

# Rectovaginal Endometriosis

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## Summary

This paper explores the current debate on the origin and nature of rectovaginal endometriosis. Rectovaginal endometriosis is a term that means different diseases to different physicians. This term includes diseases of the cul-de-sac, the rectovaginal septum and the vaginal outlet. These areas can include the uterosacral ligaments, retrocervical tissue, posterior vaginal fornix, rectosigmoid colon and lateral cul-de-sac peritoneum.

Surgical staging of retrocervical, posterior vaginal and rectovaginal endometriosis at laparoscopy or laparotomy requires the use of intraoperative vaginal and rectovaginal exam, rectal probe and vaginal probe. All of my patients with rectovaginal involvement also had partial or complete cul-de-sac obliteration with retrocervical and/or posterior vaginal fornix endometriosis.

## Introduction

A current debate exists on the origin and nature of rectovaginal endometriosis. (Donnez et al., 1995; Donnez et al., 1996; Koninckx & Martin, 1992; Koninckx et al., 1991) The purpose of this paper is to investigate the debate by exploring the pathogenesis of rectovaginal endometriosis and its relationship to cul-de-sac obliteration.

Rectovaginal endometriosis is a term which means different diseases to different physicians. This term includes diseases of the cul-de-sac, the rectovaginal septum and the vaginal outlet. These areas can include the uterosacral ligaments, retrocervical tissue, posterior vaginal fornix, rectosigmoid colon and lateral cul-de-sac peritoneum. Diagnosis can be difficult due to the position of the disease. Most physicians will see few cases with both vaginal and rectal involvement (Martin et al., 1997).

Surgical staging of retrocervical, posterior vaginal and rectovaginal endometriosis at laparoscopy requires the use of intraoperative vaginal and rectovaginal exam, rectal probe and vaginal probe. The retrocervical tissue and/or posterior vaginal fornix have been involved in all patients with rectovaginal endometriosis who I have examined in this fashion.

## Definition

Concepts for definitions of rectovaginal endometriosis include the areas involved, the histologic components, staging systems, and pathogenesis. The three main anatomic areas of concern regarding rectovaginal endometriosis are the cul-de-sac, the rectovaginal septum and the vaginal outlet. Vaginal outlet endometriosis is generally related to tears in the vagina while giving birth and will not be discussed further. Vercellini's paper suggests that rectovaginal endometriosis is associated with cul-de-sac obliteration. (Vercellini et al., 2000) Isolated endometriosis within the rectovaginal septum was not found in his study. This is in agreement with articles by Koninckx and Martin. (Koninckx & Martin, 1992). If the origin of rectovaginal endometriosis is due to cul-de-sac obliteration, then either this is likely due to retrograde menstruation (Sampson, 1927) but may have an origin in Mullerian rests. (Russell, 1899) On the other hand, if this starts in the rectovaginal septum instead of the cul-de-

sac, then origin in Mullerian rests is more likely.

Rectovaginal endometriosis includes not only glands and stroma but also a dense fibromuscular reaction (Clement, 1990; Donnez et al., 1996) which is more prominent than the fibromuscular reactions noted elsewhere in the pelvis. (Martin, 1990; Stripling et al., 1988) These glands and stroma are noted in a pattern which suggests that these are interconnected. (Donnez et al., 1992). Histologic examination of these have led some authors to conclude that the fibrotic margin, near the bowel mucosa, can be avoided in order to avoid entering the bowel. However, others have found that the glands and stroma can go through and to the edge of the fibromuscular reaction. Resection of all fibrotic tissue that can be palpated at surgery appears to be important for long-term relief. (Donnez et al., 1995; Koninckx, 1996; Koninckx & Martin, 1994; Martin, 1999) It is to be noted that long-term in this situation means 4 to 20 years. (Karnaky, 1969; Martin, 1999; Redwine, 1987, Koninckx et al, 1991)

Different staging systems have been used for rectovaginal and cul-de-sac endometriosis. These can give very different results. As examples, the 1979 AFS system, (AFS, 1979) the 1985 revised AFS system (AFS, 1985) and the cul-de-sac staging system from Dr. Adamyan (Adamyan, 1993) can give different conclusions for various stages. In Dr. Adamyan's staging system the posterior fornix and/or retrocervical areas are always involved. This is the same as my experience. Stage I and II involve the retrocervical area and vaginal fornix, whereas stages III and IV involve varying degrees of cul-de-sac obliteration and anterior rectal wall. This distinction can be surgically important. As long as the cul-de-sac is intact and the involvement is limited to the retrocervix or vaginal fornix, then outpatient surgery using either a vaginal or laparoscopic approach is reasonable in many patients. (Martin, 1988; Perry & Victoria, 1995) These distinctions are not made in the AFS Classification system unless one knows more than can be seen at standard laparoscopy. When the cul-de-sac is completely obliterated, the peritoneum can appear to be normal with

no evidence of peritoneal involvement. This is stage 4 in Adamyan's system, but Stage 0, Score 0 in the AFS scoring system if peritoneal involvement is not noted. On the other hand, the revised AFS scoring system has a stage for complete cul-de-sac obliteration and would score this as Stage 4, Score 40. A combination of a rectal probe for rectal identification and a vaginal probe for vaginal fornix identification is needed to make this distinction. If there is only involvement of the rectovaginal septum, with no obliteration of the cul-de-sac, the vaginal probe will be seen through a soft, normal vagina.

### Incidence

Superficial endometriosis is very common and may occur in up to 100% of women at sometime in their life. (Evers, 1994) For many women with early superficial endometriosis, this may be a self-limited disease. (Brosens, 1994; Hoshiai et al., 1993; Martin et al., 1997) On the other hand, deep endometriosis and rectovaginal endometriosis are uncommon. Deep endometriosis is expected to occur in from 1 in 170 in 1 in 3,800 women. (Martin et al., 1997) Deep endometriosis can involve any area in the pelvis and not only those in the rectovaginal area. Rectovaginal endometriosis is only a small percentage of those women who have deep endometriosis.

### Treatment

Medical hormonal suppression with estrogens, progestins, and/or gonadotropin type agents is frequently the first type treatment. It can avoid or delay difficult and complicated surgery in a small number of patients. However, many patients will have recurrence of their symptoms after medical therapy. In looking at patients with mild and severe endometriosis, but not necessarily rectovaginal endometriosis, the recurrence rate is lower for mild diseases (37%) than for severe stage (74%). (Waller & Shaw, 1993) Infiltrating nodules respond less commonly than severe endometriosis in general and in particular in scar areas. (Wolf & Singh, 1989).

Although some surgeons have used TAH-BSO to avoid doing bowel surgery, this does not cure all patients.

(Redwine, 1994) In that the majority of bowel endometriotic lesions can be resected with a little more morbidity than a hysterectomy, it would appear more reasonable to do bowel resection at the time of hysterectomy than to leave bowel endometriosis behind. This is a controversial issue and many authors avoid bowel surgery at the time of the hysterectomy.

Resecting rectovaginal endometriosis is generally done in 1 of 2 approaches. One approach is to resect the endometriosis off of the bowel but leave a fibrotic rim so as to avoid entering the bowel. This will remove most of the endometriosis in many patients and may decrease the risk of complications. Some surgeons note good success using this approach but conclusions about avoiding complications are speculative. Other surgeons and I feel that all palpable areas of fibrosis should be resected for complete removal. (Donnez et al., 1995; Koninckx & Martin, 1994; Martin, 1999) However, complete resection is difficult at laparoscopy (Koninckx, 1996) and at laparotomy. (Coronado et al., 1990; Moore et al., 1988)

The three major complications that I have seen in Memphis were related to deep infiltration into the lower half of the rectovaginal septum. Palpable tumor was within 4 cm of the hymeneal ring in all three cases. Rectosigmoid resection and anastomosis resulted in an anastomotic site behind the lower third of the vagina. I have had no major complications with lesions in the upper half of the rectovaginal septum, lesions limited to the cul-de-sac or in those limited to the sigmoid colon.

There are two variations on complete resection. One is to try to wedge the fibrotic lesion out of the anterior wall and then repair the anterior wall. The other is to resect this area of the bowel in its entirety and perform a primary anastomosis. The components of the first technique feel that maintaining the vascular arcade in the mesentery is more important than avoiding tension and possible stricture on the anterior wall. The components of the second variation note that a 3 cm lesion in the bowel can have a 9.5 cm circumference. Resecting this 3 cm lesion may leave a 9.5 cm defect in the anterior

wall. Trying to repair a defect this large can be more time consuming and difficult than doing a primary resection and anastomosis. In addition, there is no large body of knowledge regarding repairing anterior lesions of this size. Those authors who favor anterior wall resections still do resection and anastomosis with lesions of this size. Anterior wall resection is more likely to be performed on lesions of less than 1 cm in size and are uncommonly performed at 2 cm or larger.

Performing TAH-BSO but avoiding the rectovaginal component may work for some patients as long as hormonal replacement is avoided or limited. However, rectovaginal endometriosis which is left after TAH-BSO can be active even without estrogen replacement. Only 9% of O'Connor's patients and 19% of Redwine's patients with deep endometriosis after hysterectomy were on estrogen replacement before referral. (O'Connor, 1987; Redwine, 1994)

### Conclusions

At surgery the classification of cul-de-sac and rectovaginal septal endometriosis requires probes in the vaginal fornix and in the rectum. If the posterior fornix can be expanded with the vaginal probe and if it shows no evidence of involvement, then the cul-de-sac may be intact. In all of my patients, this test showed that the posterior fornix and/or retrocervix were involved when the rectovaginal septum was involved.

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