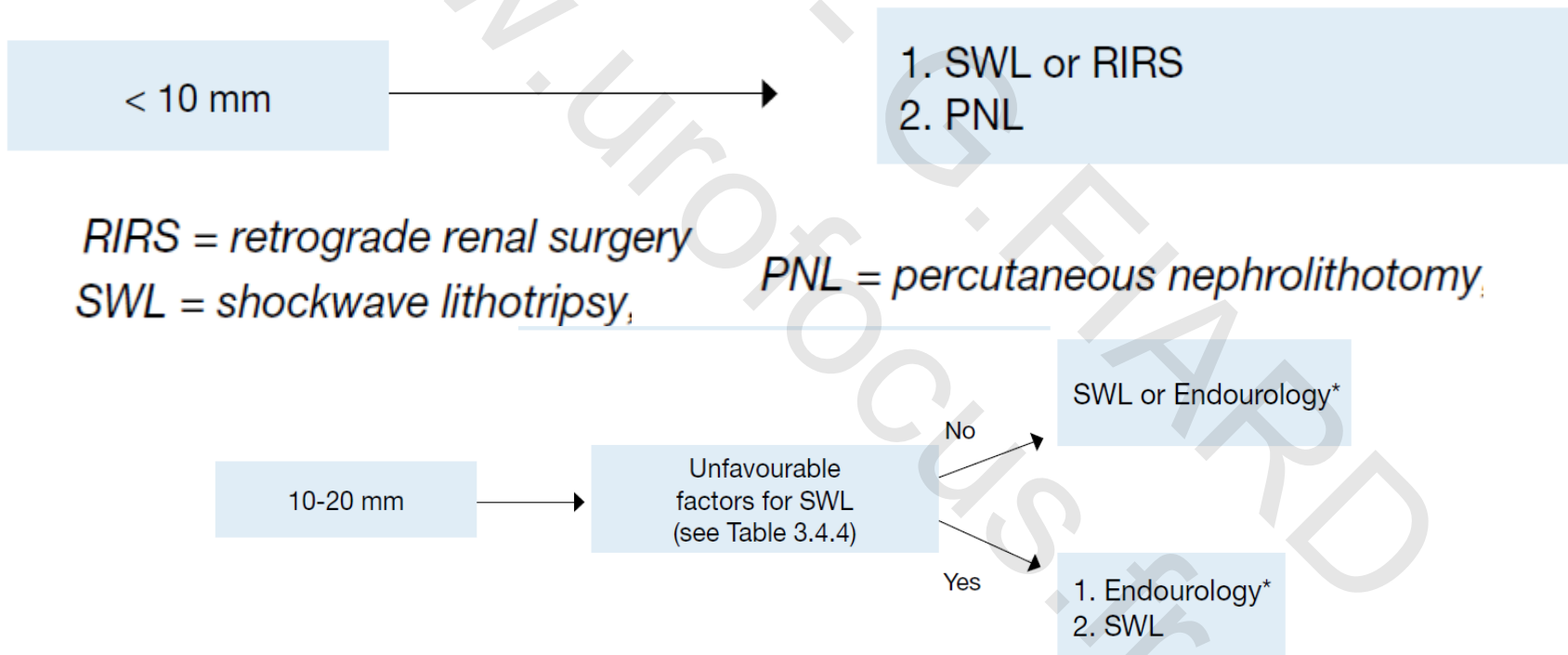
Outcomes	≤5 mm % (n/N)	5–10 mm % (n/N)	≥10 mm % (n/N)	P value
Incidence of spontaneous passage	28 (16/57)	4.8 (1/21)	0	
Incidence of intervention	5.3 (3/57)	9.5 (2/21)	14.3 (1/7)	0.477
Incidence of progression	40.4 (23/57)	52.4 (11/21)	71.4 (5/7)	0.282

TABLE 3 Incidence of spontaneous passage according to size of stone

Size of stone	≤5 mm % (n/N)	≥5 mm % (n/N)	P value
Incidence of spontaneous passage	28.1 (16/57)	3.6 (1/28)	0.006

Pourquoi plutôt une urétéroscopie souple?

- Parce qu'on a bien surveillé nos patients et qu'on les prend en charge tôt



*The term 'Endourology' encompasses all PNL and URS interventions.

Pourquoi plutôt une urétéroscopie souple?

- Parce que les suites sont moins compliquées (et que nos patients ont souvent des traitements anticoagulants)

Table 3.4.2: Complications following PNL [162]

Complications	Transfusion	Embolisation	Urinoma	Fever	Sepsis	Thoracic complication	Organ injury	Death	LE
(Range)	(0-20%)	(0-1.5%)	(0-1%)	(0-32.1%)	(0.3-1.1%)	(0-11.6%)	(0-1.7%)	(0-0.3%)	1a
N = 11,929	7%	0.4%	0.2%	10.8%	0.5%	1.5%	0.4%	0.05%	

If stone removal is essential and antithrombotic therapy cannot be discontinued, retrograde (flexible) ureterorenoscopy is the preferred approach since it is associated with less morbidity.	2a	A*
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Toepfer NJ, Baylor K, Henry Y, et al. The effect of antiplatelet and anticoagulant therapy on the clinical outcome of patients undergoing ureteroscopy. Urology 2013 Oct;82(4):773-9.

Comment je fais mon urétéroscopie souple?

- Bilan pré-opératoire :

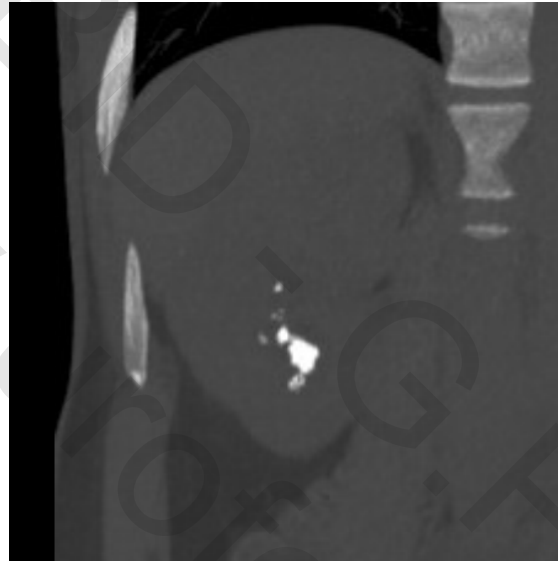


Comment je fais mon urétéroscopie souple?

- Bilan pré-opératoire :



Comment je fais mon urétéroscopie souple?



Densité?

Taille exacte?

Rein fonctionnel?

Recommendation	GR
Preprocedural imaging, including contrast medium where possible or retrograde study when starting the procedure, is mandatory to assess stone comprehensiveness, view the anatomy of the collecting system, and ensure safe access to the renal stone.	A*

Comment je fais mon urétéroscopie souple?

- Gaine d'accès urétérale?



Differences in renal stone treatment and outcomes for patients treated either with or without the support of a ureteral access sheath: The Clinical Research Office of the Endourological Society Ureteroscopy Global Study

Olivier Traxer¹ · Gunnar Wendt-Nordahl² · Hiren Sodha³ · Jens Rassweiler⁴ · Shimon Meretyk⁵ · Ahmet Tefekli⁶ · Fernando Coz⁷ · Jean J. de la Rosette⁸

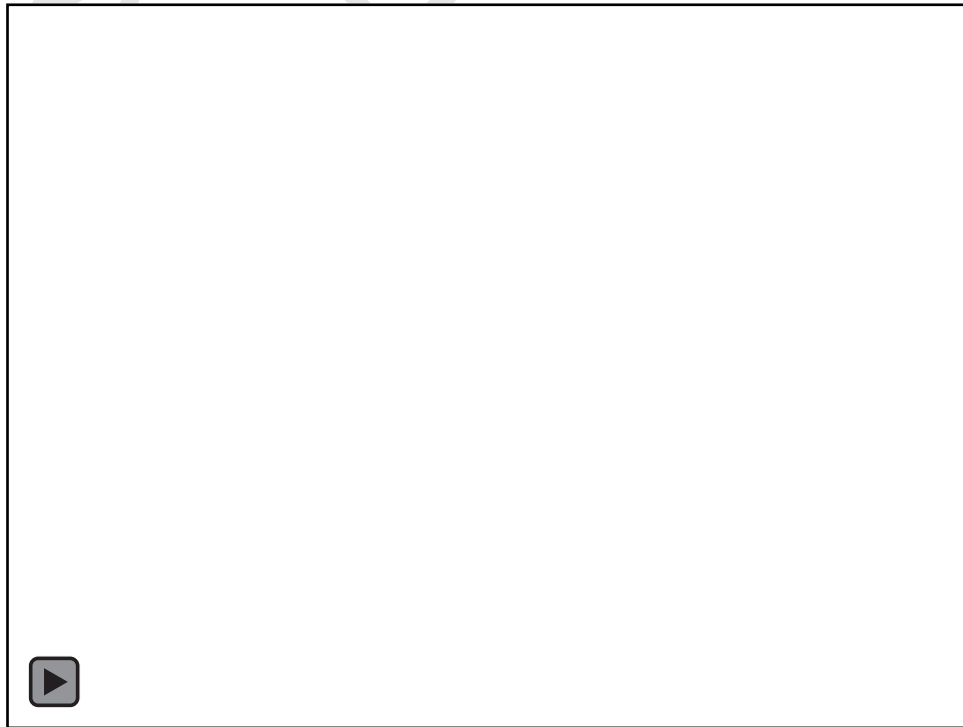
2239 patients, 1494 avec vs 745 sans
Etude non randomisée

En analyse multivariée

- Pas de différence significative : taux de patients sans fragment résiduel, lésions urétérales
- Diminution : risque d'infection post-opératoire

Comment je fais mon urétéroscopie souple?

- Gaine d'accès urétérale?



Comment je fais mon urétéroscopie souple?

- Quel urétéroscopie?

J Endourol. 2017 Jul;31(7):630-637. doi: 10.1089/end.2017.0109. Epub 2017 Jun 13.

Which Flexible Ureterscopes (Digital vs. Fiber-Optic) Can Easily Reach the Difficult Lower Pole Calices and Have Better End-Tip Deflection: In Vitro Study on K-Box. A PETRA Evaluation.

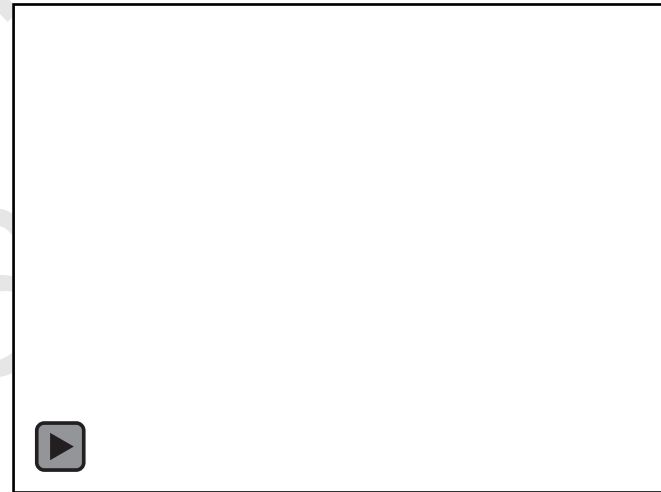
Dragos LB^{1,2}, Somani BK^{2,3}, Sener ET^{2,4}, Buttice S^{2,5}, Proietti S^{2,6}, Ploumidis A^{2,7}, Iacobaie CT⁸, Doizi S^{2,8,9}, Traxer O^{2,9}.



- **Déflexion : fibre optique > numérique**
- **Vision : numérique >> fibre optique**
- **Durée de procédure : numérique > fibre optique (-30%)**

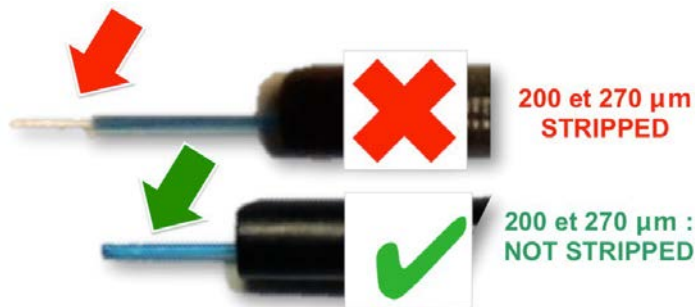
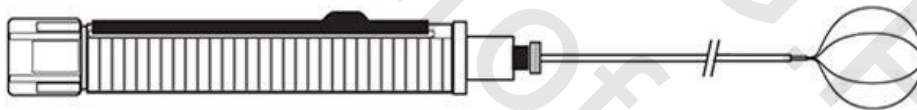
Comment je fais mon urétéroscopie souple?

- Quel urétéroscopie?



Comment je fais mon urétéroscopie souple?

- Paniers/fibres laser?
 - Le plus petit diamètre possible : ne pas limiter la déflexion++++
 - Panier fond calice type Zero-Tip



Usage unique vs réutilisable?

Comment je fais mon urétéroscopie souple?

- Stratégie : relocalisation du calcul

Diminue la morbidité “de l’urétéroscopie”

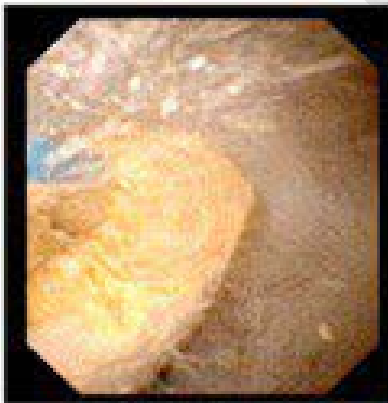
-> chaque fois que possible+++

Sinon :

- Insérer la fibre sans déflexion
- fibre à usage unique++
- recouper les 10 derniers cm de la fibre après
- URS à usage unique?

Comment je fais mon urétéroscopie souple?

- Stratégie : fragments ou poussière?



DUSTING

Long Pulse : 800 μ sec

Low Energy : 0,5 J

High Freq : 15-20Hz

Power : 7,5-10 W



Fragmentation

Short Pulse : 200 μ sec

High Energy : 1,5-2 J

Low Freq : 5Hz

Power : 7,5-10 W



Fragmentation + panier :

- Calcul <1cm
- Calcul dur (OxCa MonoH) ne faisant pas de poussière mais des fragments
- Uniquement si gaine d'accès!!!

Comment je fais mon urétéroscopie souple?

- Sonde JJ?
 - Avant :
 - Améliorer taux patients sans fragment résiduel
 - Limiter risque échec gaine d'accès (<10%?)
 - Prévention complications post-op?
 - Après : pas nécessaire si URS “simple”
 - Ambulatoire?

Rubenstein RA, Zhao LC, Loeb S, et al. Pre-stenting improves ureteroscopic stone-free rates. J Endourol 2007 Nov;21(11):1277-80.

Song T, Liao B, Zheng S, Wei Q. Meta-analysis of postoperatively stenting or not in patients underwent ureteroscopic lithotripsy. Urol Res 2012 Feb;40(1):67-77.

Quels résultats si je fais tout ça?

Table 1 – Demographic and stone characteristics by group

Characteristic	Group 1	Group 2	Group 3	Group 4
Patients, n (%)	94 (29.8)	124 (39.2)	78 (24.7)	20 (6.3)
Gender, n (%)				
Male	48 (51.1)	75 (60.5)	41 (52.6)	7 (35)
Female	46 (48.9)	49 (39.5)	37 (47.4)	13 (65)
Age, yr, mean (SD)	48.2 (11.3)	48.6 (11.9)	49.1 (11.5)	42.7 (9.7)
Stone size, mm, mean (SD)	7.9 (1.7)	15.2 (2.7)	24.6 (2.5)	33.5 (2.1)
Preprocedure stent placement, n (%)	24/94 (25.5)	36/124 (29)	21/78 (26.9)	4/20 (20)

SD = standard deviation.

O Traxer, Eur Urol 2016,

316 patients, rétrospectif

- 79% patients sans fragment résiduel à 1 mois
- 29% complications
 - Clavien I-II 27%
 - Clavien III-IV 2%

Table 2 – Intraoperative and postoperative outcomes by group

	Group 1 (n = 94)	Group 2 (n = 124)	Group 3 (n = 78)	Group 4 (n = 20)
UAS placement, n (%)	85 (90.4)	109 (87.9)	73 (93.6)	20 (100)
Overall OR, min, mean (SD)	48.4 (15.6)	71.2 (22.1)	88.9 (21.4)	112.5 (18.2)
Hospital stay, d, mean (SD)	1.4 (0.9)	1.4 (1.2)	1.5 (1.4)	1.5 (1)
Primary SFR, n (%)	85 (90.4)	99 (79.8)	55 (70.5)	11 (55)
Secondary SFR, n (%)	90 (95.7)	113 (91.1)	66 (84.6)	14 (70)
Tertiary SFR, n (%)	–	–	70 (89.7)	16 (80)
Procedures per stone rate	1.09	1.20	1.44	1.75

OR = operating room; SD = standard deviation; SFR = stone-free rate; UAS = ureteral access sheath.

Pourquoi plutôt une urétéroscopie souple?

- Calcul <2cm...une seule séance prévisible
- Anatomie favorable (angle et profondeur calice inférieur)
 - Accès au calice
 - Évacuation des fragments
- Ttt anticoagulant
- Obésité
- JJ en place

Et sinon?

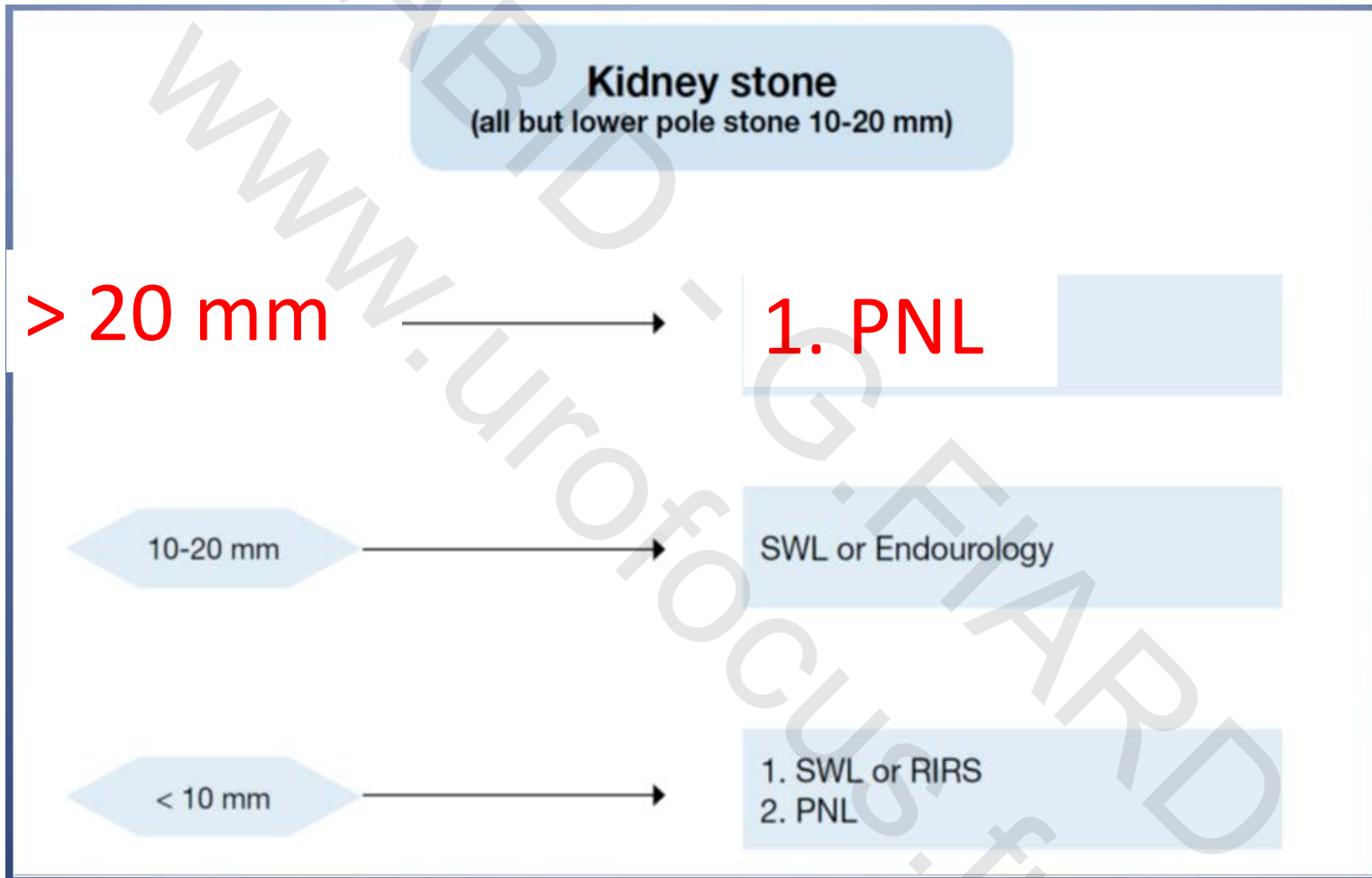
N. ABID - G. FLARD
www.urofocuss.fr

Recommandations du CLAFU 2014

calculs rénaux

Hors nature du calcul	< 2 cm	> 2 cm
Standard	LEC	NLPC
Options	URS-Souple* NLPC	URSS
Remarques	Si LEC : pas plus de 2 séances à 3 semaines d'intervalle Après PNA : délai de 3 semaines < 5 mm asymptomatique : pas de traitement systématique	LEC 4 à 6 semaines après NLPC Pas de LEC seule

Recommandations de l'EAU



Les indications de nécessité

- Les malformations
 - Syndrome de jonction
 - Diverticule caliciel
 - Rein en fer à cheval
 - Angle très aigu du calice inférieur
- Les antécédents du patient
 - Sténose urétérale
 - Entérocytoplastie / Dérivation urinaire
 - Bas appareil urinaire non accessible

Les indications

- Recommandations du CLAFU 2014
calculs rénaux

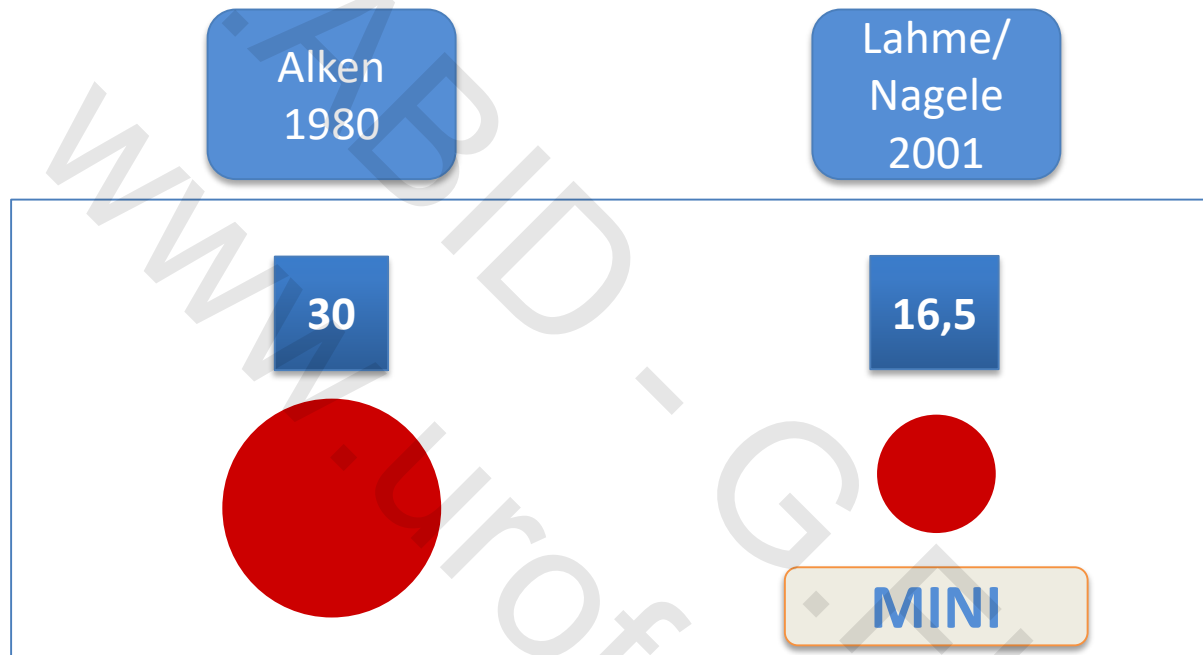
Hors nature du calcul		< 2 cm	> 2 cm
Standard	LEC	NLPC NLPC ± LEC ± URSS	
Options	URSS NLPC	LEC ± JJ URSS	
Remarques	à 3 semaines d'intervalle Après PNA : délai de 3 semaines < 5 mm asymptomatique : pas de traitement systématique		LEC 4 à 6 semaines après NLPC Pas de LEC seule

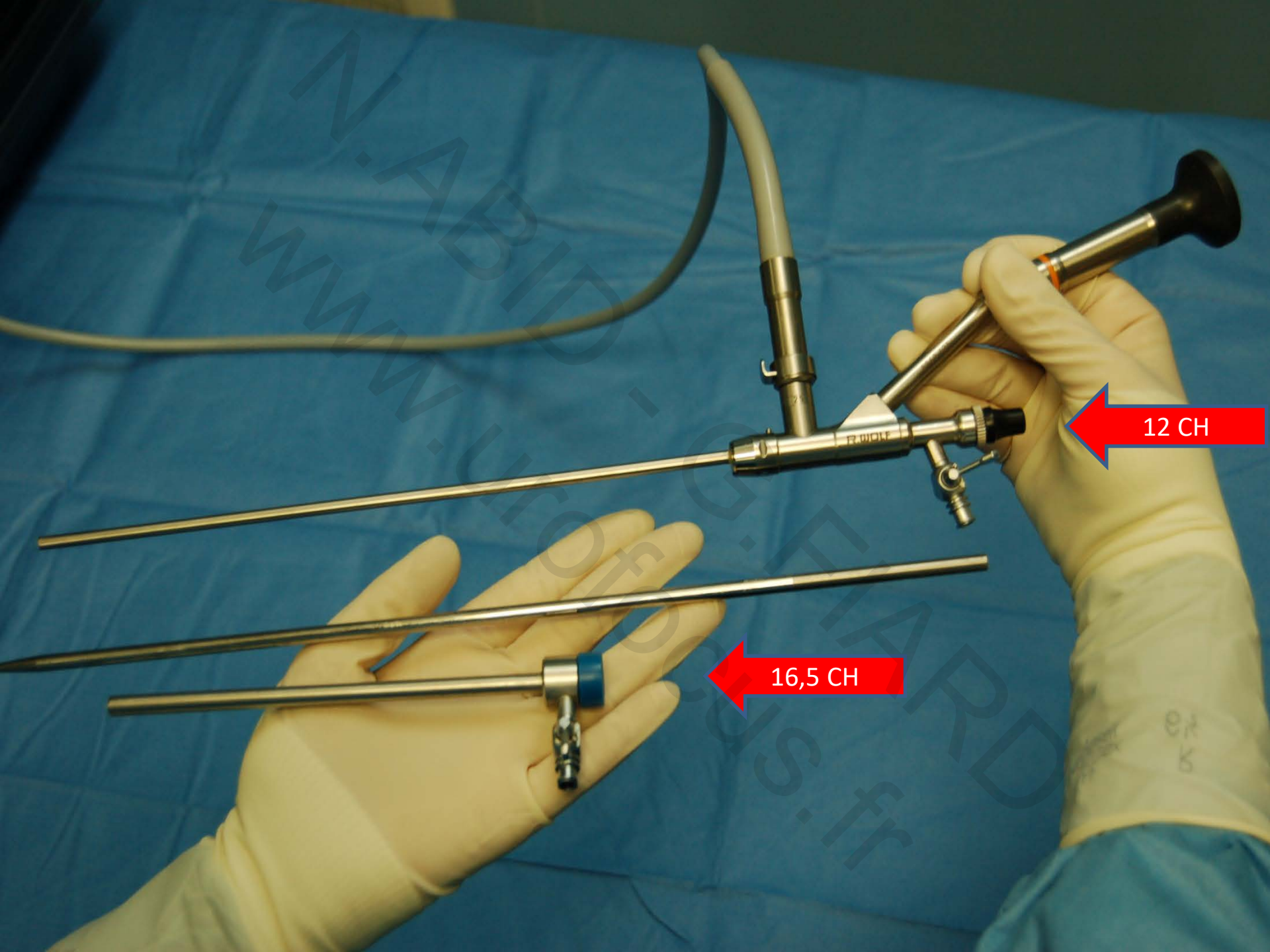
Mini NLPC

- Qu'est-ce que c'est?
- → Miniaturisation de la NLPC



Standard - Mini NLPC





12 CH

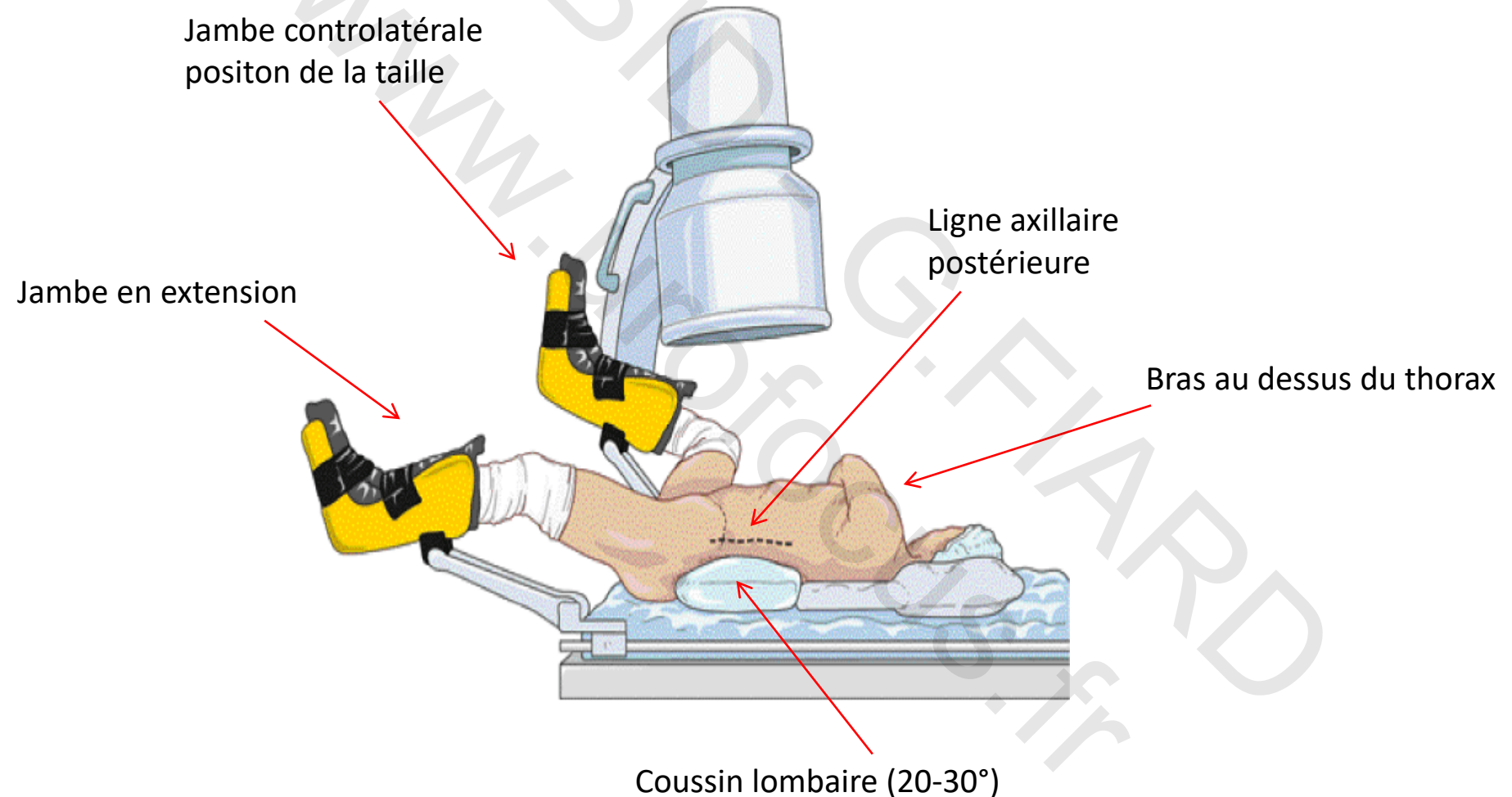
16,5 CH

La technique

Installation

- Valdivia modifiée
- Avantages Vs Ventrale :
 - Gain de temps opératoire (30-45 min)
 - Moins de risques:
 - Liés au retournement
 - Per opératoires : Cardio respiratoires
 - Viscéral: colon
 - Facilité de ponction (moins d'irradiation)
- Possibilité de traitement en double abord

Position de Valdivia modifiée (Galdakao)



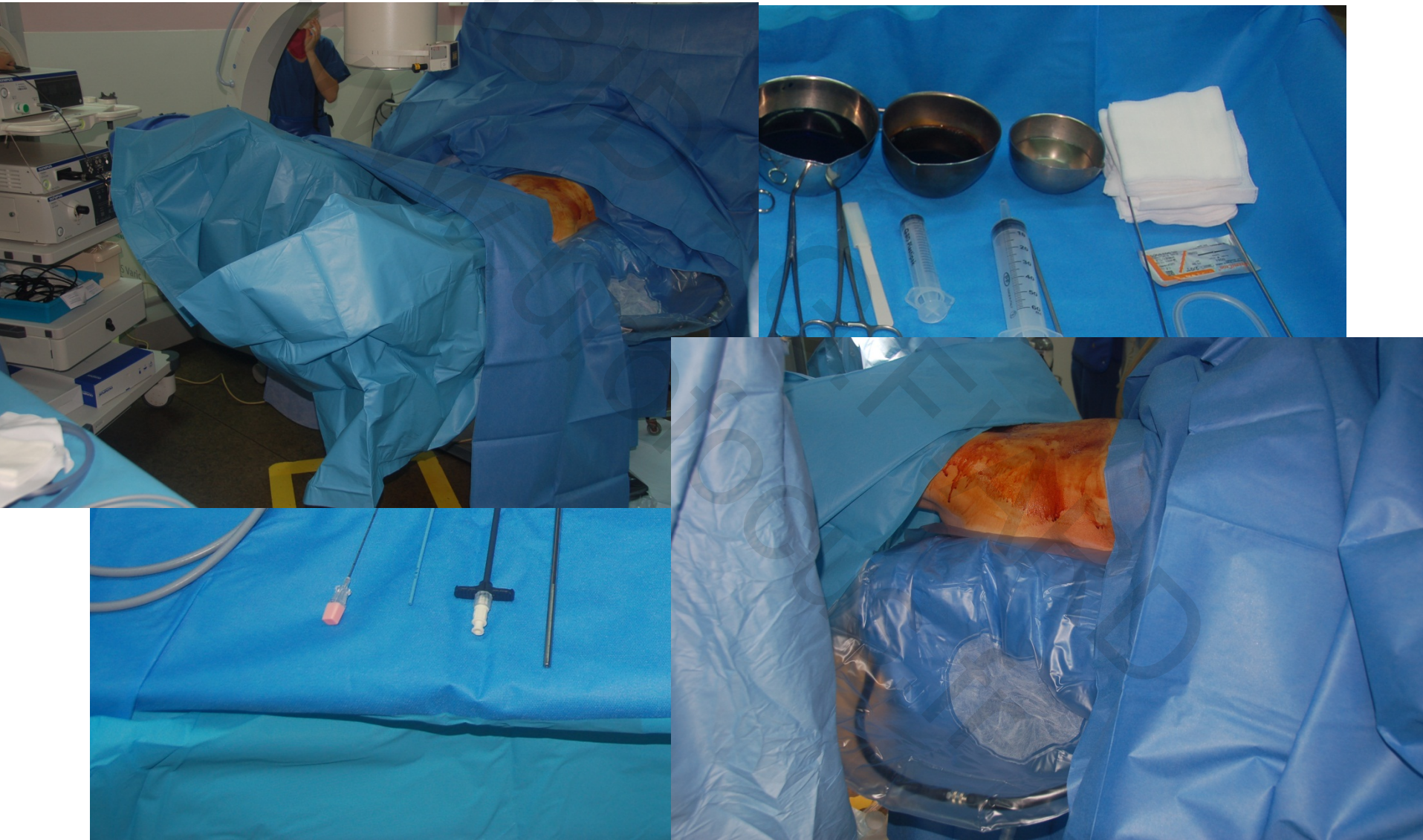
Une technique SAFE et reproductible



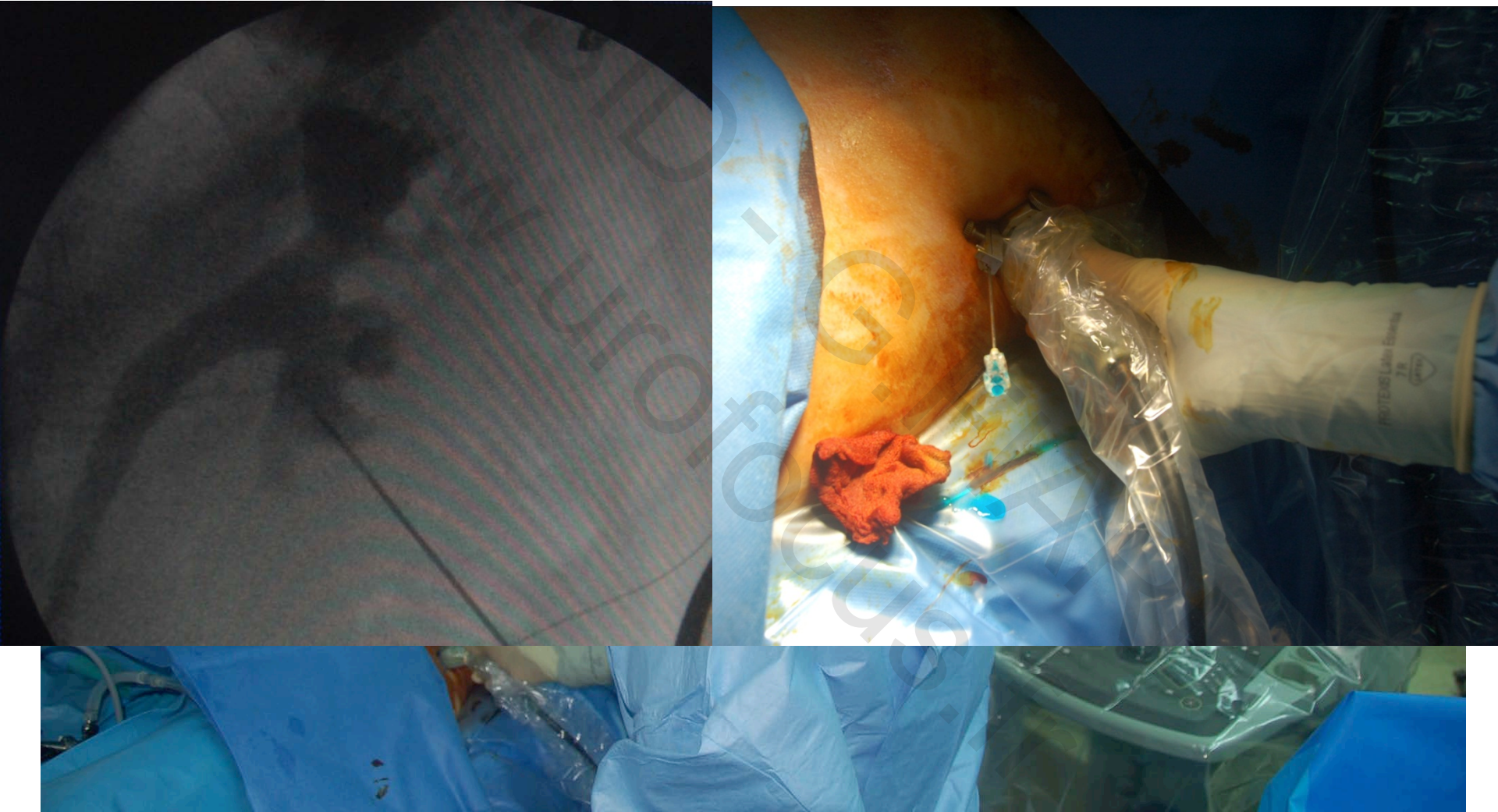
En pratique ça se passe bien!



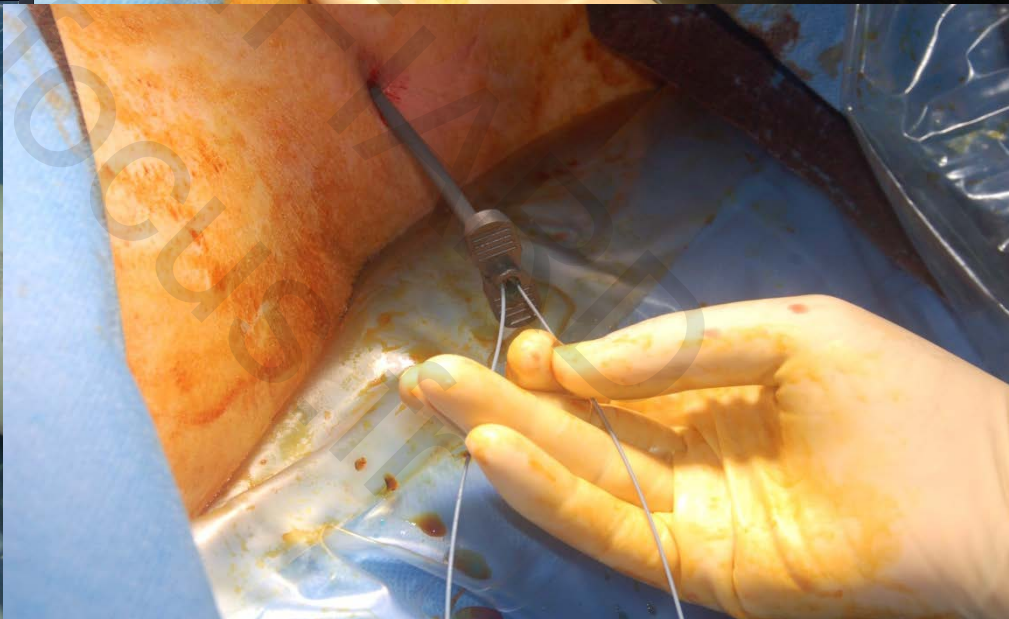
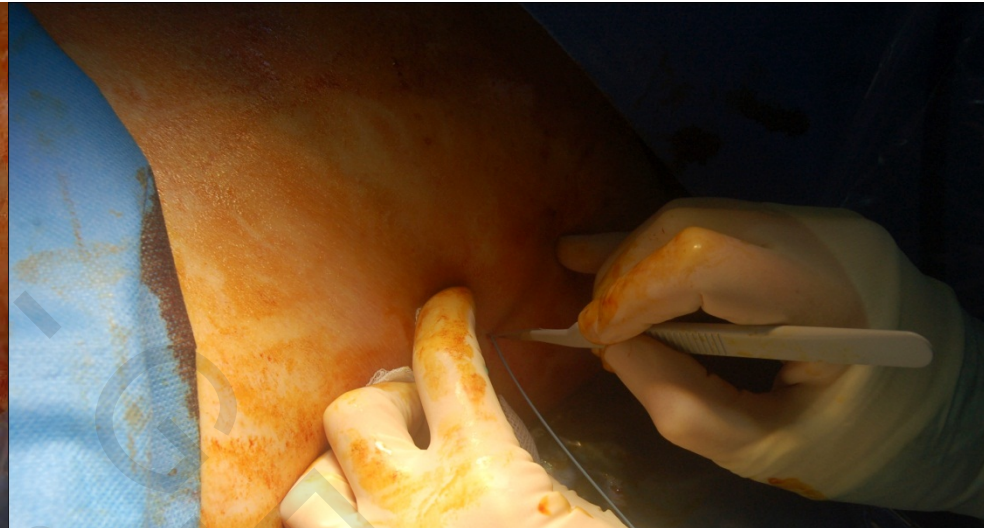
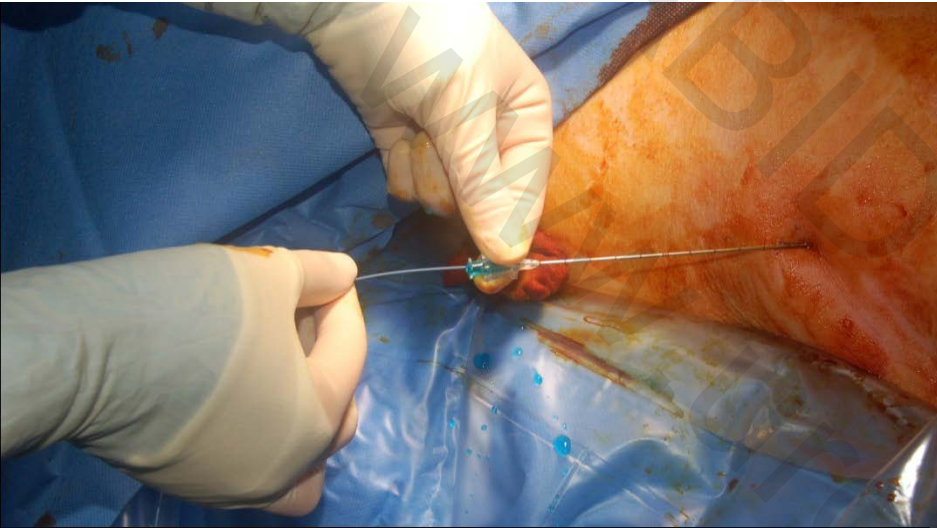
Première étape le matériel et l'installation



Seconde étape : Ponctionner le rein

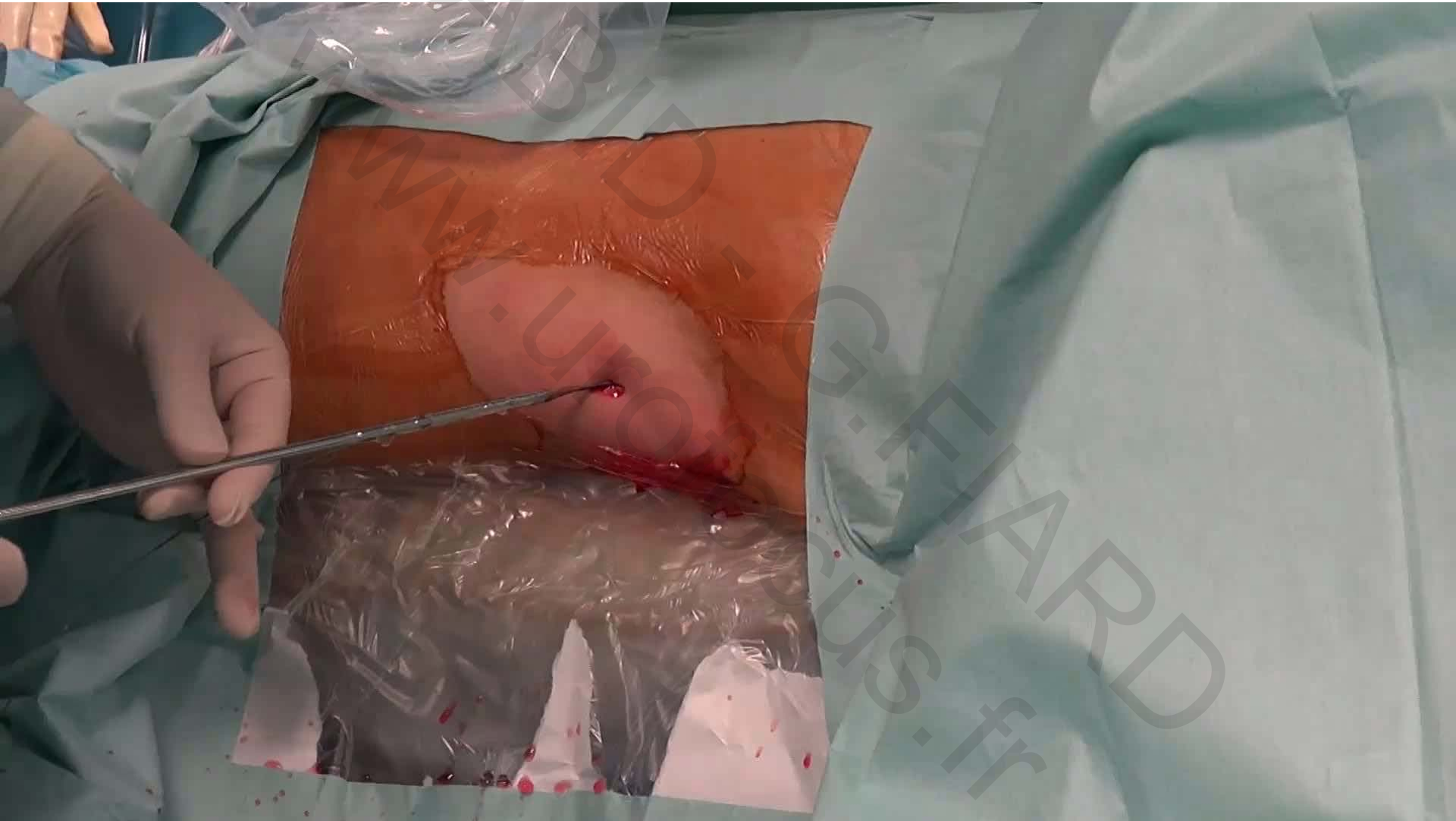


Troisième étape : Dilatation





Quatrième étape : Emplatz et traitement



La miniaturisation de la technique

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RENAL PARENCHYMAL INJURY AFTER STANDARD AND MINI PERCUTANEOUS NEPHROSTOLITHOTOMY

OLIVIER TRAXER, THOMAS G. SMITH, III, MARGARET S. PEARLE, T. SPARK CORWIN,
HUSSEIN SABOORIAN AND JEFFERY A. CADEDDU

From the Departments of Urology and Pathology, University of Texas Southwestern Medical Center, Dallas, Texas

- 6 cochons: NLPC bilatérale
 - 30 Ch
 - 11 Ch
- Evaluation à 6 semaines:
 - critère principale: effet sur le parenchyme
- “il n’y a pas d’avantage à utiliser un trajet de petite taille dans le seul but de préserver le parenchyme rénal”

quently there is no advantage to the use of a small access sheath

KEY WORDS: kidney; cicatrix; nephrostomy, percutaneous; iatrog



RENAL PARENCHYMAL INJURY AFTER PERCUTANEOUS NEPHROSTOLITHOTOMY

1695

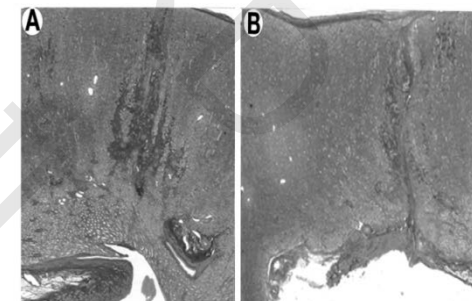


FIG. 2. Microscopic appearance of percutaneous nephrostolithotomy tract scar. A, 11Fr. B, 30Fr. Masson's trichrome stain



Does Imaging Modality Used for Percutaneous Renal Access Make a Difference? A Matched Case Analysis

Sero Andonian, MD,¹ Cesare M. Scoffone, MD,² Michael K. Louie, MD,³ Andreas J. Gross, MD,⁴
Magnus Grabe, MD,⁵ Francisco P.J. Daels, MD,⁶ Hemendra N. Shah, MCh, DNB,⁷
and Jean J.M.C.H. de la Rosette, MD⁸ on behalf of the CROES PCNL Study Group

Abstract

Objective: To assess perioperative outcomes of percutaneous nephrolithotomy (PCNL) using ultrasound or fluoroscopic guidance for percutaneous access.

Methods: A prospectively collected international Clinical Research Office of the Endourological Society (CROES) database containing 5806 patients treated with PCNL was used for the study. Patients were divided into two groups based on the methods of percutaneous access: ultrasound versus fluoroscopy. Patient characteristics, operative data, and postoperative outcomes were compared.

Results: Percutaneous access was obtained using ultrasound guidance only in 453 patients (13.7%) and fluoroscopic guidance only in 2853 patients (86.3%). Comparisons were performed on a matched sample with 453 patients in each group. Frequency and pattern of Clavien complications did not differ between groups ($p=0.333$). However, postoperative hemorrhage and transfusions were significantly higher in the fluoroscopy group: 6.0 v 13.1% ($p=0.001$) and 3.8 v 11.1% ($p=0.001$), respectively. The mean access sheath size was significantly greater in the fluoroscopy group (22.6 v 29.5F; $p<0.001$). Multivariate analysis showed that when compared with an access sheath ≤ 18 F, larger access sheaths of 24–26F were associated with 3.04 times increased odds of bleeding and access sheaths of 27–30F were associated with 4.91 times increased odds of bleeding ($p<0.05$). Multiple renal punctures were associated with a 2.6 odds of bleeding. There were no significant differences in stone-free rates classified by the imaging method used to check treatment success. However, mean hospitalization was significantly longer in the ultrasound group (5.3 v 3.5 days; $p<0.001$).

Conclusions: On univariate analysis, fluoroscopic-guided percutaneous access was found to be associated with a higher incidence of hemorrhage. However, on multivariate analysis, this was found to be related to a greater access sheath size (≥ 27 F) and multiple punctures. Prospective randomized trials are needed to clarify this issue.



CROES

CLINICAL RESEARCH OFFICE OF THE ENDOUROLOGICAL SOCIETY

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DOI: 10.1089/end.2010.0424

Ureteroscopy and Percutaneous Procedures

The C

Society

Indica

patients

- Complications majeures

Jear

M.D.,⁴

– Saignement 7,8%

– Perforation 3,4%

– Hydrothorax 1,8%

Abstract

Purpose: To

nephrolithot

Patients and

data for con

performed a

recorded, an

Results: Bet

North Amer

956, and 2603 patients had stones in the upper, interpolar, and lower pole calices, respectively. The majority of procedures (85.5%) were uneventful. Major procedure-related complications included significant bleeding (7.8%), renal pelvis perforation (3.4%), and hydrothorax (1.8%). Blood transfusion was administered in 328 (5.7%) patients, and fever >38.5°C occurred in 10.5% of patients. The distribution of scores in modified Clavien grades was: No complication (79.5%), I (11.1%), II (5.3%), IIIa (2.3%), IIIb (1.3%), IVa (0.3%), IVb (0.2%), or V (0.03%). At follow-up, the 30-day stone-free rate was 75.7%, and 84.5% of patients did not need additional treatment.

Conclusion: With a high success rate and a low major complication rate, PCNL is an effective and safe technique overall for minimally invasive removal of kidney stones.

percutaneous

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location were
ng system.

Europe, Asia,
ents, and 940,

Avantages économiques mini NLPC vs urétéroscopie

- Prix du kit complet environ 8000 euros
- Matériel autoclavable
- Moins de casse
- Peu de consommables
- Extraction facile des fragments (effet Venturi)
- Intervention rapide, en un temps

Autres avantages mini NLPC vs urétéroscopie souple

- Efficacité du traitement, avec un traitement en un temps
- Pas d'hyperpression dans le rein, donc probable diminution du risque infectieux
- Etude qui va débiter avec le CLAFU sur la qualité de vie des patients pour ces 2 types de chirurgie
- A venir: comparaison de ces 2 techniques pour les calculs du calice inférieur et/ou pyéliqués

Take home messages

- Urétéroscopie souple OK
- SAUF
 - Plusieurs séances « prévisibles »+++
 - Anatomie défavorable
 - Pas d'accès urétéral
 - Intolérance sonde JJ?