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DOES THE RECONSTRUCTION OF THE UROGENITAL DIAPHRAGM IMPROVE THE SUCCESS RATE OF THE ANTERIOR COLPORRHAPHY?

Hypothesis / aims of study

14% of women between 50-79 years are presenting with cystocele (1). The primary surgical correction of anterior vaginal wall prolapse is mostly performed by classical colporrhaphy. However, results in randomized trials generally show a large variation of high failure rates up to 60% (2), potentially related to modifications of the surgical technique. For this reason mesh repair techniques have become increasingly popular, regardless of partly severe side effects associated with use of mesh in the vagina. The aim of the present study was to assess the reoperation rate of anterior vaginal wall prolapse after plication of the adventitia overlying the bladder compared to the reoperation rate after plication of the urogenital diaphragm.

Study design, materials and methods

In 2006 a total of sixty-five anterior wall repairs were done using traditional, non-mesh tech-niques. A midline incision of the vagina was continued to the level of the midurethra. Bilateral dissection of the vaginal flaps was performed until the entire extent of the anterior vaginal pro-lapse has been exposed. In 11 patients (group A) the prolapse was corrected by plicating the adventitia of the posterior bladder wall using 4 to 5 absorbable 2-0 sutures. In 54 patients (group B) the mobilization of the vaginal flaps was extended more laterally to the ischiopubic ramus on each side. After repositioning of the dropped bladder the deviated parts of the uro-genital diaphragm were exposed bilaterally and subsequently plicated in the midline by 6 to 7 absorbable 2-0 sutures thus rebuilding a solid layer between the posterior wall of the bladder and the vagina. Statistical analysis was done using chi-square test and Mann-Whitney U test.

Results

Age and POPQ points (Ba, C) did not differ between the groups (table 1). Anterior wall repair was the only procedure in 6 patients of group A and 16 patients of group B. Except for one surgeon the mean operating time in group A was about 10 minutes shorter than in group B (table 2). In the other patients of both groups anterior wall repair was combined with vaginal hysterectomy (A: 4, B: 16 pt.), posterior wall repair (A: 3, B: 7 pt.) and transobturator sling pro-cedure (A: 1, B: 5 pt.). In 23 patients of group B sacrospinous fixation of the uterus or the va-ginal vault was performed, additionally. In 1 patient a concomitant enterocele was corrected and in 1 patient the rectum and the vagina were suspended to the sacrum, abdominally.

No complication was recognized in group A (0/11). In group B one abscess occurred after posterior wall repair. All other complications of this group were related to the diaphragm pro-cedure (7/54, p = 0.203). In 2 cases intraoperative injuries of the bladder have happened. Postoperatively, 3 patients needed temporary catheterization due to urinary retention and 2 patients presented with ureteral obstruction, one mild unilateral and another severe one bila-teral, requiring temporary nephrostomy (table 3).

Until February 2008 the overall reoperation rate of cystocele was 6%. All descents were beyond the hymen (Ba +1 to +4 cm). 3/11 patients of group A underwent recurrent surgery 8, 12 and 15 months after primary treatment. 1/54 patients of group B or one of 30 patients with-out sacrospinous or sacral suspension underwent recurrent surgery 17 months after primary treatment (table 2). The procedure consisted in tissue replacement by a monofilament synthe-tic mesh material which was combined with sacrospinous hysteropexy because of concurrent descent of the uterus (C –4 to 0 cm) in all but one patient of group A.

Interpretation of results

The findings of this study indicate that a modification of the traditional anterior wall repair may reduce the failure rate (2%), thus potentially enabling an alternative of early use of mesh ma-terial. However, complications especially ureteral obstructions (4%) are enhanced compared to the reported rate of 0-2% (3). In this respect plicating of the urogenital diaphragm has to be considered as a challenging procedure requiring advanced expertise.

Concluding message

Independent of concurrent suspension of the middle compartment the success rate of anterior colporrhaphy might be improved by reconstruction of the more solid diaphragm in primary treatment as opposed to the plication of the weak bladder adventitia. However, attention should be payed referring to the potential severe complications, first of all ureteral obstruction.

References

(1) Am. J. Obstet. Gynecol. (2002) 186; 1160-166
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Table 1. Patient characteristics before surgery

	Group A: Plicating bladder adventitia	Group B: Plicating urogenital diaphragm	p-values
Age (years)	65 ± 8 (n = 11)	63 ± 10 (n = 54)	0.624
Ba (cm)	1.9 ± 1.8 (n = 11)	2.4 ± 1.9 (n = 54)	0.405
C (cm)	0.8 ± 1.7 (n = 4)	1.3 ± 3.7 (n = 31)	0.794

Table 2. Efficiency of anterior colporrhaphy (AC)

	Group A: Plicating bladder adventitia	Group B: Plicating urogenital diaphragm	p-values
Operating time (min) All sole procedures One surgeon excluded	 41 ± 23 (n = 6) 31 ± 3 (n = 5)	 40 ± 9 (n = 16) 40 ± 9 (n = 16)	 0.209 0.038
Reoperation rate (n) All procedures AC without suspension	 3/11 3/11	 1/54 1/30	 0.002 0.021

Table 3. Complications of plicating urogenital diaphragm

	n	Treatment
Bladder injury	2/54	Intraoperative repair with two layers of absorbable sutures, prolonged catheterization
Urinary retention	3/54	Temporary placement of a bladder catheter
Ureteral obstruction	2/54	
Unilateral	1/2	Retrograde stent placement via cystoscopy
Bilateral	1/2	Temporary bilateral nephrostomy, subsequently antegrade stent placement via nephrostomy catheter

Specify source of funding or grant	**No funding or grant was involved in this study.**
Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require eithics committee approval because	**the data used in this study were exclusively collected within the medical care of patients.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**