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Published In/Presented At

Rakhmanine, M., Rosen, L., Khubchandani, I., Stasik, J., & Riether, R. D. (2002). Lateral mucosal advancement anoplasty for anal stricture. *The British Journal Of Surgery*, 89(11), 1423-1424.

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Lateral mucosal advancement anoplasty for anal stricture

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Presented to the annual meeting of the Pennsylvania Society of
Colon and Rectal Surgeons, Philadelphia, Pennsylvania, May 2001

Paper accepted 28 June 2002

Introduction

Anatomic anal stenosis is an uncommon disabling condition. It is defined as an abnormal narrowing of the anal canal due to contracture of the epithelial lining which, to a varying extent, has been replaced by fibrous connective tissue¹. The causes of anal stenosis include surgery of the anal canal, trauma, inflammatory bowel disease, radiation therapy, venereal disease, tuberculosis and chronic laxative abuse. Patients with congenital senile involutional stenosis have also been described¹. Patients with anal stenosis complain of constipation, decreasing calibre of stool, difficulty in initiating evacuation, incomplete evacuation, tenesmus or bleeding.

Diagnosis is based on history and physical examination. The inability to perform a digital rectal examination or insert a standard-sized anal retractor, and the presence of anal fissures, are the most important features. Different approaches exist for the surgical treatment of anal stenosis. They include partial internal sphincterotomy and stricture release with various advancement and rotational flaps involving skin, mucosa, or both¹⁻⁵. The surgical approach depends on the extent of stenosis as it may involve the skin, transitional zone to the dentate line, anal canal, or all of these. This study was performed to evaluate the complication rate and recurrence of anal stenosis in patients who underwent mucosal advancement anoplasty for the indication of stenosis of the skin and/or the transitional zone only.

Patients and methods

Medical records were reviewed at the authors' institution for 95 patients who underwent lateral mucosal advancement anoplasty for distal anal stricture between 1 January 1981 and 31 December 1999.

The procedure is performed on an outpatient basis using local anaesthesia following conscious sedation provided by

an anaesthetist. The operation involves excision of the perianal and transitional zone scar with underlying internal sphincterotomy from the dentate line to the intersphincteric groove only. The mucosa is mobilized proximally and advanced distally to the previously noted intersphincteric groove to avoid ectropion (*Fig. 1*). The exterior wound is left open to heal by secondary intention.

Depending on the degree of stenosis, patients initially underwent either unilateral (59 patients; 62 per cent) or bilateral (36 patients; 38 per cent) anoplasty. The complication rate and reappearance of a clinically significant anal stricture requiring reoperation during the study period (to 31 December 2000) was the measured outcome. Thirteen patients with a follow-up of less than 6 months were excluded from the analysis for restenosis. Patients were followed after operation until the wounds healed. An attempt was made to follow each patient annually.

Results

There were 40 men and 55 women with a mean age of 68 years. Mean follow-up was 50 (range 1–214) months. Only 60 patients (63 per cent) had had previous anal

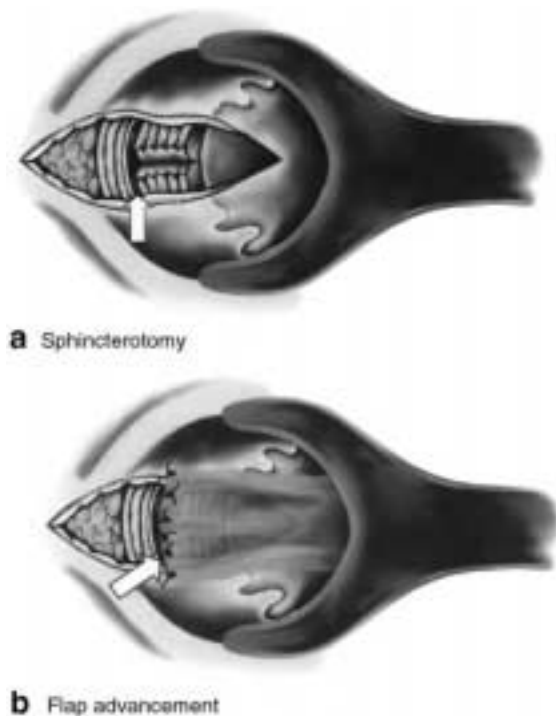


Fig. 1 **a** Scar excised with internal sphincterotomy to the intersphincteric groove. **b** Mucosal advancement to the intersphincteric groove (arrow) without tension

surgery: 35 haemorrhoidectomies, ten operations for anal fissure, four for fistula, one transanal excision of a neoplasm, and ten other miscellaneous operations.

All patients were followed after discharge for a mean of 72 days. One patient had unrecognized Bowen's disease. The overall complication rate was 3 per cent ($n = 3$). One patient developed an abscess and two had seepage of liquid stool, one of whom improved with time and dietary measures. Of 82 patients evaluated for the development of a restenosis that required operation, two developed recurrence in the first year, and two in each of the third, fourth and fifth years of follow-up ($n = 8$). Reoperation was performed in eight (10 per cent) of 82 patients for restenosis that was unresponsive to conservative management: two of 49 patients after unilateral anoplasty and six of 33 after bilateral anoplasty. Four patients with transient stenotic symptoms responded to non-operative treatment.

Discussion

The majority of surgical procedures for the treatment of distal anal and anal canal stenosis involve excision of the scar, partial internal sphincterotomy, and reshaping of the transitional zone and perianal skin with skin advancement flaps of various configurations, such as Y-V, V-Y, island, house and rotational¹⁻⁵. These procedures result in eventual healing, but most require preoperative bowel preparation, hospital stay, general anaesthesia and extensive perianal dissection with multiple suture lines.

Flap necrosis from loss of vascular supply, suture line dehiscence from excessive suture line tension, donor site problems, local sepsis, ischaemic contracture of the leading edge of the Y-V flap, urinary tract infection, faecal incontinence and restenosis are possible complications of skin advancement flaps¹⁻⁴. These complications are more likely following complex surgery for anal canal stenosis. A simpler technique is used for a more distal stenosis.

Martin⁵ initially described the use of mucous membrane for the treatment of simple anal stricture in 1944. The Martin procedure describes a posterior midline incision and advancement of the mucosal flap over the internal sphincter following excision of the scar tissue and sphincterotomy. The internal sphincterotomy corrects the distal stenosis, and covering the distal portion of the anal canal with mucosa prevents scar reformation. Sphincterotomy is performed judiciously to avoid incontinence and extends from the dentate line to the intersphincteric groove. In patients with

stenosis, this division usually includes overlying scar tissue with varying degrees of internal sphincterotomy. Despite the absence of fissure in some of these patients, this sphincterotomy widens the anal canal and the extent predicts the success of the operation. Khubchandani² described a lateral incision to avoid the risk of a keyhole deformity. The risk of mucosal ectropion is minimized by advancing the mucosa to, but not beyond, the distal border of the internal sphincter (intersphincteric groove). No cases of ectropion were encountered during follow-up in the present study; a bilateral repair was used if a medium to large anal retractor did not fit easily in the anal canal following unilateral repair. In the present series, eight (10 per cent) of 82 patients developed restenosis that necessitated reoperation during the follow-up period. These results were achieved with a postoperative complication rate of 3 per cent. No flap separation, necrosis or donor site dehiscence, complications that are associated with skin advancement flaps, was encountered. No postoperative urine retention or urinary tract infection was reported.

Patients with severe distal anal stenosis who initially required bilateral anoplasty appeared to be at a higher risk of subsequent restenosis (six of 33 *versus* two of 49 patients) due to the severe nature of the presenting disease. No cases of restenosis were noted after 5 years. Periodic digital self-dilatation or sequential dilatation in the clinic with Hegar dilators can be performed after operation in an attempt to avoid reoperation. Four patients responded to this method of non-operative therapy. Symptomatic distal restenosis unresponsive to conservative therapy may be managed with a contralateral mucosal advancement flap (if previously unilateral) or with skin advancement flaps.

References

- 1 Gonzalez AR, de Oliveira O Jr, Verzaro R, Noguera J, Wexner SD. Anoplasty for stenosis and other anorectal defects. *Am Surg* 1995; **61**: 526-9.
- 2 Khubchandani IT. Anal stenosis. *Surg Clin North Am* 1994; **74**: 1353-60.
- 3 Maria G, Brisinda G, Civello IM. Anoplasty for the treatment of anal stenosis. *Am J Surg* 1998; **175**: 158-60.
- 4 Caplin DA, Kodner JJ. Repair of anal stricture and mucosal ectropion by simple flap procedures. *Dis Colon Rectum* 1986; **29**: 92-4.
- 5 Martin EG. The plastic use of skin in simple anal stricture, reconstruction of anal lining, pilonidal disease. *Transactions of the American Protologic Society* 1944; **44**: 195-200.



European Colorectal Congress

28 November – 1 December 2022, St.Gallen, Switzerland

Monday, 28 November 2022

09.50

Opening and welcome

Jochen Lange, St.Gallen, CH

10.00

It is leaking! Approaches to salvaging an anastomosis

Willem Bemelman, Amsterdam, NL

10.30

Predictive and diagnostic markers of anastomotic leak

Andre D'Hoore, Leuven, BE

11.00

SATELLITE SYMPOSIUM

ETHICON

PART OF THE Johnson & Johnson FAMILY OF COMPANIES

11.45

Of microbes and men – the unspoken story of anastomotic leakage

James Kinross, London, UK

12.15

LUNCH

13.45

Operative techniques to reduce anastomotic recurrence in Crohn's disease

Laura Hancock, Manchester, UK

14.15

Innovative approaches in the treatment of complex Crohn Diseases perianal fistula

Christianne Buskens, Amsterdam, NL

14.45

To divert or not to divert in Crohn surgery – technical aspects and patient factors

Pär Myrelid, Linköping, SE

15.15

COFFEE BREAK

15.45

Appendiceal neoplasia – when to opt for a minimal approach, when and how to go for a maximal treatment

Tom Cecil, Basingstoke, Hampshire, UK

16.15

SATELLITE SYMPOSIUM

Medtronic

Further Together

17.00

Outcomes of modern induction therapies and Wait and Watch strategies, Hope or Hype

Antonino Spinelli, Milano, IT

17.30

EAES Presidential Lecture - Use of ICG in colorectal surgery: beyond bowel perfusion

Salvador Morales-Conde, Sevilla, ES



18.00

Get-Together with your colleagues

Industrial Exhibition

Tuesday, 29 November 2022

9.00

CONSULTANT'S CORNER

Michel Adamina, Winterthur, CH

10.30

COFFEE BREAK

11.00

SATELLITE SYMPOSIUM

INTUITIVE

11.45

Trends in colorectal oncology and clinical insights for the near future

Rob Glynn-Jones, London, UK

12.15

LUNCH

13.45

VIDEO SESSION

14.15

SATELLITE SYMPOSIUM



15.00

COFFEE BREAK

15.30

The unsolved issue of TME: open, robotic, transanal, or laparoscopic – shining light on evidence and practice

Des Winter, Dublin, IE

Jim Khan, London, UK

Brendan Moran, Basingstoke, UK

16.30

SATELLITE SYMPOSIUM



17.15

Lars Pahlman lecture

Søren Laurberg, Aarhus, DK

Thursday, 1 December 2022
Masterclass in Colorectal Surgery
Proctology Day

Wednesday, 30 November 2022

9.00

Advanced risk stratification in colorectal cancer – choosing wisely surgery and adjuvant therapy

Philip Quirke, Leeds, UK

09.30

Predictors for Postoperative Complications and Mortality

Ronan O'Connell, Dublin, IE

10.00

Segmental colectomy versus extended colectomy for complex cancer

Quentin Denost, Bordeaux, FR

10.30

COFFEE BREAK

11.00

Incidental cancer in polyp - completion surgery or endoscopy treatment alone?

Laura Beyer-Berjot, Marseille, FR

11.30

SATELLITE SYMPOSIUM



12.00

Less is more – pushing the boundaries of full-thickness rectal resection

Xavier Serra-Aracil, Barcelona, ES

12.30

LUNCH

14.00

Management of intestinal neuroendocrine neoplasia

Frédéric Ris, Geneva, CH

14.30

Poster Presentation & Best Poster Award

Michel Adamina, Winterthur, CH

15.00

SATELLITE SYMPOSIUM

OLYMPUS

15.45

COFFEE BREAK

16.15

Reoperative pelvic floor surgery – dealing with perineal hernia, reoperations, and complex reconstructions

Guillaume Meurette, Nantes, FR

16.45

Salvage strategies for rectal neoplasia

Roel Hompes, Amsterdam, NL

17.15

Beyond TME – technique and results of pelvic exenteration and sacrectomy

Paris Tekkis, London, UK

19.30

FESTIVE EVENING

Information & Registration www.colorectalsurgery.eu