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HOW DOES THE APICAL SUPPORT OF THE VAGINA INFLUENCE VAGINAL WALL PROLAPSE?

Hypothesis / aims of study

Despite improvements in surgical technique and the use of grafts, vaginal wall prolapse recurs in up to 30% of women following surgery. Several hypotheses have been suggested to explain the recurrence of prolapse, and different surgical techniques have been described to try to reduce the failure rate of pelvic organ prolapse (POP) surgery. Whether the recurrence rate of vaginal repair is related to a fascial or muscular defect is contradictory. The role of the vaginal apical support in the pathogenesis of anterior vaginal wall prolapse is still unclear. Therefore the aim of our study was to evaluate the relationship between apical support and anterior / posterior vaginal wall prolapse.

Study design, materials and methods

Women attending gynaecology outpatients at a tertiary referral teaching hospital were studied. Both women who were symptomatic and asymptomatic for vaginal prolapse were included. Women were identified as symptomatic from prolapse if they complained of any of the prolapse symptoms and/or on direct questioning they reported a “sensation of dragging” or “a lump or fullness in the vagina”. Women were defined as asymptomatic when referred for pelvic pain, heavy periods, endometriosis, amenorrhoea, lower urinary tract symptoms, need of hormone replacement therapy, contraception, sterilisation, hysteroscopy, pelvic ultrasound scans, smear test, recurrent vaginitis but no prolapse symptoms and had none of the above symptoms. They were examined in the left lateral position by the same experienced clinician using a Pelvic Organ Prolapse Quantification (POP-Q) system, as described by the International Continence Society (ICS). This identified six defined points in the vagina: two anterior (Aa, Ba), two posterior (Ap, Bp) and two apical (C and D). Each point was expressed as distance in centimetres from the introitus with woman performing a maximum Valsalva manoeuvre. The absolute descent of the posterior fornix, of the cervix and/or vaginal vault (in women who have undergone a hysterectomy) was also determined. The normality of data distribution was checked by means of the Shapiro-Wilk test. The correlation between the superior vaginal compartment (point C and/or point D) findings, as well as the absolute descent of these points, and the anterior (points Aa, Ba) and posterior (points Ap, Bp) vaginal wall findings were studied using the Pearson correlation test with significance being at a p value < 0.05. A version 14.0 SPSS software program (SPSS Inc., Chicago, Illinois, USA) was used.

Results

355 women were studied. 233 (66%) were symptomatic and 122 (34%) asymptomatic for prolapse. The mean age for the asymptomatic women was 48 years (range 18-82 years) and 57 years (range 33-82 years) for the symptomatic women. The distribution of vaginal examination findings using the POP-Q for symptomatic and asymptomatic patients are shown in Table 1.

POP-Q	**Asymptomatic**	**Symptomatic**	**P value**
	n = 122	n = 233	
Aa	-2 (-2;-1.5)	-1 (-1.5;0)	0.0008
Ba	-2 (-2;-1.5)	-0.5 (-1;0)	0.0005
C	-6 (-7;-6)	-3 (-4;-2)	0.0002
Ba	-2 (-3;-2)	-0.5 (-1;0)	0.0008
Bp	-2 (-2.5;-2)	-0.5 (-1;0)	0.0007
D	-8 (-8;-7)	-6 (-7;-5)	0.0001
TVL	8 (8;9)	7 (7;8)	0.0001
GH	3 (2.5;3)	4 (3.5;4.5)	0.01
Pb	3 (3;3.5)	3.5 (3;4)	0.08
Stage	I (I;II)	II (II;III)	0.0001

Table 1. Median and 95%CI in brackets of the POP-Q measurements of the two study groups. (p<0.05 Mann-Whitney U test).

There was significant moderate correlation between the degree of cervical and posterior fornix descent and anterior and posterior vaginal prolapse, as shown in table 2.

	Aa		**Ba**		**Ap**		**Bp**	
	Pearson	**p**	**Pearson**	**p**	**Pearson**	**p**	**Pearson**	**p**
C	0.379	**0.000**	0.496	**0.000**	0.340	**0.000**	0.359	**0.000**
D	0.350	**0.000**	0.456	**0.000**	0.244	**0.003**	0.324	**0.000**

Table 2. Correlations between anterior and posterior vaginal wall prolapse and the cervical and posterior fornix descent

There is significant moderate correlation between anterior and posterior vaginal prolapse and the absolute position of the cervix, posterior fornix and the vault as shown in table 3.

	Aa		**Ba**		**Ap**		**Bp**	
	Pearson	**p**	**Pearson**	**p**	**Pearson**	**p**	**Pearson**	**p**
Absolute	0.306	**0.000**	0.397	**0.000**	0.223	0.006	0.242	**0.003**

descent of cervix								
Absolute descent of posterior fornix	0.278	**0.001**	0.433	**0.000**	0.240	**0.003**	0.344	**0.000**
Absolute descent of vaginal vault	0.307	**0.000**	0.456	**0.000**	0.299	**0.000**	0.337	**0.000**

Table 3. Correlations between anterior and posterior vaginal wall prolapse and the absolute levels of the uterine/vault prolapse

Interpretation of results

These results show that the support of the superior vaginal compartment (the posterior fornix, of the cervix and/or vaginal vault) plays an important role in the suspension of the anterior and posterior vaginal wall. This suggests that reinforcing the support of the superior vaginal compartment might be necessary to improve the treatment of anterior and posterior vaginal prolapse and to reduce the risk of recurrence.

Concluding message

A thorough examination of the superior vaginal suspension prior to surgery for vaginal wall prolapse might be extremely useful to improve the surgical outcome of POP surgery.

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Is this a clinical trial?	**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	**Ethics approval was not nedeed as vaginal examination is part of our routine clinical practice**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**