

to check the whole area by careful digital palpation with biopsy of any suspicious zone. Even so, during the course of one operation a suspicious area was found, frozen section proved it to be malignant, and an excision of the rectum was performed.

The lesser procedure for a villous tumour involving only part of the rectum has been performed on 12 occasions. There has been no instance of perirectal sepsis. Although some narrowing has occurred in the course of healing this has not resulted in a rectal stricture.

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## Surgical Access to the Rectum – a Transsphincteric Exposure

by A York Mason FRCS  
(*St Helier Hospital Group, London*)

Complete division of the anal sphincters gives an excellent exposure of the interior of the rectum. When sutured accurately they heal well and leave the patient with normal defæcation and complete anal continence.

I first used this exposure nine years ago and since then I have had occasion to use it in 18 more cases. Mr Henry Thompson, to whom I demonstrated it some two years ago, has used it with complete success since then in at least 4 cases, and Mr H E Lockhart-Mummery has given me details of one case in which he used it successfully. With their permission I have included their cases in this review, making a total of 24 cases, all with normal defæcation and full continence. I feel confident now that this is a safe procedure to use when clear exposure of the interior of the rectum is required. Mr Ian Todd suggested the descriptive name of 'transsphincteric exposure'.

#### The Operation

The patient is placed on the operating table in the inverted 'V' position, the buttocks being strapped apart with adhesive plaster, as shown in Fig 1. Fig 2 shows the line of incision, extending from the anus just to the left of the midline posteriorly and passing obliquely upwards to the left of the coccyx and lower sacrum. The subcutaneous tissues in the line of the incision are infiltrated with a dilute solution of adrenaline.

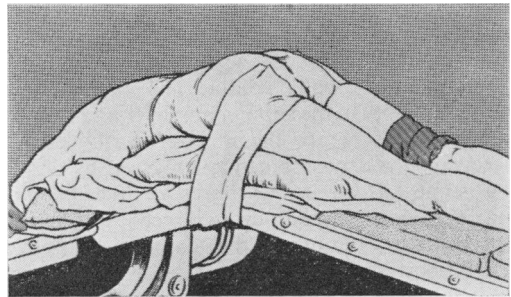


Fig 1 Patient positioned on the operating table

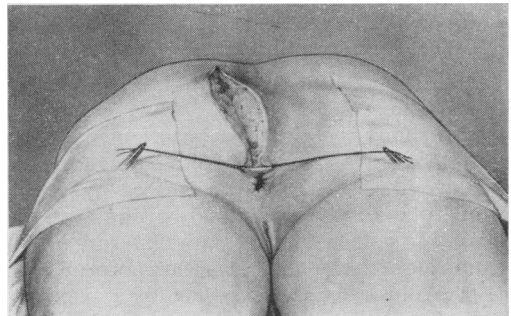


Fig 2 The line of the incision

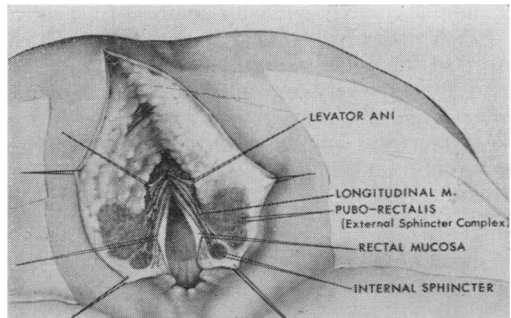


Fig 3 The anatomy encountered as the incision is deepened

The anatomy encountered as the incision is extended into the anal canal and rectum is shown in Fig 3. The lower fibres of the gluteus maximus are seen in the upper end of the wound. What I have called the puborectalis-external sphincter complex presents as a large bundle of muscle. Complete division of this bundle is an essential step in obtaining good exposure, and its accurate suture is probably the most important factor in restoring normal function and continence afterwards. The levator ani is a sheet of variable thickness, merging into the upper and deep aspect of the puborectalis-external sphincter complex. The fascia propria and the muscle coats of the rectum and anus are divided in the line of the

incision, to reveal the well-defined submucous plane. The expanded lower part of the circular muscle ends as a partially separated ovoid bundle of characteristic paler colour. The main vessels are seen clearly in the submucous layer and should be controlled before the mucosa is divided. If necessary the exposure can be enlarged by dividing some of the lower fibres of the gluteus maximus muscle, and even larger exposure is obtained by removing the coccyx. Complete hæmostasis and accurate marking of each layer, as it is divided, with stay sutures, is absolutely essential. If this is not done muscle layers retract and lose their characteristic colour, making it difficult to restore them accurately when the time comes for repair. Cadaver dissections, done by my colleague John Edwards, have been an essential contribution to the surgical anatomy of this exposure.

Fig 4 shows the perfect exposure giving clear direct vision, without any additional lighting, of a rectovesical fistula. The prostatic cavity is seen through the rectal opening and beyond that, the opening into the bladder. With this sort of exposure, closure of a fistula presents no problems.

Fig 5 illustrates the exposure of a papillary carcinoma. Its base is clearly visualized and its excision, between paired stay sutures around the periphery through full thickness of rectal wall, can be done accurately and with control of bleeding.

Fig 6 shows a simple flat papilloma, which carpeted the entire rectum. It is being dissected away along the very convenient submucous plane. After denuding the rectum of its mucosa in this way, the raw muscle seems to epithelialize remarkably quickly and without any serious stricture problem.



Fig 4 *The exposure of a prostatic fistula*

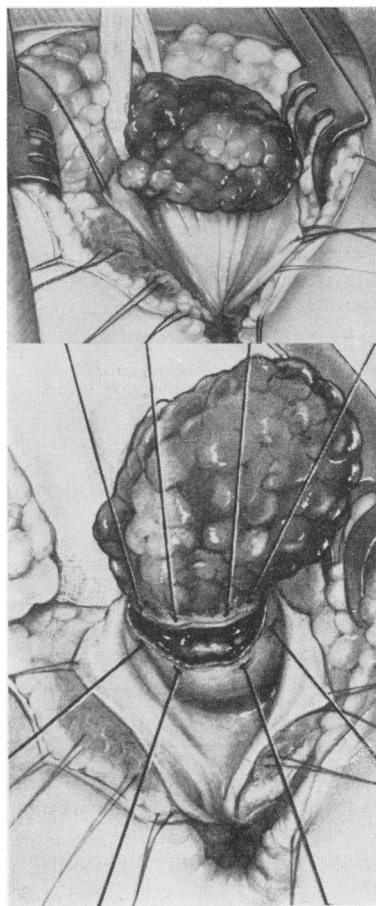


Fig 5 *The exposure and excision of a papillary carcinoma*

Having dealt with the pathology, the rectum and anus are now closed in layers using chromic catgut throughout. Fig 7 demonstrates the method of closure of the incision. It shows the continuous catgut suture to the mucosa, and interrupted catgut sutures taking both muscle coats and the fascia propria, and ending with careful approximation of the cut ends of the expanded lower end of the internal circular layer (the visceral sphincter). The puborectalis-external sphincter complex requires several interrupted sutures of stronger chromic catgut. The subcutaneous fat is approximated by fine catgut sutures and a suction drain is placed in the space in front of the coccyx. The skin near the anus is closed with catgut and the remainder with a non-absorbable suture. Fig 8 shows the final closure.

#### *The Indications*

Although there are other possible indications, up till now I have used this exposure in three main groups of patients: (1) Vesicorectal fistula.

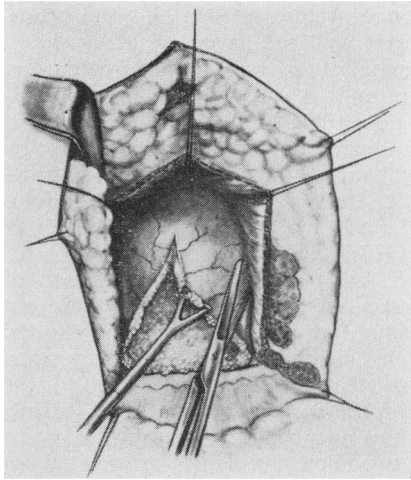


Fig 6 *Submucosal resection of an extensive flat type villous papilloma*

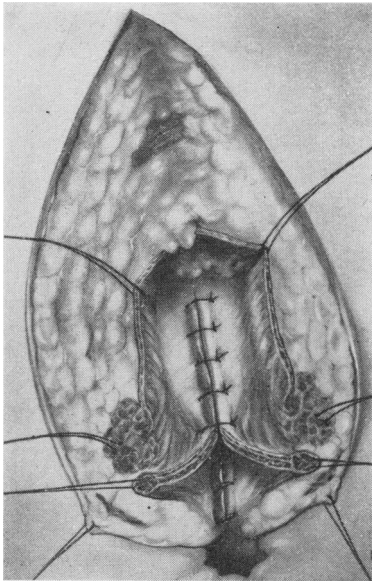


Fig 7 *Method of closure in layers*

(2) Villous tumours of the rectum too large and extensive or too high to be resected adequately through the intact anal canal. (3) Local excision of carcinoma of the rectum in patients who refused permanent colostomy or were considered unsuitable, physically or mentally, for abdominoperineal resection.

Over the past nine years this exposure has been used in 24 cases. There were 4 cases of rectovesical fistula, 3 following prostatectomy and the fourth a complication of low anterior resection of the rectum for Hirschsprung's disease in a child. All these cases had a preliminary

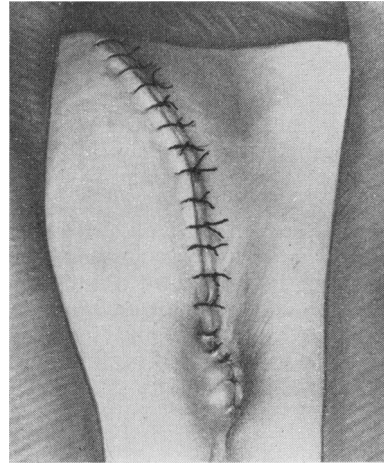


Fig 8 *Final closure*

temporary colostomy established and, after operation, bladder drainage by means of a suprapubic tube or an indwelling urethral catheter until the fistula had healed. There were 10 cases of villous papilloma, all resected through this exposure, because they were considered to be too large or too extensive to be resected satisfactorily through the intact anus. I have separated them into two main types. In the protuberant group, although some were enormous and apparently completely filling the ampulla of the rectum, it was possible to find a base smaller than the tumour itself and to close the mucosal defect left after excision. In these cases a temporary colostomy did not seem to be necessary and was not used. In the flat group, carpeting virtually the entire rectum, mucosal apposition after excision was not possible and no attempt was made to cover the raw muscle. In this group I thought that a temporary colostomy was advisable.

This exposure was used for local excision of carcinoma of the rectum in 10 cases who had comparatively small growths and who were all considered unsuitable, emotionally or physically, for abdominoperineal resection with a permanent colostomy. I did not consider that a temporary colostomy was necessary or indeed advisable in any of these cases. This series is too small and the follow-up time too short to make any comparison with the results of abdominoperineal resection; however, one patient is now 93, fit and free from recurrence, seven years after local excision. Another patient developed a local recurrence eighteen months after the original excision, a further local excision was carried out and followed up with deep X-ray treatment, and she remains well and free from further recurrence two years later. All that can be said is that, if a

patient is not fit for abdominoperineal resection, then this is an excellent alternative.

**Healing and Functional Results**

There was primary healing in 15 out of these 24 cases. Subcutaneous infection with some delay in healing occurred in 9, and one patient who had had a flat villous papilloma carpeting the entire rectum developed a faecal fistula on the eighth day. A temporary defunctioning colostomy was established and the fistula healed completely a few days later. In all these patients the final wound has been excellent, pliable and free from any discomfort or deformity. All 24 patients have ended up with normal defaecation and full anal continence.

**Acknowledgment:** The illustrations for this paper were prepared by Miss J Dewe.

**REFERENCES**

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**Postscript (September 1969):** Since presenting this paper I have learned with great interest that Dr A E Bevan advocated removal of the coccyx and division of the anal sphincters and rectal wall in the midline posteriorly, to give access for local excision of carcinoma of the rectum. The details of his operation were published in *Surgical Clinics of North America I*, 1917, 1233.

My parasacral approach differs in detail and I think that it has some advantages, but the principle is the same, that the sphincters can be divided to give good access to the rectum, and then sutured to leave the patient with full anal continence and normal defaecation.

**Rectal Prolapse and Incontinence Treated by Reconstruction of the Anorectal Sphincters**

by Ronald W Raven OBE TD FRCS  
 (Gordon Hospital,  
 Vauxhall Bridge Road, London SW1)

This is a distressing and disabling condition, causing some patients to be house-bound and others afraid to change rooms. Many therefore live secluded lives and suffer in silence. At times a colostomy has been accepted by the patient as the only means of relief. It is no wonder that surgeons have devised many operations to cure the condition; some have given poor results and

were discarded. At present the following operations are performed and have their advocates.

Rectosigmoidectomy was a popular method in this country until it was realized that the end-results are poor (Hughes 1949, Porter 1962). An abdominal repair operation was devised by Roscoe Graham (1942) but the reported functional results are variable. A combined abdominoperineal repair was described by Hughes & Gleadell (1962); the recurrence rate was 11%. Muir (1955, 1962) advocated the operation of anterior resection of the rectum, pointing out that the rectum must be mobilized down to the levatores ani muscles and the levator raphe exposed, so that extensive adhesions to the rectum are formed in the pelvis. Of 48 patients treated by this method, Muir did not know of a recurrence of complete prolapse, but pointed out that follow up was poor partly because the expectation of life for these patients is usually short.

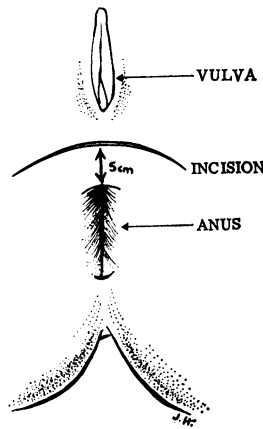


Fig 1 A curved skin incision 6.5 cm long half way between the anus and the vulva

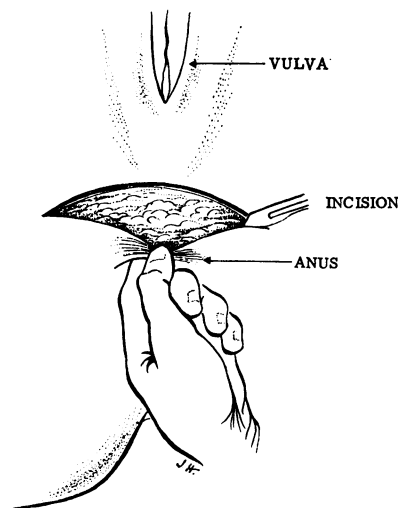


Fig 2 The incision is deepened, identifying the external and internal sphincters