

Late Results of Endorectal Flap in Management of High Type Perianal Fistula

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ABSTRACT

BACKGROUND

Fistula-in-ano is a problematic perianal disease for physicians and patients because of its occasional difficulty in management. Due to the different types of fistulas seen in patients, careful approach is necessary to correctly choose from among the various surgical techniques. One surgical method for complex fistula is the endorectal advancement flap which has been frequently performed because of its low complication rate.

METHODS

This study enrolled 40 (33 males, 7 females) patients who suffered from high type fistula (greater than 30%-50% involvement of the external sphincter) as noted on digital rectal examination and endoanalsonography. Patients were seen at Shahid Faghihi Hospital, affiliated with Shiraz University of Medical Sciences, between 2007 and 2011. All enrolled patients received similar preoperational preparation. We used the jackknife operative position and determined the internal orifice of the fistula by inserting a probe, with injection of methylene blue or oxygen peroxide. Endorectal advancement flap included the mucosa, submucosa and thin portion of the muscle that completely covered the sutured internal orifice area. The external orifice was opened to adjust the external border of the external sphincter to allow for effective drainage.

RESULTS

All enrolled patients were followed for 36 months, which was noticeable statistically when compared with other study findings of high type fistula. The location of the external orifice, age, sex and bowel habits were not related to recurrence rate.

CONCLUSION

Endorectal advancement flap in selected patients who suffer from high type fistula seems to have beneficial effects with a low recurrence rate. Therefore, management of complex high type fistulas remains a challenging topic.

KEYWORDS

Endorectal Flap; Perianal Fistula; Outcome.

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INTRODUCTION

Anal fistula is a common disease that involves 5.6 women and 12.3 men per 100,000 population.¹ A complex fistula is a type of fistula with more recurrence and interventional damage to the sphincters.^{2,3} The complex fistula involves more than 30%-50% of the external sphincter muscle and consists of fistulas with multiple tracts, anterior fistulas in women, and fistulas in those with a history of Crohn's disease, who have undergone local radiotherapy or have fecal incontinence.⁴⁻⁶ Although crypto glandular infection is the main cause, other factors such as Crohn's disease, trauma, radiotherapy and malignancies may also play a role.⁷⁻⁹

Surgical management is not the same for all types of anal fistulas; treatment should be selected according to the type of fistula, local anatomy, surgeon's experience and judgment.¹⁰ It should be always kept in mind that extensive surgery may result in more sphincteric damage and dysfunction, as well as increased recovery time.⁶ A large deep wound may last for months. In fact, successful treatment of an anal fistula involves closure of the primary orifice (internal orifice) along with maintenance of sphincter function.¹¹

Technical procedures in the treatment of anal fistulas include placement of a seton, fistulotomy, fistulectomy, fibrin glues, plaques and an endorectal flap.⁸ Considering the variable results of different surgical methods as reported in several studies, we believe that an endorectal flap can be considered a selective treatment for high type fistulas, since sphincter damage and recurrence is less than with other surgical methods.¹²⁻¹⁴

According to previous studies, those who benefit more from endorectal flap surgery are women with anterior fistulas as well as patients with inflammatory bowel disease, high type fistulas, previous sphincter surgery, previous complex and multiple fistulas, and even those who have undergone previously unsuccessful endorectal flap surgery.^{8,14-17}

The recurrence rate following endorectal flap surgery varies among studies. Overall, one-fourth of patients required several surgical interventions to successfully close the fistulas.^{10,12}

We followed our patients who underwent endorectal flap surgery for complex fistula for 36 months with the intent to evaluate the results of this technique.

MATERIALS AND METHODS

All patients diagnosed with perianal fistulas who referred to the Outpatient Surgery Clinic at Shahid Faghihi Hospital, Shiraz, Iran from January 2007 to March 2011 were enrolled in this study. The diagnosis of high type perianal fistula was confirmed by detection of the fistula tract above or through the external sphincter complex by digital rectal examination. With the exception of endorectal sonography, no other routine imaging modality such as fistulography or endoanal MRI was performed prior to surgery to locate the fistula tract.

Surgical technique

On the day prior to surgery all patients received complete mechanical preparation of the large bowel. Surgeries were performed under general or regional anesthesia with patients placed in the prone jackknife position. Patients received prophylactic intravenous injections of ceftriaxone (1 g) and metronidazole (500 mg), after which the rectoscope was inserted. Next, the possible fistula tract was palpated and then a special probe inserted through the external orifice in order to reach the internal orifice. In cases where the internal orifice was not located, oxygen peroxide (2%) with or without diluted methylene blue was injected through the external orifice. Once we determined the location of the primary orifice (internal orifice) and the diagnosis of high type perianal fistula was confirmed, a transverse incision was made distal and two sides of internal orifice, which created a flap that contained mucosa and a small part of the sphincter muscle (Figures 1-3). The base of this flap measured at least 4cm (twice as much as the width of the tip of the flap), thus it was long enough to reach the distal part of the internal orifice without tension and risk of ischemia from the flap. The internal orifice located in the sphincter muscle was then sutured with long-absorbable 3-0 PDS string in the shape of a figure eight. After homeostasis, the flap's edges were sutured separately with the same thread (Figure 4).

RESULTS

This study included 40 patients that were treated by the endorectal flap technique. There were 33 males and 7 females whose mean age was 40.7 years (range 27-59). Duration of follow up was 36



Fig.1: Identification of the internal opening.



Fig.2: Creation of the flap.



Fig.3: Flap containing mucosa and a small part of the muscle.



Fig.4 : Suturing the flap.

months and all patients completed follow up.

Complete cure was achieved in 28 (70%) patients as confirmed by examination four weeks after surgery and by telephone contact every 12 months thereafter.

None of the females experienced recurrence, however 12 males experienced recurrence during the first year after treatment. Six of these cases had one or more previous failed operations for fistula (fistulotomy, seton insertion or endorectal flap). Of those who recurred, 2 underwent a second endorectal flap surgery which was successful. The remaining 10 patients refused any additional surgery. The healing rate after this second procedure resulted in an overall success rate of 75%.

There were 16 patients with previous histories of one or more failed surgeries for perianal fistula. Of these, 6 of the 12 patients who experience recurrence were from this group. One underwent a repeat endorectal flap repair, which was successful. Thus there was a 62.5% initial cure rate that improved to 68.75%, which the initial and final success rates in this group were statistically significant.

The external fistula orifice was located in anteriorly in 10 cases, posterior in 11 cases and at the lateral aspect of the anal verge in 19 cases. Of those who recurred, in 3 cases the external fistula orifice was located posteriorly (25%), in 4 it was anterior (50%), and in 3 it was located laterally (25%). There were 2 (1 male, 1 female) patients with evidence of anal incontinence following surgery. The male patient had a history of three fistulotomy procedures prior to this surgery, however this was a recent complaint for the female patient. A history of chronic constipation was seen in 11 (20%) cases of which 3 who recurred were from this group.

There was no significant statistical relationship between age, history of constipation, location of external fistula orifice, and failure rate.

DISCUSSION

Endorectal flap repair has been advocated as a treatment for high type perianal fistulas.^{12,13,18,19} Although early results appear promising, with high success rates of 55%-100%,⁶ additional studies with longer follow-up periods have shown a considerable drop in the success rate corresponding to a decline in enthusiasm for this procedure.^{8,13,14,20-24} In a

Dutch study of 105 patients there was a failure rate of 31%.²⁵ The same results have been reported by other investigators.^{23,26}

Although evidence exists that previous attempts to repair fistulas by fistulotomy, fistulectomy, seton insertion and endorectal flap have been considered negative predictors of outcome,^{8,20} in the present study the healing rate was less than 10%. The data from the current study was very similar to reports by Mitalas, Kodner et al. and Mizrahi et al.⁷ It is not clear which predictors alter the surgical outcome. According to another researcher, however, the number of previous repairs does affect the outcome of the endorectal flap procedure. Repeat endorectal advancement flaps have been suggested, however this procedure can be more challenging in a scarred, repeat surgical field.^{21,22,27}

According to the literature, as with the present study, approximately one out of every four patients requires multiple surgical interventions for successful closure of the fistula tract.²⁸⁻³¹ Better result also is presented by some expert.³²

In our study we have shown that continence was not significantly altered. This was important because in some reports, the onset or aggravation of incontinence following the endorectal flap procedure has been shown to vary from 8%-35% of cases.³³⁻³⁵

The data in this study is after a follow-up of 36 months. In comparison to other studies that have indicated most recurrences (more than 80%) occur within the first year after treatment, we have also shown that all recurrences (100%) in this study developed within the first 12 months after surgery. Therefore, a follow up period of 36 months seems to be an adequate long term follow-up period.

This study has several weaknesses. This was an observational series that enrolled a small number of patients, with insufficient power to evaluate potential predictive factors such as history of chronic constipation and location of the fistula's external orifice in relation to anal verge and their associations to the success or failure of this technique.

Based on the data obtained from the present study, the endorectal flap procedure was curative in 75% of our patients without marked deterioration in

anal continence. The procedure was easy to perform and without significant complications.

Despite the limitations of the present study, this technique could be a valuable alternative for repair of perianal fistulas, particularly in recurrent and more complex cases. This procedure can be a treatment of choice because of its sphincter saving approach and relative low recurrence rate.

CONFLICT OF INTEREST

The authors declare no conflict of interest related to this work.

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