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# ORIGINAL PAPERS

## The House Advancement Anoplasty for Treatment of Anal Disorders.

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### Abstract

**Objectives: Anal advancement flaps treat a variety of anal disorders. In recent years the "House" advancement flap has been used with good success, the term referring to the shape of the flap used. It is simple with few shortcomings. We reviewed a single centre's experience of this procedure.**

**Methods: All patients who underwent a house advancement flap between 1996 and 2001 were identified. The case notes were examined and data collected on indication for surgery, complications, follow-up and outcome.**

**Results: Thirteen consecutive patients were identified, mean age of 44 years. Indications for surgery were chronic anal fissure, fistulous disease and post surgical deformity or stenosis of the anal canal. Median follow-up was 37 months (25-84). In 9 patients the flaps healed within 4 weeks. In the remaining 4 patients the flaps healed by secondary intention over a median of 14 weeks (8-20). Post-operative complications occurred in 5 patients (3 donor site separation and 2 flap retraction). Two patients developed recurrence of their original disorder. Eleven patients have relief of pre-operative symptoms with fully healed flaps.**

**Conclusion: This procedure is simple, easy to construct and robust. It can be performed for a variety of anal disorders with satisfactory results and few complications and should be in every Coloproctologist's armamentarium.**


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### Introduction

Symptoms from the anal canal vary from a mild irritation to a major source of morbidity. Surgery to treat anal pathology can result in further complications and morbidity. Traditional haemorrhoidectomy is associated with ectropion and anal stenosis, and fistulotomy results in a scarred anal canal often with a keyhole-shaped deformity. Posterior sphincterotomy for chronic anal fissure also invariably resulted in a keyhole deformity, and it has recently been recognised that lateral sphincterotomy carries a delayed risk of passive faecal incontinence, particularly in women(1).

The application of sliding skin flaps to the anal canal is not a new technique. In 1969 Sarner(2) described a rectangular sliding full thickness cutaneous flap to treat anal stenosis. The V-Y advancement flap has been employed for many years, in particular for use in the management of ectropion following haemorrhoidectomy(3). These two procedures have been combined in recent years to form the "house" advancement flap, so called as it is in the shape of a house. We report a single institution experience of the use of the house flap in a variety of anal conditions, including posterior chronic anal fissure.

### Patients and Methods

The 13 patients who underwent house advancement flap between 1996 and 2001 were identified. Data were collected on the indication for surgery, coexisting disease, time to healing and complications. The indications were: chronic anal fissure(4), keyhole deformity of the anus following anal surgery(4), recto-vaginal fistula(2), anal canal stenosis(1), pouch vaginal fistula(1), fistula in ano(1).

### Surgical technique

The house advancement flap is a sliding flap of perianal skin as illustrated in Figures 1. It can be use for anal stenosis, covering large defects and as an adjunct to fistula repair.

Patients received peri-operative antibiotics (metronidazole and gentamicin or cephalosporin) and pre-operative bowel preparation was usually administered. Two patients with recto-vaginal fistulae had temporary colostomies formed, one before house flap repair, the other when the flap was raised; both these patients had obstetric trauma as the aetiology for their fistula. One other patient also had temporary colostomy formation; although her house flap anoplasty was to repair a posterior keyhole deformity following sphincterotomy for post-haemorrhoidectomy stenosis, she underwent simultaneous anterior sphincter repair

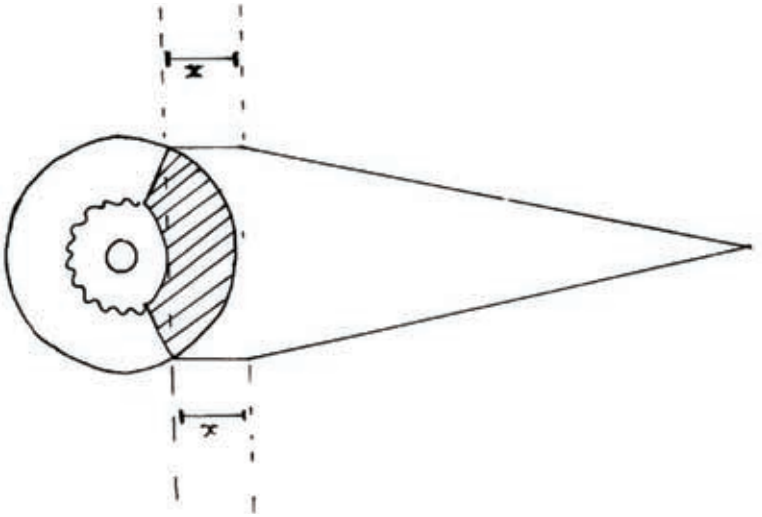


*Figure 1(a). The shaded area of anoderm is excised. Only scar tissue is removed and care is taken not to damage underlying internal sphincter or devascularise the leading edge of the flap. The long flap is incised but not detached from underlying tissue.*


*Figures 1(b). The flap has been advanced, with the resulting secondary defect (Z) closed in a V–Y fashion.*

of an obstetric injury. Otherwise, colostomy formation was not routinely performed for house advancement flap.

## Results

There were 8 women and 5 men, age 44 (range 23 to 66) years and the median follow-up was 37 (range 25 to 84) months. The hospital stay was a median 4 (range 1 to 8) days. The average time to healing was 6.5 (range 3 to 20) weeks. In 9 patients the flaps healed within 4 weeks. In the remaining 4 patients the flaps healed by secondary intention over a period of 14 weeks (Table 1).

*Table 1: Results according to indication*

| Indication | Number | Success | Failure |
|---|---|---|---|
| Chronic anal fissure | 4 | 4 | 0 |
| Keyhole deformity | 4 | 4 | 0 |
| Recto-vaginal fistula | 2 | 1 | 1 |
| Anal canal stenosis | 1 | 1 | 0 |
| Pouch-vaginal fistula | 1 | 0 | 1 |
| Fistula in ano | 1 | 0 | 1 |

Complications were as follows: although all 4 patients with fistulas healed, fistula recurrence occurred in two patients, one subsequently treated by Martius (pedicled labial fat-pad) flap, the other by mucosal advancement flap. Donor site separation with healing by secondary intention was seen in 3 patients and flap retraction in 2 (1 haematoma, 1 infection), both being resutured within 1 week and going on to heal. The two patients who underwent house advancement flap to improve their incontinence (keyhole deformity post fistulotomy) had good wound healing and some improvement in passive leak. All other patients recovered well.

## Discussion

A house flap covers a wider defect than a V-Y plasty, which increases its versatility, particularly in the anus, but otherwise construction and robustness are the same. Most common applications for the house advancement flap are ectropion(3), anal canal stenosis(4) and keyhole deformity(5).

In 1996 Sentovich(5) reviewed 30 patients undergoing house advancement flap for varied indications and described 47% donor site separation and 3% flap retraction, furthermore the only anal fistula treated by this technique recurred. In 1988 Robertson(6) described 14 anal fistulas treated with house flaps with a 14% donor site separation rate and 21% recurrence.

In our series 50% of fistulas failed to heal primarily whereas all patients with both post-surgical anal canal deformity (keyhole or stenosis) and chronic anal fissure healed. In the current surgical climate of preservation of the internal anal sphincter with fissure-in-ano the House advancement anoplasty is a very useful option to help achieve fissure healing. However it is much less useful in the management of anal fistulous disease where rectal or vaginal advancement flaps are more successful.

It is important for Medical Officers to be familiar with the various anorectal flap procedures used by colorectal surgeons in the management of the common conditions seen in primary care.

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