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# **9th Asian Congress of Urology**

of the Urological Association of Asia  
*Organized by the Urological Society of India*



## **New Delhi – India**

## **2 – 5 October 2008**



**Center for Reconstructive Urethral Surgery**



# One-stage bulbar urethroplasties: surgical techniques and long-term results

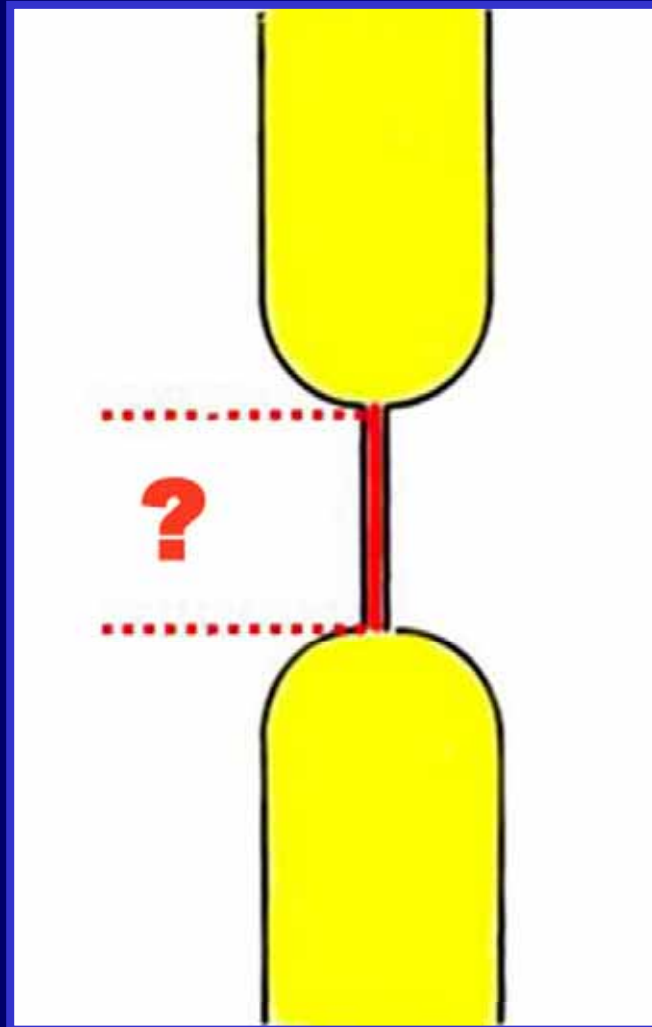
updated July 2008



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# One-stage bulbar urethroplasties



**End-to-end anastomosis**

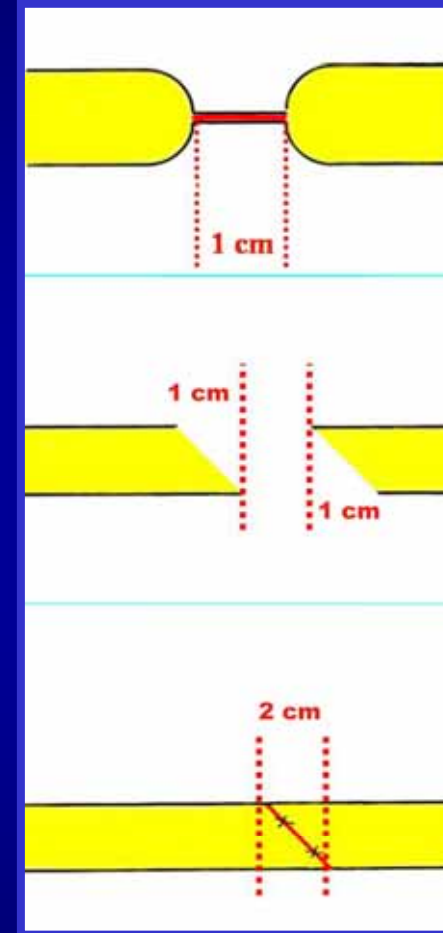
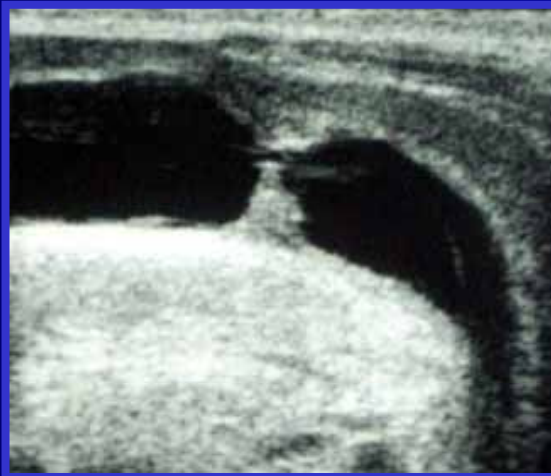
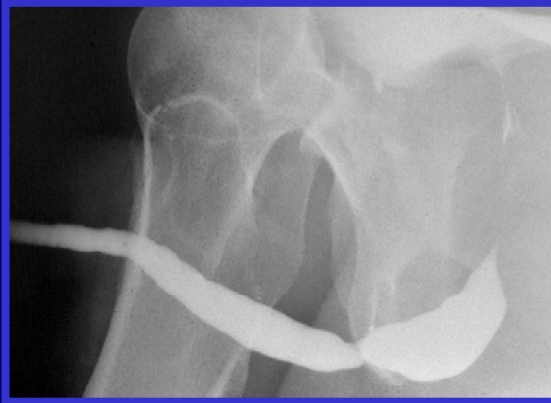
**Augmented anastomotic repair using dorsal oral mucosal graft**

**Oral mucosal graft urethroplasty**

- ventral onlay
- dorsal onlay



# End-to-end anastomosis



Urethral stricture ranging from 1 to 2 cm



# Preparation of the patient



**Simple lithotomy position**



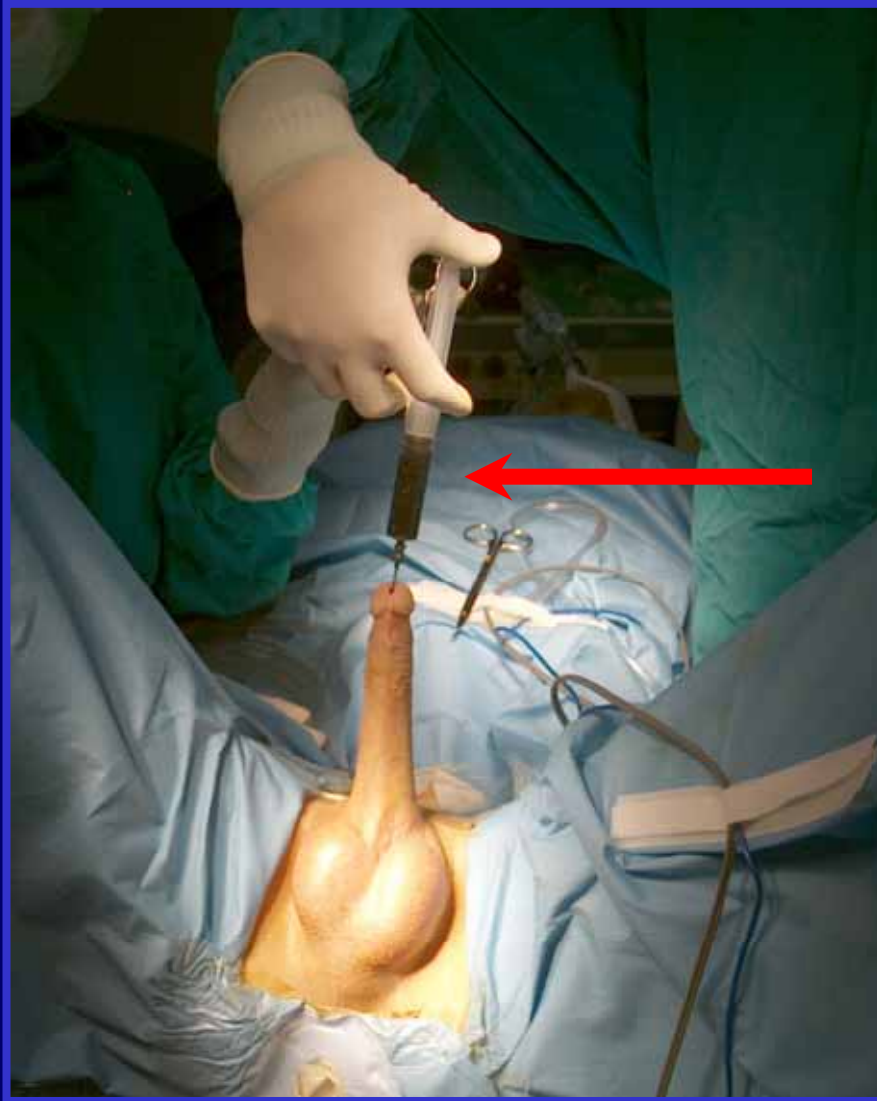
# Preparation of the patient



**Allen stirrups with sequential inflatable compression sleeves**



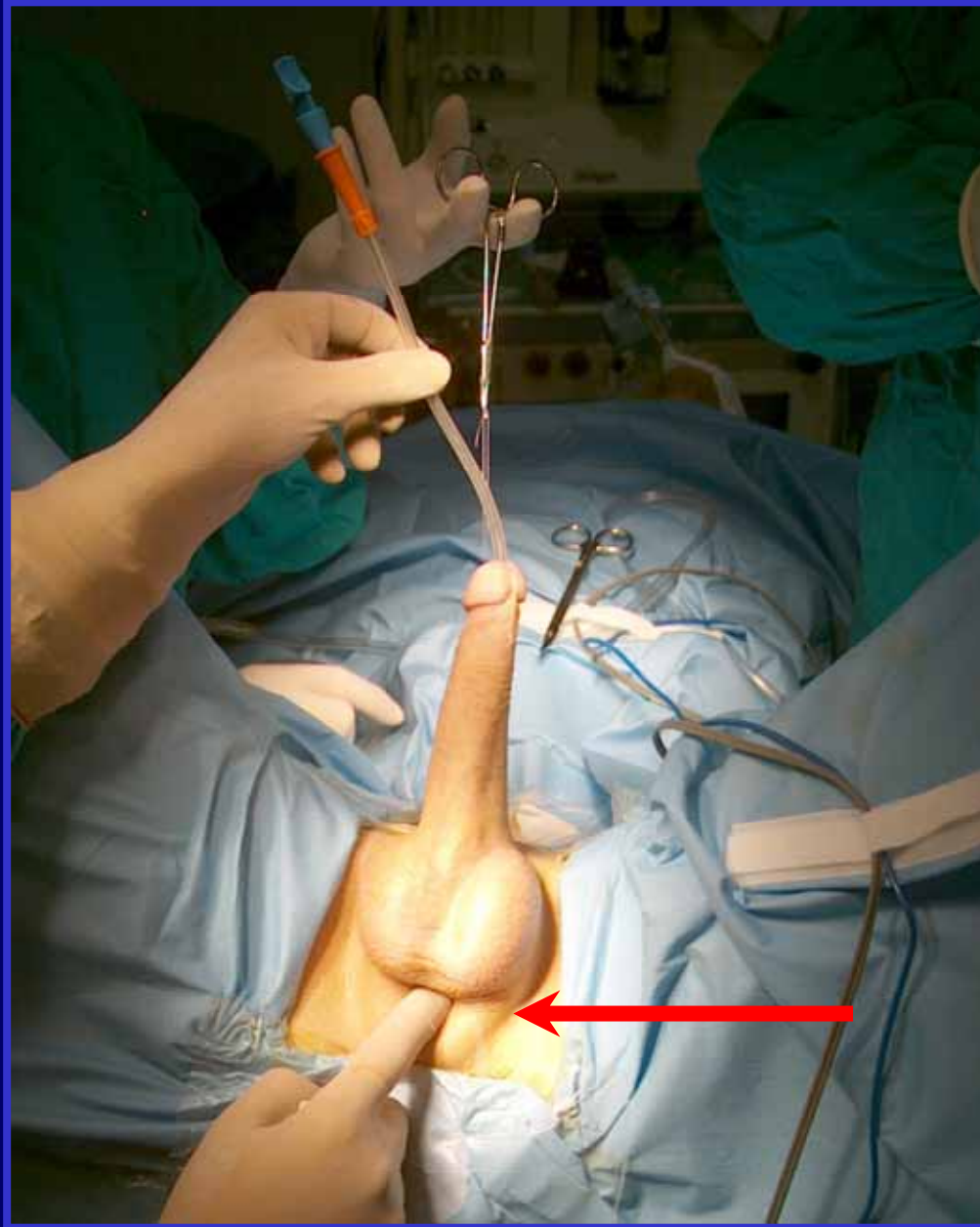




**Methylene blue is  
injected into the urethra**

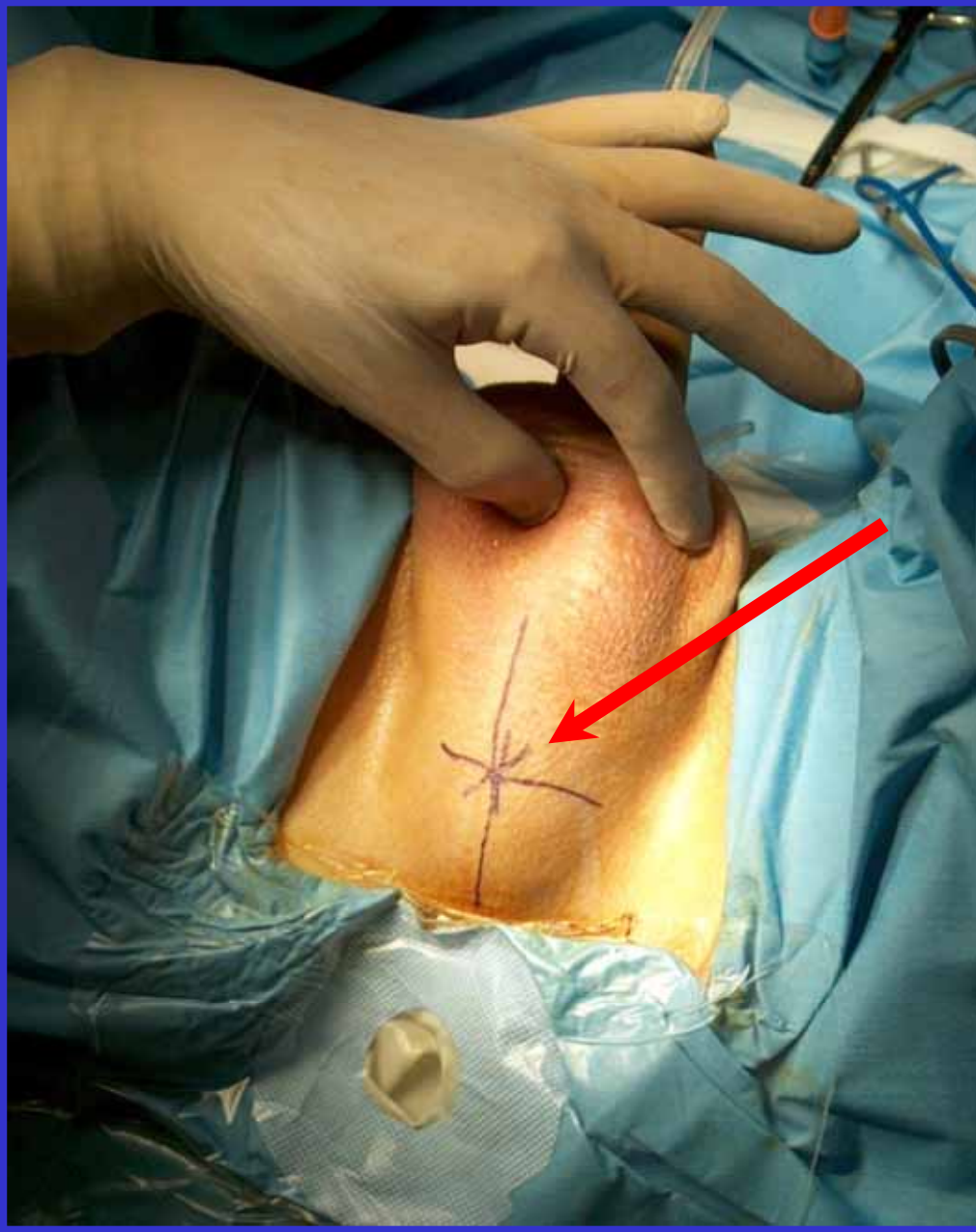






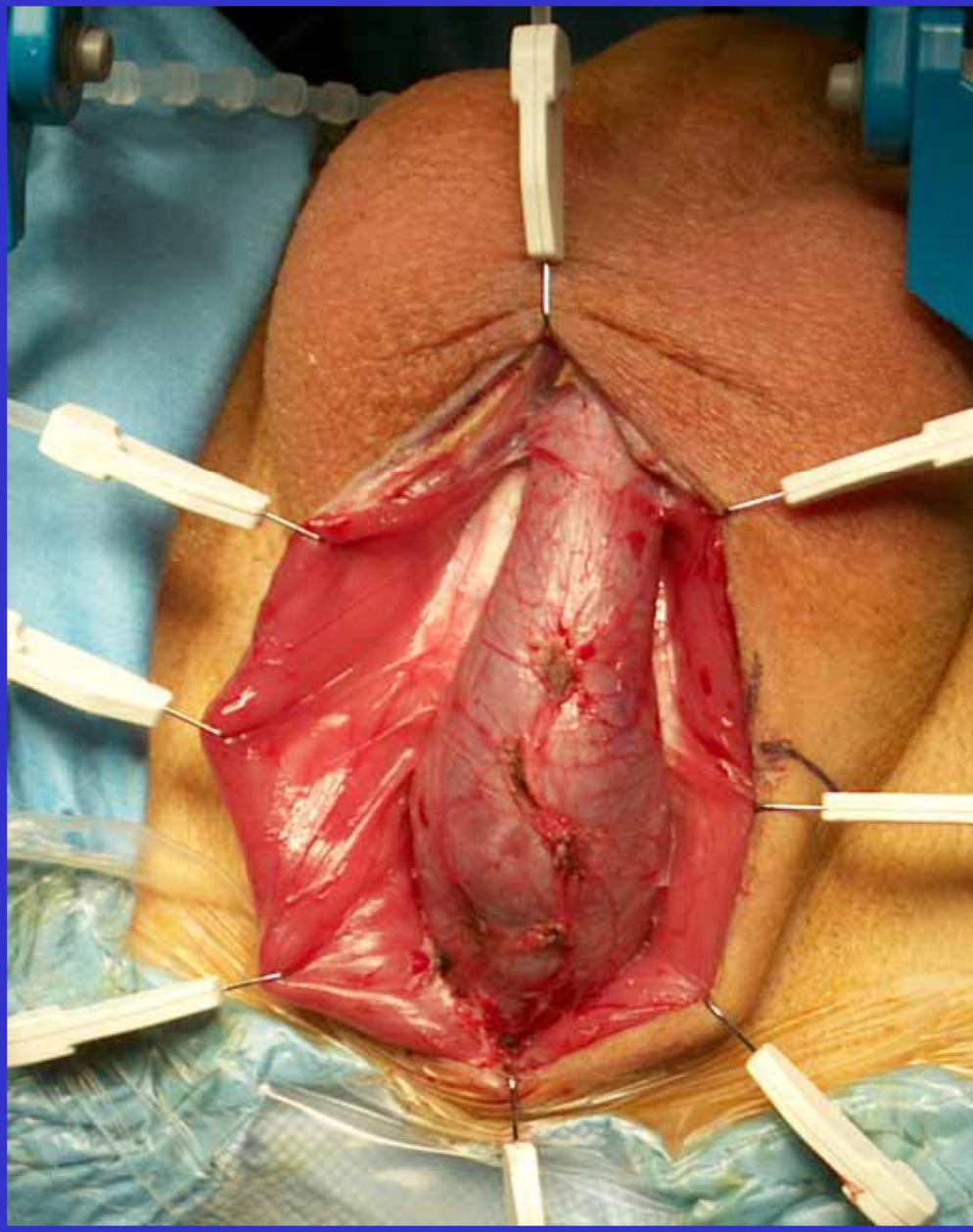
**The distal extent of  
the stenosis is  
identified by  
inserting a 16-  
French catheter  
with a soft round tip**





**Midline perineal incision**

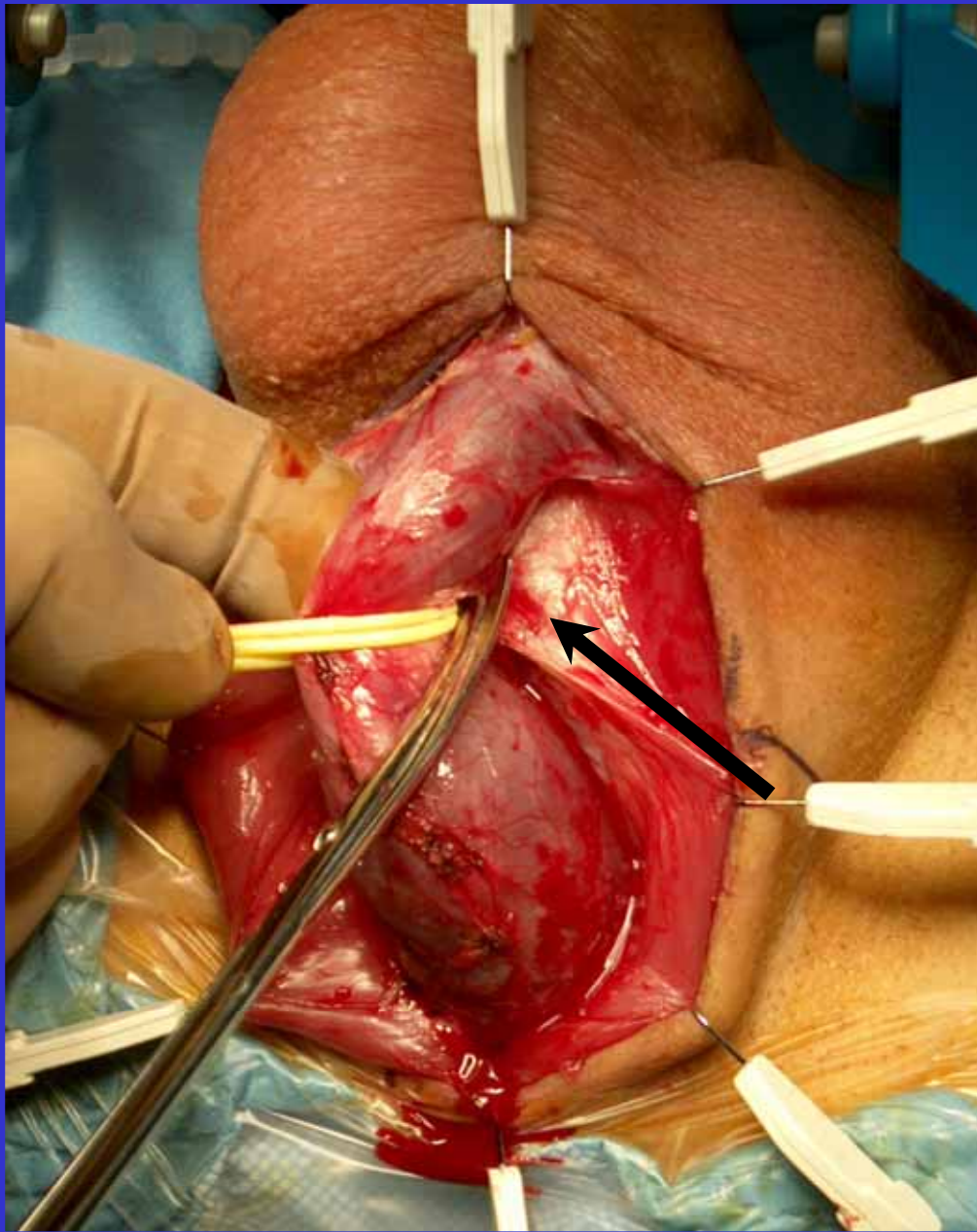




**The urethra is freed from  
the bulbospongiosum  
muscle**

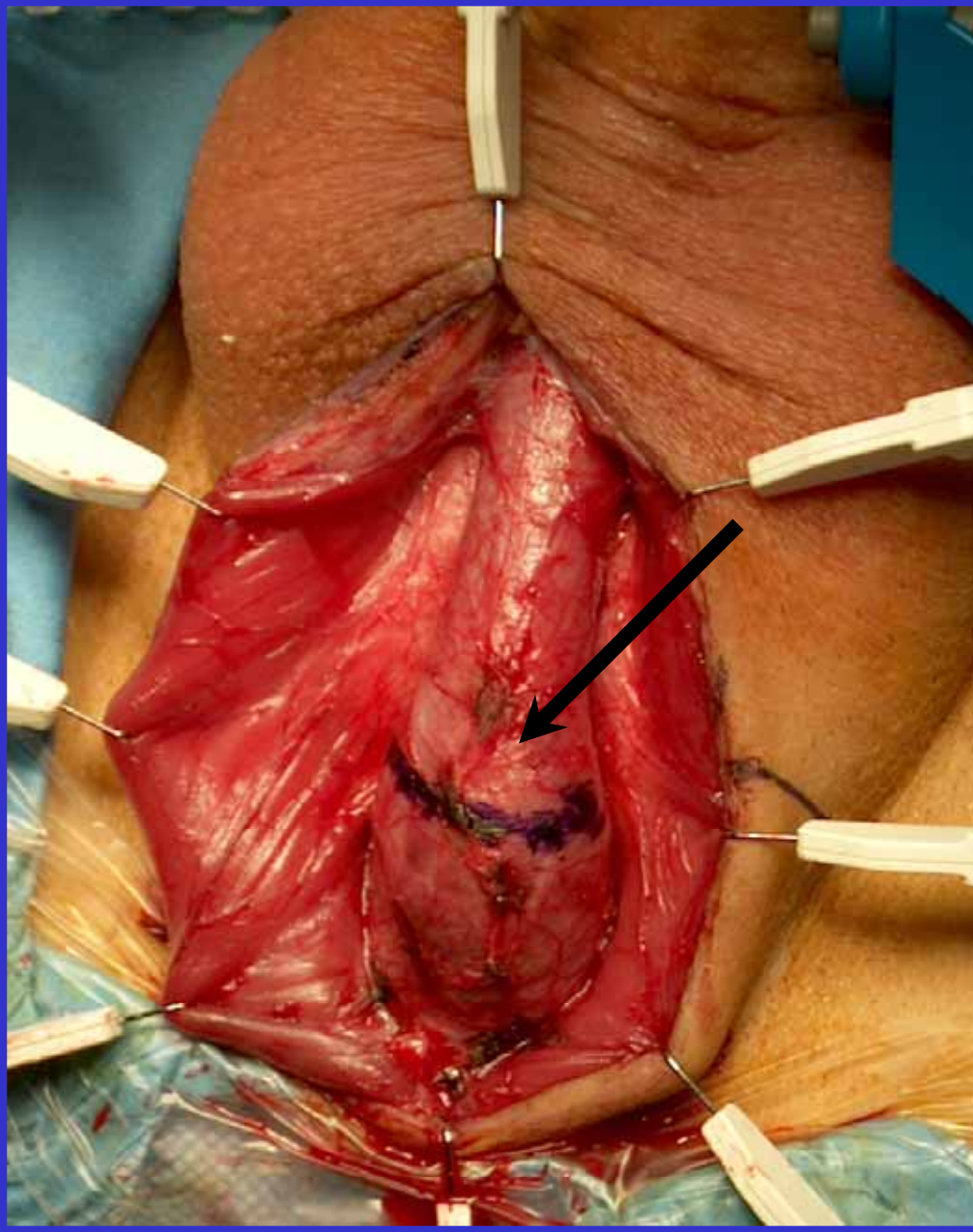






**The urethra is dissected  
from the corpora  
cavernosa**

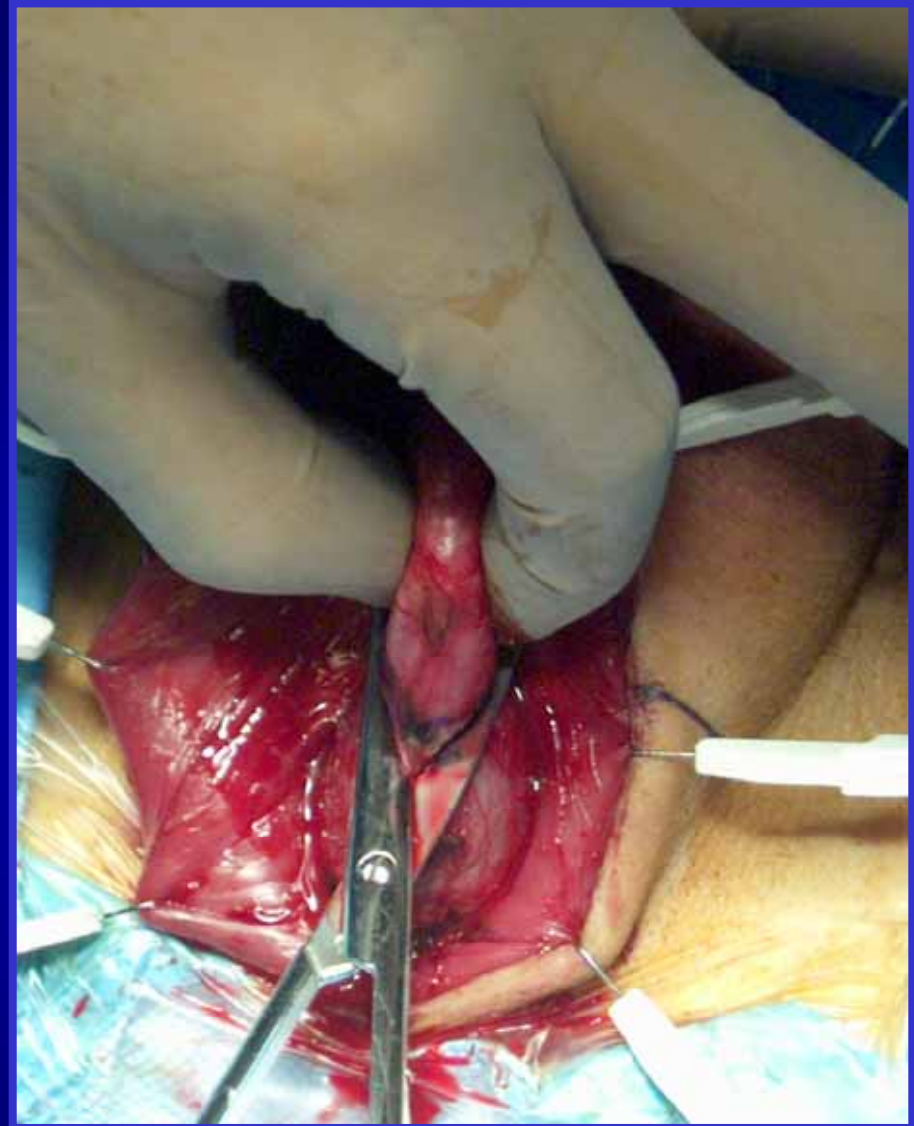
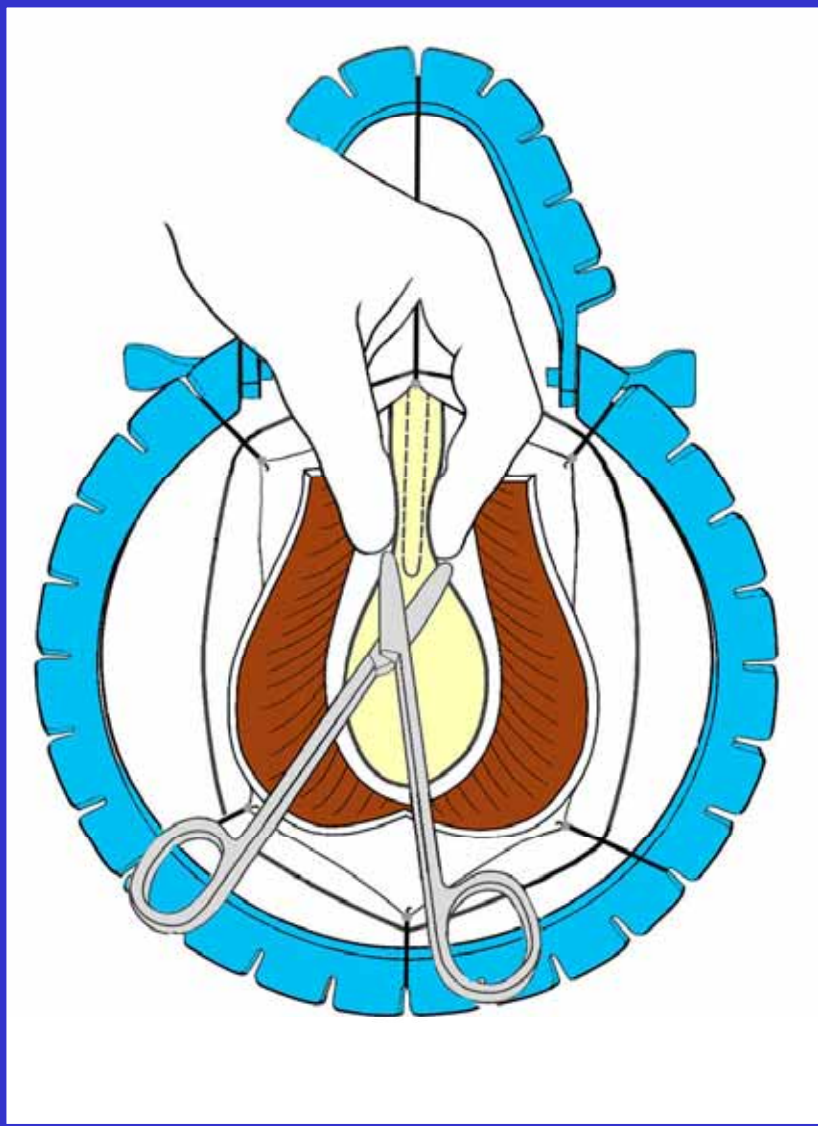




**The distal extent of the  
stenosis is identified  
and outlined**







**The urethra is transected at the stricture level**

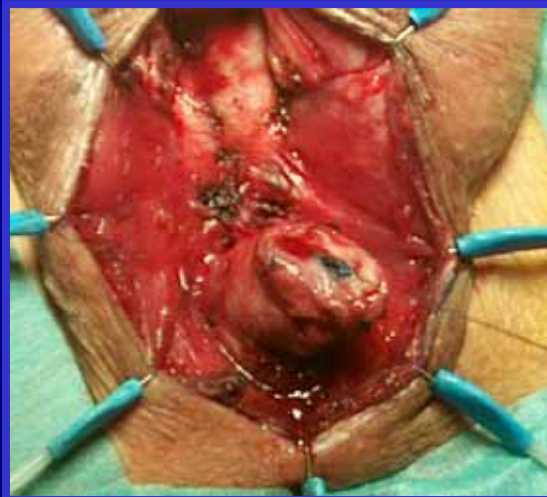


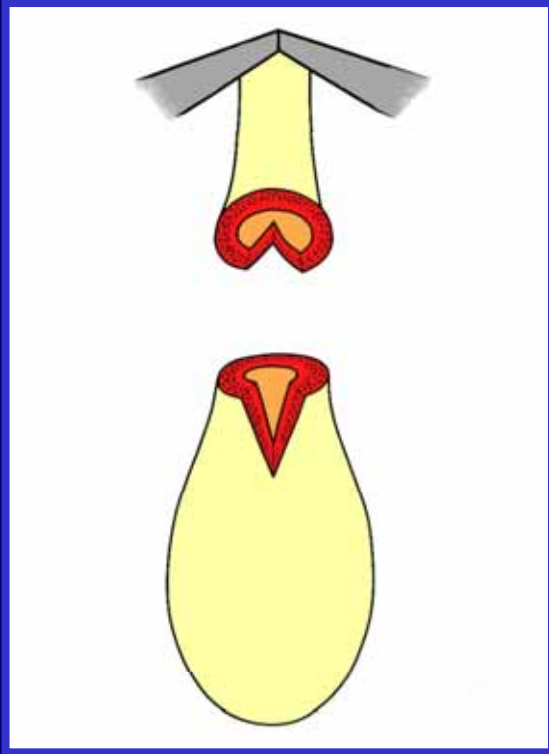


**distal end**

**The stricture is  
removed**

**proximal end**



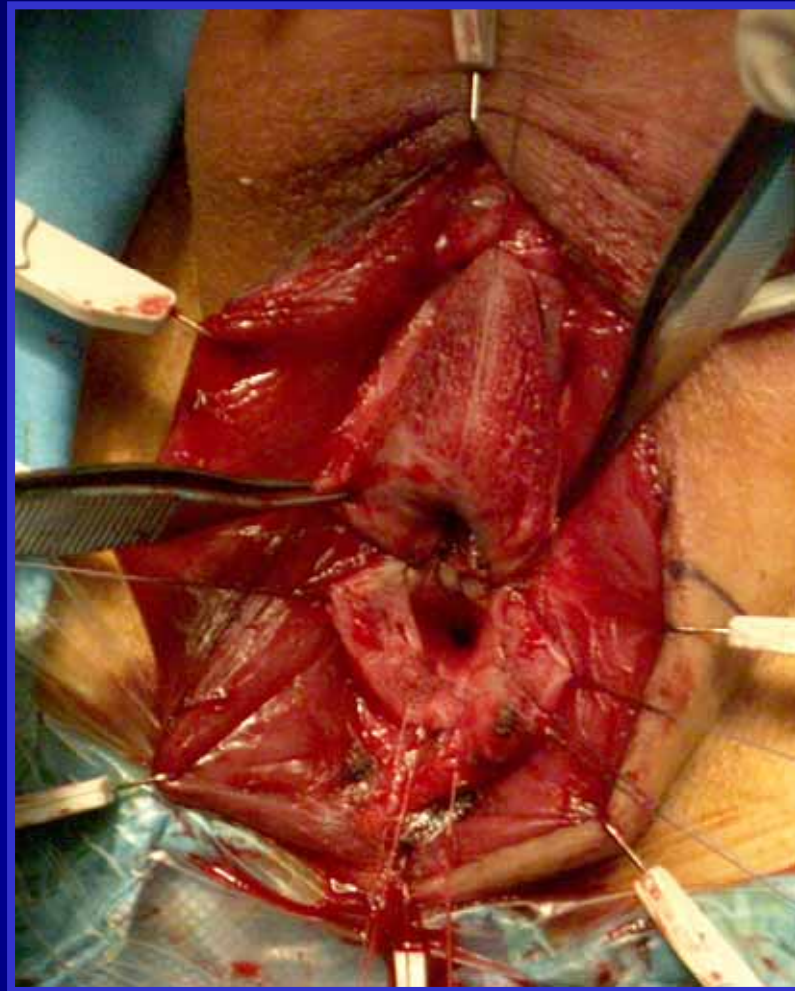
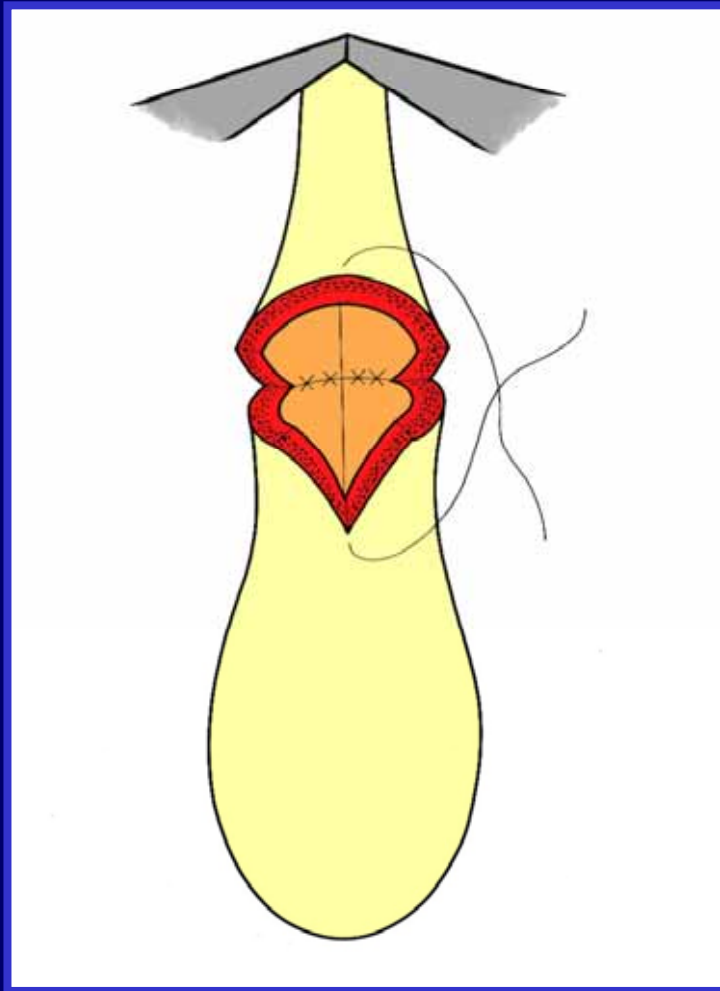


**The urethra is spatuled  
for 1 cm on both ends**



**A total of 8 interrupted 4-  
zero polyglactin sutures  
are put in place before  
tying**

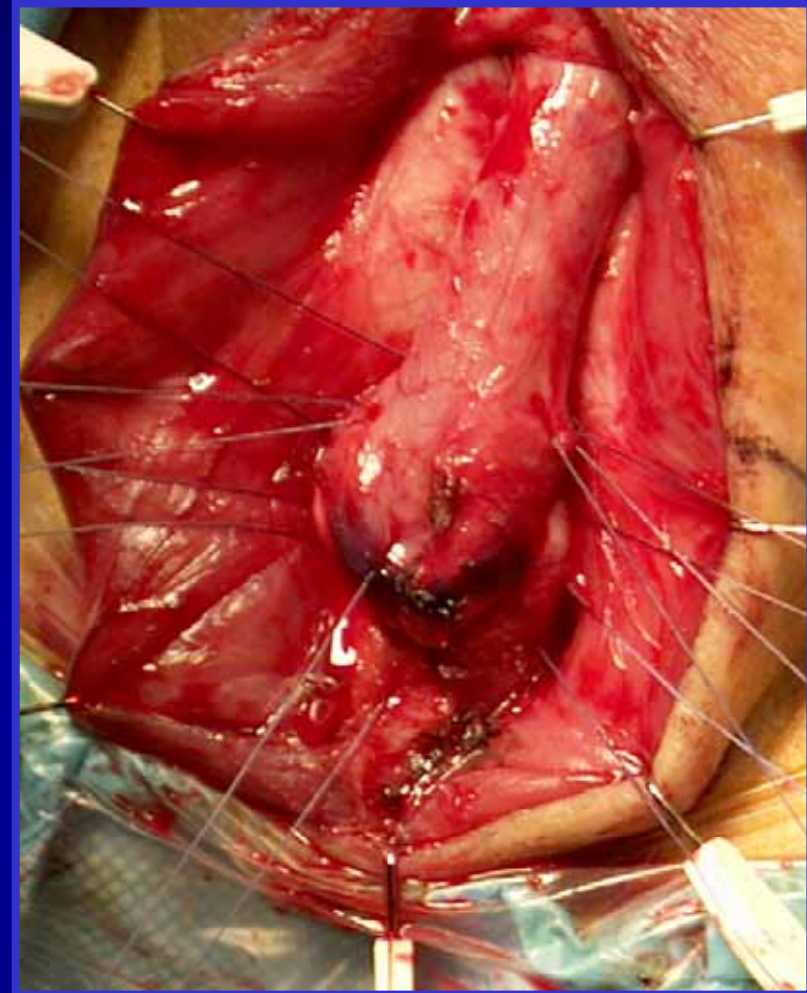
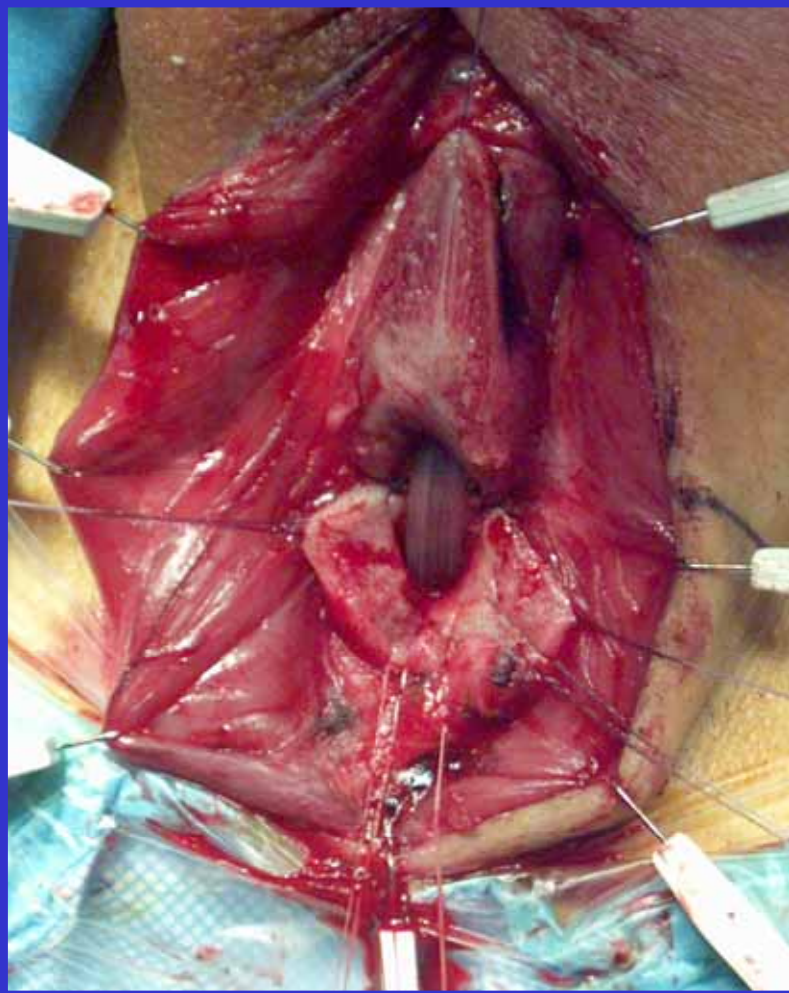




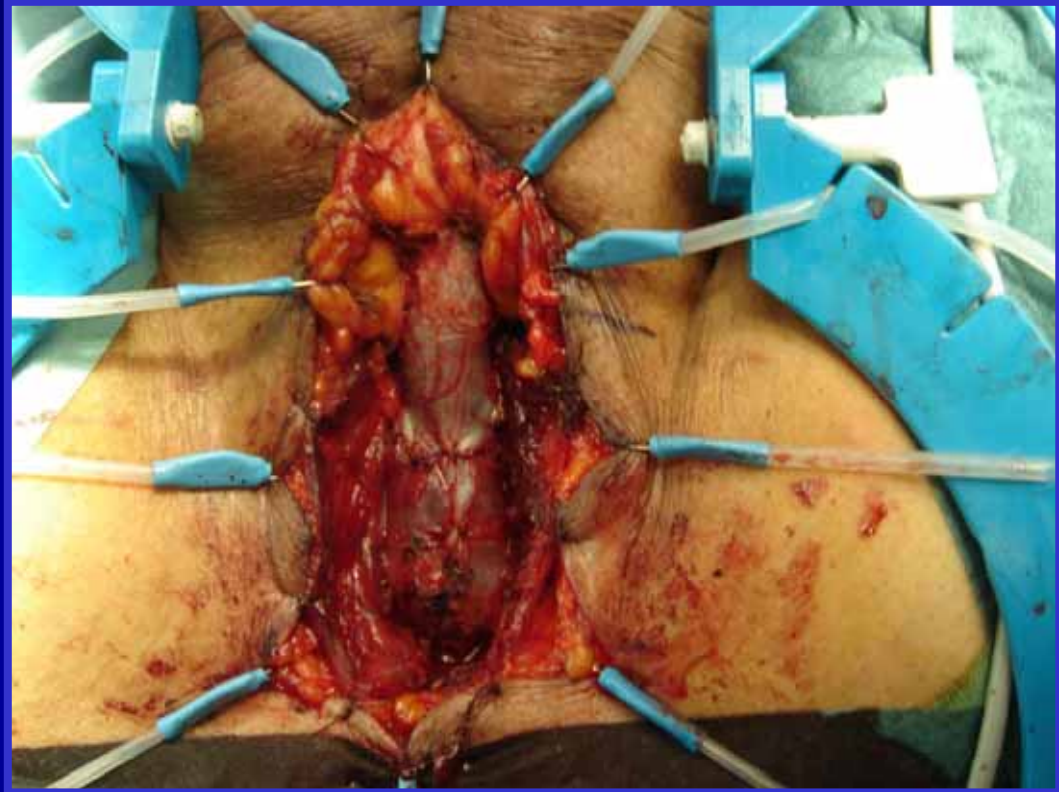
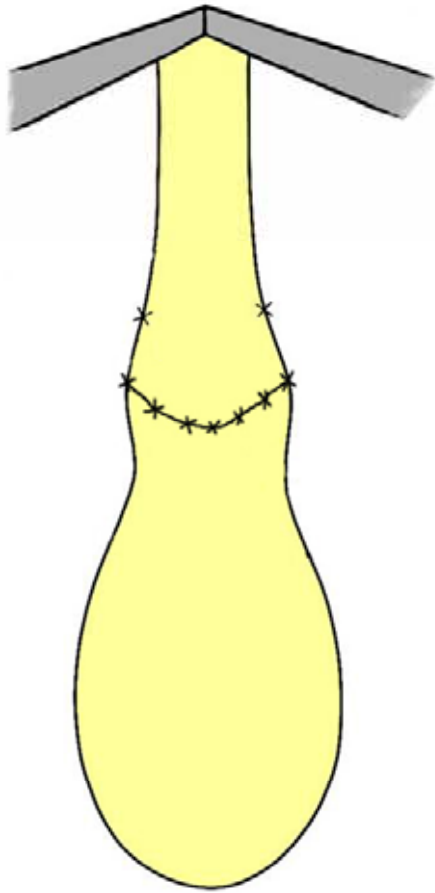
**The anastomosis is completed on the roof**







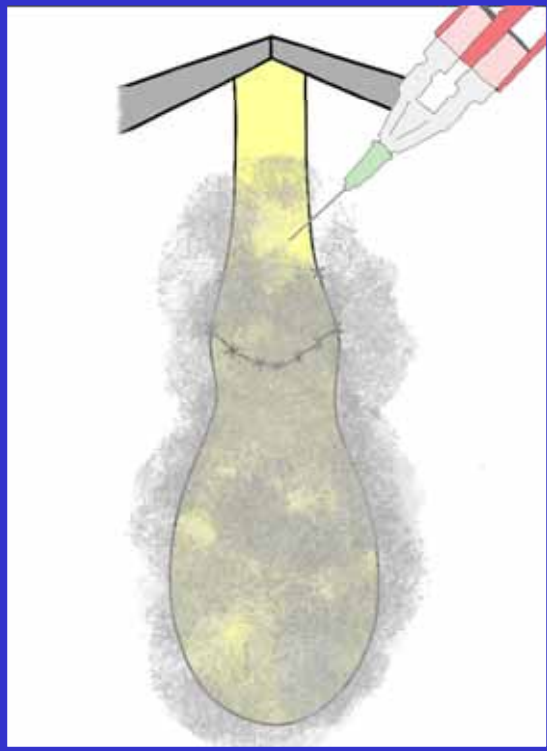
**A Foley 16-French grooved silicone catheter is inserted and the urethra is closed**



**The anastomosis is completed**







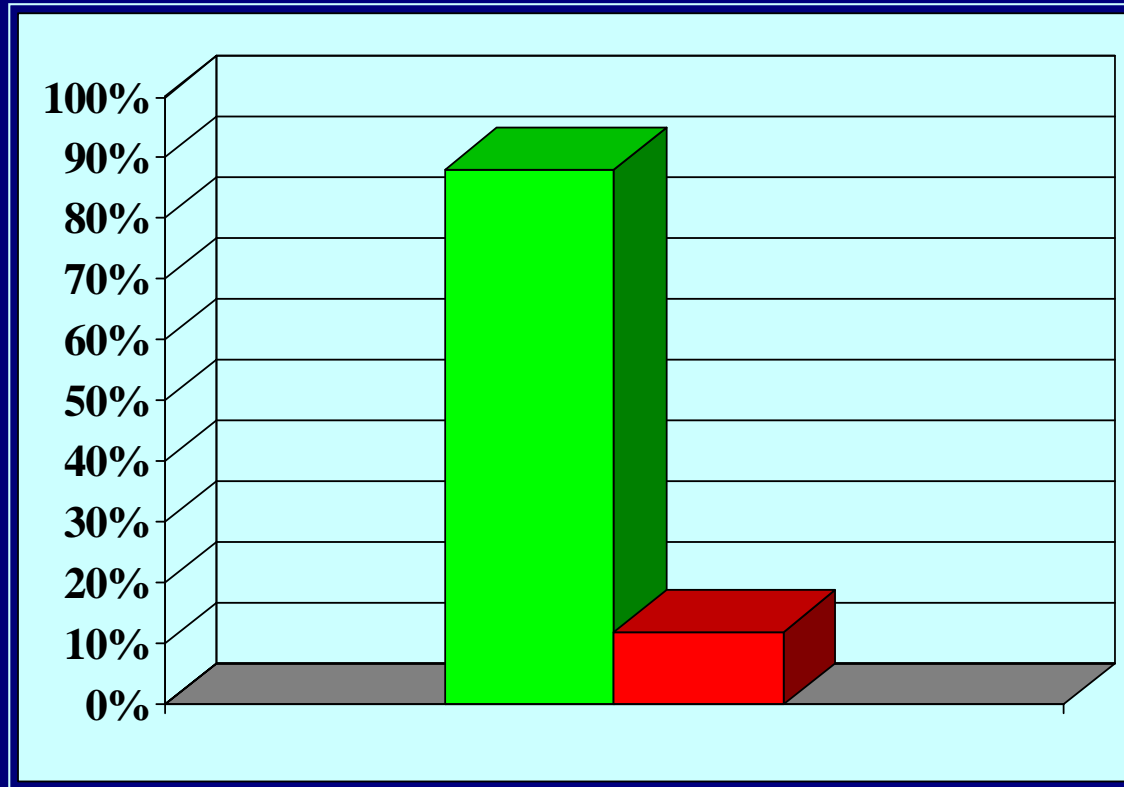
**Two ml of fibrin glue are injected over the urethra to prevent urinary leakage**





# Results of 176 end-to-end anastomosis

Mean follow-up 75 months (12 - 237 months)



■ success

155 (88.1%)

■ failure

21 (11.9%)

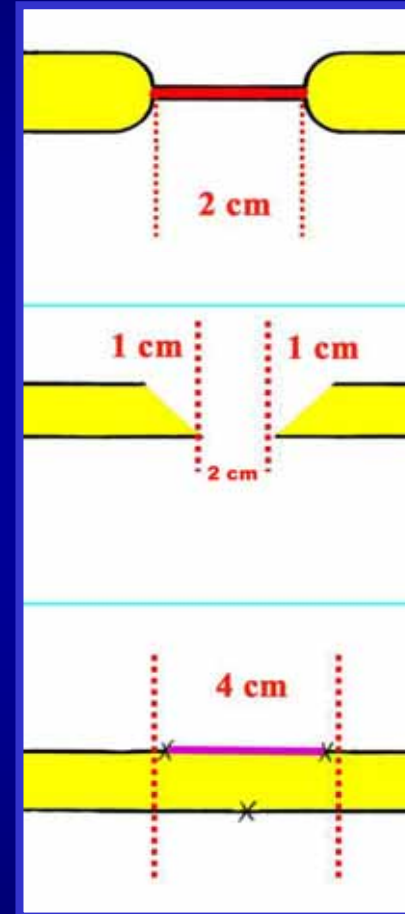
# End-to-end anastomosis

year	N. patients	mean follow-up	success rate
2006	153	64	90.8%
2008	176	75	88.1%
	+ 23		

year	N. patients	success	failure
2006	- 6 (lost)	6	
2007-2008	+ 29	22	7



# Augmented anastomotic repair using dorsal oral mucosal graft



Obliterative urethral stricture ranging from 2 to 3 cm



# Two surgical teams work simultaneously



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# Two sets of surgical instruments



**Oral mucosa**



**Urethroplasty**





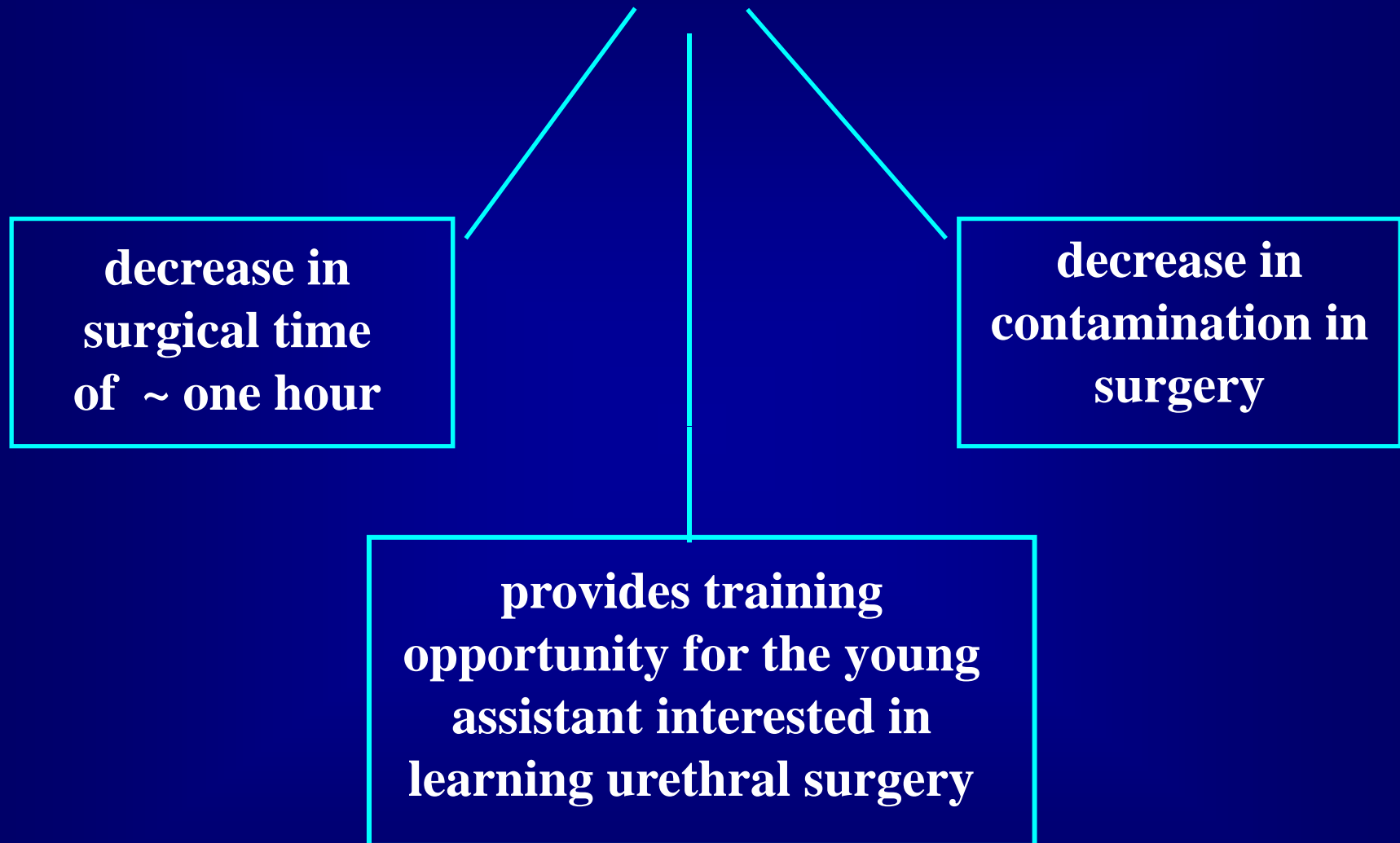
**Appropriate mouth  
retractor**

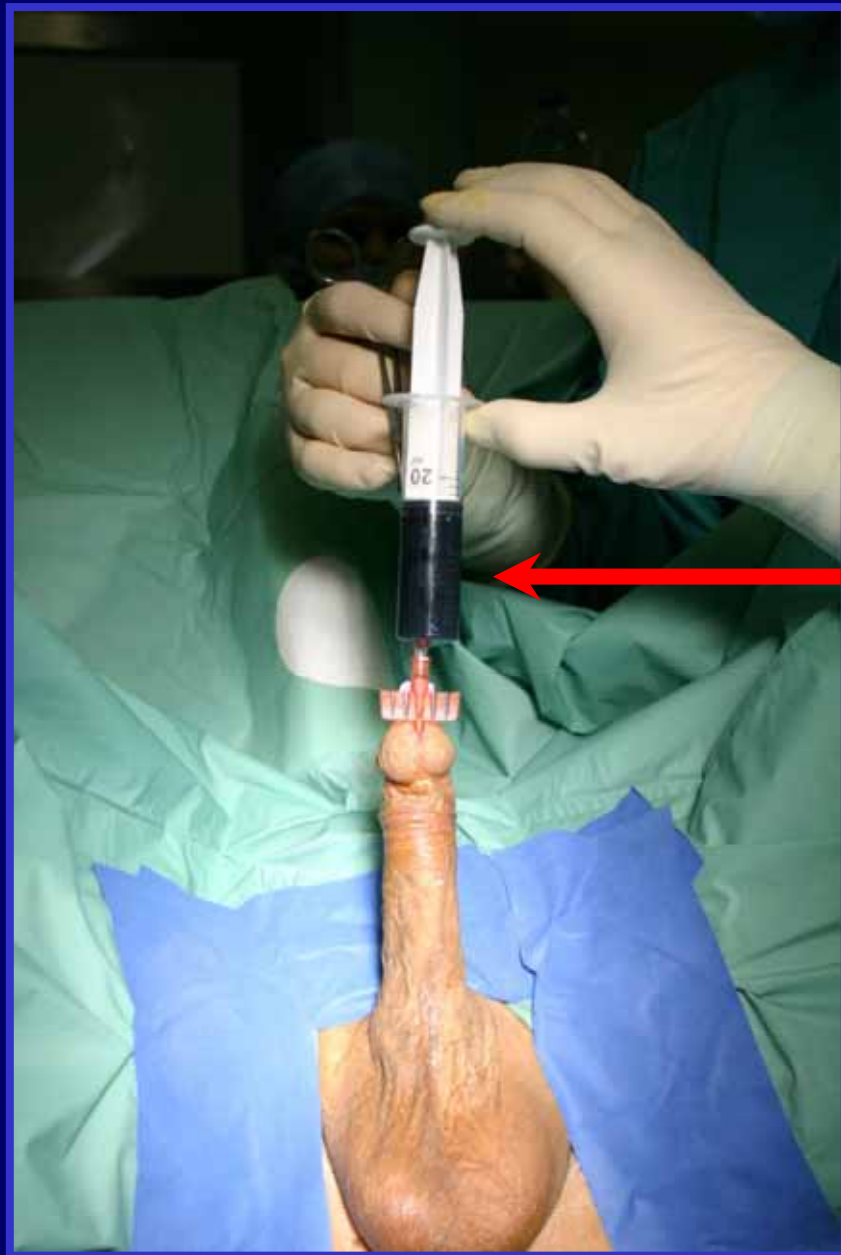


**Only one assistant is needed  
to harvest the oral graft**



# Advantages of the double team

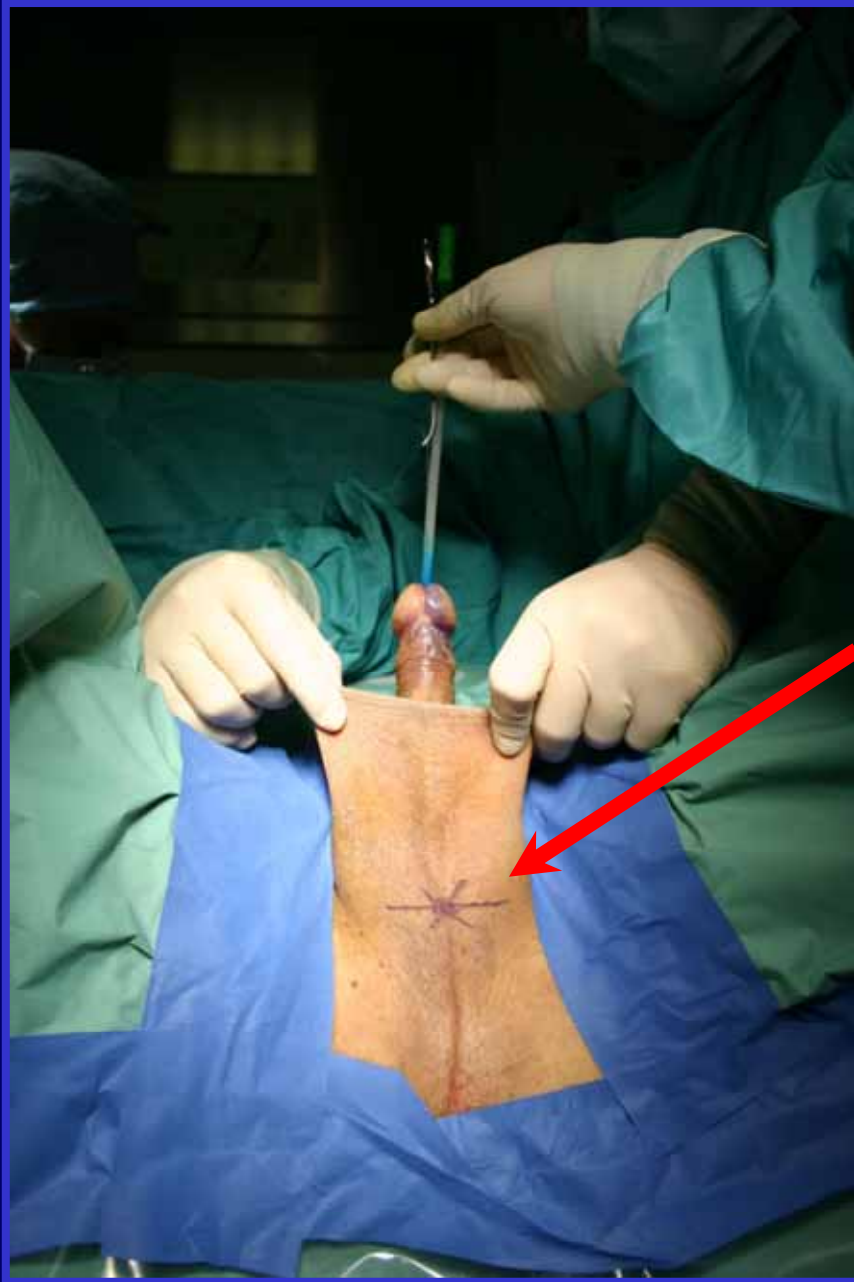




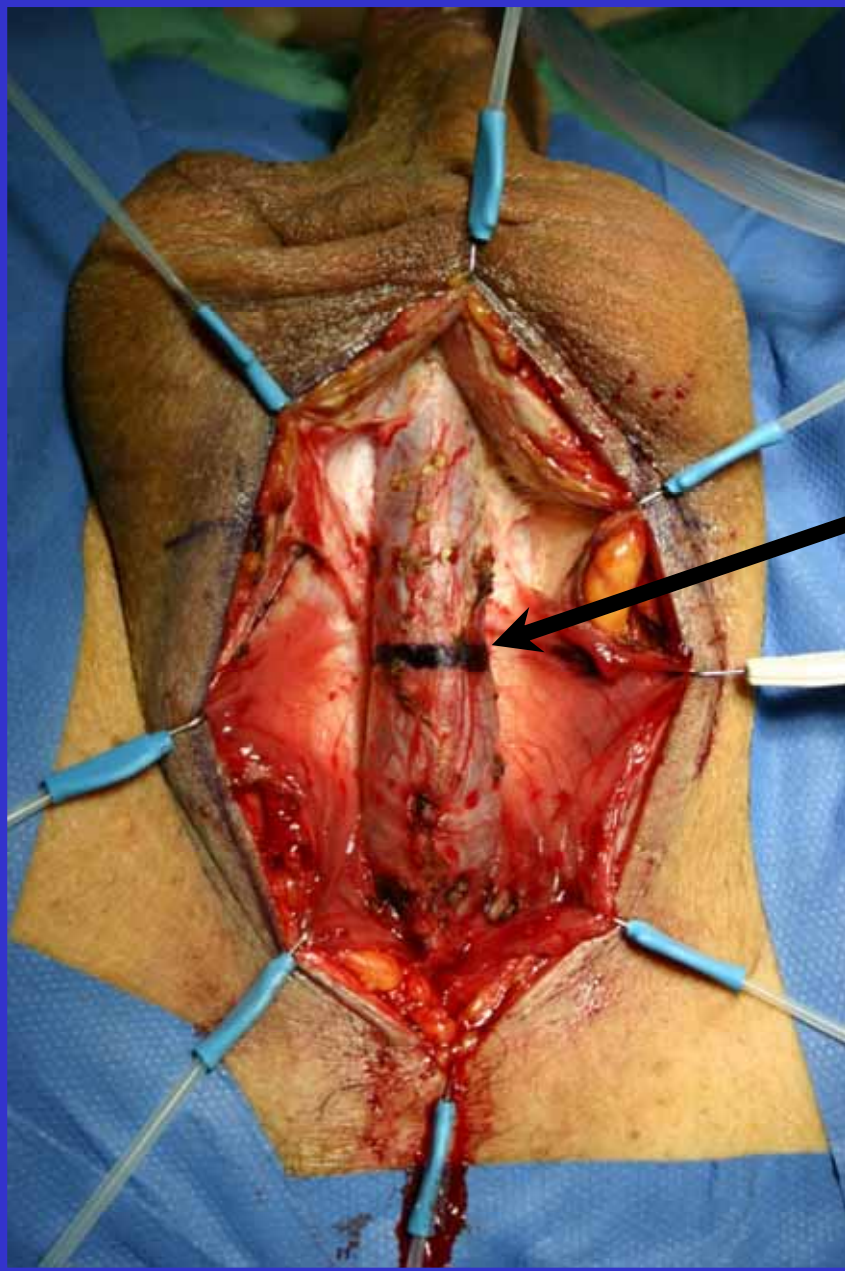
**Methylene blue is injected  
into the urethra**



**The distal extent of the stenosis is identified by inserting a 16-French catheter with a soft round tip**



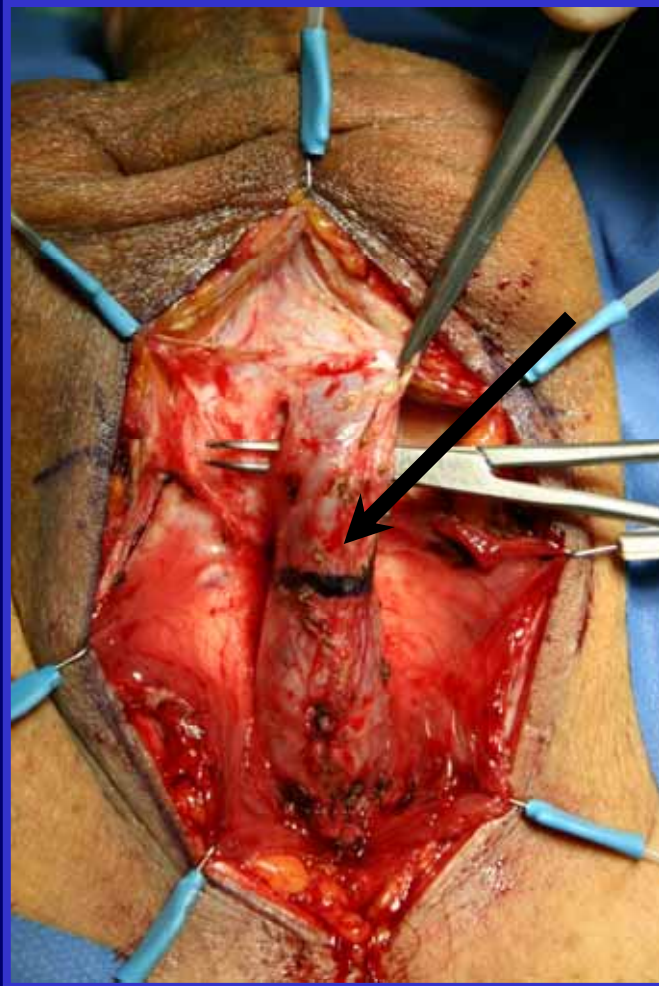
**Midline perineal incision**



**The distal extent of the stenosis is identified and outlined**

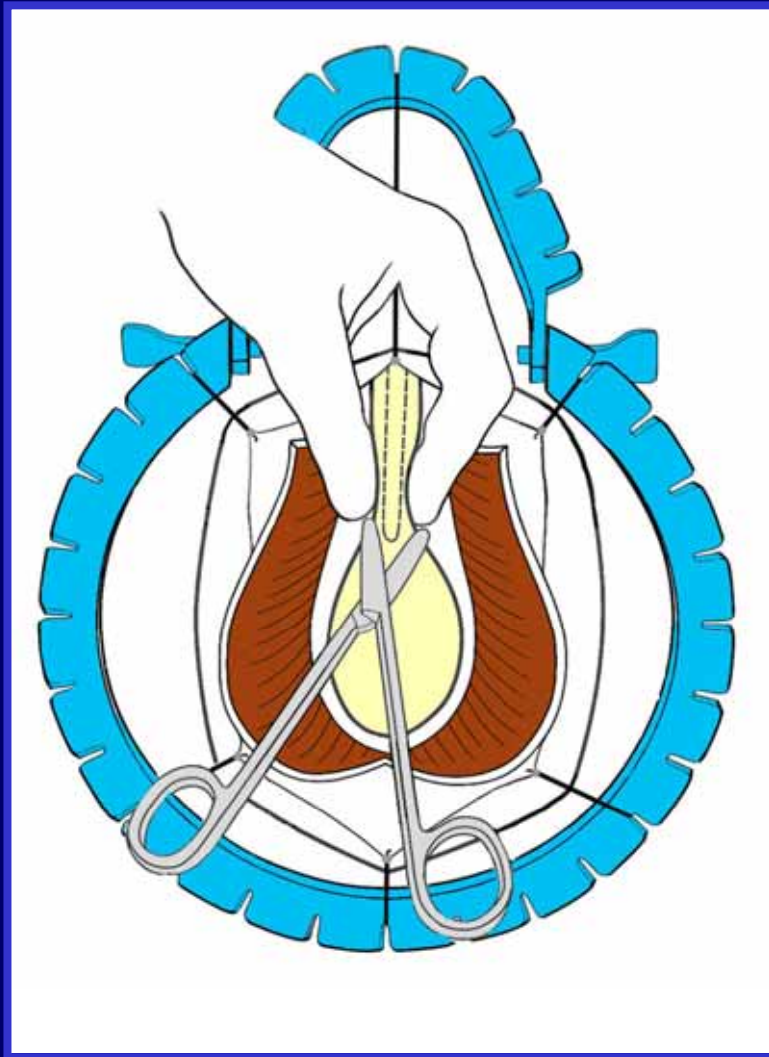




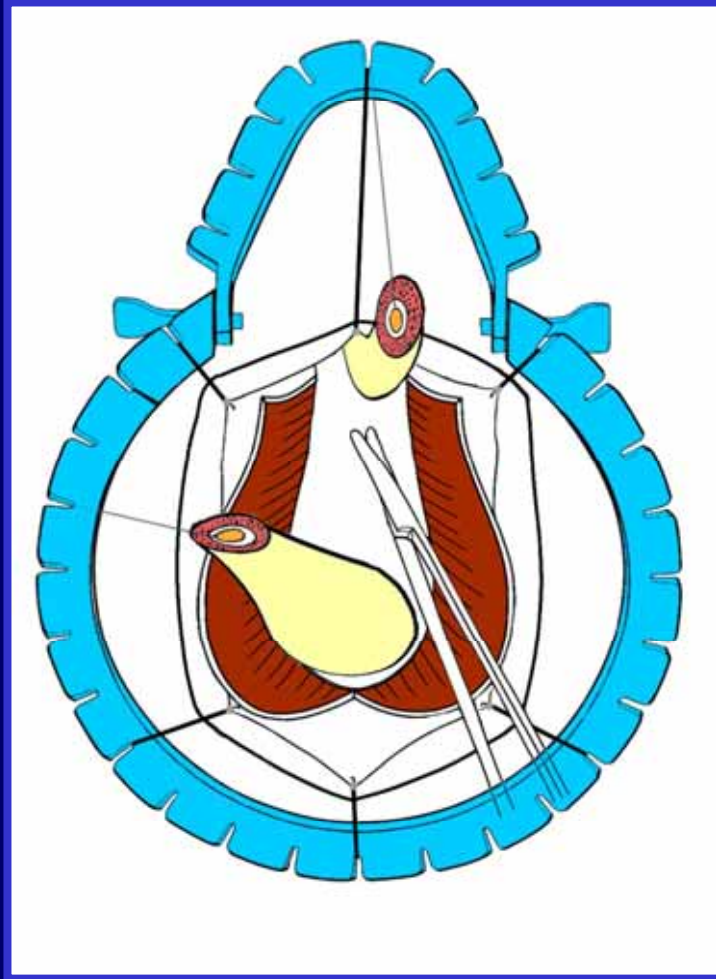


**The urethra is dissected from the corpora cavernosa**



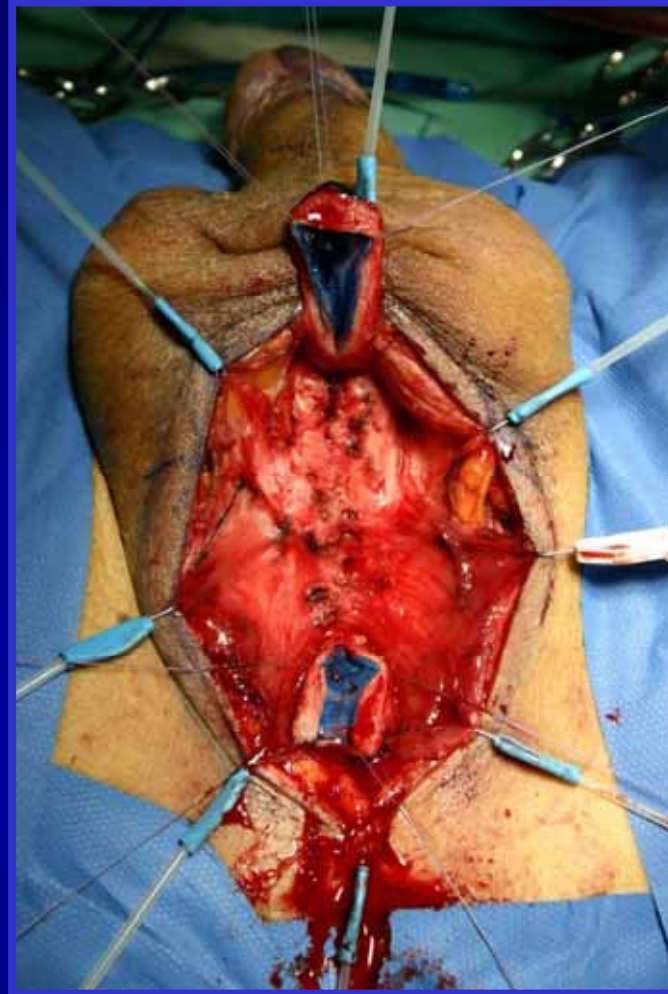
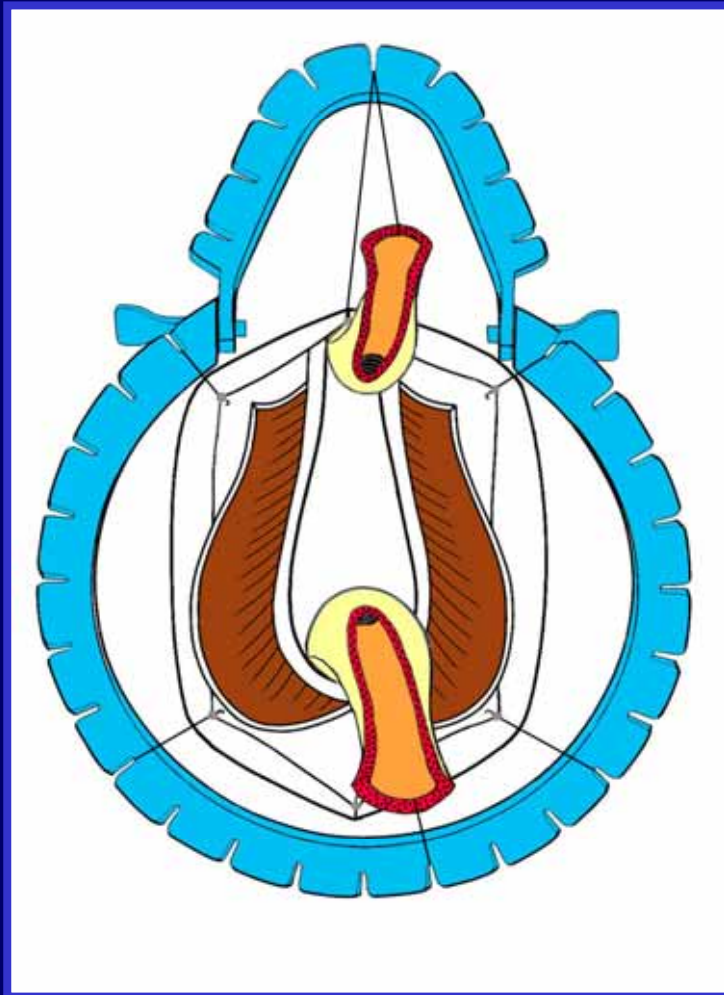


**The urethra is transected at the stricture level**

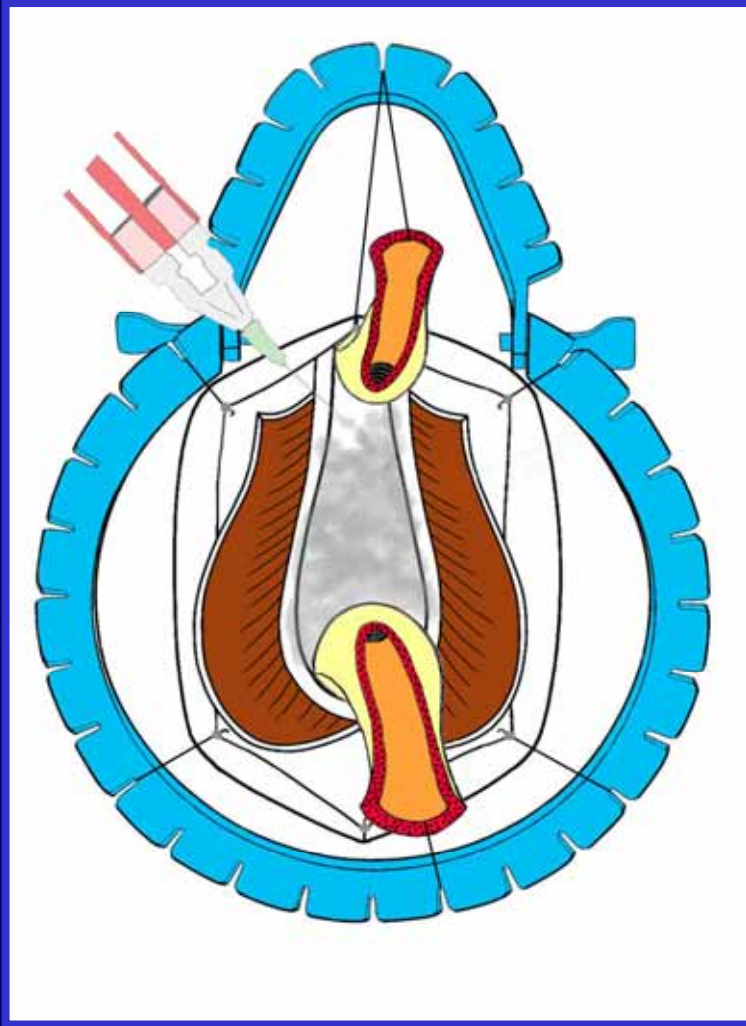


**The distal and proximal urethral ends are mobilized from the corpora cavernosa**



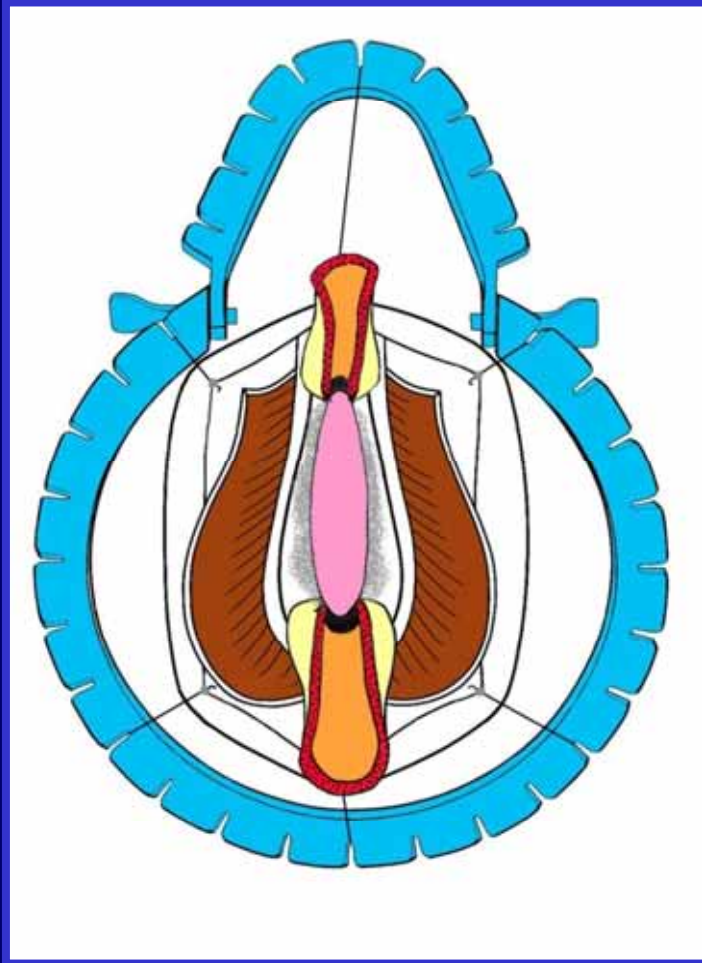


**The distal and proximal urethral ends are fully spatuled along the dorsal surface**

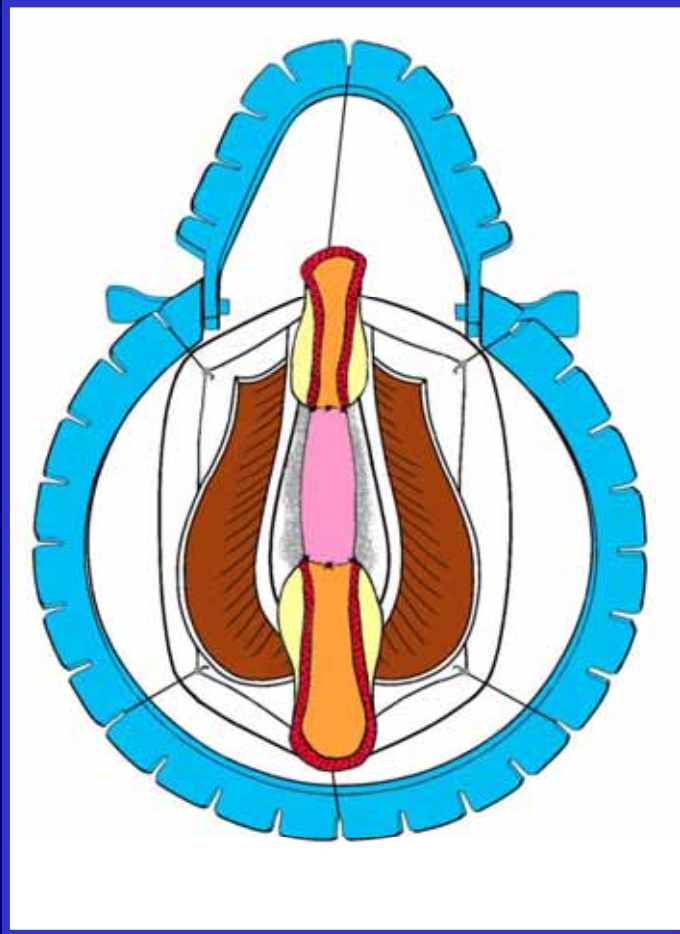


**Two ml of fibrin glue are injected over the corpora cavernosa**

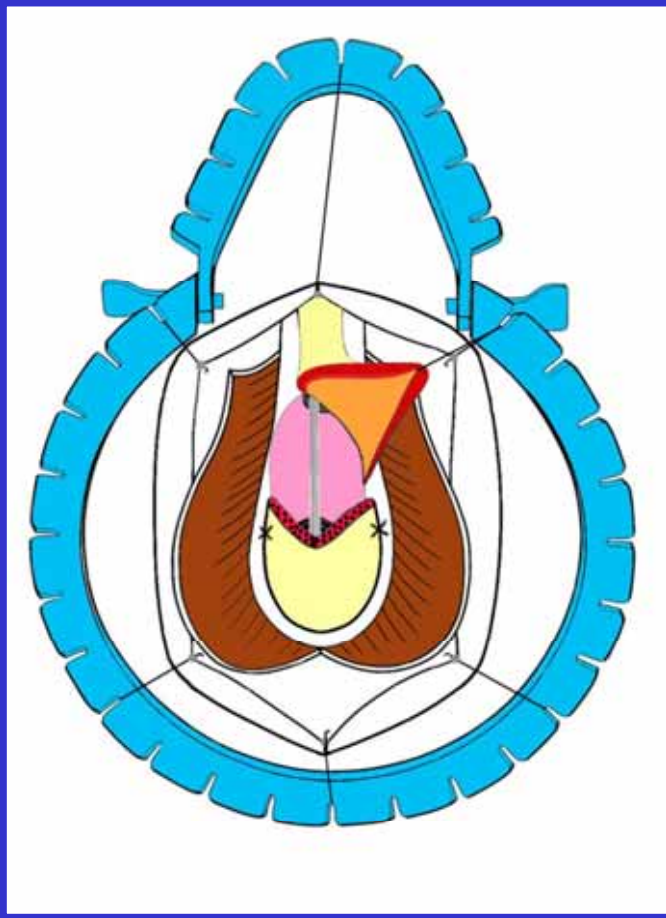




**The oral mucosal graft is applied over the fibrin glue**



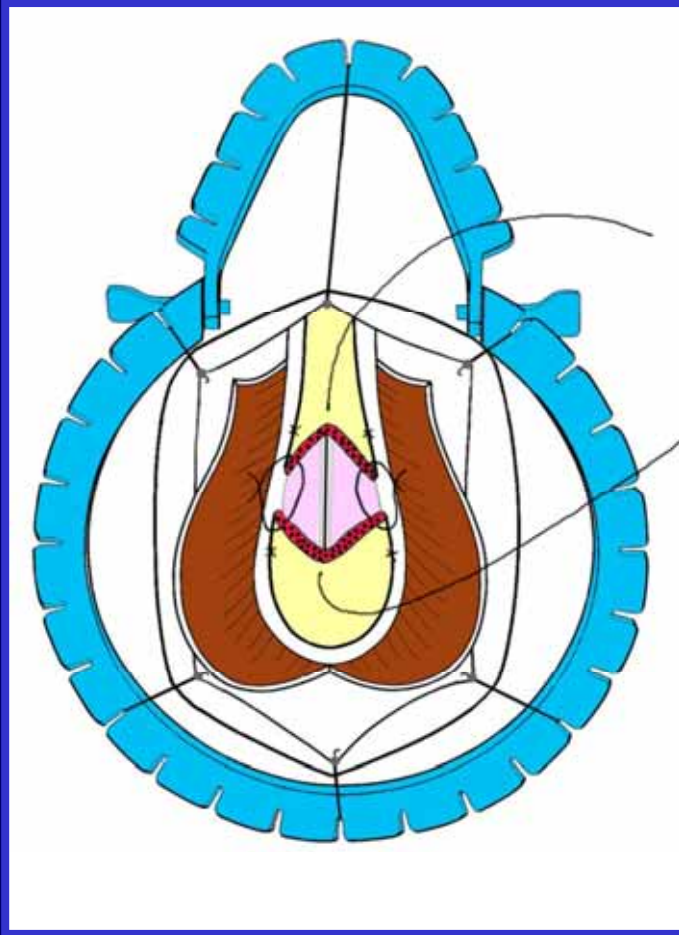
**The distal and proximal urethral edges are sutured to the apices of the graft**



**The distal urethra is pulled down and the proximal urethra is pulled up to cover the graft**

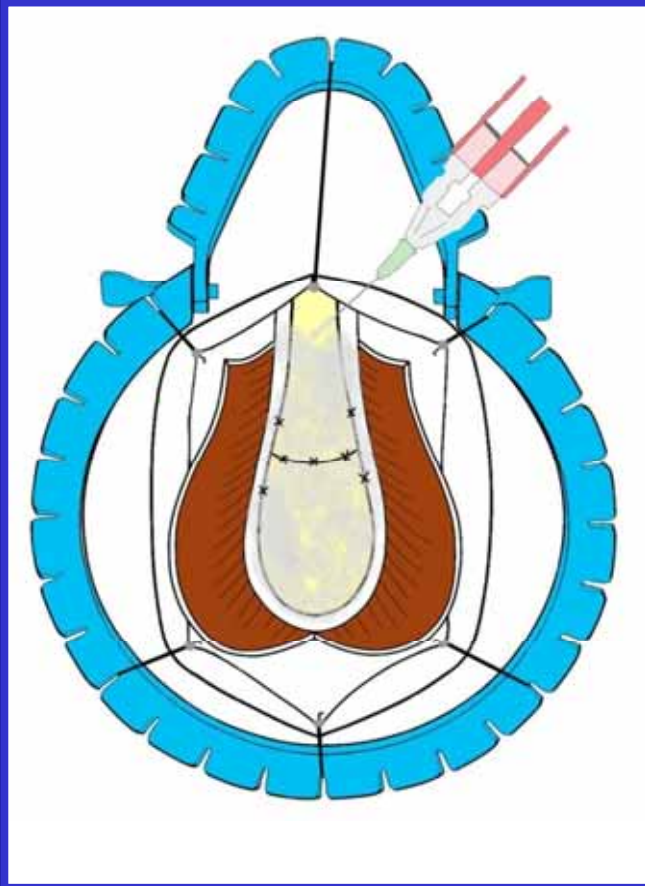






**The distal and proximal urethral edges are sutured together along the midline as an end-to-end anastomosis**

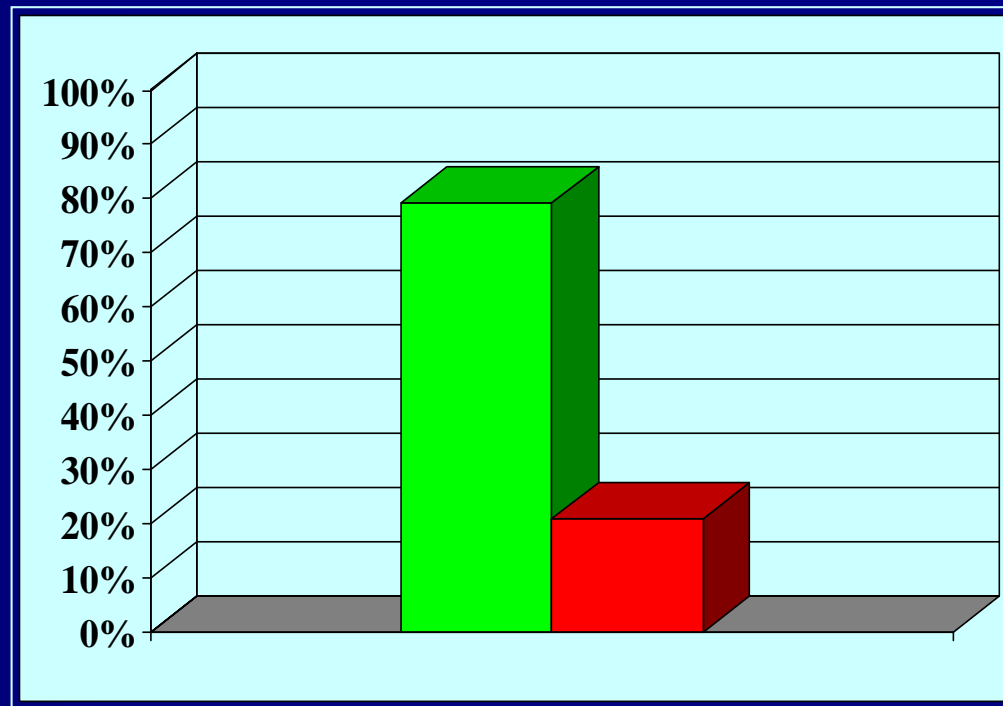




**Two ml of fibrin glue are injected over the urethra to prevent urinary leakage**

# Results on 24 patients who underwent augmented anastomotic repair using dorsal oral mucosal graft

Mean follow-up 48 months (25 – 78 months)



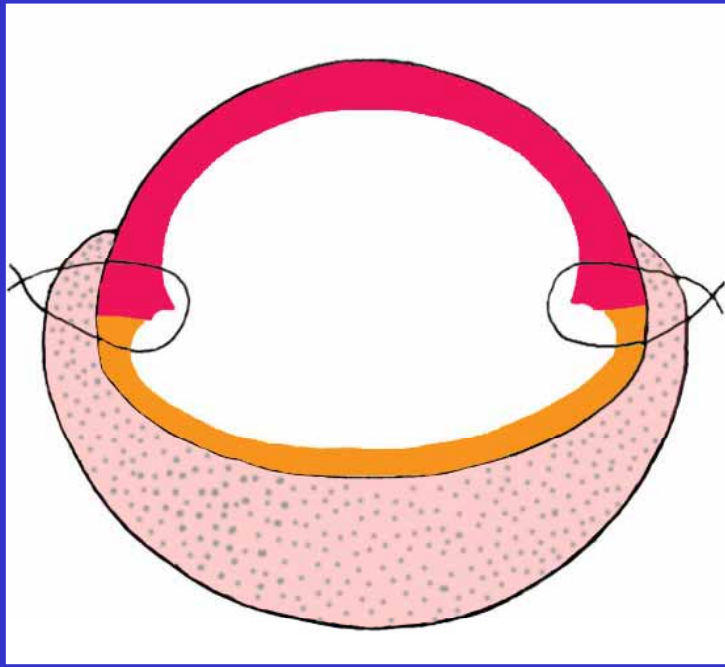
■ success	19 (79.2%)
■ failure	5 (20.8%)

# Oral mucosal graft urethroplasty

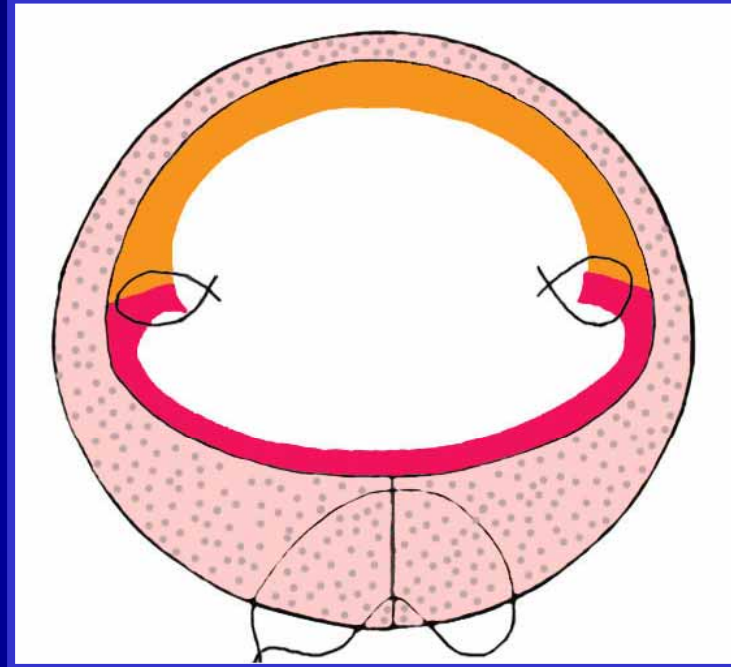


Urethral stricture more than 3 cm in length





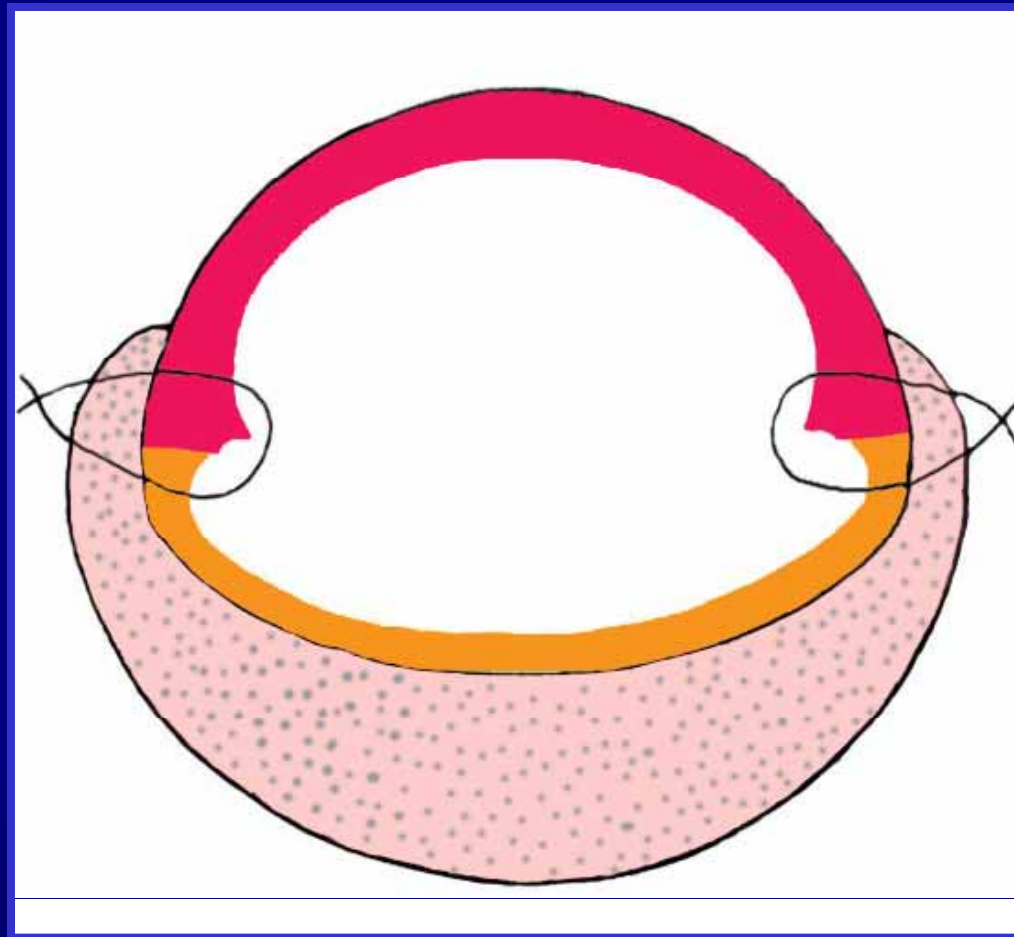
**Dorsal onlay graft**

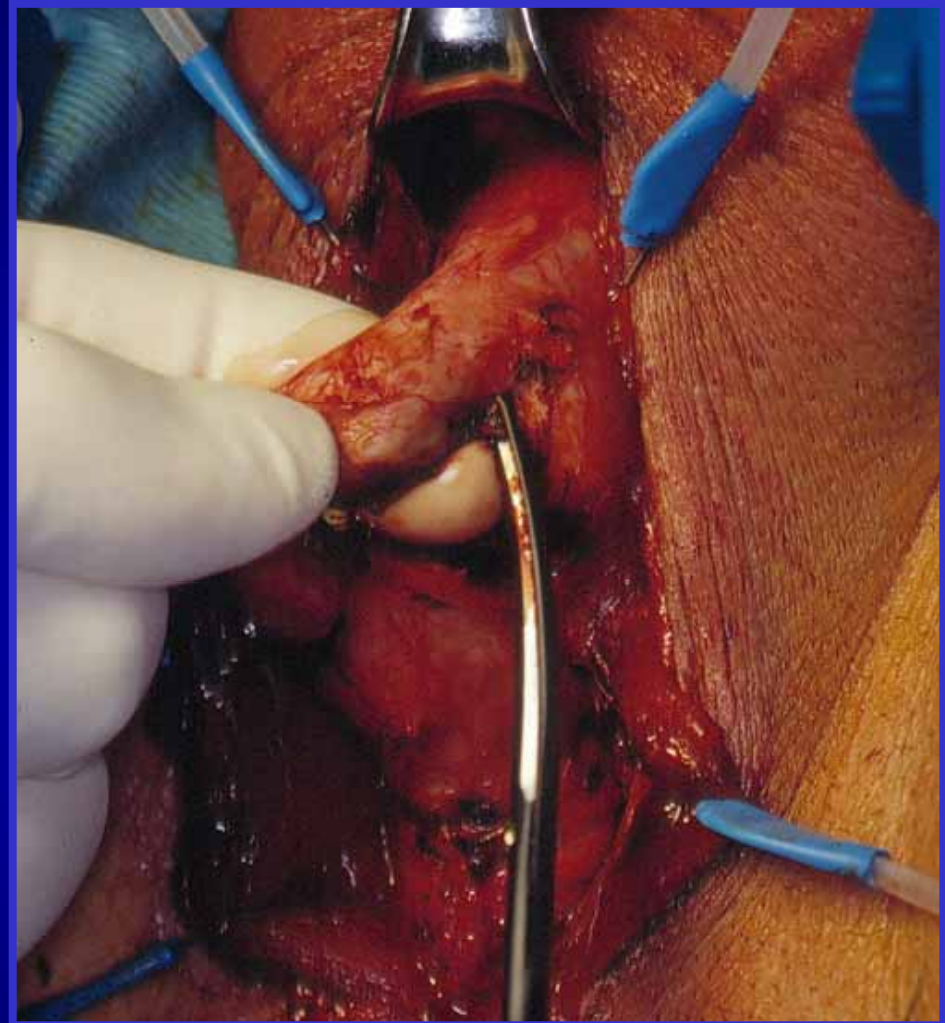
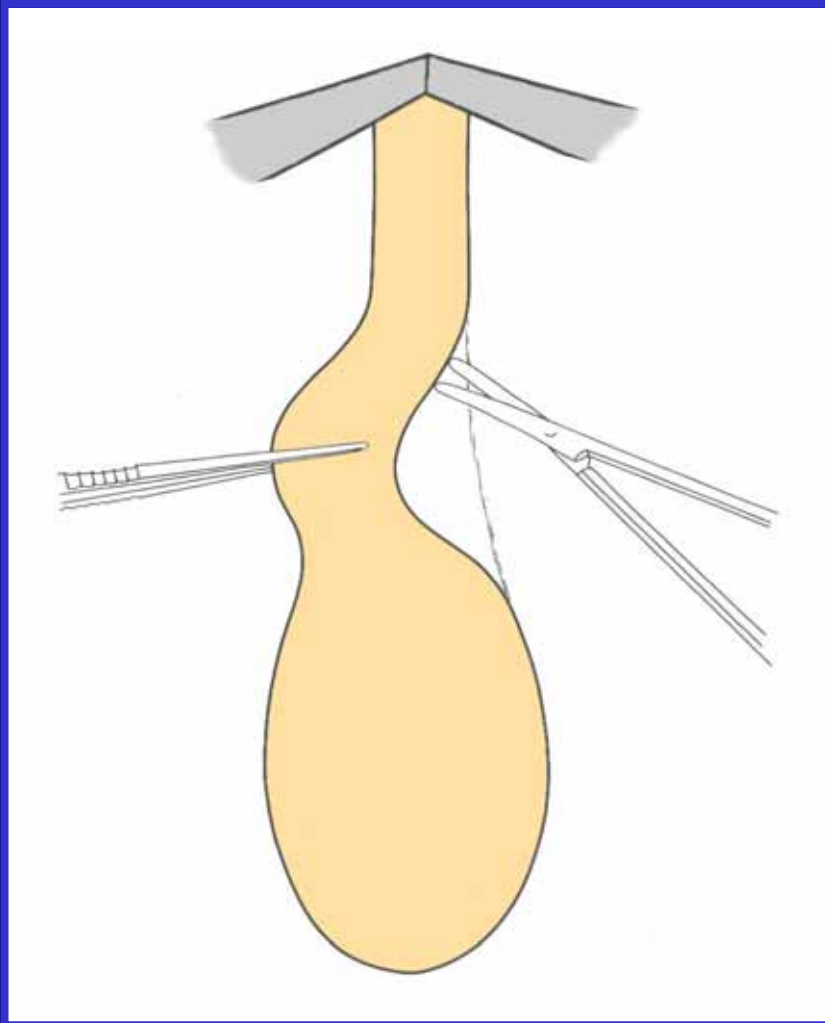


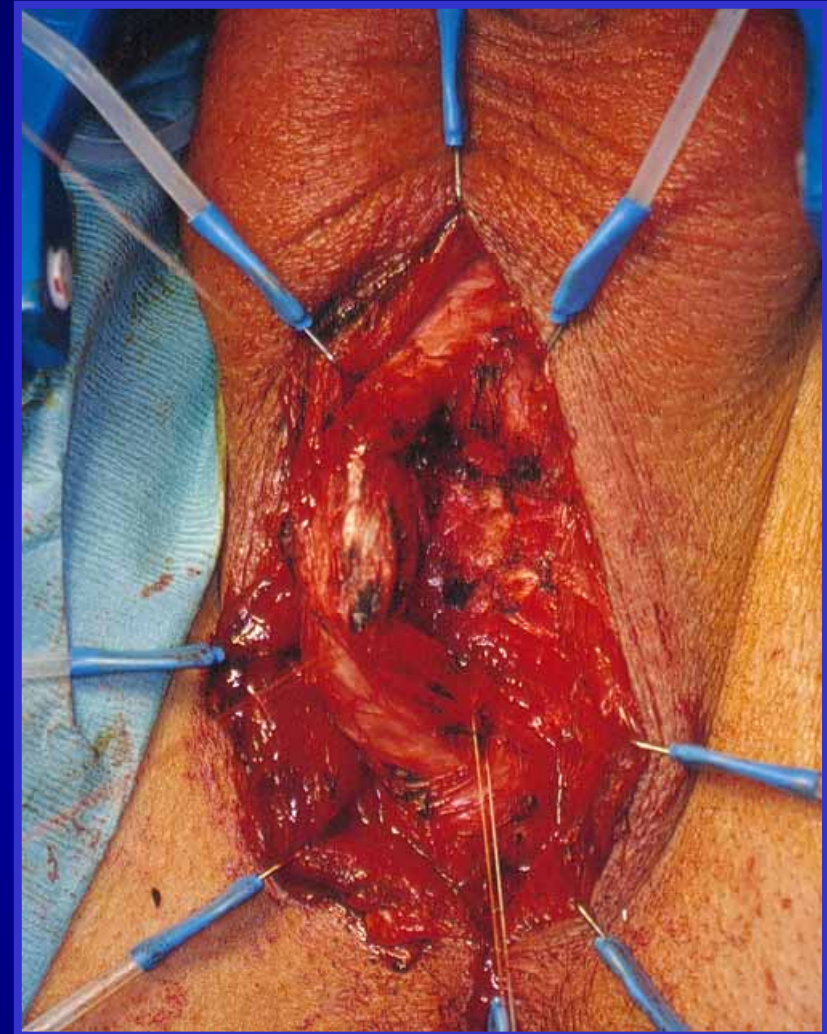
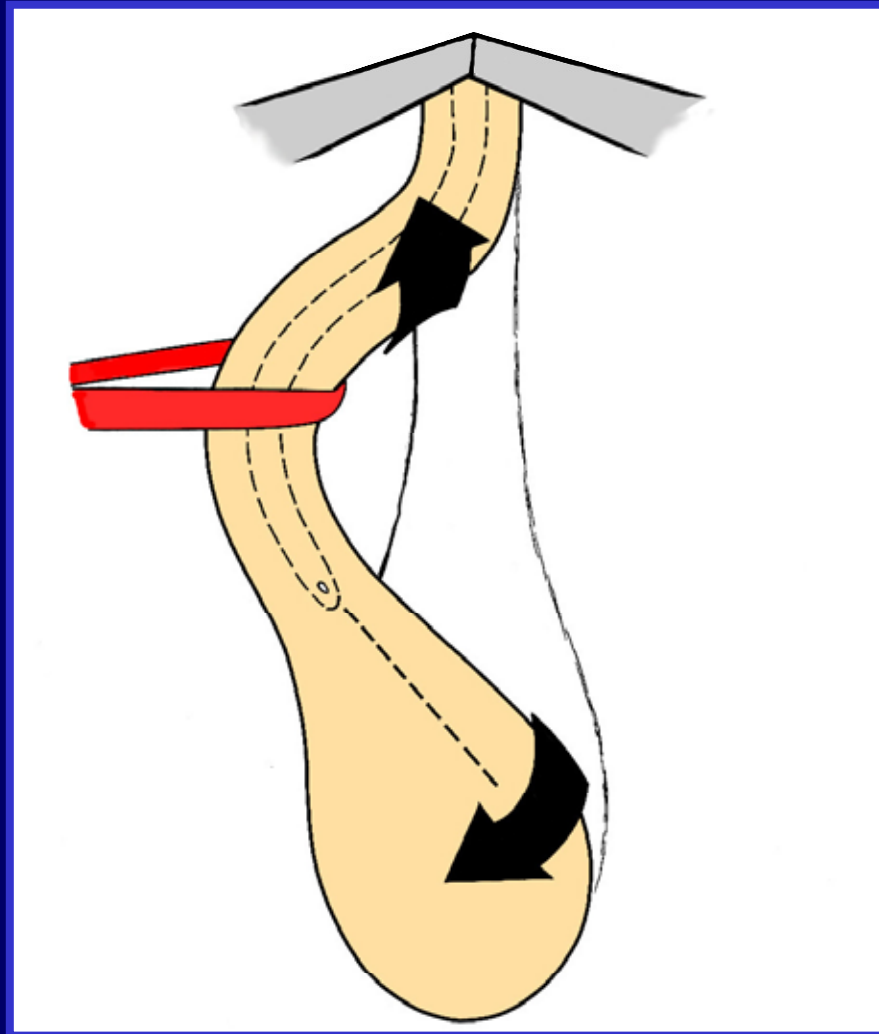
**Ventral onlay graft**



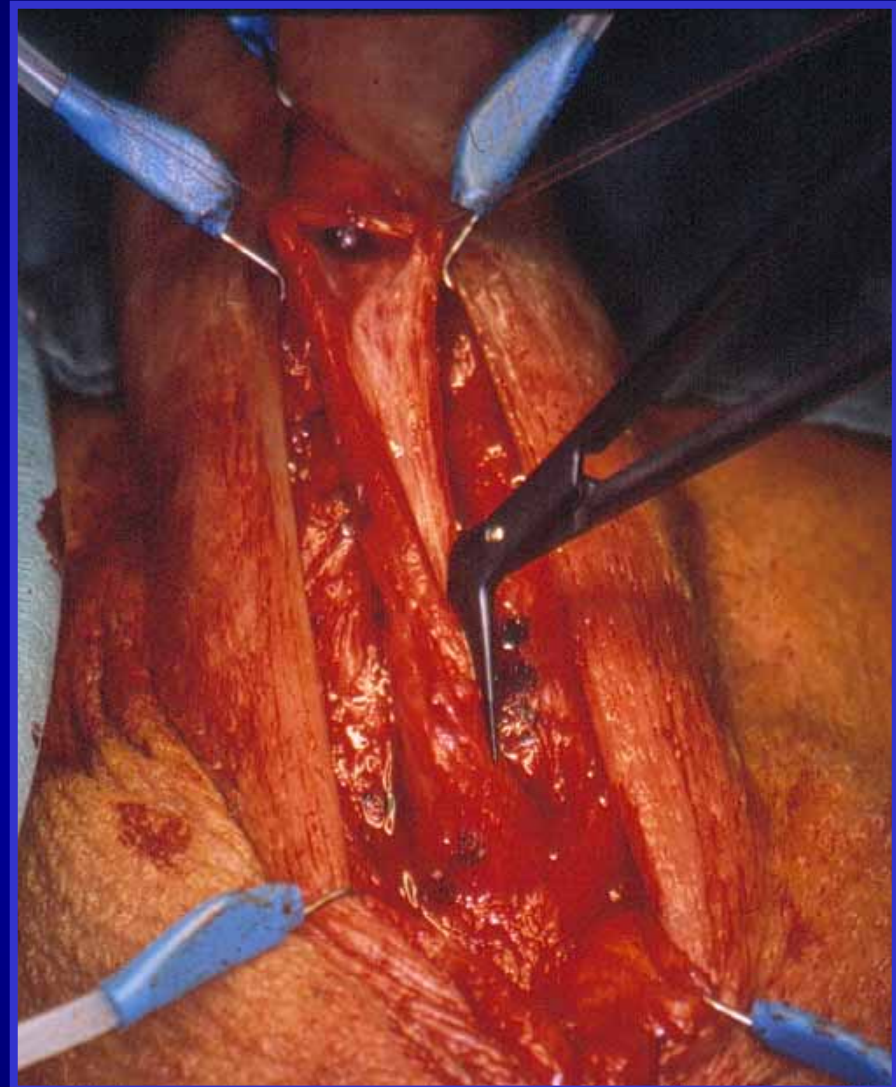
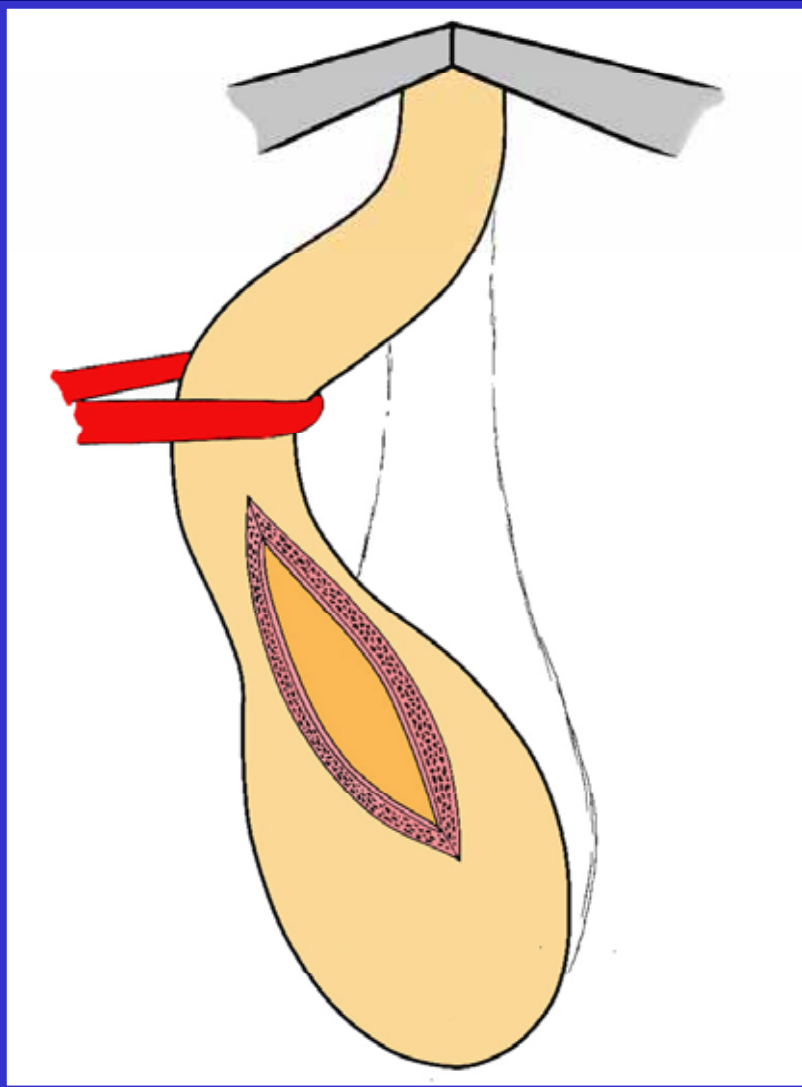
# Dorsal oral mucosal onlay graft urethroplasty



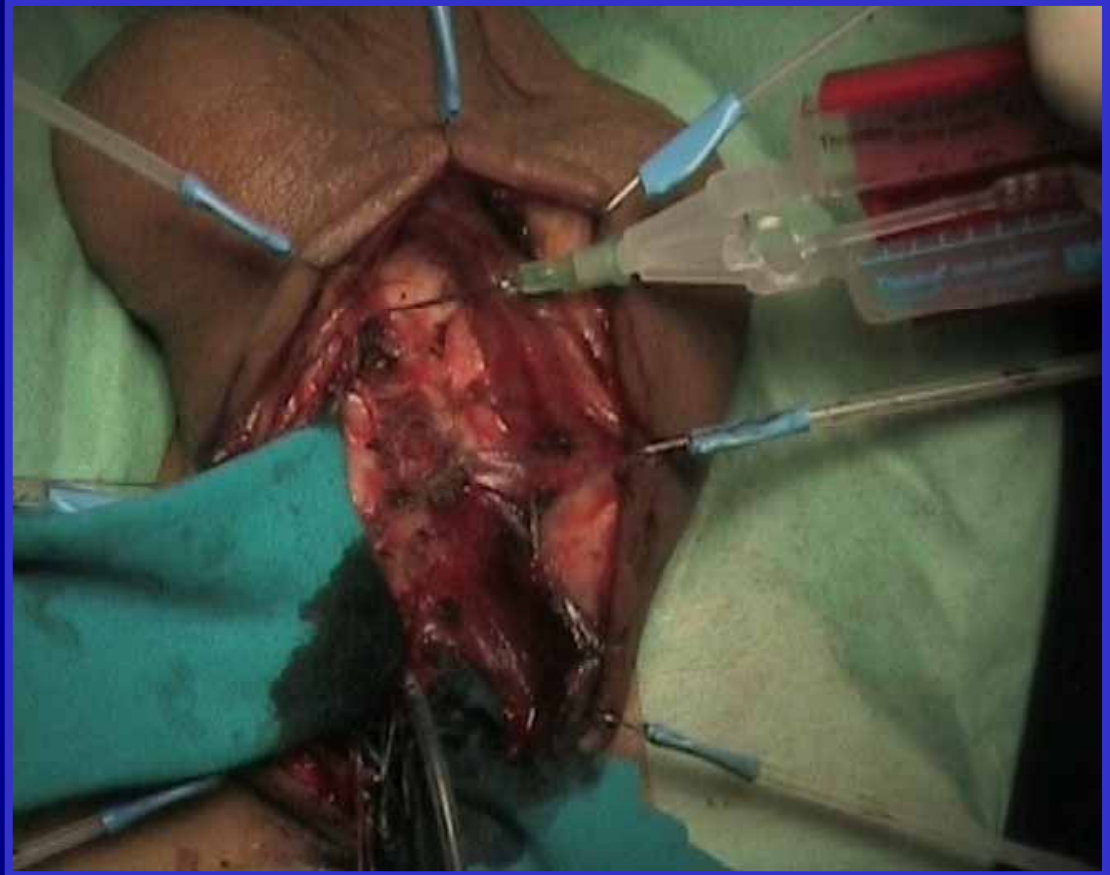
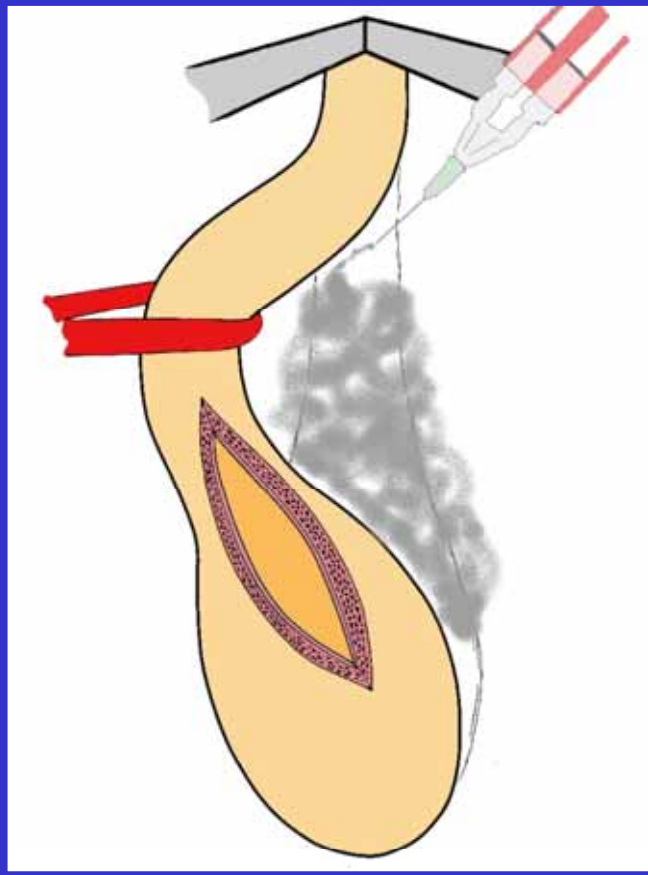


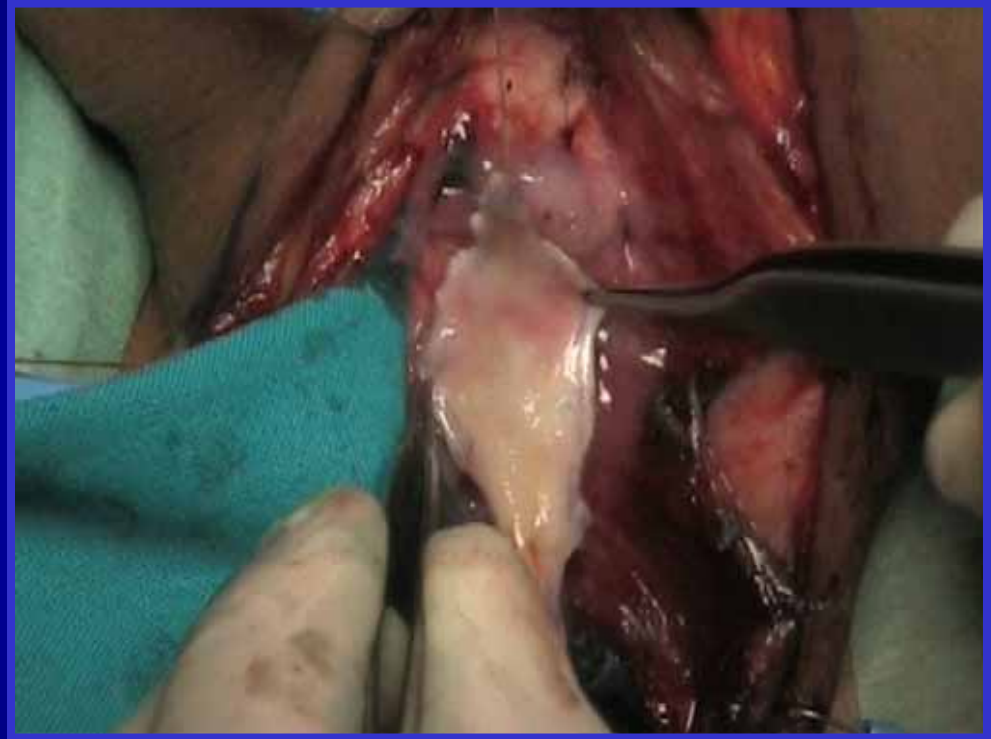
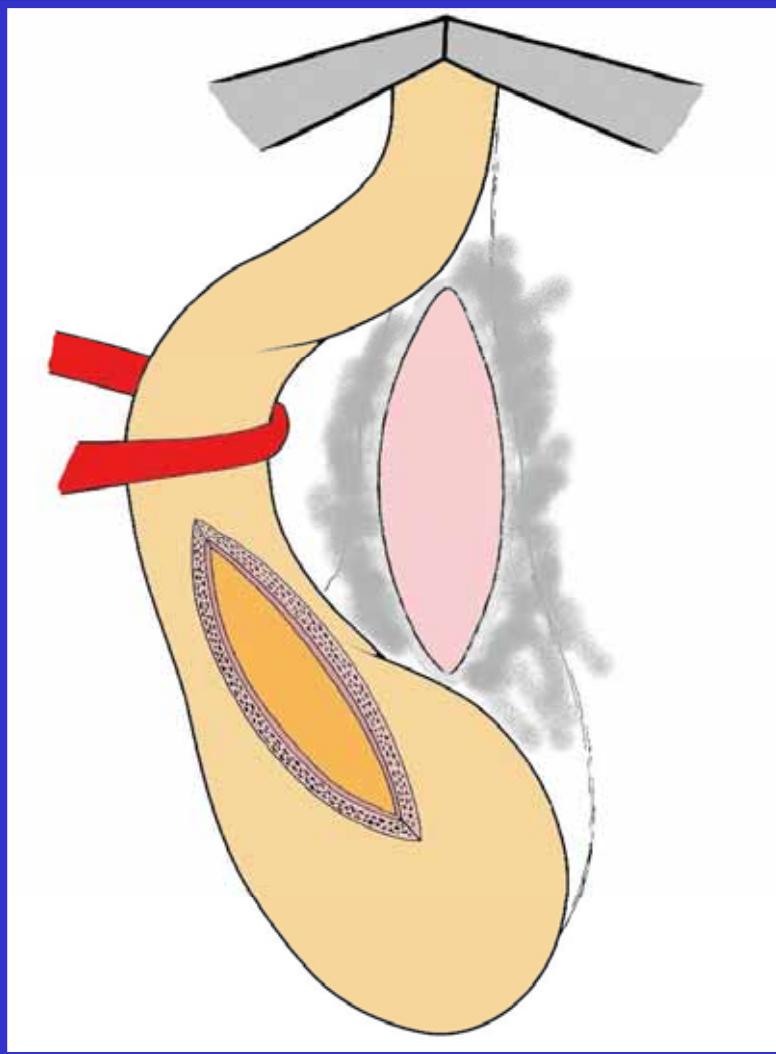


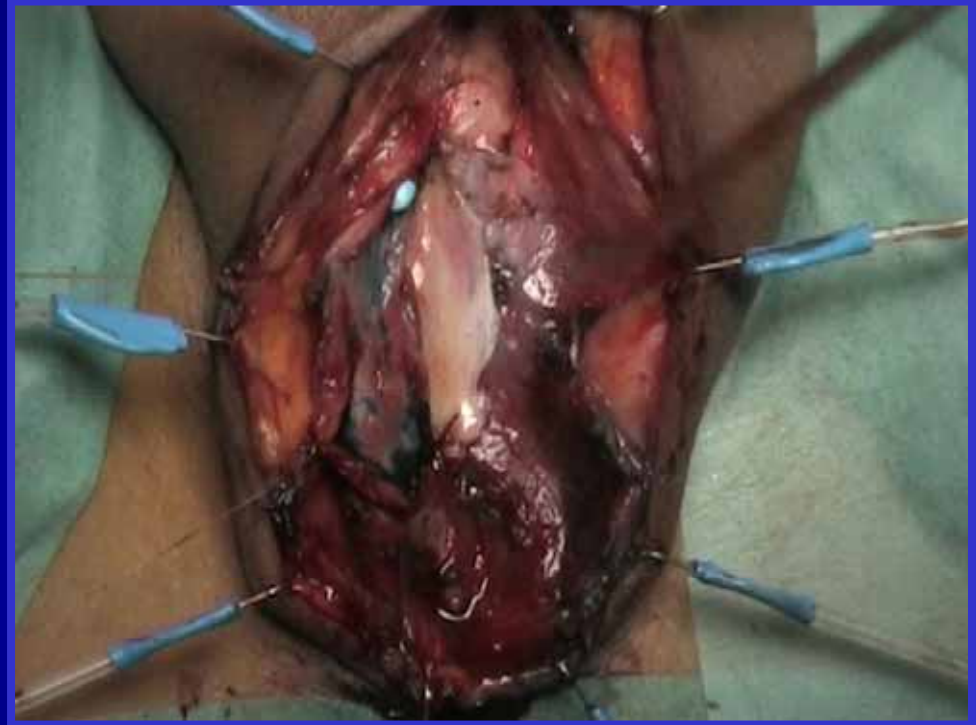
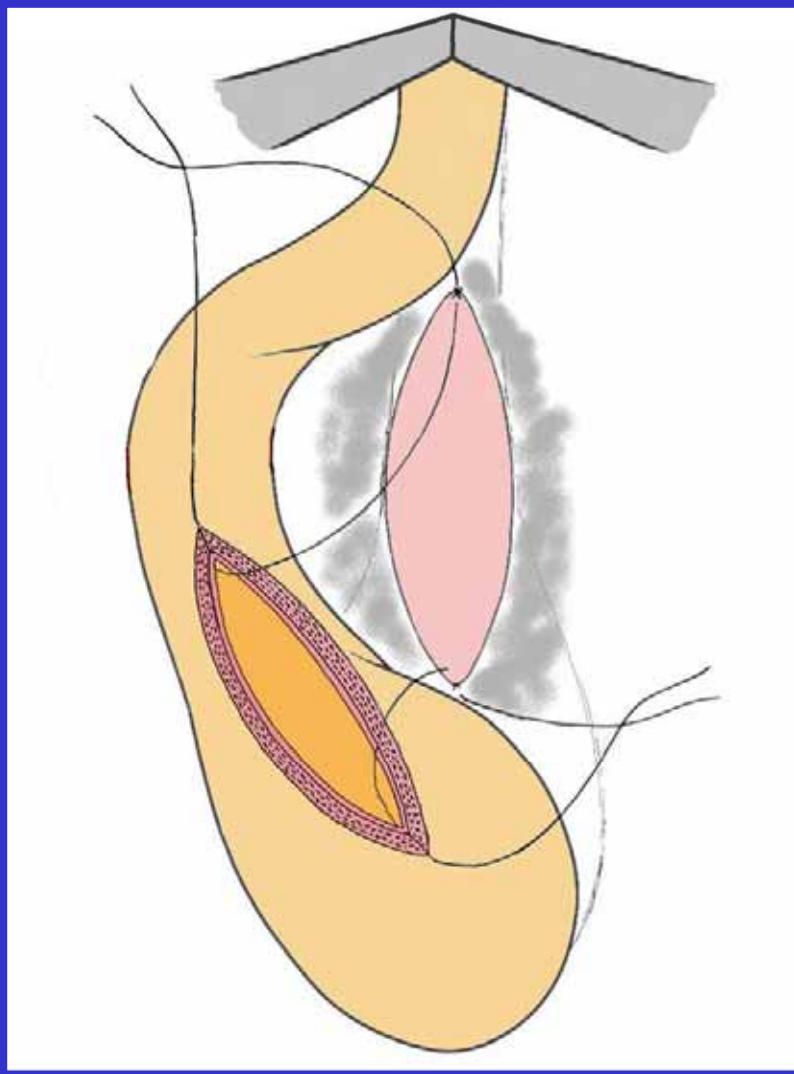


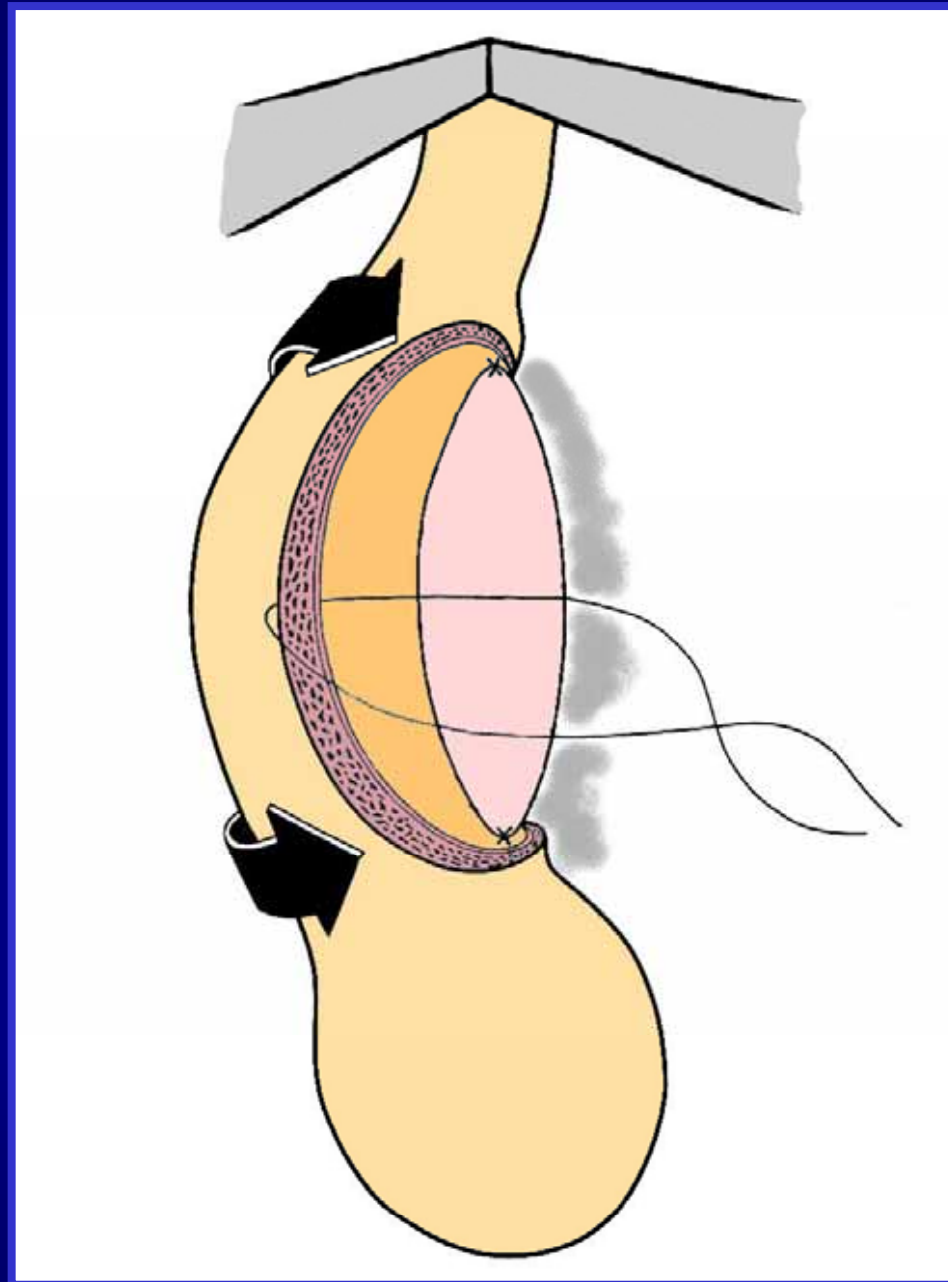




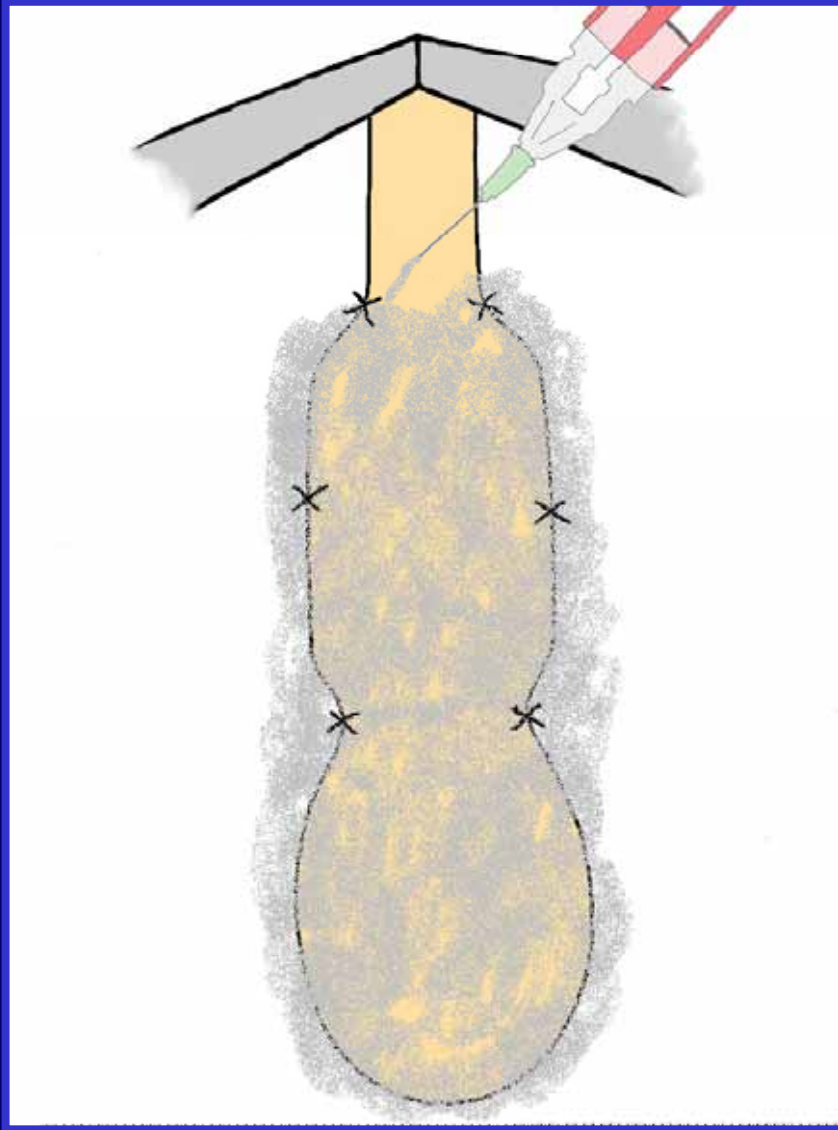






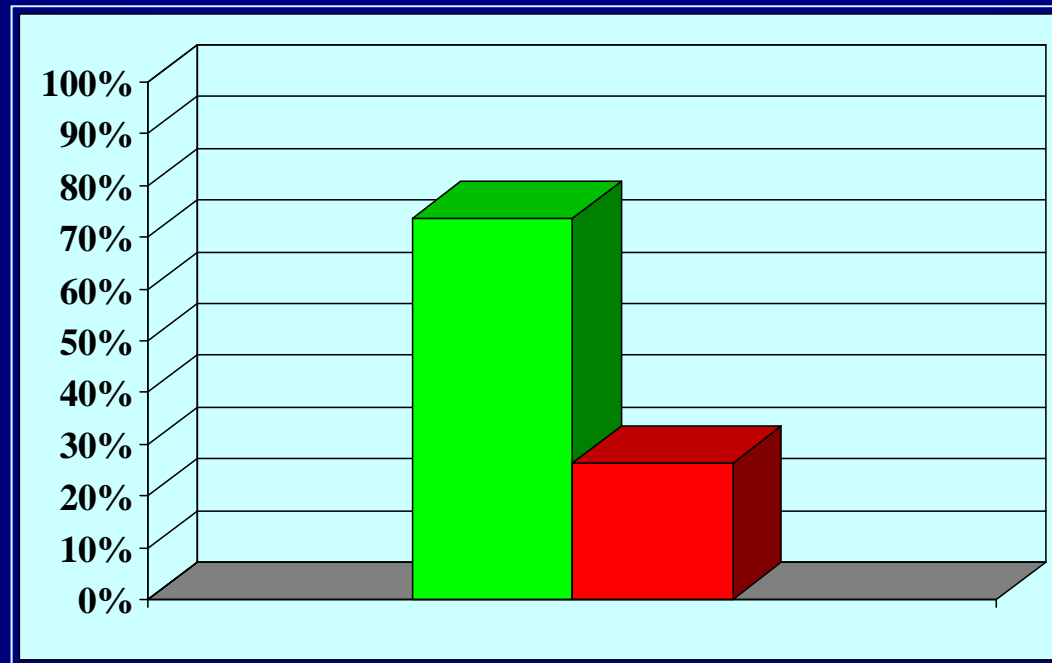






# Results on 19 patients who underwent dorsal oral mucosal onlay graft urethroplasty

Mean follow-up 52 months (12 – 117 months)



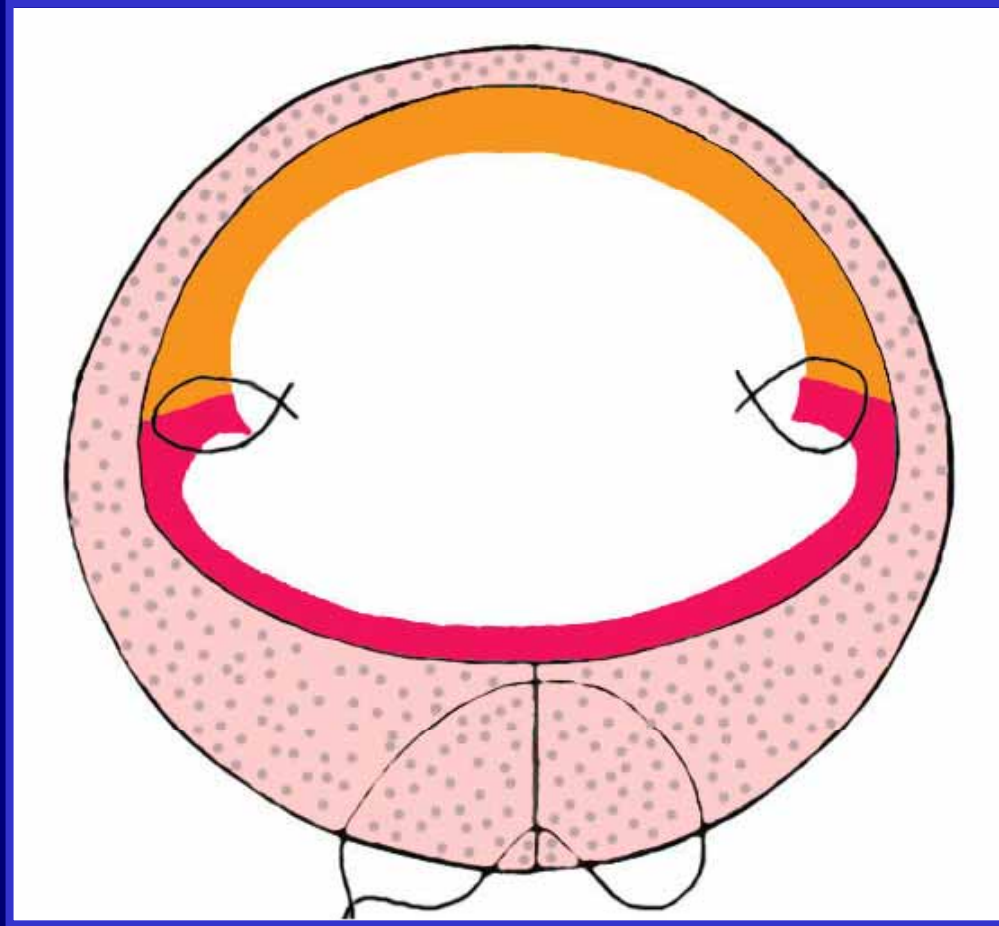
■ success

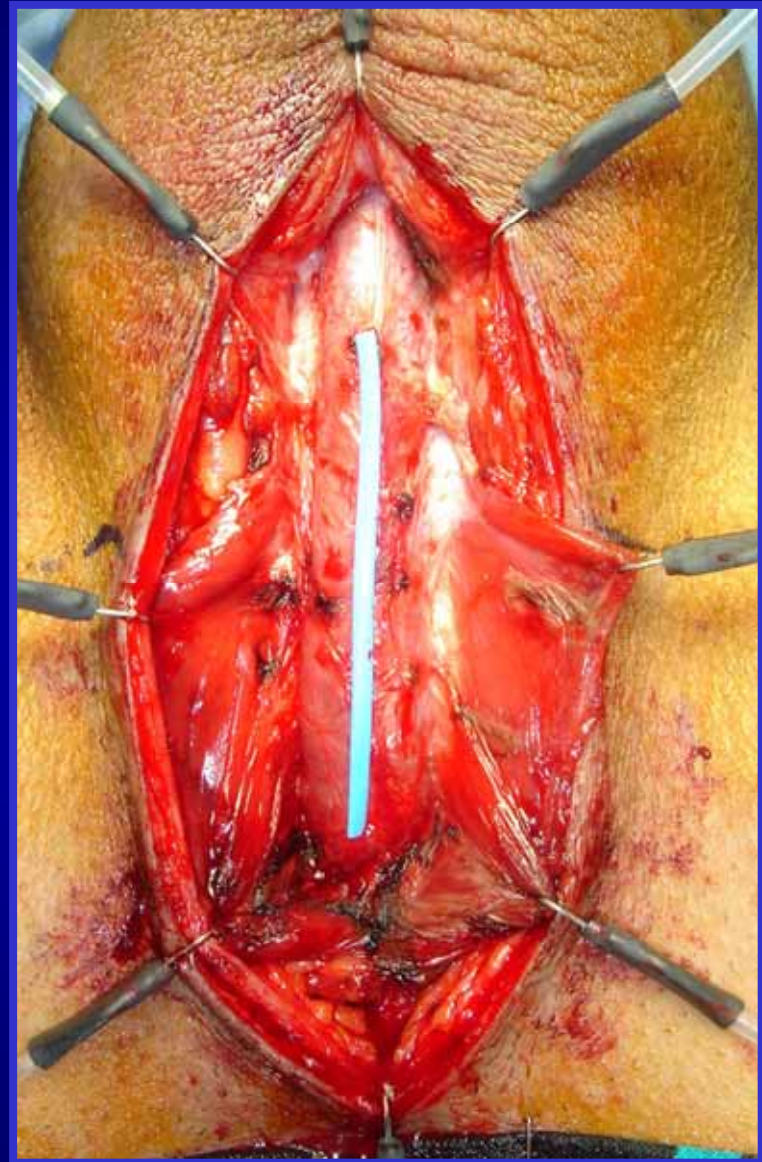
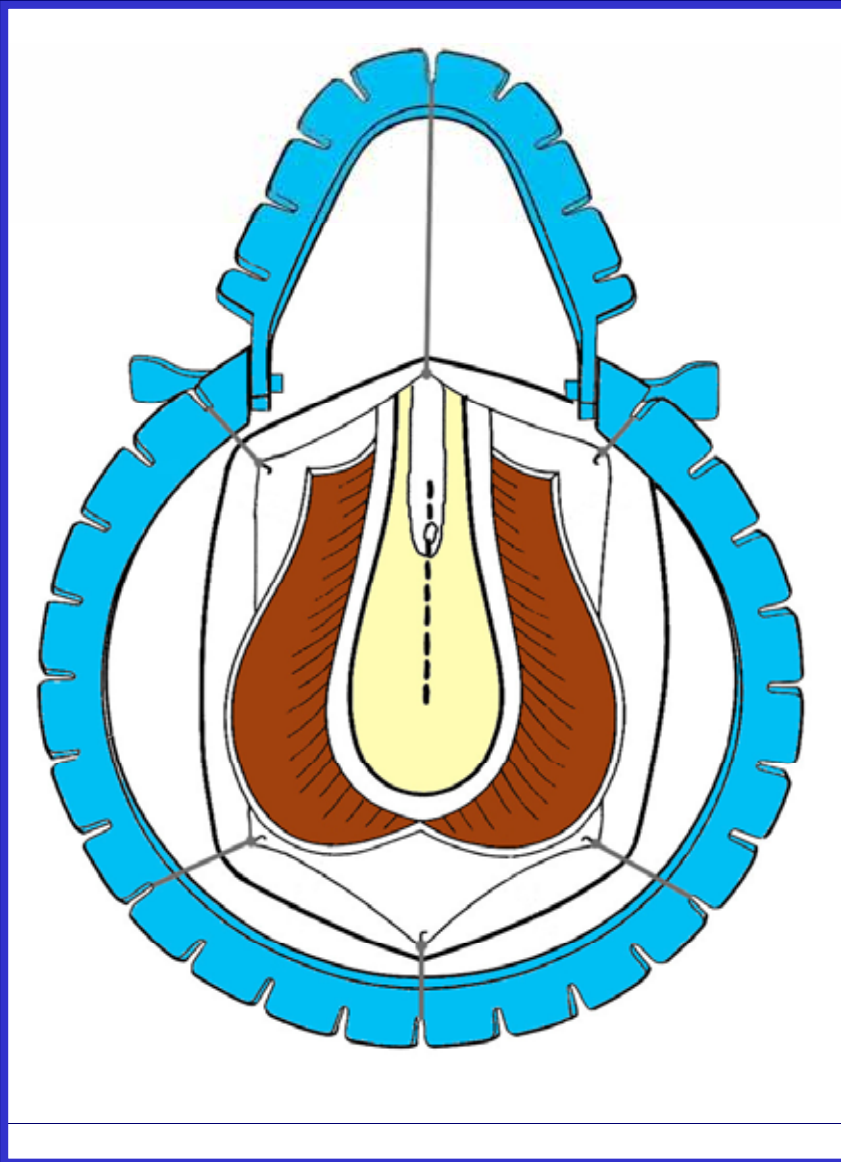
14 (73.7%)

■ failure

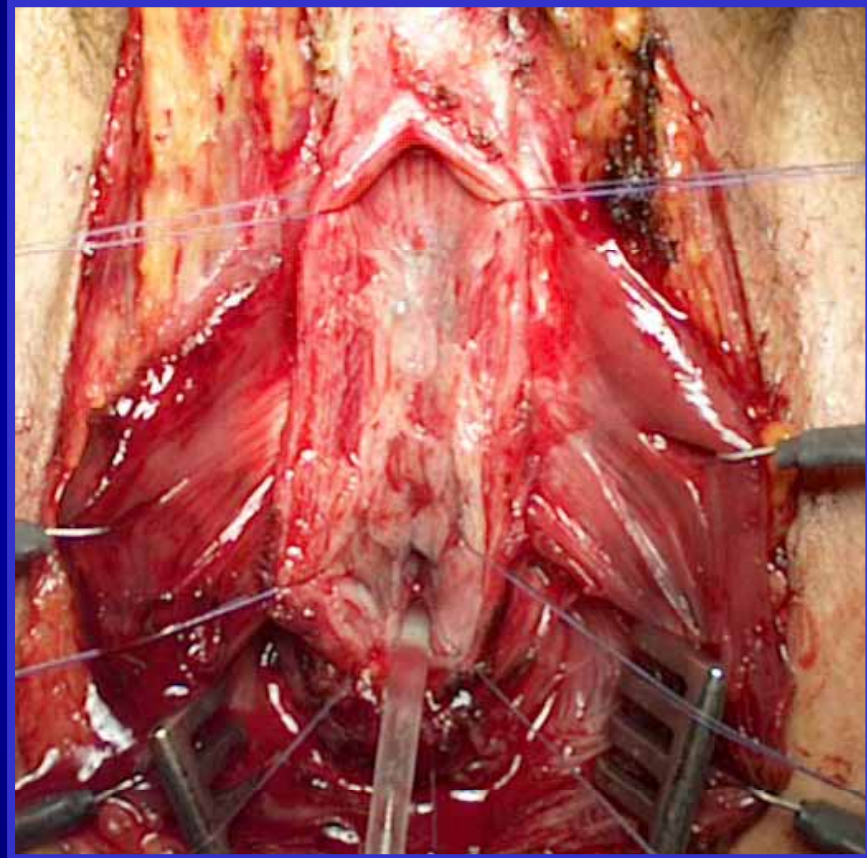
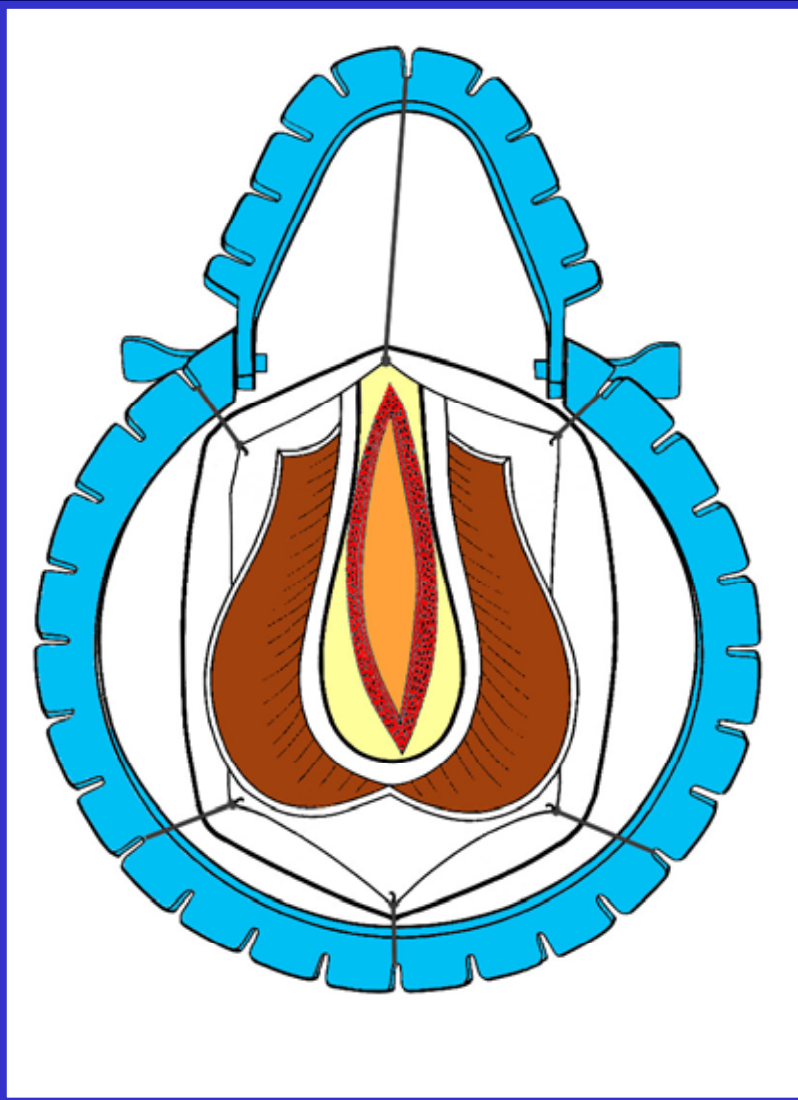
5 (26.3%)

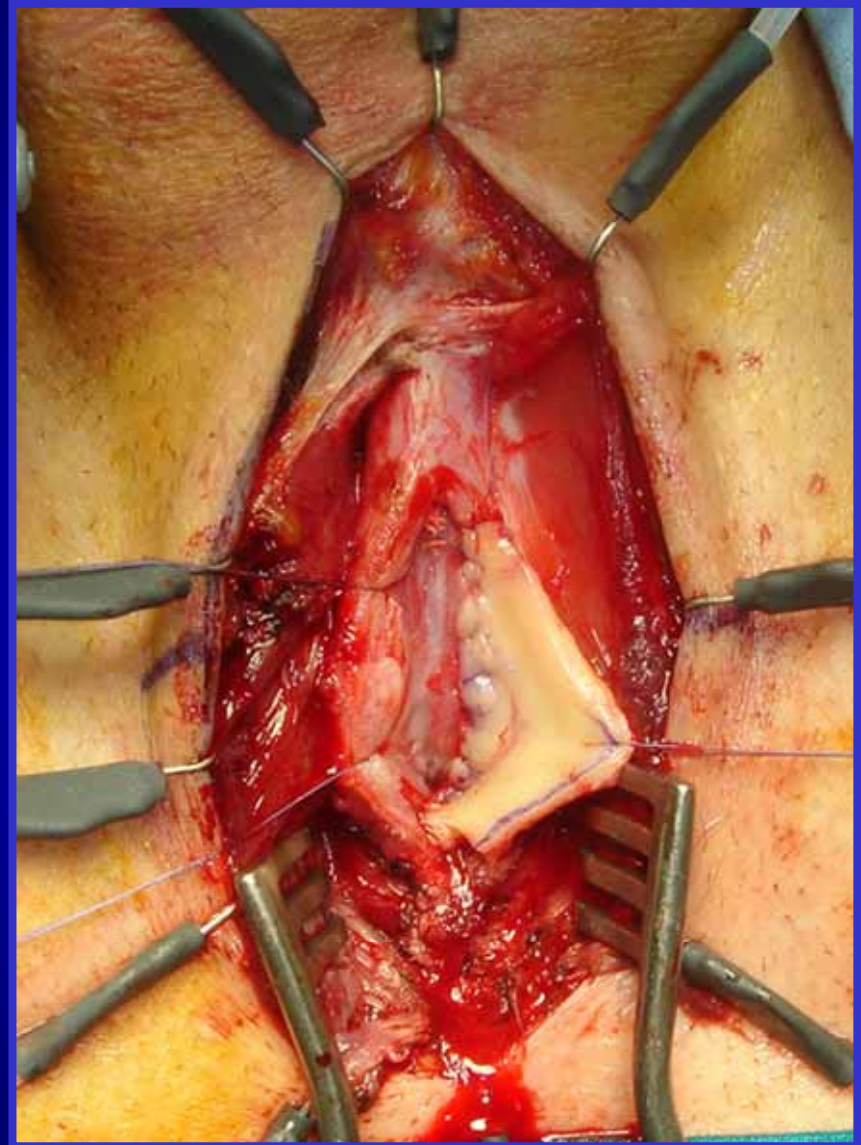
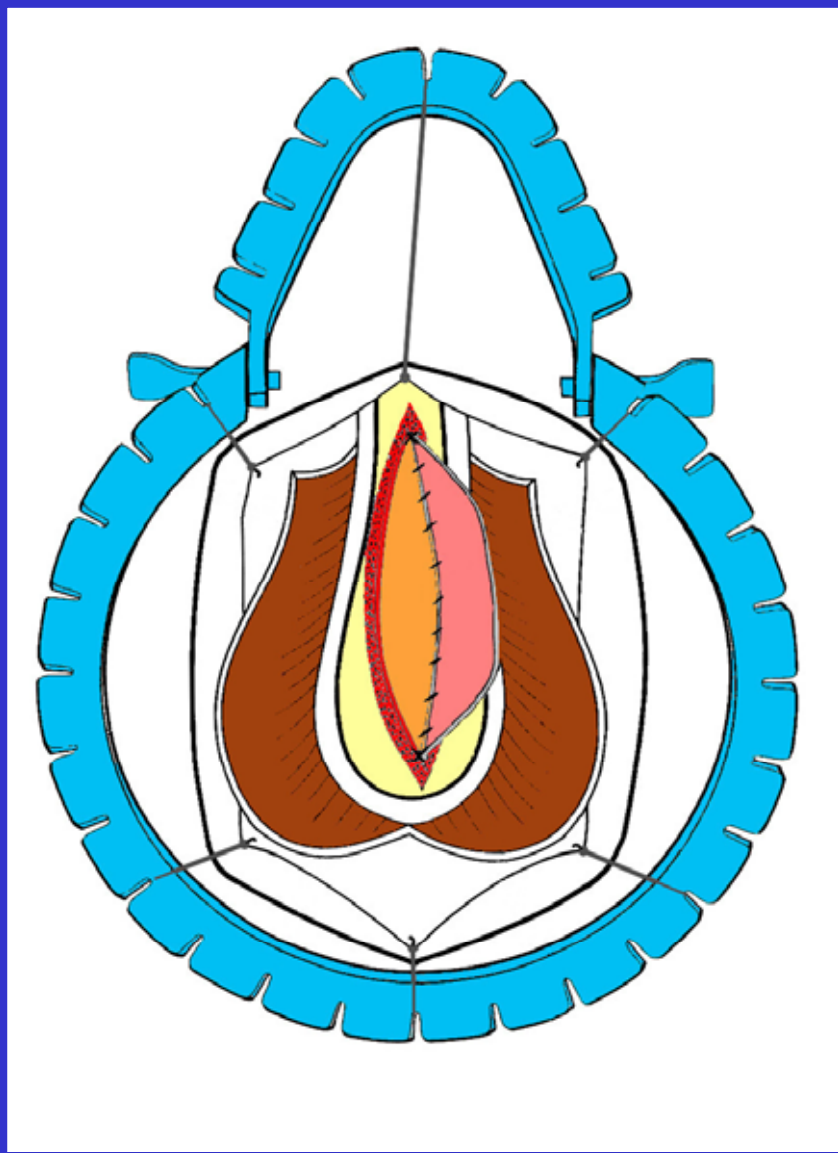
# Ventral oral mucosal onlay graft urethroplasty



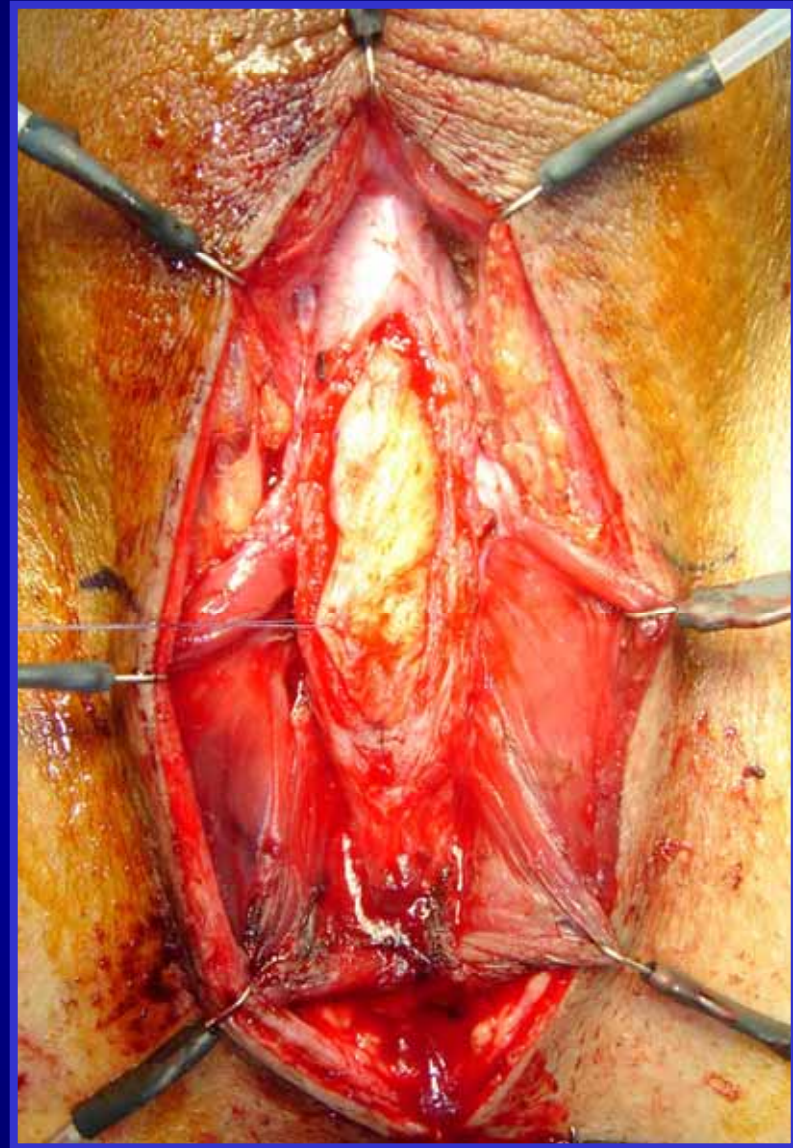
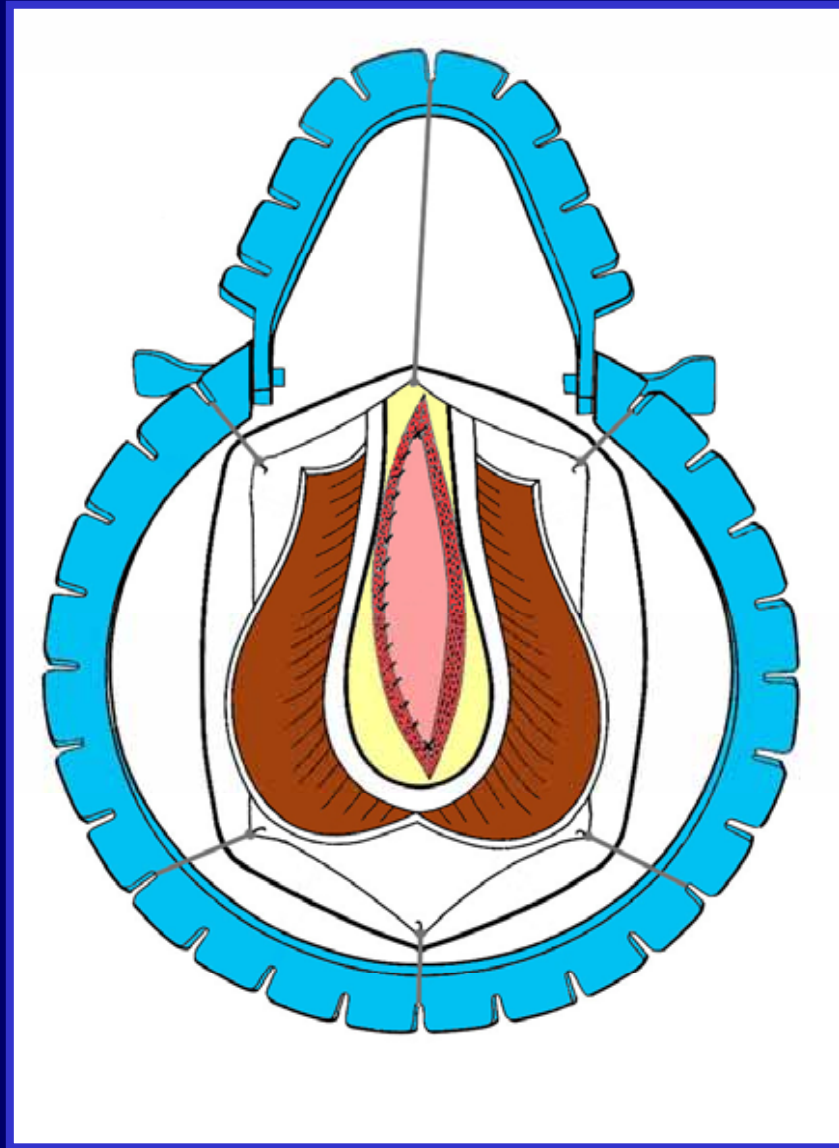




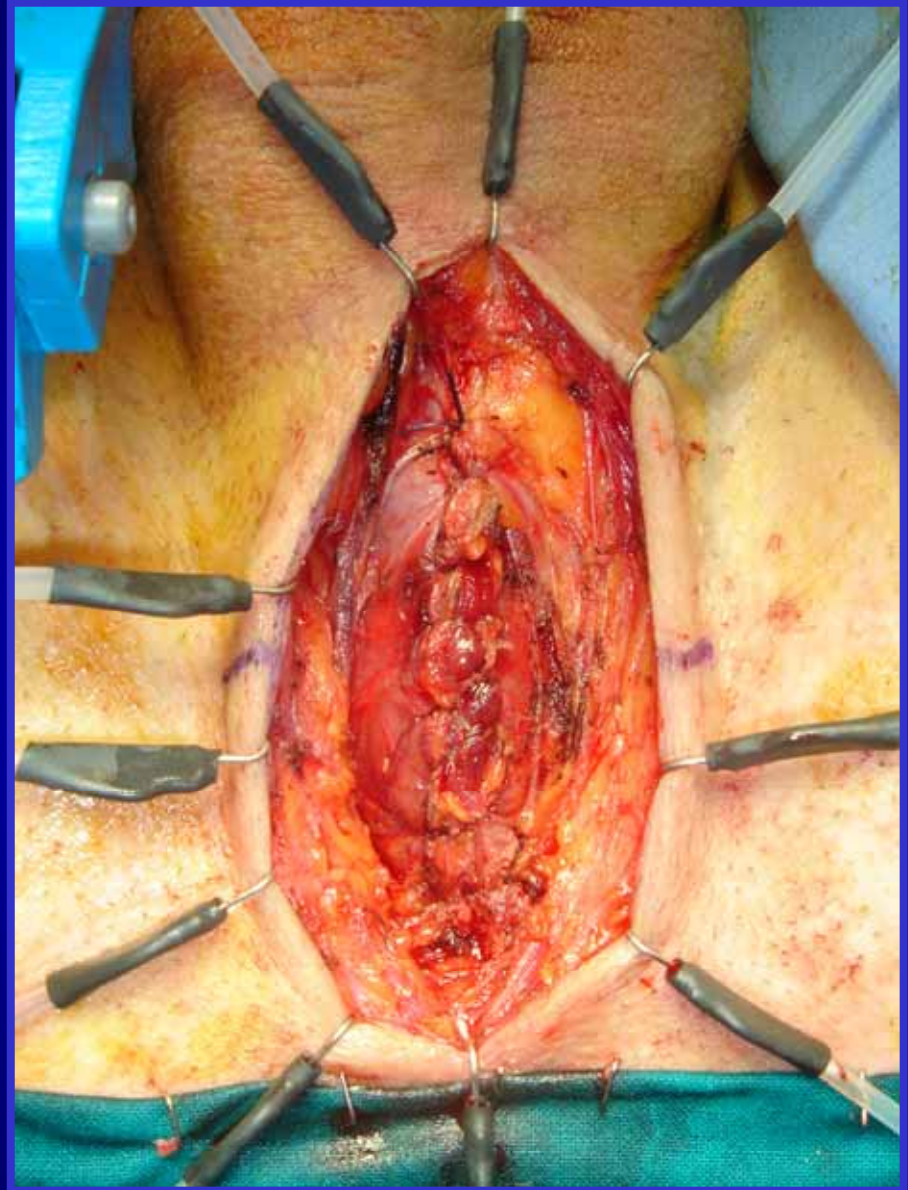
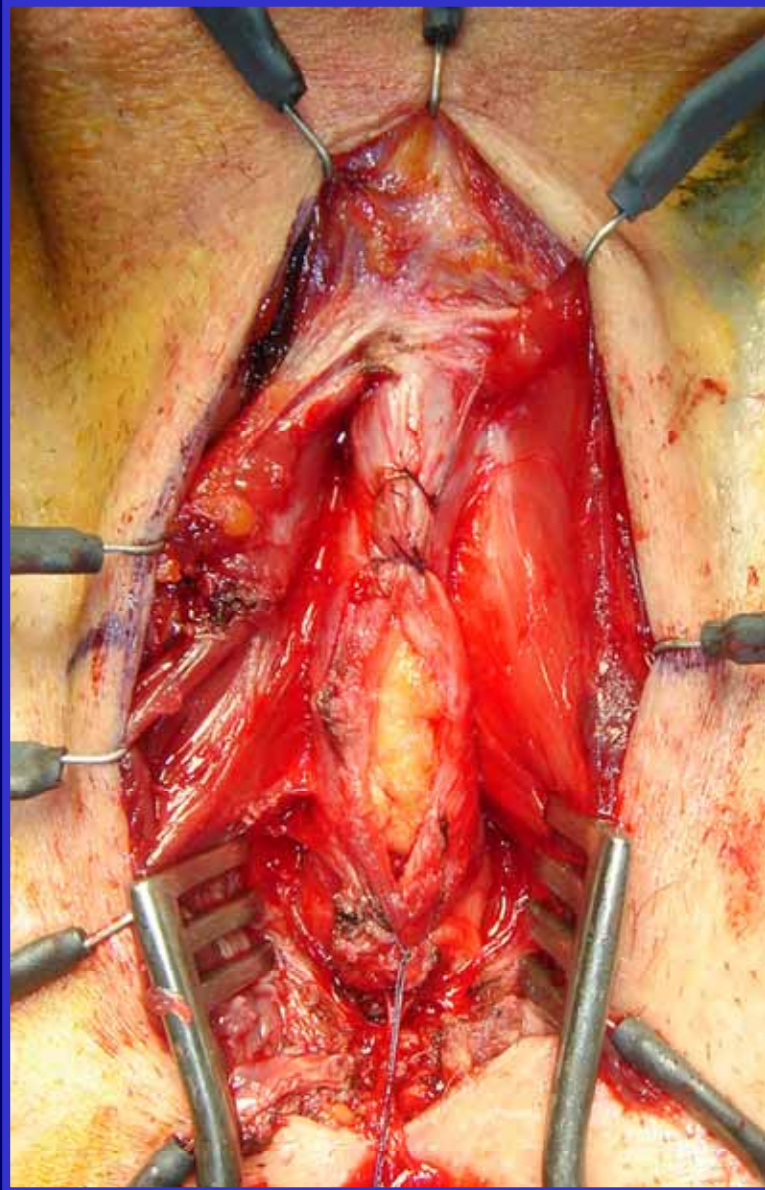










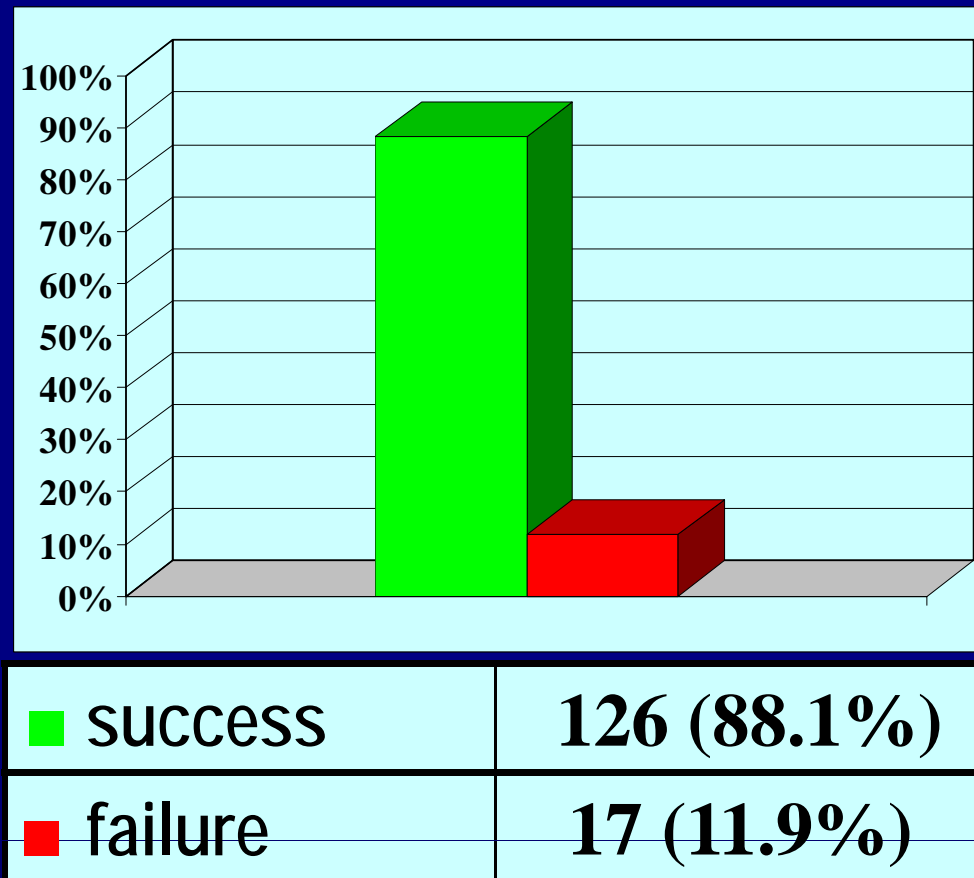


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# Results on 143 patients who underwent ventral oral mucosal onlay graft urethroplasty

Mean follow-up 38 months (12 – 103 months)



# Success rate of 362 one-stage bulbar urethroplasties

success	failure
314 (86.7%)	48 (13.3%)

Follow-up: minimum 12 months  
maximum 237 months



# Comparative success rate of 362 one-stage bulbar urethroplasties

surgical technique	success
end-to-end anastomosis 176 cases	88.1%
onlay graft urethroplasties 162 cases	86.4%
augmented anastomotic repair 24 cases	79.2%



# Question

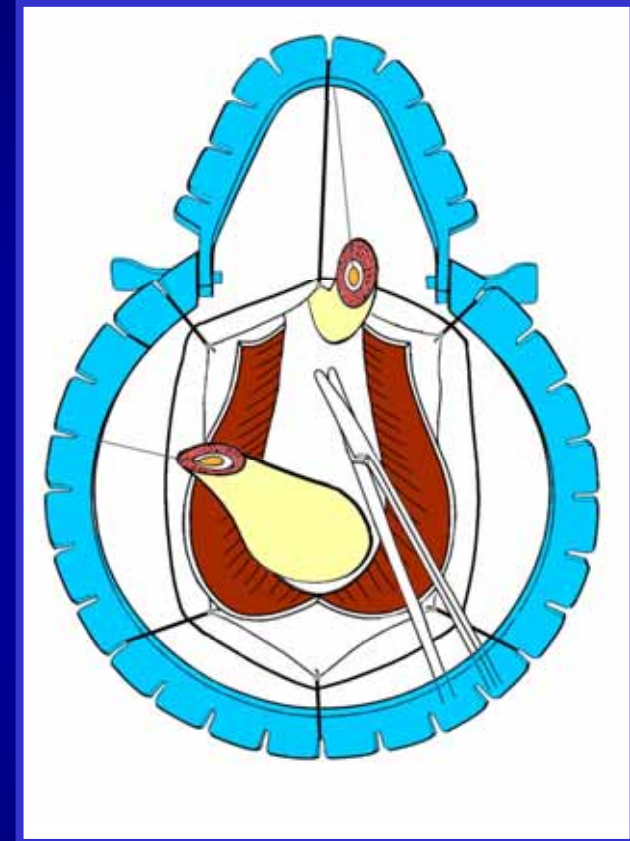
**Based on these results, is it time to change the approach to surgical treatment of bulbar urethral strictures ?**





# End-to-end anastomosis

End-to-end anastomosis still  
represents one of the best techniques  
for repair of bulbar urethra  
strictures of various etiologies,  
various lengths and in patients of  
various ages

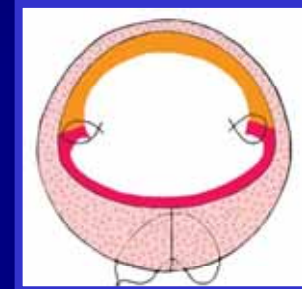


88.1%

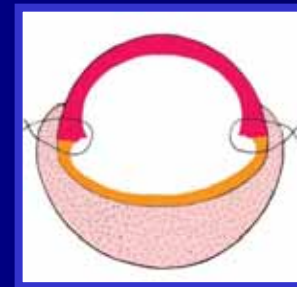


# Onlay graft urethroplasty

The use of onlay graft procedures  
should represent in the future a valid  
alternative to  
end-to-end anastomosis



ventral graft



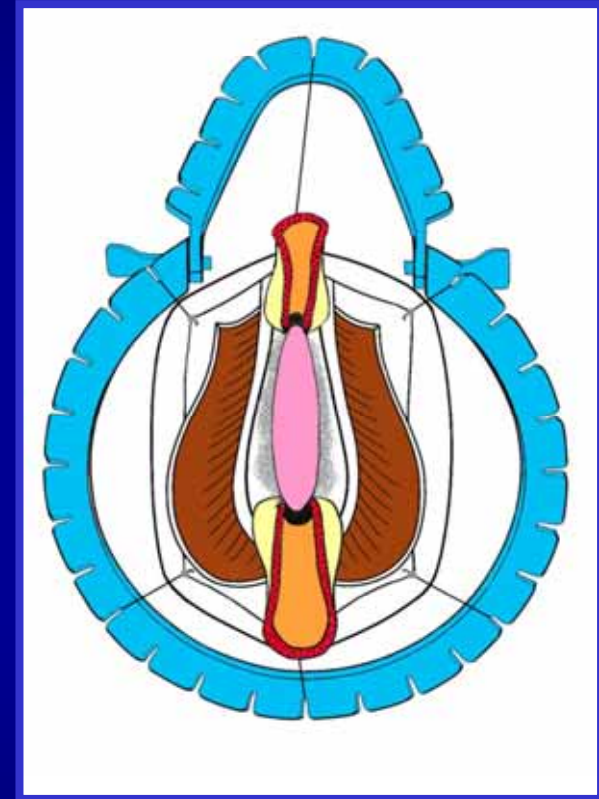
dorsal graft

86.4%



# Augmented anastomotic repair

Augmented anastomotic repair  
should be reserved only for complex  
cases, when end-to-end anastomosis  
or onlay graft procedure are not  
suggested



79.2%



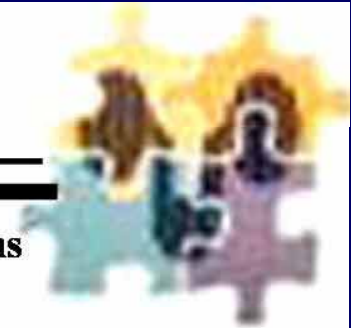
**To transect or not to  
transect the urethra ?  
That is the question !**







Society of Genitourinary Reconstructive Surgeons



**Scientific Session at the 2009 American Urological Association  
(AUA) Annual Convention**

**Chicago, Illinois, USA**

**April 25-30, 2009**

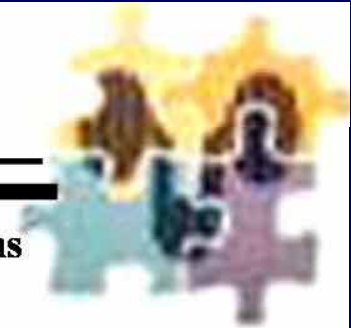


**Center for Reconstructive Urethral Surgery**





Society of Genitourinary Reconstructive Surgeons



## Topics to be presented and discussed

**Failed Hypospadias Repair Presenting in Adults: A New Outbreak?**

**Point-Counterpoint. Bulbar Urethroplasty: Transect or not to Transect the Urethra?**

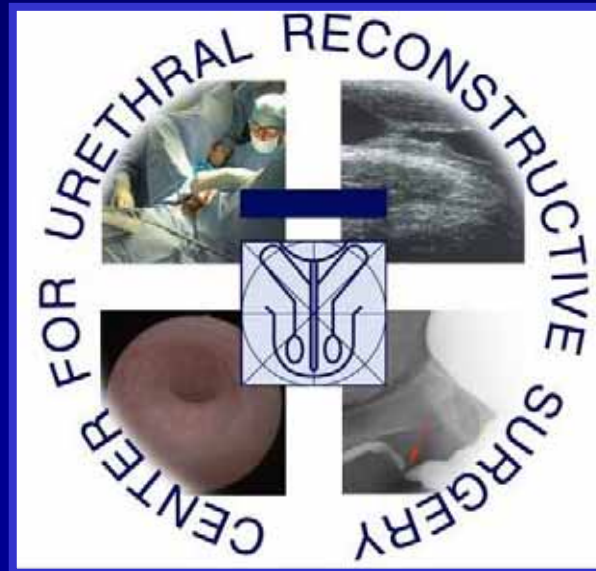
**Does Penile Length Affect Surgical Steps and Outcome of Posterior Urethroplasty?**



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[www.urethralcenter.it](http://www.urethralcenter.it)



**Next month, this lecture will be fully available on our website**

**Thank you !**

