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SURGICAL MANAGEMENT OF ENTEROCELE IN WOMEN: THE ABDOMINAL OR TRANSVAGINAL APPROACH?

Hypothesis / aims of study

An enterocele is a herniation of the small bowel or peritoneum protruding in the upper part of the posterior wall of the vagina. Enteroceles are often accompanied by rectoceles and may not only cause vaginal bulging symptoms, but also symptoms of obstructive defecation. Current surgical approaches for large recto-enteroceles include the laparoscopic or open rectovaginopexy (RVP) , the posterior vaginal colporraphia with a Moskowitz procedure, and recently the use of posterior vaginal mesh implant. The aim of this study is to compare the anatomical and functional outcome of surgical recto-enterocele repair with a posterior vaginal mesh implant (Avaulta® posterior type) and the abdominal rectovaginopexy (RVP).

Study design, materials and methods

This is a case-control study with 52 women who had a RVP serving as historical control and 36 women who had an Avaulta® posterior implantation. The RVP was performed by open laparotomy as previously described by Silvis et al (1). The Avaulta® posterior was placed according to the company (BARD, USA) guidelines. During surgery the enterocele was dissected from the rectum and the rectum anterior wall was attached to the top of the implant with 2-3 monocryl® 3-0 (Ethicon) sutures as high as possible. The top of the vagina was also attached to the front site of the top of the implant. With the rectum attached to the posterior side of the top of the implant, and the vagina to the anterior site, Douglas pouch was obliterated completely.

All women were clinically suspect for an enterocelel. In the majority of women the enterocele was confirmed on a defecography. Anatomical outcome was recorded by physical examination pre- and post-operatively, using the Pelvic organ Prolapse Quantification (POP-Q). Functional outcome was assessed with The Urogenital Distress Inventory and the Defecatory Distress Inventory. The latter was developed at our institution and is used to record defecatory symptoms in the same format as the UDI. Both questionnaires have individual domains with scores that range between 0 and 100. The higher the score, the more severe symptoms are. The Incontinence Impact Questionnaire was used to assess quality of life before and after surgery.

Results

The mean follow-up for the RVP group was 17,5 months and for the Avaulta® posterior group 22,2 months. Five women in the RVP and eight in the Avaulta® posterior group were lost to follow-up or had incomplete data.

There was no statistical significant difference in pre-operative patient characteristics (age, Body Mass Index, parity and history of urogynaecological surgery) as well as in preoperative UDI, DDI and IIQ scores between groups. Also the number of women with co-existing cystocele (p 0,103) or apical prolapse (p 1,000) were comparable between groups. There was a significant difference in preoperative rectocele staging between groups. All women in the Avaulta® posterior group had a pre-operative rectocele ≥ stage 2 as compared to 31 women (67,4%) in the rectovaginopexy group (p 0,000).

In both groups there was one patient with a recurrent rectocele ≥ stage 2 (p 1,000). Functional outcome is displayed in the table.

Both the procedures significantly improved the UDI pain/discomfort and pelvic organ prolapse domain scores, with reasonable effect sizes in the prolapse domain. The RVP also reduced complaint of obstructive micturition significantly. With respect to specific defecation symptoms both techniques significantly relieved obstructive defecation symptoms. The RVP also improved constipation and fecal incontinence, although the effect on fecal incontinence was of borderline significancy. This effect was not found in the Avaulta® posterior group.

After a RVP all domains of quality of life (ie physical activity, mobility, social activity, embarrassment and emotions) significantly improved as compared to only improvement in physical functioning in the Avaulta® posterior group.

If we compare the postoperative scores on the UDI, DDI and IIQ between the RVP and Avaulta® posterior group, no statistical significant differences are found.

Table: Functional outcome and quality of life after RVP or Avaulta® posterior

	Avaulta® (n=28)	**Effect size**	**P-value**	**RVP (n=47)**	**Effect size**	**P-value**
UDI domains						
Urinary incontinence	9,66	0,100	0,482	6.53	0,109	0.322
Overactive bladder	4,19	0,072	0,438	2.17	0,036	0.563
Obstructive micturition	10,46	0,190	0,118	15.04	**0,294**	**0.005**
Pain/discomfort	25,70	**0,412**	**0,000**	15.81	**0,272**	**0.004**
Prolapse symptoms	42,00	**0,587**	**0,000**	43.02	**0,583**	**0.000**
DDI domains						
Constipation	5,51	0,139	0,250	12.23	**0,317**	**0.004**
Obstructive defecation	11,62	**0,268**	**0,017**	13.37	**0,263**	**0.009**
Painful defecation	3,62	0,073	0,663	7.22	0,130	0.172
Fecal incontinence	-0,86	-0,017	0,819	8.30	0,182	0.081
IIQ						

Physical	16,67	**0,295**	**0,028**	18.25	**0,328**	**0.002**
Mobility	1,81	0,032	0,735	14.97	**0,279**	**0.001**
Social	6,66	0,140	0,402	13.73	**0,296**	**0.006**
Embarrassment	-0,02	0,000	0,997	12.12	**0,243**	**0.022**
Emotional	6,99	0,114	0,244	13.80	**0,278**	**0.003**

Mean difference between pre-and postoperative scores (paired t-test). Effect size calculated with Cohen's r (1992) where 0.2 is indicative of a small effect, 0.5 a medium and 0.8 a large effect size.

Interpretation of results

Our study shows that both procedures are equally effective in anatomical outcome. The vaginal posterior wall prolapse is cured in > 95% of women. However, the RVP appeared to improve constipation, fecal incontinence symptoms, and quality of life better as compared to the Avaulta® posterior group.

Since this is a historical case control study, and not a randomised comparative study, the results have to be interpreted with caution. Both groups may have been different in natural variables that we did not collect. However, after the introduction of the Avaulta® posterior mesh we decided to use the mesh in all women in whom we previously would have performed a RVP. Therefore, bias by indication seems not to be an issue. In addition, we have to realise that when we compared both techniques face to face we did not observe any statistical significant differences in UDI, DDI en IIQ scores after surgery.

Although it was not subject of the current paper it is obvious that an open laparotomy for the RVP has a greater impact on the woman and has a longer recovery period as compared to the vaginal mesh technique.

Concluding message

Both techniques are effective in the anatomical cure of recto-enteroceles, with the Avaulta® procedure being less invasive. However, functional improvement of symptoms, especially constipation and fecal incontinence appears to be better after an RVP. In woman with predominant constipation or fecal incontinence before surgery it may be advisable to perform a RVP, especially if one is skilled to do this procedure by laparoscopy instead of laparotomy.

References

1. Abdominal rectovaginopexy: modified technique to treat constipation. Silvis et al. Dis Colon Rectum. 1999 Jul;42(7)964-5.

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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 ethics committee approval because	**retrospective analysis of 2 standard operation techniques, used in our hospital**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**