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Study Of Clinical Presentation And Management Of Patients Presenting With Fistula- In –Ano

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Abstract

Introduction: *Fistula in ano is the common surgical problem prevalent worldwide and is also considered one of the commonest cause for a persistent sero-purulent discharge that irritates the skin in the neighborhood and causes discomfort. It forms a good majority of treatable benign lesions of rectum and anal canal. 90% or so of these cases are end result of cryptoglandular infection. Diagnosis of fistula in ano is made on the basis of complaints of the patients, physical examination and investigations. The only accepted treatment for fistula in ano today is surgery. Complications of fistula surgery are myriad and include faecal soilage, mucous discharge, varying degree of incontinence, recurrent abscess and fistula.*

Aims and ojectives: *In this dissertation, a prospective study will be conducted to elicit the clinical presentation of fistula in ano, various modes of treatment and the complications associated with it. 50 cases of fistula-in-ano admitted to the surgery department, Guru Nanak Dev Hospital, Amritsar will be included in the study.*

Summary and conclusions: *The incidence of fistula was observed more in males than females with a ratio of 9:1 occurring in middle age group, most commonly in the 3rd and 4th decade of life. The most common clinical presentation was perianal discharge in 100% of cases followed by pain, swelling and pruritus with incidence of 62%, 58% and 52% respectively. The average duration of disease was found to be 6.7 months approximately. Fistulogram does not provide any additional information other than identification of internal opening. The external opening was clinically seen in all the cases with internal opening palpated in 84% of cases and seen only in 50% of cases. The external opening was most commonly located posteriorly (66% cases) in relation to the anal verge. The most common histopathological finding is of non-specific chronic inflammation with very less incidence of tuberculosis. The most common treatment modality undertaken for low anal fistulas is fistulectomy with few cases of fistulotomy and anal advancement flaps. The treatment modality undertaken for high type of fistuals is fistulectomy with seton placement. Other advanced surgical methods could not be done because of lack of adequate resources and high equipment cost. The average duration of hospital stay was approximately 4 days in most cases due to early ambulation and very few complications. Proper antibiotic coverage, regular daily sitz bath and proper local care of wound, the average healing time by granulation was found to be 40.3 days with 52% of cases have their wound healed in 15-30 days .The incidence of mild pain was reported in almost all the cases. Transient incontinence (10%), wound infection (10%) and constipation (30%) were the complications reported in the early post-operative period. Minor stenosis (2%) and recurrence (2%) were among the delayed postoperative complications found in the 2nd and 3rd month of the post-operative period.*

Keywords: *Fistula-in-ano, Anal Fistula, Fistulotomy, Fistulectomy, Seton Stitch, Anal Advancement Flap, Perianal discharge,*

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I. Introduction

Anal fistula or fistula-in-ano is a chronic abnormal communication between the epithealised surface of the anal canal and usually the perianal skin. It originates from infection in the anal glands which are located between the internal and external sphincters and drain into anal canal. If the outlet of these glands become blocked then an abcess can then track in many directions from the focus in the intersphincteric plane. When this track reaches the skin or another epithelialized surface, for example, the rectum or anus then a fistula is formed.

Fistula can be due to secondary abcess[1], tuberculosis, trauma, foreign body, hidradenitis suppurativa, immunosuppression (including HIV), crohn's disease lymphogranuloma venerum, sacrococcygeal teratoma, rectal duplication and perianal actinomycosis. In fact, in some cases, hidradenitis suppurativa and Crohn's disease may coexist. Local infection related to an anal fissure and anal carcinoma can also lead to fistula-in-ano.

The commonly used Standard classification systems divide fistula into two groups:- Low anal- Internal opening opens into the anal canal below the anorectal ring.High anal- Internal opening opens into the anal canal above the anorectal ring.

Park classified anal fistula in 4 types[2]:-

Intersphincteric 70%- through the internal sphincter;Transphincteric 25%- through the internal and external sphincter; Suprasphinteric 5%- tract is supralevator in location and opens into ischiorectal fossa; Extrasphincteric 1%- tract passes through the entire sphincter mechanism and opens onto the skin.

The chief complaint with which the patient presents is intermittent or constant drainage or discharge (purulent or blood stained). There is usually a history of pain, itching, swelling and recurrent abscess formation. There may be a pink or red elevation exuding pus, or it may have healed. In Crohn's disease or tuberculosis, the margins may be raised and the discharge is watery[3]. Physical examination findings remain the main stay of diagnosis. The examiner should observe the entire perineum, looking for an external opening that appears as an open sinus or elevation of granulation tissue. Spontaneous discharge via the external opening may be apparent or expressible upon digital rectal examination. Digital rectal examination may reveal a fibrous tract or cord beneath the skin; it also helps delineate any further acute inflammation that is not yet drained. Lateral or posterior induration suggests deep posterior anal or ischiorectal extraction[4].

Commonly done investigations in fistula-in ano are Proctoscopy, Sigmoidoscopy ,colonoscopy, Fistulography, Endoanal/ endorectal ultrasound, Magnetic Resonance Imaging (MAGNETIC RESONANCE IMAGING), Computerized Tomography Scan (CT scan), barium enema / small bowel series, Fistuloscopy. But thorough physical examination is most needed.

These days, the only accepted treatment for fistula in ano is surgery. The principle underlying this treatment is to lay the main track open together with all offshoots extending from it. Then allow the wound to heal by granulation tissue from the bottom and not to permit the epithelium to bridge over until the granulation tissue has grown from the deepest point of the wound to the surface. First surgical lay open of fistula in ano as practiced today was performed by John Ardene in 1337[5]. Definitive treatment of a fistula aims to stop it from recurring. Treatment depends on where the fistula lies, and which parts of the internal and external anal sphincter. There are several options:

- Fistulotomy - Laying open of the fistula
- Fistulectomy - complete excision of the fistulous tract
- Seton Stitch - done for high rectal fistula
- Colostomy - to allow healing in high type of fistulas
- Fibrin glue injection Fistula plug -: Fibrin glue is a biological glue made up of fibrinogen and its multiple components[6]. The end product is a gel-like substance that can be used in surgery to achieve hemostasis and a water tight seal. This treatment option does not carry any risk of bowel incontinence.
- Endorectal advancement flap - is a procedure in which the internal opening of the fistula is identified and a flap of mucosal tissue is cut around the opening. The flap is lifted to expose the fistula, which is then cleaned and the internal opening is sewn shut. After cutting the end of the flap on which the internal opening was, the flap is pulled down over the sewn internal opening and sutured in place. The external opening is cleaned and sutured.
- LIFT Technique (ligation of intersphincteric fistula tract)- It is is based on secure closure of the internal opening and removal of infected cryptoglandular tissue through the intersphincteric approach. Essential steps of the procedure include, incision at the intersphincteric groove, identification of the intersphincteric tract, ligation of intersphincteric tract close to the internal opening and removal of intersphincteric tract, scraping out all granulation tissue in the rest of the fistulous tract, and suturing of the defect at the external sphincter muscle[7].
- Fistula clip closure (OTSC Proctology) -minimally-invasive sphincter-preserving technique has been developed and clinically implemented by the German surgeon Ruediger Prosst[8,9].
- PERFACT Procedure - (proximal superficial cauterization, emptying regularly fistula tracts and curettage of tracts). The procedure is effective even in fistula associated with abscess, supralevator fistula-in-ano and fistula where the internal opening is non-localizable[10].The above mentioned surgical procedures may result in various complications. They can include infection, bowel incontinence or the fistula returning. Rates of incontinence vary, although most studies report incontinence in 3-7% of people. The incontinence rate is 17% for seton techniques and around 6-8% after an advancement flap procedure. After having a fistulotomy, recurrence rate can vary from 7-21%,

- **10**. VAAFT PROCEDURE- also called as Video Assisted Anal Fistula Treatment- it uses a fistuloscope with a camera to diagnose the fistulous openings and tract and laser energy source to obliterate the tract followed by the anorectal advancement flap or staplers to close the internal opening[11].
- **11.** FiLaC™ - Fistula Laser Closing:- It is a blind technique and uses a radial energy emitting laser probe to bliterate the fistulous tract followed by endorectal flap to close the internal opening.

FACTORS AFFECTING RECURRENCE[12]

- Complex type of fistula
- Horseshoe extension
- Lack of identification or lateral location of the internal fistulous opening
- Previous fistula surgery
- The surgeon performing the procedure.

Fistula-in-ano is one of the common peri-anal disorder and there is scarcity of studies on its natural history, incidence, etiopathogenesis, clinical features, investigations and treatment, especially in this part of the country. Hence this study was conducted to put light on the various aspects of the disease.

II. Aims And Objectives:

- To study the clinical presentation of Fistula-In-Ano.
- To study the various modes of treatment for fistula-in-ano and their efficacy.
- To study complications associated with the surgical interventions for fistula –in-ano.

III. Iii. Material And Method

The prospective study was conducted in the surgical ward of Guru Nanak Dev Hospital, Amritsar after taking approval from institutional ethics and thesis committee. 50 cases diagnosed with Fistula-In-Ano (in the year 2015-2017) were included in the study and followed up for three months. Purpose of study was explained to the patient and informed consent was taken. Direct interview with the patients was done using a performa and detailed history was obtained. Thorough clinical examination and appropriate investigations were performed over the patients as per requirement.

Inclusion Criteria:

- Patients diagnosed as cases of Fistula-In-Ano of any age and either sex, admitted to the surgical ward of Guru Nanak Dev Hospital, Amritsar were included in the study.
- All cases of Fistula-In-Ano whether high or low type.

Exclusion Criteria:

- Fistulas associated with known chronic diseases like tuberculosis, malignancy etc.
- All recurrent fistulas.
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IV. Observation And Results

The present study was conducted in the Department of Surgery of the Guru Nanak Dev Hospital attached to the Govt. Medical College Amritsar. A total of 50 patients with the diagnosis of fistula-in-ano admitted to this hospital were studied prospectively and followed up for three months. All the observations and findings were recorded on a Performa. A complete history, thorough clinical examination, lab investigations were done in all the patients. All cases underwent surgery under spinal anasthesia.

TABLE: 1 DISTRIBUTION OF PATIENTS ACCORDING TO THE AGE

TABLE 2: DISTRIBUTION OF PATIENTS ACCORDING TO THE SEX

SEX	NO. OF PATIENTS	Percentage
MALE	**45**	**90%**
FEMALE	**5**	**10%**

TABLE 3: AGE AND SEX DISTRIBUTION OF DISEASE

TABLE 4: PRESENTING SIGNS AND SYMPTOMS

SYMPTOMS	NO.OF PATIENTS	PERCENTAGE
DISCHARGE	50	100%
PAIN	31	62%
SWELLING	29	58%
PRURITUS	26	52%
CONSTIPATION	7	14%
BLEEDING	5	10%

TABLE 5: DURATION OF DISEASE

DISEASE DURATION IN MONTHS	NO.OF PATIENTS	PERCENTAGE
0-5	20	40%
6-11	26	52%
12-18	3	6%
>18	1	2%

Table 6: Distribution of Patients according to the Standard classification of Fistula

Table 7: Shows distribution of patients according to the location of external opening with respect to the anal verge

Table 8: Distribution of patients according to examination of external and internal openings of fistula tract

Openings	No.of Cases	Percentage
External	50	100%
Internal : Palpated	42	84%
Inspected	25	50%
Both	25	50%
Neither	8	16%

TABLE 9: DISTRIBUTION OF PATIENTS ACCORDING TO THE TYPE OF SURGERY

TYPE OF OPERATION	NO. OF PATIENTS	PERCENTAGE
FISTULECTOMY	24	48%
ADVANCEMENT FLAP	17	34%
FISTULOTOMY	8	16%
SETON	1	2%

Table 10: Distribution of Patients According to the Histopathology Report

Histopathology Findings	No. Of Patients	Percentage
Non-Specific Chronic inflammation	48	96%
Tuberculosis	02	04%
Crohn's disease	Nil	Nil

Table 11: Hospital Stay of patients after Surgery

Duration Of Stay in days	No.of patients	Percentage
1-3 days	16	32%
4-6 days	32	64%
7-10 days	2	4%

Table 12: Time taken by the wound to heal

DURATION IN WEEKS	NO.OF PATIENTS	PERCENTAGE
1-7 days	Nil	Nil
7-14 days	Nil	Nil
15-30 days	18	36%
31-60 days	26	52%
61-90 days	6	12%

Table 13: Trend of Pain Relief in postoperative patients

Pain level	1st week	2nd week	1st month	2nd month	3rd month
Absent	0	28	46	49	50
Mild	39	21	3	1	0
Moderate	9	1	1	0	0
Severe	2	0	0	0	0

Table 14: Incidence of post-operative complications after 2 weeks of follow up

Complications	No.of cases	Percentage
Constipation	15	30%
Incontinence	5	10%
Wound infection	5	10%'
Recurrence	Nil	Nil
Stenosis	Nil	Nil
Bleeding	Nil	Nil

Table 15: Incidence of post-operative complications at the end of 1st month of follow up

Complications	No.of cases	Percentage
Constipation	2	4%
Incontinence	2	4%
Bleeding	1	2%
Wound infection	1	2%
Recurrence	Nil	Nil
Stenosis	Nil	Nil

Table 16: Incidence of post-operative complications at the end of 3 months of follow up

Complications	No.of cases	Percentage
Constipation	01	2%
Recurrence	01	2%
Stenosis	01	2%
Wound infection	01	2%

V. Discussion

Fistula-in-ano is a frequently encountered anorectal disorder and it is a well acclaimed fact that surgically untreated fistula-in-ano never heals. The surgeries practiced in our setup are Fistulectomy, Fistulotomy and Endorectal Advancement Flap and Seton. Other advanced surgical methods are not done in our hospital because of the high equipment cost, lack of adequate resources and surgical expertise.

A total of 50 cases admitted to surgical department were studied prospectively with respect to brief history, clinical symptoms and management. The results are discussed in the following way.

The maximum age incidence of disease in our study (Table 1) was found to be in the age group of 31-40 years (36%) followed by nearly equal incidence (24%) in 21-30 years age group and (18%) 41-50 years age group. The incidence of 12% was found in the age group of 51-60 years .The minimum age incidence of disease was found to be in the age group of less than 20 years (6%) and in the elderly (4%). The mean age of incidence in our study was found to be of 38.2 years. The incidence of disease decreases as the age increases. It is less in the children and the elderly and is most common in the 3rd, 4th and 5th decade.

Sainio P[13] reported that in a large study of 458 cases the mean age of incidence was 38.3 years. Vasilevsky and Gordon[14] (1984) and Bruhl (1986) reported that most patients with fistula in ano presented in third or fourth decade of life.

In our study (Table 2) Male: Female ratio was 9:1, thus proving that in a given population the incidence of anal fistula is higher in the male gender. The age group specific sex incidence of disease was found to be higher in males across all the age groups and was found to be nearly same among all the age groups (Table 3). This is also comparable to other studies.

The presenting symptom common in all the patients was persistent perianal discharge from the external opening of the fistula and was present in all of our cases (100%). The next common symptoms were pain and perianal swelling found in 62% and 58% of the patients respectively. The incidence of pruritus was found to be 52% and that of bleeding to be of 10% and constipation in 14% of the patients (Table 4). Das AC and Prakash Agrawal[15] reported discharge from the external opening to be the commonest complaint (92%), which is comparable to our study. This is comparable to the other studies.

In our present study, the minimum duration of disease was 2 months and the maximum duration was 21 months showing the chronicity of the disease with the mean duration of symptoms was found to be of 6.7 months (Table 5). Vasilevsky and Gordon[14] series also support the fact that average duration of disease varies from 3-6 months.

In our study (Table 6), 49 (98%) cases that were present had low level fistula-in-ano, 1 (2%) had high level or complex fistula in our study. Veerendra Kumar et al[16] reported the incidence of low anal type of fistula to be of 74% and high anal to be of 4% with other types being 22%. This difference could be attributed to the low sample size and regional difference of lifestyle and habitat in this part of the world.

In our study (Table 7), 11 patients (22%) had the external opening anterior to the transverse line while 33 patients (66%) had external opening posterior to the transverse line and 6 patients had lateral external openings. The external opening was identified in all 50 cases. The internal opening was palpated in 84% of cases, visualized in 50% of cases, both visualized and palpated in 50% of cases and in 16% of cases internal opening was neither visualized nor palpated (Table 8). This group of patients in whom internal opening was not localized were subjected to imaging modalities like fistulogram and endorectal ultrasonography.

In the present study (Table 9), 24 out of these 50 cases underwent fistulectomy as surgical procedure, 8 patients underwent Fistulotomy, 17 patients underwent Fistulectomy with Advancement Flap and 1 underwent Fistulectomy with Seton placement under Spinal Anasthesia.

The excised tissue specimen of fistulous tract was collected after the surgical procedure and was sent for histopathological examination. The histopathological exam reported 48 (96%) cases of non-specific chronic inflammatory infiltrates and 2(4%) cases of tuberculosis (Table 10). The biopsy of the fibrous tissue was sent for histopathological exam in 8 cases of fistulotomy. Veerendra kumar et al[16] (2015) reported 32 cases of non-specific chronic inflammation and 2 case of tuberculosis which is comparable to our study.

The mean duration of post-operative hospital stay in the patients was found to be 4.28 days. The maximum duration of hospital stay in patients post-operatively was found to be 10 days and the minimum stay was found to be 2 days (Table 11). This could be attribute to the patient's compliance to the surgery and type of surgery done. The stay was found to be less in patients who have undergone advancement flaps surgery compared to the other surgeries. The duration of stay was variable in Fistulectomy group and was comparable to the advancement flap surgery which could be explained by the size of the defect left with the intention of secondary healing. The seton group has the longest hospital stay because of the increase morbidity and complications observed in post-operative period.

The mean average time taken for wound healing in our study was approximately 40.3 days. A wound was considered to be healed completely when it was found to be fully epithelised and dry. All patients were advised to have sitz bath in luke warm water solution regularly 3-4 times daily and then local application of lidocaine ointment. The minimum time required for complete healing of wound in our study was 16 days and maximum time for complete healing was 75 days. Delayed healing in certain cases was due to the large defect of the wound left in cases of fistulectomy with the intention of secondary healing or due to the seton placement in high anal type of fistulas or the non-compliance to the sitz bath and ointment application and dirty wound. Other factors like diabetes, hypertension or tuberculosis. In our study of 50 cases (Table 12), 52% of cases achieved healing in 31-60 days of time, 36% cases in 15-30 days; this is in accordance with literature of Vasilevsky and Gordon series[14] which showed 23% healing in less than 4 weeks i.e.28 days and 60% healing in 5-8 weeks i.e. 31-60 days. Veerendra kumar[16] et al also reported that 46% of their cases had wound healing in >4 weeks of time.

The complaint of pain was maximally reported in the 1st week of the post-operative period with 39 cases having mild, 9 cases having moderate and 2 cases having severe intensity of pain. In the 2nd week of post-operative period the complaint of pain was reduced with 28 cases reported no pain, 21 cases having mild intensity and one having moderate intensity of pain. It reduced to 3 cases having mild pain and 1 case having moderate intensity of pain after 1 month of follow up which reduced to 1 case reporting mild intensity of pain after 2 months of follow up and negligible in 3rd month (Table 13). This trend of pain could be attributed to the type of surgery patient has undergone and the size of the defect left after the surgery. The incidence of pain was reported for a longer period in a patient of seton placement and patients left with a large sized wound defect after fistulectomy. It was less in patients who have undergone fistulotomy and least in patients who have undergone anal advancement flap surgery. The pain in the immediate postoperative period was treated with intravenous analgesics followed by shifting to oral anti-inflammatory and analgesics.

The incidence of constipation was observed to be of 30% after two weeks of follow up which reduced to 4% after 1 month and 2% after 3 months of follow up. The patients who developed constipation were given laxatives to which they responded well (Table 14-16).

The incidence of post-operative wound infection was found to be 10% at the end of 2 weeks of follow up which reduced to 2% at the end of 3 months of follow up.

The incidence of development of true fecal incontinence was nil in our study. However 10% of patients did develop transient incontinence to feces and flatus within 2 weeks of postoperative period which reduced to 4% after 1 month and negligible after 3 months. The incontinence was self-limiting in nature as anorectal ring was not damaged in any case (Table 14-16).

Anal stricture or minor stenosis was not reported in 98% cases, but 1 case reported minor stenosis of the anal opening in the 2nd month of follow up. Gross scarring and induration of the wound due to excessive dissection along with co-morbid condition of the patient led to improper healing, and thus leading to stenosis. Antibiotic coverage, sitz bath and regular anal canal dilatation were done to manage the stenosis and none of the cases required any surgical intervention.

The complication of bleeding was found in 2% of cases in the first month of post-operative period and this is attributed to his associated co-morbid condition of heamorrhoids which were treated conservatively.

Recurrence was found to be present in 1 case in the 3rd month of follow up and was subjected to fistulectomy surgery within a month of recurrence (Table 14-16). Veerendra kumar et al (2015)[18] reported the post-operative incidence of complication of wound infection to be 16%, recurrence to be of 2% among 68%, 28% and 4% of cases who have undergone fistulectomy, fistulotomy and seton respectively.

VI. Conclusion

We conclude that there is a male preponderance of the disease and the fistulectomy remains the commonest procedure in our study series. The diagnosis by clinical mehods is very accurate and cost-effective. Even with advent of newer techniques probably to remove the diseased part at one stage operation, the conventional techniques are cost-effective, have a low learning curve and all the patients could have easy access to these techniques especially keeping in view the health budget of the developing nation like India. The post-operative complications are usually minimal and operative morbidity is unsually low with the conventional procedures if used judicially and adequately.

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PHOTOGRAPH: SHOWING ANTERIOR TYPE OF ANAL FISTULA ON CLINICAL EXAMINATION

PHOTOGRAPH : SHOWING PROBING OF FISTULA TRACT

PHOTOGRAPH: SHOWING INTRAOPERATIVE WOUND DEFECT AFTER CORING OUT FISTULECTOMY

PHOTOGRAPH: SHOWING WOUND HEALING IN A PATIENT AT ONE MONTH OF FOLLOW UP

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