

ESSM ABC Course

Peyronie Disease: Surgical Treatment

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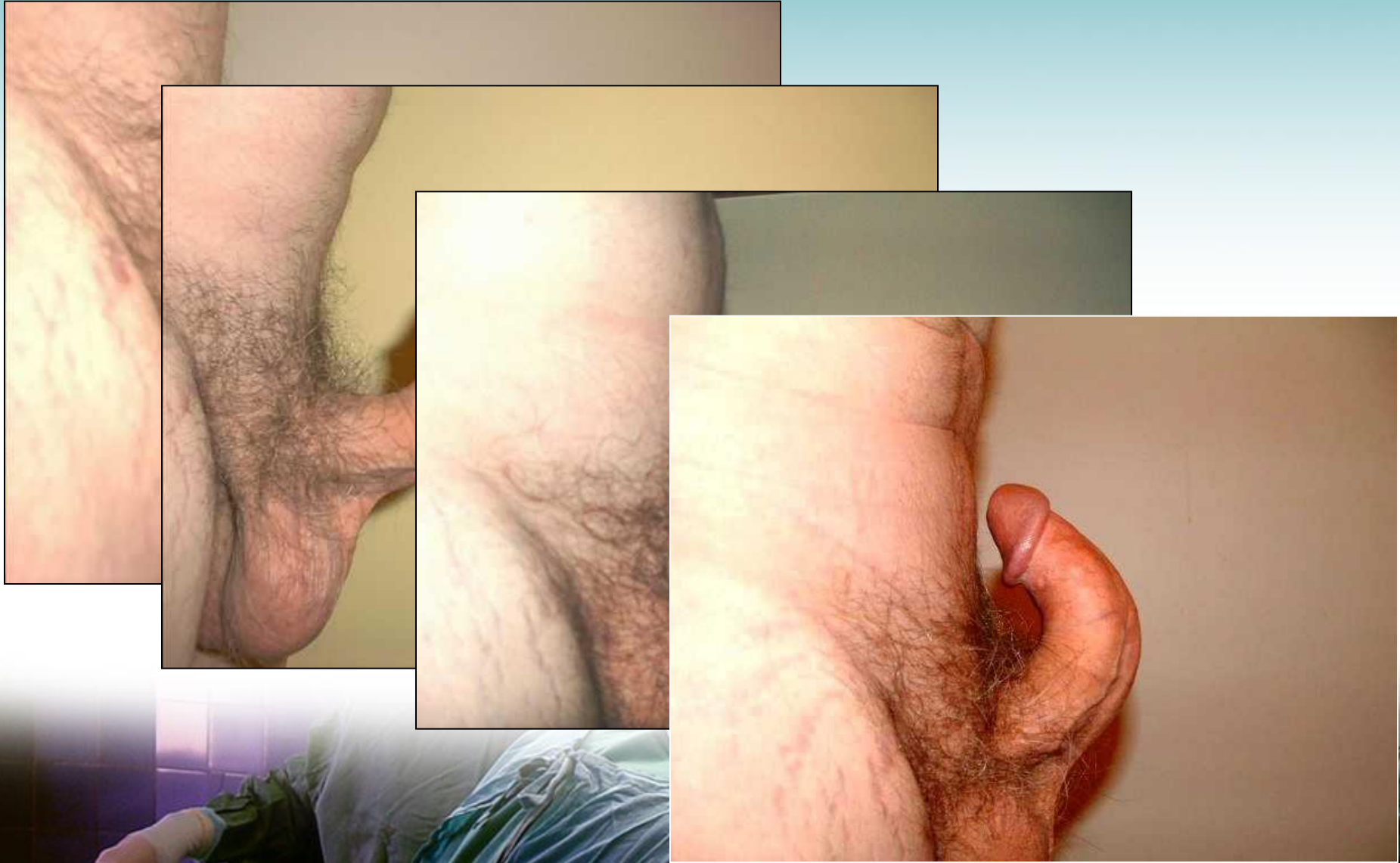


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Majadahonda

Comunidad de Madrid



PD-Progression



Courtesy of K. Angermeyer

Indications for Surgical Reconstruction

- Stable disease (≥ 6 mos)
- Painless deformity
- Compromised/Unable to engage in coitus (2° to deformity and/or inadequate rigidity)
- Failed conservative therapy
- Extensive plaque calcification
- Desire most rapid and reliable result



Pre-operative Consent

Set expectations regarding outcome

- **Persistent/Recurrent Curvature-**

- Goal- “Functionally Straight” - $<20^{\circ}$

- **Change in length**

- More likely shorter with plication vs. grafting

- **Diminished rigidity**

- $\geq 5\%$ in all studies – specially with grafting
- Dependent upon pre-op erectile quality

- **Decreased Sexual Sensation**

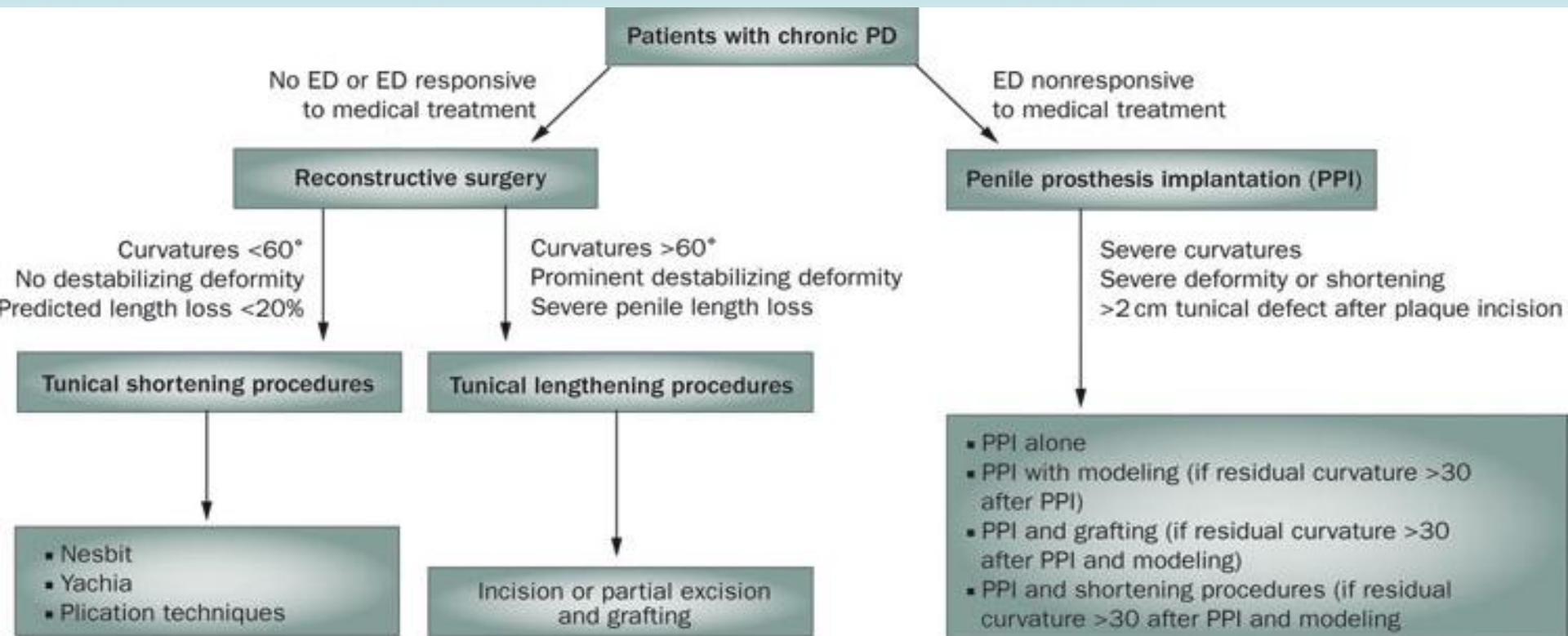
- Common but infrequently reported to compromise orgasm/ejaculation



What is the difference between
Sarkozi en Obama ?



Surgical Algorithm

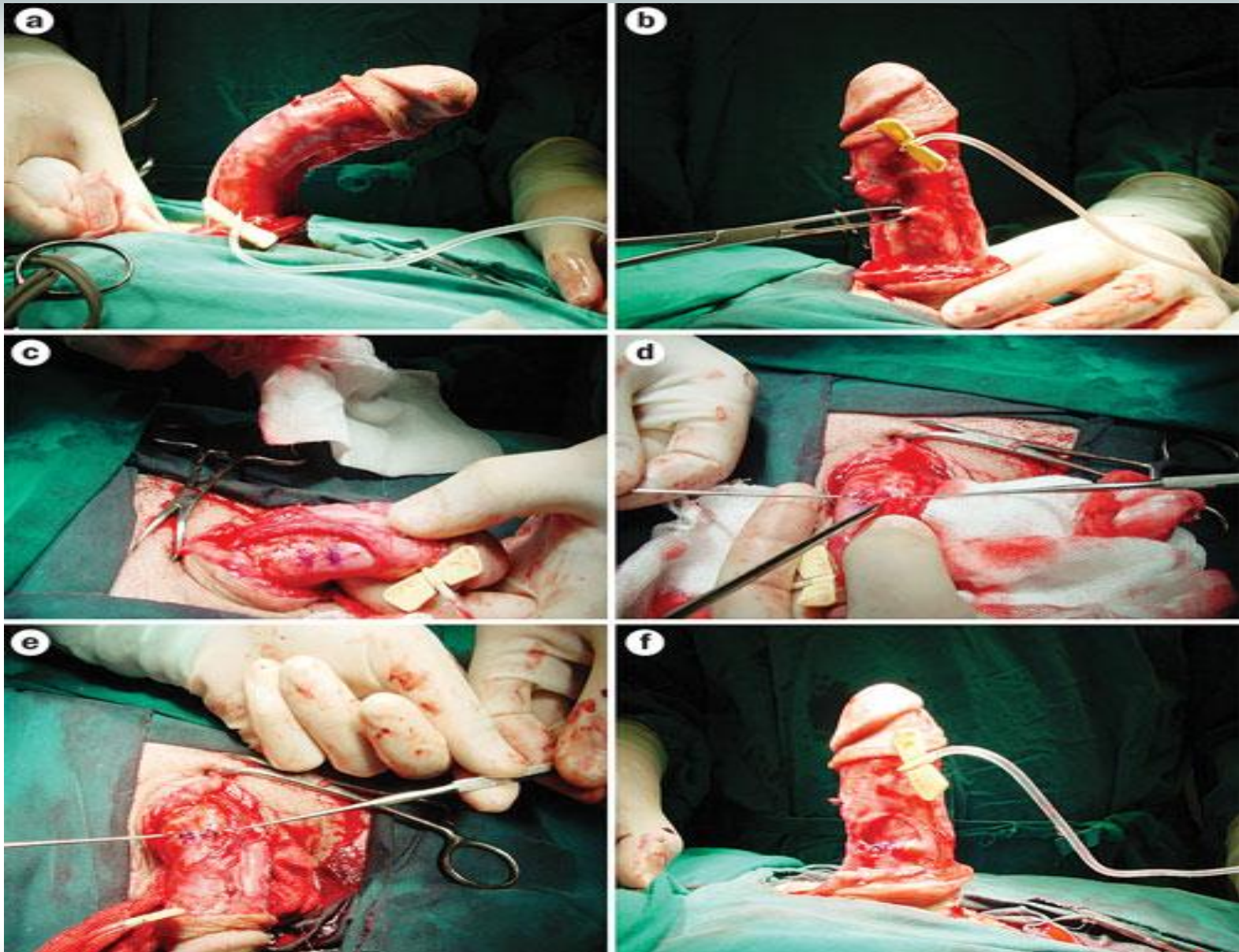


Surgical Plication Techniques

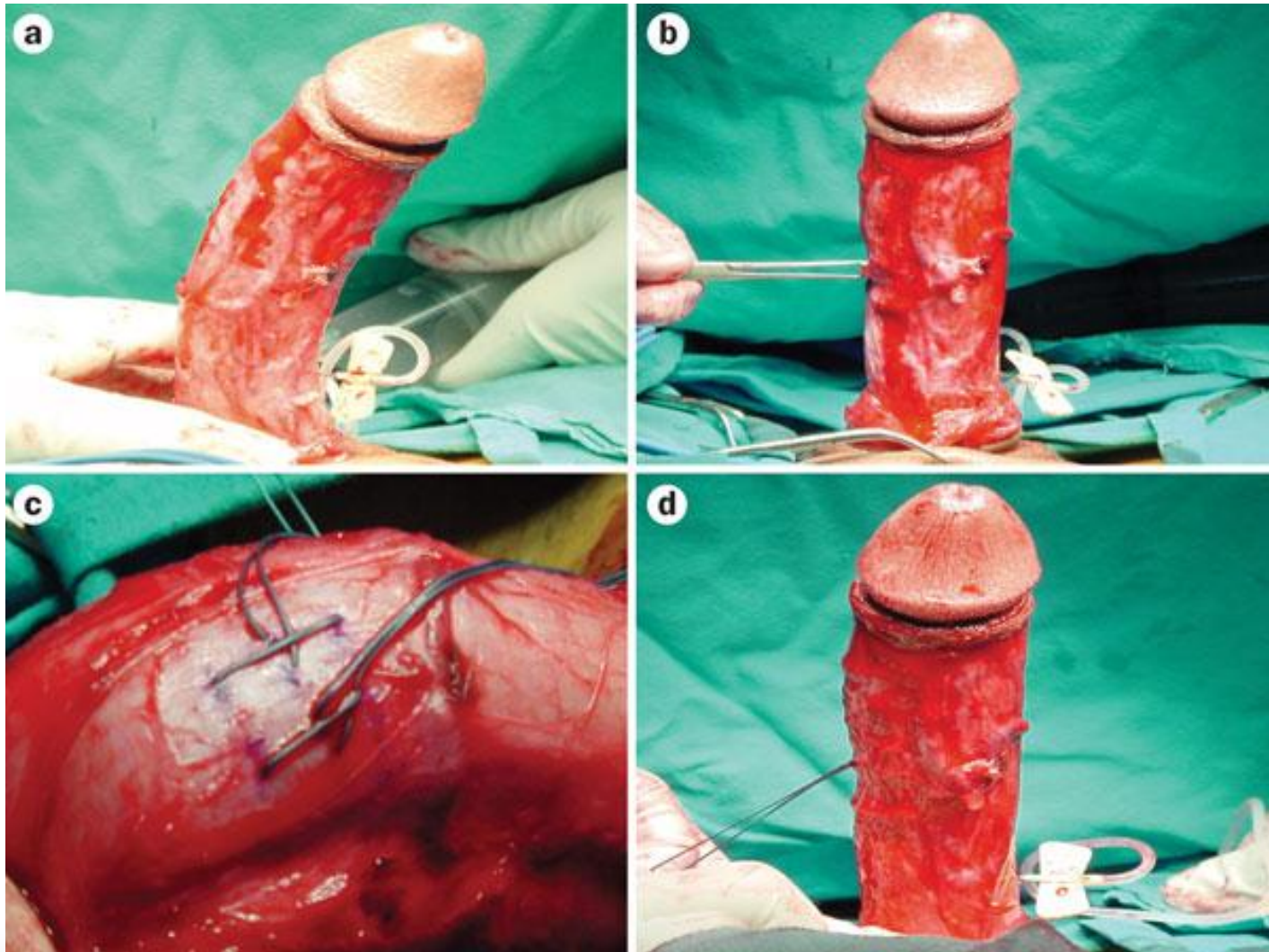
- Nesbit – Excision & closure
- Yachia – Plication w/ H-M technique
- Lue/16 dot – No incision plication
- Duckett/Baskin TAP – Partial incision & plication



The Nesbit procedure



Penile plication



Outcomes of tunical shortening procedures

Table 1 | Outcomes of tunical shortening procedures

Study	n	Mean follow-up (months)	Outcomes (% of cohort)			
			Penile straightness	Penile shortening	Postoperative erectile dysfunction	Overall satisfaction
Nesbit procedure						
Savoca et al. (2004) ¹⁹	218	89	86.3	17.4	11.5	83.5
Bokarica et al. (2005) ²⁰	40	81	87.5	100	5	NR
Licht et al. (1997) ²¹	28	22	79	37	4	79
Ralph et al. (1995) ²²	359	21	89	100	2	82
Yachia procedure						
Yachia (1990) ²³	1	NR	100	0	NR	100
Daitch et al. (1999) ²⁴	14	24.1	93	57	7	79
Rehman et al. (1997) ²⁵	26	22	73	100	7.6	78
Plication techniques						
Van der Horst (2004) ²⁷	28	30	100	74	35.7	67.8
Greenfield (2006) ²⁸	68	29	99	7.3	7.3	98.5
Taylor (2008) ²⁹	90	72	83	18	12	82
Gholami (2002) ³⁰	132	31	85	41	3	96
Dugi et al. (2010) ³¹	45	21	100	0	NR	93

Abbreviation: NR, not reported.

Recommendation- Plication Procedures

There is no evidence that one surgical approach provides better outcomes over another, but curvature correction can be expected with low risk of new ED

Grade C



Incision/Partial Excision & Grafting

2011 Indications

- Must have strong erections pre-op!!!
- Curvature > 60-70 degrees
- Significant shaft narrowing hinge-effect present
- Extensive plaque calcification

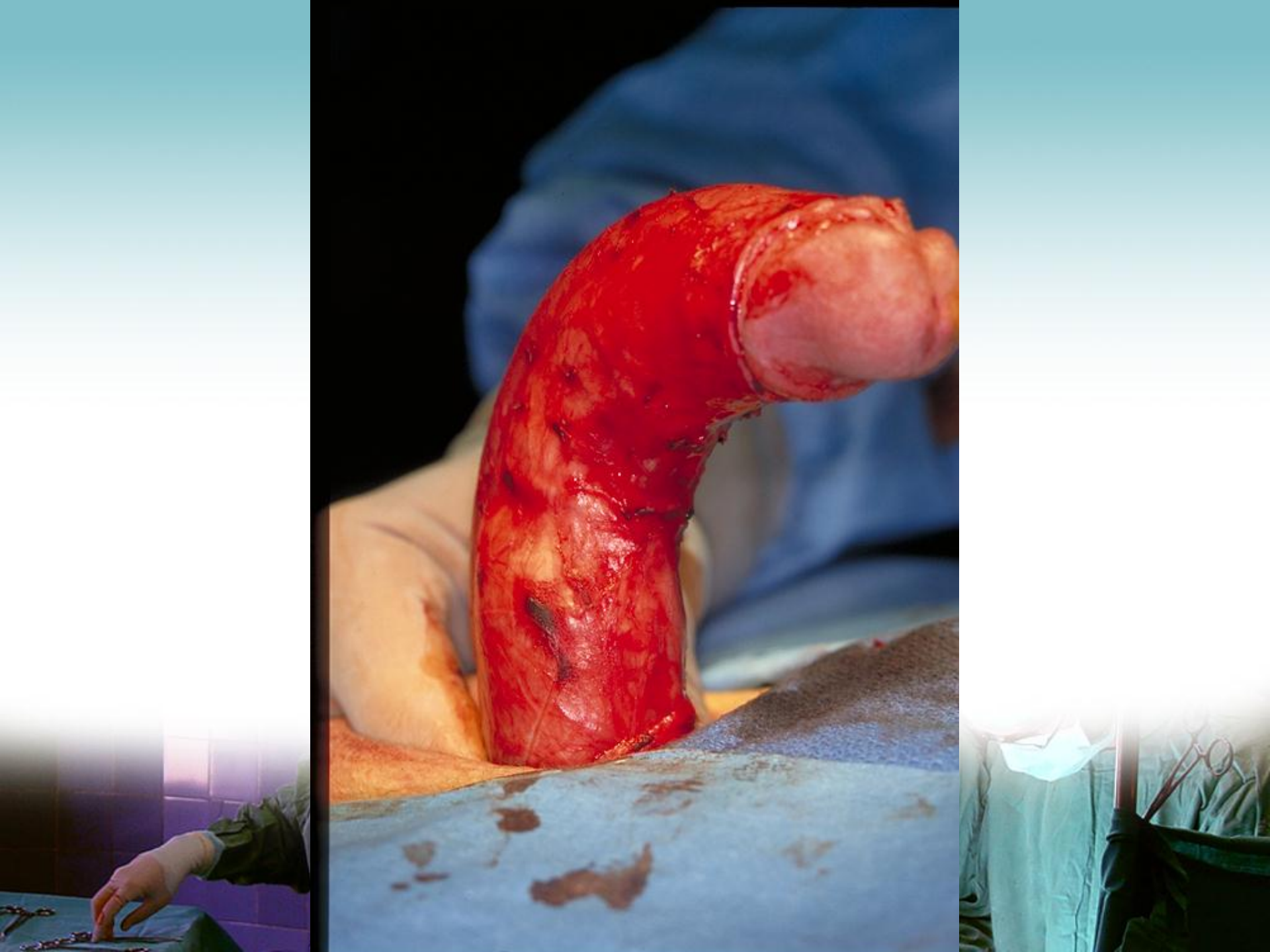


Surgical Grafting Techniques

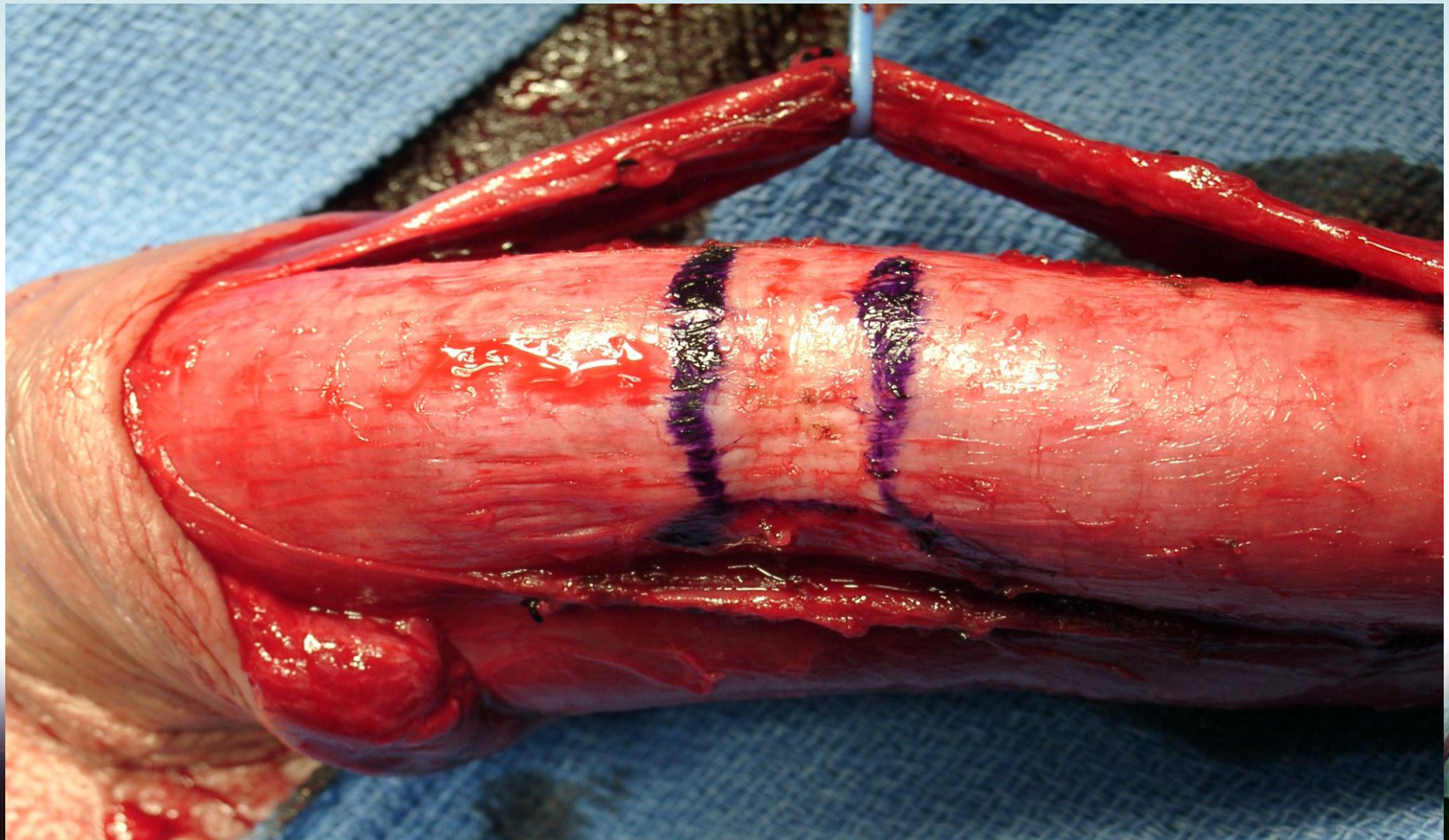
- Plaque incision/partial excision
- Goal- Limit trauma to cavernosal tissue to maintain veno-occlusive relationship w/tunica & graft

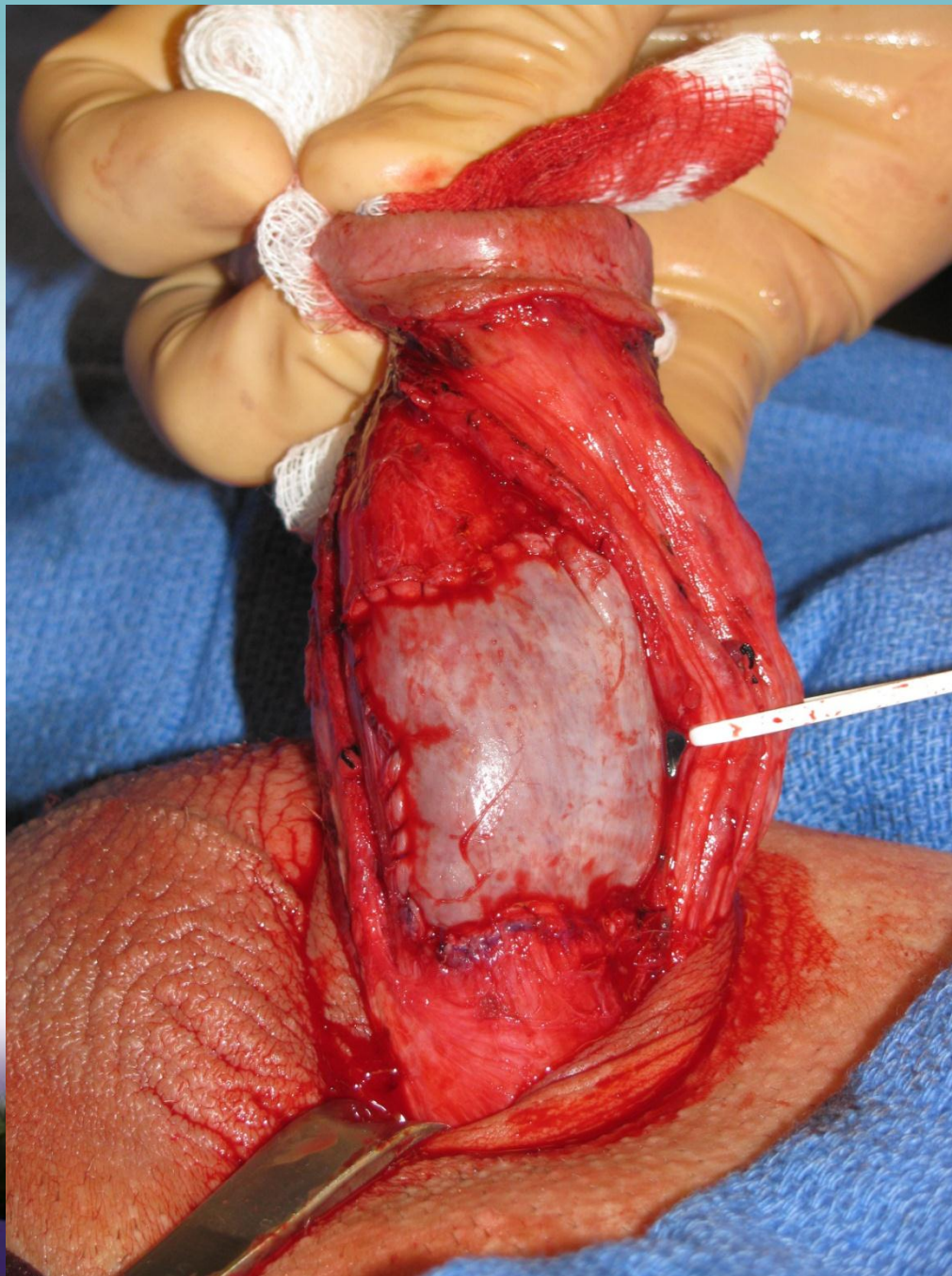


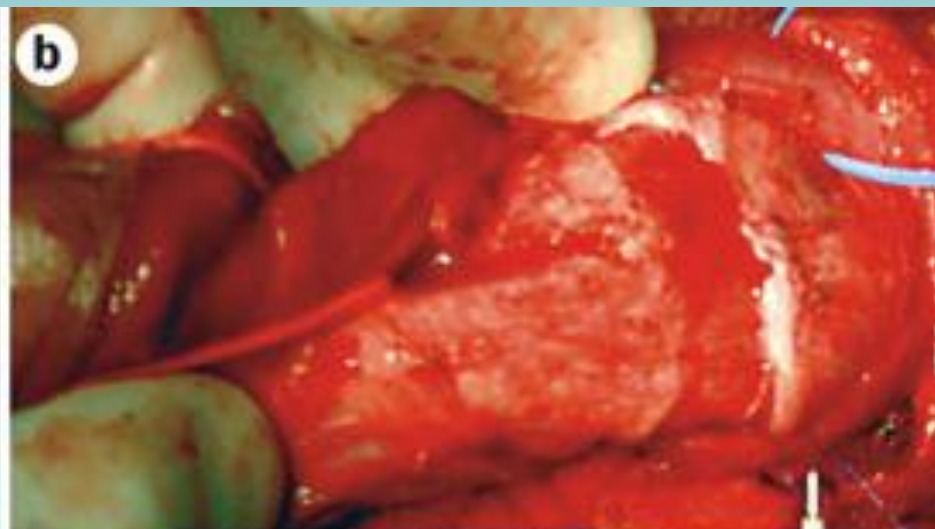




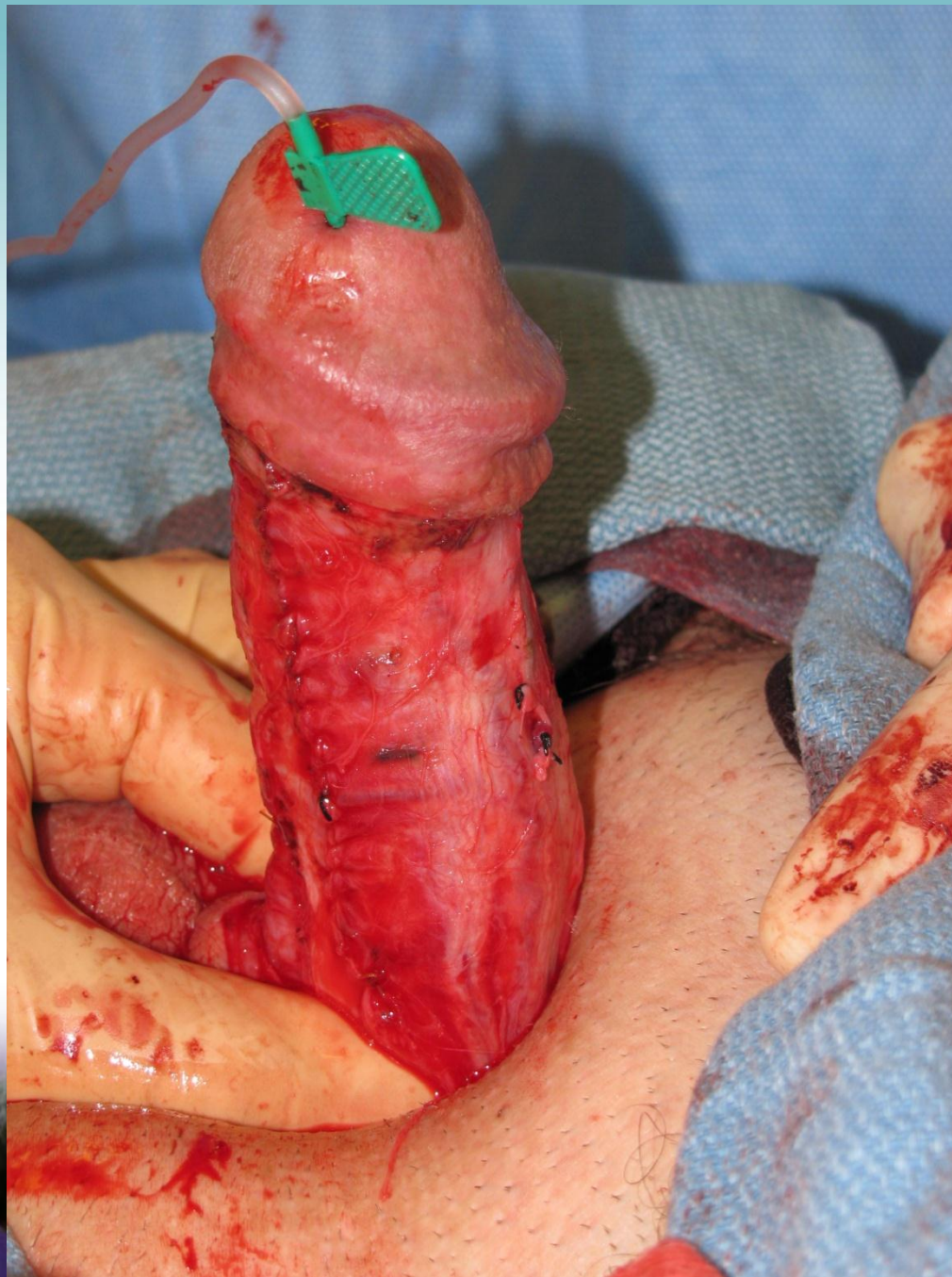
Modified H-Incision







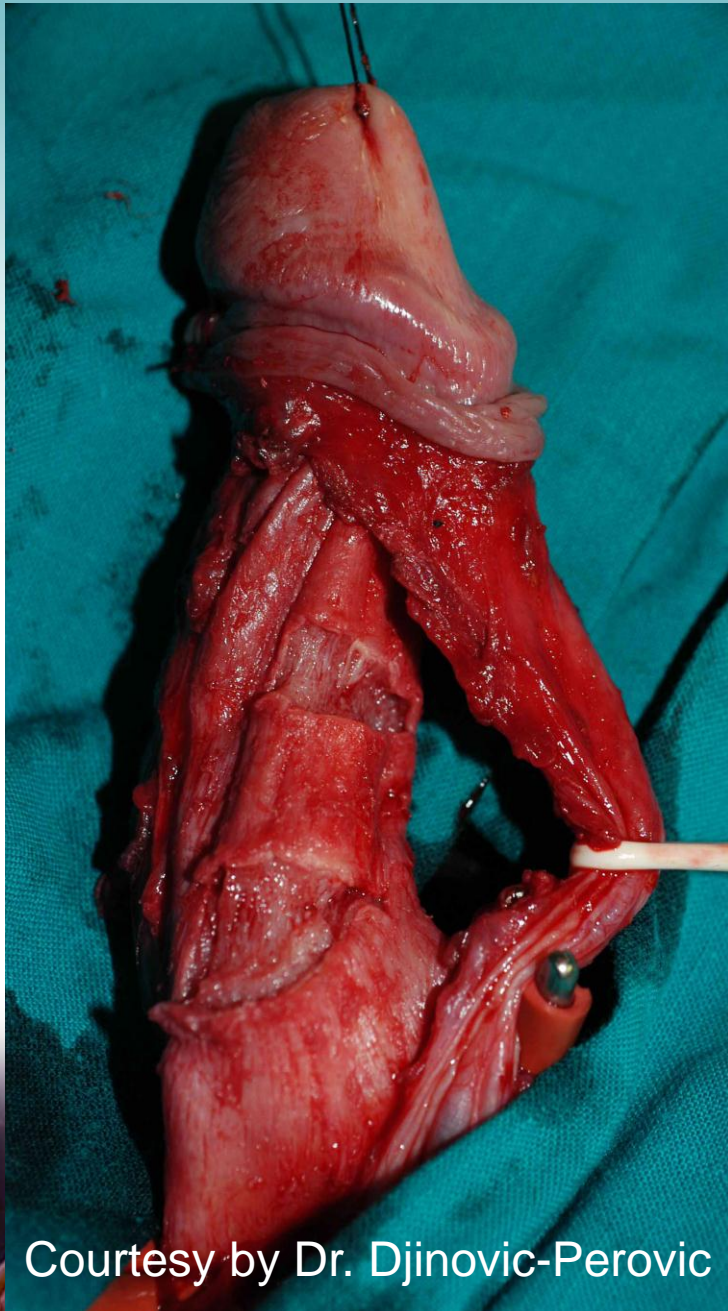




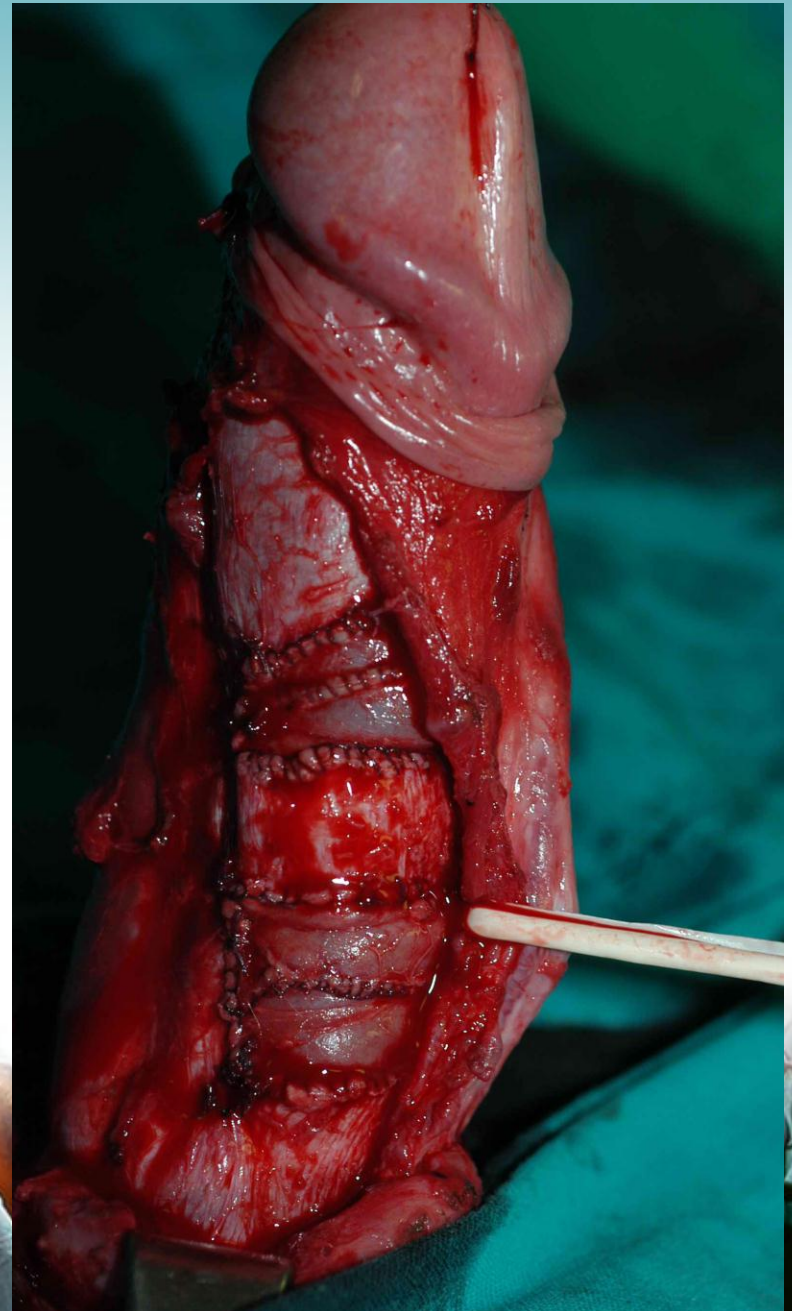
Dorsolateral curvature - Venous grafting



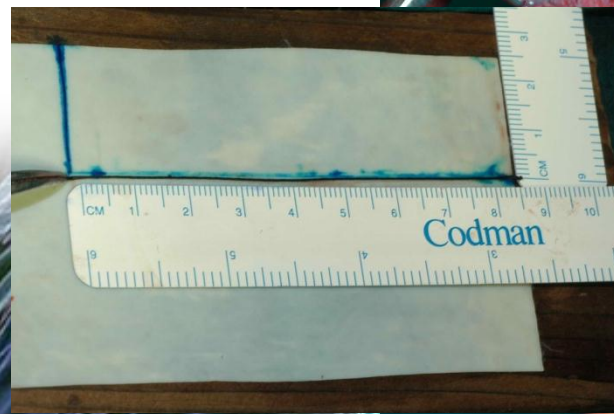
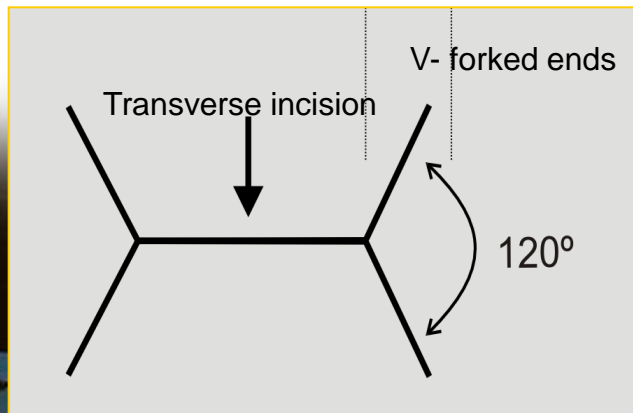
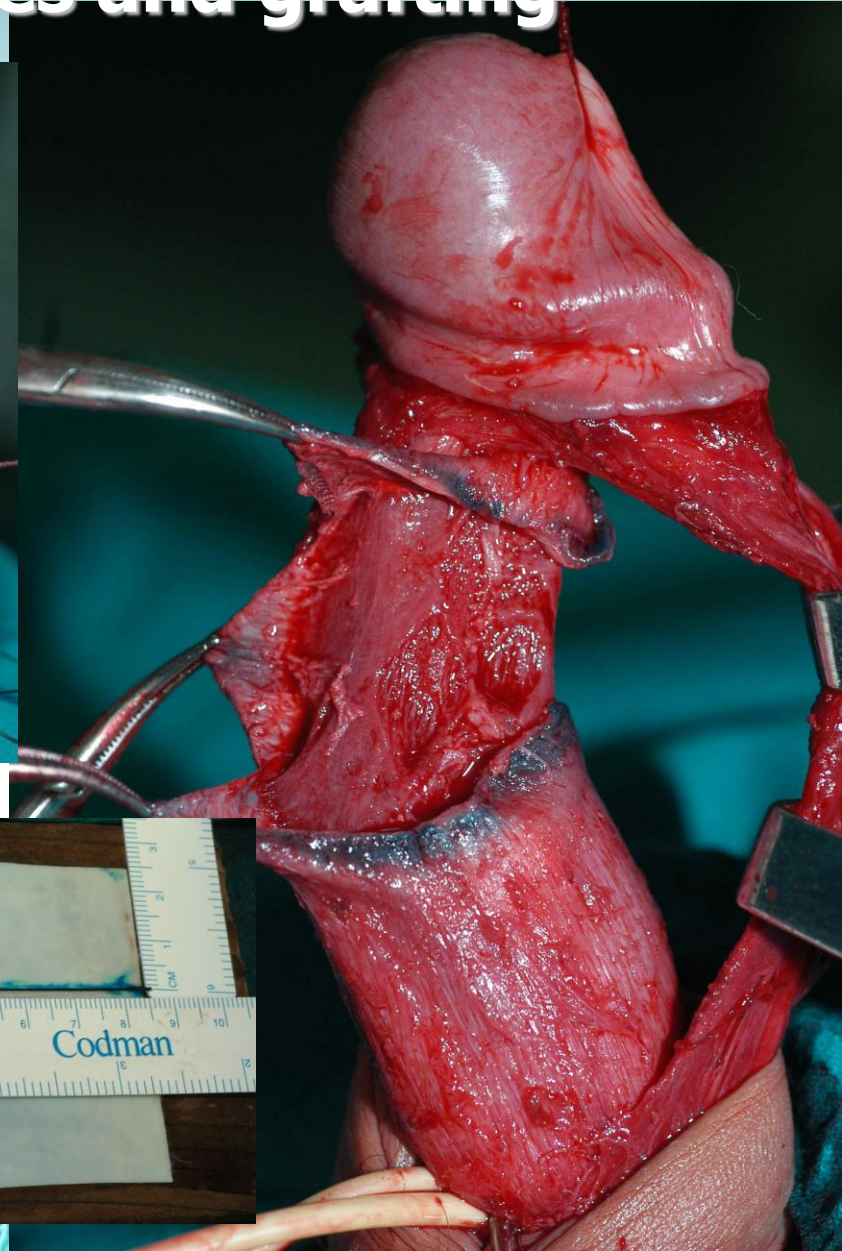
Courtesy by Dr. Djinovic-Perovic

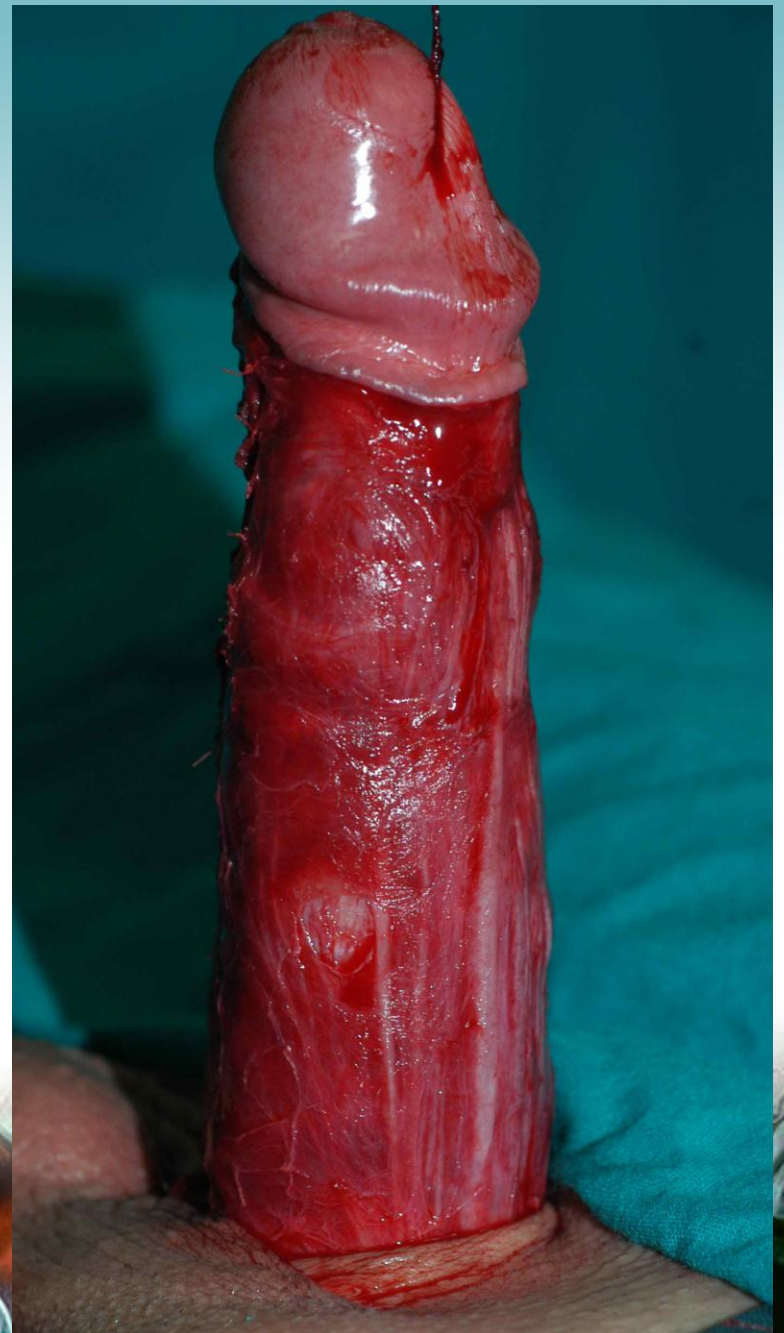
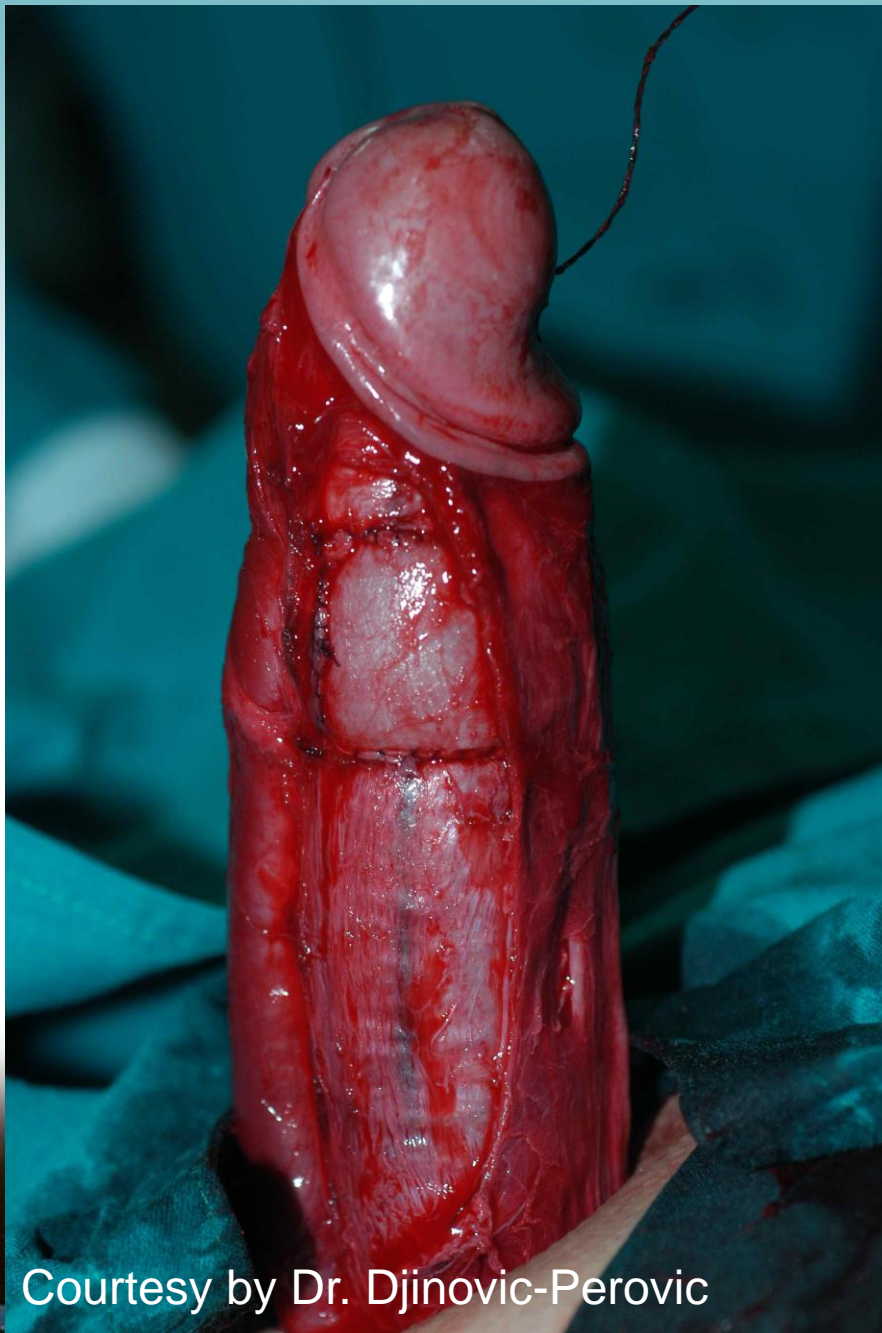


Courtesy by Dr. Djinovic-Perovic



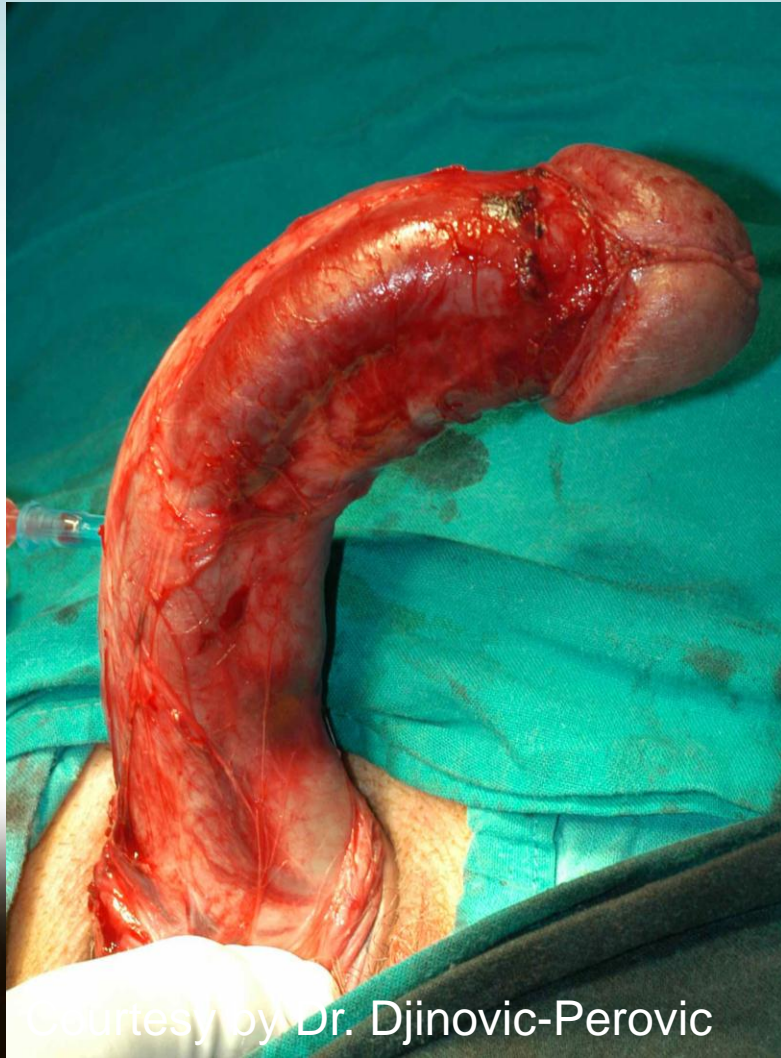
DORSAL CURVATURE: Measuring, incision over dorsal and lateral sides and grafting





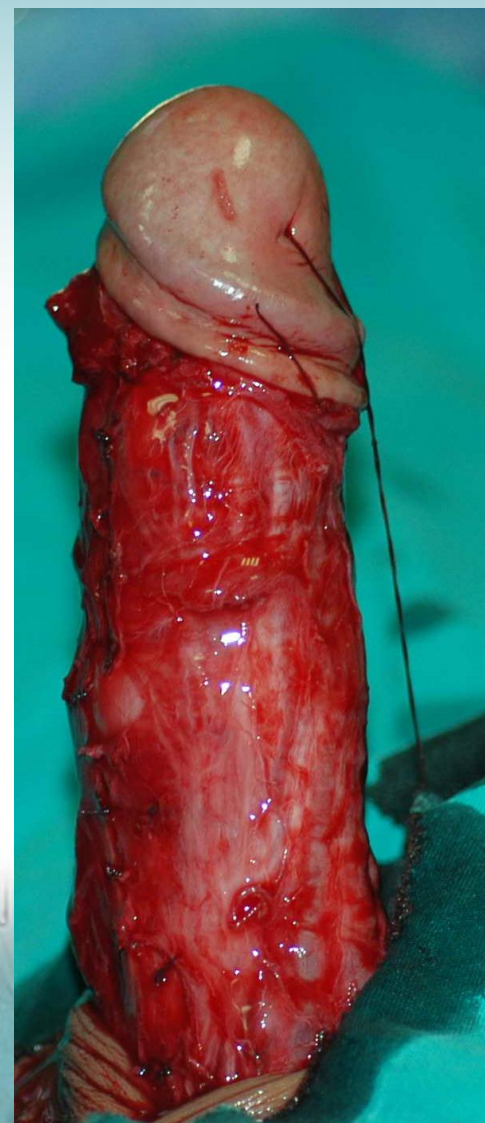
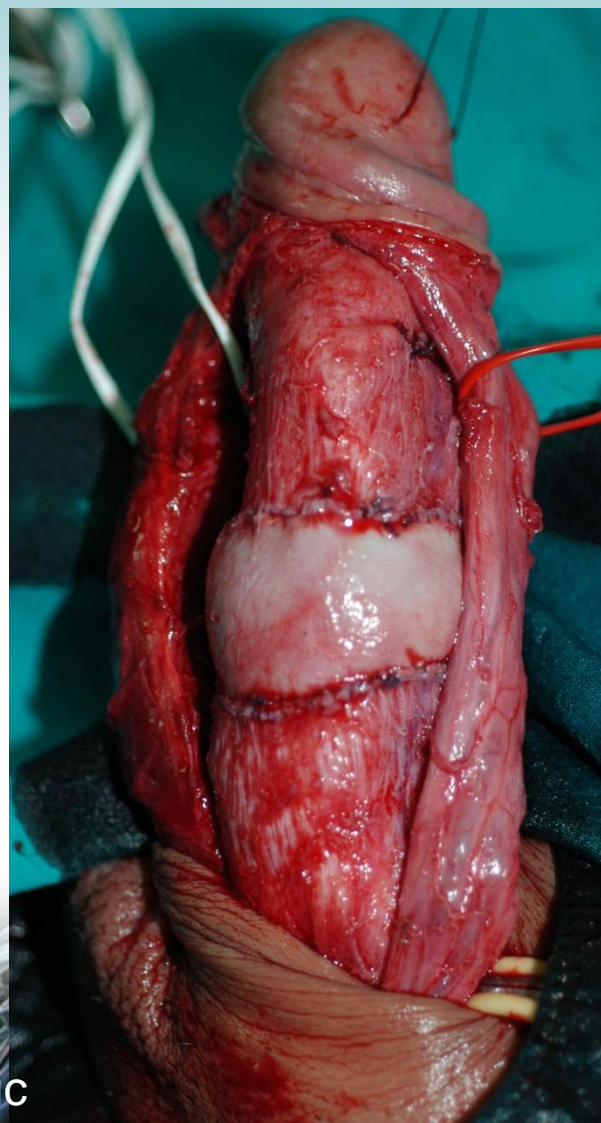
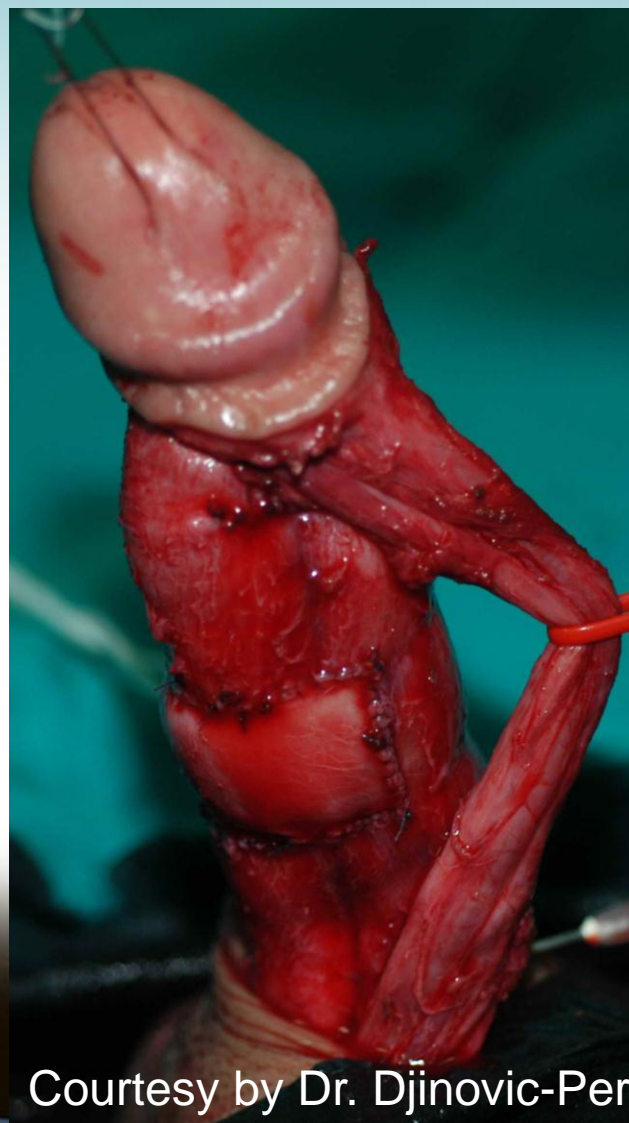
Courtesy by Dr. Djinovic-Perovic

LATERAL CURVATURE: Measuring, incision only over affected cavernosal body and grafting



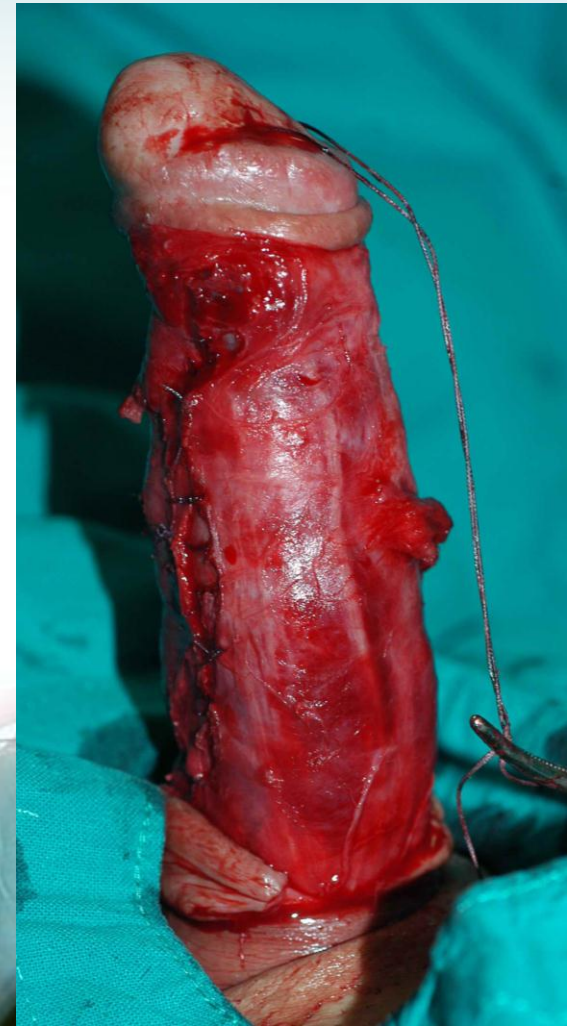
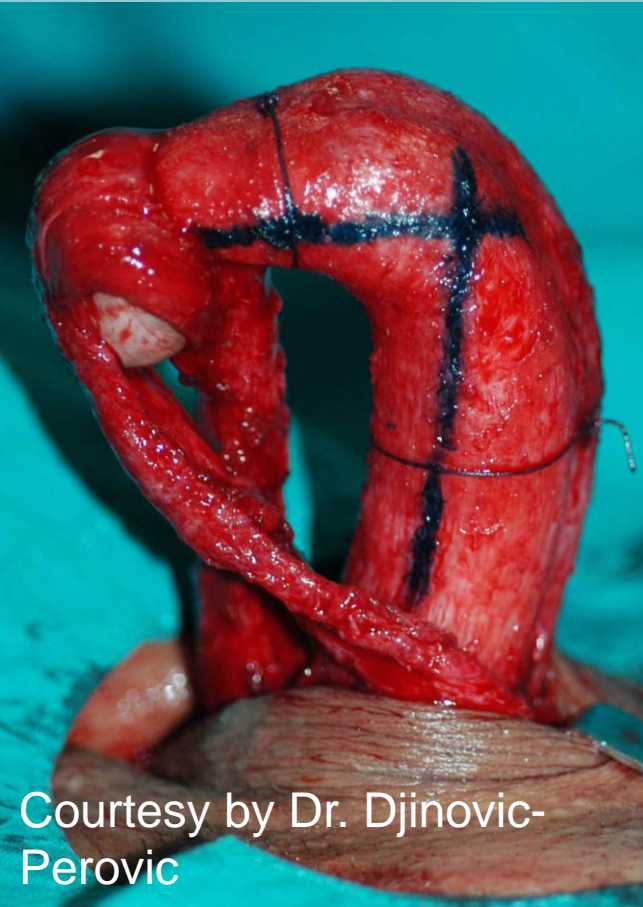
Courtesy by Dr. Djinovic-Perovic





Courtesy by Dr. Džinovic-Perovic

VENRAL CURVATURE: Measuring, forked incision over ventral and lateral sides and grafting



Courtesy by Dr. Djinovic-Perovic



Outcomes of tunical lengthening surgery with autologous grafts

Table 2 Outcomes of tunical lengthening surgery with autologous grafts							
Study	n	Mean follow-up (months)	Graft material	Outcomes (% of cohort)			
				Penile straightening	Postoperative erectile dysfunction	Penile shortening	Patient satisfaction
Gelbard and Hayden (1991) ³²	12	NR	Temporal fascia	100	0	NR	100
Wild <i>et al.</i> (1979) ³⁷	50	17	Dermis	80	12	NR	70
Levine <i>et al.</i> (1997) ¹⁶	48	19.6	Dermis	94	25	19	NR
Goyal <i>et al.</i> (2008) ³⁸	11	9.6	Dermis	81.8	18.2	NR	81.8
O'Donnell (1992) ³⁹	25	42.2	Tunica vaginalis	88	68	96	NR
Kargi <i>et al.</i> (2004) ⁴⁰	12	10	Fascia lata	100	0	0	100
Shioshvili <i>et al.</i> (2005) ⁴¹	26	38.4	Buccal mucosa	92.3	7.7	15.4	NR
Cormio <i>et al.</i> (2009) ⁴³	15	13.1	Buccal mucosa	100	0	0	93.3
Teloken <i>et al.</i> (2000) ⁴⁶	7	6	Crural tunica albuginea	85.7	0	0	85.7
Da Ros (2005) ⁴⁹	27	NR	Crural tunica albuginea	96.2	3.7	NR	70.4
Hsu <i>et al.</i> (2003) ⁵⁰	24	31.2	Deep dorsal vein	96	4	NR	100
Craatz <i>et al.</i> (2006) ⁵¹	12	4–10	Rectus sheath	83.3	NR	NR	58.3
Abbreviation: NR, not reported.							

Outcomes of tunical lengthening surgery with saphenous vein grafting

Table 3 | Outcomes of tunical lengthening surgery with saphenous vein grafting

Study	<i>n</i>	Mean follow-up (months)	Outcomes (% of cohort)			
			Penile straightening	Penile shortening	Postoperative erectile dysfunction	Patient satisfaction
El-Sakka <i>et al.</i> (1998) ⁵⁸	112	18	95.5	17	12	92
Kalsi <i>et al.</i> (2005) ⁵⁹	113	12	86	25	15	96
Adeniyi <i>et al.</i> (2002) ⁶⁰	51	16	82	35	8	92
Akkus <i>et al.</i> (2001) ⁶¹	50	32	80	40	6	88
DeStefani <i>et al.</i> (2000) ⁶²	8	13	87.5	0	0	100
Kadioglu <i>et al.</i> (2008) ¹¹	70	41.7	75.7	0	8.5	86.2
Kalsi <i>et al.</i> (2005) ⁵⁹	40	60	80	35	22.5	86
Montorsi <i>et al.</i> (2004) ⁶³	50	>60	72	100	22	60
Hsu <i>et al.</i> (2007) ⁶⁴	48	NR	90	NR	5	90

Abbreviation: NR, not reported.

Outcomes of tunical lengthening surgery with allografts and xenografts

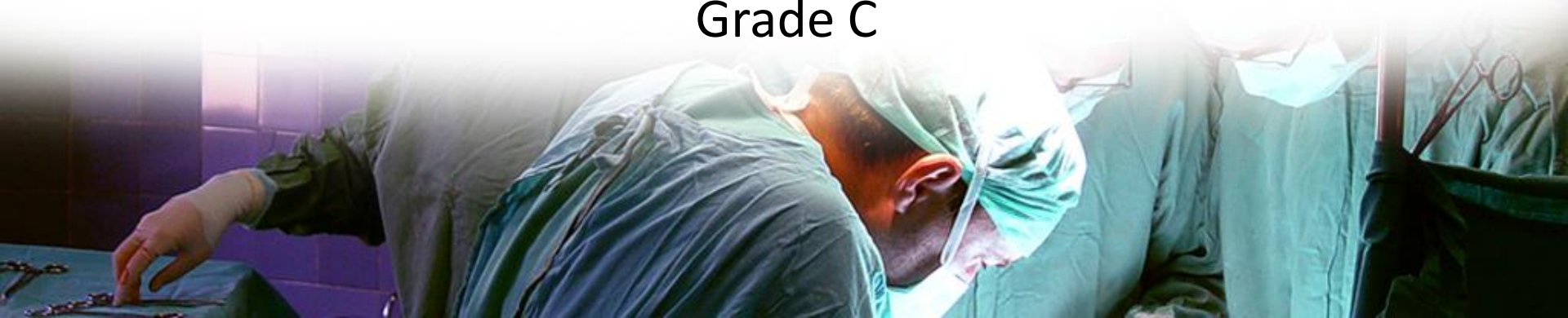
Table 4 | Outcomes of tunical lengthening surgery with allografts and xenografts

Study	n	Graft material	Mean follow-up (months)	Outcomes (% of cohort)			
				Penile straightening	Penile shortening	Postoperative erectile dysfunction	Patient satisfaction
Allografts							
Taylor et al. (2008) ²⁹	101	Cadaveric pericardium	58	92	33	35	75
Chun et al. (2001) ⁶⁵	9	Cadaveric pericardium	6	55.5	0	66.7	88.8
Usta et al. (2003) ⁶⁶	19	Cadaveric pericardium	22	98	0	30	98
Levine et al. (2003) ⁶⁷	40	Pericardial graft	22	98	33	30	98
Kalsi (2006) ⁷²	14	Cadaveric fascia lata	31	78.5	28.5	7.1	92.8
Sampaio et al. (2002) ⁷⁴	40	Dura mater	12–72	95	0	15	95
Xenografts							
Egydio et al. (2003) ³³	78	Bovine pericardium	17.5	88.4	0	0	NR
Knoll (2007) ⁶⁹	162	Porcine 4-layer SIS	38	91	0	21	NR
Lee (2008) ⁷⁰	13	Porcine 4-layer SIS	14	100	NR	54	NR
Breyer (2007) ⁷¹	19	Porcine 1-layer SIS	15	63	63	53	NR
Abbreviation: NR, not reported.							

Recommendation- Grafts for PD

- Autologous grafts require more time and a second incision
- Allograft and Xenograft procedures appear shorter in duration with no reported transmission of diseases
- Synthetic grafts increase the risk of infection and are not recommended
- There is no evidence that surgical outcomes are consistently better with one graft type
- Overall there is an increased risk of post-op ED

Grade C



Post-Straightening Rehabilitation

- Begin massage & manual stretch
 - 2 wks post-op
 - 5 min x 4 weeks
- Consider PDE5i daily early post-op to enhance nocturnal erections

Levine et al *J Urol* 2005

- Penile Extender 2-3wks post-op x 3 months

Moncada et al, AUA 2007, abst 750



PD – Surgical Algorithm

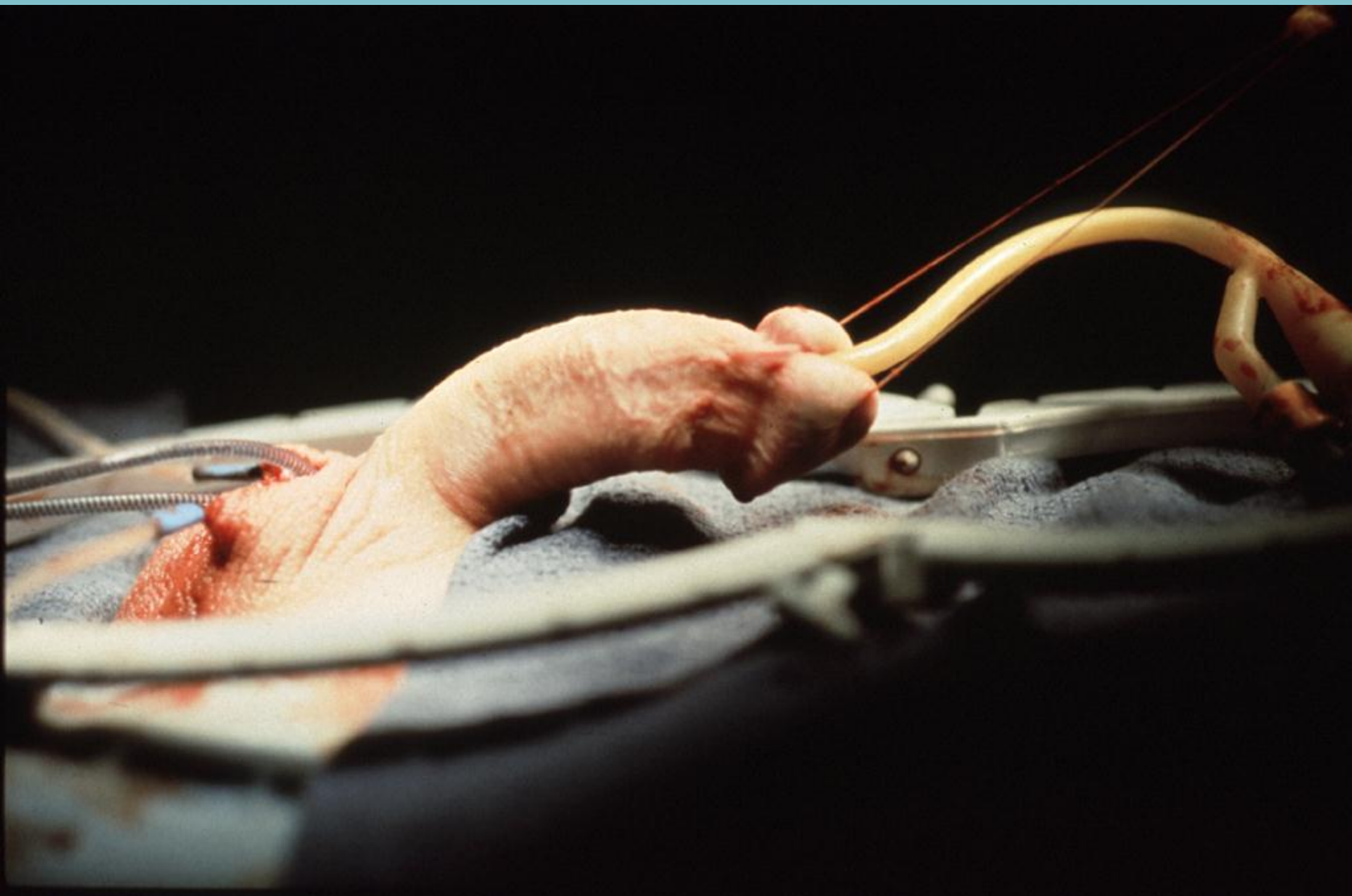
■ When inadequate rigidity

3) Penile Prosthesis Placement

- IPP alone (not LGX)
- With modeling (Wilson, 1994)
- With incision
- With incision and grafting (defect >2 cm)

Levine & Dimitriou *Urology* 2000

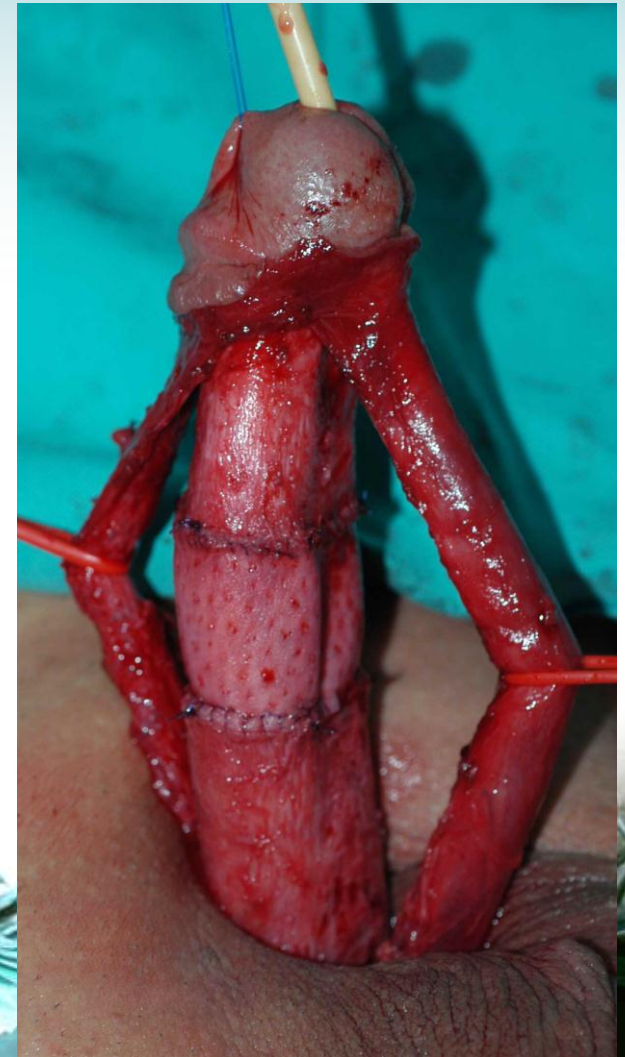
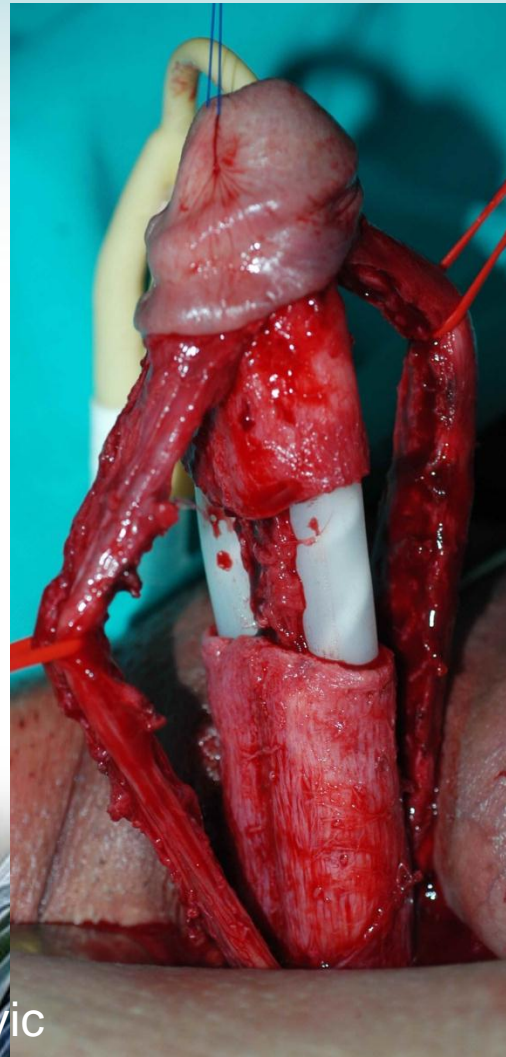






PENILE SHORTENING WITHOUT CURVATURE:

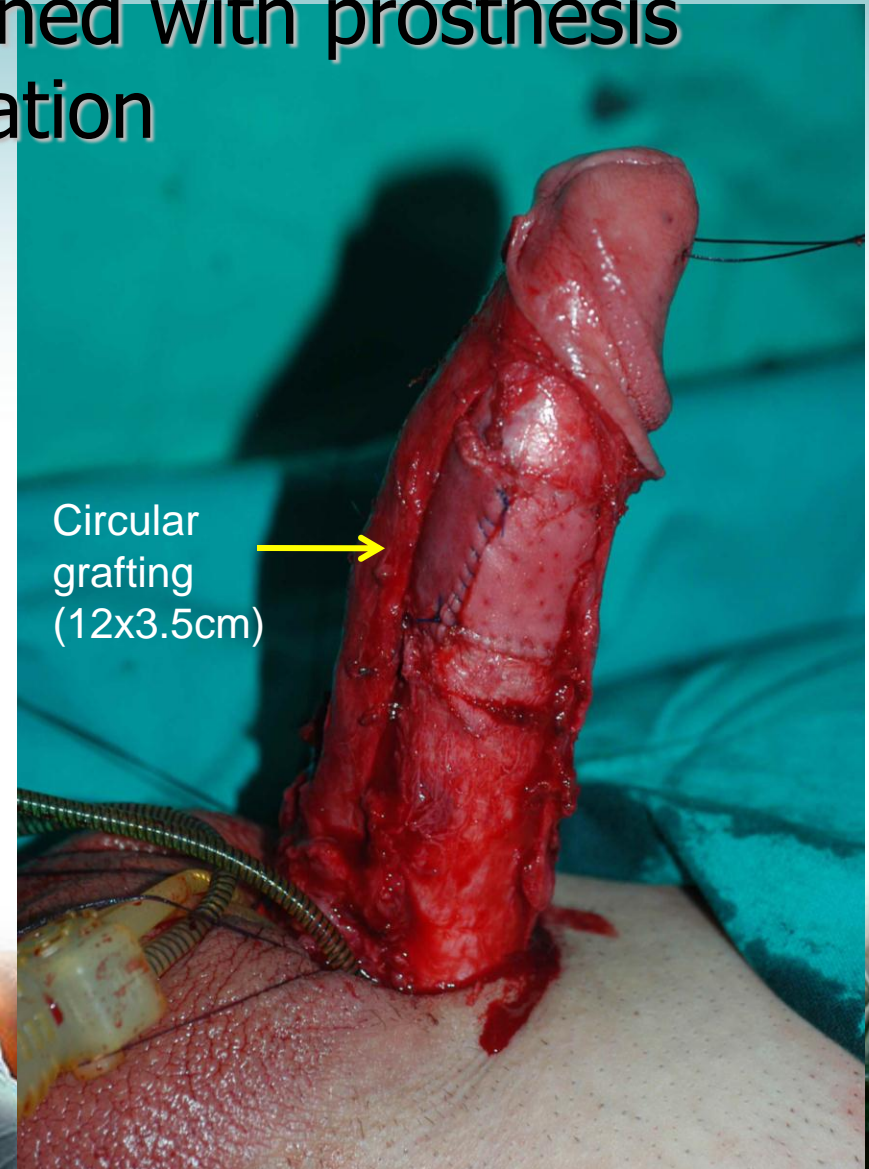
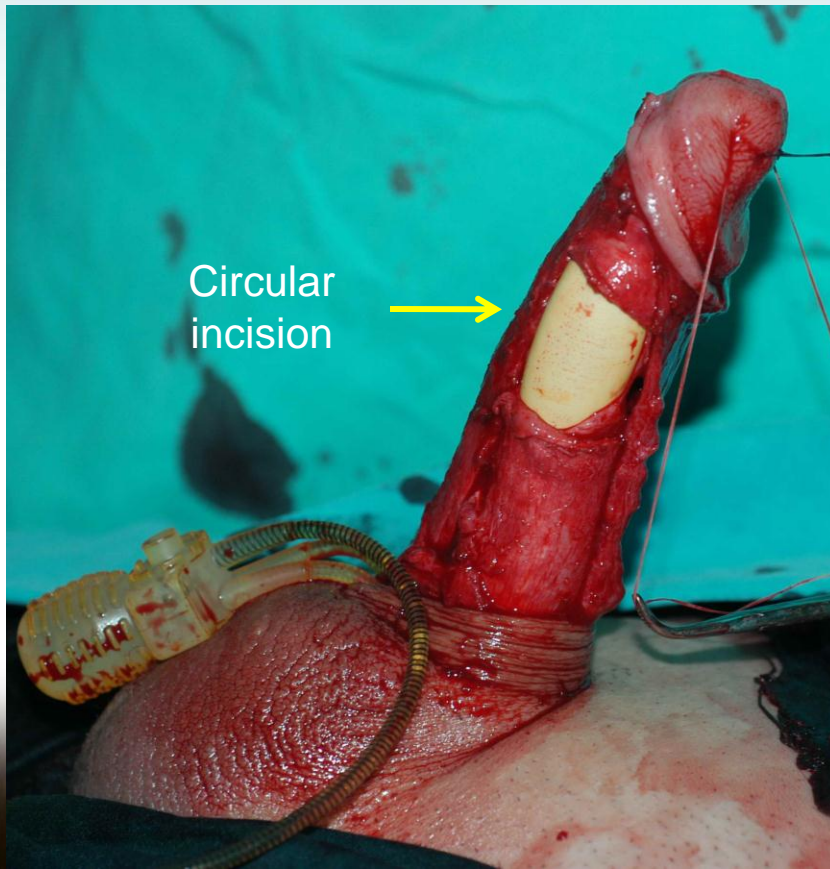
Circular grafting combined with prosthesis implantation



Courtesy by Dr. Djinovic-Perovic

PENILE SHORTENING WITHOUT CURVATURE:

Circular grafting combined with prosthesis implantation



Outcomes with Penile Prosthesis Surgery in Peyronie's Disease

Author	Year	No. of pts	Device	Manual Modeling	Tunica incision/ excision +/- graft	Complete Correction	Pt. Sat.
Akin- Olugbade	2005	18	Alpha-1	20%	30%	100%	60%
Usta	2003	42	—	74%	26%	88%	84%
Levine	2001	16	Ambicor	—	—	96%	96%
Wilson	2001	104	700CX, Alpha-1	100%	—	—	—
Levine	2000	46	2/3PI	54%	46%	100%	—
Carson	2000	63	700CX	—	—	—	88%
Ghanem	1998	20	M	—	—	65%	87%
Morganstern	1997	309	700CX	—	—	98%	—
Marzi	1997	21	M,S	—	38%	—	—
Montague	1996	72	34 700CX, 38 Ultrex	—	—	100% 74%	—
Monstorsi	1996	23	700CX	—	40%	70%	79%

2PI, 2-piece inflatable; 3PI, 3-piece inflatable; M, malleable; S, soft;
 *Peyronie's disease patients as part of a larger prosthesis study

Mulhall J. *Standard Practice in Sexual Medicine*. 2006. 170.

Recommendation

PD Surgery

- Detailed consent imperative
- Follow published algorithms
- Plication for less severe deformity ($<60^\circ$) & when borderline ED
- Grafting reserved for severe deformity $>60-70^\circ$, +/- hinge, normal erectile function, & experienced surgical team
- Prosthesis placement with additional maneuvers when refractory ED & PD

Grade C-Level 2,3.



PD- Conclusions

- Far more prevalent than previously thought – growth area in Urology.
- Failure to understand pathophysiology compromises treatment
- Large-scale, multi-center, PC trials necessary
- Combination therapy may be best approach today
- Surgery remains gold standard but counseling critical

