

ALIGNMENT OF ANAL SPHINCTERS IN HIGH FISTULA: A NOVEL SURGICAL TECHNIQUE

Rezvan Mirzaei¹, Bahar Mahjoubi¹, Atefeh Kashanizadeh¹, Zahra Omrani^{*1}

¹MD., Department of Colorectal Surgery, Colorectal Research Center(CRRC), Rasoul-e-Akram Hospital, Iran University of Medical Sciences, Tehran, Iran.

*Corresponding author: Zahra Omrani

Colo Rectal Research Center (CRRC), Department of Colorectal Surgery, Rasoul-e-Akram Hospital, , Iran University of Medical Sciences, Tehran, Iran. zahraomrani@yahoo.com, Tel: 09122769181

Abstract--Background: High fistula-in-ano is difficult to treat due to concerns of postsurgical incontinence. We had an innovation as a technique with no recurrence rate and minimal negative effect on continence score.

Method: This is a prospective study of 49 patients operated for high anal fistula, from 2010 to 2012. After resection of extra-sphincteric part of fistula, tract of fistula in transsphincteric portion is divided and then the surgeon decided that whether excise fibrotic tissue or saving them to achieve better alignment and at last both cross-sections of the cutting muscles placed in opposite side of each other with little distance by suturing edges of sphincter to the base of wound or to the skin instead of sphincter repair. Evaluation of the continence score and fistula recurrence rate of the patients with interval time of before and 6, 10 weeks and one year after surgery were conducted.

Results: The mean age of the patients was 42.85 ± 14.9 years. The mean length of fistula tract was 7 ± 2.7 . Also mean of wexner score before surgery was 1, and 6& 10 weeks and one year after surgery was 0.6, 0.56 and 0.5, respectively. Eight of patients had puborectalis involvement (16.3%) and nine of them (18.4%) had horseshoe fistulas. Forty four of forty nine patients (93%) after 10 weeks had complete healing.

Conclusion: Alignment of sphincter can be a problem solving technique in high transsphincteric fistula surgery.

Key words: High transsphincteric fistula, Sphincter alignment, incontinence, Recurrence of fistula

INTRODUCTION:

Fistula-in-ano is one of the commonly encountered surgical problems. High transsphincteric fistula-in-ano are difficult to treat since the conventional laying-open will lead to division of most of the anal sphincter muscles resulting in incontinence [1, 2, 3, 4]. A transsphincteric fistula, running through the lower third of the external anal sphincter can be cured in most cases by a simple "laying-open" technique. This procedure is less appropriate for fistulas running through the middle and upper third of the external anal sphincter or puborectalis. In such cases with a high transsphincteric fistula division and subsequent separation of both sphincters edges, it is expected inevitably to have impaired continence.

The ultimate purpose of surgical treatment for an anal fistula is the eradication of sepsis while maintaining continence. To achieve these goals, it is essential to identify the fistula anatomy, as well as the relationship between the fistula tract and the sphincters, before or at the time of surgery [4].

Surgical options include Park's fistulotomy, insertion of a seton, primary fistulectomy with occlusion of the internal ostium, fistulotomy with primary repair of the sphincter, endorectal advancement flaps, anocutaneous advancement flap, repair of fistula using fibrin adhesive glue and re-routing the fistula [1,5,6].

There are various procedures that have been used for saving the sphincters but they cannot definitively identify the whole anatomy of the fistula tract. None of the preoperative evaluations such as MRI, endoanalsonography have 100% accuracy for diagnosis of extensions and collections. [7]

As laying open let the surgeon better exposure for complete diagnosis of collections and extensions of anal fistulas, it has the least rate of recurrence in different options of treatments for fistula. In high transsphincteric fistulas, cutting the sphincter may lead to some degree of incontinence. [1] Unfortunately sphincter repair is not possible in all cases because it could prevent the drainage of deep collections and extensions and leads to more probability of recurrence.

Recurrence of fistula can increase the rate of morbidity and is not cost benefit for the patients. Both recurrence and incontinence have major psychological effect on patients. Novel technique of alignment has access to extensions and collections leading to less recurrence rate and also does not have negative effect on continence by taking control of sphincter cross-sections repair.

METHODS

This prospective study conducted on 49 patients with high fistula passing through middle or upper third of external anal sphincter or puborectalis who underwent peri anal fistulae surgery between 2010 to 2012. A thorough History and

Publication History

Manuscript Received : 18 April 2016
Manuscript Accepted : 25 April 2016
Revision Received : 27 April 2016
Manuscript Published : 30 April 2016

physical examination before surgery was taken from patients. Exclusion criteria was: hx of CVA; colorectal cancer; brain disorder; multiple sclerosis; history of major pelvic surgery; rectal prolaps; IBD and IBS.

Patients were given consent form for using this novel technique. History of previous perianal abscess, surgery for fissure, hemorrhoids or fistula was taken from patients. Wexner score of each patient was calculated before entering in the study and patient should not have any incontinence (wexner score: 0-1) before surgical intervention. Characteristics of fistula such as site of ext and internal opening, length of the tract were recorded. Patients with confusing physical examination underwent endoanal ultrasound, or MRI for more accurate details as definition of fistula tracts, extension(s) or any collection(s). We evaluated the continence and recurrence of the patients at the times of 6 and 10 weeks and 1 year after surgery

Surgical Technique:

First, probing of fistula tract is done, and then fistulectomy of the extra-sphincteric part of the fistula is done and all fibrosis in extra-sphincteric part with perfect drainage are removed. Sphincter is divided with knife. The diseased Crypt is excised. The surgeon examined carefully the tract of the fistula to find any collections or extensions and drain or curette them properly.

After identifying the anatomy of fistula the surgeon decides whether repair the sphincters or not. If primary repair of sphincters inhibit drainage of deep collections then surgeon do the alignment.

In the next step, it is important to make a decision about excising or keeping the fibrosis, it depends on how to this act help to align the cross sections of sphincters. Therefore, if fibrosis helps the alignment it does not excise, and if fibrosis disturbs alignment by the retraction of sphincters edges, the surgeon should excise the fibrosis, and fix the sphincter edges to the base of wound or skin or mucosa in an appropriate place for aligning the external sphincter cross-sections with little distance. So, in the last step, both levels of the cutting muscles are placed against each other without repair.

In post-operative period at first deep extra-sphincteric portions of fistula heal from the base, then healing of sphincters occurs and eventually the skin and mucosa cover the wound. so, the tract is keeping opened as long as deep collections are filled completely and at last because of alignment of sphincters, they will be joined together correctly in next step.

In 6, 10 weeks and 1 year after surgery, patients were evaluated for healing of their wounds and Wexner score was calculated for each patients.

RESULTS

In this study, 49 patients were evaluated. There were 49 patients we evaluated. The mean age of them was 42.85 ± 14.9 years. The mean length of fistula tract was 7 ± 2.7 cm. Fifteen of them were male (30.6%) and 34 (69.4%) were females. Three of the patients (6.1%) had history of pelvic floor surgery. Two of patients (4.1%) had hx of fissure surgery and 4.1% had hx of hemorrhoid surgery and 5 of them (10.2%) had hx of fistula surgery.

Thirty six patients (73.5%) had hx of peri anal abscess from whom 17 patients (34.7%) drained spontaneously and 19 of them (38.8%) had drainage of abscess by surgery.

Mean of wexner score before surgery was 1, but 6, 10 weeks and 1 year after surgery, it changed to 0.6, 0.56 and 0.5 respectively. The most common site for external opening was 2 o'clock of lithotomy (9 of 28 fistulas with ext orifice).

According to our observation during surgery 18 patients (36.7%) had internal opening at 12 o'clock and 10 patients (20.4%) at 6 o'clock. Eight of patients had puborectalis involvement (16.3%) and nine of them (18.4%) had horseshoe fistulas. Forty four of forty nine of our patients (93%) had complete healing after 10 weeks and there was no recurrence after one year in any patients.

After 6 weeks of surgery only one patient (2%) had mild stricture.

DISCUSSION

Important and common complications for peri anal fistulas are: recurrence, gas incontinence, damage to anal sphincters, delayed healing and soilage. These complications are more common in high trans-sphincteric fistulas. [8] These studies evaluated incontinence but they didn't follow patients for detecting recurrence.

In a study conducted by Parakash & colleagues on 120 patients with fistulectomy and primary reconstruction there were 3 recurrences without any permanent incontinence. [2] In another study performing by Abdorahim Nahidi et al., 98 patients for transsphincteric fistulas and primary reconstruction were studied, they had not any permanent incontinence, but 93 of them had gas incontinence (mild to moderate) which improved after 4 months of prescription of Diphenoxylate tablet. [8] By our technique four patients (8.1%) had sometimes soilage and only one patient (2%) always had soilage. Six of the cases (12%) had sometimes gas incontinence and only 1 patient always had gas incontinence without recurrence rate. This is reasonable continence outcome for high fistula surgery despite some puborectalis involvement and some previous unsuccessful operation before our intervention. Despite our web searches and textbooks, this technique for high transsphincteric fistulas is novel. With regarding to follow up of patients for one year and not having recurrence after this time, and also with considering our evaluations, this study reveals that this procedure does not have negative effect on continence of the patients.

CONCLUSION

Alignment of sphincter can be a problem solving technique in high transsphincteric fistula surgery.

REFERENCES

- [1] Khalid Hussain Qureshi, Mustafa Kamal, Hamid Ali Shah, Naseer Ahmad Tariq, Salman Ahmad Tipu, Muhammad Munir Akhtar Khan (2002) Management of fistula-in-ano - a common clinical problem Management of fistula-in-ano - a common clinical problem; Pakistan J. Med. Res 41:3.
- [2] Parkash S, Lakshmiratan V, Gajendran V (1985) Fistula-in-ano: treatment by fistulectomy, primary closure and reconstitution. Aust N Z J Surg 55:23-7.

- [3] Zimmerman DD, Briel JW, Gosselink MP, Schouten WR (2001) Anocutaneous advancement flap repair of fistulas. *Dis Colon Rectum*. 44:1474-80.
- [4] Do Sun Kim(2012) Comparison of a Fistulectomy and a Fistulotomy with Marsupialization in the Management of a Simple Anal Fistula: A Randomized, Controlled Pilot Trial; *J Korean SocColoproctol*28: 67–68.
- [5] Jivapaisarnpong P(2009) Core out fistulectomy, anal sphincter reconstruction and primary repair of internal opening in the treatment of complex anal fistula. *J Med Assoc Thai* 92:638-42.
- [6] Parks AG, Stitz RW(1976) The treatment of high fistula-in-ano. *Dis Colon Rectum*19:487-99
- [7] O'Malley RB, Al-Hawary MM, Kaza RK, Wasnik AP, Liu PS, Hussain HK(2012)Rectal imaging: part 2, Perianal fistula evaluation on pelvic MRI--what the radiologist needs to know. *AJR Am J Roentgenol* 199:W43-53. doi: 10.2214/AJR.11.8361.
- [8] NahidAbdoraHimRashidiIran.(2011) Treatment of Recurrence Anal Fistula with open Fistulectomy and Sphincter Muscles Repair; *Sci Med* J9(6).