Complete rectal prolapse—the results of Ivalon sponge rectopexy

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Summary

Forty-two patients with complete rectal prolapse have been treated using the Ivalon sponge rectopexy. There was no operative mortality in this series and only one complete recurrence after an average follow-up of more than 4 years. Pelvic sepsis occurred in one patient and required removal of the sponge. The majority of the patients were satisfied with the results of surgery, despite some remaining incontinent.

KEY WORDS: pelvic sepsis, rectal ulcer, faecal incontinence.

Introduction

The principle abnormality in prolapse has been shown by Broden and Snellman (1968) using cine-radiography to be an intussusception of the rectum which begins initially above the peritoneal reflection. Weakness of the pelvic floor, a commonly associated phenomenon, is probably secondary to repeated episodes of prolapse or straining over long periods of time.

Numerous operations have been described to treat complete rectal prolapse. Dissatisfaction with the long-term results of the majority of earlier procedures has led to their abandonment by most surgeons. The operations currently in vogue for the treatment of prolapse are designed to prevent the intussusception by fixing the rectum to either the sacrum or the symphysis pubis. The most popular procedure in the United Kingdom is the polyvinyl alcohol (Ivalon) sponge rectopexy, first described by Wells (1959). We wish to report our experience of the use of this procedure in 42 patients.

Patients and methods

Forty-one of the patients were female with an average age of 57 years (range 22–81 years). The

male patient was aged 30 years. The average duration of the prolapse was 4.4 years (range 3 months to 25 years). Twenty-three patients were found to have a patulous anus with poor tone on digital examination. Twenty-eight patients were incontinent for faeces (Table 1). Twenty-six patients reported straining at stool and 14 of these had habitual constipation passing small motions less frequently than once every 3 days. Five patients had a predominantly watery or loose motion.

TABLE 1. Postoperative incontinence in 40 patients

Incontinence for:	Preoperative	Post-operative
Solid faeces	20 (50%)	5 (12%)
Liquid faeces	28 (70%)	15 (38%)
Flatus/mucus	30 (75%)	20 (50%)

Nine of the female patients had previously undergone a vaginal hysterectomy and three had had an anterior colporrhaphy and posterior colpoperineorrhaphy for genital prolapse. Three other women had a cystocele—in one this was associated with a small rectocele. Fifteen women were nulliparous and 26 multiparous. One patient gave a history of an obstetrical tear into the anus which was primarily repaired at that time. She remained fully continent for 48 years before her prolapse developed.

Three patients came from long-term care institutions; two suffered from dementia and one had Down's syndrome. One further patient suffered from severe endogenous depression.

Six patients were found at laparotomy to have diverticular disease and one of these patients gave a history of previous attacks of acute inflammation requiring hospitalization. Seven patients had an associated solitary rectal ulcer and these seven women were younger (average age 45 years; range 22–72) than the group as a whole. In addition to the

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FIG. 1. The Ivalon sponge has been fixed to the sacrum and the right leaf sutured to the anterior rectal wall. The left leaf will be wrapped around the rectum and sutured, leaving a gap of 1-2 cm.

prolapse all seven also complained of recurrent episodes of rectal bleeding. One patient had undergone a left hemicolectomy for carcinoma 8 years previously.

Four patients had undergone the Thiersch operation on average 8.5 years previously, with recurrence of the prolapse 3 months, 6 months, 3 years and 5 years post-operatively. One patient had an anterior resection 5 years previously for prolapse which was followed by recurrence after 3 years.

The operation of Ivalon sponge (polyvinyl alcohol) rectopexy is usually straightforward. After mobilizing the rectum, the sponge, which has been soaked in saline, is sutured to the sacrum. The two leaves of the sponge are then wrapped around the posterior and lateral aspects of the rectum leaving a gap of 1-2 cm anteriorly. Interrupted sutures are used to tack the sponge to the rectum after which both rectum and sponge are covered with pelvic peritoneum (Fig. 1). The full details are described elsewhere (Ellis, 1966).

Results

There was no immediate post-operative mortality. Thirty-nine patients have been reviewed on average 4.2 years following surgery with the longest follow-up being just over 10 years. There was one late death from myocardial disease 8 years post-operatively.

Three patients developed significant late complications. A 68-year-old woman developed an incisional

hernia 1 year after her rectopexy. This has been repaired. One other patient, a 49-year-old woman, began discharging pus per vaginam 5 years after her rectopexy. At laparotomy there was a chronic pelvic and retrorectal abscess from which pieces of the sponge were removed. This cured her abscess but since then she has had some difficulty evacuating her rectum although there was no narrowing of her rectum. She has not had any recurrence of her prolapse. This patient had diverticular disease. The third patient, a 76-year-old woman, developed a complete recurrence of her rectal prolapse 1 year after her rectopexy. She then underwent a Thiersch operation and has not had any further prolapse during the last 18 months. Four further patients have developed minor degrees of mucosal prolapse which is evident on straining.

The seven patients with an associated solitary rectal ulcer have been reviewed on average 2.5 years after their rectopexy. All of these women have been cured of their prolapse but in only six has the 'ulcer' completely healed. One patient, a 37-year-old woman, still has some nodularity of the anterior rectal wall but this is less marked than pre-operatively. Biopsy of this lesion showed the typical features of the solitary rectal ulcer syndrome. She is much improved clinically but still has intermittent episodes of minor rectal bleeding and mucoid discharge. Protoscopic examination undertaken when the patient strained, revealed marked anterior muco-

sal descent down to but not through the sphincter region with the nodular area at the head of this mucosa.

Continence improved considerably as a result of surgery (Table 1). While 20 patients had difficulty at times controlling solid faeces preoperatively, only five patients had any incontinence for solid faeces postoperatively and all of these cases were substantially improved by the rectopexy. However, 15 patients were incontinent when the motion was loose or watery and half the patients had an occasional mucoid discharge or could not at times control the passage of flatus even though the prolapse had been cured. Only one of the patients reviewed was dissatisfied with the results of the operation, highlighting the distressing nature of the prolapse itself.

Discussion

In the present study, Ivalon sponge rectopexy has given good long-term control of complete rectal prolapse without mortality. This compares favourably with previous reports (Table 2). The overall results of series published from the United Kingdom show a mortality of 1.6% (7/425) with a recurrence rate of 4.0% (14/351) after an average follow-up of 5.4 years. Although rare, the one major problem with polyvinyl alcohol sponge is its liability to become infected. Nowadays, the authors would advise peri-operative prophylactic antibiotic cover when foreign material of this nature is being inserted. Kupfer and Goligher (1970), Morgan, Porter and Klugman (1972), Penfold and Hawley (1972) and Anderson, Kinninmonth and Smith (1981) all report cases in whom the sponge became infected in the immediate post-operative period and required removal of the material. However, in none of these patients did the prolapse recur probably related to post-septic fibrosis within the pelvis. In the present series, one patient developed pelvic sepsis 5 years after her rectopexy. Removal of the sponge resolved the sepsis and in common with previous reports there has been no recurrence of the prolapse. The patient had

diverticular disease with known prior episodes of acute inflammation. A further five patients with asymptomatic diverticular disease underwent rectopexy and there have been no septic complications in these patients to date. Symptomatic diverticular disease should be considered a contraindication to Ivalon sponge rectopexy. The use of more inert substances such as Mersilene mesh (Wyatt, 1981) or Marlex mesh (Keighley, Fielding and Alexander-Williams, 1983) may decrease the risk of infection.

The solitary rectal ulcer syndrome is a curious condition which, when associated with complete rectal prolapse, usually resolves after treatment of the prolapse (Martin, Parks and Biggart, 1981). In the present study six of the lesions healed completely after rectopexy. In the seventh patient, with a large nodular lesion there was still a small area of nodularity associated with descent of the anterior rectal mucosa after surgery. In many patients with the solitary ulcer syndrome some degree of prolapse can be demonstrated (Martin *et al.*, 1981; Ford *et al.*, 1983). If conservative measures fail to alleviate troublesome symptoms, some form of rectopexy should be considered.

Although there was significant improvement in continence following rectopexy this was less impressive than the control of the prolapse itself. Parks, Swash and Urich (1977) have shown that anorectal incontinence may result from pudendal nerve damage related to the trauma of childbirth or from repeated straining at stool. Following the correction of the rectal prolapse, the tone in the anal sphincters may improve to a degree as they are no longer being stretched by a descending rectum. This, together with the practice of perineal exercises, attention to dietary aspects and the judicious use of pharmacological agents, may result in a continuing improvement in the degree of continence over the next 12 months.

There is, at present, no satisfactory method of predicting which patients will remain incontinent after rectopexy. The use of rectal pressure studies is of no value in this respect (Keighley *et al.*, 1983). If

TABLE 2. Results of Ivalon sponge rectopexy

Author	Patients		Mortality	Recurrence	Average length of follow-up (years)
	Total number	Number reviewed			
Anderson <i>et al.</i>	40	37	1	1	7
Boutsis <i>et al.</i>	26	25	1	3	3.5
Kupfer <i>et al.</i>	25	21	1	0	5.5
Morgan <i>et al.</i>	150	93	4	3	5.5
Penfold <i>et al.</i>	101	95	0	3	6
Stewart	41	40	0	3	5.5
Present series	42	40	0	1	4.2
Total	425	351	7	14	5.4

incontinence remains a significant problem, post-anal perineorrhaphy in selected patients has been used with success (Parks, 1967; Keighley *et al.*, 1983).

The Ivalon sponge rectopexy will cure most patients of their prolapse and improve the degree of anal continence and this can be achieved with an acceptable mortality and morbidity. The risk of sepsis may be reduced by perioperative antibiotics. It is possible that other materials such as Mersilene or Marlex mesh may be more widely used as an alternative in the future. The majority of patients are pleased with the results of the operation even though some remain incontinent.

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