

# FISTULOTOMY AND MARSUPIALISATION FOR SIMPLE FISTULA-IN-ANO

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## ABSTRACT

*Nineteen consecutive cases of simple fistula-in-ano treated with fistulotomy and marsupialisation were retrospectively reviewed. Fourteen cases were simple intersphincteric and the remaining 5 cases were uncomplicated transsphincteric fistulae. The cases were followed up for between 3 to 10 months (mean 6.9 months). There were no reports of bowel incontinence or recurrence of fistula. The advantages of this 'tissue conserving' procedure are discussed in the paper.*

*Keywords: Bowel continence, anal pressures, tissue conserving procedure, fistulectomy*

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## INTRODUCTION

Fistula-in-ano is a common condition. Most of them are cryptoglandular in origin and secondary to an infected anal gland. Most fistulae, of the order of 90 to 95 percent, are simple<sup>(1)</sup>. By 'simple', it is meant that the fistula is easy to treat. Conventionally this implies that there is not much difficulty in identifying the fistula tract and that ano-rectal function is not significantly impaired following surgery. The uncomplicated intersphincteric and low transphincteric fistulae belong to this group.

In Singapore, most surgeons treat simple fistula-in-ano with fistulectomy; a procedure where the fistula tract and the adjacent tissue are excised and the wound created is left to heal by secondary intention. This paper reports the results of a sphincter and tissue conserving procedure ie fistulotomy and marsupialisation in the treatment of simple fistula-in-ano.

## MATERIALS AND METHODS

Nineteen consecutive cases of simple fistula-in-ano treated electively in the department with fistulotomy and marsupialisation between April 1990 and November 1990 are included in this study.

Fourteen cases were classified as simple intersphincteric fistulae and the remaining 5 cases were low transphincteric fistulae. The cases were followed up for between 3 to 10 months with a mean of 6.9 months. Ages ranged from 13 to 65 years (mean age 35) and the majority were male (16:3).

The operative procedure of fistulotomy and marsupialisation is illustrated in Figs 1 to 6. The operation is performed under caudal anaesthesia and the patient is positioned in jack-knife position with the buttocks strapped apart to expose the perianal region. Following successful passage of the probe through the fistula tract, the tissue superficial to the probe is incised with cutting diathermy until the probe is entirely exposed. The floor of the fistula tract is curetted and the tissue is sent for histology. The external fistula opening is excised but trimming of the overlying mucosal and skin edges is not necessary. After achieving haemostasis, the cut mucosal edges are sutured to the respective edges of the fistula floor (ie marsupialisation) with interrupted 4/0 vicryl sutures. The resulting wound is remarkably small and heals with minimal deformity.

No packing of the fistulotomy wound is required. Oral analgesics are prescribed and the patient is advised a high fibre diet and to have sitz baths three times a day until the wound heals.

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Fig 1 - Simple intersphincteric fistula demonstrated with the probe and forceps (patient in jack-knife position)

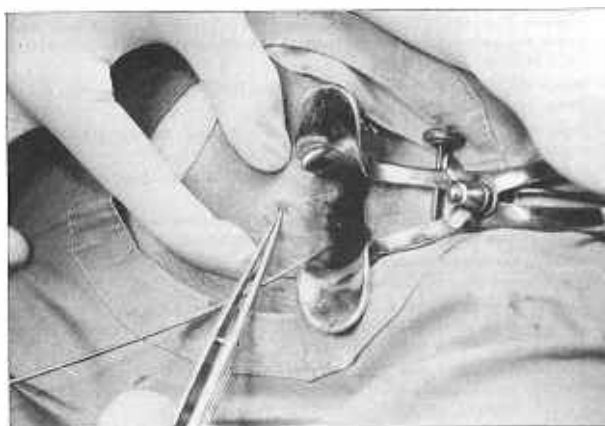


Fig 2 - Fistulotomy done with cutting diathermy

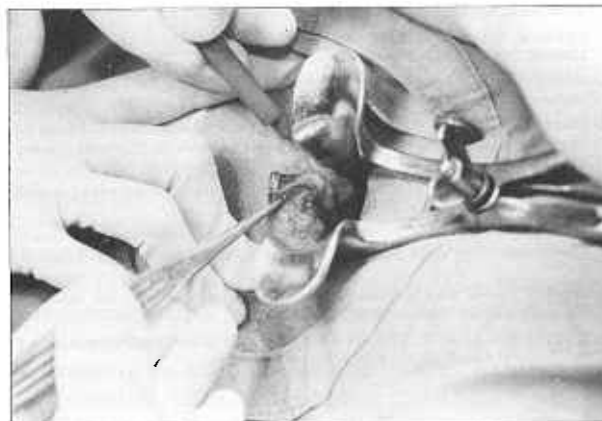
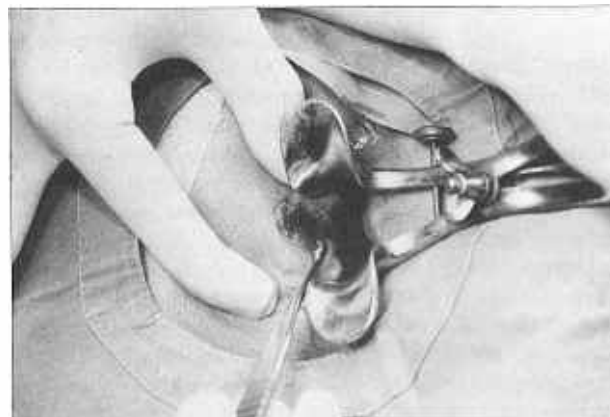
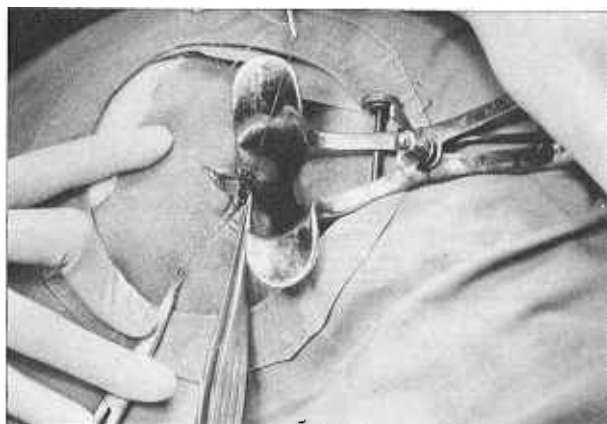


Fig 3 - Fistulotomy wound curetted and tissue sent for histology



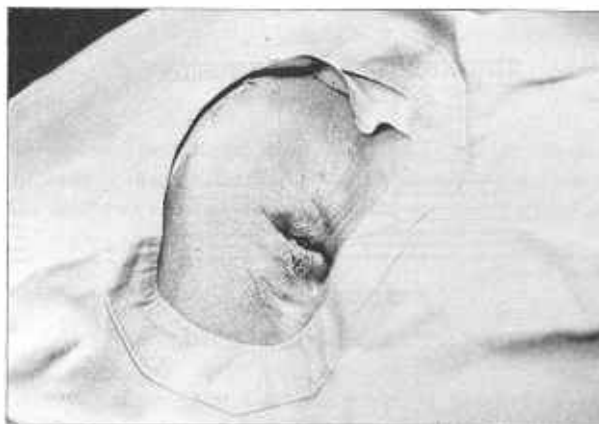
**Fig 4 - Marsupialisation of fistulotomy wound done with interrupted 4 0 vicryl sutures**



**Fig 5 - Marsupialisation completed**



**Fig 6 - Final wound appearance after removal of anal retractor. Note that no dressing is required to secure haemostasis and keep wound edges apart**



with intersphincteric fistula, even when no external sphincter was divided, the postoperative resting anal pressure was reduced in the distal 2cm of anal canal which represents the area of internal sphincter division. Although the mean maximal anal pressure was normal, there was still a 8% incidence of minor incontinence to flatus and liquid stool. The impaired continence rate was even higher when the external sphincter was divided as required in the treatment of transsphincteric fistula. These findings were similarly reported by others<sup>(3-8)</sup>.

We know that the ano-rectal ring<sup>(6,9)</sup>, is responsible for major bowel continence (continence to solid stool). Maintenance of minor continence (continence to liquid stool, flatus and mucous), however, depends on a long list of factors besides the anal sphincter mechanism (see Table I). These findings supported attempts at sphincter conserving surgery in the treatment of fistula-in-ano.

## RESULTS

Fourteen patients were operated on as day cares and were discharged a few hours later when they could micturate and when no bleeding from the wound was observed. The remaining 5 patients were admitted for the surgery either because they had significant medical history or were above 45 years of age.

The immediate post-operative complication of urinary retention was observed in one patient. There was no report of significant bleeding in this series.

The average wound healing time was 3.5 weeks (ranged from 2.5 to 5 weeks). No patient complained of bowel incontinence after the fistulotomy wound had healed, this included flatus continence, nocturnal soiling or leak.

There was no report of recurrence of fistula in this relatively short follow up period. The mean follow up was 6.9 months.

## DISCUSSION

From ancient times to the present day, the treatment of fistula-in-ano remained the same, namely operation in the form of a 'lay-open' with knife, cautery or the use of a seton<sup>(1)</sup>. The fistula wound when finally healed by secondary intention would become part of the anal canal lining, and thus eradicate the source of persistent chronic low grade sepsis in the anal gland and the associated fistula tract.

In the process of 'opening' the fistula tract, the overlying internal sphincter and in the case of transsphincteric fistula, part of the external sphincter are divided.

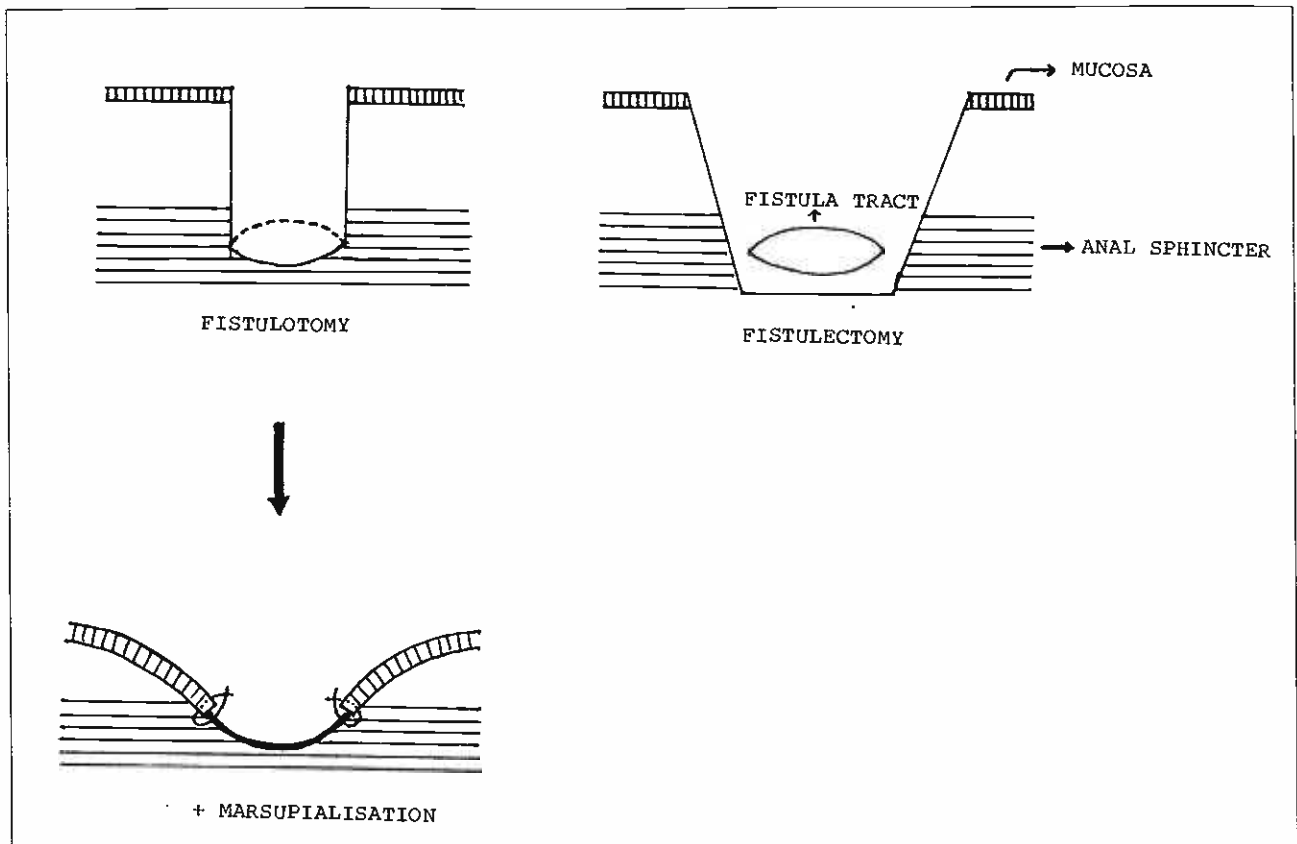
Belliveau<sup>(2)</sup> measured resting anal pressures and maximal squeeze pressures pre and post-operatively in patients treated for fistula-in-ano. Resting anal pressure is contributed mainly by the internal sphincter and maximal squeeze pressure largely by the external sphincter. In his study, he noted that in patients

**Table I - Factors affecting bowel continence**

Ano-Rectal Ring
External Sphincter Complex
Internal Sphincter
Ano-Rectal Angle
Anal Contour
Internal and External Haemorrhoidal Plexus
Nature and Frequency of Stool
Others ie Vagal Denervation, Procto-colitis, Laxative etc

Locally the usual surgical treatment for simple fistula-in-ano is fistulectomy, where the entire fistula tract is excised. To prevent premature healing of the overhanging mucosal and skin edges, the wound is further saucerized. Post-operatively, the saucerized wound is kept open by careful packing or dressing, which is a painful and time consuming nursing procedure. In fistulectomy, a varying amount of healthy tissue surrounding the fistula tract is also excised together with the fistula tract (see Fig 7). This may result in an appreciably larger wound with greater separation of the divided anal sphincter ends which, besides taking a longer time to heal, would predispose to a greater risk of bowel incontinence. When the wound finally heals, there is greater amount of scarring and deformity in the anal contours and in severe cases a guttered wound, known as a 'key hole' deformity in the perianal region may result in soiling, mucus leak and pruritis ani.

Fig 7 - Schematic Difference between Fistulotomy + Marsupialisation and Fistulectomy in the treatment of simple Fistula-in-Ano



Fistulotomy is widely practised in the United States. As illustrated in Fig 7, a smaller wound is created. To prevent the mucosal edges from healing prematurely which may result in recurrence of fistula, the fistula tract is marsupialised to the overlying cut edges of mucosa and skin. As there is no open wound, the risk of post-operative bleeding is much reduced and the need of the very tedious and painful post-operative wound dressing is not required. Fistulotomy and marsupialisation can thus be done as a day surgery procedure. As a result, the burden on hospital beds and nursing staff is reduced considerably.

Fistulectomy has little to recommend. The best that can be said is that it provides more biopsy material. In a controlled randomised trial by Kronberg<sup>(10)</sup>, the wounds took longer to heal than fistulotomy wounds (mean 41 days versus 34 days). There was also a greater risk of post-operative bleeding and of injury to the anal sphincter mechanism. The recurrence rate at 1 year of both fistulectomy and fistulotomy were similar at 5% in this series.

Although this is a small series and with a relatively short follow up period, the early results are encouraging. The extra effort put in to marsupialise the fistulotomy wound is amply rewarded by many advantages accorded by the procedure. In the present day of medical practice, where patient comfort and convenience are increasingly more important in deciding

method of therapy, fistulotomy and marsupialisation will appeal to both patient and surgeon as the treatment of choice for simple fistula-in-ano.

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