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IS THE LASER MIGHTIER THAN THE SWORD? A COMPARATIVE STUDY FOR THE URETHROTOMY

Hypothesis / aims of study
The knife is the most common used instrument for a Sachse urethrotomy. Unfortunately there are high rates of relapse. It is thought that using a laser reduces these relapse rates. In this study we compare both techniques.

Study design, materials and methods
We examined 192 patients (all male) in this retrospective study. Between 2010 and 2014, 127 (66,1%) patients were treated with a knife and 65 (33,9%) with a laser (Holmium, Laservision). We used the UREThRAL stricture score (USS)[1] (Table I) for scoring the complexity of the stricture. Postoperative complications were scored using Clavien. Treatment success was stated as no need for intervention. Every intervention was considered a failure, like a relapse requiring new surgery but also starting Clean Intermittent Catherization (CIC) after surgery.

Results
Mean age in the knife group (KG) was 63 years (95%CI: 60-66), in the laser group (LG) this was 62 years (95%CI: 57-66) (p=0,68). The USS did not differ between both groups (LG 6,0 (95%CI: 5,3-6,7), KG 5,7 (95%CI: 5,4-6,0) (p=0,49). It should be pointed that laser was more often used for patients with a relapse (LG 46,7% (N=28), KG 53,3% (N=32) (p=0,01). All results can be found in Table II.
Between both groups no difference was found in postoperative increase in flow-rate, the percentage postoperative complications (all Clavien II, 1 Clavien III in the KG) or the percentage of failure. Even when looked separately at patients treated for a primary stricture versus those treated for a relapse, no difference could be found between the KG and the LG: nor in USS, neither in outcomes.

Interpretation of results
There was no significant outcome difference between urethrotomy with laser or with knife regarding increase of the flow-rate, number of complications or failure rate. There was no difference in duration of follow-up or complexity of the strictures. Despite the fact that laser was more often used in patients with a relapse, outcomes were not different when corrected for this item..

Concluding message
As treatment with laser is more expensive that treatment with a knife, costs have to be taken in consideration in deciding which technique to use in the transurethral treatment of urethral strictures .

Table I the UREThRAL Stricture Score

Component	Score
Urethral stricture etiology	1 = traumatic, idiopathic or iatrogenic 2 = inflammatory or hypospadias
Total number of strictures	2 = point per stricture
Retention	1 = patent urethra 2 = obliterated or near obliterated
Anatomic location	1 = bulbar urethra 2 = penile urethra (including meatus and fossa) 3 = panurethral or both bulbar and penile urethra are involved
Length	1 point per cm of length

Table II Results

	Total group			Primary			Relapse		
	KG (N=127)	LG (N=65)	p	KG (N=95)	LG (N=37)	p	KG (N= 32)	LG (N=28)	p
USS (95%CI) (min:5)	5,7 (5,4-6,0)	6,0 (5,3-6,7)	0,49	5,7 (5,4-6,0)	5,7 (5,1-6,2)	0,92	5,7 (5,1-6,4)	6,6 (4,5-8,7)	0,39
Increase Qmax in ml/sec (95%CI)	9,5 (5,3-13,7)	10,5 (6,7-14,4)	0,73	10,9 (6,3-15,4)	8,6 (4,5-12,8)	0,5	6,0 (-5,0-19,9)	13,4 (5,4-21,4)	0,32
Complications in % (N)	5,6 (7)	3,1 (2)	0,36	4,2 (4)	2,7 (1)	0,57	9,7 (3)	3,6 (1)	0,35
FU in months (95%CI)	16,4 (13,6-19,3)	17,5 (13,9-21,0)	0,66	15,9 (11,5-17,9)	14,4 (12,4-21,9)	0,39	16,7 (15,6-27,6)	14,2 (12,4-23,4)	0,36
Failure % (N)	58,3 (70)	68,8 (44)	0,11	45,6 (41)	56,8 (21)	0,17	96,7 (29)	91,2 (52)	0,15

References
1. The UREThRAL stricture score: A novel method for describing anterior urethral strictures; Wiegand et all; Can Urol Assoc J 2012;6(4) 260-4

Disclosures
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