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Title: Success rate of TVT operation in patients with low urethral pressure

Aim of study

Low urethral pressure has been reported to be a risk factor for failed retro pubic stress incontinence surgery. No data are available concerning TVT operation in stress incontinent females with low urethral pressure. The aim of this study was to evaluate the success rate of the TVT operation in patients with low urethral pressure compared with patients with normal urethral pressure.

Materials

Three hundred and nineteen stress and mixed incontinent patients had a TVT operation performed in 6 different Norwegian gynaecological departments. A short form disease specific questionnaire was used pre and post operatively. A stress incontinence index is constructed from the questionnaire by 3 sub indices: When-, how often- and to which extent was stress incontinence experienced? The urge incontinence index is constructed by 2 questions: How often and to which extent urge incontinence was experienced? 4 items construct the quality of life index. How many pads were used, how often did they avoid activities-, places or situations- due to fear of leakage, and how did leakage possibly influence vacations, family life, social life and sleep? Patient satisfaction was post operatively evaluated. In all items a scale of 5 categories were possible choices, with the scores ranging from 0 to 4. An increasing score means a less favourable situation. The questionnaire has been validated and was found reliable. Leakage recorded by 24 hours pad test, standardised stress test, and residual urine was recorded pre- and post- operatively. By use of micro tip catheter 1 to 3 urethral profiles were recorded. When more than one profile was recorded, urethral pressure was calculated as the mean of the recordings. Forty-three patients (13%) had low urethral pressure (LUP ≤ 20 cm H₂O), while 276 patients (77%) had normal urethral pressure (NUP > 20 cm H₂O). An additional operation for descence was performed in combination with the TVT operation in 7 and 25 patients respectively in these 2 groups. Median age and range were 69 years (44-87) and 54 years (28-85) in LUP and NUP patients respectively. Follow up was median 7 months and range (4-12) and median 7 months range (3-25) in LUP and NUP patients respectively. Number of previous incontinence operations and maximum flow was recorded post operatively in one of the participating departments. Among those patients, where maximum flow was recorded, 23 had LUP and 117 had NUP. Fourteen and 67 patients had had no previous incontinence operation whereas 6 and 18 patients had had 1 to 3 previous incontinence operations in the LUP and the NUP groups respectively. Statistics: Mann Whitney test and Fisher exact test.

Results

Median and the 25th and the 75th percentiles of patient age, indices and objective outcome values pre and post operatively in patients with low and normal urethral pressure are depicted in table 1. Eighty-five per cent of the LUP patients and 87% of the NUP patients were very satisfied with the results of the operation. There was no significant difference in number of patients who had had previous incontinence operations and those who had not in the LUP and NUP patient groups. Complications are depicted in Table 2. No complication was reported in 246 patients. Data are missing in 24 patients.

Conclusions

There was no difference in satisfaction with the operation 7 months post operatively between patients in the LUP and the NUP groups. However, patients with LUP were post operatively leaking significantly more than patients with NUP and all indices were post operatively higher, but not significantly higher, in patients with LUP compared with patients with NUP. Due to this, urethral pressure should be recorded before TVT operations and patients with LUP should be informed about moderately reduced success rate before a TVT operation is performed.

Table 1

	Low urethral pressure				Normal urethral pressure				
	n	median	25%	75%	n	median	25%	75%	
Patient age years	37	69	55	74	248	54	48	62	P<0.001
Stress incontinence index	40	9	8	11	255	9	8	10	n.s.
Urge incontinence index	40	4	1	6	250	7	4	9	n.s.
Pre op. Quality of life index	33	6	3	9	230	6	4	9	n.s.
24 hours pad test gr.	33	96	32	128	235	69	30	156	n.s.
Stress test gr.	33	52	29	100	248	35	16	65	n.s.
Residual urine ml.	39	0	0	10	244	0	0	5	n.s.
Max. urethral pressure cm H ₂ O	40	18	8	20	256	42	21	120	P<0.001
Post op. Stress incontinence index	42	1	0	3	270	0	0	2	n.s.
Urge incontinence index	44	2	0	4	270	0	0	2	n.s.
Quality of life index	38	1	0	3	248	0	0	2	n.s.
24 hours pad test gr.	35	1	0	22	223	0	0	0	P<0.001
Stress test gr.	41	0	0	1	269	0	0	0	P<0.003
Residual urine ml.	42	5	0	20	268	5	0	20	n.s.
Maximum flow ml/sec	25	24	9	48	134	25	2	48	n.s.

Table 2

		LUP	NUP	
Bladder perforation	Yes	3	2	P=0.02
Haematoma	Yes	2	5	n.s.
Deep infection	Yes		1	n.s.
Catheter > one week	Yes	1	4	n.s.
Catheter > one month	Yes		1	n.s.
Other complication	Yes		7	n.s.
Missing values		3	21	n.s.