

Surgical Outcome of Benign Anal Stricture by V-Y Anoplasty with Lateral Sphincterotomy

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Abstract

Original Research Article

Introduction: Benign anal stenosis is not uncommon, often disabling and incapacitating condition, occurring mainly after anorectal surgery/procedures. Both non-surgical and surgical treatments have been advocated in the treatment of anal stenosis with mixed results. The aim of anoplasty is to restore normal function to the anus by excising/ dividing the stricture and widening the anal canal by various plastic surgery techniques. Many methods have been used for the treatment of anal stenosis with variable results. It is extremely difficult to reproduce the results of the anoplasty procedures described in the literature as prospective trials are very few in number and anal manometry is not widely available/affordable. This review examines the outcome of surgical treatment of benign anal stenosis in the form of VY anoplasty with lateral sphincterotomy. This study attempts to evaluate the efficacy of this procedure in the management of anal stenosis. **Methods:** A prospective clinical study was undertaken over a 1 year period on ten patients operated for anal stenosis with v-y anoplasty+lateral sphincterotomy. **Result:** Ten (10) patients with benign anal stenosis were treated in our surgery department. Local administration of chemical injections by RMPs (6cases), overzealous haemorrhoidectomy (2 cases), chemical burns (2 cases) were the etiology of anal stenosis in the present study. All the patients underwent surgical treatment after poor response to non-operative management which included bowel softeners, sitz baths, graded metallic anal dilators. The patients underwent V-Y anoplasty with unilateral lateral internal sphincterotomy. Prior to this procedure the patients underwent diversion loop sigmoid colostomy four weeks before the V-Y anoplasty. The post-operative period of these patients were uneventful. There was no re-operation and only minor complications were present in two patients: anal pruritus and one with temporary incontinence for flatus. On long term follow up over one year, there was no incidence of re-stenosis. We selected the V-Y anoplasty technique for its good long term results, our experience and low complications. Besides, this method can be performed bilaterally in severe anal stenosis in conjunction with unilateral internal sphincterotomy. **Conclusion:** Anal stenosis is often a preventable complication. A well-performed hemorrhoidectomy is the best preventive measure. Anoplasty techniques should be part of the armamentarium of young colorectal surgeons for treating anal disorders. Most post-anoplasty complications can be avoided by meticulous planning and strict adherence to the surgical principles while executing the anoplasty. The principle of V-Y transposition should be clear in mind before attempting V-Y anoplasty with/without lateral sphincterotomy. The ease of performance, the absence of major complications and the good functional outcome obtained confirm that this method is effective and safe in the treatment of anal stenosis even in the hands of a general surgeon.

Keywords: Benign, non-surgical, surgical, plastic surgery, methods

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INTRODUCTION

Benign anal stricture is not uncommon, often disabling and incapacitating condition, occurring mainly after anorectal surgery/procedures. The circumferential narrowing may be a functional or an anatomical one [1] Functional stricture results from a hypertonic anal sphincter whereas in an anatomical one the normal anoderm is replaced with an inelastic

cicatrized tissue. Anatomical stricture is the result of an overzealous haemorrhoidectomy, inflammation of the anus in inflammatory bowel disease, radiotherapy, tuberculosis and chronic laxative abuse [3]. The patient usually presents with painful bowel movements, per rectal bleeding and narrow stools or incomplete evacuation [5]. Visual examination alongwith digital rectal examination confirms the diagnosis.

Both non-surgical and surgical treatments have been advocated in the treatment of anal stenosis with mixed results [4] Non-surgical management with laxatives, sitz bath, rectal dilatation is indicated in mild to moderate stenosis. The aim of anoplasty is to restore normal function to the anus by excising/ dividing the stricture and widening the anal canal by various plastic surgery techniques [1]. Many methods namely stricture release, sphincterotomy and advancement flaps have been used for the treatment of anal stricture with variable results [3]. It is extremely difficult to reproduce the results of the anoplasty procedures described in the literature as prospective trials are very few in number and anal manometry is not widely available/affordable. This review examines the outcome of surgical treatment of benign anal stricture in the form of VY anoplasty with lateral sphincterotomy. This

study has evaluated the efficacy of this procedure in the management of severe anal stricture.

METHODS

A prospective clinical study was undertaken over a one year period from January 2017 to December 2017 on ten patients operated for anal stricture with v-y anoplasty+lateral sphincterotomy in the Department of General Surgery at Calcutta National Medical College. The inclusion Criteria was benign anal strictures arising out of anorectal surgery/procedures who were poor responders to conservative management which included bowel softeners, sitz baths, graded metallic anal dilators for four to eight weeks. Malignant anorectal strictures, functional anal stenosis and patients who responded to conservative therapy were excluded from the study.

Table-I: Etiology of stenosis

Cause of stenosis	No. Of cases
Sclerosant injection	6
Overzealous hamorrhoidectomy	2
Chemical burns	2

All the patients underwent surgical treatment after poor response to non-operative management which included bowel softeners, sitz baths, graded metallic anal dilators for four weeks. Initially the patients underwent diversion loop sigmoid colostomy four to eight weeks before the V-Y anoplasty.

V-Y anoplasty with LAIS was performed in spinal anaesthesia in lithotomy position. A longitudinal incision extending from the anal verge at 3 O'clock position to proximal portion of anal canal over the stricture tissue to create adequate space for proctoscopic examination and to allow the base of the 'V' flap to be mobilized inside the anal canal. A 'V' shaped incision was made of which base of the V is at the anal verge. The 'V' flap (comprising 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. 3/0 polyglycolic acid suture is used to suture 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 this study all procedures are done bilaterally [1,4]. This flap can also be done in the posterior midline. Subsequently unilateral lateral anal internal sphincterotomy is performed in the side opposite to that of the stricture [9]. There were no major per-operative complications. The mean operative duration of the procedure was 90-120 minutes. Blood loss was less than 50 cc. The post-operative period of these patients were uneventful. Postoperatively the patients were put on laxative therapy and serial rectal dilatation with graded metallic dilators. The reversal of the sigmoid colostomy was done four weeks post the anoplasty procedure.

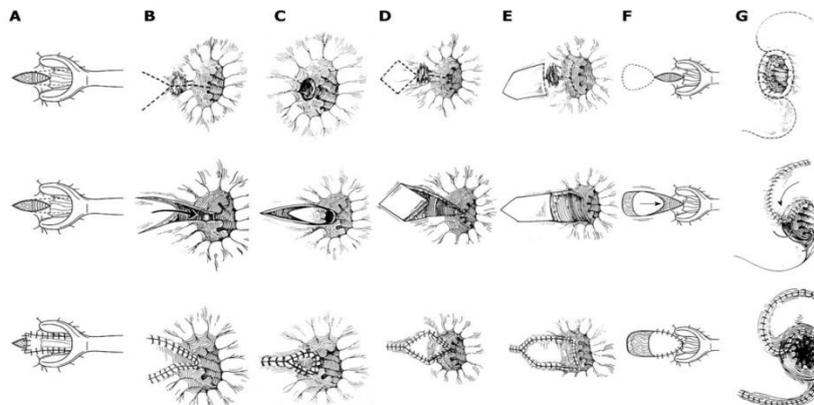


Fig-1: Operative procedure for the surgical treatment of anal stenosis. A:

Martin's anoplasty; B: Y-V advancement flap; C: V-Y advancement flap; D: Diamond-shaped flap; E: House-shaped flap; F: U-shaped flap; G: Rotational S-flap.

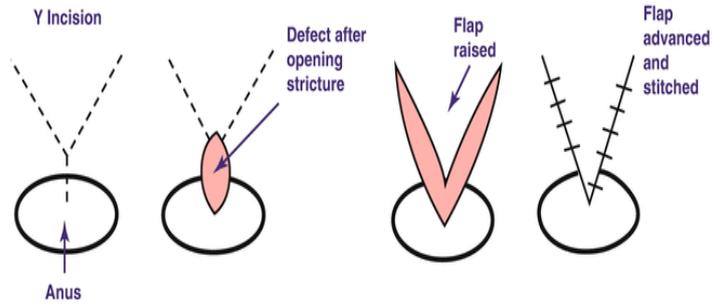


Fig-2: Steps of V-Y Anoplasty

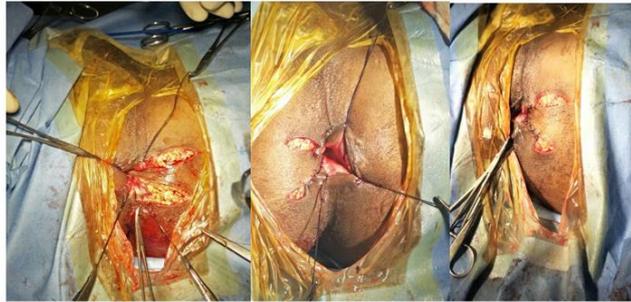


Fig-3a: Advancement flap being dissected

Fig-3b and 3c: V-Y flap being sutured to submucous layer



Fig-4: Immediate post-operative appearance



Fig-5: Post-operative appearance after six weeks



Fig-6: Post-operative appearance after eight weeks

RESULTS

Median age of patient was 36 years (range 18-72 years).

There was no re-operation and only minor complications were present in two patients: anal pruritus and one with temporary incontinence for flatus.

On long term follow up over one year, there was no incidence of re-stenosis. We selected the V-Y anoplasty technique for its good long term results, our experience and low complications. Besides, this method can be performed bilaterally in severe anal stenosis in conjunction with unilateral internal sphincterotomy.

Table-II: Patient demographics

Number of patients	10
Age in years	18-72 years
Male	7
Female	3

Table-III: Post-operative complications

Recurrence	0
Haemorrhage	0
Flatus incontinence	1
Flap necrosis	0
Anal pruritus, eczema	1

DISCUSSION

The choice of the ideal procedure is determined by the extent and severity of the stricture. V-Y anoplasty has been used in the treatment of severe and moderate low anal stenosis with good results. V-Y advancement flap is indicated for moderate 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 [8].

Milsom *et al.* [10] reviewed the experience with this entity in 212 patients over a five year period to a hospital specializing in colorectal 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.

Similar encouraging results have been reported in a total of 33 patients treated with Y-V anoplasty in two studies mentioned here [8, 12]. A total healing rate of 100% was obtained using diamond flap anoplasty in a total of 23 patients affected by anal stricture. Oh and Zinberg [13] 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 colleagues [13] published a study in which 95 patients underwent lateral mucosal advancement anoplasty. Mean follow up was 60 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 flatus incontinence).

Selvaggio *et al.* [11] treated 75 patients with anal stenosis with 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. Satisfactory 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 like eczema.

Angelchik *et al.* [9] 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 results in all patients. Concurrent lateral internal sphincterotomy was also employed in selected patients who had a fibrotic muscular component contributing to the stenosis similar to our present study.

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. In the present study during the study period we have done only 10 cases. In my opinion, it is not very rational to compare with the other studies conducted on a larger study population over a wider study period at this moment. But with this outcome and low rate of complications, it can be said that the result of the present study is comparable to others. 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 minimal early and late morbidity, and should restore anal function with a good long-term outcome.

CONCLUSION

Anal stricture is often a preventable complication. A well-performed hemorrhoidectomy is the best preventive measure. Anoplasty techniques should be part of the armamentarium of young colorectal surgeons for treating anal disorders. Most post-anoplasty complications can be avoided by meticulous planning and strict adherence to the surgical principles while executing the anoplasty. The principle of V- Y transposition should be clear in mind before attempting V-Y anoplasty with/ without lateral sphincterotomy. The ease of performance, the absence of major complications and the good functional outcome obtained confirm that this method is effective and safe in the treatment of anal stenosis even in the hands of a general surgeon.

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