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ANTERIOR VAGINAL WALL PROLAPSE, THE COMPARISON OF THREE DIFFERENT SURGICAL TECHNIQUES

Hypothesis / aims of study
To compare subjective and objective cure, complications and adverse events following three different surgical techniques for repair of anterior vaginal wall prolapse.

Study design, materials and methods
We performed a prospective observational cohort study. Women with a primary or recurrent prolapse of the anterior vaginal wall stage 2 or higher according to the Pelvic Organ Polapse Quantification (POP-Q) system, without prolapse of the middle or posterior compartment, were eligible. We compared anterior colporrhaphy (AC), trocar-guided anterior vaginal polypropylene mesh (anterior Prolift™) procedure and vaginal paravaginal repair anterior with tissue inductive biomesh (VPVR with Surgisis Biodesign™). The choice of surgical procedure performed, was based on patient characteristics. In case of a midline defect (classic cystocele), POP-Q stage II or III with good tissue quality a AC procedure was performed. In case of above mentioned patient characteristics but with a paravaginal defect of the pubocervical fascia, a VPVR Surgisis Biodesign™ was performed. An anterior Prolift™ was used in case of a cystocele stage 3 or higher with a patients preference to the use of mesh or in case of recurrent cystocele and in absence of a pubocervical fascie. Follow-up after 6 weeks, 6 months and every following year included gynaecologic investigation including POP-Q and validated questionnaires (Urogenital Distress Inventory(UDI-6), Incontinence Impact Questionnaire (IIQ)).
Primary endpoint: success defined as a composite outcome at last follow-up i.e. no bulge symptoms and anterior POP-Q stage I or less and absence of re-operarion for POP in the anterior compartment. Secundary endpoints: subjective outcomes such as patient-reported urogenital distress and disease specific impact on quality of life as well as objective (anatomic) outcomes per compartment and complications and adverse events.
All data analyses were performed with the statistical program SPSS, version 19.
A Kruskall-Wallis, a Wilcoxon and a Mann-Whitney test used where appropiate. A *P* value of 0.05 was considered statistically significant.

Results
From may 2007 till december 2011 we performed 38 AC, 19 VPVR anterior and 14 anterior mesh procedures for the treatment of cystocele stage 2 and higher. There were no differences in baseline characteristics, except for a higher number of patients in the Prolift™ group with chronic pulmonary disease ($p<0.002$). Mean follow-up time of the SSR -, VPVR- , and the mesh repair group was 20, 37 and 36.6 months respectively. Table 1 shows the results and complications at the last follow-up.

Interpretation of results
After a mean follow-up time of almost two and a half years none of the three techniques for the anterior vaginal wall repair is superior, nor in efficacy, nor in morbidity. This might be due to small numbers. When we look at the primary outcome there seems to be a tendency towards a better primary outcome in the VPVR and mesh repair group and this might become significant when the groups have larger numbers. The subjective results of 'no bulge symptoms' as secondary outcome measurement tend towards better results in the AC and the VPVR group compared to the mesh repair. This might be caused by a higher rate of the novo prolaps in the posterior compartment in the mesh group. The combination of a relatively high objective anatomical recurrence of a cystocele stage 2 and on the other hand good subjective results of 'feeling no bulge' show that there is no linear relation between anatomy and patients complaints. Using a composite outcome measurement is therefore very useful in evaluating surgical procedures.Our results reflect the daily practice of the treatment of women with failure of the anterior vaginal wall and are in line with data of recent randomized clinical trials on this topic [1-3]. As this is a observational study the choice of technique is based on patient characteristics. As none of the techniques show a significant difference in primary and secondary outcome measurements we suggest that patient characteristics should be taken into account in the choice of surgical procedure.

Concluding message
This study demonstrated that the perfect prolapse surgery does not exist at present. Pelvic reconstructive surgery should have an individualized approach, in which patients characteristics determine the type of surgery. The different surgical techniques are still under evaluation, which should enable a better identification of the respective indications in prolapse repair by the vaginal route.

Table 1. Results

	Anterior colporrhaphy	Anterior VPVR with biomesh	Anterior Prolift™	*p*-value
Primairy outcome				
Success (composite outcome)	43.3% (10/30)	66.7% (10/15)	66.7% (8/12)	0.182
Secundairy outcomes				
Cystocele stage <2	54.5%(18/33)	52.6% (10/19)	84.6% (11/13)	0.16
Cystocele stage 2	42.4%(14/33)	31.6%(6/19)	15.4% (2/13)	0.273
Cystocele stage 3	2.8% (1/35)	10.5% (2/19)	-	0.27

No bulge symptoms	82.9% (29/35)	86.7% (13/15)	75% (9/12)	0.689
Complications/adverse events				
Intra-operative bleeding >500ml	0	0	7.1% (1/14)	0.131
Bladder perforation	0	5.3% (1/19)	0	0.255
Temporary urinary retention	5.3% (2/38)	5.3% (1/19)	0	0.684
Vaginal dehiscence	0	0	0	
Vaginal wound bleeding	0	0	0	
De novo SUI	13.2% (5/38)	10,5% (2/19)	14,3% (2/14)	1
Surgery for SUI	18.4% (7/38)	15.8% (3/19)	21.4% (3/14)	0.677
Mesh exposure	-	-	21.4% (3/14)	0.002
Surgery for mesh exposure	-	-	1	
De novo POP posterior compartment	9.1% (3/33)	15.8% (3/19)	23.1% (3/13)	0.339
De novo POP apical compartment	-	-	7.7% (1/13)	-

Data presented as % (n/total n)

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