

Original Article

V-Y anoplasty for iatrogenic anal stenosis: our initial experience in BSMMU

Sheikh SH¹, Jahan I², Rahman MR³, Matubber MM⁴, Taher A⁵, Rahman AZMM⁶, Naznin N⁷, Faruque O⁸

Abstract

To date, ideal surgical management of anal stenosis has not been well defined. Different surgical options have been described in literature to treat anal stricture starting from partial lateral internal sphincterotomy to different flap anoplasties. For severe anal stenosis, advancement flaps are the only option and all the techniques show good result and patient satisfaction. We treated five cases of severe anal stenosis by V-Y anoplasty in Colorectal Surgery Unit of BSMMU. Here we have shown the clinical outcome of V- Y anoplasty.

Key words: Anoplasty, anal stenosis, surgery

Introduction

Benign anal stenosis is an uncommon, disabling and incapacitating disease. Anal stenosis is the narrowing of the anal canal. In other words, it is the loss of normal elasticity in the anal canal that may cause even narrowness and rigidity with the subsequent difficulty in the dilatation required to perform defecation normally. It ranges from true anatomic stricture to muscular or functional stenosis.¹ The cause of anal stenosis varies from congenital, traumatic or iatrogenic. Anal stenosis occurs most commonly following any anorectal surgical procedure, such as hemorrhoidectomy, excision and fulguration of anorectal

warts, endorectal flaps or following proctectomy, particularly in the setting of mucosectomy. Moreover, trauma, inflammatory bowel disease, radiation therapy, venereal disease, tuberculosis, and chronic laxative abuse all may lead to several degree of anal stenosis.² Also sepsis, ischemia from occlusion of lower mesenteric artery or upper rectal artery, AIDS, venereal lymphogranuloma, gonorrhoea, amoebiasis, anorectal congenital disease and finally, chronic abuse of ergotamine tartrate for the treatment of migraine may lead to anal stenosis.² The patient usually reports difficult or painful bowel movements, rectal bleeding and narrow stools or incomplete evacuation. The fear of fecal impaction or pain usually causes the patient to rely on daily laxatives or enemas. Physical examination confirms the diagnosis. Visual examination of the anal canal and perianal skin, along with digital rectal examination, is usually sufficient to establish the presence of anal stenosis. Anal examination under general anaesthesia is recommended to evaluate the stricture and to choose the appropriate technique, occurring mainly after anorectal surgery.³

Although often described as a debilitating and difficult problem, several good treatment options are available. Non-operative treatment is recommended for mild stenosis and for initial care of moderate stenosis. Although with severe stenosis, conservative treatment can lead to good results; however, surgery is always necessary. For more severe anal stenosis, a formal anoplasty should be performed to treat the loss of anal canal tissue.⁴ Various types of flaps have been described for anal stenosis which allows delivery of the more pliable anoderm into the anal canal to replace the scarred lining at that level. A lateral internal sphincterotomy is also usually necessary at the time of anoplasty. Among different flap procedures, V-Y anoplasty has been used in the treatment of severe low anal stenosis with good results.⁴

In the literature, various complications have been reported after anoplasty. These include flap necrosis from loss of vascular supply, infection or local sepsis, suture dehiscence from excessive suture line tension, failure to correct the stenosis, donor site problems, sloughing of the flap, ischemic contracture of the edge of the flap, pruritus, urinary tract infection subsequent to *Clostridium difficile* enterocolitis only in a few cases, fecal incontinence, constipation without stenosis, urinary retention, restenosis and ectropion if the flap is advanced too far and sutured at the anal verge.¹⁻⁴

1. *Professor Dr Md Shahadot Hossain Sheikh, Professor, Colorectal Surgery, Department of Surgery, BSMMU, Shahbag, Dhaka
2. Dr Ismat Jahan, Colorectal Surgery, Department of Surgery, BSMMU, Shahbag, Dhaka
3. Dr Md Rayhanur Rahman, Colorectal Surgery, Department of Surgery, BSMMU, Shahbag, Dhaka
4. Dr Md Mohiuddin Matubber, Colorectal Surgery, Department of Surgery, BSMMU, Shahbag, Dhaka
5. Dr Abu Taher, Associate Professor, Colorectal Surgery, Department of Surgery, BSMMU, Shahbag, Dhaka
6. Dr AZM Mahfuzur Rahman, Assistant Professor, Surgery, Dhaka Medical College, Dhaka
7. Dr Nashid Naznin, Colorectal Surgery, Department of Surgery, BSMMU, Shahbag, Dhaka
8. Dr Omar Faruque, Medical Officer, Department of Surgery, BSMMU, Shahbag, Dhaka

**For correspondence*

Methods

From January 2010 to January 2013, total five (5) patients of severe anal stenosis were managed by V-Y anoplasty in the Colorectal Surgery unit of BSMMU. Among the patients, four were male and one female.

All the patients were prescribed with laxative for initial 2 weeks. After that, digital dilatation was advised for next 2 weeks and then dilatation with rectal dilator for another 1 month. The patients, who did not improve with this initial management, undergone V-Y anoplasty. All the patients maintained the follow up Protocol. First 3 patients have completed their 2 years follow up schedule and they are now completely alright. The fourth patient is coming 3 monthly and the fifth one is advised to come monthly for 6 months.

Operative procedure was performed under spinal anaesthesia in the lithotomy position. Adequate antibiotic therapy (cefuroxime and metronidazole) was given at the time of surgery. A mechanical bowel preparation was given on the day before surgery. A longitudinal incision was made from the anal verge at 3 O'clock position to proximal anal canal over the stricture tissue. So the space is created for proctoscopic examination and to allow the base of the 'V' flap inside the anal canal. A 'V' shaped incision was made of which base of the V is at the anal verge. The 'V' flap (with skin and subcutaneous tissue) is advanced medially so that the centre of the base of the 'V' can easily reach the upper end of the initial longitudinal incision. Care is taken regarding vascularity of the flap. 3/0 vicryl is used to fix up the flap with the mucous and submucous layer. Once the 'V' flap is advanced, the single limb of 'Y' is created lateral to the apex of the 'V'. thus the 'V' is converted into the 'Y'. in my series, all procedures are done bilaterally. This flap can also be done in the posterior midline. There were no major per-operative complications. The mean operative duration of the procedure was 1hour to 1:30 hours. Blood loss was less than 20 cc in each case. Operative procedure and post operative status is shown figure 1-5.

Postsurgical management consists of fiber supplements and pain control. Sitz baths can also be instituted to assist with local hygiene. In the post-operative period, a constipating regimen was recommended for 2 days. Antibiotic therapies were continued for 7 days. This technique is simple and quite useful for stenosis associated with an anal fissure. However, if more than 25% of the circumference of the anal canal needs to be covered, another anoplastic procedure is indicated.

Results

Median age of patient was 32 years (range 18-72 years). Three (3) patients came with anal stenosis, as complication

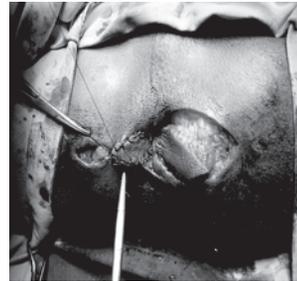


Figure-1: Flap advancing



Figure-2: Fight side anoplasty completed.



Figure-3: After completion of procedure

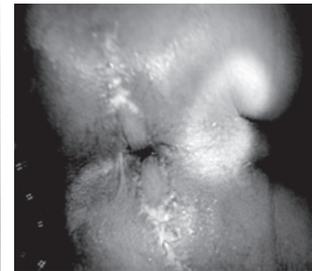


Figure-4: After 2 weeks.



Figure-5: After 3 months

of open haemorrhoidectomy, one after kabiraji medicine application and the other one developed anal stenosis after Cat Back procedure for ectopic anus. Detailed history and physical examination were performed preoperatively. (Table-I)

Table-I: Patients demography

Number of the patients	5
Age (years)	18-32
Male	4
Female	1

None of the patient developed complete flap necrosis but one developed partial flap necrosis. The patient was managed by conservative mean like sitz bath. Post-operative hospital stay was 6 (range 5 to 7) days. All the patients are following the followup protocol. All patients achieved satisfaction after the procedure. (Table- II)

Table-II: Post-operative complications (N=5)

Variables	Number	Percentage(%)
Recurrence	0	0
Haemorrhage (reactionary/secondary)	0	0
Post-operative incontinence	0	0
Flap necrosis		
Partial	1	20
Complete	0	0

Discussion

The choice of an adequate procedure is related to the extent and severity of the stenosis as it may involve the skin, transitional zone to the dentate line, anal canal or all of these. V-Y anoplasty has been used in the treatment of severe low anal stenosis with good results. V-Y advancement flap is indicated for mild to severe stricture at the dentate line, middle or high localized strictures, associated with mucosal ectropion. The disadvantage is the tip of the V is subject to ischemic necrosis.⁵

During a 4-year period, Angelchik et al⁶ managed 19 patients who had anal stenosis (n = 14) or anal ectropion (n = 5). 18 of these patients had prior ano-rectal surgery. They employed a Y-V anoplasty or advancement diamond-shaped pedicle flap and obtained satisfactory to excellent results in all patients. Concurrent lateral internal sphincterotomy was also employed in selected patients who had a fibrotic muscular component contributing to the stenosis. Based on our cohort of patients, they believe the pedicle skin flap technique is slightly superior to the Y-V anoplasty in functional and cosmetic results.

Milsom et al⁷ reviewed the experience with this entity in 212 patients admitted over a five year period to a hospital specializing in colonic and rectal diseases. They advocated V-Y anoplasty for severe low anal stenoses and initial simple or multiple anal sphincterotomies through the stenotic area for middle, high or entire anal canal stenoses. They showed 90% healing rate after V-Y and Sarner's anoplasty.

Selvaggio et al⁸ treated 75 patients with anal stenosis and moderate to severe symptoms; hemorrhoidectomy was the most common cause of anal stenosis (75%); 52 patients underwent Y-V anoplasty (69.3%), 20 bilateral and 32 unilateral; 23 patients underwent house flap anoplasty (30.7%) for posterior stenosis. Good to successful results were obtained in 94% in Y-V patients and in 97% in house flap patients. Overall, in the 75 patients, a 3% rate of flap necrosis was observed and 4% of patients experienced minor complications.

Each of the surgical techniques described can be performed safely and have been used with variable healing rates. It is extremely difficult to interpret the results of the various anoplastic procedures in the literature for the obvious reason that prospective trials have not been performed. There are no controlled studies on the advantages and disadvantages of the various anoplastic maneuvers; however, almost any approach will at least improve symptoms in the mucosal advancement flap anoplasty with a healing rate of 94%.⁵

Similar results have been reported in a total of 33 patients treated with Y-V anoplasty in two studies.^{5,9} A total healing rate of 100% was obtained using diamond flap anoplasty in a total of 23 patients affected by anal stricture patient. Oh and Zinberg¹⁰ used C anoplasty in 12 patients with anal stenosis (10 by previous hemorrhoidectomy, 1 by fistulectomy and 1 by fissurectomy), and 11 patients obtained satisfactory results with a total healing rate of 91%. Rakhmanine and colleagues¹¹ published a study in which 95 patients underwent lateral mucosal advancement anoplasty. Mean follow up was 50 months. Only 63% of patients had undergone previous surgery: 35 patients had hemorrhoidectomy, 10 operations for anal fissure, 4 for fistula, 1 transversal excision of a neoplasm and 10 other operations. The overall complication rate was 3% (one abscess and two seepage of liquid stool).

In our series, during the two year's time we have done only 5 cases. In my opinion, it is not very rational to compare with other series at this moment. But with this outcome and complications, it can be said that outcome is comparable to others.

Anoplasty should be part of the armamentarium of colorectal surgeons for treating severe anal stenosis. The anatomic configuration of the anorectum and perianal region is very complex and knowledge of this area is essential before performing any surgical procedure. The preparation of flaps is important for treatment success.

Various types of anoplasties with adjacent tissue transfer flaps have been devised to relieve anal stenosis. All of these flaps share the concept of an island of anoderm that is incised completely around its circumference. The type of flap to be used is based on the surgeon's familiarity and choice as well as the patient's anatomy and the availability of adequate perianal skin for use in the various flaps. The ideal procedure should be simple, should lead to no or minimal early and late morbidity, and should restore anal function with a good long-term outcome.

References

1. Liberman H, Thorson AG. How I do it: Anal stenosis. *Am J Surg.* 2000;179:325-329.
2. Maria G, Brisinda G, Civello IM. Anoplasty for the treatment of anal stenosis. *Am J Surg.* 1998;175:158-160.
3. Milsom JW, Mazier WP. Classification and management of postsurgical anal stenosis. *Surg Gynecol Obstet.* 1986;163:60-64.
4. Owen HA, Edwards DP, Khosraviani K, Phillips RK. The house advancement anoplasty for treatment of anal disorders. *J R Army Med Corps.* 2006;152:87-88.
5. Brisinda G, Vanella S, Cadeddu F, Marniga G, Mazzeo P, Brandara F et al. Surgical treatment of anal stenosis. *World J Gastroenterol.* 2009 April 28; 15(16): 1921-1928.
6. Angelchik PD, Harms BA, Starling JR. Repair of anal stricture and mucosal ectropion with Y-V or pedicle flap anoplasty. *Am J Surg.* 1993 Jul;166(1):55-59.
7. Milsom JW, Mazier WP. Classification and management of postsurgical anal stenosis. *Surg Gynecol Obstet.* 1986 Jul;163(1):60-64.
8. I Selvaggio, F Cadeddu, M Grande and G Milito. Surgical management of anal stenosis. *BMC Geriatrics.*
9. Gingold BS, Arvanitis M. Y-V anoplasty for treatment of anal stricture. *Surg Gynecol Obstet.* 1986; 162:241-242.
10. Oh C, Zinberg J. Anoplasty for anal stricture. *Dis Colon Rectum.* 1982;25:809-810.
11. Rakhmanine M, Rosen L, Khubchandani I, Stasik J, Riether RD. Lateral mucosal advancement anoplasty for anal stricture. *Br J Surg.* 2002;89:1423-1424.