



Clinical Study of Fistula-In-ANO

¹Dr Vishal Nandagawali, Associate Professor, Department of Surgery, Indira Gandhi Government Medical College, Nagpur, Maharashtra, India

²Dr Akash Gholse, Senior Resident, Department of Surgery, Indira Gandhi Government Medical College, Nagpur, Maharashtra, India

³Dr Mahendra Kamble, Assistant Professor, Department of Surgery, Indira Gandhi Government Medical College, Nagpur, Maharashtra, India

⁴Dr Rohit Chavhan, Senior Resident, Department of Surgery, Indira Gandhi Government Medical College, Nagpur, Maharashtra, India

⁵Dr Pranjal Meshram, Junior Resident, Department of Surgery, Indira Gandhi Government Medical College, Nagpur, Maharashtra, India

Corresponding Author: Dr Akash Gholse, Senior Resident, Department of Surgery, Indira Gandhi Government Medical College, Nagpur, Maharashtra, India

Citation this Article: Dr Vishal Nandagawali, Dr Akash Gholse, Dr Mahendra Kamble, Dr Rohit Chavhan, Dr Pranjal Meshram, "Clinical Study of Fistula-In-ANO", IJMSIR- March - 2022, Vol - 7, Issue - 2, P. No. 132 - 140.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Background: Fistula-in-ano is a hollow tract lined with granulation tissue and connects internal opening inside anal canal to external opening in perianal skin. It occurs in perianal abscess following rupture or which had been surgically drained. Presenting complaints is perianal discharge with past history of perianal abscess. Digital rectal examination remains mainstay of diagnosis. In this study an attempt has been made to study the clinical presentation and post operative course of this disease.

Methods: The present cross sectional observational prospective study was conducted on 57 patients in Department of Surgery IGGMC, Nagpur. Detailed clinical history, examination and investigation for managing patients and operative fitness were done. Surgical intervention was done accordingly.

Results: 35% of the patients were in age group of 31-40 years. 75.44% are male patients and 24.56 % are female patients. 82.4 % of the patients presented with complaints of perianal discharge f/b pain in 73.6 % of the patients. 80.7 % patients had previous history of perianal abscess. 75.44 % of patients had posteriorly located external opening while 24.56 % had anteriorly located opening. 43.85 % had Intersphincteric type of fistula while transphincteric were 26.31%. 89.47% patients underwent fistulectomy while 8.77 % underwent fistulotomy. One female patient underwent LIFT procedure.

Conclusion: Anal Fistula is a common, detrimental crippling disease that poses a challenge for Surgeons for treatment. Proper diagnosis and apt surgical intervention is a blessing for both surgeon and patient.

Keywords: Fistula-in-ano, Fistulectomy, Perianal Abscess, Perianal Fistula

Introduction

Fistula-in-ano is a hollow tract that is lined with granulation tissue and connects a primary opening inside the anal canal to the secondary opening in the perianal skin¹. All around history, fistula-in-ano is known for its troublesome pathology. The disease is as old as mankind itself¹.

It was first described by Hippocrates in 430 BC¹ who advocated the use of seton in treatment. Sushruta in 2500 BC² conducted operations on fistula-in-ano and it was known as “Salya Tantra”. Since ages fistula has been vigorously studied but the true nature of the disease has not been revealed, leaving us a wide horizon to understand the depth of the disease.

The overall incidence is 9 per 100000³ population per year in western Europe and those in their third, fourth and fifth decade are the most commonly affected.

Patients complains of intermittent purulent discharge, pain and episode of acute anorectal sepsis that settled incompletely spontaneously or with antibiotics, or which was surgically drained. The occurrence of such abscess is mostly secondary to the infection of anal gland (Cryptoglandular hypothesis of Eisenhamer).

The most useful classification of anal fistula is proposed by Parks in 1961⁴, based on the centrality of intersphincteric anal gland sepsis. Parks classified anal fistula is classified into four types:

- 1) Intersphincteric – 70%
- 2) Trans-sphincteric – 25%
- 3) Suprasphincteric – 5 %
- 4) Extrasphinteric – 1%

Simple and complex are commonly used adjunctive with fistula – complexity may be endowed by the level at which the primary tract crosses the sphincters, the

presence of secondary extensions or the difficulties faced in treatment.

Thorough previous history of perianal or perirectal disorders with clinical examination focussed to determine the site of external opening that appears as an open sinus or elevation of granulation tissue with spontaneous discharge visible from external opening on digital rectal examination helps to locate the external opening. On digital rectal examination internal opening is felt and fibrous tract is palpated connecting it to external opening. Fistula-in-ano is investigated with fistulography, sigmoidoscopy, colonoscopy, endoanal or endorectal ultrasound, magnetic resonance imaging. They act as adjunct to the physical examination. The aim of surgical treatment is to eradicate fistula without disturbing anal continence. The most common operative intervention used are fistulotomy and fistulectomy. Ligation of intersphincteric fistulous tract is also option for treatment. Complex fistula demands advance procedures like endorectal advancement flap, ano-cutaneous advancement flap, and direct extension and closure of internal opening. The improved surgical interventions have rendered post-operative period uneventful and steep fall in recurrence rate.

The chronicity of the disease with its notorious annoying symptoms like soiling of clothes, pruritis, varying degrees of incontinence following surgery renders an otherwise healthy and active person with an economic burden, retraction from social gatherings and further leading to loss of self-confidence. It has been said that more surgeons’ reputations have been impugned because of consequences from fistula operations than from any other operative procedures¹.

There has been lot of progress in understanding the disease aetiology in relation with anatomy of anal canal and rectum and mechanism of continence of rectum. This

has enabled the surgeons to eradicate the disease without interfering with the continence

Fistula-in-ano rarely heals spontaneously and requires surgical intervention in most of the cases. This enables the surgeons in present time to obtain more precise surgical evaluation in anal fistula treatment and its management.

Methodology

This is a prospective study conducted in Department of General Surgery, Indira Gandhi Government Medical College and Hospital, Nagpur during the time period of 1st July 2018 to 31st November 2020. A number of 57 patients were selected who were diagnosed and admitted with fistula-in-ano and are willing to undergo operative intervention.

All patients were admitted in surgical wards. Detailed history including the past history of anorectal abscess and of previous fistula surgery was taken. The mode of presentation, other co-morbid conditions like diabetes, findings on clinical examination (digital rectal examination and proctoscopy) were recorded in preformed proforma for individual patients. All routine investigations, ECG, Chest X ray were done. Specific investigation like MRI fistulogram done in few cases. Patients with diabetes and hypertension were referred to the physician for optimisation. All the patients were subjected to pre-anaesthetic check-up and operated after fitness. Data related to the goals of the study were collected.

Inclusion Criteria

- 1) All clinically diagnosed cases of fistula-in-ano in all ages and both sex who are ready to give consent for clinical study.
- 2) Patients who were previously operated or some intervention done for fistula-in -ano.

Exclusion Criteria

- 1) Patients who present with fistula's which are specific to certain conditions:
 - a. Crohn's disease
 - b. Fistula's secondary to Carcinoma Rectum
 - c. Fistula's secondary to Ulcerative colitis
 - d. Patient with abdominal tuberculosis
 - e. History of Radiation therapy
 - f. Patient with immunocompromised status (HIV Positive Patient)
- 2) Patients who did not gave consent for the study.



Figure 1: Fistula with single external opening at 11''O clock

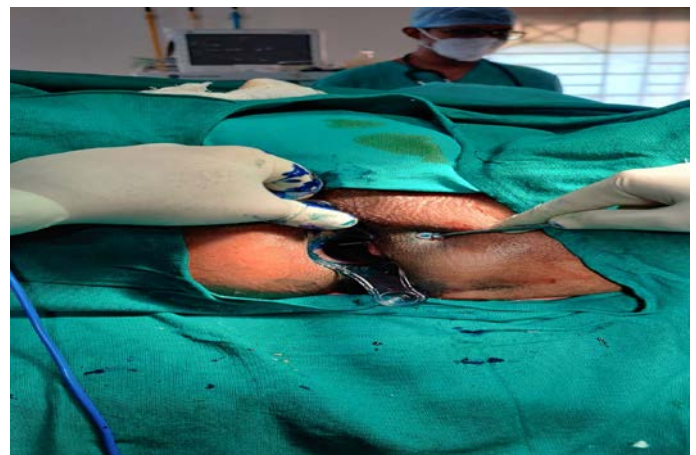


Figure 2: Delineating openings using fistula probe



Figure 3 : Fistulectomy wound site

Results

In our study of 57 patients, 35.08 % patients were in the age group of 31-40 years. This is followed by 21-30 years of age group, 29.82 %. The youngest patient in our study is of 12 years old and oldest was 74 years old.

Sn.	Age Group	No. Of Cases	Percentage
1	10-20	2	3.50
2	21-30	17	29.82
3	31-40	20	35.08
4	41-50	11	19.29
5	51-60	5	8.77
6	61-70	1	1.75
7	71-80	1	1.75
	TOTAL	57	100 %

Table 1: Age Distribution

In our study of 57 patients there were 75.4 % male patients and 24.5% female patients indicating that disease is more common in males with Male: Female ratio 3.07:1.

Sn..	Gender	No. Of Cases	Percentage
1	Male	43	75.4
2	Female	14	24.5
		57	

Table 2: Gender Distribution

In our study of 57 patients majority study subjects were from lower class, 45.61 % followed by upper lower class, and 26.31 %. None of the patient was from upper class while 8.77 % were from upper middle class. This difference is owing to the fact that majority of the patient to attend the government hospital are from lower socio-economic class.

Sn.	Socio-Economic Status	No. Of Patients	%
1	Upper	0	0
2	Upper Middle	5	8.77%
3	Lower Middle	11	19.29%
4	Upper Lower	15	26.31%
5	Lower	26	45.61%
	Total	57	100%

Table 3: Socio-Economic Status

Most of the patients presented with more than one complaint of which most common was discharge, 82.45% from external opening Followed by pain in 73.68%.

Sn.	Presenting Complaints	No. of patients	Percentage present study
1	Pain	42	73.68
2	Discharge	47	82.45
3	Swelling	9	15.78
4	Pruritis	5	8.77
5	Bleeding	3	5.26
		57	

Table 4: Presenting Complaints

In our study of 57 patients majority of patient's external opening was located in posterior region 75.44 % while 24.56 % of patient had external opening located in anterior region.

Sn.	Position of external openings	No. Of patients	Percentage
1	Anterior	14	24.56
2	Posterior	43	75.44
		57	100 %

Table 5: Position of External Opening

In our study of 57 patients, majority of the patient 43.85 % had Intersphincteric type of fistula while transphincteric were in 26.31 % followed by superficial fistula in 24.56 %. Only 5.26 % of patient had high anal fistula.

Sn.	Type of fistula	No. of patients	%
1	Superficial	14	24.56%
2	Intersphincteric	25	43.85%
3	Transphincteric	15	26.31%
4	High Anal	3	5.26%
		57	100

Table 6: Type of Fistula

In our study, 89.47% patients underwent fistulectomy while 8.77 % underwent fistulotomy. Five patients who were subjected to fistulotomy were having associated abscess, hence fistulotomy was done in those patients. LIFT was done in a case of young female who was not willing for either fistulotomy or fistulectomy due to cosmetic reasons.

Sn.	Types of surgical treatment	No. of patients	%
1	Fistulectomy	51	89.47
2	Fistulotomy	5	8.77
3	Lift	1	1.75
		57	100%

Table 7: Types of Surgical Treatment

31.57% patients had healing of wound by the end of second week. 12 of those 18 patients were young belonging to age group of 20-30 years and 14 patients out of 18 presented with superficial types of fistula explaining rapid recovery compared to others. 38.58 % had healing of wound by the end of third week while remaining 29.82 % required more than 4 weeks for healing. In this group of patient who required more than 4 weeks for complete healing i.e 31.17 %, 7 patients were of 5th and 6th decade while 9 patients were belonging to 4th decade. Out of those 9 patients two developed recurrence. One of them were having complex fistula while other patient had high anal fistula. One patient was of age 74 yrs old that required more than 4 weeks for complete healing.

Sn.	Time	No. of Patients	Percentage
1	2 WEEK	18	31.57 %
2	3 WEEK	22	38.58 %
3	≥4 WEEK	17	29.82 %
		57	100 %

Table 8: Duration of Healing

71.92 % of the patients in our study complaint of post operative pain. This patients were treated with injectable analgesics (Inj.Diclofenac 50 mg IM bd) for 2 days post operatively f/b oral analgesics Tab. Diclofenac 50 mg bd for 5 days.

12.28 % patients developed fever on post operative day 1 which were subsided after giving anti-pyretics (Inj. Paracetamol 500 mg IV). Patient was kept on oral tab paracetamol 500mg bd for two days following episode of fever. Fever subsided subsequently after two days and patient was discharged on post operative day 3.

12.28 % patients developed post-operative wound infection with purulent discharge from wound site. The patients were treated with daily cleaning and dressing with sitz bath and kept on higher antibiotics. All patients were discharged by post-operative day 4.

7.01 % of patient developed post-operative headache as a complication to spinal anaesthesia. Anaesthetist opinion was taken and patient was given Inj. Paracetamol 500 mg IV with adequate hydration, head low position and oral caffeine intake. In all four patients headache subsided by post-operative day 2 and patient were discharged on oral medication on post-operative day 3.

Sn.	Post-operative complications- immediate	No. Of patients	Percentage
1	Pain	41	71.92 %
2	Fever	7	12.28 %
3	Post-Operative Bleeding	11	19.29 %
4	Post-Operative Wound Infection	7	12.28 %
5	Post-Operative Headache	4	7.01 %

Table 9: Complications- Immediate

17.54 % patients in our study were complaining for soiling of clothes which lasted for 2 weeks. Patients were advised sitz bath and daily cleaning and dressing with kiegel’s exercise for strengthening of sphincter tone. All ten patients responded well to treatment and by the end of fourth week this problem was solved.

5.26 % of patient developed category C incontinence on clinical continence grading (Loss of control over liquid stools and flatus). Out of this three patients, two had complex intersphincteric fistula and third patient had high anal fistula. The problem persisted for 1 month following operation. Out of 3 patients, 2 patients had improvement by the end of first month while another patient had persistent flatus incontinence and had recurrence by the end of 9 month.

5.55 % patient had recurrence. Out of this three patients one had complex fistula. In another patient there was high anal fistula. The third patient with recurrence had intersphincteric fistula in which LIFT procedure was done.

Sn.	Post-Operative Complications – Late	No. of Patients	%
1	Soiling of clothes	10	17.53%
2	Faecal incontinence	3	5.26 %
3	Flatus incontinence	4	7.01 %
4	Recurrence of fistula	3	5.26 %

Table 10: Complications - Late

Discussion

In our study most of the patients belong to the age group of 31- 40 (35.08 %) followed by 21 – 30 yr age group (29.82 %). Study conducted by Vasilevisky et al in 1985⁵, Jebakumar et al in 2016⁶, Siddharth et al in 2015⁷ showed that most of the patients belong to 4th decade. Fistula is rare after 7th decade.

In our study 76 % patients were male and 24 % were female. Male:Female ratio was 3.07: 1. Our study shows that fistula is found dominantly in male age group. The male to female ratio in our study corresponds similarly to the studies done by Siddharth et al in 2015⁷ and Sukhlecha et al in 2019⁸ around 3:1.

In our study major number of patients were belonging to lower socio-economic status group i.e 45.61%. Patient with upper lower and lower middle socio-economic status were 26.31% and 19.29 %. Study conducted by Yadu et al in 2018⁹ showed that 66 % of the patient belonged to low socio-economic status while 34 % belonged to high socioeconomic group. Study conducted by Qureshi et al in 2018¹⁰ showed that 29.5% of patient belong to lower class while in our study it is around 46 %. In his study majority of the patient were from upper lower class 45 % while in our study it is 25 %.

In our study main chief complaint that patients presented with were perianal discharge around 82.45 % followed

by 73.68 % with complaints of pain in perianal region. 15.78 % of the patient also presented with swelling in perianal region while pruritis around external opening and bleeding were present in fewer number of patients, 8.77 % and 5.26 % respectively. In study done by Mazier et al in 1971¹¹, 76 % of the patient presented with pain while discharge is the presenting complaint in 40 % cases. In study done by Siddharth et al in 2015⁷, 74 % of the patient presented with pain and discharge.

In our study 80.70% had past history of perianal abscess. In study conducted by PJ Shouler et al in 1986¹², 69 % of the patient had previous history of perianal infection. In study conducted by Sukhlecha et al in 2019⁸, 80 % of patients had previous history of perianal abscess which is consistent with our study.

In our study 75.44 % of the patients were having posteriorly placed external opening while anterior are 24.56 %. In study conducted by Siddharth R et al in 2015⁷, 80% of patient had posteriorly situated external opening while 20 % of patients had anterior opening. In study conducted by Yadu et al in 2018⁹, 76 % patients had posterior opening while 24 % had anterior opening.

In our study 43.85% had intersphincteric type of fistula while 26.31 % had transphincteric type of fistula. 24.56% of patient had superficial fistula while 5.26 % had high anal fistula. Our study corresponds to Study of Garcia Aguilar et al in 2000¹³ which reported 21 % of Superficial, 48 % of Intersphincteric, 28 % of Transphincteric, 3 % of high anal type.

In our study most of the patients healed by 3rd week around 38.58 %. In study done by Jebakumar et al in 2016⁶ most of the patient healed by 4th week. In our study 29.82 % patient took a time of 4 week or more for complete healing.

71.92 % of the patients in our study complaints of post-operative pain. In study conducted by Mazier et al in

1971¹¹, 73.5 % of the patients complaints of post-operative pain. These patients were treated with injectable pain killers (Inj. Diclofenac 50 mg IM bd) for 2 days post operatively f/b oral analgesics Tablet Diclofenac 50 mg bd for 5 days.

12.28 % of patients developed post-operative fever on post-operative day 1 which were subsided after giving anti-pyretics (Inj Paracetamol 500 mg IV). Patient was kept on oral tab paracetamol 500mg bd for two days following episode of fever. In study conducted by Mazier et al in 1971¹¹, 14.4 % patients reported fever on day 1 and 7.5 % on day 2.

In study conducted by Kumar et al in 2015¹⁴, 16 % of patients had post-operative wound infection and in our study it is 12.28 %. The patients were treated with daily cleaning and dressing with sitz bath and kept on higher antibiotics. All patients were discharged by post-operative day 4.

In study conducted by Kumar et al in 2015¹⁴, 6 % of patients had postoperative headache and in our study it is 7.4 %.

In our study 17.54 % of the patients developed soiling of clothes, 7.01 % developed flatus incontinence, 5.26 % developed faecal incontinence and 5.26 % developed recurrence. In study done by Marks and Ritchie et al in 1977¹⁵ soiling of clothes is reported in 31 % of the case, 25 % of the patient developed flatus incontinence and 17 % developed faecal incontinence. In study done by PJ Shouler et al in 1986¹², 12 % of patients reported soiling of clothes, 2 % reported flatus incontinence while another 2 % reported faecal incontinence. Vasilevisky et al in 1985⁵ in his study reported recurrence in 6.5 % of the cases. Presence of a blind track is considered as the reason for recurrence in his study.

We concluded that chances of incontinence are present if there is excessive damage to the sphincter complex. This

incontinence resolves on conservative management and most of the patient regains their continence over the period of time. Recurrence is related to complex fistulas and fistula with high blind track or high extensions.

Conclusion

Fistula-in-ano is a simple disease but it disrupts the life of a patient at enormous levels. People lost their confidence over a period of time and avoid social gatherings. This hampers the professional, personal and mental wellbeing of a patient and brings economical burden over a period of time.

Fistulectomy is a better surgical intervention, which offers complete removal of the disease. It is imperative to take note that continence should not be hampered in enthusiastic removal of fistula track. Loss of continence is a potentially debilitating condition and one should avoid putting patient through such misery. Given an opportunity, fistula should be removed completely in first setting. Not only is the recurrence difficult to treat, but it comes at the cost of continence of the patient.

There are many surgical approaches for fistula-in-ano and few more are under study. It is a disease which has been studied for centuries but is yet to reveal its true nature and therefore one particular management cannot be agreed upon. We suggest individualisation of operative procedure according to patient's particular and patient should be informed about results, pros and cons of all different procedures. This seems to be a better approach for fistula-in-ano to relieve patient of its symptoms and satisfy the doctor.

References

1. MD MC, FRCS RJNM, MD DVWF, Bergamaschi R. In: Corman's Colon and Rectal Surgery. 6th edition. Philadelphia: Lippincott Williams and Wilkins; 2012. p. 384-400.

2. Puthiyedath R, Kasinath S, Sethukrishna E, Vasanthi B, Ram Manohar S, Sehgal A. Management of Fistula in Ano in Ancient Greek and Ayurvedic Medicine - A Historical Analysis. *Indian J Hist Sci.* 2005 Jan 1;40:153–67.
3. In: Bailey & Love's Short Practice of Surgery : Short Practice of Surgery [Internet]. CRC Press; 2018 [cited 2021 Feb 13]. p. 1363–7.
4. Parks AG. Pathogenesis and Treatment of Fistula-in-Ano. *Br Med J.* 1961 Feb 18;1(5224):463-460.2.
5. Vasilevsky C-A, Gordon PH. Results of treatment of fistula-in-ano. *Dis Colon Rectum.* 1985 Apr 1;28(4):225–31.
6. iaim_2016_0308_10.pdf [Internet]. [cited 2022 Jan 17]. Available from: https://iaimjournal.com/wp-content/uploads/2016/08/iaim_2016_0308_10.pdf
7. Siddharth R, Kumar GA, Sreedhar S. Clinical study of fistula in Ano. *J Evol Med Dent Sci.* 2015 Oct 26;4(86):15082–8.
8. Sukhlecha AG. Prevalence of fistula-in-ano in patients attending tertiary care institute of Gujarat: a cross-sectional study. *Int Surg J.* 2019 Jun 29;6(7):2449–52.
9. Yadu S, Toppo A. Clinical presentation and outcome of fistula in ano cases. *Int Surg J.* 2018 Aug 25;5(9):3006–10.
10. Qureshi IP, Sahani IS, Qureshi S, Modi V. Clinical study of fistula in ano in patients attending surgical OPDs of a tertiary care teaching hospital, Central India. *Int Surg J.* 2018 Oct 26;5(11):3680.
11. Mazier WP. The treatment and care of anal fistulas: A study of 1,000 patients. *Dis Colon Rectum.* 1971 Mar;14(2):134–44.
12. Shouler PJ, Grimley RP, Keighley MR, Alexander-Williams J. Fistula-in-ano is usually simple to manage surgically. *Int J Colorectal Dis.* 1986 Apr;1(2):113–5.
13. García-Aguilar J, Davey CS, Le CT, Lowry AC, Rothenberger DA. Patient satisfaction after surgical treatment for fistula-in-ano. *Dis Colon Rectum.* 2000 Sep;43(9):1206–12.
14. A clinico-pathological study of fistula in ano by kumar et al.
15. Marks CG, Ritchie JK. Anal fistulas at St Mark's Hospital. *Br J Surg.* 1977 Feb;64(2):84–91.