Center for Reconstructive Urethral Surgery



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The use of internal urethrotomy in patient with urethral stricture



This is a difficult topic. It is not easy to provide sure guidelines of treatment for urethral stricture using endoscopic procedures.

I hope to provide you with useful information on the problems involved in the treatment of urethral stricture using endoscopic procedures.



A survey of stricture management involving 431 urologists from the USA showed:

1. The most common procedures used were dilation (92.8%), internal urethrotomy (85.6%), stent (23.4%).

2.31% to 33% of urologists elected to continue endoscopic management despite predictable failure.

3.74% of urologists believe that the literature supports the use of urethroplasty only after repeated internal urethrotomy failure.

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Bullock TL and Brandes SB, J Urol 2007; 177: 685-690

The treatment of short bulbar urethral stricture with primary open urethroplasty is less costly than endoscopic treatment with internal

urethrotomy.

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Rourke KF and Jordan GH, J Urol 2005; 173: 1206-1210

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The most cost-effective strategy for the management of short, bulbar urethral strictures is to reserve urethroplasty for patients in whom a single endoscopic attempt fails.

For longer strictures for which the success rate of internal urethrotomy is expected to be less than 35% urethroplasty as primary therapy is cost-effective.

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Wright JL et al. Urology 2006; 67: 889-893

Repeated urethrotomy and dilation for the treatment of urethral

stricture are neither clinically effective nor cost-effective.

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Greenwell TJ et al. J Urol 2004; 172: 275-277



PANSADORO V. and EMILIOZZI P.

Patients : 224

Followup: mean 98 months

Recurrence rate: 68%

JOURNAL OF UROLOGY 1996; 156: 73-75



Success rate based on stricture etiology

≻ congenital	66%
> infection	48%
> instrumentation	42%
> unknown	39%
> trauma	16%
	J Urol 1996; 156: 73 - 75
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Success rate based on stricture length



Recurrence rate based on stricture site



Result following multiple urethrotomies

stricture site	N° procedures	N° pts	N° success
	2	11	2
bulbar	3	3	0
	4	2	0
	2	23	0
penile	3	6	0
	4	2	0

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J Urol 1996; 156: 73 - 75



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Stricture free rate

	after 24 months		hs after 48 months	
number of procedures	dilation	urethrotomy	dilation	urethrotomy
1	55%	60%	50%	60%
2	30%	50%	0%	40%
3	0%	0%		

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J Urol 1998; 160: 356 - 358

Current endoscopic procedures for the treatment of male urethral stricture



The choice of an endoscopic procedure for the treatment of male urethral stricture is based on:

main features of the patient



- ➤ obesity
- > concomitant diseases
- > psychological status



Poor candidate for open surgery



The choice of an endoscopic procedure for the treatment of male urethral stricture is based on:

main features of the stricture disease



➤ etiology

➢ length

> associated condition

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Poor candidate for endoscopic procedure



NO

- Failed hypospadias
- lichen sclerosus
- ➢ perineal trauma

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YES

➤ congenital

Etiology

- ➤ instrumentation
- ➤ infection
- ≻ unknown
- ➤ pelvic trauma
- radical prostatectomy

Congenital mucosal urethral stricture or valve







Traumatic urethral

stricture







< 1 cm	YES
~ 1 cm	YES
from 1 to 2 cm	YES
~ 2 cm	?
> 3 cm	?



Adverse associated condition

- ≻ stent
- ≻ tumor
- ≻ stone
- ➢ diverticulum
- ➤ abscess
- ≻ fistula

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The use of cold – knife urethrotomy for the treatment of bulbar urethral strictures

Our experience on 128 patients:

➢ Mean age: 41 years (15 - 81)

➤ Mean follow-up: 39 months (6 – 131)

Success 104/128 (81.3%)

Failure 24/128 (18.7%)

The use of cold – knife urethrotomy for the treatment of bulbar urethral strictures

Surgical technique



Standard procedure

Cold – knife cut at 12 o'clock

Post-operative course following cold – knife urethrotomy

> 16 Ch. silicone grooved catheter in place for 7 days



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> uroflowmetry every 30 days for 6 months

uroflowmetry every 6 months

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Results according to the stricture etiology

stricture etiology	N°	success	failure
infection	1 (0.8%)	1 (100%)	
congenital	2 (1.5%)	2 (100%)	
instrumentation	4	3	1
	(3.2%)	(75%)	(25%)
trauma	7	6	1
	(5.5%)	(85.7%	(14.3%)
TURP	12	8	4
	(9.4%)	(66.7%)	(33.3%)
catheter	13	10	3
	(10.1%)	(76.9%)	(23.1%)
unknown	89	74	15
	(69.5%)	(84.3%)	(15.7%)

Results according to the stricture length

Stricture length	N°	success	failure
< 1 cm	1 (0.8%)	1 (100%)	
1-2 cm	51	43	8
	(39.8%)	(84.3%)	(15.7%)
2-3 cm	49	42	7
	(38.3%)	(85.7%)	(14.3%)
3-4 cm	17	13	4
	(13.3%)	(76.5%)	(23.5%)
4-5 cm	8	5	3
	(6.3%)	(62.5%)	(37.5%)
panurethral	2 (1.5%)		2 (100%)

Results according to the prior treatment

prior treatment	N°	success	failure
none	63	54	9
	(49.2%)	(85.7%)	(14.3%)
urethrotomy	34	30	4
	(26.6%)	(88.2%)	(11.8%)
associated treatments	18	12	6
	(14.1%)	(66.7%)	(33.3%)
dilation	10	5	5
	(7.8%)	(50%)	(50%)
urethroplasty	3 (2.3%)	3 (100%)	

Results according to the number of urethrotomies on 128 patients

Number of urethrotomies	N°	success	failure
one	104	104	
	(81.3%)	(100%)	
two	11	11	
LWO	(8.6%)	(100%)	
Al eree e	4	3	1
	(3.1%)	(75%)	(25%)
four	0		
> four	0		
open urethroplasty	9		
	(7%)		
total	128	118 (92.2%)	1 (0.8%)





It depends on how long the patient has been disease-free



The use of cold – knife urethrotomy for the treatment of bulbar urethral strictures

Conclusion

The use of cold – knife urethrotomy may represent a good option in the treatment of bulbar urethral strictures.

In our experience, the success rate notably decreases after the third urethrotomy.

The abuse of this technique still represents the most frequent bad practice in urology.

The use of holmium laser urethrotomy for the treatment of traumatic posterior urethral strictures after pelvic trauma

Patient selection



Mean age: 33 years (16 – 60)

Patient psychological compliance

No obliterative stricture

No loss of erection after trauma



The use of holmium laser urethrotomy for the treatment of traumatic posterior urethral strictures after pelvic trauma

Surgical technique



Standard procedure

Laser cut at 12 o'clock

No vaporization of the tissues















Post-operative course following holmium laser urethrotomy

> 24 Ch. silicone grooved catheter in place for 30 days



> uroflowmetry every 30 days

when uroflowmetry is less than 12 ml/sec

e-mail: info@urethralcenter.it repeated holmium laser urethrotomy website: www.urethralcenter.it Results of holmium laser urethrotomy in the treatment of traumatic posterior strictures after pelvic trauma

- ➤ period 2000 2009
- ➢ patients 33
- ➤ mean age 33 years (16 60)
- ➤ mean followup 73 months (12- 125)

Success 18/33 (54.5%)

Results according to the number of urethrotomies on 33 patients

number of urethrotomies	N°	success	failure
one	18 (54.5%)	18 (100%)	
two	9 (27.3%)	9 (100%)	
three	2 (6.1%)	2 (100%)	
four	0		
> four	3 (9.1%)	3 (100%)	
open urethroplasty	1 (3%)		
total	33	32 (97%)	



The use of holmium laser urethrotomy for the treatment of traumatic posterior urethral strictures Conclusion

The use of holmium laser urethrotomy represents a good option in the treatment of traumatic posterior urethral strictures.

In our experience, the success rate at the first urethrotomy is low (54.5%) and some patients may require new procedures, thus increasing the success rate.

This technique should be used only in selected patients.

I showed you the use and the results of endoscopic urethral surgery for repair of anterior and posterior urethral strictures

What appoach to take will be decided by you, your experience, your surgical background and your patient's expectation

There is nothing more I can tell you !



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

Thank you !

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