

Study of Fistulotomy and Fistulectomy in the Management of Low Anal Fistula and Evaluation of Short Term Outcomes

Nisith Ranjan Mallik¹, Soumyadeepta Nandi², Ashis Kumar Saha¹,
Chhanda Das³

¹(Associate Professor, Department of General Surgery, Calcutta National Medical College, Kolkata, India)

²(Post Graduate Trainee, Department of General Surgery, Calcutta National Medical College, Kolkata, India)

³(Assistant Professor, Department of Pathology, IPGME&R, Kolkata, India)

Abstract: *Fistula-in-ano being one of the most common benign anal conditions in daily surgical practice and for its chronic and recurring nature, adequate and effective surgery is the prime expectation of the patient from a surgeon. Conventional surgical options for a low fistula-in-ano include a fistulotomy and a fistulectomy. A fistulectomy involves complete excision of the fistulous tract, thereby eliminating the risk of missing secondary tracts and providing complete tissue for histopathological examination. A fistulotomy lays open the fistulous tract, thus leaving smaller unepithelised wounds, which hastens the wound healing. The purpose of our study is to review the role of fistulotomy and fistulectomy as management options for low anal fistula and to evaluate their outcomes. This study demonstrated shorter operating time and wound healing time, less post operative pain and earlier return to normal activities following a fistulotomy in comparison to a fistulectomy and should therefore be recommended as a standard surgical procedure in the treatment of low fistula-in-ano.*

Keywords – *fistula-in-ano, fistulotomy, fistulectomy*

Date of Submission: 07-04-2018

Date of acceptance: 23-04-2018

I. Introduction

Fistula-in-ano is one of the most common benign anal conditions in daily surgical practice. It is defined as an epithelised abnormal tract connecting two surfaces, usually the rectal mucosa and perianal skin. ¹ Fistula-in-ano usually results from an anorectal abscess which bursts spontaneously or after inadequate surgery. Acute infection of the anal crypt leads to an anorectal abscess and fistula-in-ano represents the chronic form of this infection. Different classifications have been put forward which categorize these fistulae into low or high, simple or complex, or according to their anatomy inter-sphincteric, trans-sphincteric, and suprasphincteric or extra-sphincteric.^{1,2} Low fistula-in-ano open in to the anal canal below the anorectal ring and high fistula-in-ano open in to the anal canal at or above the anorectal ring. Two thirds are posterior, one-third anterior. Studies have revealed that low type fistulae (low inter-sphincteric and low trans-sphincteric) are the commonest anal fistulae accounting for up to 90% of cases. The mainstay of treatment of fistula-in-ano is eradication of sepsis with preservation of anorectal function. Conventional surgical options for a low fistula-in-ano include a fistulotomy and a fistulectomy. A fistulectomy involves complete excision of the fistulous tract, thereby eliminating the risk of missing secondary tracts and providing complete tissue for histopathological examination. A fistulotomy lays open the fistulous tract, thus leaving smaller unepithelised wounds, which hastens the wound healing. . Low anal fistula has been mainly treated by fistulotomy, which is technically easier, with good results but recurrence has been shown in some case series. Fistulectomy can be done in low anal fistula without causing rectal incontinence.

II. Aims & Objectives

The purpose of our study is to review the role of fistulotomy and fistulectomy as management options for low anal fistula and to evaluate their outcomes.

III. Materials & Methods

1. **STUDY AREA** : Department of General Surgery, Calcutta National Medical College and Hospital
2. **STUDY POPULATION** : Patients admitted in surgical ward, Calcutta National Medical College and Hospital with low lying fistula in ano through OPD
3. **STUDY PERIOD:** 1½ YEARS : Jan 2016 to June 2017 (New sample collection ended by Mar, 2017)
4. **SAMPLE SIZE:** Approximately 50 patients.

5. SAMPLE DESIGN: Patients admitted from surgical OPD with diagnosis of low anal fistula based on clinical assessment and radiological diagnosis underwent either fistulotomy or fistulectomy and surgically managed by a single surgical team.

INCLUSION CRITERIA-

All patients admitted in surgical ward with low anal fistula confirmed clinically and radiologically

EXCLUSION CRITERIA

1. High anal fistula
2. Patients with systemic disease
3. Patients with inflammatory bowel disease

6. STUDY DESIGN: Institution based prospective observational study.

7. PARAMETERS STUDIED:

- i) Demographic characteristics
- ii) Clinical presentation and diagnosis
- iii) Operating time
- iv) Hospital stay
- v) Healing time
- vi) Post-operative complications- pain, wound infection, granuloma
- vii) Quality of life post operatively
- viii) Recurrence if any

8. STUDY TOOLS :

- a) History
- b) Clinical examination
- c) Radiological investigation
- d) Pre designed proforma where patient particulars will be noted.

IV. Results & Analysis

Anal fistula is found to be more common in males (94%). The two groups have comparable sex distribution ($p=0.6$). The commonest symptom was discharge from the external opening (100%). The duration of symptoms were statistically similar in the two groups. The mean external openings of the fistulous tract in the two groups were of comparable distance from the anal verge ($p=0.67$). Operating time was thus significantly high for fistulectomy group than fistulotomy group ($p<0.001$). Significant per operative bleeding was found more in fistulectomy than fistulotomy though the difference was not statistically significant ($p=0.72$). There was no significant difference in the mean duration of hospital stay between the two groups. Healing time in fistulotomy was significantly shorter than fistulectomy. Post operative pain is significantly greater in fistulectomy than fistulotomy. Wound infection was found more in fistulectomy patients than fistulotomy patients but the difference did not reach statistical significance ($p=0.56$). Granuloma was formed more in fistulotomy patients (8%) than in fistulectomy patients (4%) but the difference was not statistically significant ($p=0.6$). None of the patients developed any adverse effects on their bladder habits and their sexual life in either of the groups during the follow up period. None of the patients developed any incontinence to stool or flatus during the follow up period. Only 1 patient (4%) in the fistulotomy group had recurrence of fistula, whereas none of the patients in fistulectomy group had any recurrence during the study period. The difference in the results was not statistically significant ($p=0.3$). The patients undergoing fistulotomy returned to normal activity early than patients undergoing fistulectomy ($p=0.02$).

V. Discussion

From the results we find that anal fistula is more common in the middle age group (30-50yrs). The fistulotomy and the fistulectomy groups have comparable age distribution (39.6 ± 11.8 yrs and 39.6 ± 12.4 yrs, $p=0.96$). Anal fistula is found to be more common in males (94%). The 2 groups have comparable sex distribution (fistulotomy-23 M, 2 F and fistulectomy-24 M, 1 F, $p=0.6$). Similar observations were noted by Carmona et al.⁸ The commonest symptom was discharge from the external opening (100%). The mean duration of symptoms were 5.3 ± 4.2 months and 4.7 ± 3.8 months ($p=0.29$). The mean external openings of the fistulous tract in the two groups were of comparable distance from the anal verge (fistulotomy 1.6 ± 1.7 cm, fistulectomy- 1.7 ± 1.6 cm, $p=0.67$).

The mean operating time of fistulotomy group and fistulectomy group was 9.72 ± 3.26 and 15.16 ± 3.74 mins. Operating time was thus significantly high for fistulectomy group than fistulotomy group ($p<0.001$). Similar findings were reported in several studies.²⁸ Sheikh and Shukr also were of the opinion that fistulotomy could lessen the operating time and speed up patient recovery.⁹ It was also reported that application of

radiofrequencies to fistulectomy can lessen the operating time but the difference was not found significant when compared to fistulectomy without radiofrequency.⁷ Significant per operative bleeding was found more in fistulectomy than fistulotomy though the difference was not statistically significant ($p=0.72$).

Patient satisfaction after surgical treatment depends on period of hospitalisation, post operative pain, wound healing time, interference with anal continence and continence of the disease.³ There was no significant difference in the mean duration of hospital stay between the two groups (3.9 ± 1.2 days vs 4.2 ± 1.6 days, $p=0.12$). Similar result was found by Lindsay et al and Jain et al.¹⁰ Several RCTs found that wound size is smaller in fistulotomy than fistulectomy, but the difference was not statistically different.^{2,5} However healing time was found more in fistulectomy than fistulotomy owing to larger wound size.^{5,6} In our study the fistulotomy group had a mean healing time of 2.4 ± 0.7 weeks whereas the fistulectomy group had a mean healing time of 3.48 ± 1 weeks, which was statistically different ($p<0.001$) similar to other studies.

Post operative pain was reported to be more in fistulotomy than fistulectomy.² The fistulectomy patients had to take analgesics for 9.4 ± 2.8 days which was significantly greater than 6.6 ± 2.1 days for fistulotomy patients ($p<0.001$). Thus the results are in corroboration with the observations of previous studies. Wound infection was found more in fistulectomy patients than fistulotomy patients but the difference did not reach statistical significance ($p=0.56$). Granuloma was formed more in fistulotomy patients (8%) than in fistulectomy patients (4%) but the difference was not statistically significant ($p=0.6$). Poenaru reported a granuloma incidence of 2.8% after surgical management of fistula in ano.¹¹ Neither groups of patients had any adverse effect on bladder habits nor on sexual life post operatively during the follow up period. The result is similar to findings by Lindsey and Jain that there was no difference in extents of adverse effects on physical, social and sexual lives after either fistulotomy or fistulectomy.¹⁰

None of the patients in either of the study groups developed any fecal incontinence. The reports on effects of surgeries of anal fistula on incontinence were mixed. Most of the studies reported a low incidence of fecal incontinence after surgeries for anal fistula.^{4,7} Some studies however reported incontinence rates between 14%-62%.¹¹ Some reported incontinence to liquid stool and flatus, but no incontinence to solid stool.¹⁴ However the incidence increased with the complexity of fistula.¹⁵ Surgical fistulotomy was regarded as the strongest risk factor for fecal incontinence by Visscher et al¹⁶, but Wexner reported tripple incidence of transient flatus incontinence after fistulectomy than fistulotomy.¹⁷ Lower incontinence rates after fistulotomy and marsupialisation than fistulectomy by Garcia.¹² The results of our study was so probably because the study population comprised of patients with simple and low anal fistula.

Only 1 patient (4%) in the fistulotomy group had recurrence of fistula, whereas none of the patients in fistulectomy group had any recurrence during the study period. The difference in the results was not statistically significant ($p=0.3$). Recurrence rate after fistulotomy was reported to be between 0-9%, which was supported by Qureshi.¹⁸ However Kronborg reported 12.5% recurrence after 1 year follow up.³ Some authors reported recurrence rate upto 13% in surgically treated fistula in ano. Recurrence rate after fistulectomy was reported to be 9.52% after 1 year follow up.³ Oh et al however reported 0% recurrence rate after 25.4 months follow up in infants who underwent fistulotomy.¹³ Our study period was only 1.5 years and longer duration of follow up may be done for more appropriate results. The patients undergoing fistulotomy returned to normal activity early (1.3 ± 0.4 weeks) than patients undergoing fistulectomy (1.7 ± 0.7 weeks)($p=0.02$). This can be explained by less post operative pain and earlier healing after fistulotomy than fistulectomy.

VI. Conclusion

This study demonstrated shorter operating time and wound healing time, less post operative pain and earlier return to normal activities following a fistulotomy in comparison to a fistulectomy and should therefore be recommended as a standard surgical procedure in the treatment of low fistula-in-ano. However, due to small sample size and short period of follow up, the findings of the present study need to be substantiated further with studies involving larger sample sizes and longer period of follow-up.

References

- [1]. Parks, A.G., Gordon, P.H. & Hardcastle, J.D. (1976) A classification of fistula-in-ano. *British Journal of Surgery*, 1976; 63: 1-12.
- [2]. Bhatti, Y., Fatima, S., Shaikh, G.S. & Shaikh S. (2011) Fistulotomy versus fistulectomy in the treatment of low fistula in ano. *Rawal Medical Journal* 36, 284-286.
- [3]. Kronborg, O. (1985) To lay open or excise a fistula-in-ano: a randomized trial. *British Journal of Surgery* 72,970
- [4]. Pescatori, M., Ayabaca, S.M., Cafaro, D., Iannello, A. & Magrini, S. (2006) Marsupialization of fistulotomy and fistulectomy wounds improve healing and decreases bleeding: a randomized controlled trial. *Colorectal Diseases* 8, 11-14.
- [5]. Pescatori M. Anal fistula summit and Scandinavian ECTA Branch foundation. Hamar (Norway) 12-13 September 2013. *Tech Coloproctol*, 2014; 18: 85-6.
- [6]. Gafar AA (2013) Fistulotomy versus fistulectomy as a treatment for low anal fistula in infants: a comparative study. *Ann Pediatr Surg* 9(3):103-107.
- [7]. Göttgens KWA, Janssen PTJ, Heemskerk J, van Dielen FMH, Konsten JLM, Lettinga T et al (2015) Long-term outcome of low perianal fistulas treated by fistulotomy: a multicenter study. *Int J Colorectal Dis* 30(2):213-219.
- [8]. Carmona J, Osterman A, Lugo Vicente H. Fistula-in-ano in children: a case series. *Bol Asoc Med P R* 2011; 103:14-17.

- [9]. Sheikh IA, Shukr I (2015) Fistulotomy vs fistulectomy in the treatment of simple low anal fistula of male patients. Pak Armed Forces Med J 65(6):798–802.
- [10]. Lindsey, L., Smilgin-Humphreys, M.M., Cunningham, C., Mortensen, N.J, George, B.D. (2002) A randomized, controlled trial of fibrin glue vs. conventional treatment for anal fistula. Diseases of the Colon and Rectum 45, 1608–1615.
- [11]. Poenaru D, Yazbeck S. Anal fistula in infants: etiology, features, management. J Pediatr Surg 1993; 28:1194–1195.
- [12]. Garcia Aguilar J, Belmonte C, Wong WD, Goldberg SM, Madoff RD. Anal fistula surgery: Factors associated with recurrence and incontinence. Dis Colon Rectum. 1996;39:723-9.
- [13]. Oh J-T, Han A, Han SJ, Choi SH, Hwang EH. Fistula-in-ano in infants: is nonoperative management effective? J Pediatr Surg 2001; 36:1367–1369.
- [14]. Knoefel WT, Hosch SB, Hoyer B, Izbicki JR. The initial approach to anorectal abscesses: Fistulotomy is safe and reduces the chance of recurrences. Dig Surg, 2000; 17: 274-8.
- [15]. Novotny NM, Mann MJS, Rescorla FJ (2008) Fistula in ano in infants: who recurs? Pediatr Surg Int 24(11):1197–1199.
- [16]. Visscher AP, Schuur D, Roos R, van der Mijnsbrugge GJ, Meijerink WJ, Felt-Bersma RJ (2015) Long-term follow-up after surgery for simple and complex crypto glandular fistulas: fecal incontinence and impact on quality of life. Dis Colon Rectum 58(5):533–539.
- [17]. Wexner SD, The Standards Practice Task Force, The American Society of Colon and Rectal Surgeons (1996) Practice parameters for treatment of fistula-in-ano—supporting documentation. Dis Colon Rectum 39(12):1363–1372.
- [18]. Khalid Hussain Qureshi, Mustafa Kamal, Muhammad Hamid Ali Shah, Naseer Ahmed Tariq, Salman Ahmad Tipu. Management of Fistula-in-Ano. J Coll Physicians Surg Pak, 2002; 12: 361-3.

Nisith Ranjan Mallik "Study of Fistulotomy and Fistulectomy in the Management of Low Anal Fistula and Evaluation of Short Term Outcomes." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 4, 2018, pp 42-45.