



A CLINICAL STUDY OF FISTULA IN ANO AND ITS MANAGEMENT

Surgery

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ABSTRACT

Introduction: Fistula in ano forms a good majority of treatable benign lesions of the rectum and anal canal. It has been said that more surgeons' reputation has been impugned because of the consequences of fistula operations. Complications of fistula surgery are myriad and include fecal soiling, mucus discharge and recurrent abscess and fistula. **Aim and Objectives:** The purpose of the study is to learn the different modes of clinical presentations, predictive accuracy of Goodsall's rule, methods of investigations and post operative outcome of fistula in ano. **Materials and Methods:** Prospective and observational study undertaken in Gauhati Medical College and Hospital. After admission a short history was taken and physical examination was conducted. Patients were then explained about their disease process and the possible line of management. Baseline investigations were done followed by imaging studies. Strict aseptic precautions were followed during the operation. **Observations and Results:** The patients were predominantly of the age group 29-38 years. The male to female ratio was 3:1. All the patients presented symptoms of perineal irritation or discomfort. 38.33% had their external openings in the anterior circumference. 43 patients underwent a fistulotomy while 17 patients underwent a fistulectomy. A persisting infection or sepsis indicating a remnant tract or preserved anal gland was seen in 8 patients (13.33%). **Conclusion:** We conclude that there is a male preponderance for this disease. Perineal irritation and discharge were the most common presenting symptoms with a majority having a solitary posterior external opening. Low level fistula was the most common type. Operative morbidity is usually low and fistulotomy remains the commonest procedure.

KEYWORDS

Anal canal pathology, pruritis, abscess, fistulotomy, fistulectomy, recurrent abscess, perineum

INTRODUCTION

Fistula in ano forms a good majority of treatable benign lesions of the rectum and anal canal. Around 90% of these cases are considered as the end result of crypto glandular infection. Anal fistulas are considered to be one of the commonest causes for a persistent seropurulent discharge that irritates the skin in the neighborhood and causes discomfort. An anal fistula is essentially a painless condition, though discharge ceases temporarily and pus accumulates to form recurrent abscesses. Pain is experienced till the abscess ruptures which gives immediate relief. Most of these fistulae are easy to diagnose with a good source of light, a proctoscope, and a meticulous digital rectal examination. Despite the ease of diagnosis, establishing a cure is problematic on two accounts. Firstly, many patients tend to let their ailment nag them rather than being subject to examination, mostly owing to the site of affection of the disease. The more important second factor is that a significant percent of these diseases persist or recur when the right modality of surgery is not adopted or when the post-operative care is inadequate. So these conditions affect the young and middle aged persons most often, thereby causing a loss of valuable productive man hours. Complications of fistula surgery are myriad and include fecal soiling, mucus discharge, varying degrees of incontinence and recurrent abscess and fistula. Clearly the surgeon who is fortunate enough to have the first opportunity to treat the patient is the one most likely to affect a cure, to limit morbidity and to minimize disability. This study is an attempt to understand the presenting symptoms, the findings on clinical examination, various investigational modalities and post operative outcomes of Fistula in Ano.

AIMS AND OBJECTIVES

- To study the different modes of clinical presentations of fistula in ano.
- To determine the predictive accuracy of Goodsall's rule in relation to type of fistula treated.
- To study the post-operative outcomes and short term complications if any.

MATERIALS AND METHODS:

It is a prospective and observational study undertaken in Gauhati Medical College and Hospital, Guwahati from 1st July, 2018 to 30th June, 2019. Inclusion criteria: All cases of clinically or radiologically diagnosed cases of Fistula in ano occurring in the ano rectal region.

Exclusion criteria:

- Age of patients less than 12 years.
- Fissure in ano, Perianal Sinus.
- Recurrent cases of Fistula in Ano.

After admission a short history was taken and a physical examination was conducted. Patients were then explained about their diseases process and the possible line of management. Detailed history was then obtained from the study group to establish proper diagnosis. Thorough physical examination was done in each case. Baseline investigations were done followed by imaging studies. After proper evaluation and preparation, patients were taken up for surgery.

Fistulectomy was done under spinal anesthesia. The patient was positioned in a lithotomy position, inspection and identification of the site of external opening was performed, and proctoscopy was applied for detection of the internal opening and the fistula tract. Diluted methylene blue was injected in the external opening to identify the presence and site of internal opening. A probe was passed in the external opening to define the direction of the fistula tract to the internal opening. Coring out the primary track reduces the risk of missing secondary tracks, which were seen as transected granulation tissue, which may be followed by the same technique. Once the track had been cored out from the external toward the internal opening, either with scissors or with cautery dissection, simple anatomical closure of the cored-out tunnel with mucosal closure of the defect with interrupted absorbable sutures was performed. The wound outside the sphincters was packed.

Probing not only provides the identification of the course of the fistula tracts but also facilitates fistulotomy over the probe. By the use of diathermy, the perianal skin and anal epithelium were divided. The internal sphincter, if it was encountered, was identified and partially divided. If a high blind track was encountered, it was loosely curetted and adequately drained through the fistulotomy incision.

Data analysis was done both manually and by using Spreadsheet applications eg, Microsoft ® Excel. Calculated data were arranged in systematic manner, presented in various table and figures and statistical analysis was made using statistical softwares eg, EpiInfo and Graph Pad InStat Version 3.

OBSERVATIONS AND RESULTS

In our study of 60 patients, males were more commonly affected than females in a ratio of 3:1 and the most common age group affected was 29-38 years. The most common comorbid condition was diabetes mellitus (11.6%) followed by Hypertension (6.67%)

Table 1: Distribution of symptoms

Symptoms	Patients	Percentage
Perineal irritation	60	100%
Perineal discharge	34	56.67%
Perineal itching	19	31.67%

In the study, 81.67% of the patients had a single external opening. 10% had 2 and 8.33% of the patients had multiple external openings. Internal opening was present in 25 out of 60 patients and absent in 35 out of 60 patients. In fistulogram 35 patients showed an intersphincteric fistula, 24 had a transsphincteric fistula and 1 patient had a suprasphincteric fistula.

Table 2: Level of the fistulas among patients.

Fistula level	No. Of patients	Percentage
Low	55	91.67%
High	5	8.33%
Total	60	100%

Table 3: Distribution of the procedure undergone with respect to the type of fistula.

Type of fistula	Procedure				%
	Fistulotomy	%	Fistulectomy	%	
Inter sphincteric	24	55.8	11	64.7	58.3
Trans sphincteric	18	41.8	6	35.2	40
Supra sphincteric	1	2.32	0	0.0	1.67
Total	43	71.6	17	28.3	100

The most common complication was persisting sepsis occurring in 8 patients, recurrence occurred in 7 patients and incontinence occurred in 6 out of a total 21 patients who developed complications. The procedure specific complication of persisting sepsis was seen in 12% fistulotomy patients and 17.64% fistulectomy patients whereas incontinence was seen in 2.3% fistulotomy patients and 29% fistulectomy patients. Recurrence was seen in 12% fistulotomy patients and 12% fistulectomy patients. The histopathological examination of tissues sent for biopsy showed 55 patients had a chronic non specific inflammation of the fistulous tract as the etiology whereas in 5 patients, tuberculosis was discovered as the etiological factor.

DISCUSSION

This prospective and observational study was carried out to understand the different modes of clinical presentation of Fistula in Ano, along with the various modalities of investigations and their post-operative outcomes. 60 patients fulfilling the inclusion criteria were selected. Age of all the 60 patients ranged from 19-77 years. The patients were predominantly of the age group 29-38 years. Patients belonging to the extremes of age did not show much involvement. The male to female ratio was 3:1, showing a predominantly male involvement with the disease, with no specific pathophysiological basis for their involvement. Rao et al in their study on the histopathology of fistula in ano and its relevance; found that the male to female ratio was 2.3: 1.¹ Kim et al also in their Comparative Review of Perianal Sinus & Fistula in Ano reported a male to female ratio of 4.6: 1.² A reason for lesser female involvement could be attributed to the fact that females, with perineal symptoms of irritation, discharge and itching rarely came forward for treatment, unless the complaints were severe in nature.

Fistula in ano, predominated in patients belonging to the lower socio economic class with a total of 42 patients (70%). This condition was also seen in patients from the upper socio economic class but was not as prevalent (18 patients (30%)). Sukhlecha AG et al in their study, also discovered the same distribution; 70% for lower socio economic class and 30% for upper socio economic class among patients with fistula in ano.³

On analysing the comorbid factors, Diabetes Mellitus was the predominant comorbid factor, seen in 7 patients (11.67%), with Systemic Hypertension seen in 4 patients (6.67%). Both Diabetes Mellitus and Systemic Hypertension was seen in 3 patients (5%). 44 patients (73.33%) did not present with any comorbidity. Elhassan et al

in their recent 2017 study also inferred that Diabetes Mellitus was the most common disease that was complicated by perianal abscess in both genders.⁴

While studying the distribution of presenting symptoms, all the 60 patients (100%), presented symptoms of perineal irritation or discomfort. 56.67% of the patients presented with perineal discharge (34 patients) and 31.67% (19 patients) presented with perineal itching as the chief complaint. Many patients presented with overlapping symptoms of perineal irritation, discharge and itching. Sukhlecha AG et al reported in their study that 70% of all patients had perianal discharge while 10% patients presented with perianal pain. 80% patients had history of perianal abscess.³ Clinical evaluation of the patients, by means of a digital rectal examination, demonstrated presence of external openings in all 60 patients. 49 patients (81.67%) presented with a solitary external opening, whereas 6 patients (10%) had 2 external openings and 5 patients (8.33%) had 2 or more external openings. Siddharth et al also observed that 76% of the patients had only one external opening while 12% had 2 external opening and another 12% had more than 2 openings. Here also fistula in ano with a single external opening was commonest in occurrence.⁵ In the present study, 23 patients (38.33%) had their external openings in the anterior circumference from the 3 O'clock to the 9 O'clock position, in accordance with the Goodsall's Law, whereas 37 patients (61.66%), had their external openings in the posterior circumference. Saino P et al in their study found 84% patients had posterior opening while 16% patients had anterior opening.⁶ The MR study showed presence of intersphincteric fistula in 35 patients (58.33%), while transsphincteric fistula was seen in 24 patients (40%). suprasphincteric fistula was detected in 1 patient only (1.67%). 55 patients (91.67%) had a low level fistula whereas 5 patients (8.33%) had a high level fistula (internal opening begins above the anal sphincter). Sukhlecha AG et al in their study found that 88% of the patients had low type of fistula i.e. internal opening below the anorectal ring, while 12% had high type of fistula.³ A low type fistula is more widespread in the study by Kumar et al., who also found that fistula was found to be high in only 4% subjects and low in 74%.⁷ Considering the procedures performed, 43 patients (71.67%) underwent a fistulotomy while 17 patients (28.33%) underwent a fistulectomy. Upon comparing the type of fistula with the type of procedure performed, it was found that, 24 patients with intersphincteric, 18 patients with transsphincteric and 1 patient with suprasphincteric fistulas underwent fistulotomy, whereas 11 patients with intersphincteric and 6 patients with transsphincteric fistulas underwent fistulectomies. Only 1 patient was diagnosed with a suprasphincteric fistula in ano in whom a fistulotomy was performed. Kumar et al performed fistulectomy in 68% subjects, fistulotomy in 28% subjects and seton placement in 4% subjects.⁸

Parks and Stitz demonstrated that hospital stay and healing times was much longer in patients treated for transsphincteric and suprasphincteric as compared with those treated for an intersphincteric fistula.⁸ In fistulotomy, the tract must be layed open from its termination (external opening) to its source (internal opening); it is the surest way of getting rid of the fistula. It is applied mainly to the intersphincteric fistula and trans-sphincteric fistula involving less than 30% of the external sphincter.⁹

21 patients developed post operative complications with incontinence being the least common post operative complication, prevalent in 6 patients (10.00%). A persisting infection or sepsis indicating a remnant tract or preserved anal gland was seen in 8 patients (13.33%). 7 patients (11.67%) had recurrence of symptoms after initial surgery. 39 patients (65.00%) had no complications. Kumar HM et al found that true fecal incontinence was variable, ranging from nil to 26%.⁷ On analyzing the complications with respect to the procedure performed, the incidence of incontinence was significantly higher in patients who underwent fistulectomy (29%) while incontinence was seen in only 2.3% of the patients who underwent fistulotomy which was found to be statistically very significant (P=0.0055) In our study, recurrence occurred in 5 (12%) out of 43 patients who underwent fistulotomy and 2 (12%) out of 17 patients who underwent fistulectomy with no statistically significant difference between the 2 groups (P=1.000). According to Kronborg, recurrence occurred in three (12.5%) out of 24 patients treated by fistulotomy and in two (9.52%) out of 21 patients treated by fistulectomy, with no statistically significant difference between both groups.¹⁰ According to Zuhair Bashir, in his study, recurrence occurred in two (6.25%) out of 32 patients managed by fistulotomy and in three (6.81%) out of 44 patients managed by

fistulectomy, with no statistically significant difference.⁹ Our study showed 74.4% of the patients who underwent fistulotomy had no complications compared to 47% patients with fistulectomy ($P=0.0333$). Persistent sepsis however showed the same degree of occurrence in both the procedures (12%) which again did not show any significant statistical difference ($P=0.6760$). Poon Chi-Ming et al studied 135 patients and found that there was recurrence in 13.3% of patients operated by fistulectomy, compared to the study done by Ramachandra ML et al which showed a 25% recurrence operated by fistulectomy, amongst a total of 80 patients.¹¹ Final histopathological analysis of the resected tract in fistulectomy and portion of the tract in fistulotomy revealed a chronic non specific inflammatory pathology in 55 patients (91.67%) and a tubercular pathology in 5 patients (8.33%). Barwood et al in 1997 reported that histopathology of fistula material showed unremarkable fistula-in-ano in 87% of requests while six patients had unexpected abnormal results, including three new diagnoses of Crohn's disease.¹²

Globally, tuberculosis is on the rise because of the increasing number of patients diagnosed with acquired immunodeficiency syndrome (AIDS) and also because of migration to the west from high prevalence countries. In an Indian study by Shukla HS et al involving 122 cases of fistulae in-ano, 15.6% were of tuberculous in origin.¹³ On the other hand, a study conducted in Helsinki by Sainio P et al indicated that 0.2% of all the fistulae were because of TB.¹⁴

CONCLUSION

Our study included 60 patients who were diagnosed to have fistula in ano, who underwent surgical intervention. Through our study, we conclude that there is a male predilection for this disease. Lower socio economic class was more prone to developing fistula in ano. Perineal irritation and discharge were the most common presenting symptoms with a majority having a solitary external opening which most commonly had a posterior opening. Low level fistula was the most common type. Operative morbidity is usually low and fistulotomy remains the commonest procedure in our study series. The post operative complications are usually mild in nature and are minimal.

REFERENCES

1. Rao GB, Srivastava V. Histopathological study of fistula in ano and its relevance. *Journal of Diagnostic Pathology and Oncology*. 3(2):101-3.
2. Kim JW, Kwon SW, Son SW, Ahn DH, Lee KP. Comparative Review of Perianal Sinus & Fistula in Ano. *Journal of the Korean Society of Coloproctology*. 2000 Feb 1;16(1):7-11.
3. Sukhlecha AG. Prevalence of fistula-in-ano in patients attending tertiary care institute of Gujarat: a cross-sectional study. *International Surgery Journal*. 2019 Jun 29;6(7):2449-52.
4. Elhassan YH, Guraya SY, Almaramby H. The prevalence, risk factors and outcome of surgical treatment of acute perianal abscess from a single Saudi hospital. *Biosciences Biotechnology Research Asia*. 2017 Mar 25;14(1):153-9.
5. Siddharth R, Kumar GA, Sreedhar S. Clinical study of fistula in ano. *Journal of Evolution of Medical and Dental Sciences*. 2015 Oct 26;4(86):15082-87.
6. Sainio P, Husa A. Fistula-in-ano. Clinical features and long-term results of surgery in 199 adults. *Acta chirurgica scandinavica*. 1985;151(2):169-76.
7. Veerendra Kumar HM. A Clinico-Pathological study of Fistula in ANO 2010 (Doctoral dissertation, RGUHS).
8. Goldberg SM, Parks AG, Golicher JC, Alexander-Williams J, Hanley PH, Stitz RW. The treatment of high fistula-in-ano. *Diseases of the Colon & Rectum*. 1976 Sep 1;19(6):487-99.
9. Kamal ZB. Fistulotomy versus fistulectomy as a primary treatment of low fistula in ano. *Iraqi Academic Scientific Journal*. 2012;11(4):510-5.
10. Kronborg O. To lay open or excise a fistula-in ano: a randomized trial. *British Journal of surgery*. 1985 Dec;72(12):970-970.
11. Ramachandra ML, Garg M. A comparative study in the management of fistula in ANO using various modalities. *International Surgery Journal*. 2018 May 24;5(6):2223-7.
12. Barwood N, Clarke G, Levitt S, Levitt M. FISTULA-IN-ANO: A PROSPECTIVE STUDY OF 107 PATIENTS. *Australian and New Zealand journal of surgery*. 1997 Feb;67(2-3):98-102.
13. Shukla HS, Gupta SC, Singh G, Singh PA. Tubercular fistula in ano. *British journal of surgery*. 1988 Jan;75(1):38-9.
14. O'Donohoe MK, Waldron RP, O'Malley E. Miliary tuberculosis presenting as an acute perianal abscess. *Diseases of the colon & rectum*. 1987 Sep 1;30(9):697-8.