



SOCIETÀ ITALIANA DI ANDROLOGIA

Sez. Marche Emilia Romagna e Repubblica di S. Marino

14:30 Tavola Rotonda: “Induratio Penis Plastica”
Moderatori Giorgio Cavallini, Massimo Polito



Chirurgia protesica e non-protesica... Uso di graft?

Fulvio Colombo – Alessandro Franceschelli



Struttura Dipartimentale di Andrologia

Policlinico Ospedaliero-Universitario S.Orsola - Bologna

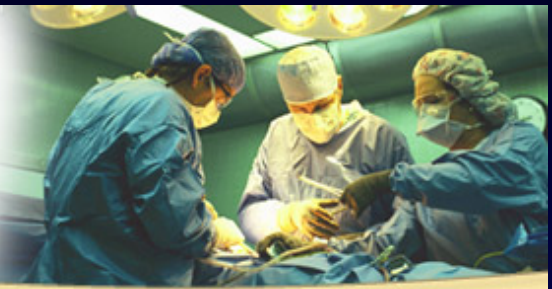
<http://www.aosp.bo.it/content/andrologia-colombo>






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Peyronie's Disease Guidelines ??

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 American Urological Association

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EDUCATION > Guidelines & Policies > Guidelines

Guidelines & Policies

- Guidelines
- Best Practice Statements
- White Papers/Other AUA Clinical Guidance Documents
- Clinical Guidance Documents Endorsed by the AUA
- AUA Policy Statements
- AUA Position Statements
- Archived Guidelines
- Who We Are
- Standard Operating Procedures Overview
- Definition Statement
- COI Disclosure
- Testimonials

GUIDELINES

ASYMPTOMATIC MICROHEMATURIA

- [Diagnosis, Evaluation and Follow-Up of Asymptomatic Microhematuria \(AMH\) in Adults: AUA Guideline 2012](#)
- [Diagnosis, Evaluation and Follow-Up of Asymptomatic Microhematuria \(AMH\) in Adults: AUA Guideline Algorithm \[pdf\] 2012](#)

BENIGN PROSTATIC HYPERPLASIA

- [Benign Prostatic Hyperplasia \(BPH\) 2010](#)
- [View BPH Webinar \[video\] 2010](#)

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CARDIOVASCULAR EFFECTS OF SILDENAFIL DURING EXERCISE IN MEN WITH KNOWN OR PROBABLE CORONARY ARTERY DISEASE - A RANDOMIZED CROSSOVER TRIAL

Adelaide M. Arruda-Olson, MD, PhD; Douglas W. Mahoney, MS; Ajay Nehra, MD; Marilyn Leckel, RN; Patricia A. Pellikka, MD

Context: The relationship between sildenafil citrate use and reported adverse cardiovascular events in men with coronary artery disease(CAD) is unclear.

Objective: To evaluate the cardiovascular effects of sildenafil during exercise in men with CAD.

Design, Setting, and Subjects: Randomized, double-blind, placebo-controlled crossover trial conducted March to October 2000 at a US ambulatory-care referral center among 105 men with a mean (SD) age of 66 (9) years who had erectile dysfunction and known or highly suspected CAD.

Interventions: All patients underwent 2 symptom-limited supine bicycle echocardiograms separated by an interval of 1 to 3 days after receiving a single dose of sildenafil (50 or 100 mg) or placebo 1 hour before each exercise test.

Main Outcome Measures: Hemodynamic effects of sildenafil during exercise (onset, extent, and severity of ischemia) assessed by exercise echocardiography.

Results: Mean (SD) resting ejection fraction was 56% (7%) (range, 39%-68%). After sildenafil use, resting systolic blood pressure was reduced from 135 (19) mm Hg to 128 (17) mm Hg, for a mean change of -7 mm Hg (95% confidence interval [CI], -9 to -4 mm Hg; $P < .001$). After placebo use, the mean (SD) change was from 135 (20) mm Hg to 133 (19) mm Hg, a difference of -2 mm Hg (95% CI, -6 to 0.3 mm Hg; $P = .08$). The difference between mean change after sildenafil and placebo use was 4.3 (95% CI, 0.9-7.7; $P = .01$). Resting heart rate, diastolic blood pressure, and wall motion score index (a measure of the extent and severity of wall motion abnormalities) did not change significantly in either group. Exercise capacity was similar with sildenafil use (mean [SD], 4.5 [1.0] metabolic equivalents) and placebo use (mean [SD], 4.6 [1.0] metabolic

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Recommendations on surgical treatment for penile curvature

LE GR

Surgery is indicated when Peyronie's disease is stable for at least 3 months (without pain or deformity deterioration), which is usually the case after 12 months from the onset of symptoms, and intercourse is compromised due to deformity.

3

C

Penile length, curvature severity, erectile function (including response to pharmacotherapy in case of erectile dysfunction) and patient expectations must be assessed prior to surgery.

3

C

Tunical shortening procedures, especially plication techniques are the first treatment options for congenital penile curvature and for Peyronie's disease with adequate penile length, curvature < 60° and absence of special deformities (hour-glass, hinge).

2b

B

Grafting techniques are the preferred treatment option for patients with Peyronie's disease with no adequate penile length, curvature > 60° and presence of special deformities (hour-glass, hinge).

2b

B

Penile prosthesis implantation, with or without any additional procedure (modelling, plication or grafting), is recommended in Peyronie's disease patients with erectile dysfunction not responding to pharmacotherapy.

2b

B



Evidence-Based Management Guidelines on Peyronie's Disease

Eric Chung, FRACS,^{1,2} David Ralph, FRCS,³ Ates Kagioglu, MD,⁴ Guilio Garaffa, FRCS,³ Ahmed Shamsodini, Trinity Bivalacqua, MD,⁶ Sidney Glina, MD,⁷ Lawrence Hakim, MD,⁸ Hossein Sadeghi-Nejad, MD,⁹ and Gregory Broderick, MD¹⁰

2016!

SURGICAL ALGORITHM (GRADE B, LEVEL 3)

Plication surgery should be preferred for men with adequate erectile function (with or without pharmacotherapy), adequate penile length, and minimal to moderate curvature but without the presence of hourglass deformity causing hinging.

Grafting procedures should be the choice of surgery for men with good erectile function, severe deformity (significant or severe curvature and/or indentation or hourglass deformity), and concern about further penile length loss.

PPI should be considered in men with complex penile deformities and/or refractory erectile dysfunction.

LA CHIRURGIA DELL' I.P.P.

OBBIETTIVI:

- CORREZIONE MORFOLOGICA
(ripristino delle condizioni originali)
- CAPACITA' PENETRATIVA

LA CHIRURGIA dell' I.P.P.

VARIABILI da CONSIDERARE:

- CARATTERISTICHE DELLA MALATTIA
(angolo di curvatura, tipo di deformazione, sede della placca, dimensioni, mono/multi focalità, consistenza)
- MORFOLOGIA DEL PENE
(lunghezza, presenza di tessuto erettile)
- EREZIONE
(storia clinica, studio pre-op)
- CARATTERISTICHE ED ASPETTATIVE DEL PAZIENTE
(età, stato relazionale, comorbidità)

Erectile Dysfunction after Plaque Incision and Grafting: Short-term Assessment of Incidence and Predictors

Stefan Flores, BA,* Judy Choi, MD,[†] Byron Alex, BS,[†] and John P. Mulhall, MD[‡]

ABSTRACT

Introduction. Plaque incision and grafting (PIG) surgery for Peyronie's disease (PD) is a recognized management strategy. One of the recognized complications of PIG surgery is the development of postoperative erectile dysfunction (ED).

Aim. To determine the incidence of ED after PIG surgery and attempt to define predictors of ED development.

Methods. All patients underwent preoperative cavernosometry. Grafting was performed with either cadaveric pericardium (Tutoplast) or intestinal submucosa (Surgisis). Prior to 2006, the procedure used an H-type incision, whereas after this date, the Egydio approach has been used.

Main Outcome Measures. Men undergoing PIG completed preoperative and 6-month postoperative International Index of Erectile Function (IIEF) questionnaires.

Results. 56 patients were analyzed. Mean patient and partner ages were 57 ± 22 and 54 ± 18 years, respectively. Mean duration of PD at the time of PIG was 22 ± 9 months. Seventy-five percent had curvature alone, 11% had hourglass/indentation deformity, and the remainder had combined curvature/indentation. Mean preoperative curvature was $52 \pm 23^\circ$. Fifty-two had grafting with Tutoplast, while four had grafting with Surgisis. All men at baseline were capable of generating a penetration rigidity erection. Preoperatively, 50% of men had cavernosal insufficiency and 21% had venous leak (baseline and postoperative erectile function [EF] domain scores were 23 ± 4 and 17 ± 9 , respectively [$P < 0.01$]). Forty-six percent of men experienced a ≥ 6 -point decrease in EF domain score after PIG. The predictors of a ≥ 6 -point reduction in IIEF-EF domain score on multivariable analysis were degree of preoperative curvature, type of plaque incision, patient age, and baseline venous leak.

Conclusions. Almost one-half of men had significant reduction in their erectile rigidity after PIG. Reduction was predicted by larger baseline curvature, the Egydio plaque incision technique, older patient age, and the presence of venous leak at baseline. Based on these data, we discourage older men, those with venous leak, and those with profound curvature from considering PIG surgery. Flores S, Choi J, Alex B, and Mulhall JP. Erectile dysfunction after plaque incision and grafting: Short-term assessment of incidence and predictors. J Sex Med 2011;8:2031–2037.

Preoperative Clinical and Diagnostic Characteristics of Patients Who Require Delayed IPP after Primary Peyronies Repair

Hannah H. Alphs, MD,* Neema Navai, MD,* Tobias S. Köhler, MD,[†] and Kevin T. McVary, MD*

*Northwestern University Feinberg School of Medicine, Department of Urology, Chicago, IL, USA; [†]Department of Urology, Southern Illinois University School of Medicine, Springfield, IL, USA

DOI: 10.1111/j.1743-6109.2009.01649.x

ABSTRACT

Introduction. Penile vascular abnormalities occur in a high proportion of patients with Peyronie's disease (PD). Penile duplex ultrasonography (PDU) and dynamic infusion cavernosometry and cavernosography (DICC) are tools that can be used to help tailor individualized treatment for patients undergoing surgical intervention for their PD. However, precisely which parameters can be used to predict those patients with PD at risk for developing erectile dysfunction (ED) after intervention without inflatable penile prosthesis (IPP) has not been previously elucidated.

Aim. To evaluate preoperative vascular parameters that predispose PD patients for developing ED after intervention without IPP.

Methods. Twenty-six patients receiving surgical intervention for their PD at a single center were retrospectively identified. Of these, 11 (42.3%) opted for primary repair without placement of an IPP. Three (27.2%) of these 11 patients went on to develop ED postoperatively.

Main Outcome Measures. We compared various demographic, PDU, and DICC parameters between patients who did and did not fail primary repair of their PD.

Results. Mean age and follow-up of patients who went on to develop ED after repair of PD without IPP were not significantly different ($P < 0.05$). Resistive index (RI) and end diastolic volume were significantly different between these two groups ($P < 0.05$), while peak systolic volume, flow to maintain, and pressure decay were not significantly different. An RI cutoff of <0.80 was found to identify all patients who would later develop ED and fail primary repair without IPP.

Conclusions. Penile vascular assessment can aid in counseling patients about their risk of developing delayed ED after primary repair of PD. In our cohort of patients, PDU provided preoperative risk stratification for postoperative erectile dysfunction in men undergoing Peyronie's repair without IPP. We propose the prospective study of an RI cutoff to identify patients at risk of failing primary PD repair without IPP. Alphs HH, Navai N, Köhler TS, and McVary KT. Preoperative clinical and diagnostic characteristics of patients who require delayed IPP after primary peyronies repair. J Sex Med 2010;7:1262–1268.

LA CHIRURGIA dell' I.P.P.

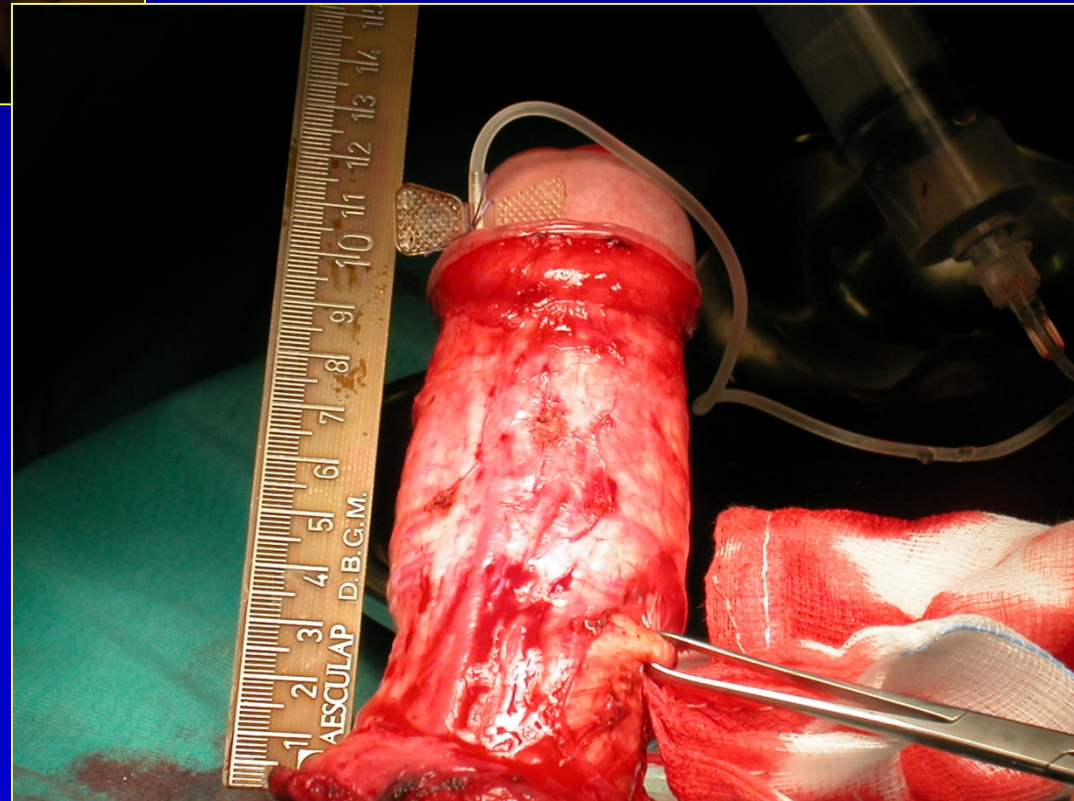
OPZIONI:

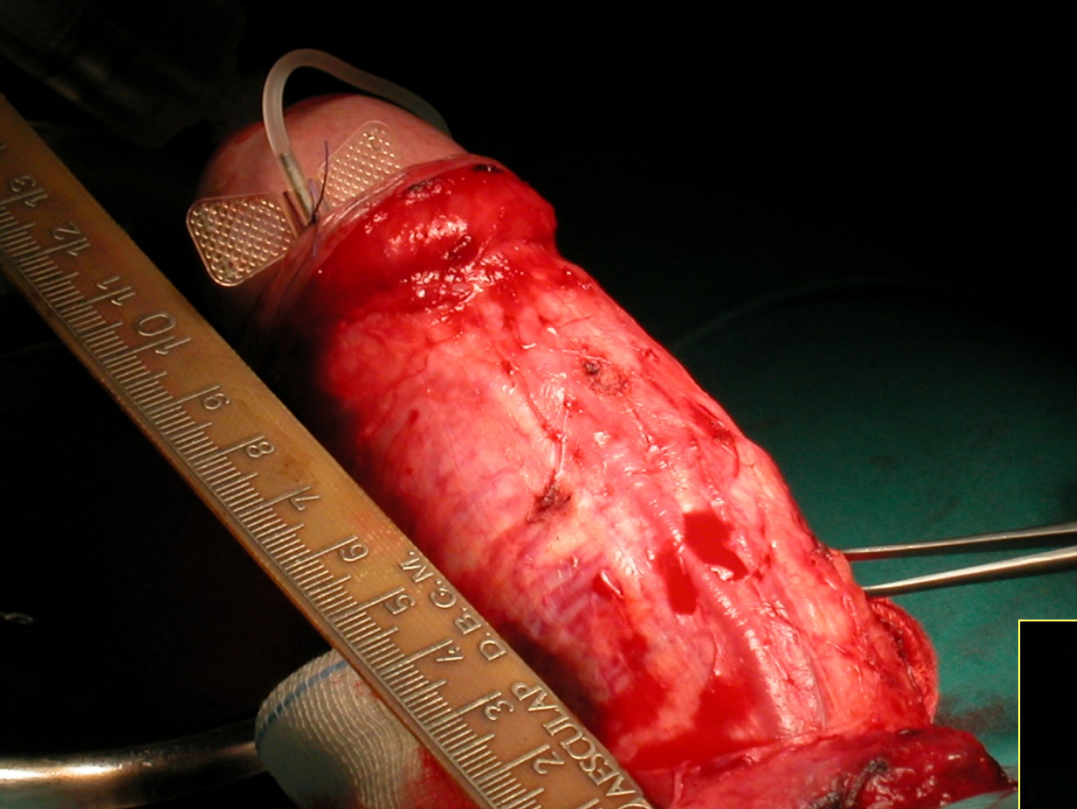
- TECNICHE DI ACCORCIAMENTO
Nesbit e Plicature
- TECNICHE DI ALLUNGAMENTO
Chirurgia di placca (incisione/escissione, innesti)
- IMPIANTO PROTESICO (idraulico, soffice, malleabile)
+/- manovre ancillari (modeling, chirurgia di placca)

TECNICHE DI ACCORCIAMENTO

NESBIT:

- rapidità
- palliativa
- accorciamento





NESBIT:

- rapidità
- palliativa
- accorciamento



TECNICHE di ACCORCIAMENTO

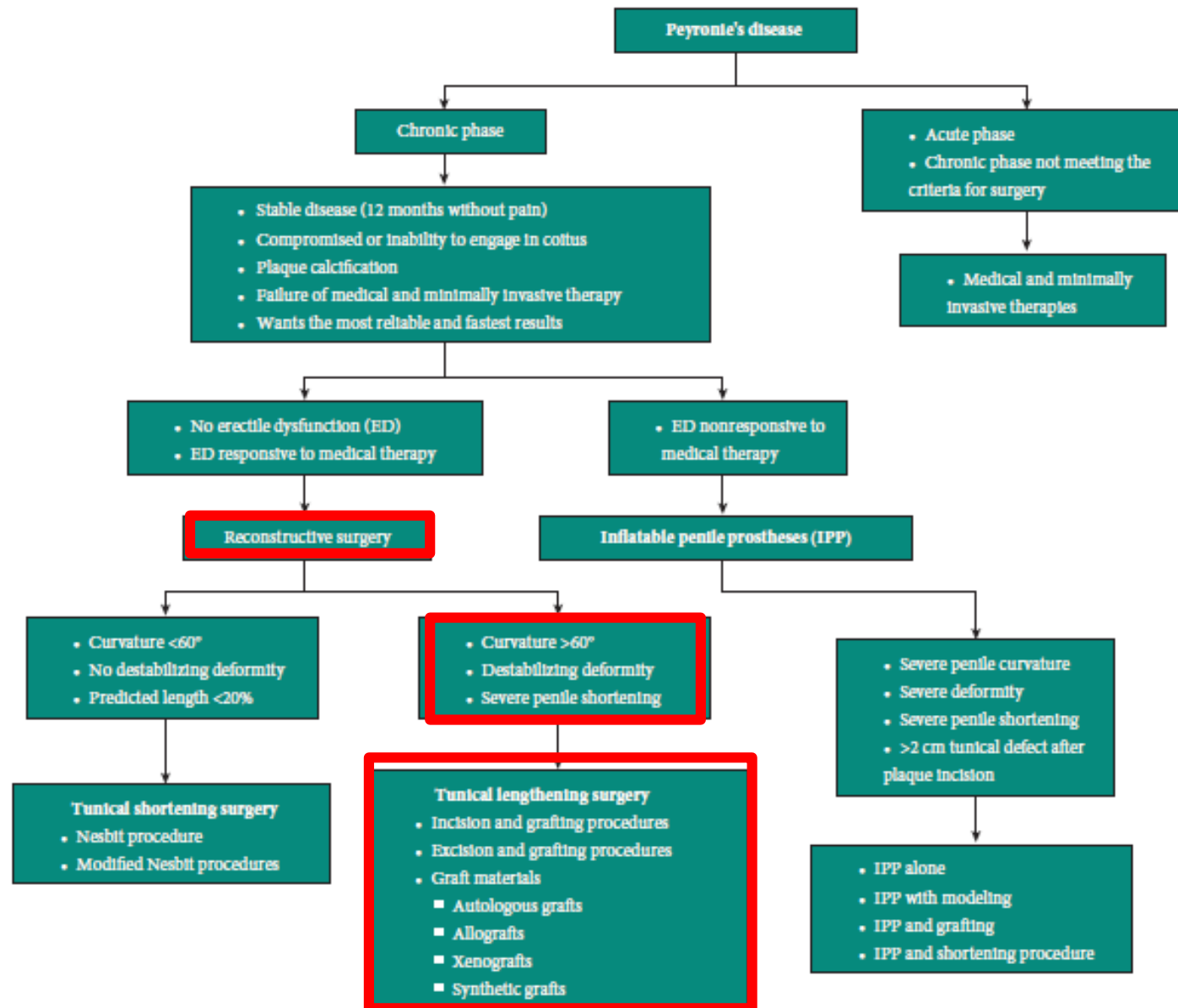
Per quali pazienti ?

- *CURVATURA < DI 45°*
- *LUNGHEZZA ADEGUATA DEL PENE*
- *FUNZIONE ERETTIVA CONSERVATA*
- *NON PREOCCUPATI DELL' ACCORCIAMENTO*

Outcomes of surgical treatment of Peyronie's disease

Culley C. Carson and Laurence A. Levine*

BJU Int 2014; 113: 704-713

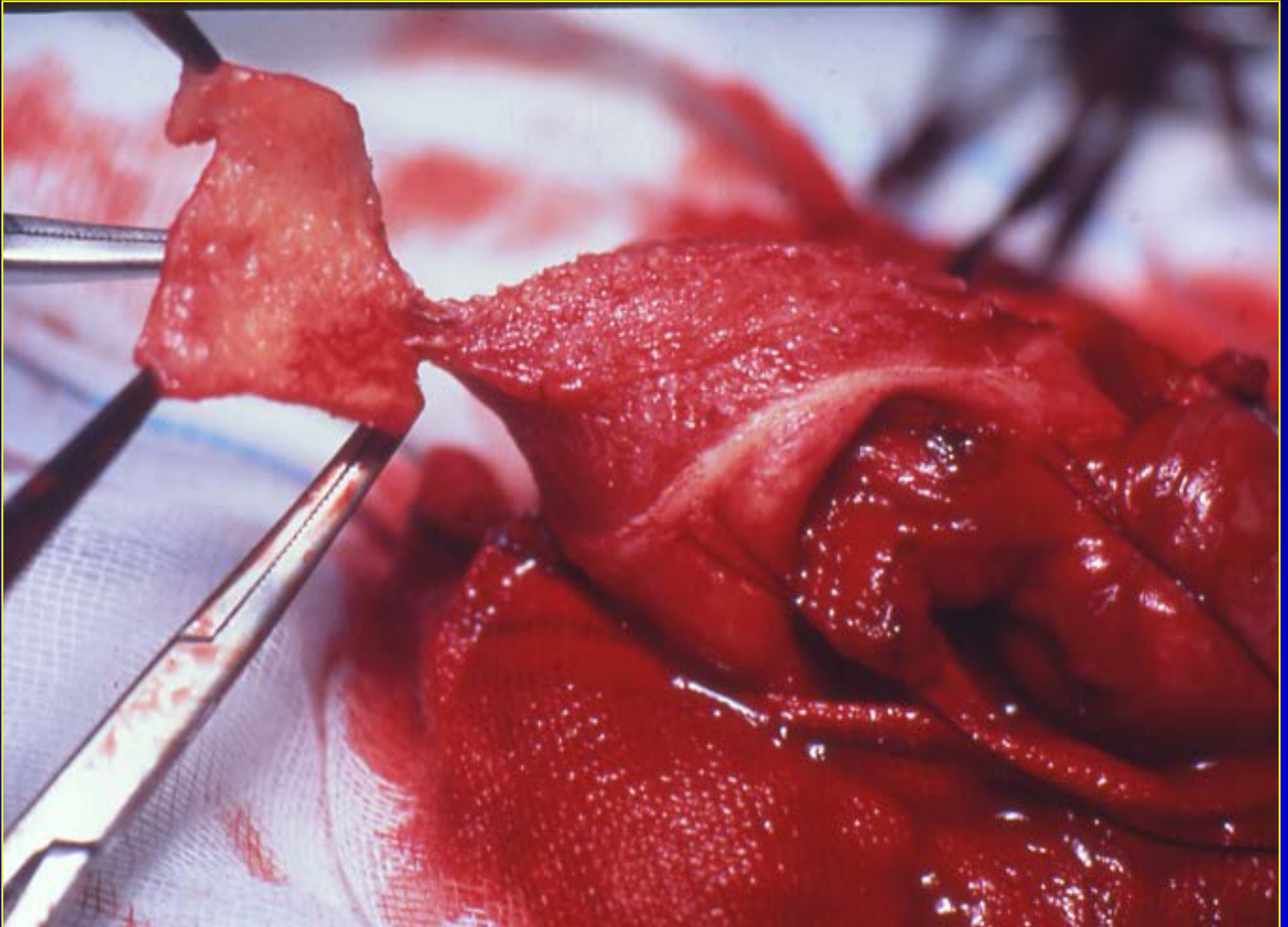


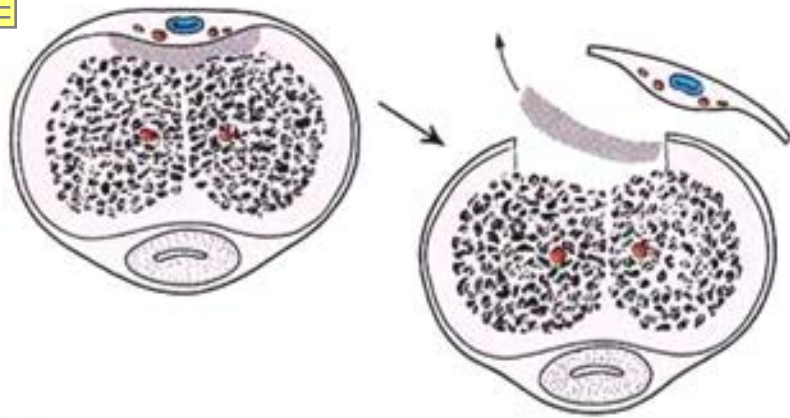
CHIRURGIA di PLACCA

(TUNICAL LENGTHENING PROCEDURE)

- *COMPLETA* (Escissione)
- *PARZIALE* (Incisione)

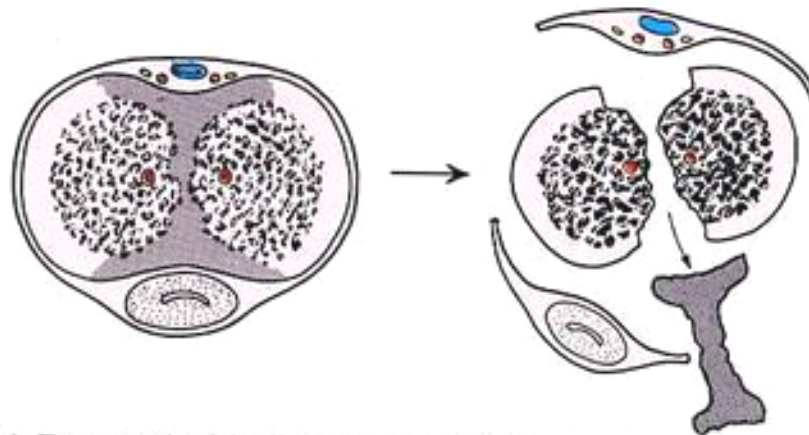
ESCISSIONE COMPLETA DI PLACCA: Ia CHIRURGIA "RADICALE"



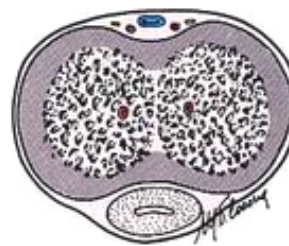


a) Removal of dorsal plaque.

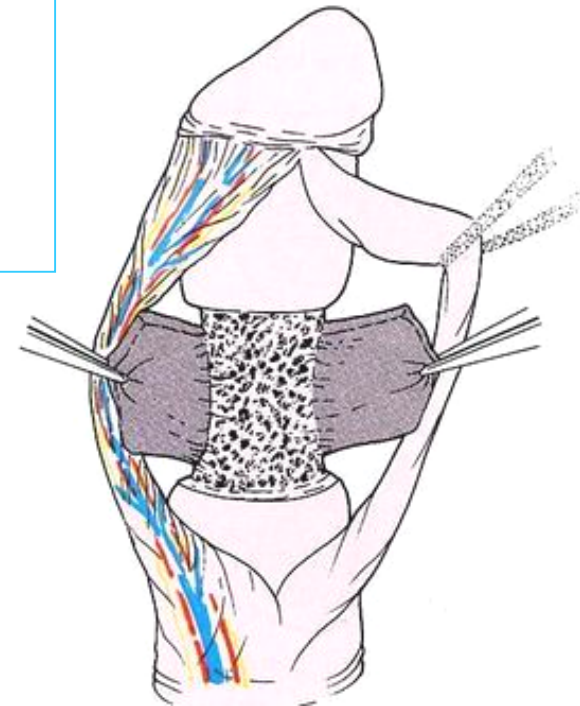
**1980-1992: LA CHIRURGIA "RADICALE",
L'INTERO "FOCUS SCLERO-JALINOGENO"
DOVEVA ESSERE RIMOSSO**



b) Removal of hull-shaped septal plaque.



c) Removal of circular ring.

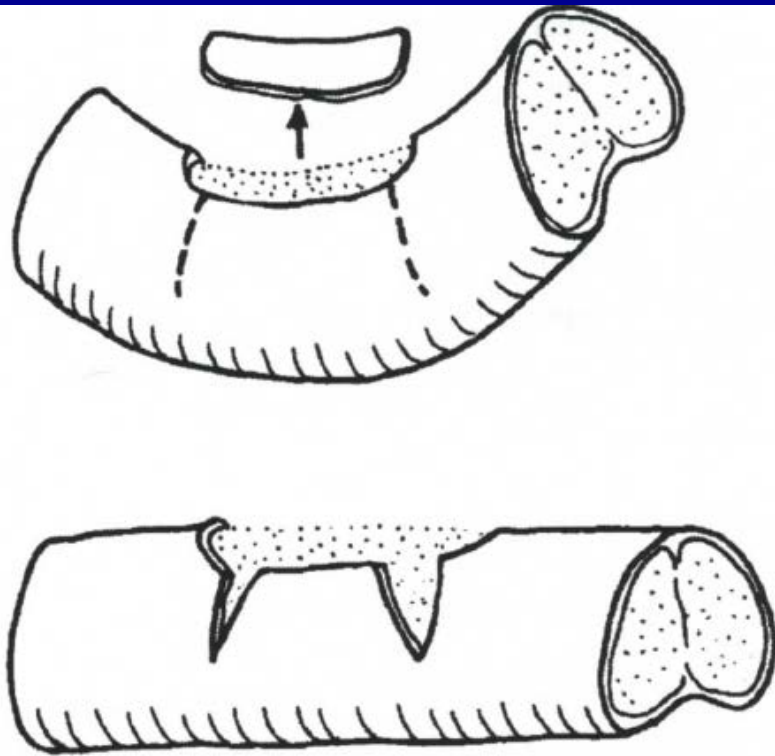


RELAXING INCISIONS IN THE CORRECTION OF PENILE DEFORMITY DUE TO PEYRONIE'S DISEASE

Vol. 154, 1457-1460, October 1995
Printed in U.S.A.

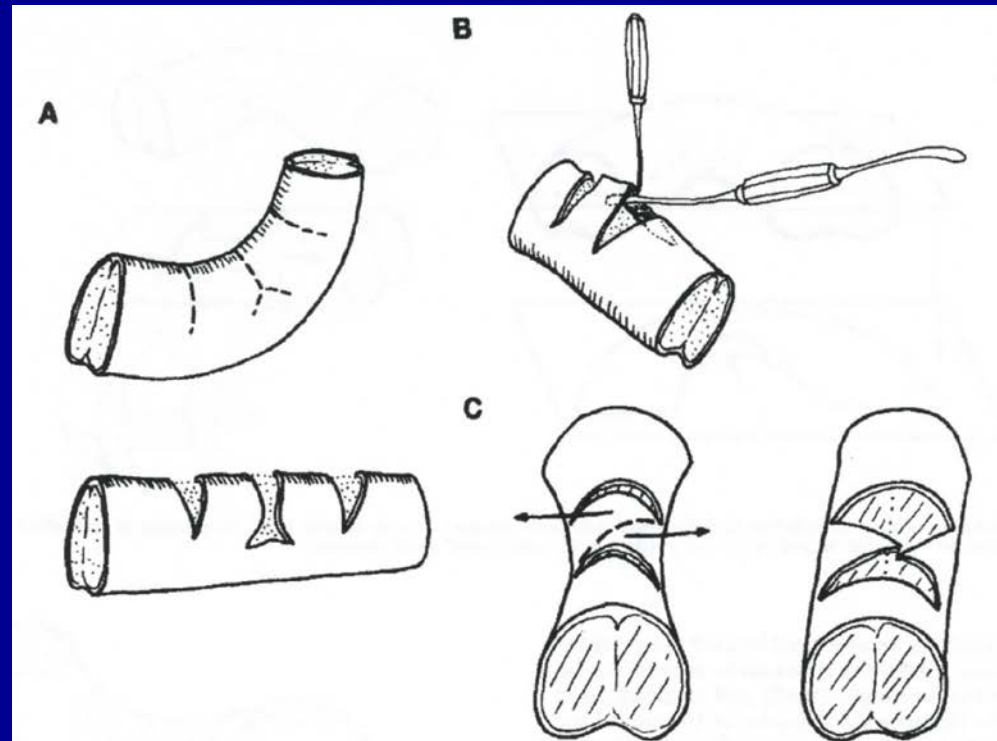
MARTIN K. GELBARD

From the Department of Urology, Clinical Faculty, University of California at Los Angeles School of Medicine, Los Angeles, California



INCISIONI ALBUGINEE AL TERMINE
DELL' ESCISSIONE DI PLACCA

1995!

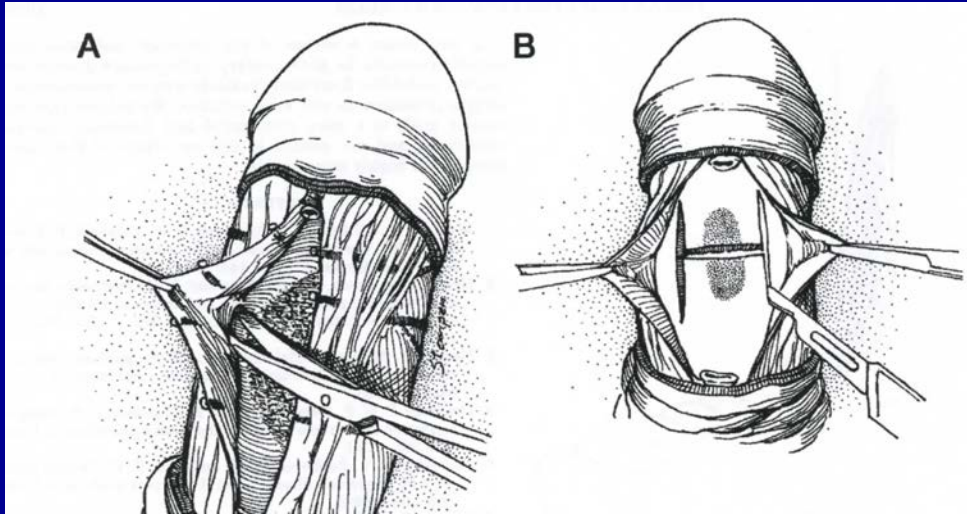


- A) INCISIONI TRASVERSALI DORSALI DI RILASSAMENTO ALBUGINEO
- B) SCOLLAMENTO DELLA T.ALBUGINEA
- C) LEMBI OBLIQUI DI AVANZAMENTO

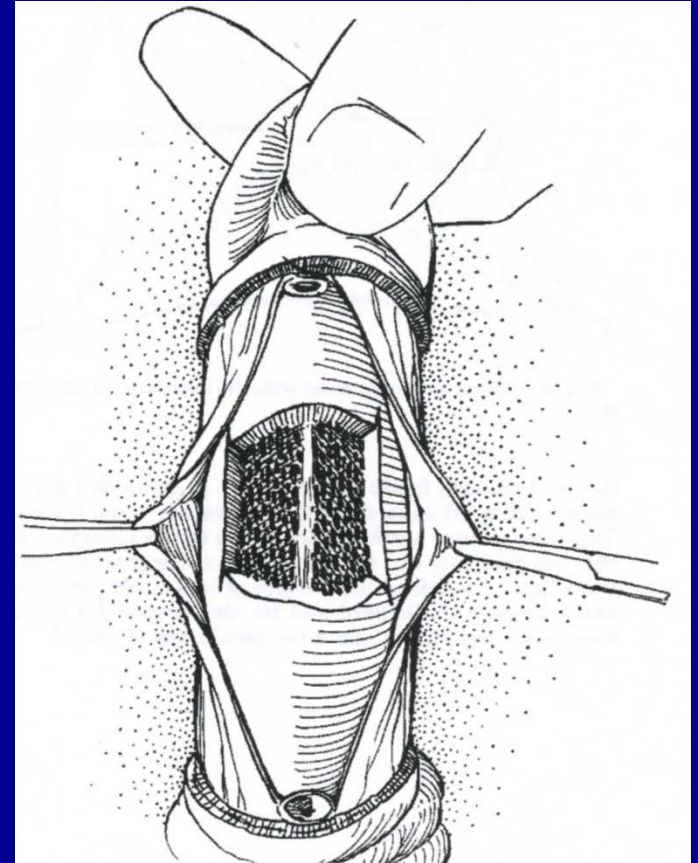
Lue TF, El-Sakka AI. Venous patch graft for Peyronie's disease.

J Urol 1998; 160: 2047-9

THE JOURNAL OF UROLOGY



- A) ISOLAMENTO DEL FNVD (DA MEDIANO A LATERALE!) CON AUSILIO DI LOUPES 5x.
- B) INCISIONE TRASVERSALE DI RILASSAMENTO, EFFETTUATA AL CENTRO DELLA PLACCA (x correggere la curvatura)
- C) INCISIONI LONGITUDINALI PER CORREGGERE LA DEFORMAZIONE A CLESSIDRA



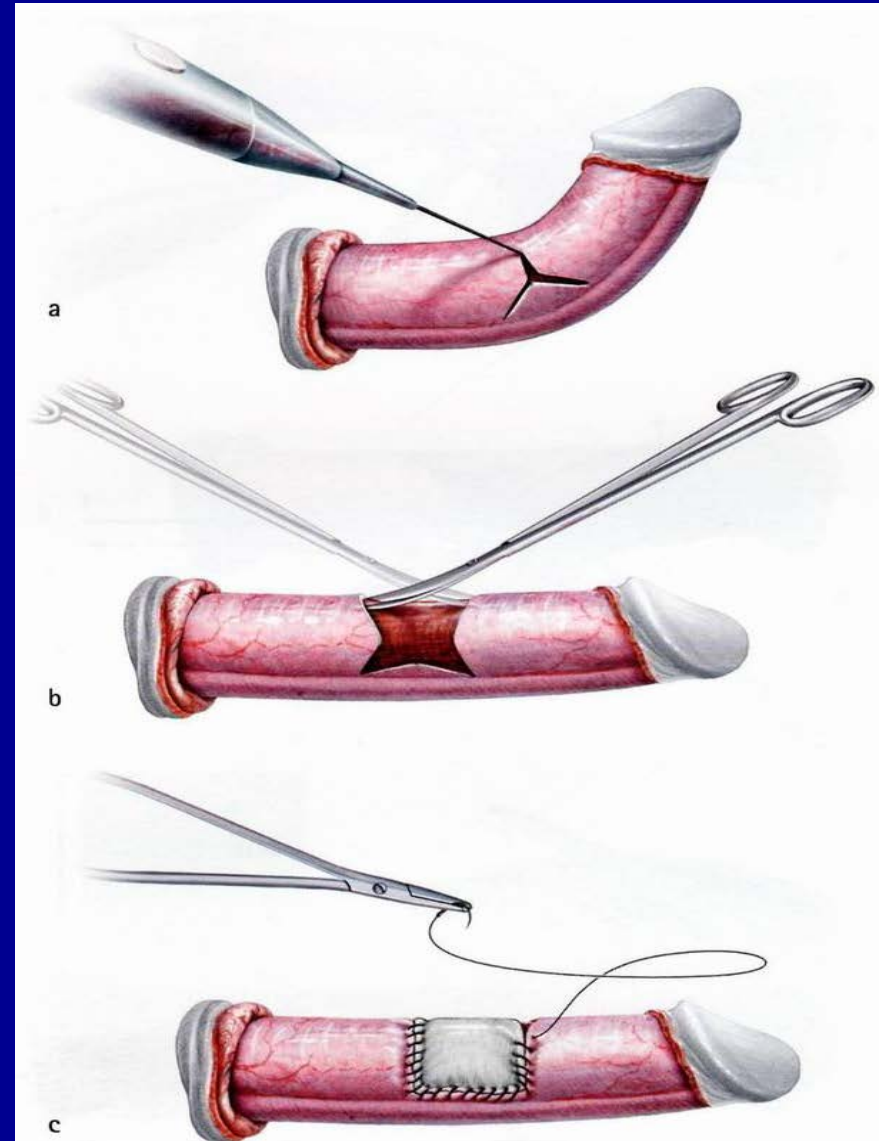
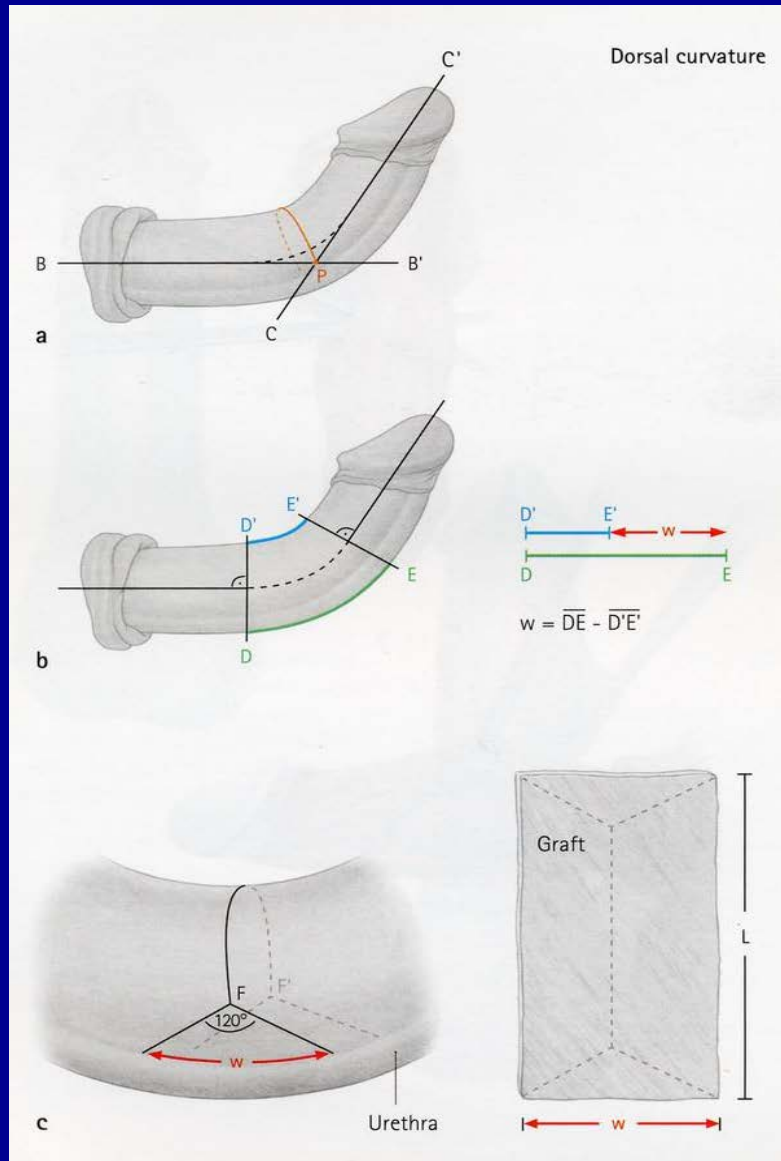
MISURAZIONE DELLE DIMENSIONI DEL DIFETTO ALBUGINEO DA RICOPRIRE EFFETTUATA CON PENE STIRATO SIA LONGITUDINALMENTE SIA TRASVERSALMENTE.

1998!

P. Egydio:

SOLUZIONE GEOMETRICA PER DETERMINARE LE DIMENSIONI DELL'INNESTO DOPO L'ESCISSIONE

BJU Int 2004; 94:1147-57



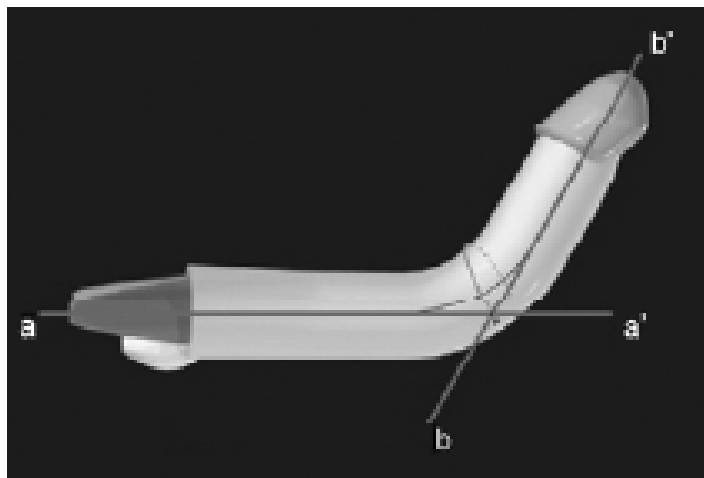


Figure 1. The point of maximum curvature (P) is determined at the intersection of lines a-a' and b-b' tangential to the penile axis. A circumferential line is drawn at point P on the angle bisector.

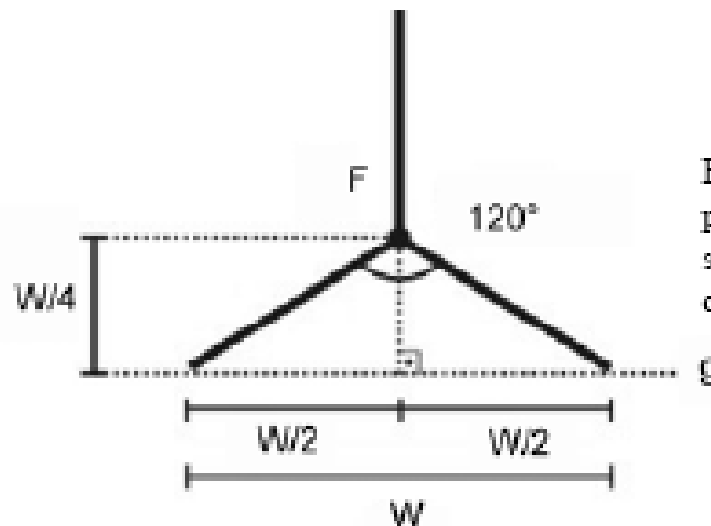


Figure 3. The starting point of the 120-degree bifurcation at the end of circumferential lines is established by marking a length of $W/4$ back from the intersection with the g line. W, the difference measured between the longer and shorter side of the penis, that correspond to the width (W) of the tunica defect.

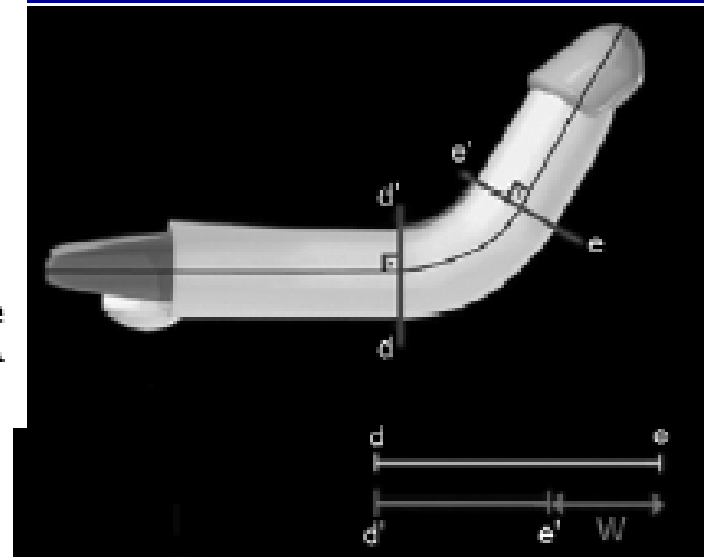
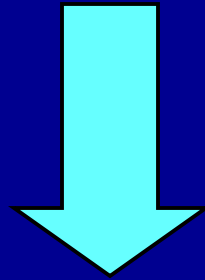


Figure 2. The difference (W) equals $d-e$ (distance between two points along the longer side of the penis) minus $d'-e'$ (the corresponding distance along the shorter side of the penis), measured outside the curvature area ($\square = 90$ degrees).

P. Egydio:
SOLUZIONE GEOMETRICA
PER DETERMINARE LE
DIMENSIONI DELL'INNESTO
DOPO L'ESCISSIONE

BJU Int 2004; 94:1147-57

-ESCISSIONE/INCISIONE-
PERDITA DI SOSTANZA



SOSTITUZIONE DEL TESSUTO
ASPORTATO

- INNESTO -

CARATTERISTICHE DEL MATERIALE “IDEALE”

- Elasticità : conservata anche dopo l'attecchimento
- Resistenza : durante la distensione massima
- Maneggevolezza : durante l'intervento
- Scarsa reazione fibroso-cicatriziale : nel post-op.
- Scarsa fibrosi areolare sub-innesto : → V.O.D.
- Buona isto-compatibilità : scarsa interazione Ag/Ab
- Rapidi tempi di preparazione
- Bassi costi

Grafting techniques for Peyronie's disease

Georgios Hatzichristodoulou

Department of Urology, Technical University of Munich, University Hospital Klinikum rechts der Isar, Munich, Germany

Ideal graft characteristics

The search for the ideal graft for PD surgery is ongoing. Up to date, no single available graft has emerged as the best option for the surgical repair of PD. The ideal requirements for a graft for PD reconstructive surgery include: availability, resistance to infection, lack of contraction, promotes hemostasis, preserve erectile capacity, be cost-effective, and should not prolong operative time; off-the-shelf grafts should be packaged in various sizes to fit the patient's tunical defects.

Grafting techniques for Peyronie's disease

Georgios Hatzichristodoulou

Department of Urology, Technical University of Munich, University Hospital Klinikum rechts der Isar, Munich, Germany

Table 1 Indications for grafting techniques for Peyronie's disease

Penile deviation >60°
Short penis
Hourglass deformity
Satisfactory preoperative erectile function

Table 2 Grafting materials for Peyronie's disease

Autologous grafts

Vein
Dermis/Prepuce
Tunica vaginalis
Tunica albuginea
Buccal mucosa
Lingual mucosa
Rectus sheath

Table 2 Grafting materials for Peyronie's disease

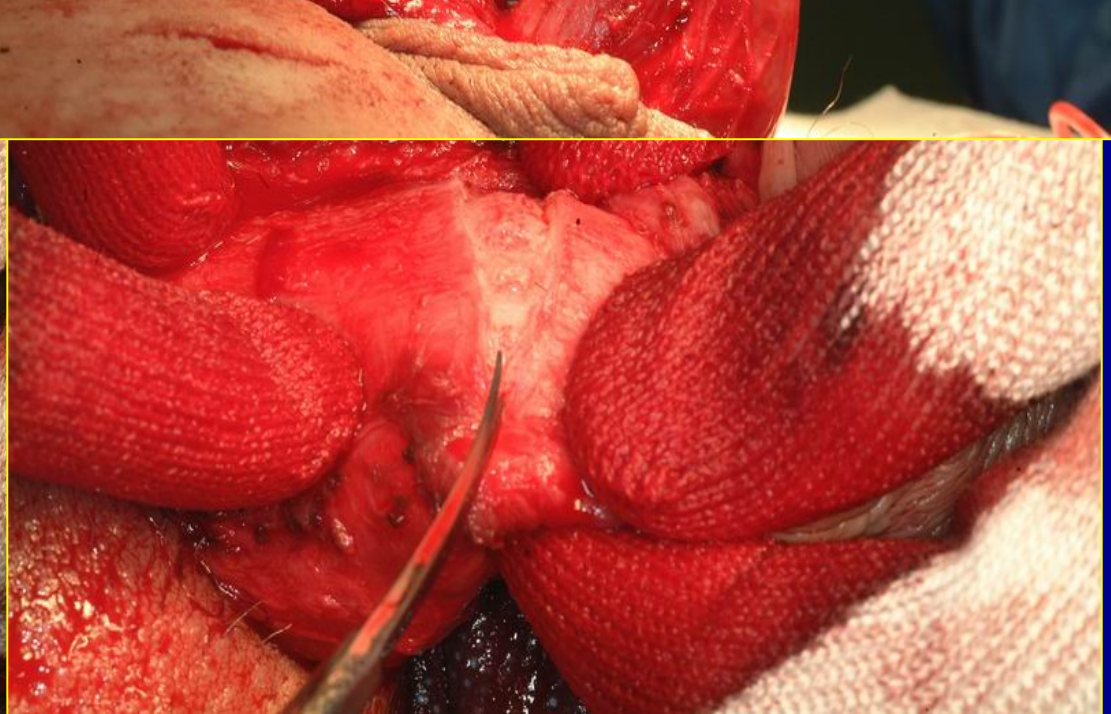
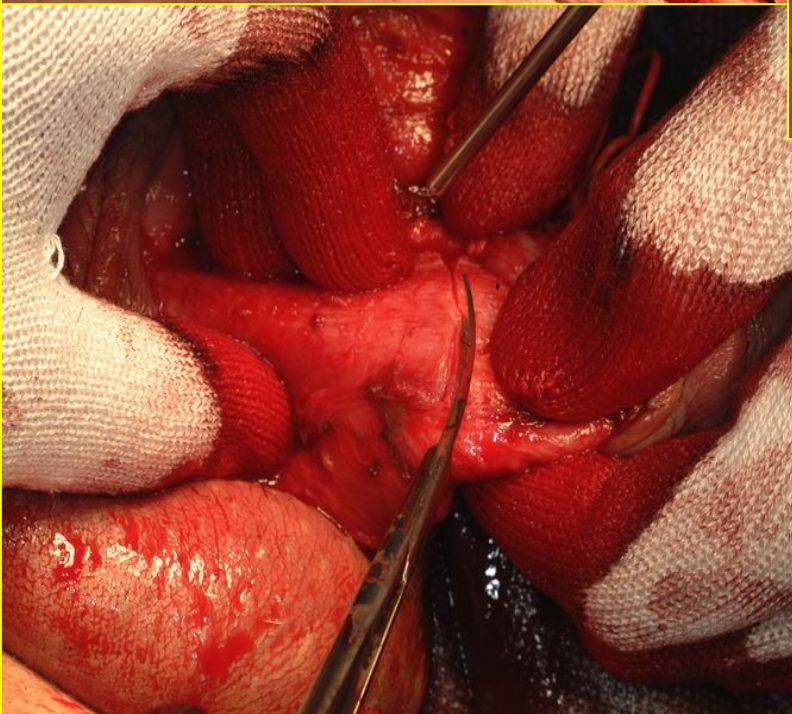
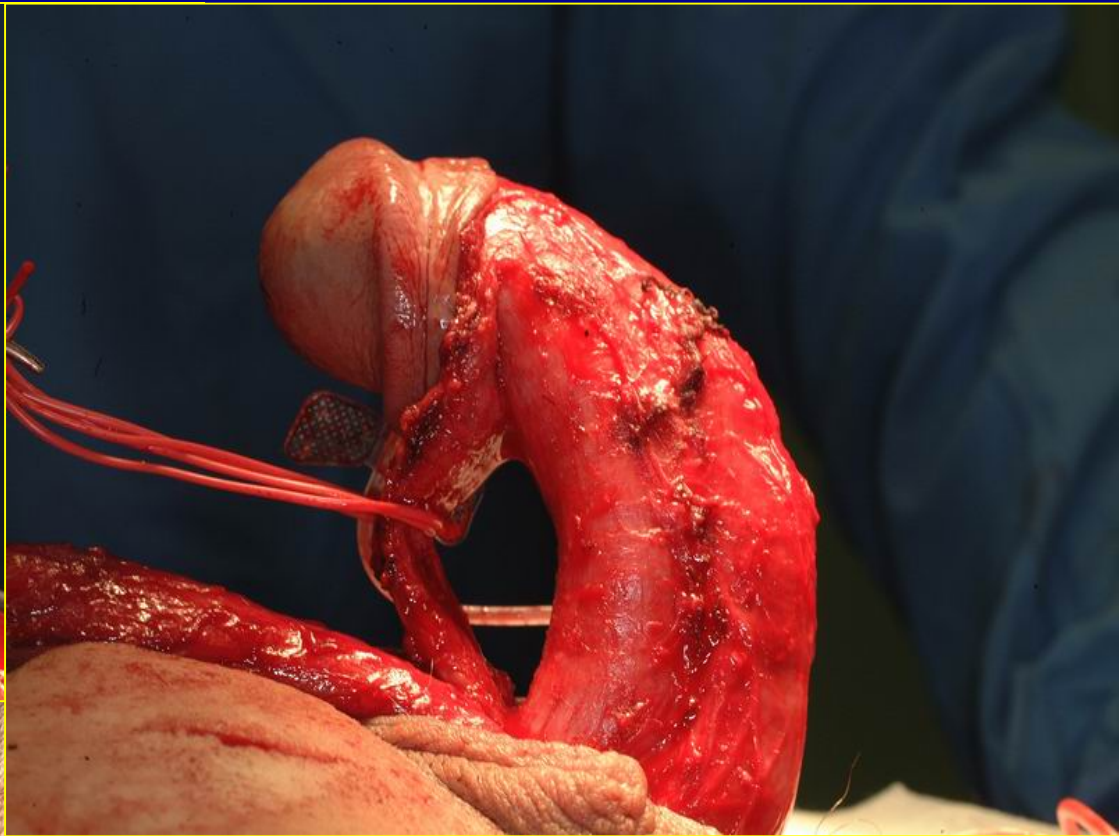
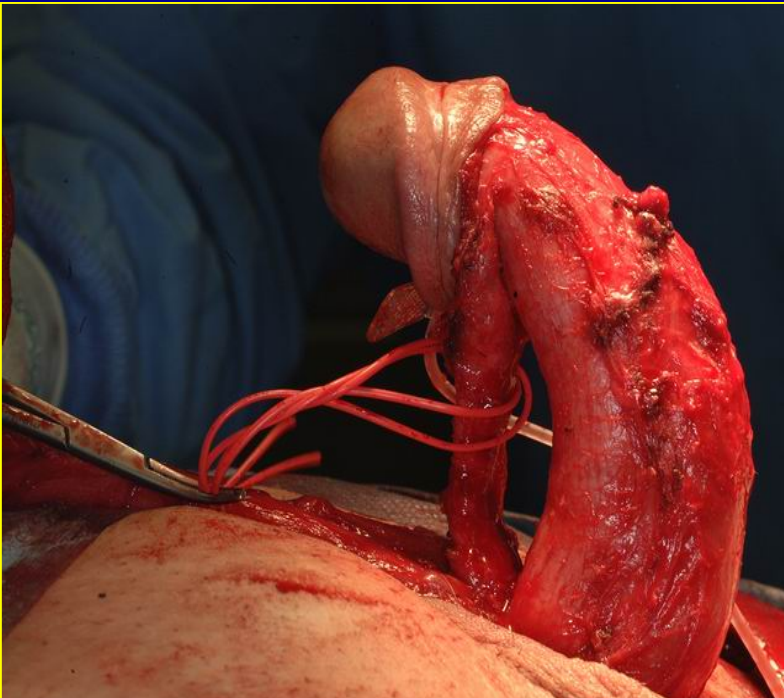
Non-autologous grafts/xenografts

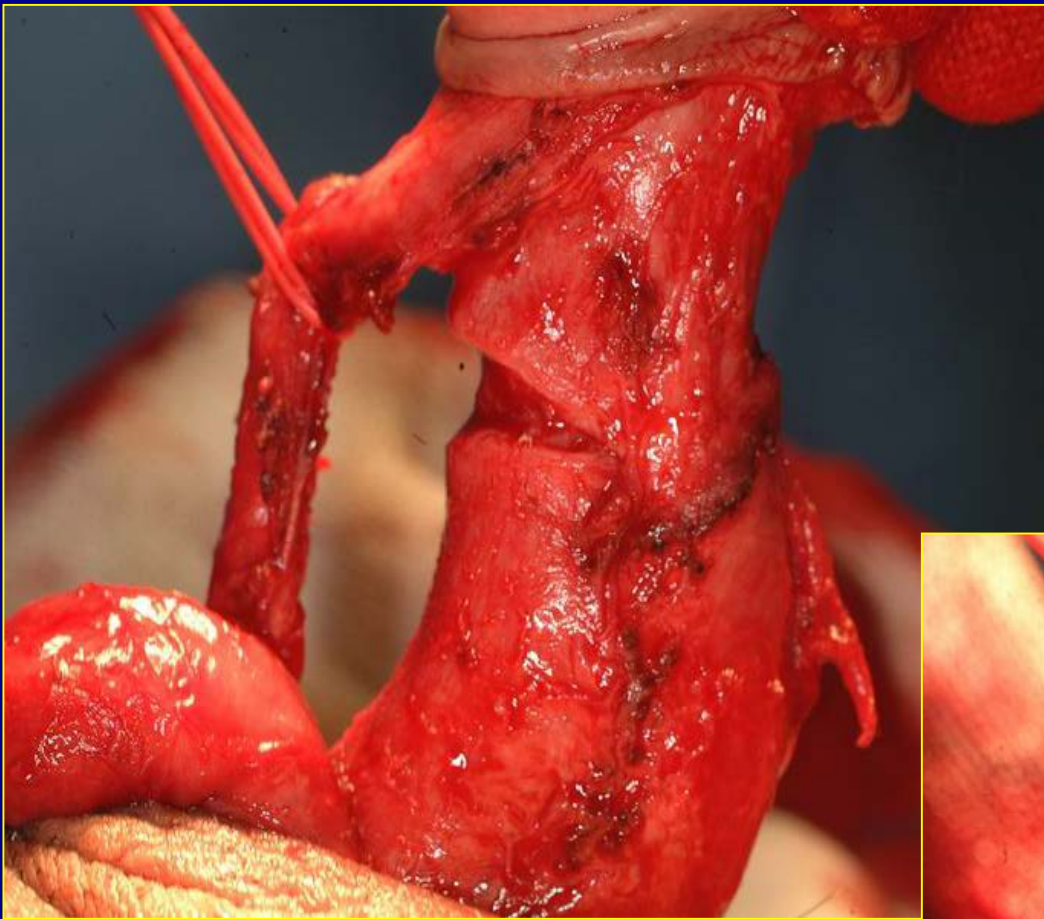
Human dermis
Human pericardium
Human fascia lata
Human dura mater
Bovine pericardium
Porcine small intestinal submucosa
Porcine dermis
Equine collagen fleece

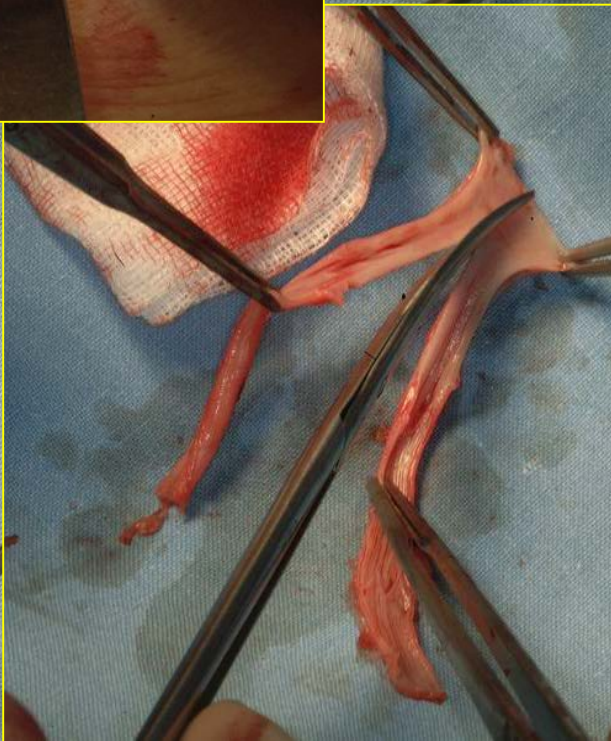
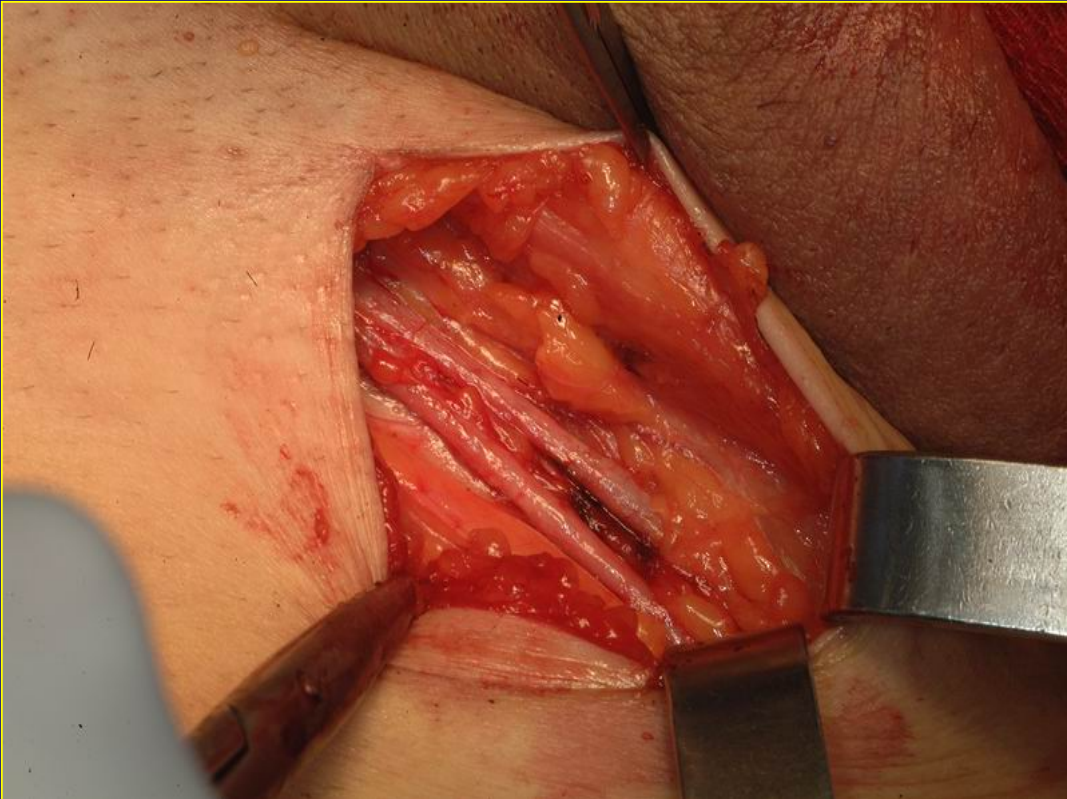
Table 2 Grafting materials for Peyronie's disease

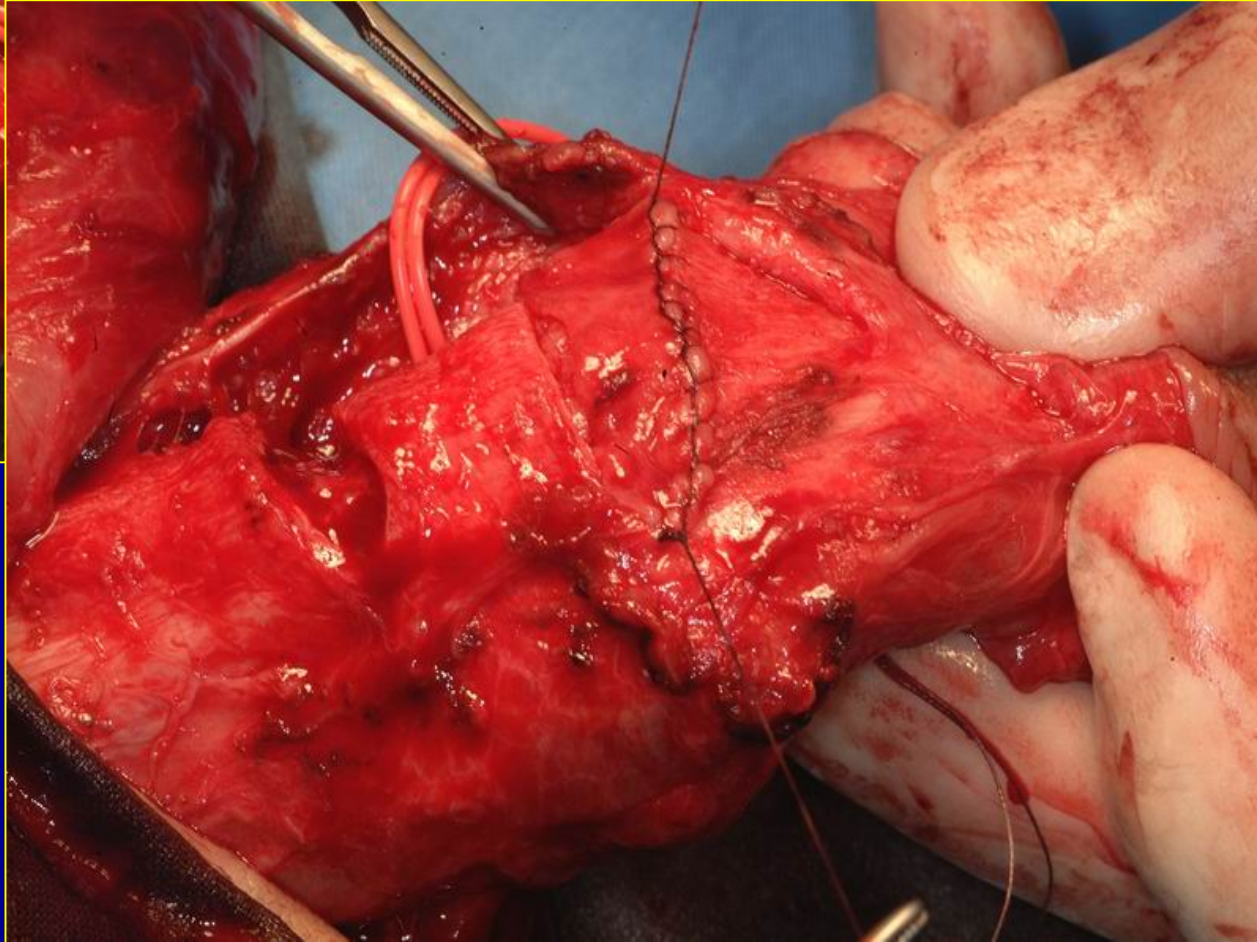
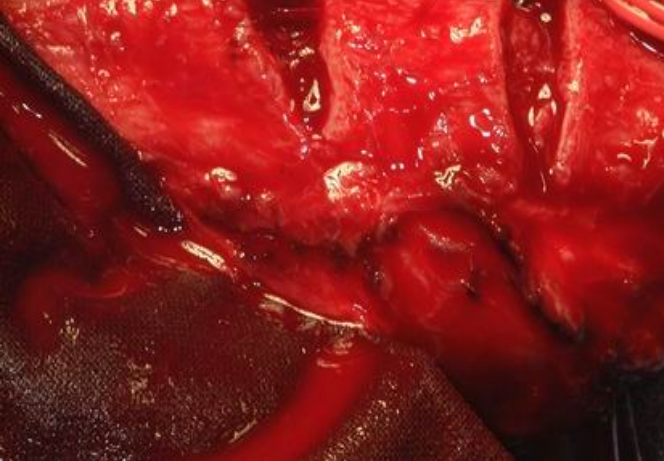
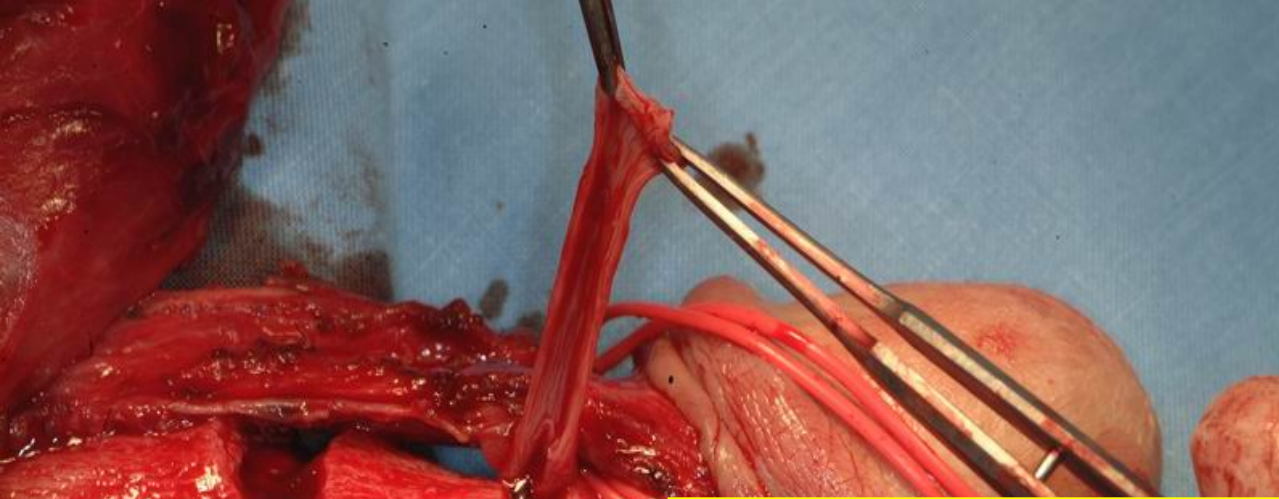
Synthetic grafts

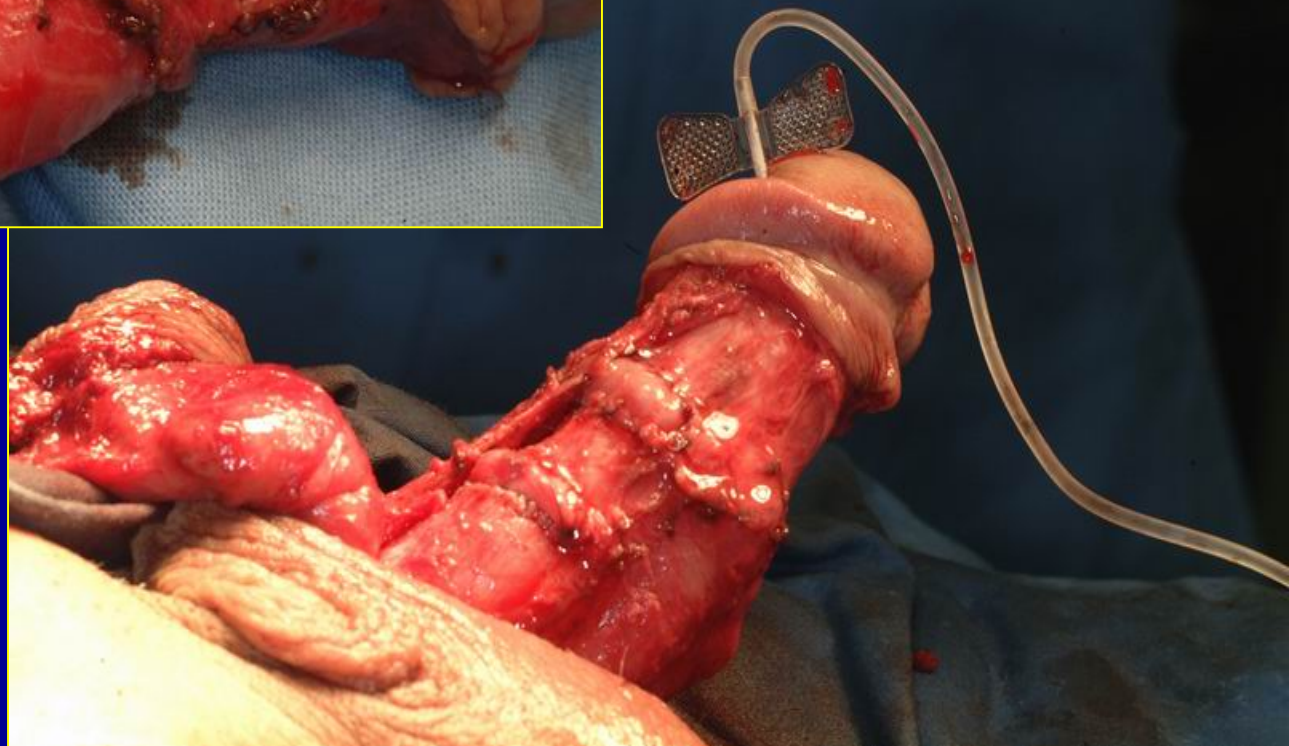
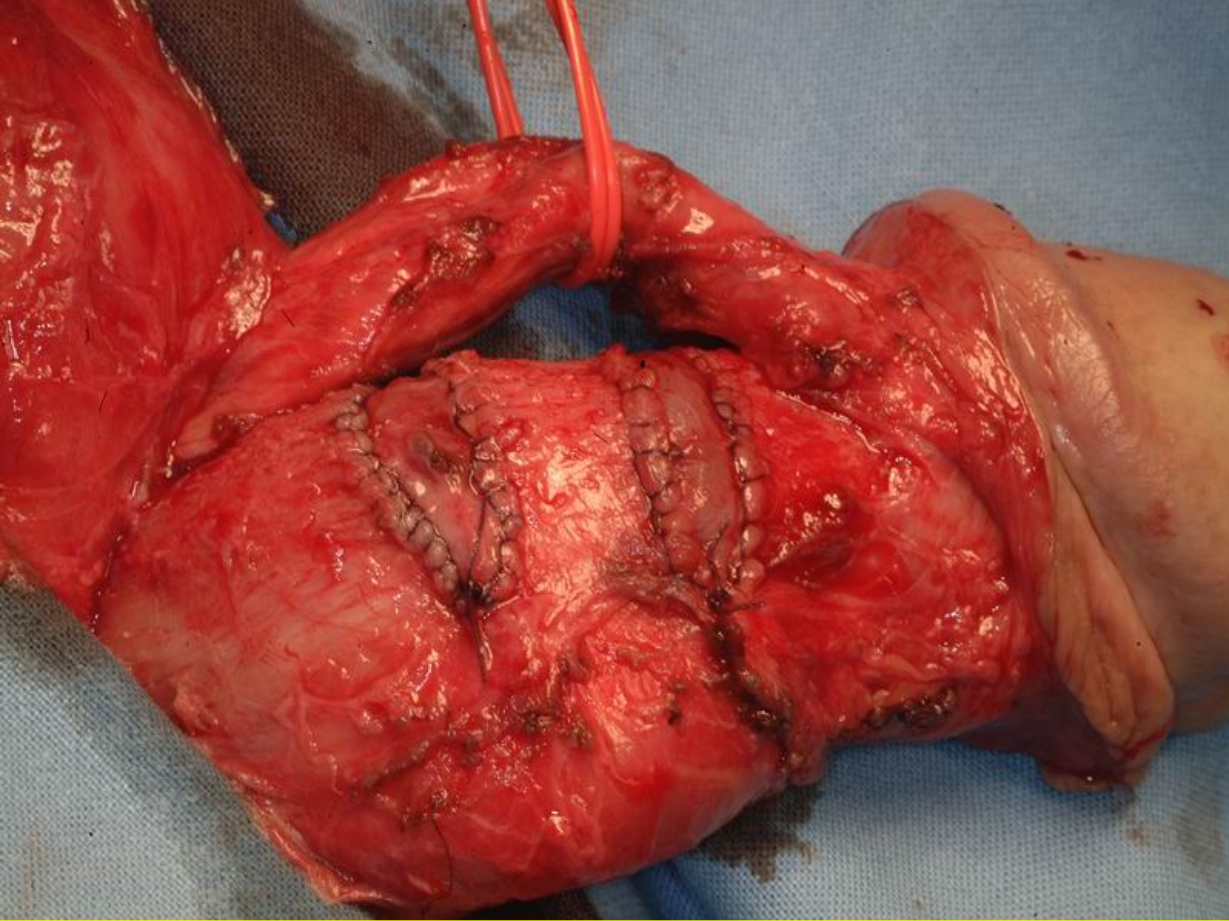
Dacron®
Gore-Tex®/Teflon®





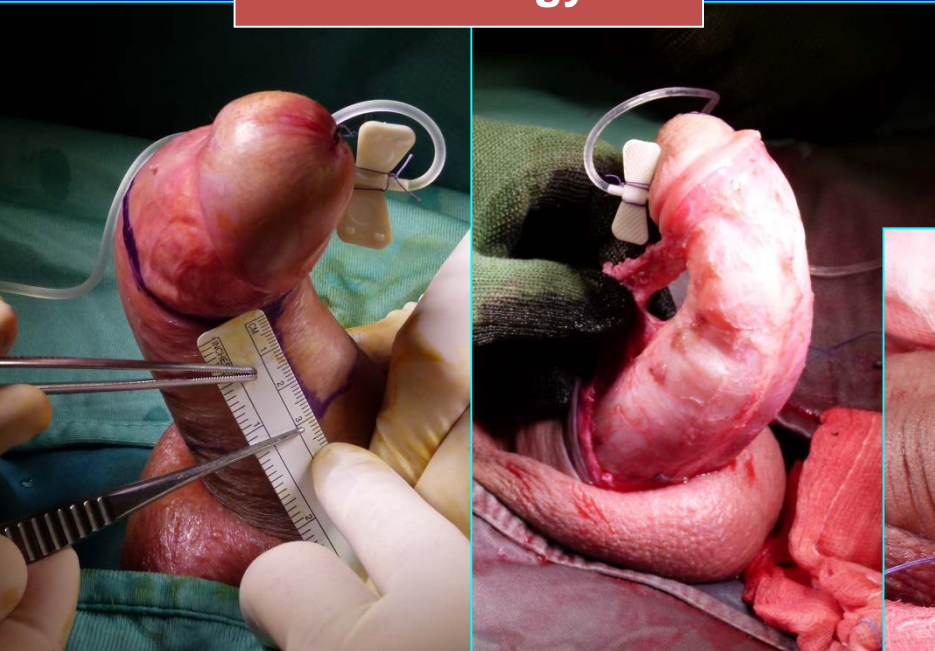




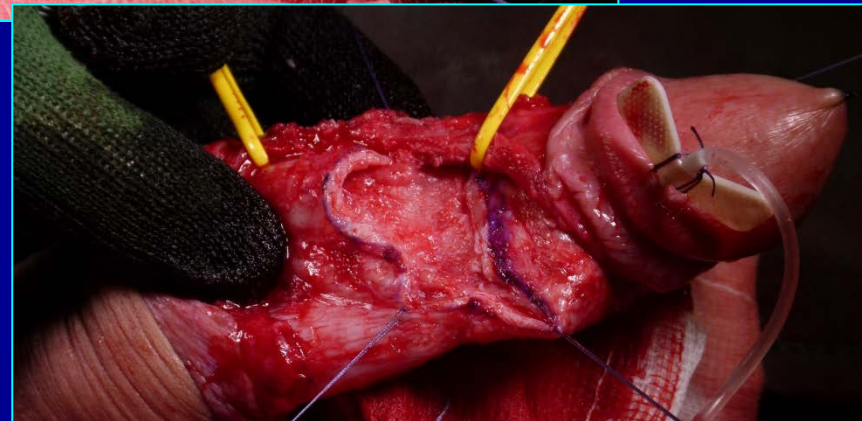
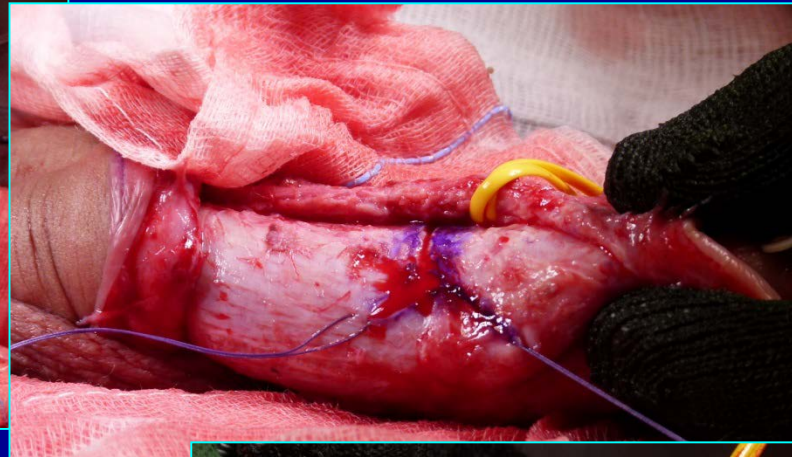


TRATTAMENTO CHIRURGICO DELL'IPP

Misurazione
secondo Egydio

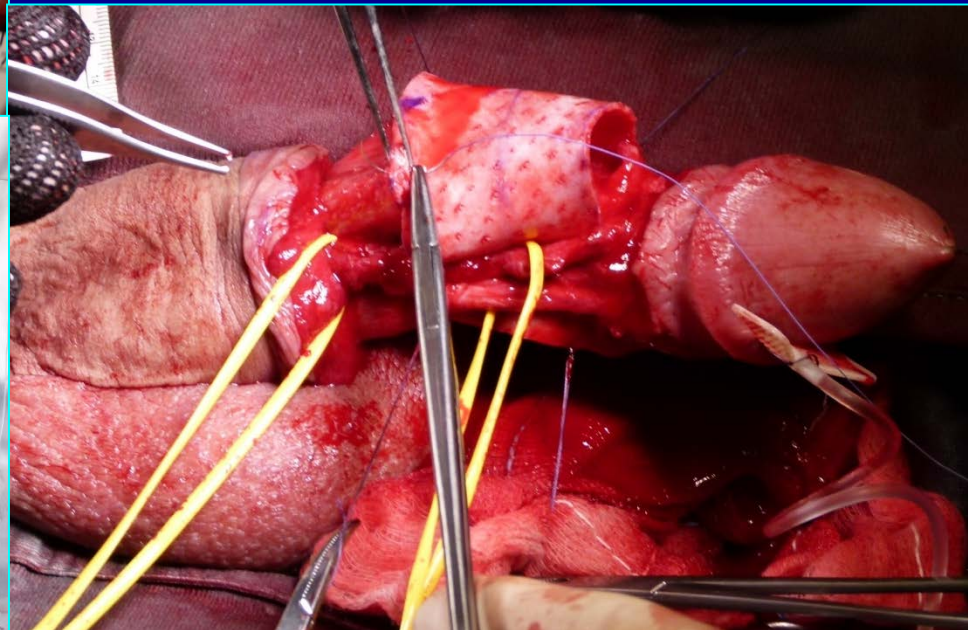
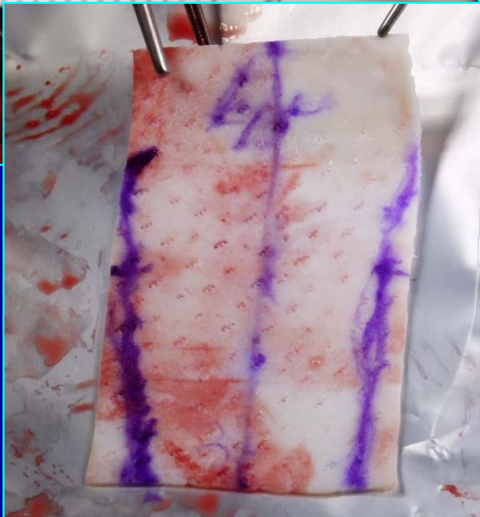
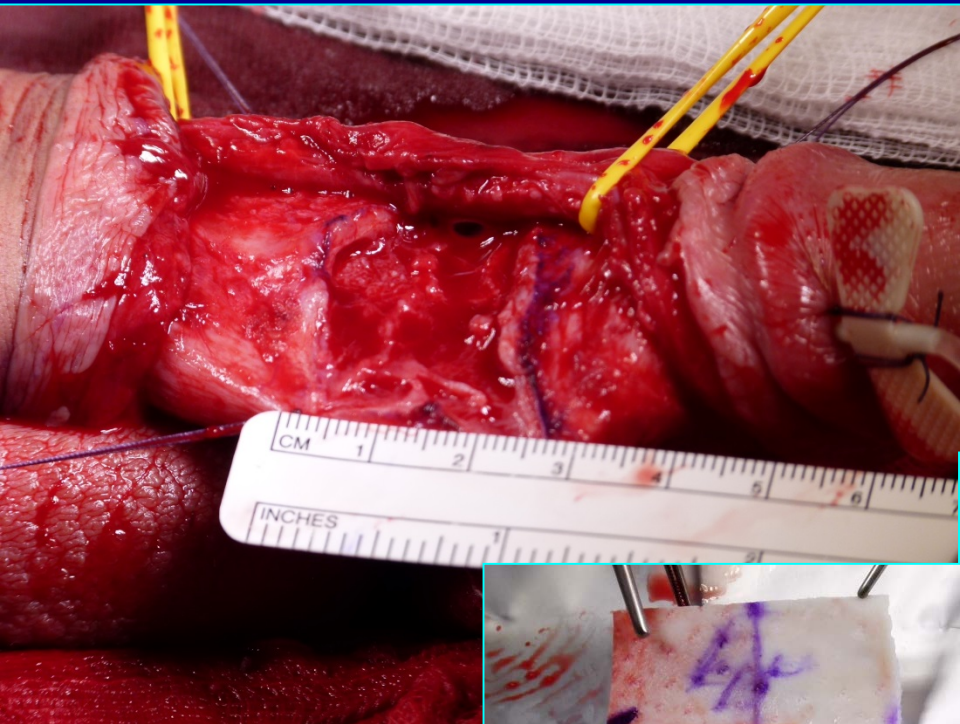


Incisione albuginea di
allungamento e
allargamento



TRATTAMENTO CHIRURGICO DELL'IPP

**INNESTO
ALBUGINEO
DI PELVICOL**



TRATTAMENTO CHIRURGICO DELL'IPP

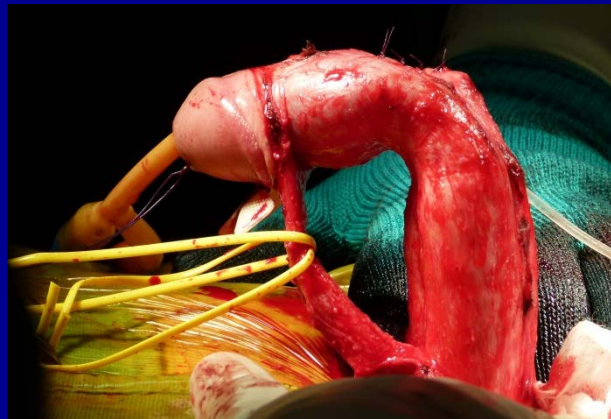
INNESTO ALBUGINEO DI PELVICOL

FISIOTERAPIA LOCALE POST-OP (VACUUM)

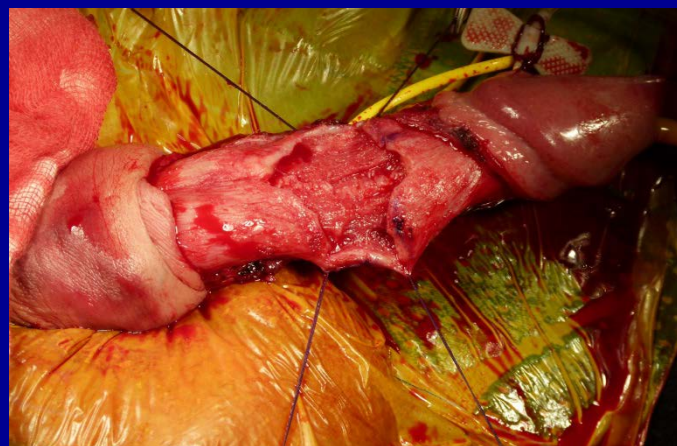
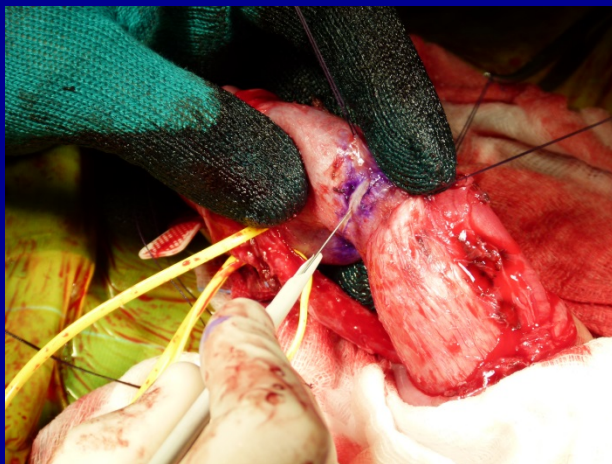


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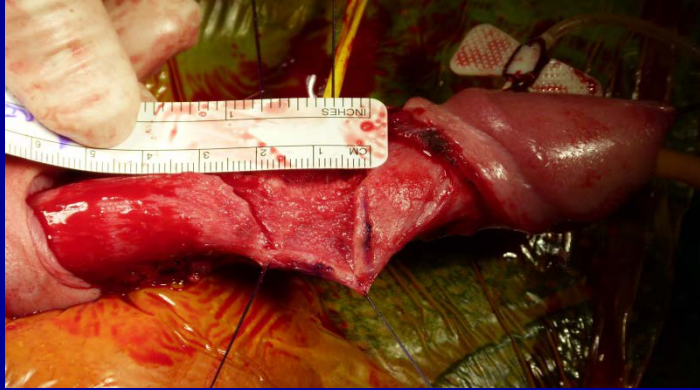
Misurazione
secondo Egydio



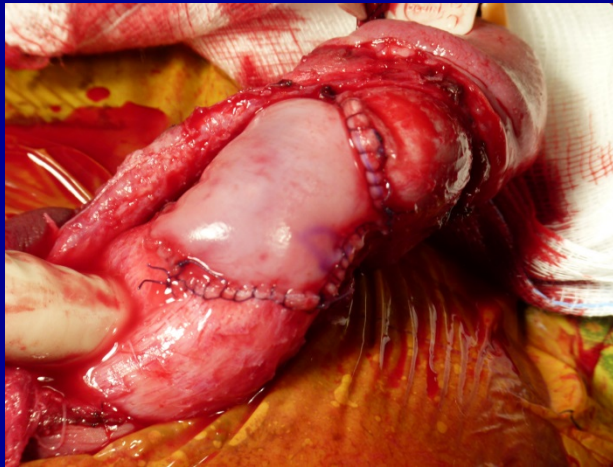
Incisione albuginea di
allungamento e allargamento



TRATTAMENTO CHIRURGICO DELL'IPP



**INNESTO
ALBUGINEO
DI VERITAS**



TRATTAMENTO CHIRURGICO DELL'IPP

INNESTO ALBUGINEO DI VERITAS

FISIOTERAPIA LOCALE POST-OP (VACUUM)



MATERIALI A CONFRONTO

Plaque surgery for Peyronie's disease: heterologous grafts.

	DERMA	ALLODERM	VENA	SIS
SPESSORE	3mm	1.5 mm	1.5 mm	0.2-0.42 mm
ELASTICITA'	+++	---	++	++
COSTO	Biologico	420 €	Biologico	470 €
COMPLICANZE	Retrazione	//	Retrazione (-)	//
ISTOTRASFOR- MAZIONE	12 mesi	12 mesi	6-8 mesi	16 mesi

Grafting techniques for Peyronie's disease

Georgios Hatzichristodoulou

Department of Urology, Technical University of Munich, University Hospital Klinikum rechts der Isar, Munich, Germany

Table 3 Outcomes after partial plaque excision/incision and grafting for Peyronie's disease

Author	Year	No. of patients	Graft type	Mean operative time (min)	Mean follow-up (months)	Surgical outcomes (%)				Satisfaction
						Penile straightening	Post-op ED	Penile shortening	Decreased sensation	
Staerman <i>et al.</i> (15)	2010	28	SIS	104	29	79	11	25	4	NA
Simonato <i>et al.</i> (36)	2010	26	Dermis/prepuce	NA	95	64	32	NA	NA	41
Sansalone <i>et al.</i> (21)	2011	157	Pericardium	NA	20	88	29	–	3	97
Chung <i>et al.</i> (37)	2011	86	^a	NA	98	68	67	22	17	35
Da Ros <i>et al.</i> (38)	2012	33	Tunica albuginea	NA	41	90	18	18	18	90
Hatzichristodoulou <i>et al.</i> (14)	2013	63	Collagen fleece	94	<1	83	NA	NA	8	NA
Salem <i>et al.</i> (33)	2014	17	Lingual mucosa	130	15	88	6	NA	NA	94
Zucchi <i>et al.</i> (32)	2015	28	Buccal mucosa	NA	43	96	4	NA	NA	85

^a, dermal graft (n=20), pericardium (n=33), SIS (n=33). post-op, postoperative; ED, erectile dysfunction; SIS, small intestinal submucosa; NA, not available.

Outcomes of surgical treatment of Peyronie's disease

Culley C. Carson and Laurence A. Levine*

Graft type	Type of tissues	Author, date	Patients, N	Mean follow-up, months	Surgical outcomes (%)					
					Straightening	Shortening	Postoperative ED	Sensory change	Pain	Satisfaction
Autologous grafts	Rectus sheath	Craatz et al., 2006 [40]	12	4 to 10 (range)	100.0	NR	0.0	NR	NR	58.3
	Tunica vaginalis	O'Donnell et al., 1992 [41]	25	42.2	88.0	96.0	68.0	16.0	NR	NR
	Dermal graft	Goyal et al., 2008 [42]	11	6 to 24 (range)	81.8	NR	9.1	18.2	0.0	81.8
	Buccal mucosa	Cormio et al., 2009 [43]	15	13.1	100.0	0.0	0.0	0.0	NR	93.3
	Fascia lata graft	Kargi et al., 2004 [44]	12	10	100.0	0.0	0.0	NR	NR	100.0
Allografts	Venous patch graft	El-Sakka et al., 1998 [45]	112	18	96.0	170	12.0	10.0	6.2	92.0
	Pericardium	Chun et al., 2001 [46]	9	6	55.5	NR	11.0	0.0	NR	88.9
	Tutoplast® human pericardial grafting	Taylor et al., 2008 [18]	81	58	91.0 [†]	33.0	32.0	31.0	NR	75.0
	Fascia lata Tutoplast® graft	Kalsi et al., 2006 [47]	14	31	79.0	28.6	7.1	7.1	NR	93.0
	Four-layer Stratis grafts	Kovac et al., 2007 [48]	13	7.8	76.9	46.0	23.0	23.0	NR	84.6
Xenografts	Porcine four-layer SIS	Lee et al., 2008 [49]	13	14 (median)	100.0 [§]	NR	54.0	NR	NR	NR
	Porcine four-layer SIS	Knoll et al., 2007 [50]	162	38	91.0	5.0	21.0	17.0	0.0	NR
	Porcine one-layer SIS	Breyer et al., 2007 [51]	19	15	63.0	63.0	53.0	NR	26.0	Score of 2.7 out of 5.0
	Bovine pericardium graft	Egydio et al., 2002 [52]	33	19.5	87.9	NR	0.0	NR	NR	NR
	TachoSil [†]	Hortsmann et al., 2011 [28]	43	63.0	41.0	40.0	9.0	7.0 (severe), 16.0 (moderate)	7.0	20.0
Synthetic grafts	Polyethylene terephthalate mesh reinforced silicone sheet patch graft	Licht et al., 1997 [53]	28	22	61.0	30.0	18.0	14.0	NR	30.0

Grafting techniques for Peyronie's disease

Georgios Hatzichristodoulou

Department of Urology, Technical University of Munich, University Hospital Klinikum rechts der Isar, Munich, Germany

Conclusions

Grafting techniques represent the preferred surgical treatment in patients with stable PD, penile curvature $>60^\circ$, short penis, or an hourglass deformity. Patients who are scheduled for a grafting surgery, however, must have satisfactory preoperative erectile rigidity. Preoperatively, the patient needs to be fully counseled about adverse effects and negative outcomes, such as diminished sensation at the glans penis or diminished erectile function. Various grafts have been used for closure of the tunica albuginea defect following plaque incision or partial plaque excision. Today, autologous and non-autologous grafts ("off-the-shelf" grafts) are used widely. Each graft type has its advantages and disadvantages. There is no "ideal" graft that can be recommended. Surgeon experience, careful patient selection, patient preference, and type of penile deformity will affect the choice of graft. Moreover, availability and costs of grafts will limit and guide their use in penile reconstructive surgery for PD.

Grafting techniques for Peyronie's disease

Georgios Hatzichristodoulou

Department of Urology, Technical University of Munich, University Hospital Klinikum rechts der Isar, Munich, Germany

Postoperative management

There are several strategies regarding the postoperative management of patients with PD after grafting procedures. The transurethral catheter is usually removed on the first postoperative day (33,36). Loose or compressive dressing around the penis is recommended for at least 24 h to avoid hematoma formation (14,15,20,36). Patients should refrain from sexual intercourse and sexual activities for 4–6 weeks postoperatively (21,30,38). Despite limited data, postoperative rehabilitation is recommended in order to reduce the risk of postoperative ED, enhance recovery of erectile function, reduce the risk of penile length loss after surgery, and optimize straightening of the penis (1,5,7,30).

Conclusions

Grafting techniques represent the preferred surgical treatment in patients with stable PD, penile curvature >60°, short penis, or an hourglass deformity. Patients who are scheduled for a grafting surgery, however, must have satisfactory preoperative erectile rigidity. Preoperatively,

Massage and stretching of the penis twice a day starts 2 weeks after surgery for a period of 4 weeks. Nocturnal PDE-5 inhibitors have been recommended in order to improve nocturnal erections, reduce the risk of postoperative ED, stretch the penis, and improve oxygenation to the applied graft (40). This should start 7–10 days after surgery for a period of 6 weeks. The use of external penile traction devices has been encouraged to reduce postoperative penile shortening. Penile traction therapy is recommended to start 2–3 weeks after surgery on a daily basis for 2–8 h, for a period of 3 months (1,7).

Outcomes of surgical treatment of Peyronie's disease

Culley C. Carson and Laurence A. Levine*

BJU Int 2014; 113: 704-713



Lengthening strategies for Peyronie's disease

Christopher D. Gaffney, Matthew J. Pagano, Aaron C. Weinberg, Alex C. Small, Franklin E. Kuehas, Paulo H. Egydio, Robert J. Valenzuela

Plaque incision (PI) and grafting with corporal sparing silicone prosthesis placement

PI and grafting with silicone prosthesis placement increases penile length while retaining some native erectile function. Austoni *et al.* [2005] described a technique involving placement of a soft, axially rigid 10 Fr silicone prosthesis, which allows for some residual erectile function. Full thickness incisions were made into the tunica over the area of maximal bending until the penis could be fully elongated and relaxed. The defect was closed with a saphenous venous graft. For the 145 patients enrolled, average penile length increased by 1.3 cm (range, 0.8–2 cm) (37). Zucchi *et al.* in 2013 modified Austoni's technique on 60 patients to use an 8 Fr prosthesis and a dovetail incision allowing for further curvature relaxation. This resulted in a larger defect requiring a bovine pericardial patch instead of the smaller venous graft. Mean shaft length increased by 2 cm (range, 1.2–2.3 cm) (38). Significantly, the authors reported that each patient maintained his gains in the 6 months following the procedure.

Transl Androl Urol 2016;5(3):351-362

Ente Ospedaliero di Monza
II Clinica Urologica
Università degli Studi di Milano
Direttore Prof. E. Pisani

Krankenhaus der Stadt Monza
II Urologische Klinik
Staatliche Universität Mailand
Direktor Prof. E. Pisani

Simposio Internazionale sull'I.P.P.

Milano, 27 Ottobre 1984

I.P.P. Internationales Symposium

Milano, 27. Oktober 1984

Col patrocinio dell'Università
degli Studi di Milano e
dell'Ente Ospedaliero di Monza

Unter dem Patronat der staatlichen
Universität Mailand und
des Krankenhauses der Stadt Monza

1984:
l'esordio della
CHIRURGIA RADICALE
per il trattamento dell'IPP

16.15 E. Austoni (Milano)

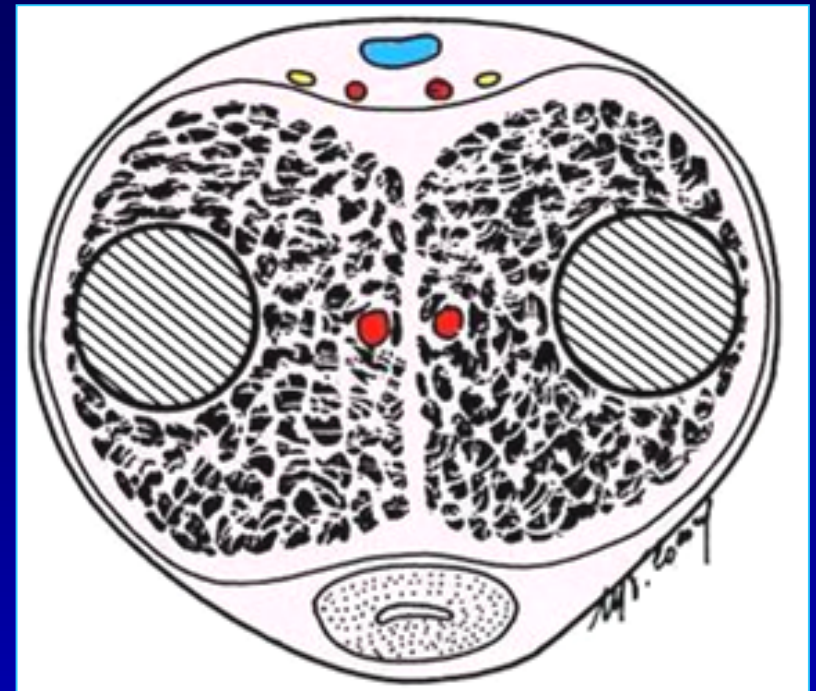
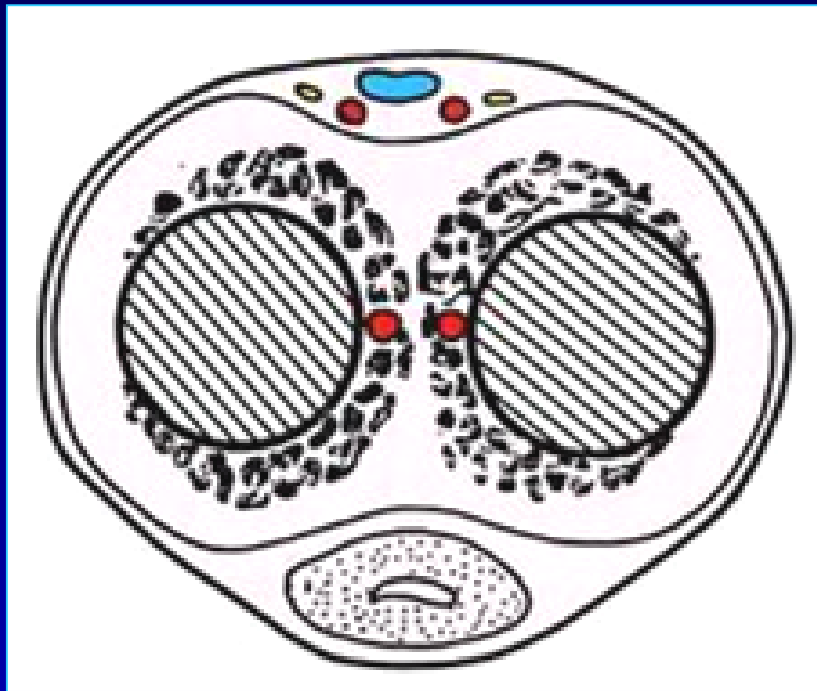
Chirurgia combinata, impianto
protesi Subrini ed innesto dermico

Behandlung mit Subrini Prothese und
Deckungshautmaterial

16.45 F. Schreiter (Schwelm)

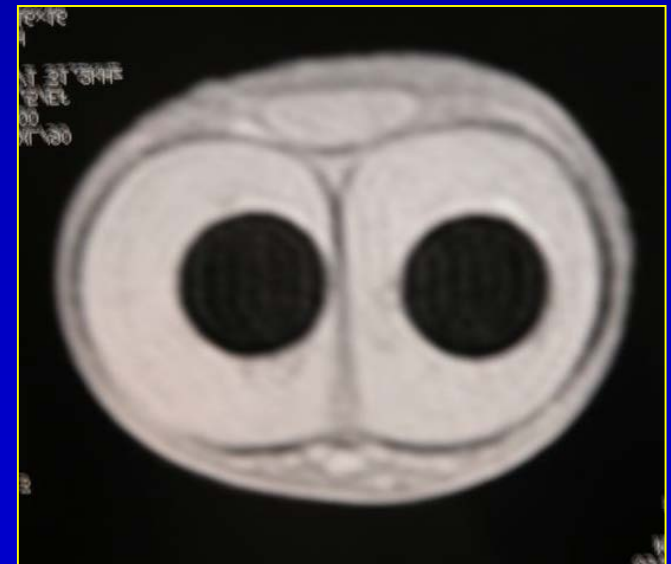
Impianto protesi idrauliche
e patch alloplastico

Behandlung mit hydraulischer
Prothese und alloplastichum
Deckungsmaterial



*La protesi idraulica si riteneva sostituisse completamente l'erezione fisiologica

*La protesi soffice di Subrini, invece, preupponeva la presenza di "erezione complementare", comportandosi come un "tutore" a rigidità assiale e riduzione volumetrica



Soft Prosthesis Implant and Relaxing Albugineal Incision with Saphenous Grafting for Surgical Therapy of Peyronie's Disease: A 5-Year Experience and Long-Term Follow-Up on 145 Operated Patients

Edoardo Austoni*, Fulvio Colombo, Ai Ling Romanò, Andrea Guarneri, Ioannis Kartalas Goumas, Alberto Cazzaniga

Department of Urology, Fatebenefratelli S. Giuseppe Hospital, Via San Vittore, 12, 20123 Milan, Italy

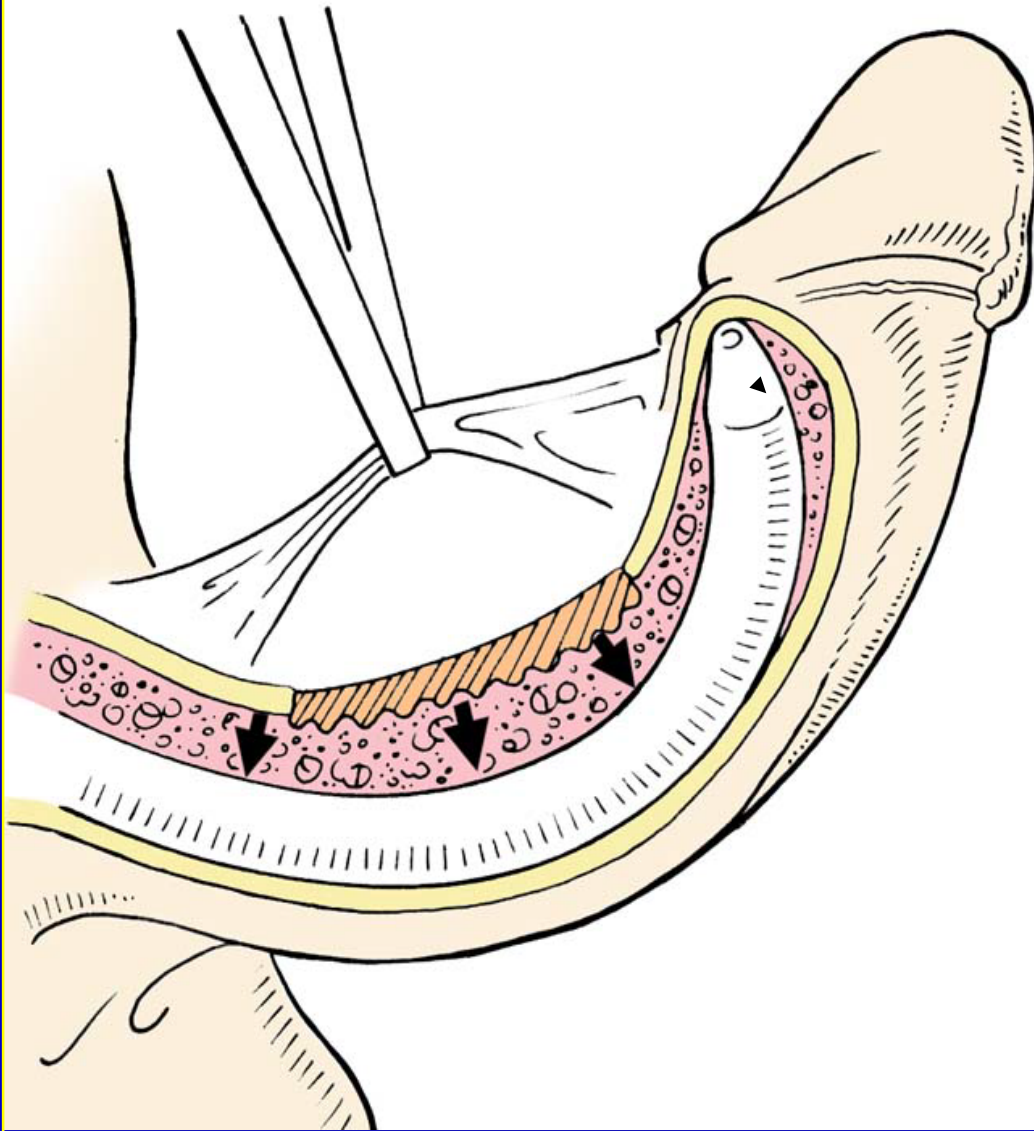
Accepted 5 October 2004

Available online 27 October 2004

- **IMPIANTO MININVASIVO di TUTORI ASSIALI SOFFICI, A DIAMETRO RIDOTTO (9-10 mm)**
- **INCISIONE DI RILASSAMENTO AUTOREGOLATA**
- **MONOGRAFT SAFENICO**

Austoni E., Colombo F. - Eur. Urology 2005

12,5 cm

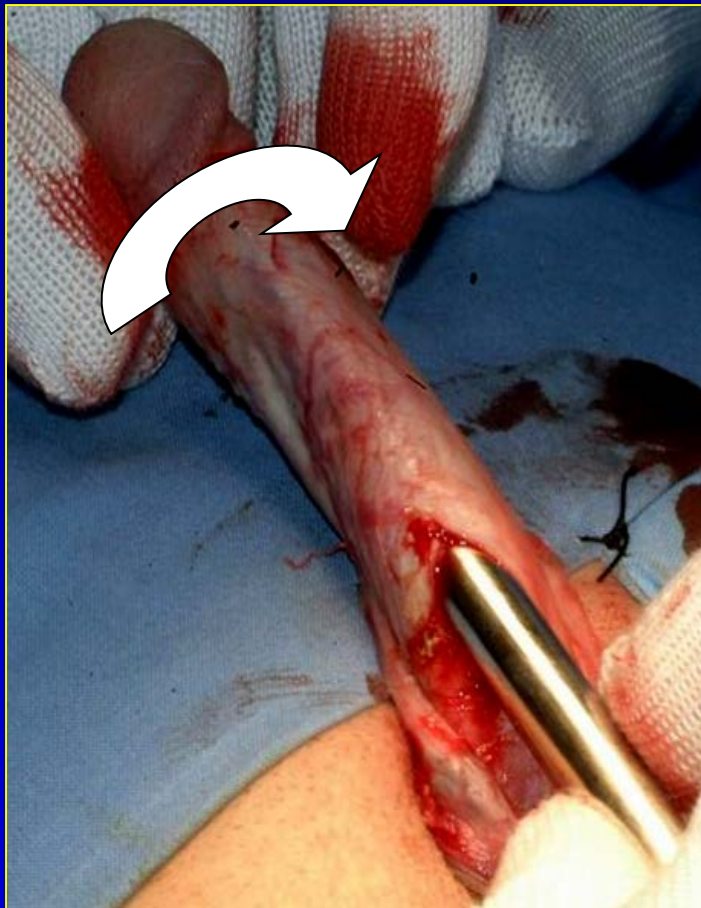


1° tempo:

**IMPIANTO
MININVASIVO DEI
TUTORI ASSIALI**

Risparmio del tessuto erettile

**Singola calibrazione mininvasiva con Hegar
(diametro 7- 9 mm. - rotazione apicale dell'Hegar rastremato)**

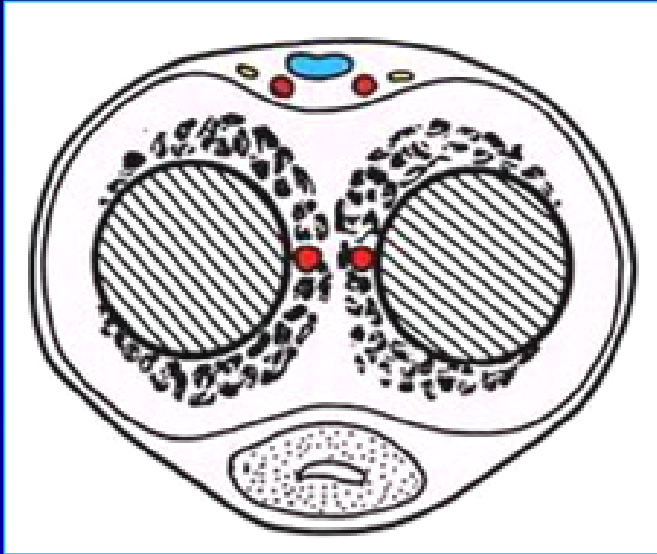


RISPARMIO DEL TESSUTO ERETTILE

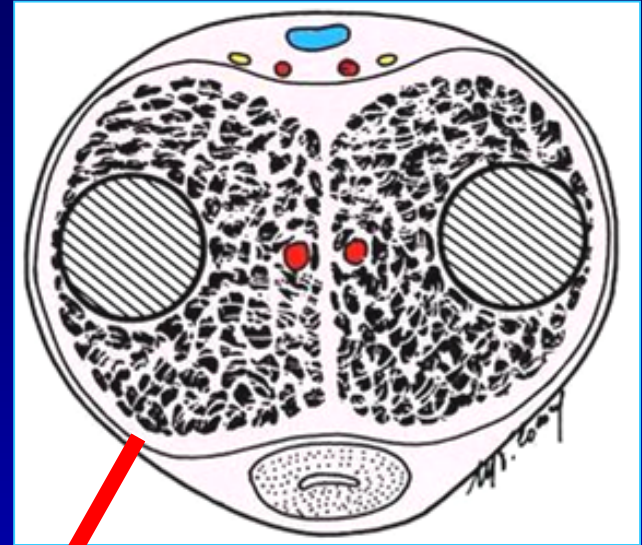
la calibratura mini-invasiva (1-2 passaggi con Hegar 9-10 mm)
consente la conservazione della capacità erettile post-op
"complementare" al tutore soffice

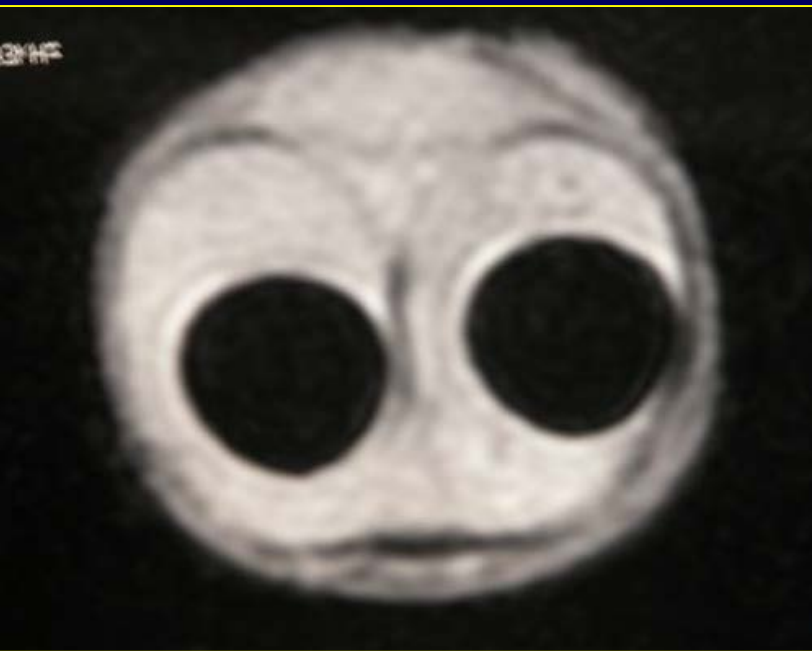


PENE FLACCIDO



EREZIONE COMPLEMENTARE





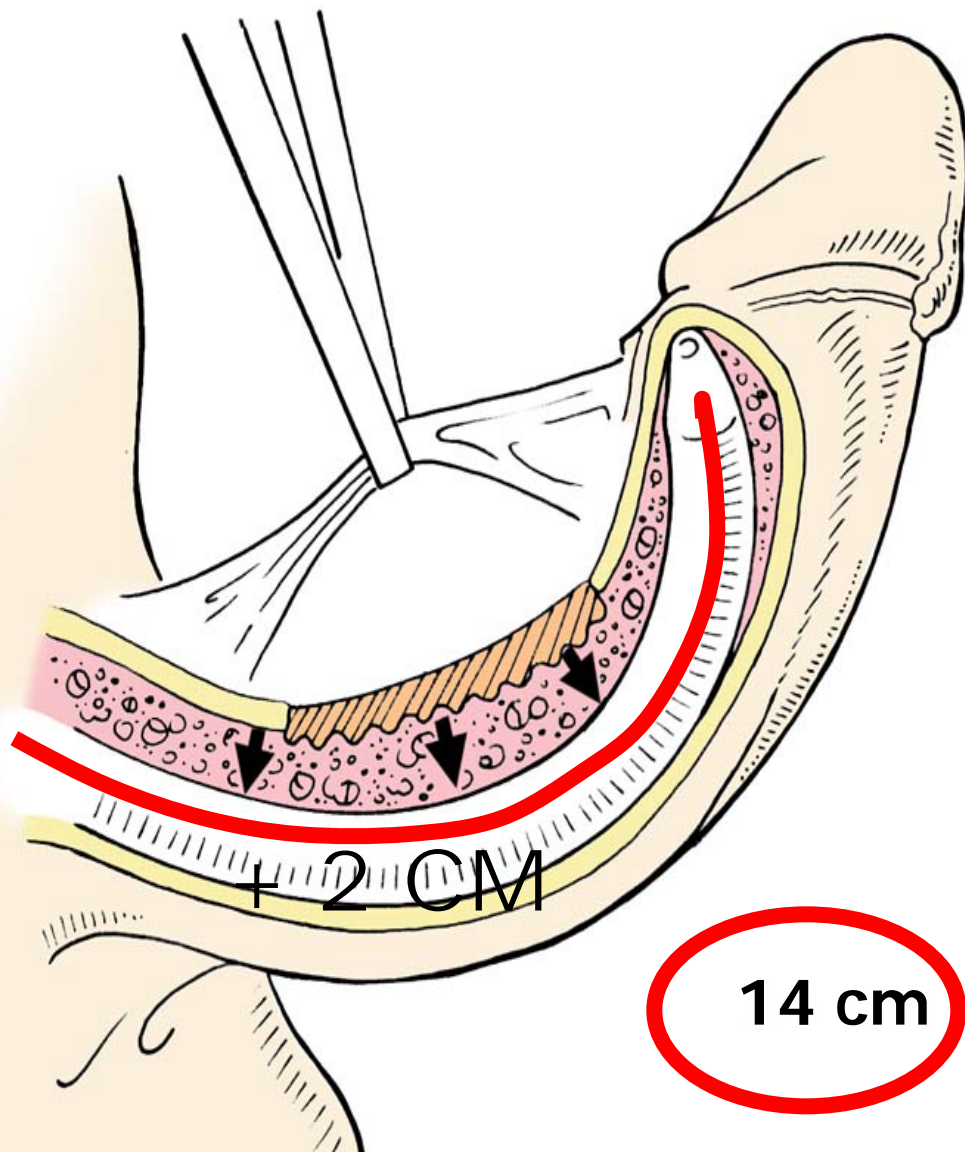
TUTORI SOFFICI 10 mm
PENE A RIPOSO



TUTORI SOFFICI 10 mm
EREZIONE
COMPLEMENTARE



12 cm

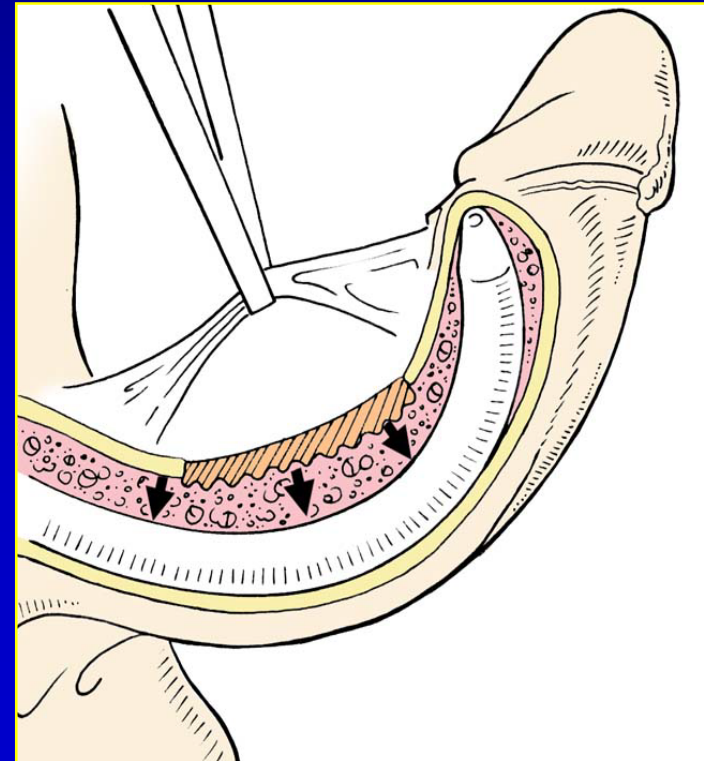
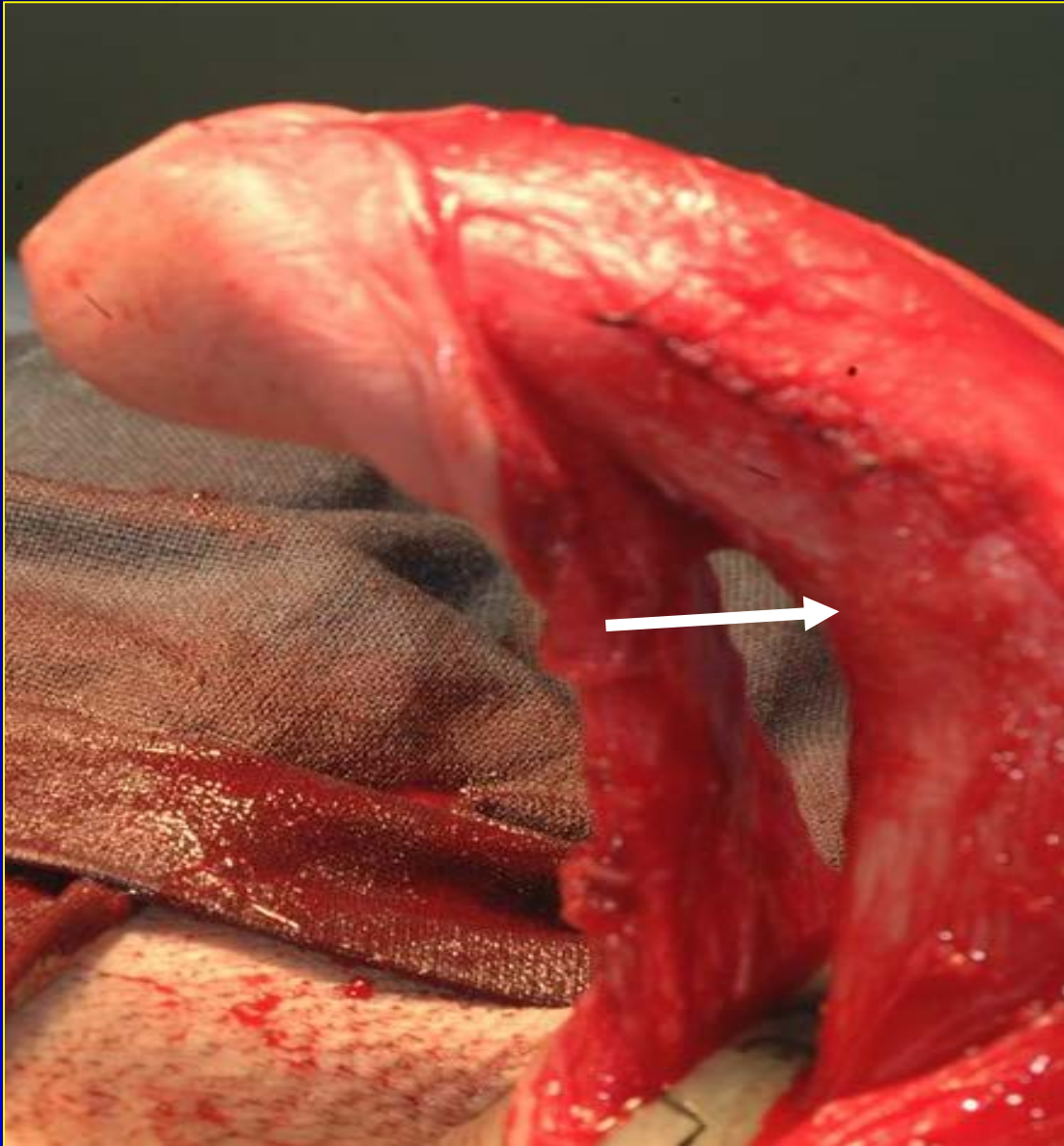


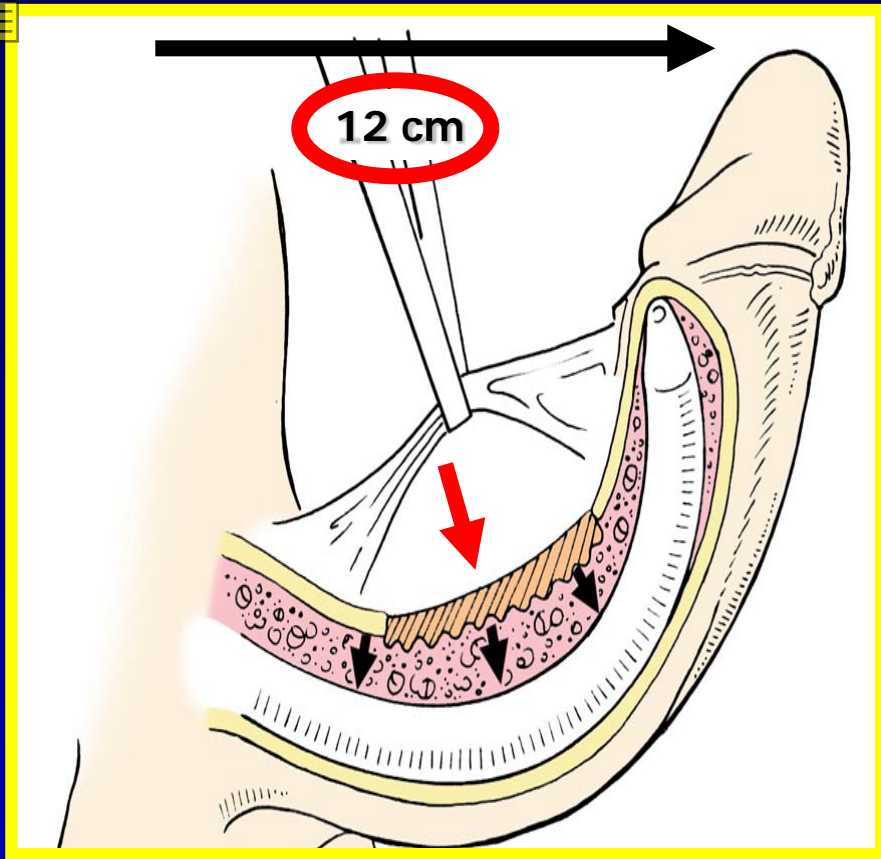
**Tutori 2 cm
più lunghi**



**Appare la
curvatura**

Isolamento del FVND

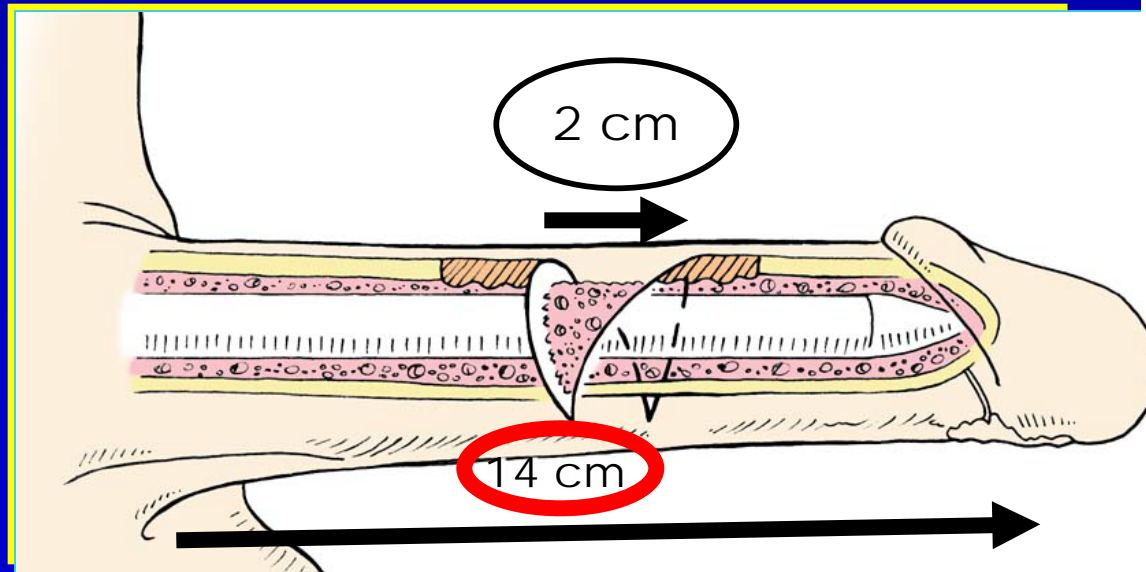




2° tempo :

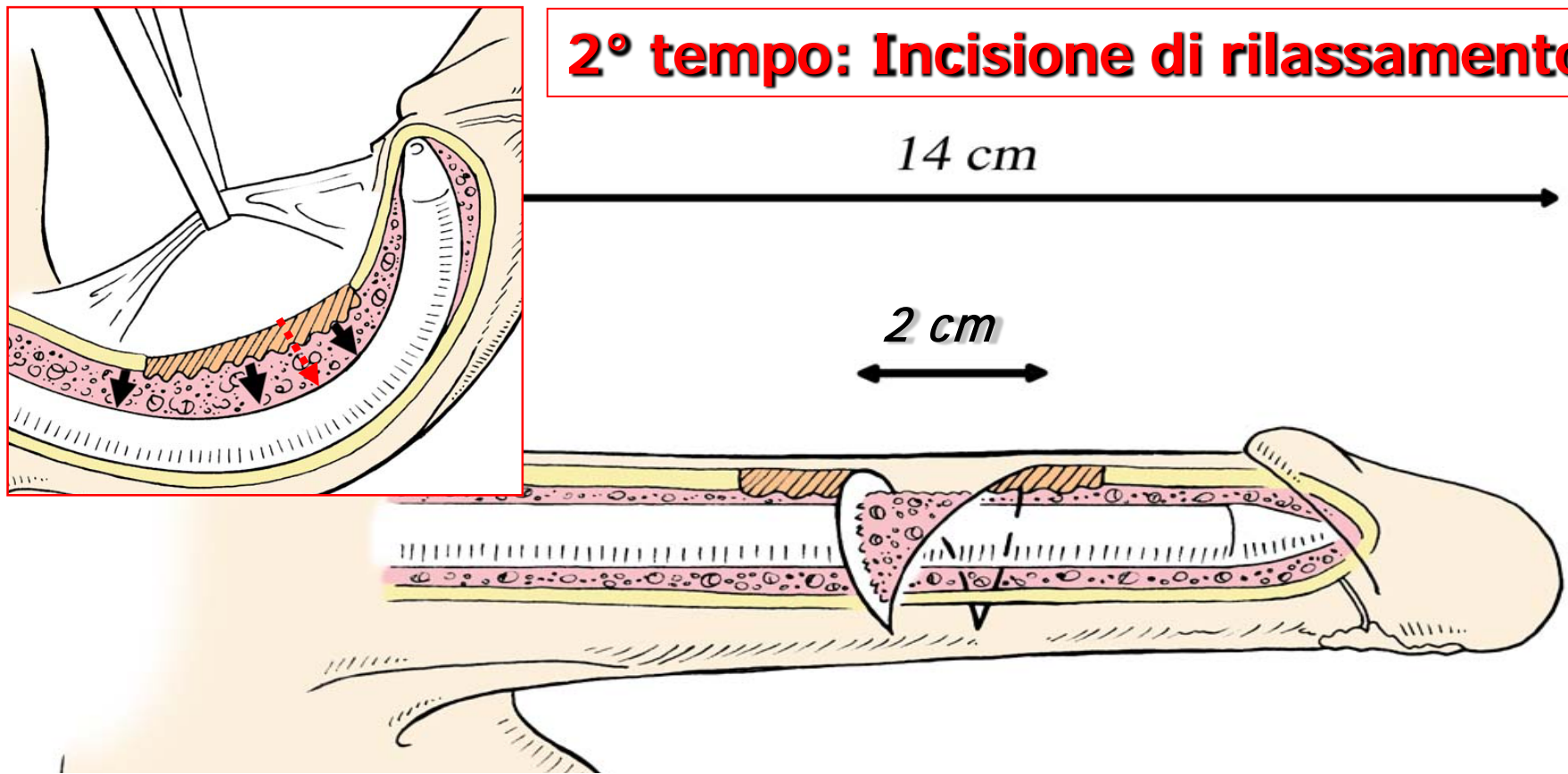
INCISIONE DI RILASSAMENTO

**L' INCISIONE
produce una losanga
autodeterminata dalla
tensione del tutore**



**2 cm. lunghezza
(da 12 a 14 cm)**

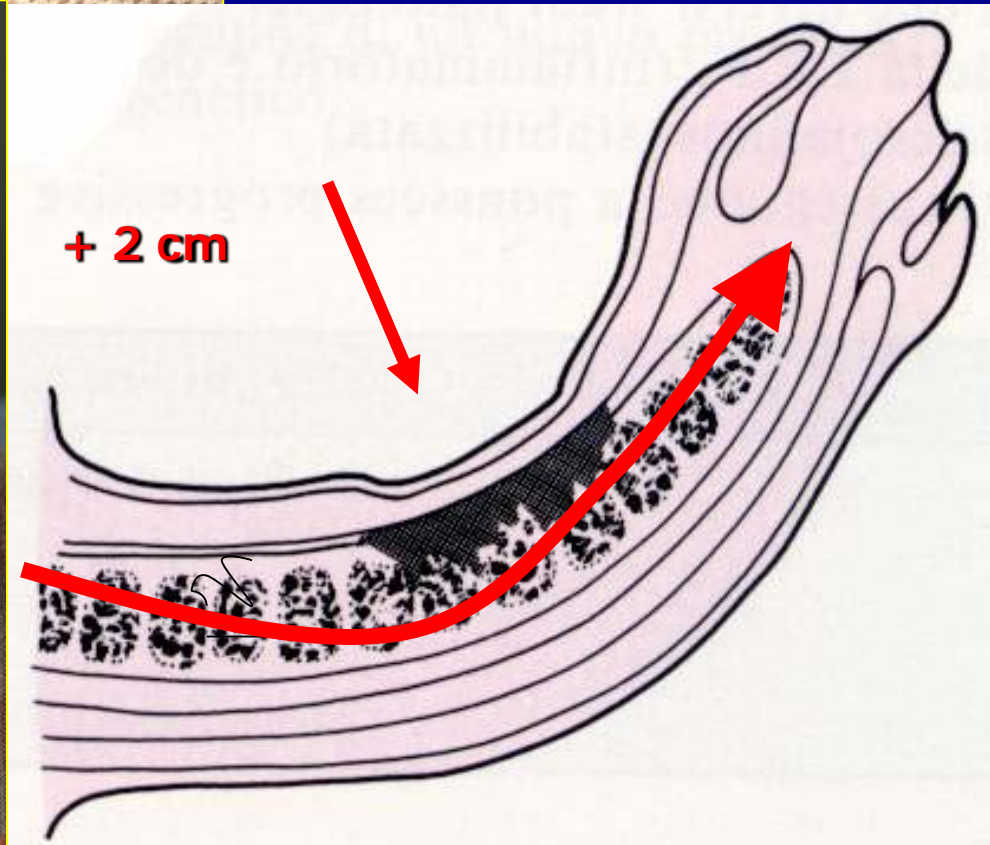
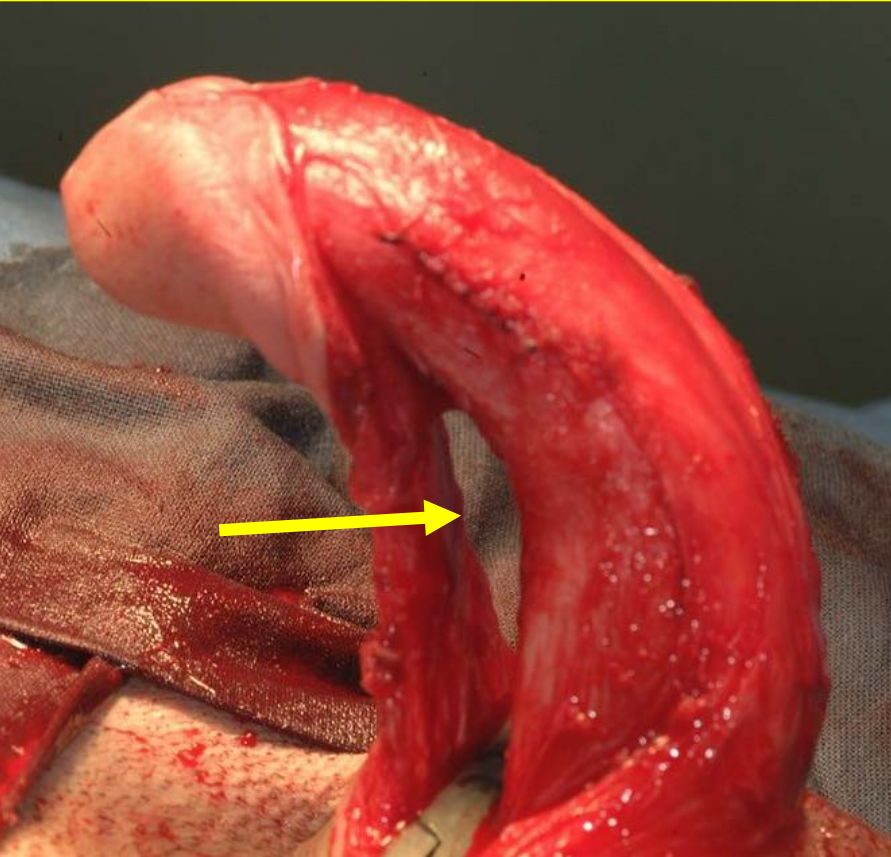
2° tempo: Incisione di rilassamento



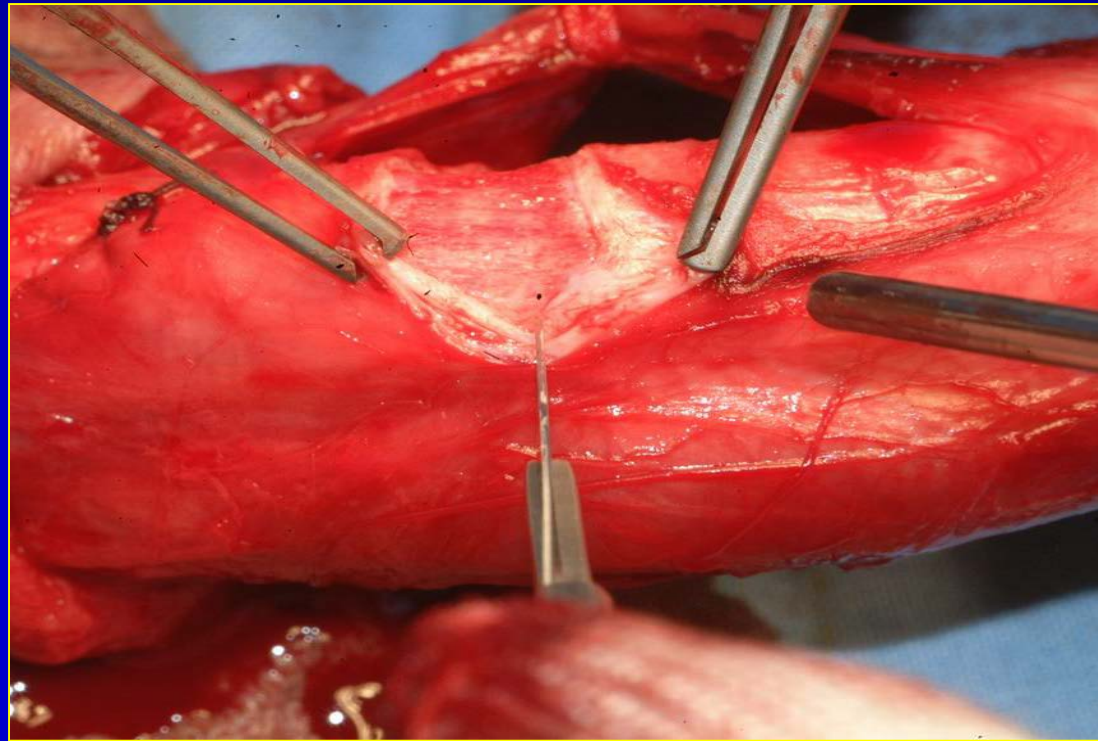
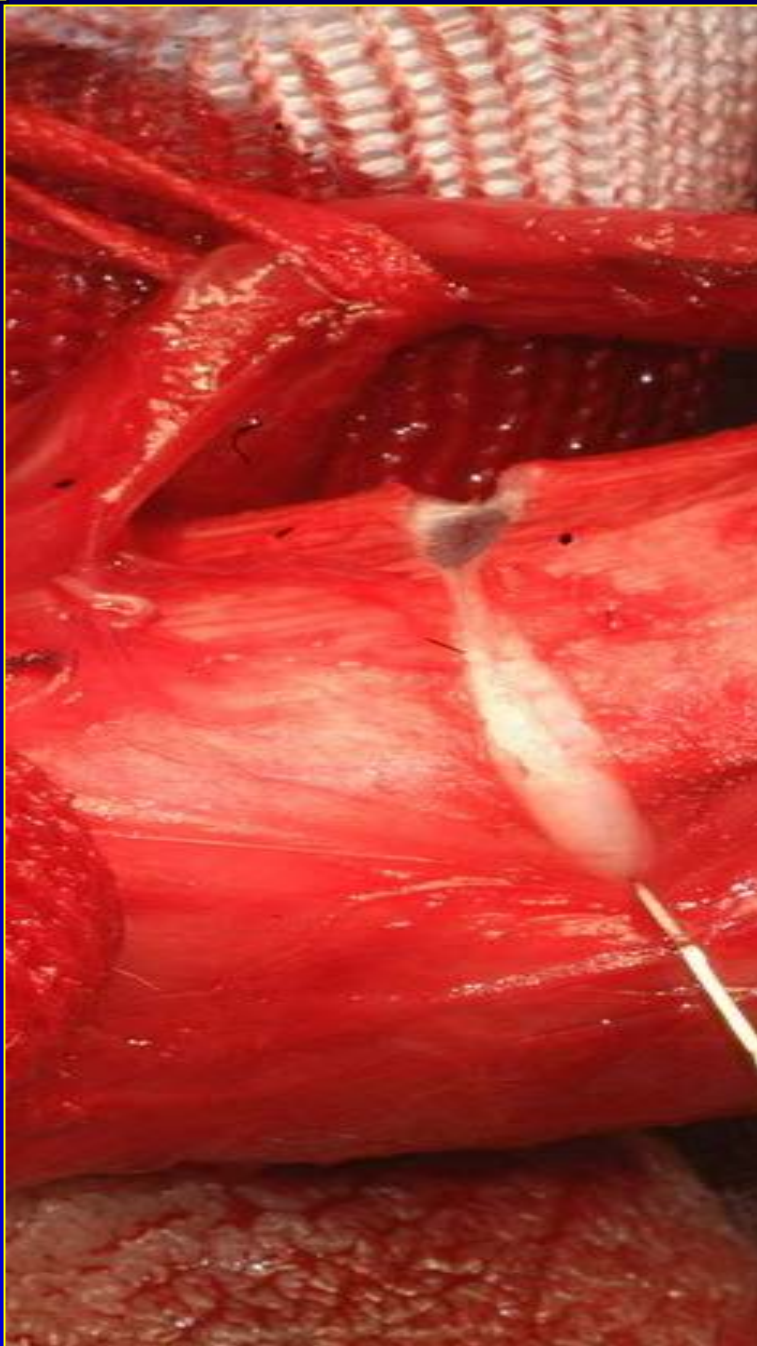
La morfologia della incisione è una LOSANGA AD ANGOLI ACUTI PARAURETRALI AUTODETERMINATA dalla spinta interna del tutore, che si raddrizza progressivamente con il rilassamento albugineo, e che ha la sua **massima estensione** nell'area **concava** ed angoli acuti nell'area convessa



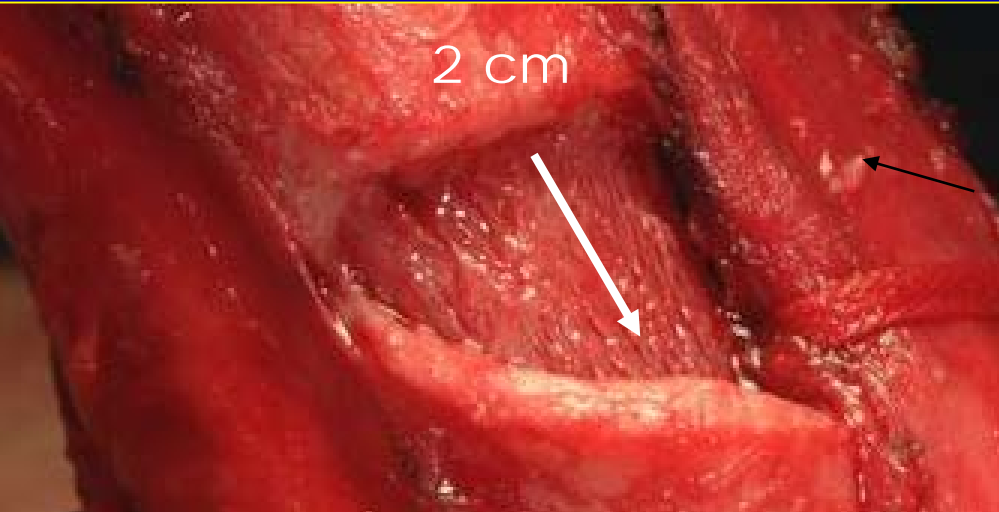
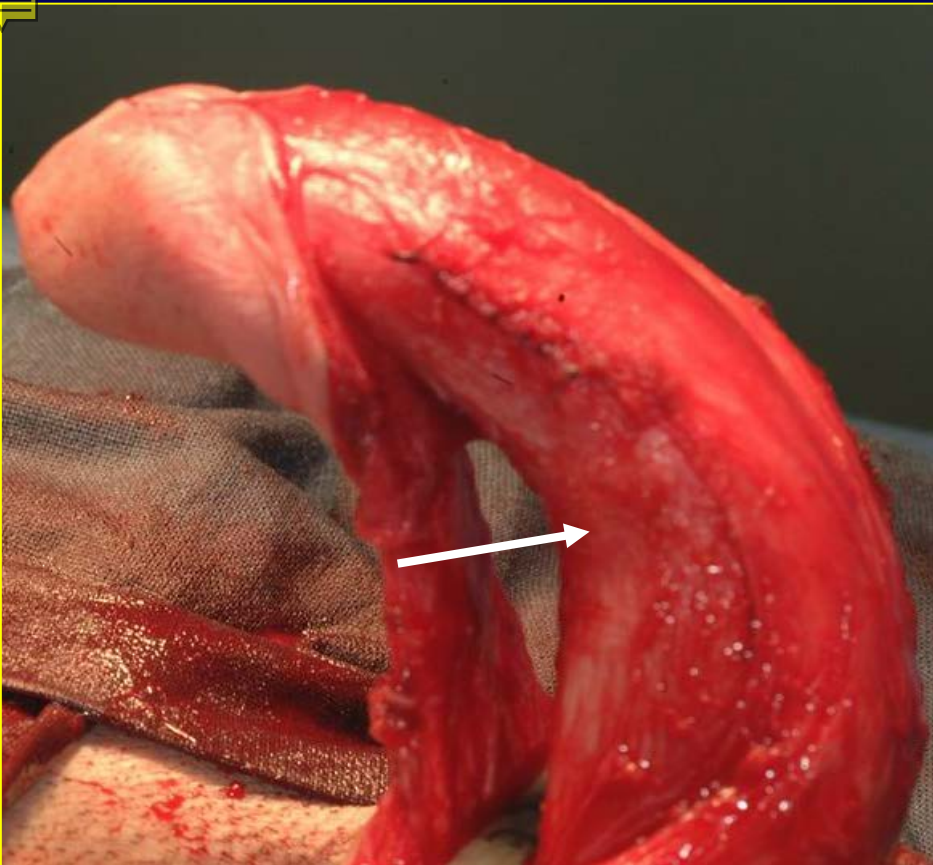
**CON L'IMPIANTO DEL
TUTORE ASSIALE SI
EVIDENZIA LA ZONA DI
INCISIONE**

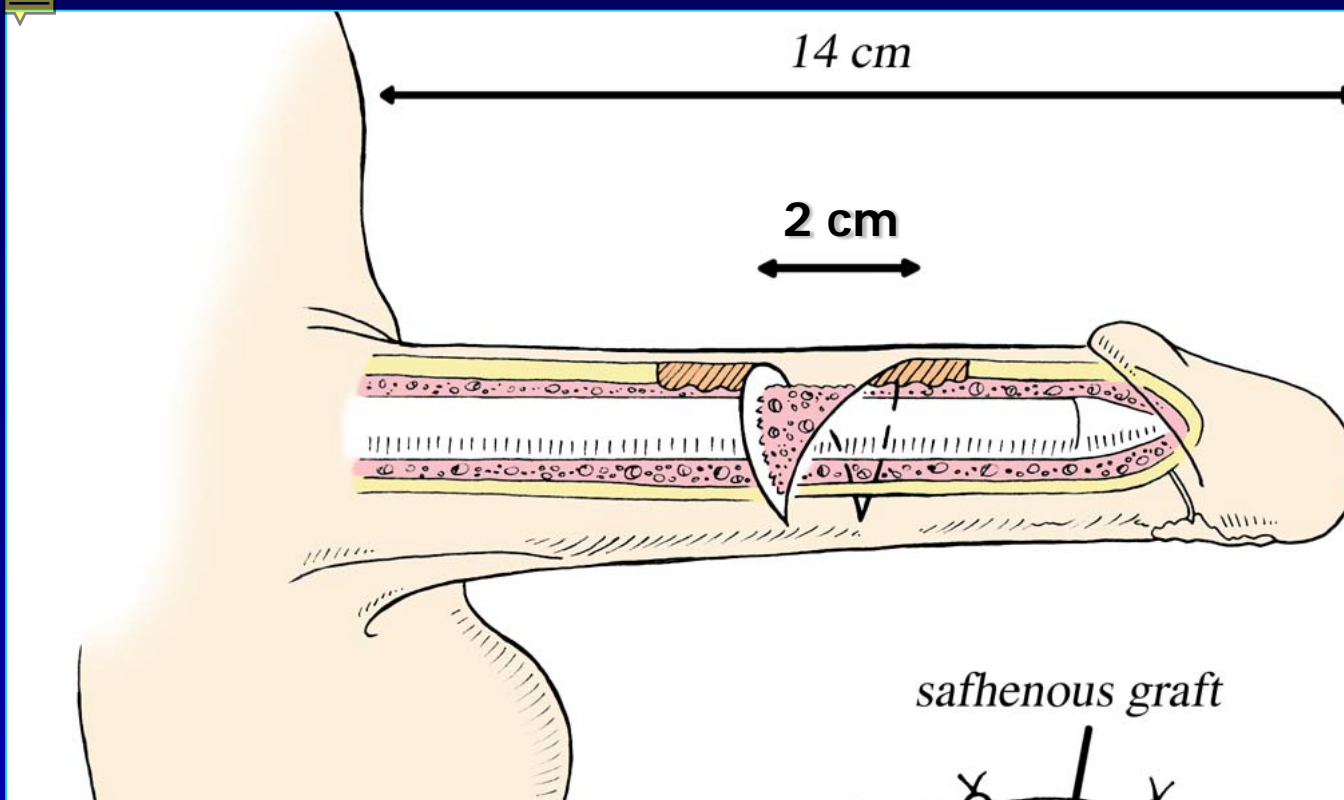


**L' INCISIONE
ALBUGINEA NON DEVE
INTERESSARE IL
TESSUTO ERETTILE**



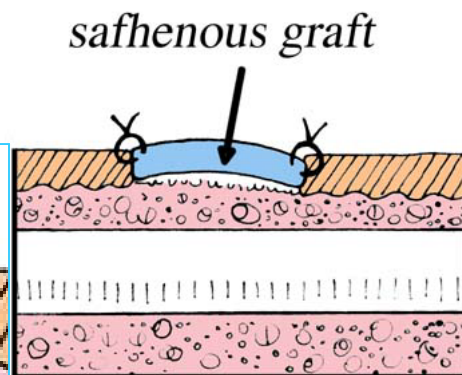
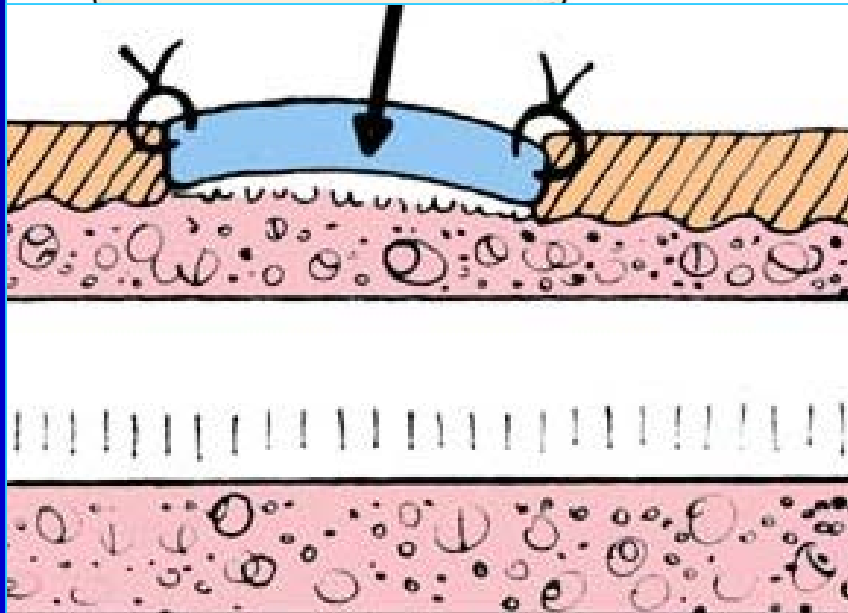
La limitazione all' allungamento del
pene è costituita dalla lunghezza
del FVND



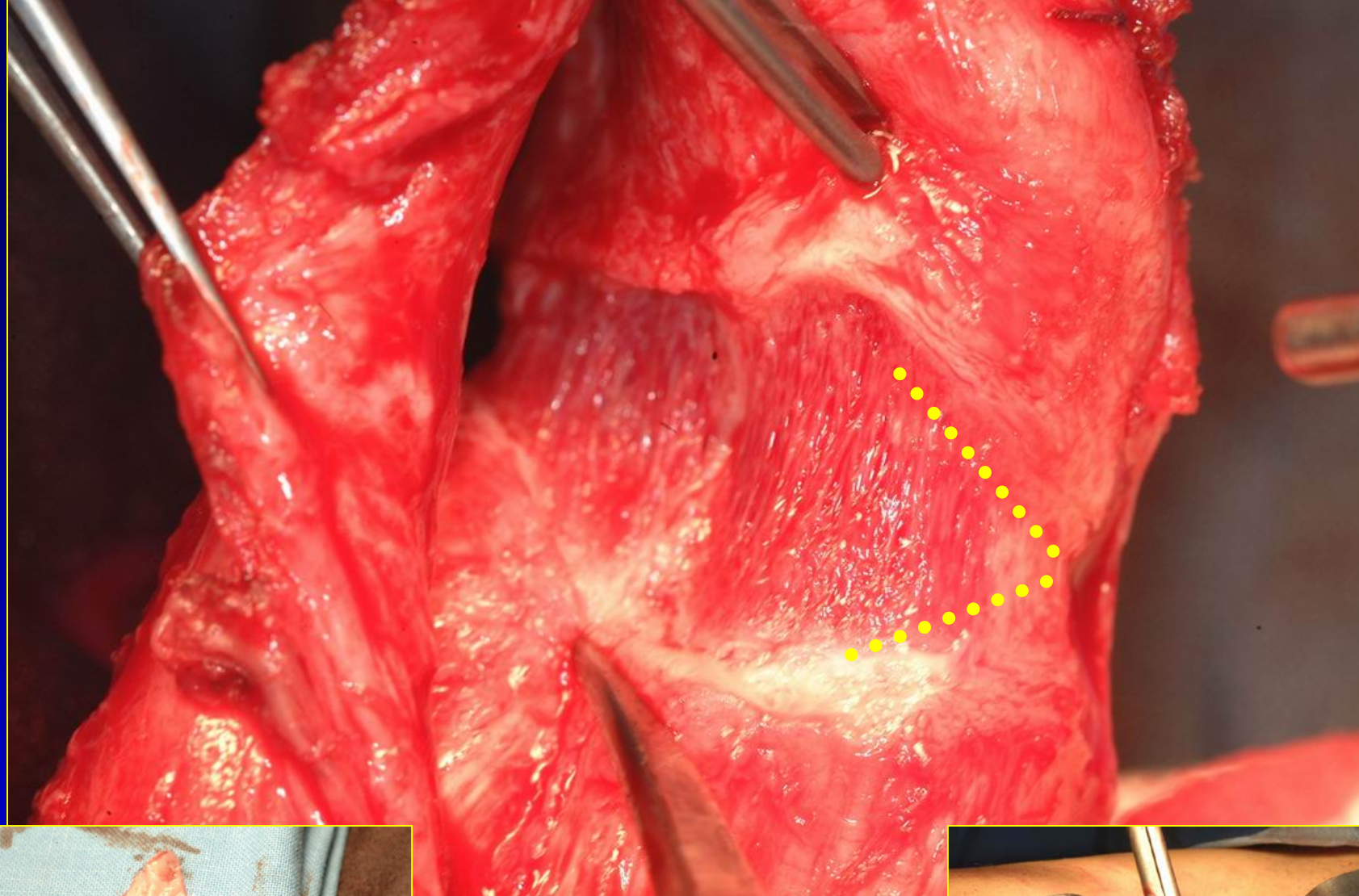


3° tempo:

GRAFTING



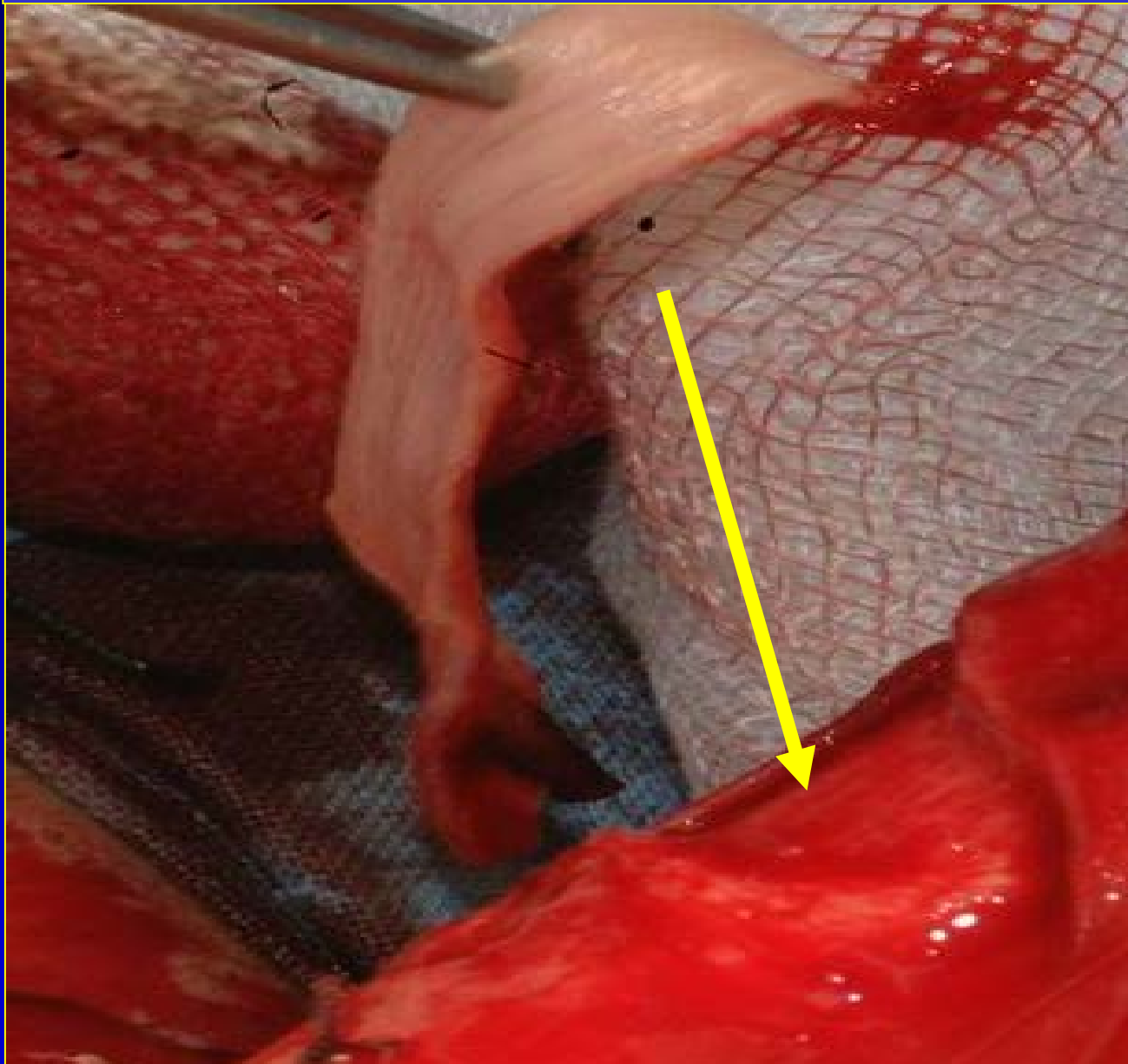
**Il graft safenico attecchirà
sui in distensione massima**



IL GRAFT SAFENICO



**VIENE APPLICATO CON LA SUPERFICIE
ENDOTELIALE INTERNA**

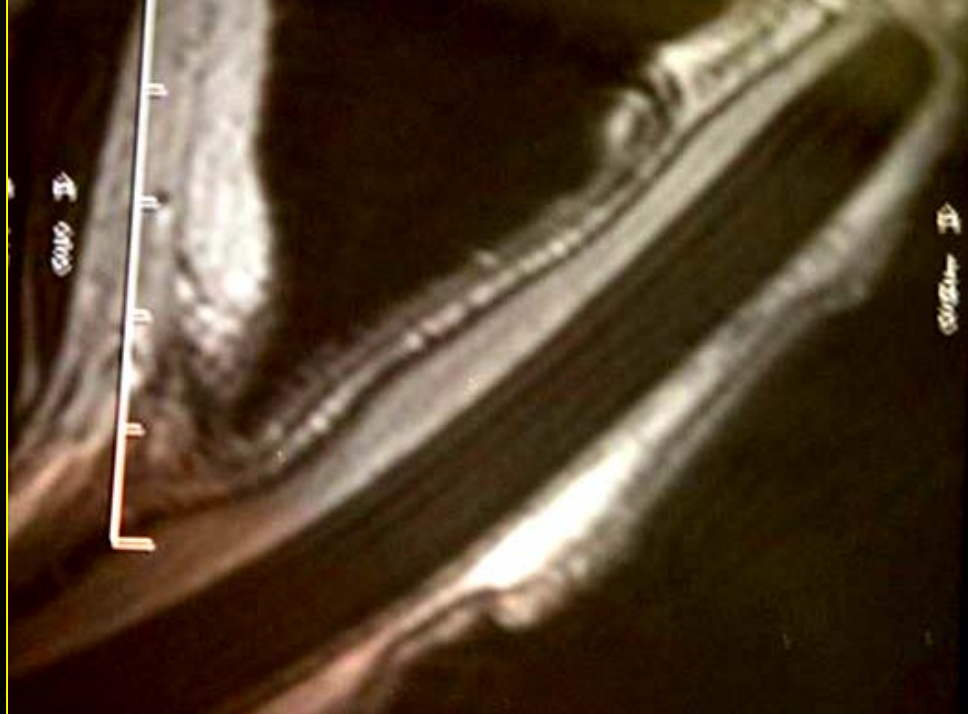
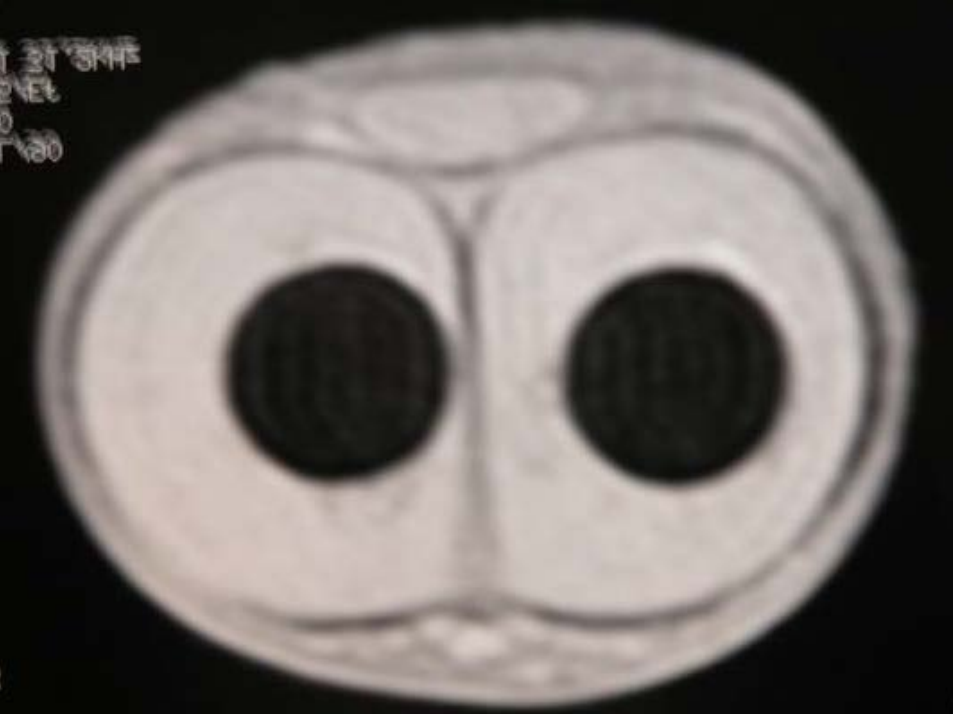


LA CONGRUITA' E' PERFETTA



IL RISULTATO A DISTANZA DOVRA' ESSERE UN PERFETTO RADDRIZZAMENTO CON EREZIONE COMPLEMENTARE

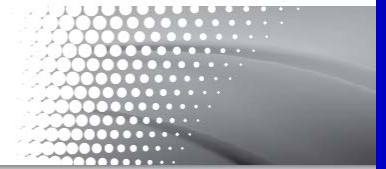


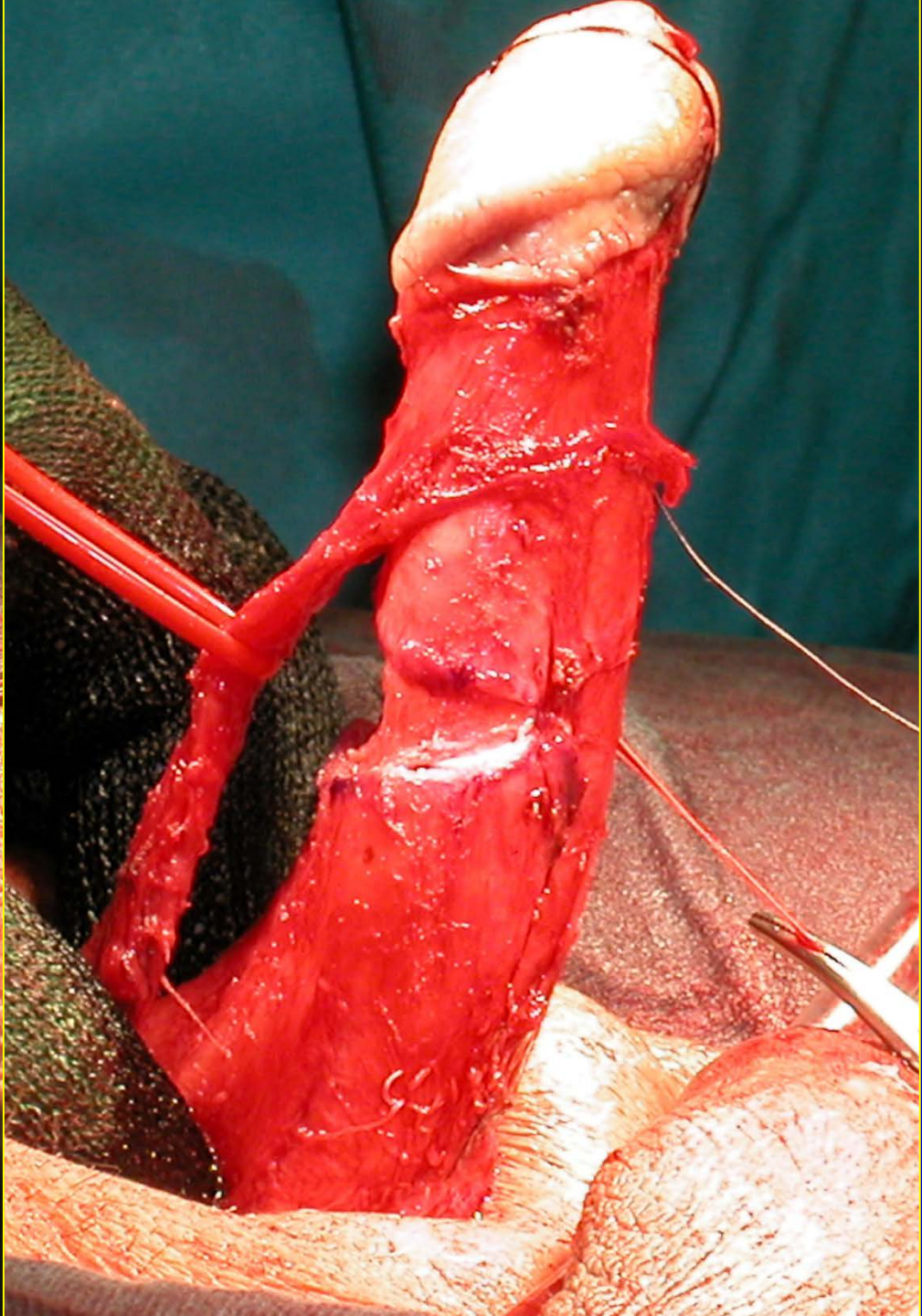
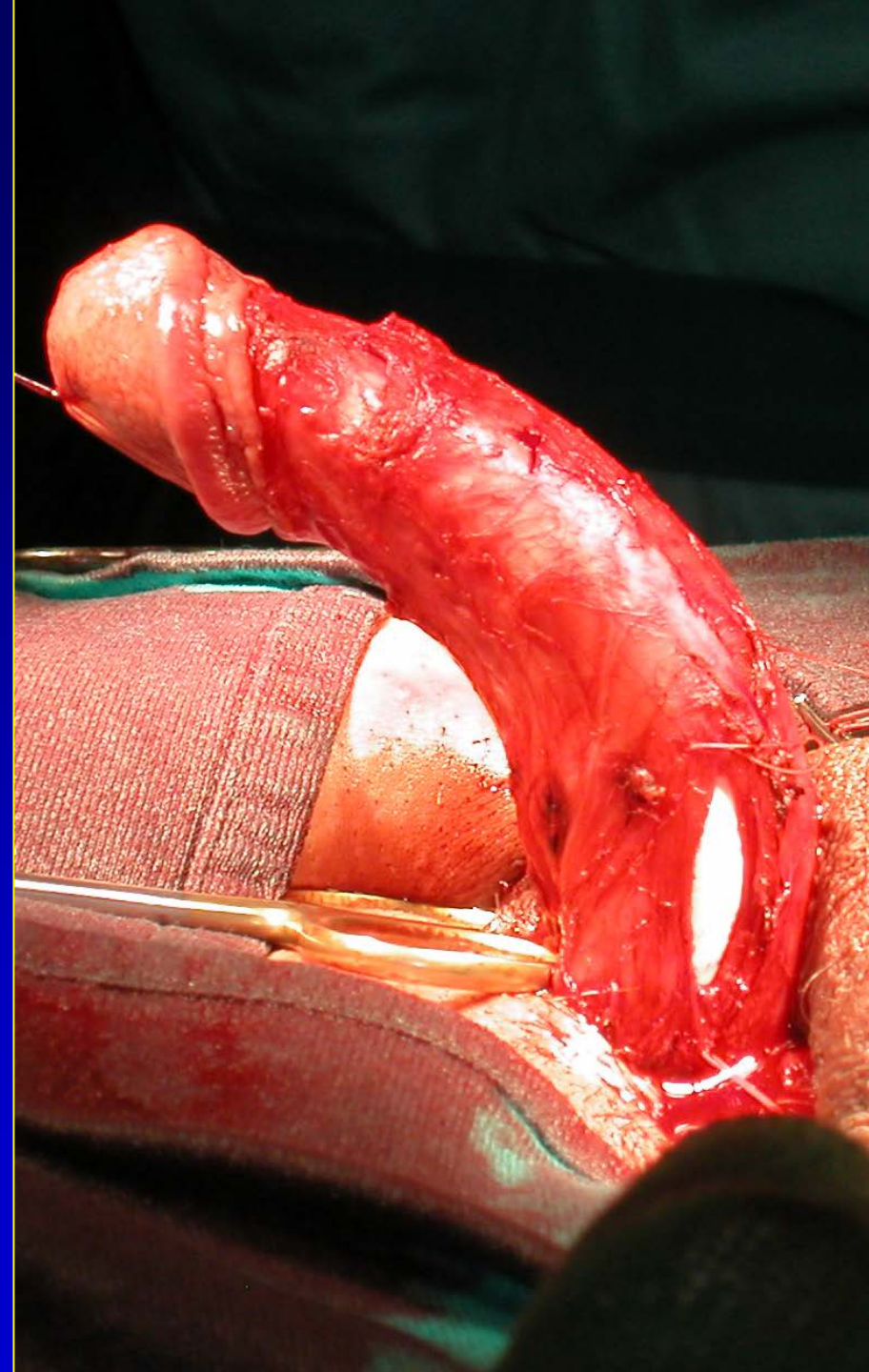


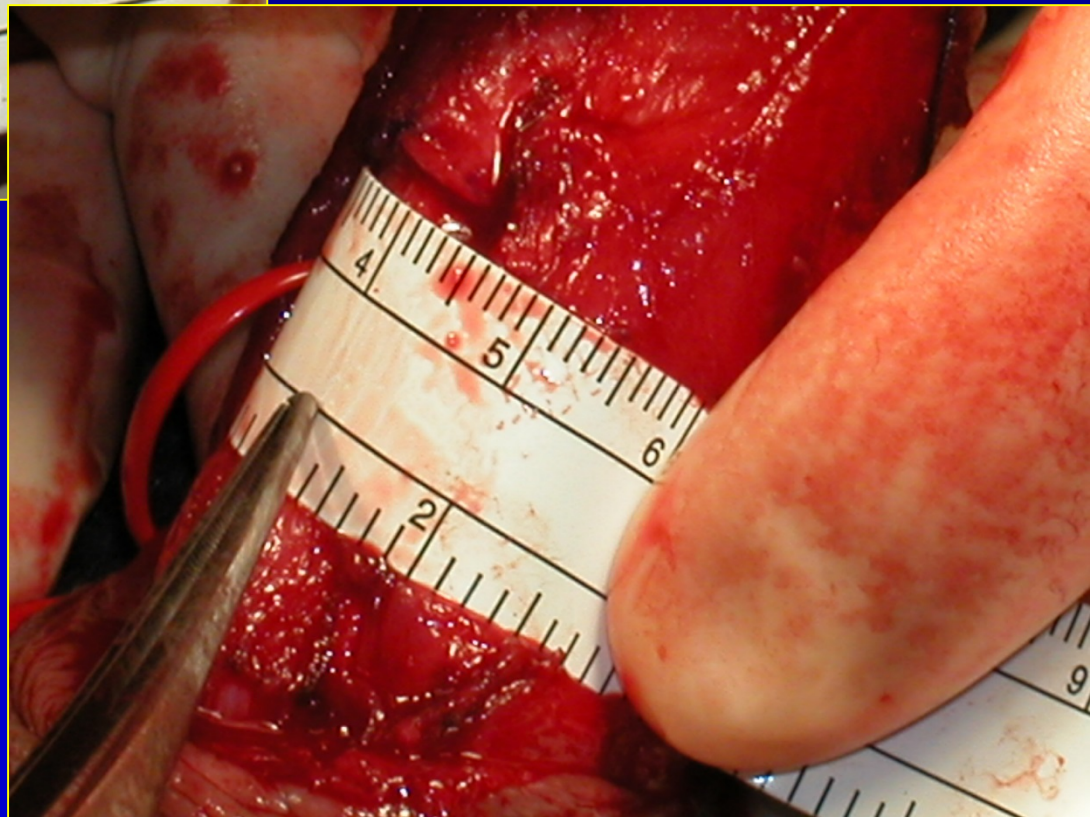
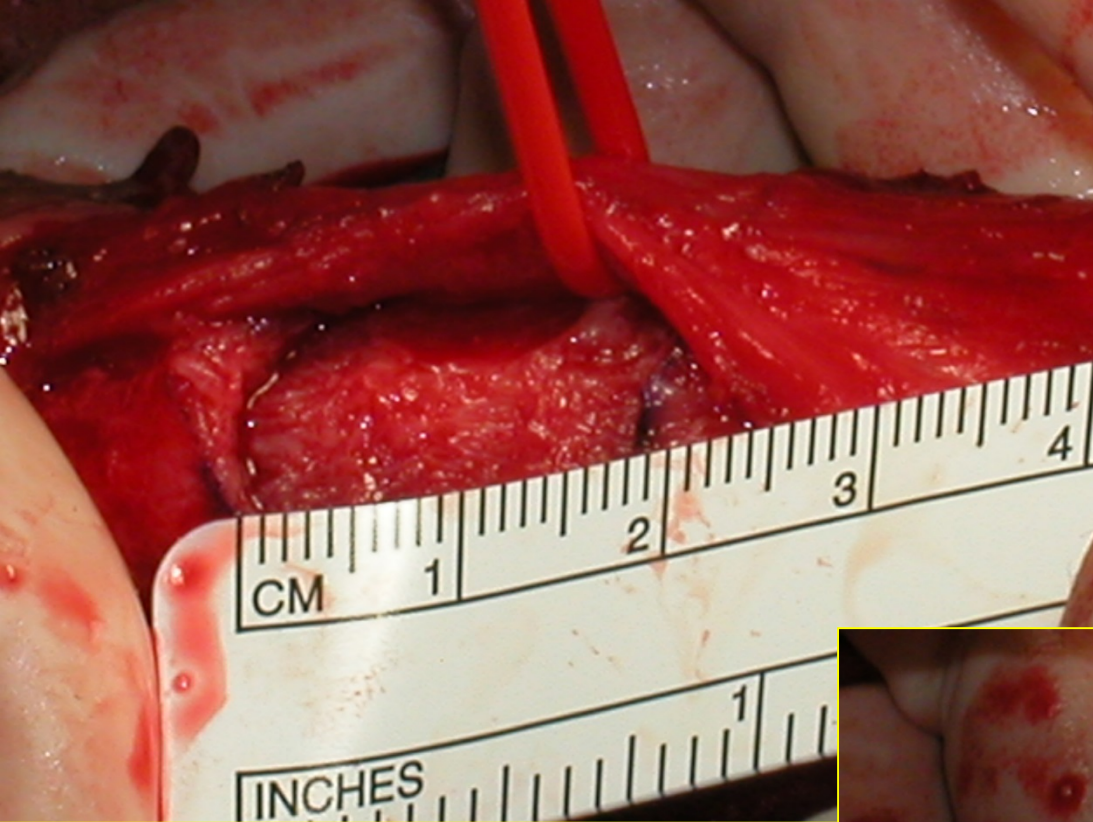
**E IN CASO DI
VENA SAFENA
INSUFFICIENTE
O ASSENTE ?**

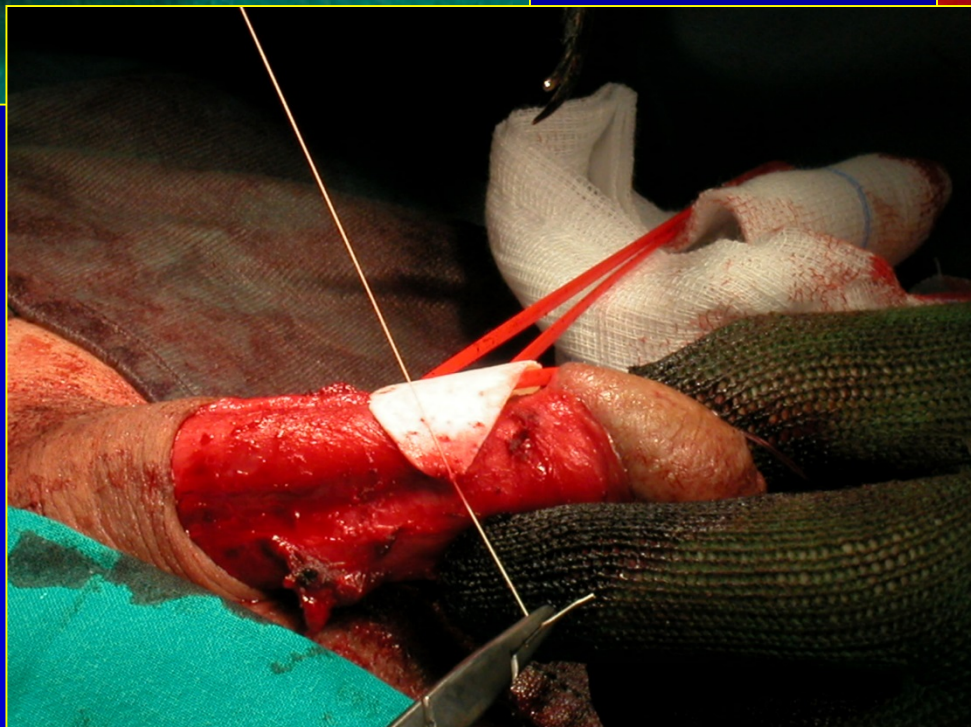
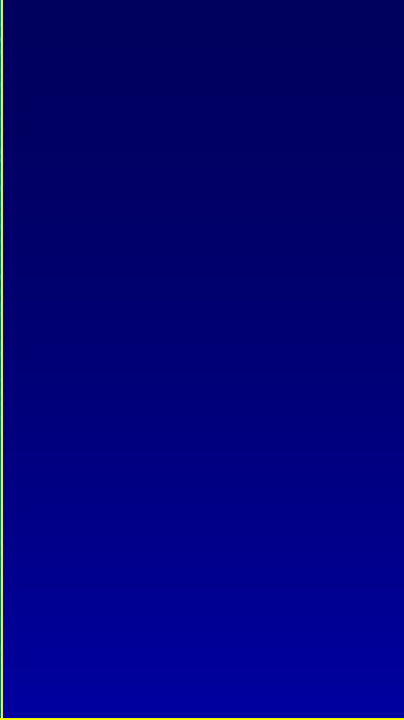


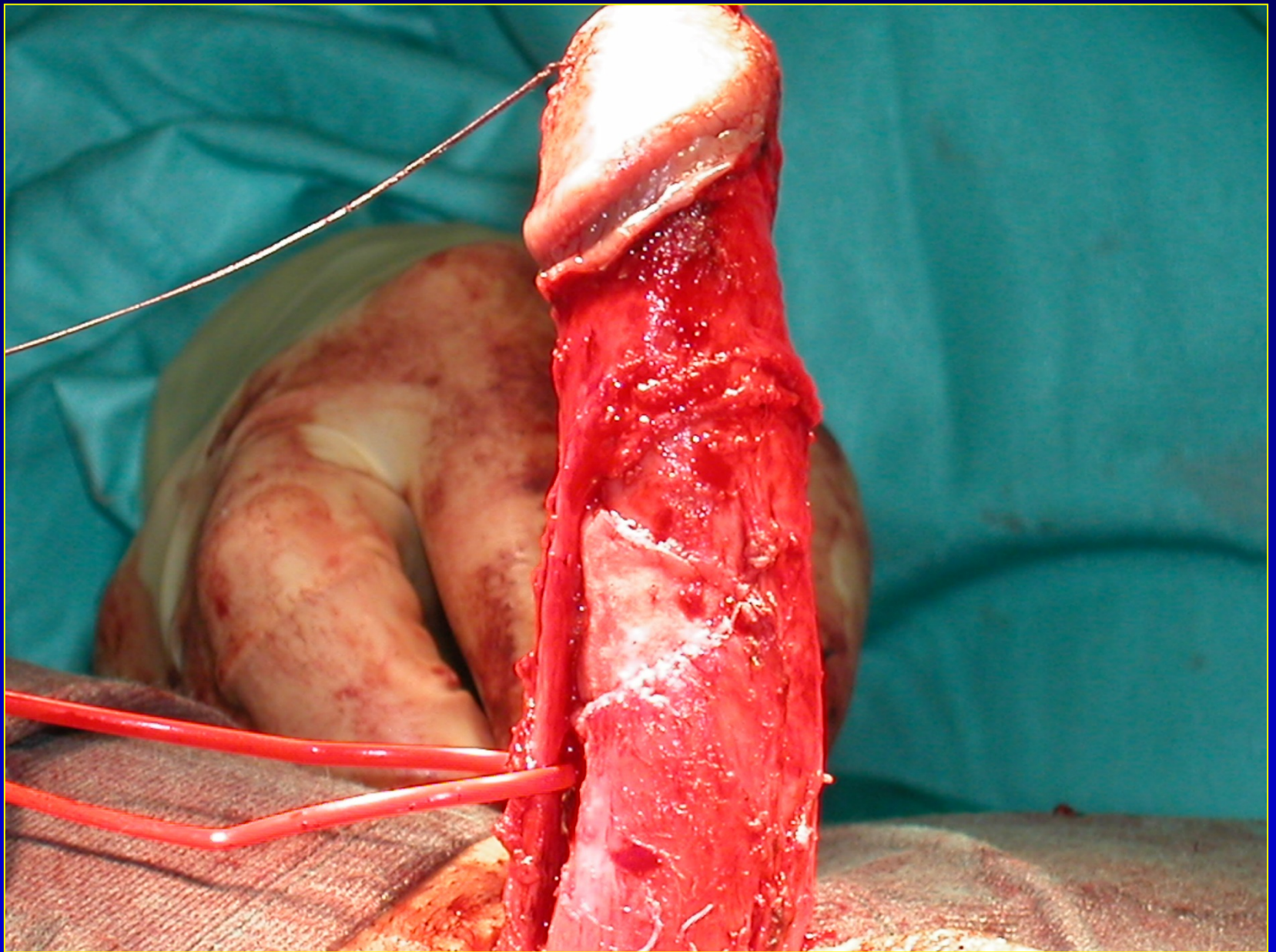
veritas®
COLLAGEN MATRIX













“INDURATIO PENIS PLASTICA”

Tecnica di Austoni

in caso di **placca** troppo **spessa** o **dura**

SI PUO' DECIDERE:

```
graph TD; A[SI PUO' DECIDERE] --> B[INCISIONE]; A --> C[ESCISSIONE]; B --> D[+ INNESTO]; C --> D;
```

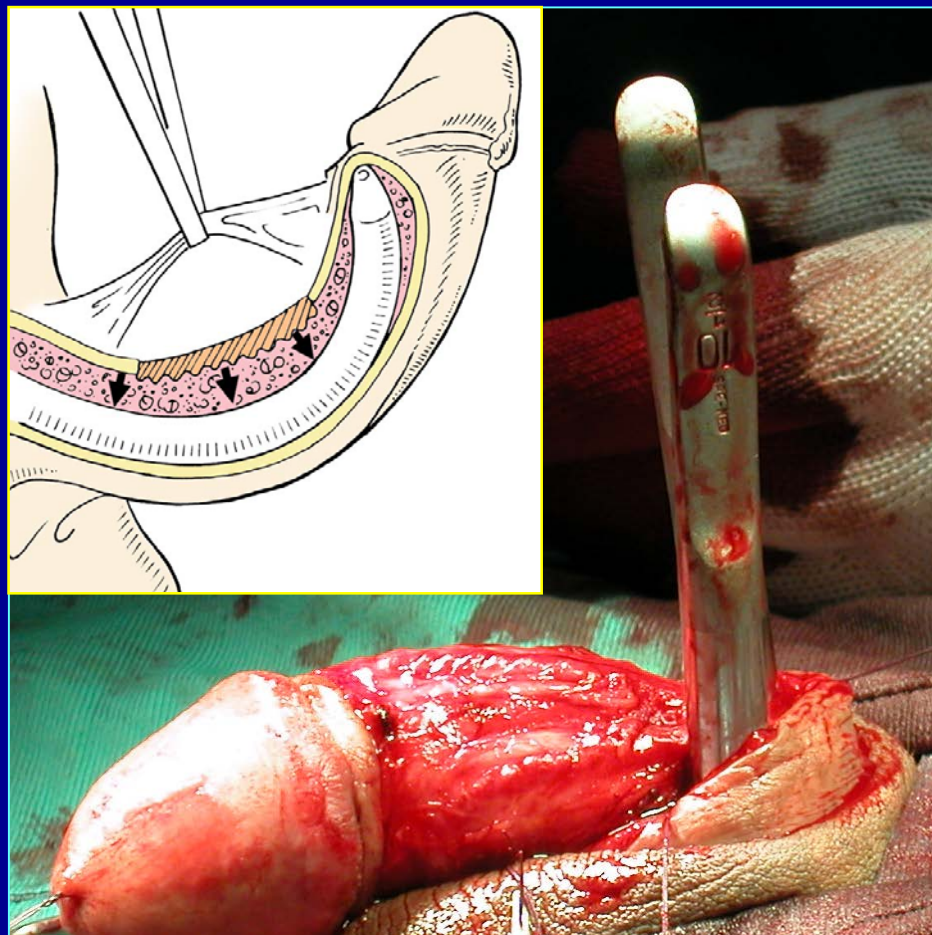
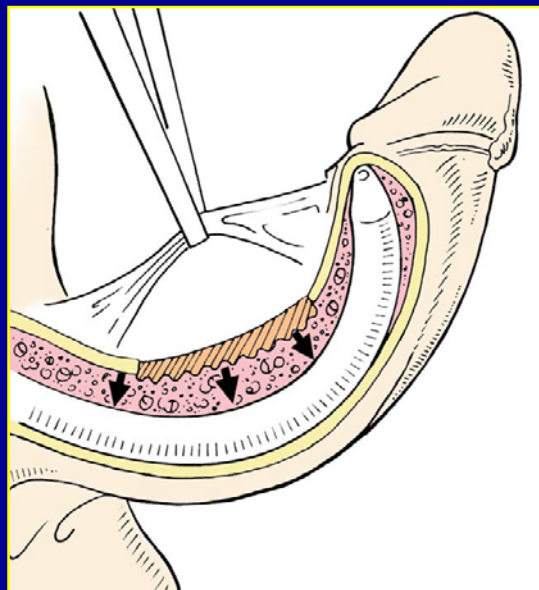
INCISIONE

ESCISSIONE

+ INNESTO

“INDURATIO PENIS PLASTICA”

Tecnica di Austoni

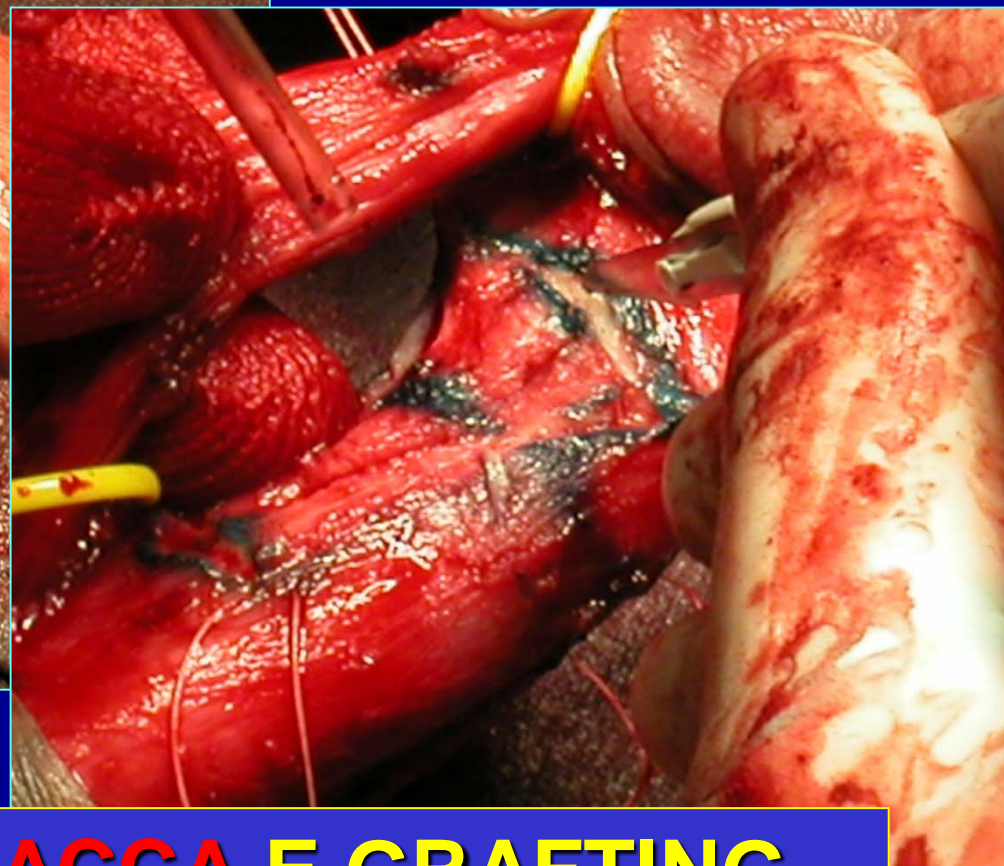
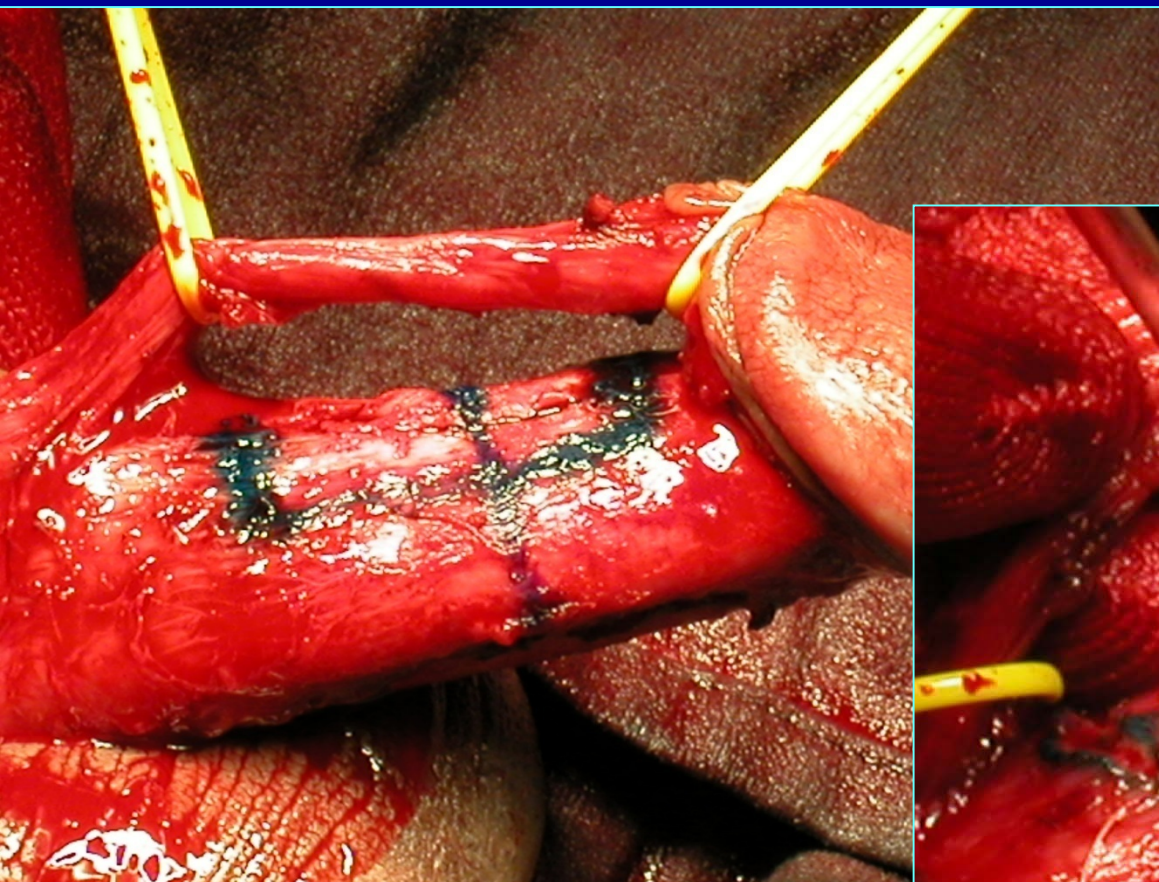


ESCISSIONE PLACCA E GRAFTING



“INDURATIO PENIS PLASTICA”

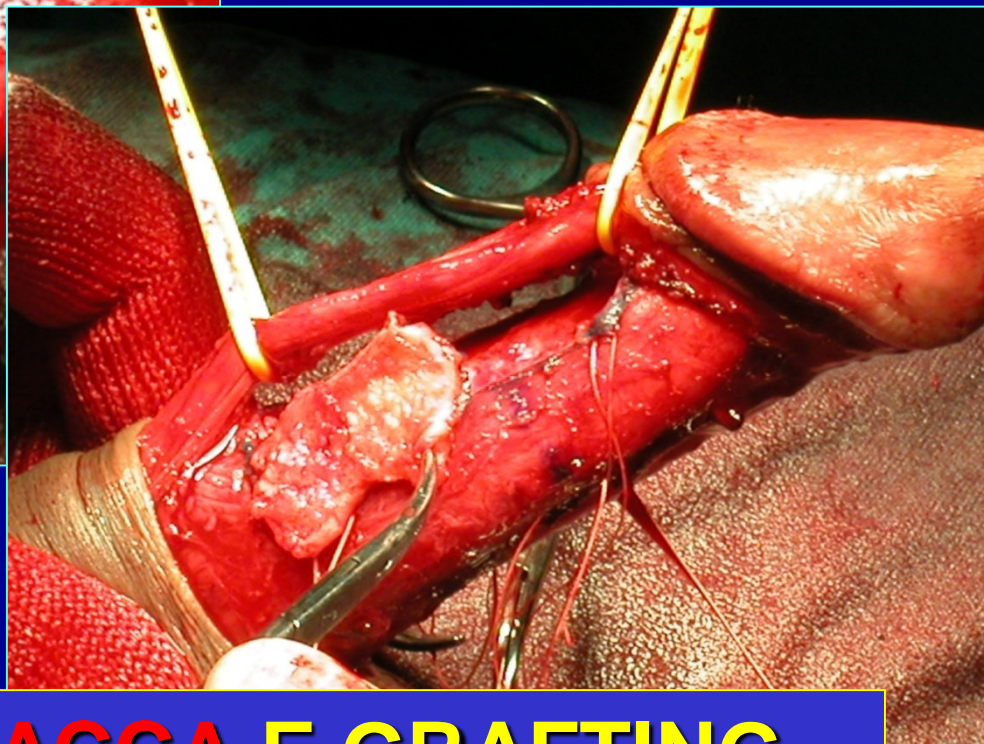
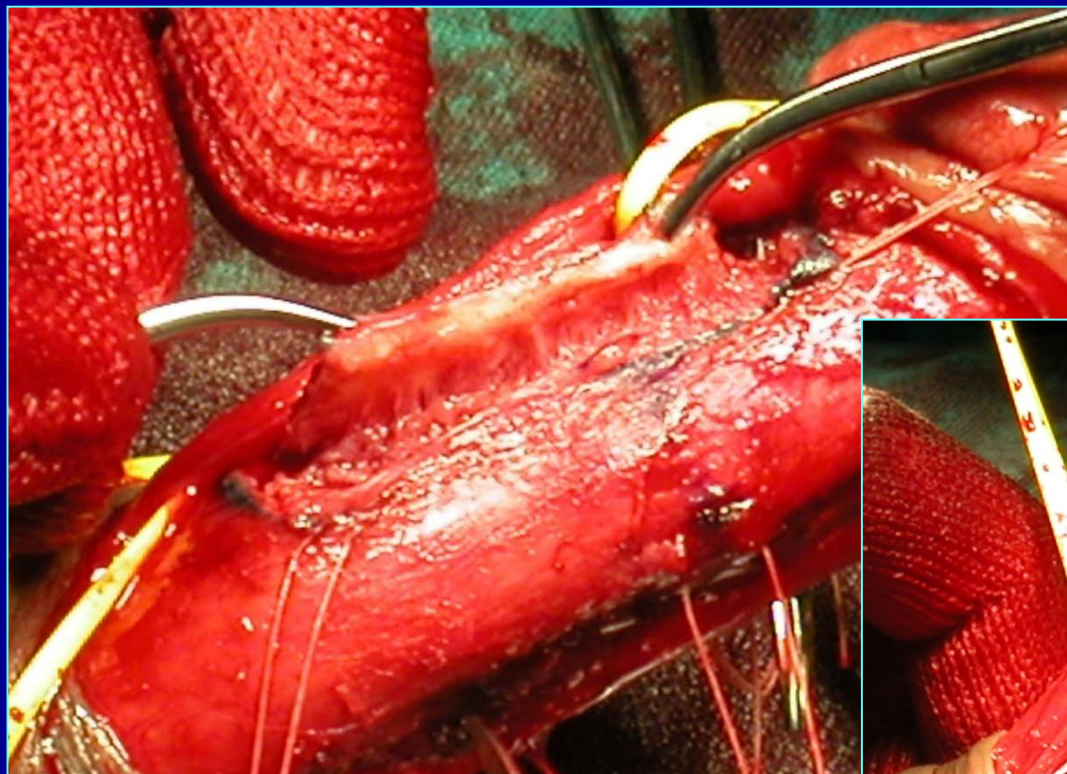
Tecnica di Austoni



ESCISSIONE PLACCA E GRAFTING

“INDURATIO PENIS PLASTICA”

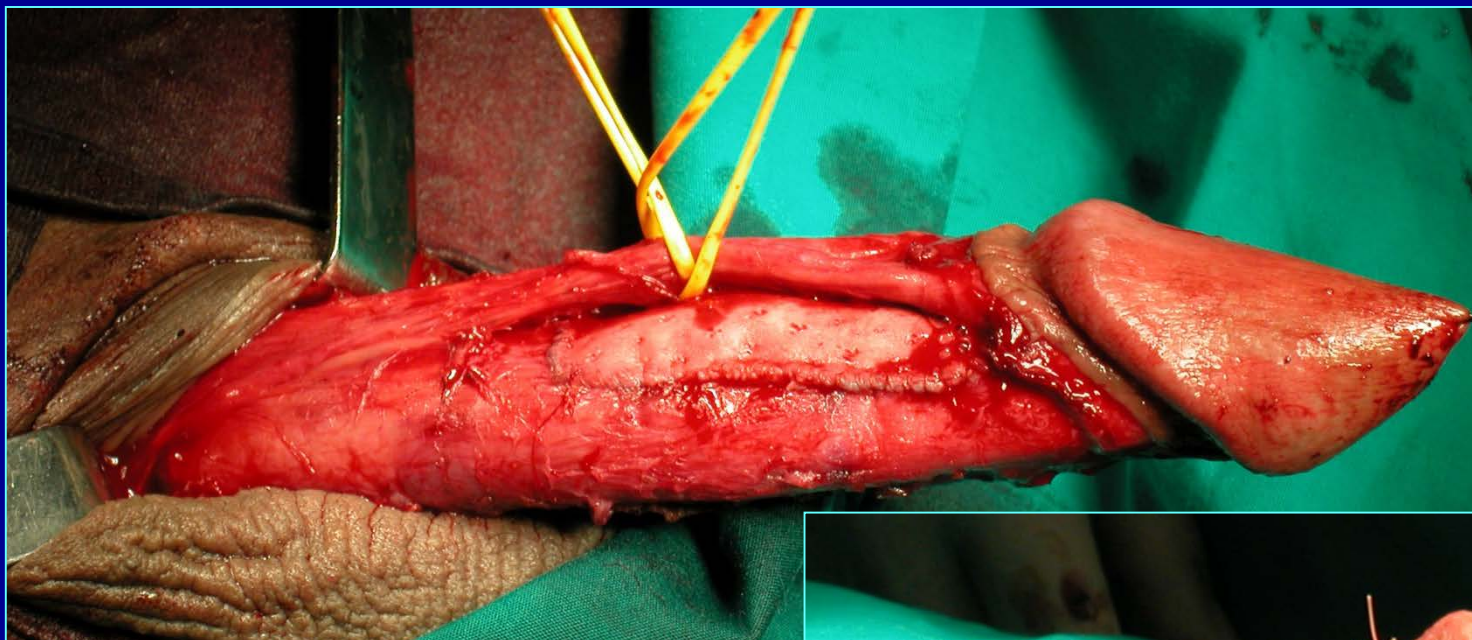
Tecnica di Austoni



ESCISSIONE PLACCA E GRAFTING

“INDURATIO PENIS PLASTICA”

Tecnica di Austoni



ESCISSIONE PLACCA E GRAFTING

Soft Prosthesis Implant and Relaxing Albugineal Incision with Saphenous Grafting for Surgical Therapy of Peyronie's Disease: A 5-Year Experience and Long-Term Follow-Up on 145 Operated Patients

Edoardo Austoni*, Fulvio Colombo, Ai Ling Romanò, Andrea Guarneri, Ioannis Kartalas Goumas, Alberto Cazzaniga

Department of Urology, Fatebenefratelli S. Giuseppe Hospital, Via San Vittore, 12, 20123 Milan, Italy

RISULTATI (145 Pz):

- Allungamento medio: 1,3 cm
- Risposta ai questionari: 55% (80 Pz)
 - soddisfatti: 76 Pz
 - insoddisfatti: 4 Pz (parestesie del glande)
 - sodd. della lunghezza: 80 Pz (100%)
 - partners soddisfatte: 29/36
 - partners insoddisfatte : 7/36 (aspetto innaturale)

RISULTATI A DISTANZA (1-2 aa.)

SODDISFAZIONE DEL PAZIENTE

	giudizio positivo	giudizio incerto	giudizio negativo
COMPLICANZE	53 (79%)	4 (6%)	10 (15%)
MANTENIMENTO DEL RISULTATO	50 (74,5%)	7 (10,5%)	10 (15%)
ATT.SESSUALE	58 (86,5%)	1 (1,5%)	8 (12%)
PARTNER	33 (49,3%)	19 (28,3%)	15 (22,4%)
COMPLESSIVO	35 (52,2%)	18 (26,8%)	14 (21%)
RIPETEREBBE L'INTERVENTO?	50 (74,5%)	7 (10,5)	10 (15%)

LA DOMANDA :
QUESTI RISULTATI ERANO
RIPRODUCIBILI ?

- **DIFFONDERE LA METODICA**
- **INCORAGGIARE LA SUA APPLICAZIONE**
- **RACCOGLIERE I RISULTATI**

STAGE SIA 2004

STAGE SIA 2005

SCUOLA ITINERANTE EUROPEA
IN ANDROLOGIA



VALUTAZIONE MULTICENTRICA DEI RISULTATI DELLA TECNICA DI AUSTONI

CENTRI COINVOLTI

F. Colombo, A. Cazzaniga, A. Guarneri - Milano

A. Zucchi, M. Porena - Perugia

L. Rolle, D. Fontana - Torino

G.M. Ludovico - Monopoli

M. Silvani, D. Minocci - Biella

L. Vaggi - L' Aquila

S. Pecoraro - Avellino

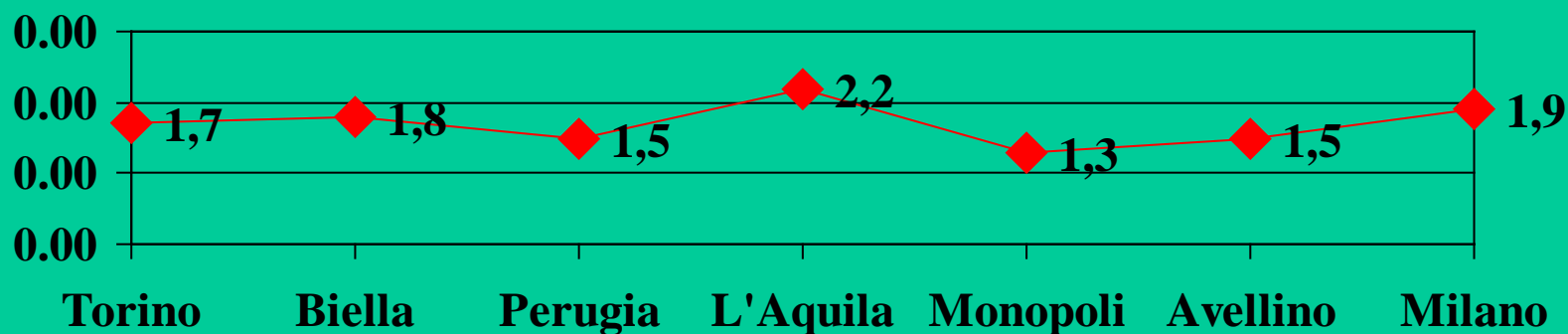


RADDRIZZAMENTO

(completo e persistente)

- Centri satellite (75 pz) 89%
- Centro pilota (192 pz) 92%

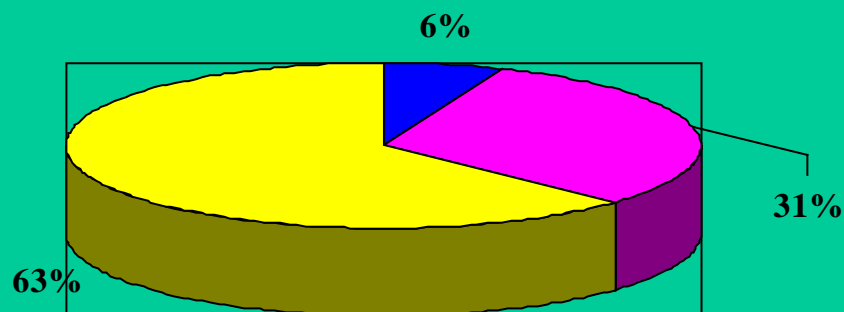
ALLUNGAMENTO



Media: 1,7 cm

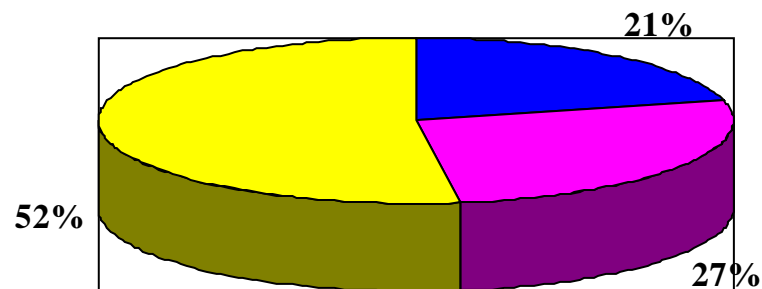
SODDISFAZIONE COMPLESSIVA

■ insufficiente ■ sufficiente ■ completa



Centri satellite - 75 pz

■ insufficiente ■ sufficiente ■ completa



Centro Pilota - 192 pz

MOTIVI di INSODDISFAZIONE

- Morfologia del pene (sia a riposo, sia in erezione)
- Giudizio negativo della partner
- Persistente ipoestesia del glande
- Insufficiente rigidità durante erezione
complementare (età correlata)



SOCIETÀ ITALIANA
DI ANDROLOGIA

Associazione Italiana

XIV CONGRESSO NAZIONALE

Il ruolo della prostata e del sistema riproduttivo
nella salute, nella fertilità e nella sessualità

ANCORA

7-8 novembre 2007

Salerno (SA) - Italia

Relazione del Presidente della Società Italiana di Andrologia



CONCLUSIONI

- METODICA RIPRODUCIBILE (RISULTATI OMOGENEI)
- DI RAPIDO APPRENDIMENTO
- BUON GRADO DI SODDISFAZIONE PZ
- % COMPLICANZE ACCETTABILE
- PUNTO DEBOLE: IMPREVEDIBILE EFFICACIA DELLA EREZIONE COMPLEMENTARE
- PUNTO CHIAVE: CORRETTA INDICAZIONE



“REMODELLING e TUTORI SOFFICI”

Perché ?

- ***“SEMPLIFICANO” LA CHIRURGIA DI PLACCA***
- ***SEMPLIFICANO IL DECORSO POST-OPERATORIO***
- ***OFFRONO RISULTATI PIU’ PREVEDIBILI***

Quando ?

- ***SE IL PENE E’ MOLTO RETRATTO, CON SETTO COINVOLTO***
- ***NEI PZ. CON RIDOTTA RISERVA ERETTILE (> 60 aa.)***
- ***SE PREVEDIAMO UNA ESCISSIONE AMPIA E PLURIFOCALE***

Corporoplasty with small soft axial prostheses (VIRILIS I®) and bovine pericardial graft (HYDRIX®) in Peyronie's disease

Asian Journal of Andrology (2013) 15, 275–279

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Alessandro Zucchi¹, Mauro Silvani² and Stefano Pecoraro³

Table 1 Type of penile recurvatum in operated patients

<i>Recurvatum</i>	<i>Angle</i>	<i>Patients</i>
Dorsal	50°	8
	60°	9
	75°	8
	45°	4
	70°	9
	90°	3
	80°	6
Left dorso-lateral	45°	3
Ventral	45°	2
	70°	2
Left lateral	45°	1
	60°	2
Right dorso-lateral	45°	1
Ring		1



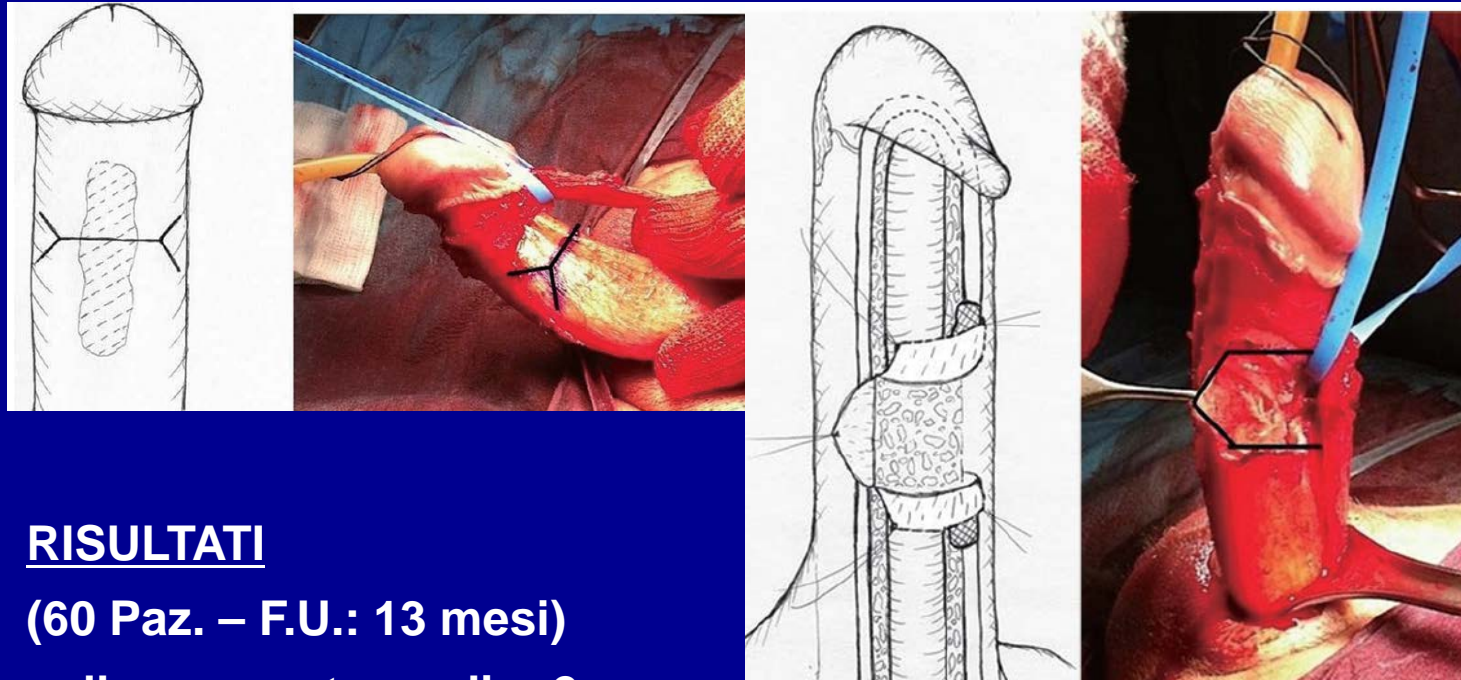
Corporoplasty with small soft axial prostheses (VIRILIS I®) and bovine pericardial graft (HYDRIX®) in Peyronie's disease

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Alessandro Zucchi¹, Mauro Silvani² and Stefano Pecoraro³



RISULTATI

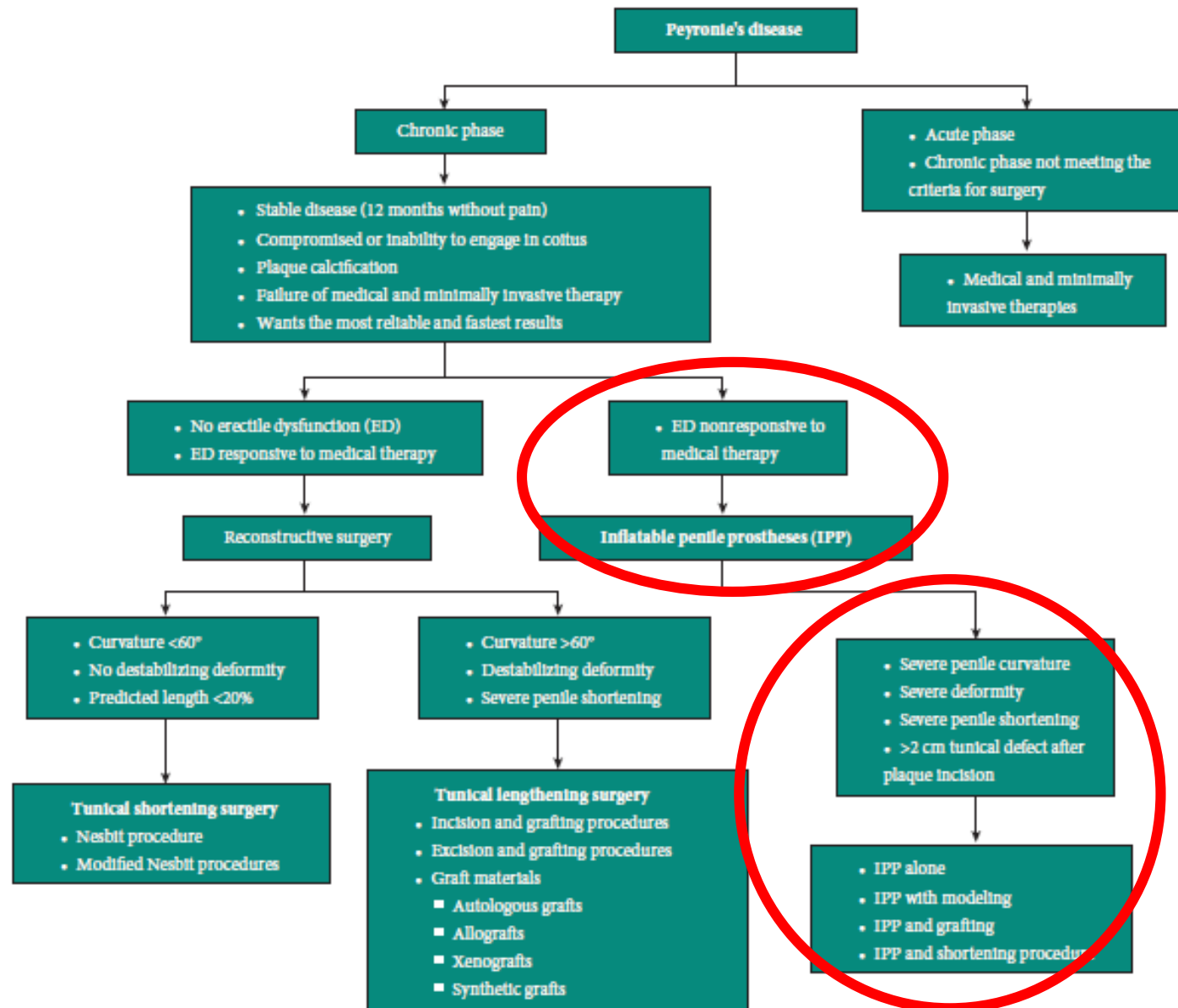
(60 Paz. – F.U.: 13 mesi)

- allungamento medio: 2 cm.
- ripresa coitale: a 60 gg: 39 pz → a 90 gg: 14 pz → a 120 gg: 7 pz
- ipoestesia glande: 0%
- IIEF: 15.5 → 23 (2 aa. FU)

Outcomes of surgical treatment of Peyronie's disease

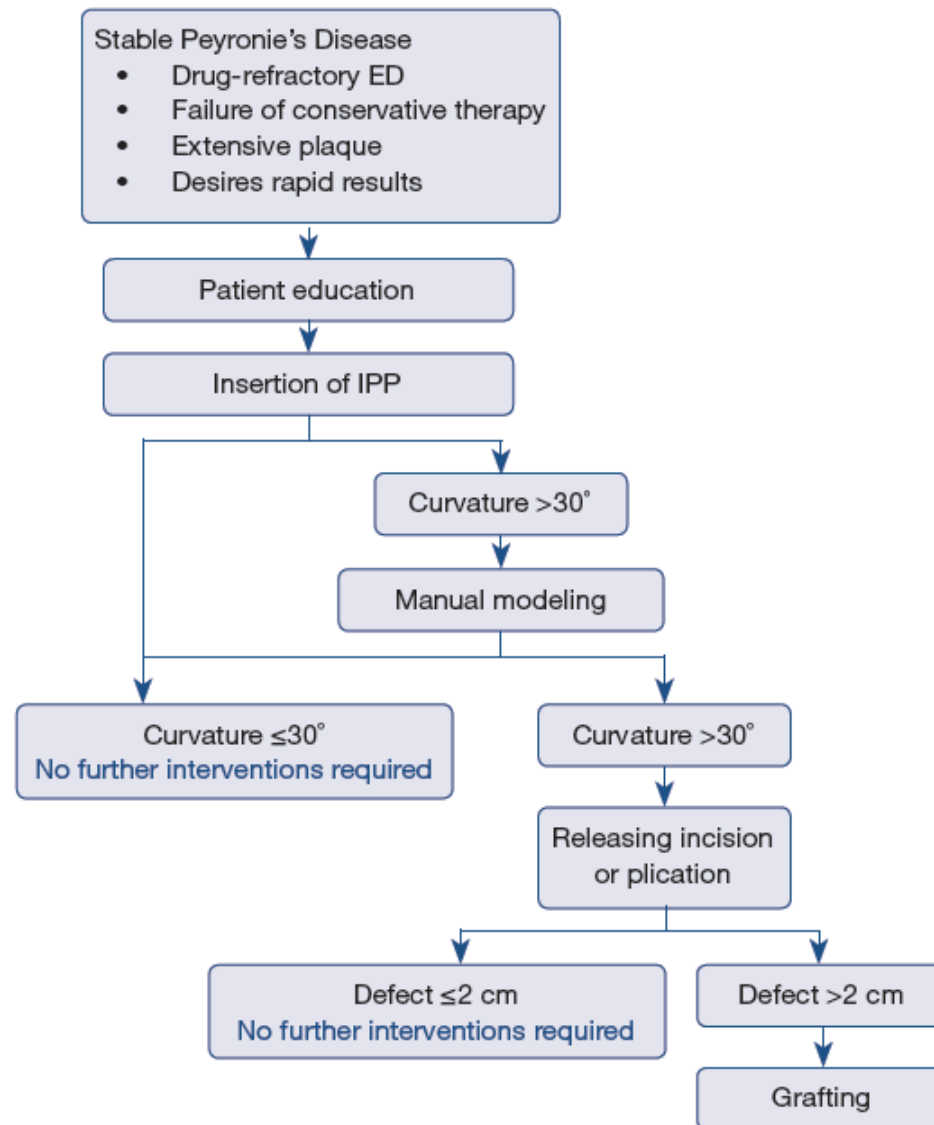
Culley C. Carson and Laurence A. Levine*

BJU Int 2014; 113: 704-713



A review of surgical strategies for penile prosthesis implantation in patients with Peyronie's disease

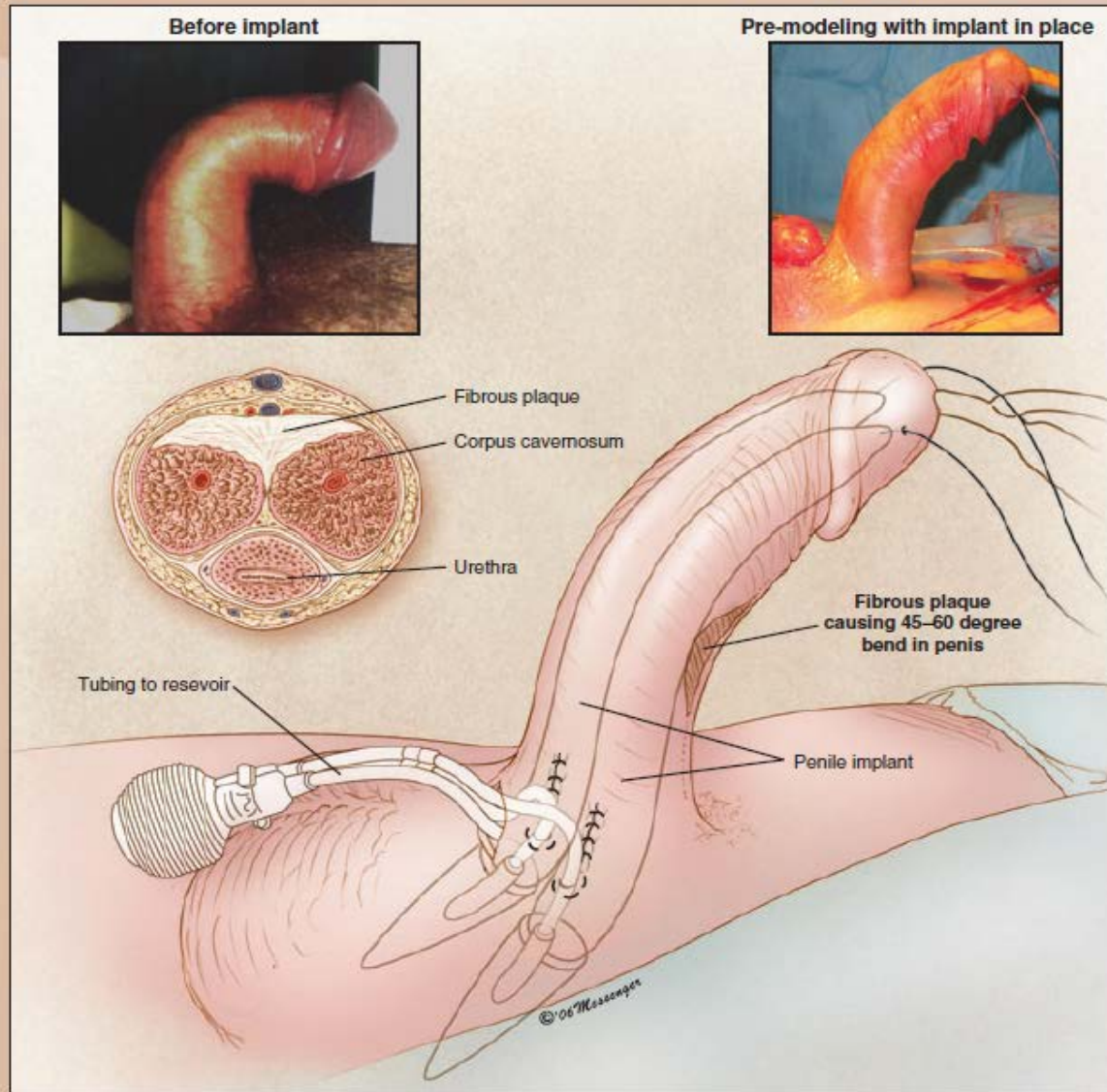
Transl Androl Urol 2016;5(3):342-350

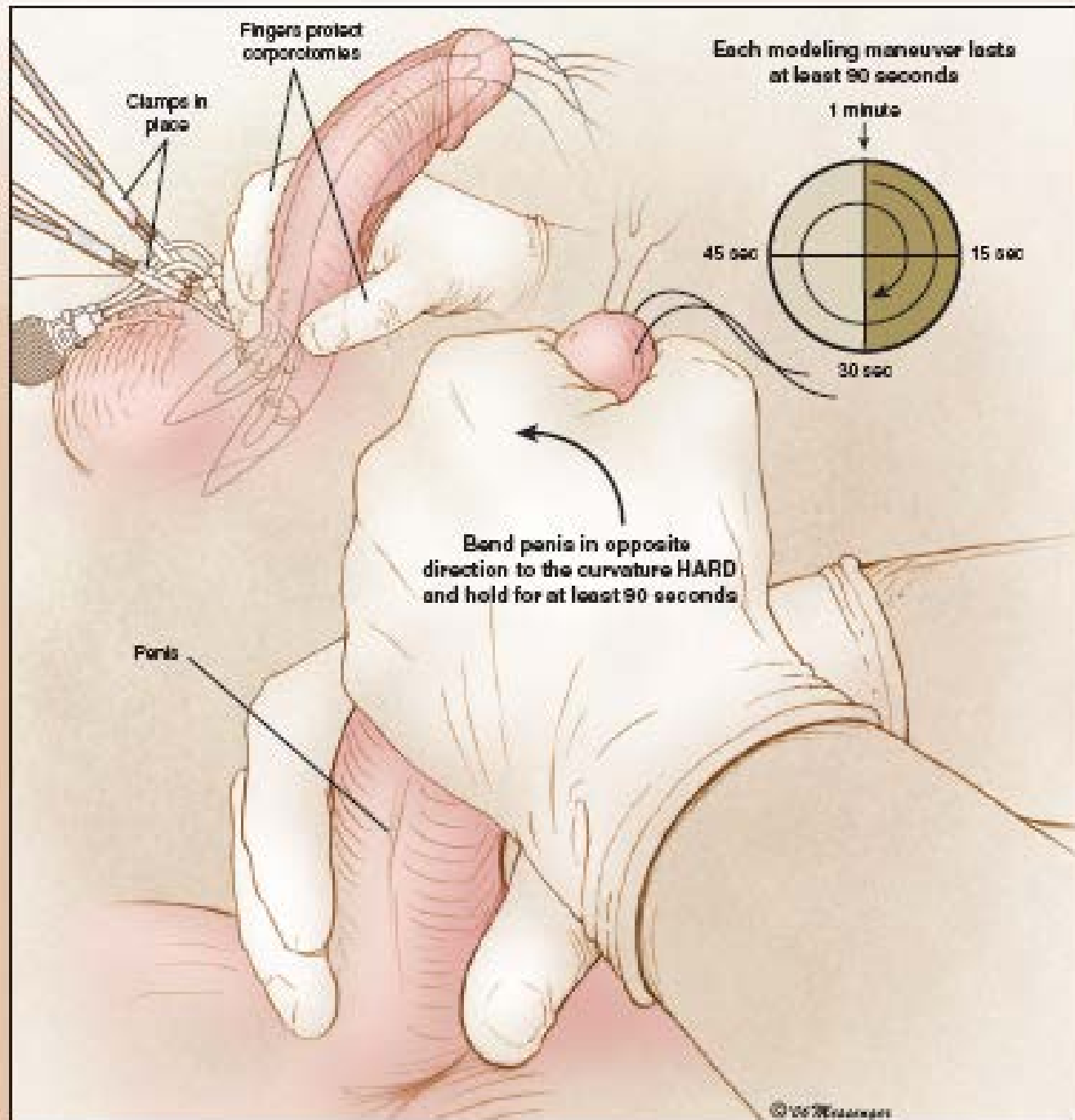


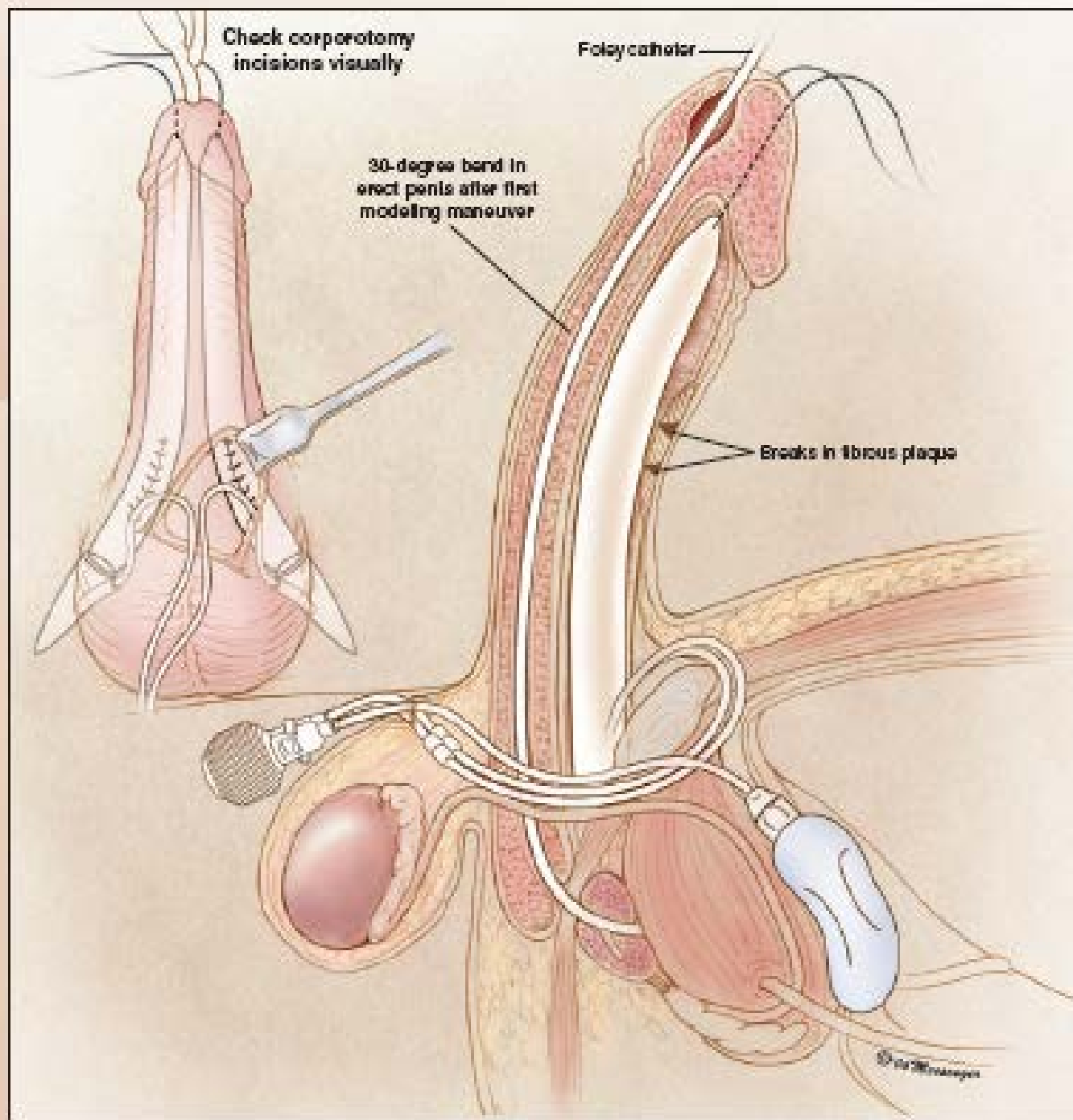
Modeling Technique for Penile Curvature

Steven K. Wilson, MD

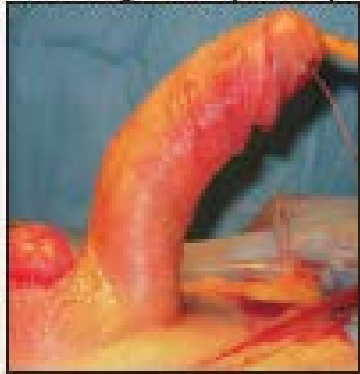
Van Buren, Arkansas







Pre-modeling with implant in place



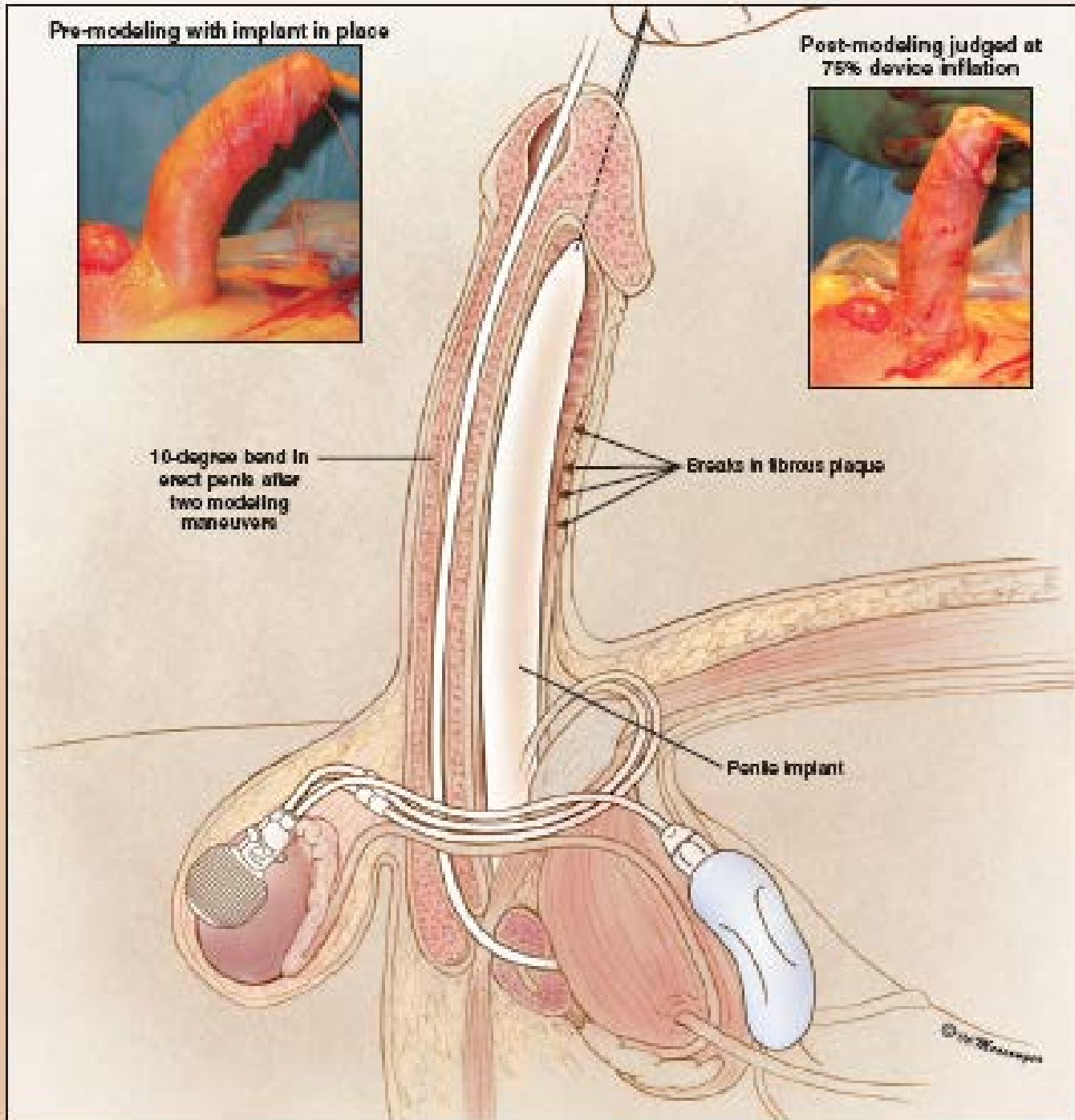
Post-modeling judged at 75% device inflation



10-degree bend in
erect penis after
two modeling
maneuvers

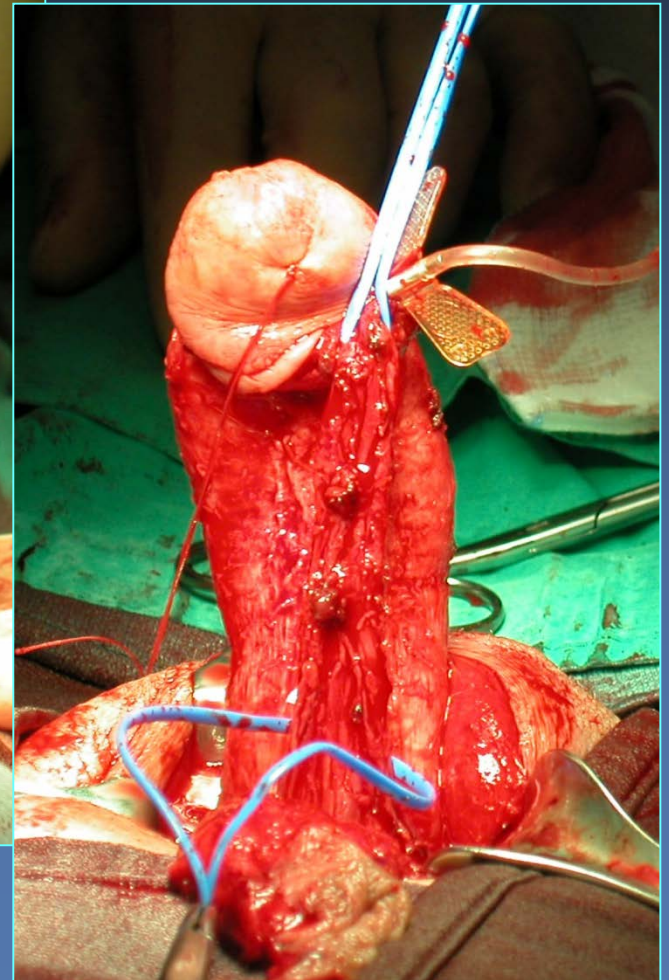
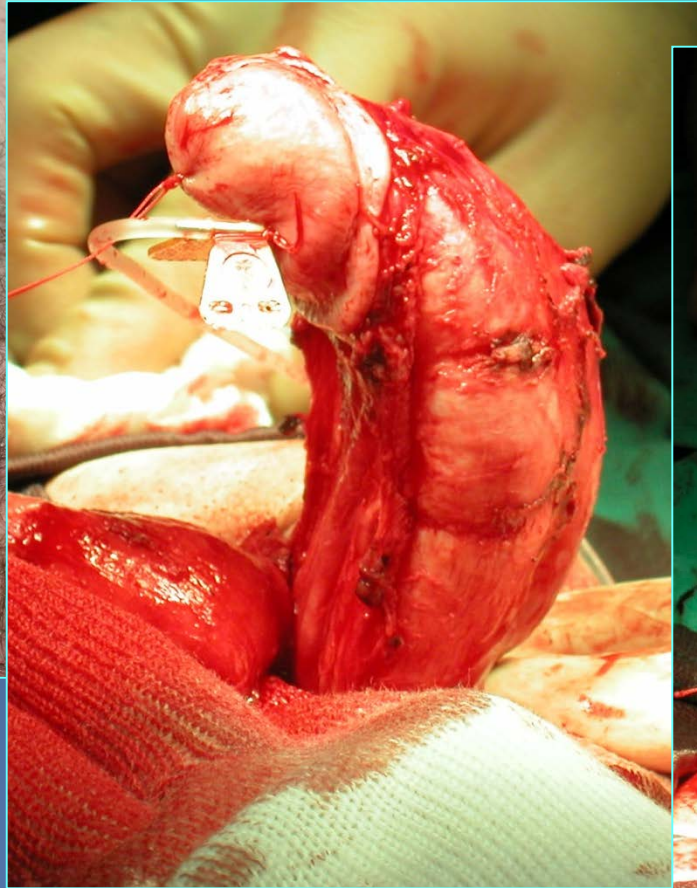
Breaks in fibrous plaque

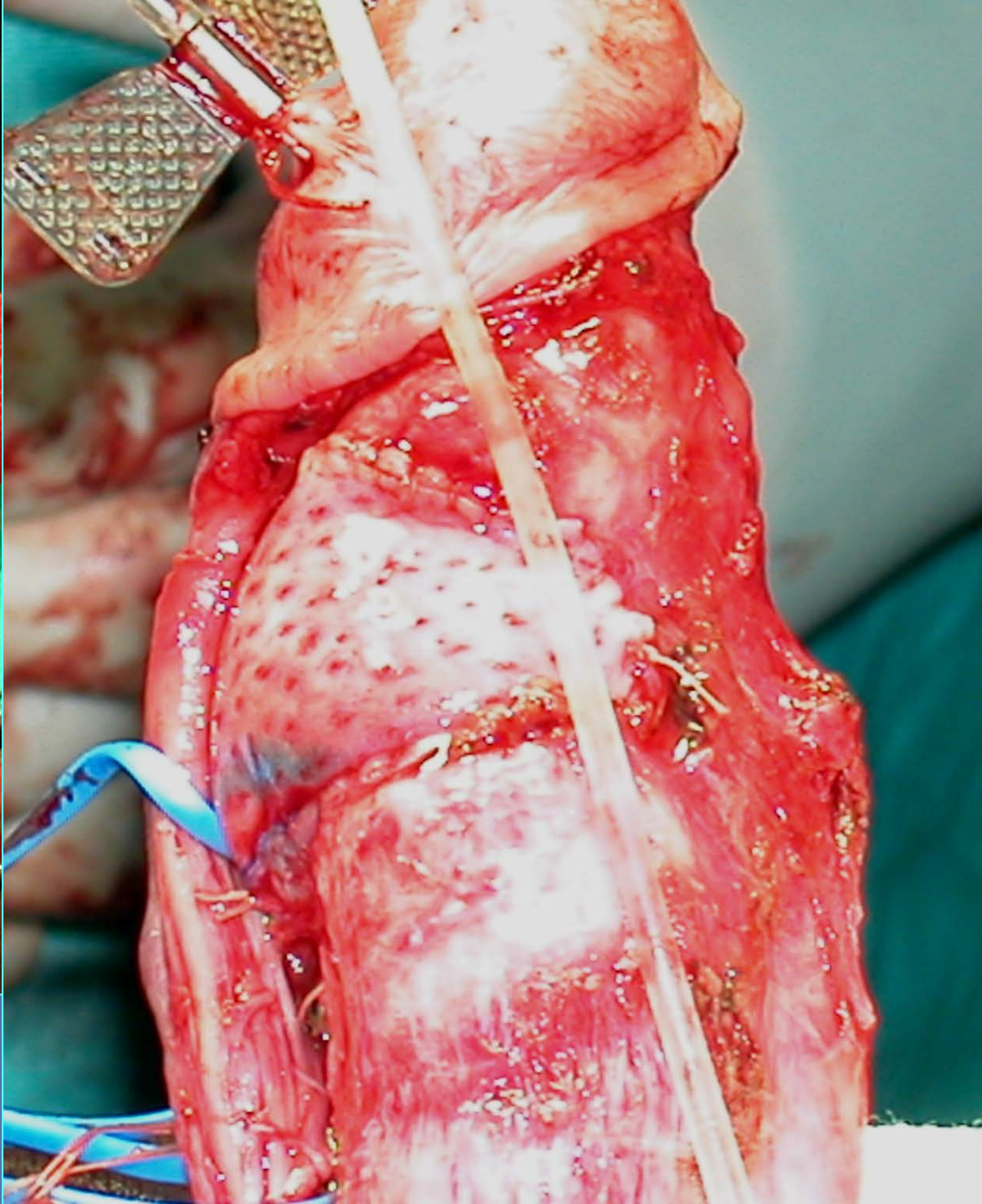
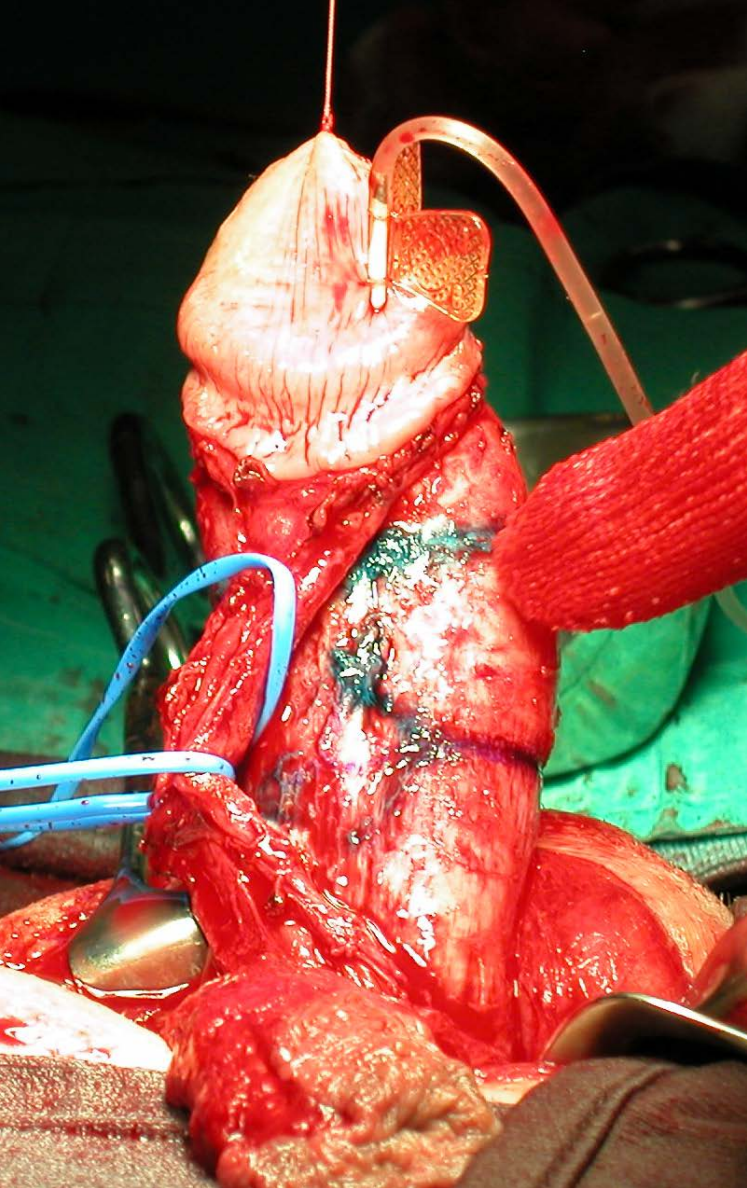
Penile implant



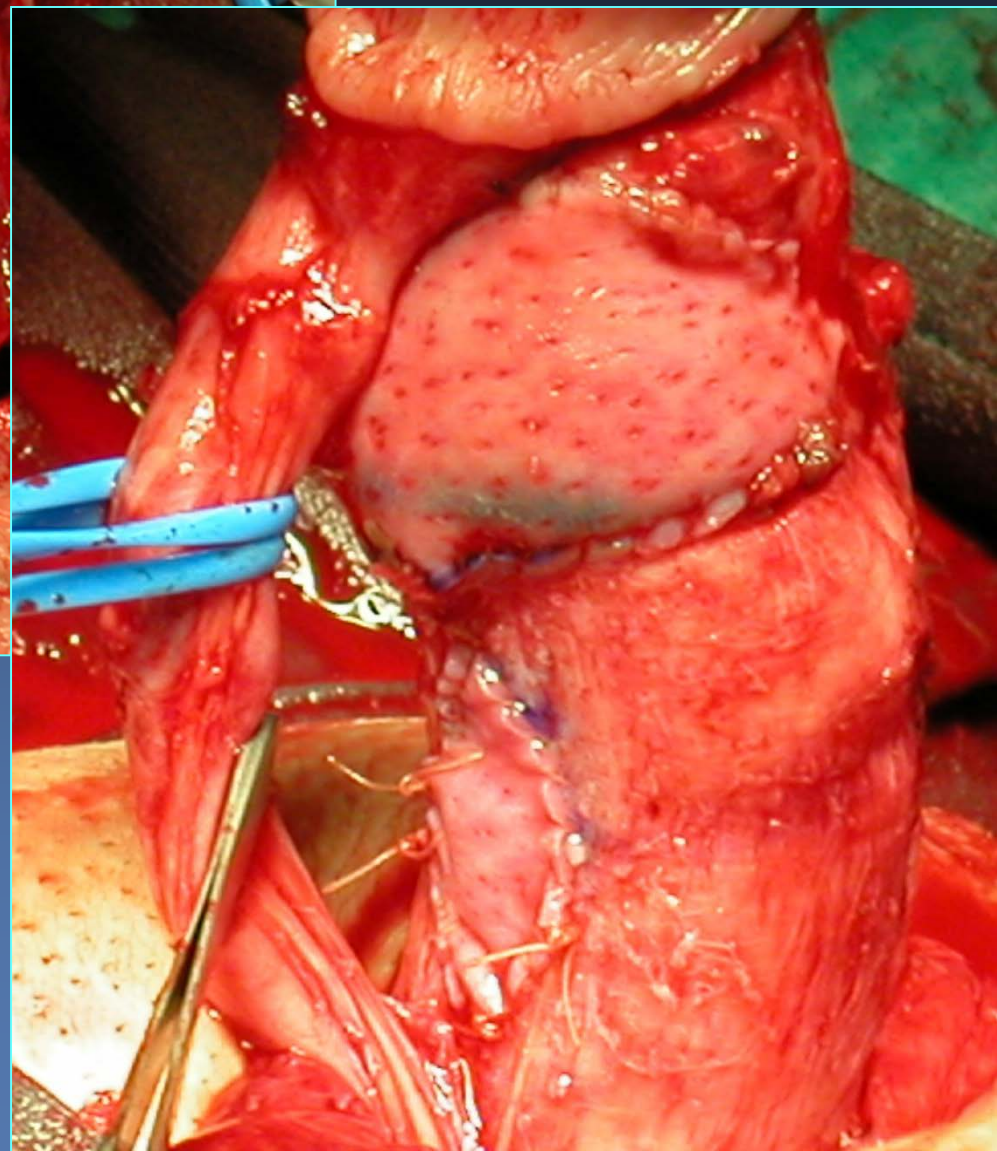
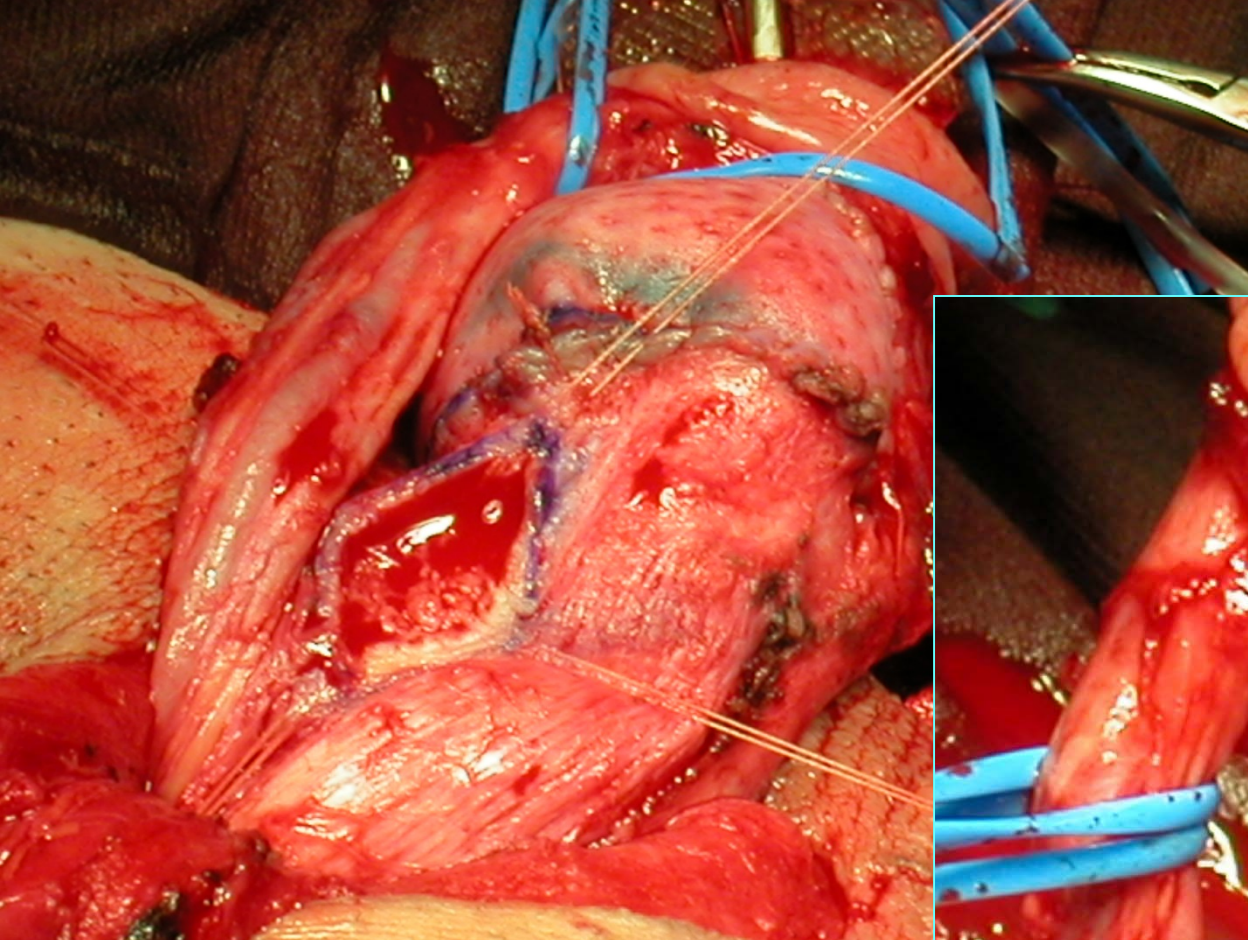
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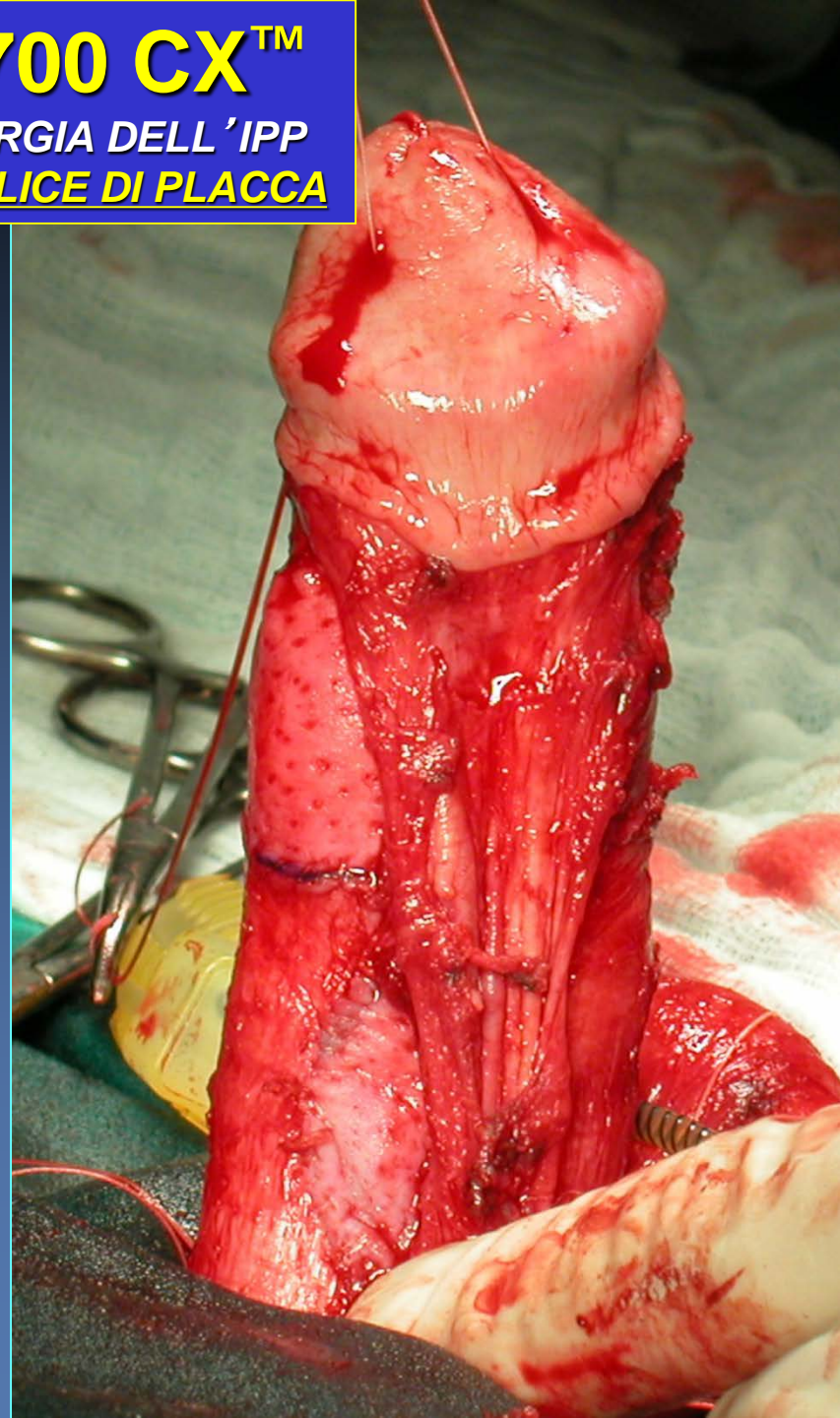
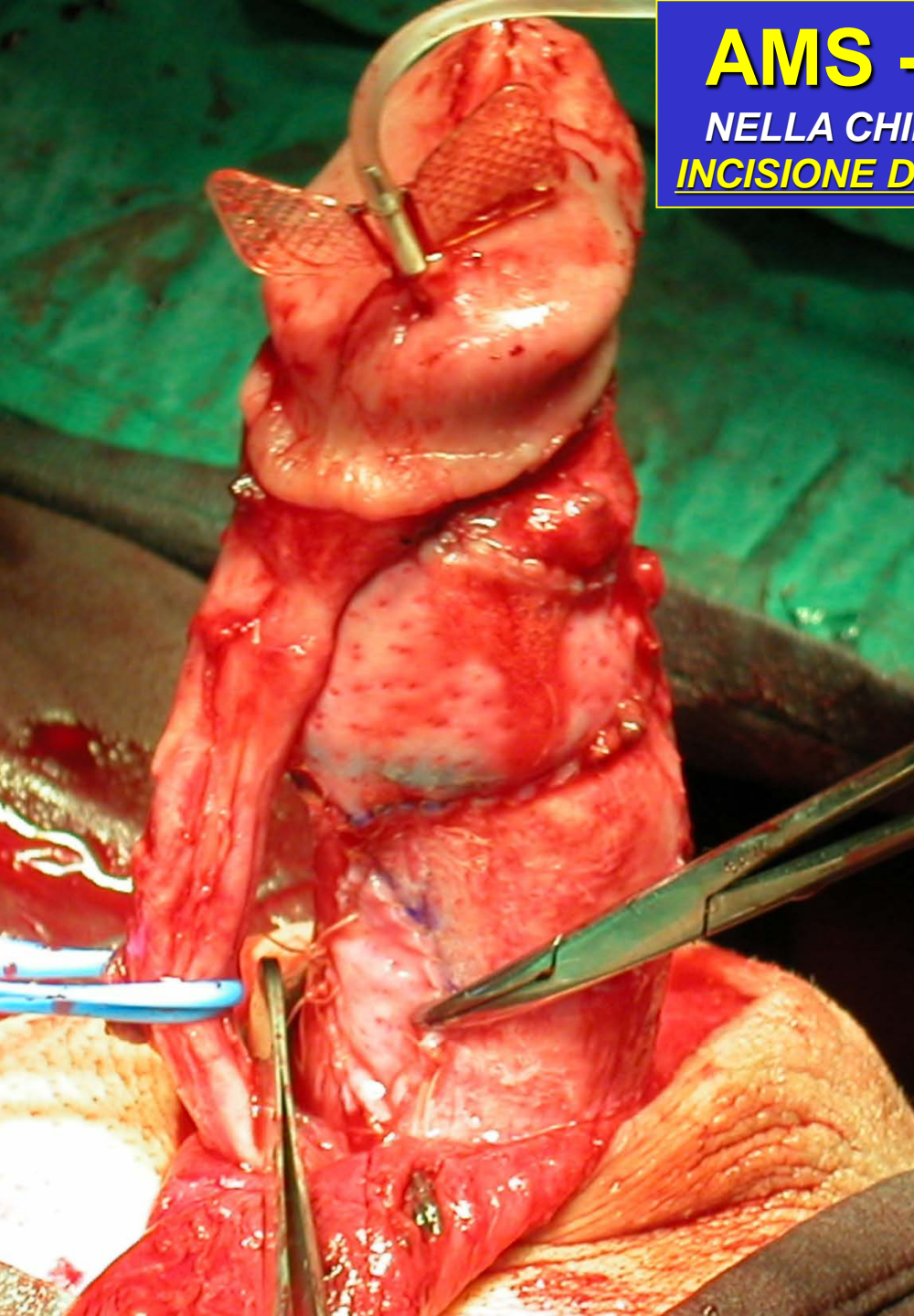


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Surgical Therapy of Peyronie's Disease

Tom F. Lue, MD, San Francisco, California

The correction of acquired penile deformity seen in Peyronie's disease patients can be a challenge for the practising urologist. The degree of curvature, the type of deformity, erectile dysfunction, and penile length are all parameters that need to be assessed in choosing the best surgical intervention in Peyronie's disease.

Patient selection for a particular surgical intervention for Peyronie's disease is paramount. There is no single standard surgical therapy in Peyronie's disease. Each surgical intervention must be tailored to match the patient's penile deformity, clinical manifestations, and expectations. 

Graft Materials in Peyronie's Disease Surgery: A Comprehensive Review

Ates Kadioglu, MD, Oner Sanli, MD, Tolga Akman, MD, Ahmet Ersay, MD, Selcuk Guven, MD, and Firdovsi Mammadov, MD

University of Istanbul, Istanbul Faculty of Medicine, Department of Urology, Section of Andrology, Istanbul, Turkey

Conclusions

According to the authors of the present review, efforts to validate the use of saphenous vein and tunical albuginea from autologous materials are noteworthy. As a major advantage, autologous materials have excellent natural tissue incorporation without any additional cost. However, tissue harvesting is the major drawback of these procedures, which causes additional morbidity to the patient and time loss for the surgeon. [REDACTED]

[REDACTED] functional outcomes of the ECM tissues for longer intervals are yet to be determined. In addition, there is some recent evidence that SIS may be associated with unfavorable outcome. Synthetic grafts have been abandoned in Peyronie's surgery.