International Surgery Journal
Mahipathy SRRV et al. Int Surg J. 2025 Sep;12(9):1575-1578
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20252701

Case Report

Post-surgical sequelae–anal stenosis managed with V–Y advancement flap: a case report

Surya Rao Rao Venkata Mahipathy, Alagar Raja Durairaj, Manoj Ananthappan*, Jawharun Nisa, Anand Prasath Jayachandiran, Suresh Rajendran

Department of Plastic & Reconstructive Surgery, Saveetha Medical College and Hospital, Tamil Nadu, India

Received: 14 July 2025
Accepted: 19 July 2025

***Correspondence:**
Dr. Manoj Ananthappan,
E-mail: manojananthappan@gmail.com

ABSTRACT

Anal stenosis is a dreaded complication following anal and rectal surgery with moderate and severe cases requiring surgery. Surgery could be anorectal lesions like haemorrhoids, fistulas, fissures or due to post oncological excision and radiotherapy. There is a morbidity associated with primary perineal closure due to multiple wound break downs, delayed recovery from surgery and adjuvant therapies. Herewith, we present our case of a post-oncologic status managed with V-Y gluteal advancement fasciocutaneous flap. This is a safe and simple method with a low complication rate which can relieve the symptoms of anal stenosis.

Keywords: Anal stenosis, Post-surgical complication, V-Y advancement flap, Patent anus

INTRODUCTION

Anal stenosis is a very serious and debilitating and disabling condition. It can be either anatomical or functional. In anatomical stenosis, the normal anoderm is replaced with a varying degree of restrictive non-elastic cicatrized tissue, while in functional stenosis, there is a hypertonic internal anal sphincter.[1] It has been reported that about 90% of anal stenosis cases are due to aggressive hemorrhoidectomy.[2] It may also be due to inflammatory processes as in Crohn's disease and ulcerative colitis, few venereal diseases, post radiotherapy, tuberculosis and chronic abuse of laxatives.[3]

Generally, patients do well in spite of the stenosis, while few complain of symptoms such as reduced stool caliber, constipation, faecal incontinence, difficulty in evacuation, anal pain, bleeding or diarrhoea.[4] Advanced low rectal and anal cancers require wide resections to achieve clear margins leaving large defects in the perineum and pelvic cavity. Further, the use of neoadjuvant chemoradiation increases the morbidity as irradiated skin is prone to breakdown. Complications as a result of inadequate wound healing increases hospital stay and cost, delay initiation of adjuvant therapy, and ultimately compromise outcomes. The goal of optimum perineal reconstruction is perineal skin closure with normal vascularized tissue to hasten wound healing and obliteration of the dead space.

Lots of surgical techniques are well-known for management of moderate and severe cases of anal stenosis. The simplest procedure is partial lateral internal sphincterotomy, while classic anoplasty should be performed for more severe cases to restore the pliability of the anal canal. AAF involves the transfer of well-vascularized, healthy tissue onto the fissure base and when combined with fissurectomy, improves wound healing and reduces risk of anal stenosis.[5]

Autogenous perineal wound closure is advantageous, but for an optimum way of closure, there is no consensus yet.[6] Various flap techniques have been described in the literature, including V-Y advancement flaps, rotation flaps and island advancement flaps which are less complex and easy to perform.[7-9]

CASE REPORT

52-year-old gentleman presented to us with difficulty in defecation for the past 1 year. He was apparently normal 1.5 years ago, when he had a tumour of the anal region for which excision was done elsewhere and details are not available. There was no history of radiotherapy. Now for the past 1 year, he presents with the present complaints. There is no history of ulceration, bleeding or discharge from the anal region. There was no history of comorbidities.

Figure 1: Anal stenosis and scarring.

Figure 2: Picture after excisional release.

Figure 3: V-Y advancement flap marking.

Figure 4: Immediate post-operative picture.

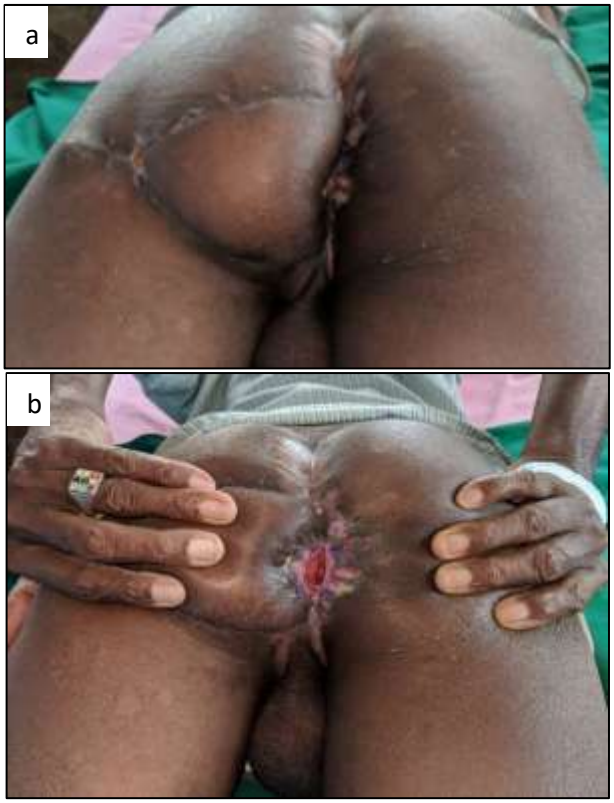

Figure 5 (a, b): Late follow-up picture showing well settled flap and patency of anal orifice maintained.

On examination, there was a severe stenosis of the anal canal, not able to admit the tip of the little finger and it was painful. There was gross scarring of the entire perianal region but the gluteal regions were healthy (Figure 1).

A clinical diagnosis of post-surgical sequelae–anal stenosis was made. We planned for release of the stenosis and a well vascularized soft tissue cover to maintain the patency of the anal canal. Under general anaesthesia and lithotomy position and under tumescent infiltration, excisional release of the anal stenosis was done (Figure 2). Raw area was created and near normal patency of the

anal canal was recreated. The raw area was then covered using a V-Y advancement flap from the gluteal region on a single pedicle (Figure 3). Inset was given with the anal mucosa with 2-0 polyglactin sutures maintaining the patency of the anal canal (Figure 4). The post-operative period was uneventful and patient was symptomatically better in 2 weeks time. He was on regular follow-up for about 6 months where the flap was well settled and the patency of the anal orifice was maintained (Figure 5).

DISCUSSION

The severity of postoperative anal stenosis is classified into three degrees, mild stenosis, where there is tight anal canal which can admit a medium sized Hill–Ferguson anal retractor or lubricated index finger, moderate stenosis which can admit them only after forceful dilatation of the anus and severe stenosis in which neither the small sized Hill–Ferguson retractor nor lubricated little finger can be admitted.[10] The level of anal stenosis may be low (distal to at least 0.5 cm below the dentate line), middle (0.5 cm above and 0.5 cm below the dentate line), high (proximal to 0.5 cm above the dentate line) and diffuse affecting the whole anal canal.[4,11]

The best treatment is prevention via adequate anorectal surgical technique.[12] Conservative treatment is advised for mild cases and initially for the moderate ones. Plenty of fluids with the use of fibre supplements and stool softeners are the basis of conservative management in addition to anal dilatation which can be performed digitally or with graduated mechanical dilators.[13] Many procedures have been described for management of anal stenosis as Y–V, V–Y, diamond, house, U-shaped, C-shaped advancement flaps and rotational S-flap.[14] The principle of anoplasty consists of increasing the dimension of the anal outlet by internal sphincterotomy and removal of cutaneous scarring and maintaining correction by proximal advancement of skin flaps or distal advancement of mucosa.[4]

No single procedure fits all, and the choice of the operation depends both on the surgeon's experience and on the severity of stenosis.[12] Despite the reported good results of these procedures (60–100% healing rate), many complications have been reported like anal mucosal ectropion, seepage of mucus or liquid stools, pruritus, suture dehiscence, flap retraction, ischemic necrosis especially at the corners of the flaps, infection, incontinence, and recurrence. The best technique has to be simple with no morbidity and restoring the anal function giving the best long-term results.[3] Due to tight anal orifices, no preoperative enemas were possible, but stool softeners were prescribed to all patients 5 days prior to surgery. Surgery was done under general or spinal anesthesia in the lithotomy position.

After measuring the defect, V-shaped skin markings are made with the apex sited at the greater trochanters with the limbs of the V reaching the superior and inferior ends of the defect. Hand-held Doppler study helps to locate the perforators precisely which allow for flap mobilization. This flap has reliable blood supply from two vessels: the superior and inferior gluteal arteries. There are a number of perforators for the superior gluteal artery (SGA) and inferior gluteal artery (IGA) and the dominant perforators are located in the middle 3rd of the flap and SGA perforators are close to the medial two-third of the line joining the posterior superior iliac spine to the greater trochanter while perforators from IGA are less definite in position.[15] After skin markings, incision is deepened until the underlying gluteus maximus muscle and deep fascia is incised without damaging the underlying muscle.

Due to multiple numbers of underlying perforators, up to one-third of the flap can be mobilized without jeopardizing its viability. The medial portion of the flap around 5–7 cm is de-epithelialized and sutured to the anal mucosa. Closure of the flap begins with approximating the edges of V, making vertical limb of "Y" (V-Y plasty) and this avoids tension along the midline and stabilizes the flap for closure. Unilateral flaps can close the defect up to 10 cm in size, for wider defect bilateral flap should be preferred.[16] High-fibre diet and bulk laxatives were prescribed to all patients for the early postoperative period. Advantages of the V-Y fasciocutaneous gluteal advancement flap are that the flap is robust and the tissue is non-radiated and well-vascularized and reliable blood supply from two vessels-superior and inferior gluteal arteries. Performing this flap has a short operating time, easy to harvest and the scar lies in the more natural gluteal crease.

Milsom et al and Mazier et al who advocated V-Y advancement flap anoplasty for management of severe low anal stenosis showed excellent results with 90% healing over a five-year period.[10] Sheikh and his colleagues also documented successful results of V-Y flap anoplasty for management of severe cases of anal stenosis in a series of 5 patients.[17] In another comparative study of 10 patients who underwent various flap surgeries for anal stenosis like the V-Y advancement flap, house flap, diamond flap and dufourmental flap, their outcomes were similar with no preference of a single technique.[18]

CONCLUSION

V-Y advancement flap anoplasty are easy, safe and successful options for management of moderate and severe anal stenosis with marked improvement of patient symptoms and low complication rate. The V-Y fasciocutaneous advancement flap is a simple and reliable method with shorter learning curve allowing wider excision of primary low rectal cancer and helps in filling the perineal and pelvic dead space with well-vascularized tissue to prevent wound morbidity.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Tahamtan M, Ghahramani L, Khazraei H, Tabar YT, Bananzadeh A, Hosseini SV et al. Surgical management of anal stenosis: anoplasty with or without sphincterotomy. J Coloproctol (Rio J). 2017;37(1):13-7.
2. Shevchuk IM, Sadoviy IY, Novytskiy OV. Surgical treatment of postoperative stricture of anal channel. Klin Khir. 2015;9:20–2.
3. Brisinda G, Vanella S, Cadeddu F, Marniga G, Mazzeo P, Brandara Fet al. Surgical treatment of anal stenosis. World J Gastroenterol. 2009;15(16):1921–8.
4. Duieb Z, Appu S, Hung K, Nguyen H. Anal stenosis: use of an algorithm to provide a tension-free anoplasty. ANZ J Surg. 2010;80(5):337–40.
5. Patti R, Fama F, Tornambe A, Asaro G. Fissurectomy combined with anoplasty and injection of botulinum toxin in treatment of anterior chronic anal fissure with hypertonia of internal anal sphincter: a pilot study. Tech Coloproctol. 2010;14(1):31-6.
6. Blok RD, Hagemans J, Burger J. Feasibility of subcutaneous gluteal turnover flap without donor site scar for perineal closure after abdominoperineal resection for rectal cancer. Tech Coloproctol. 2019;23:751–9.
7. Chambers W, Sajal W, Dixon A. V-Y advancement flap as first-line treatment for all chronic anal fissures. Int J Colorectal Dis. 2010;25(5):645-8.
8. M. Singh, A. Sharma, A. Gardiner, G.S. Duthie. Early results of a rotational flap to treat chronic anal fissures. Int J Colorectal Dis. 2005;20(4):339-42.
9. Nyam DC, Wilson RG. Island advancement flaps in the management of anal fissures. Br J Surg. 1995;82(3):326-8.
10. Milsom JW, Mazier WP. Classification and management of postsurgical anal stenosis. Surg Gynecol Obstet. 1986;163(1):60-4.
11. Asfar S. Anoplasty for Post-hemorrhoidectomy Low Anal Stenosis: A New Technique. World J Surg. 2018; 42(9):3015–20.
12. Brisinda G. How to treat haemorrhoids. Prevention is best; haemorrhoidectomy needs skilled operators. BMJ. 2000; 321(7261):582-3.
13. Liberman H, Thorson AG. How I do it. Anal stenosis. Am J Surg. 2000;179(4):325-9.
14. Brisinda G, Brandara F, Cadeddu F, Civello IM, Maria G. Hemorrhoids and hemorrhoidectomies. Gastroenterology. 2004;127(3):1017-8.
15. Georgantopoulou A, Papadodima S, Vlachodimitropoulos D, Goutas N, Spiliopoulou C, Papadopoulos O. The microvascular anatomy of superior and inferior gluteal artery perforator (SGAP and IGAP) flaps: A fresh cadaveric study and clinical implications. Aesth Plast Surg. 2014;38:1156–63.
16. Alver O, Ersoy YE, Aydemir I, Erguney S, Teksoz S, Apaydin P et al. Use of “house” advancement flap anorectal diseases. World J Surg. 2008;32(10):2281-6.
17. Sheikh SH, Jahan I, Rahman MR, Matubber MM, Taher A, Rahman ASMM et al. V-Y anoplasty for iatrogenic anal stenosis: our initial experience in BSMMU. Bangladesh Med J. 2013;42(2):51-4.
18. Yabanoglu H. Outcomes of Advancement Flaps Used in the Treatment of Anal Stenosis Developing After Hemorrhoid Surgery: One Center Experience. Turk J Colorectal Dis. 2018;28(3):125-8.

Cite this article as: Mahipathy SRRV, Durairaj AR, Ananthappan M, Nisa J, Jayachandiran AP, Suresh Rajendran. Post-surgical sequelae–anal stenosis managed with V–Y advancement flap: a case report. Int Surg J 2025;12:1575-8.