

A CLINICO-PATHOLOGICAL STUDY OF FISTULA-IN-ANO

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ABSTRACT

BACKGROUND

Fistula-In-Ano has been one of the oldest described conditions inflicting man throughout history. It is the commonest cause for a persistent perianal discharge and discomfort. This study deals with its aetiology, pathology and the different modes of treatment and their efficacy in detail.

MATERIALS AND METHODS

For this study fifty patients were selected who were diagnosed as fistula-in-ano, admitted in Krishna Hospital and Medical Research Centre, Karad, during the period of December 2012 to May 2014. Every patient in the study underwent definitive treatment.

RESULTS

Data related to the objectives of the study were collected. Majority of patients belonged to the age group of 31-60 years, which accounts for 26 (52%) of patients. Male:Female ratio is 7.3:1. Most of the fistulas are low anal 42 (84%) and 22 (44%) of patients developed fistula in a previously burst opened or surgically drained perianal abscess. About 33 (66%) of external openings are posterior to the anal axis, of which 26 (52%) followed the Goodsall's rule. Fistulectomy is commonly performed, i.e. in about 46 (92%) of cases and the operated wound has healed in a range of 2 weeks to 4 weeks with a mean duration of 3 weeks. The postoperative complications were very minimal; there was recurrence of fistula in 1 case (2%) after 4 weeks and it was excised again.

CONCLUSION

We concluded from the study that the spontaneously ruptured or inadequately drained pyogenic abscess is the most common aetiological factor for fistula-in-ano. Operative morbidity is usually low. There is a male predisposition for the disease and the fistulectomy remains the commonest procedure in our study series. Even with advent of newer techniques, probably to remove the diseased part at one stage operation. The post-operative complications are usually mild in nature and are minimal.

KEYWORDS

Fistula-In-Ano, Fistulectomy, Fistulotomy, Seton Placement, Perianal Abscess.

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BACKGROUND

Fistula-In-Ano has been one of the oldest described conditions inflicting man throughout history. Its prevalence has been estimated to be 8.6 to 10/100,000 of the population per year with a male-to-female ratio of 1.8:1.^[1] Sushruta described the condition and advocated the use of medicated setons for its treatment. Later on Hippocrates described the fistula-in-ano in about 430 B.C. suggesting that the disease was caused by "contusions and tubercles occasioned by rowing or riding on horseback."^[2]

Fistula-in-ano is an abnormal communication between the anal canal or rectum and the perianal skin. The most common cause for the condition is an anorectal abscess, which ruptured spontaneously or was surgically drained.^[3] Such abscesses are

mostly due to infection of an anal or perianal gland.^[4] Fistulae have also been reported following trauma or probing of an abscess.^[5] tuberculosis, ulcerative colitis, Crohn's disease, Lymphogranuloma venereum and actinomycosis.^[6] Colloid carcinoma of the rectum can also manifest itself through an anal fistula.^[7]

According to Park^[8] the Anal Fistula can be Classified into the Following Types

1. Intersphincteric - 70%.
2. Transsphincteric - 25%.
3. Suprasphincteric - 5%.
4. Extrasphincteric - 1%.

The presenting complaints are intermittent or constant drainage or discharge with a history of previous pain, swelling and recurrent abscess that ruptured spontaneously or was surgically drained. There may be a pink or red opening exuding pus or it may have healed. In Crohn's disease or tuberculosis, the margins may be violaceous and the discharge watery.^[9]

Physical examination remains the mainstay of its diagnosis by observation of the entire perineum, looking for an external

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opening that appears as an open sinus or elevation of granulation tissue. Discharge from an 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 to delineate any further acute inflammation that is not yet drained. Lateral or posterior induration suggests deep posterior anal or ischiorectal extraction.^[4] Proctoscopy is usually required to identify the internal opening.

Passing of probe can be attempted through the external opening and will usually reveal the course more readily. The probe should never be forced, merely gently manoeuvred for risk of causing false passages.

Commonly done investigations in fistula-in-ano are sigmoidoscopy, colonoscopy, fistulography, endoanal/endorectal ultrasound, Magnetic Resonance Imaging (MRI), Computerised Tomography Scan (CT scan) and a barium enema/small bowel series and fistuloscopy.^[10]

The main object of surgical treatment is to eradicate it without disturbing the anal sphincter and affecting the continence. The three basic surgical techniques for the treatment of anorectal fistulae are fistulotomy, use of a seton and endorectal advancement flaps.^[11] Fistulectomy is recommended when it is necessary to provide histologic material for analysis.^[12]

Fistula-in-ano, one of common perianal disorder and there is scarcity of studies on its natural history, incidence, aetiopathogenesis, clinical features, investigations and treatment, especially in this part of the country. Hence, a prospective study on fistula-in-ano was conducted.

Methodology

A prospective study was conducted at the Department of Surgery, Krishna Hospital and Medical Research Centre in the Krishna Institute of Medical Sciences University, Karad, during the period of December 2012 to May 2014.

A number of 50 patients were selected who were admitted at the Krishna Hospital and Medical Research Centre, Karad, with a diagnosis of fistula-in-ano during the period of the study. Patients underwent definitive treatment. Data related to the objectives of the study were collected.

Inclusion Criteria

- The patients who are clinically diagnosed as fistula-in-ano in all ages and both sex who are subjected to relevant investigation and undergo surgery were to be included.

Exclusion Criteria

- All fistulas due to perineal injuries.
- All congenital fistulas.
- Cases unfit and refused for surgery.

The diagnosis of the fistula-in-ano mainly depends on clinical examination. The selected patients are subjected to pathological, biochemical and radiological investigations. Data related to preoperative and intra-operative interventions along with postoperative outcome was collected for patients who were treated with either fistulectomy, fistulotomy or seton placement.

RESULTS

In our study of 50 patients, the age of patients varies from 9 years to 80 years. Maximum number of patients were in the

age group 31–60 years, i.e. 26 patients (52%). There was 1 patient (2%) in the age group of ≤ 10 years, 19 (38%) in the age between 11–30 years and 4 patients in the age above 60 years as shown in Table 1.

Age in Years	No. of Patients	Percentage
10	1	2
11 - 30	19	38
31 - 60	26	52
> 60	4	8
Total	50	100

Table 1. Age Distribution

In our study of 50 patients there were 44 (88%) male patients, 6 (12%) female patients indicating that the disease is more common in male with a ratio of male-to-female is 7.3:1 as shown in Table 2.

Sex	No. of Patients	Percentage
Male	44	88
Female	6	12
Total	50	100

Table 2. Sex Wise Distribution

In our study most of the patients were manual labourers 40 (80%), while 6 (12%) were businessmen and 4 (8%) were students as shown in Table 3.

Occupation	No. of Cases	Percentage
Manual labour	40	80
Businessmen	6	12
Student	4	8

Table 3. Occupational Incidence

In the present study, the commonest symptoms is discharge in all patients with pruritis in 34 (68%) patients and pain in 26 (52%) patients. The commonest sign is presence of external opening in all cases, internal opening in 42 (84%) of patients and swelling in 22 (44%) cases as depicted in Table 4.

Symptoms and Signs	No. of Patients	Percentage
Pain	26	52
Discharge	50	100
Swelling	22	44
Pruritis	34	68
External opening	50	100
Internal opening	42	84
Bleeding per rectum	4	8

Table 4. Signs and Symptoms

The commonest type of fistula was low anal as shown in Table 5.

Type	No. of Patients	Percentage
Subcutaneous	6	12
Low anal	42	84
High anal	2	4
Submucous	-	-
Pelviorectal	-	-

Table 5. Distribution on the Basis of Type

Out of the 50 cases studied 33 (66%) cases had posterior openings, 12 (24%) cases had anterior openings and 5 (10%) cases had lateral external openings as depicted in Table 6.

Relation to Anal Axis	No. of Patients	Percentage
Anterior	12	24
Posterior	33	66
Lateral	5	10

Table 6. Distribution on the Basis of Location

Many associated conditions along with fistulae-in-ano were noted, commonest condition was anorectal abscess (burst opened or surgically drained) which was found in 22 (44%) cases, fissure in 2 (4%) cases, pulmonary TB in 2 (4%) cases, haemorrhoids in 4 (8%) cases and BPH in 3 (6%) cases as shown in Table 7.

Type	No. of Patients	Percentage
Fissure	2	4
Pulmonary TB	2	4
Haemorrhoids	4	8
BPH	3	6
Anorectal abscess	22	44

Table 7. Associated Conditions

Majority of the cases were treated with a fistulectomy 46 (92%), while fistulotomy was done in 2 (4%) of the cases and seton placement was done in 2 (4%) of the cases as shown in Table 8.

Type of Operation	No. of Patients	Percentage
Fistulectomy	46	92
Fistulotomy	2	4
Seton placement	2	4
Mucosal advanced flap	-	-
Fibrin glue injection	-	-
Colostomy	-	-

Table 8. Distribution on the Basis of Treatment

Most of the cases healed within 2-4 weeks with a mean time of 3 weeks as shown in Table 9.

Time	No. of Patients	Percentage
1 week	1	2
2 weeks	10	20
3 weeks	12	24
4 weeks	17	34
5 weeks	5	10
6 weeks	1	2
7 weeks	1	2
8 weeks	1	2
10 weeks	2	4
Total	50	100

Table 9. Distribution on the Basis of Time Taken to Heal

Followup, most of the patients came for followup only once or twice in the three months to six months post-operative period. There was recurrence in one case after 4 weeks and it was excised.

Out of 50 cases, fistulectomy was done in 46 cases and the excised specimen was sent for histopathological examination. 44 cases were diagnosed as due to non-specific inflammation and 2 cases were of tubercular aetiology Table 10.

Histopathology Report	No. of Patients
Nonspecific inflammation	44
Tuberculosis	2

Table 10. Distribution on the Basis of Histopathological Analysis

A few patients had transient incontinence for fluids and flatus for about 2 weeks which was probably due to operative oedema, pain and to some extent lack of tone of sphincter musculature; other complications were post-operative wound infection, retention of urine and post-operative headaches as shown in Table 11.

Complications	No. of Patients	Percentage
Postoperative wound infection	8	16
Retention of urine	2	4
Postoperative headache	3	6
Recurrence	1	2
Incontinence	-	-
Stricture	-	-

Table 11. Complications

There was no post-operative mortality among the cases in the present study.

DISCUSSION

There is a more male dominance in reported series.^[13] Kim JW et al reported the male:female of 4.6:1 in Korea.^[14] Most patients with an anal fistula present in the third or fourth decade of life^[15] and anal fistulas were uncommon after the age of 60 years.

In our study also there is a male predominance with a ratio of 7.3:1. Most of the patients in our study present between the 31-60 years and only 4 were in the age group of more than 60 years shows that our study almost matches with their study in male:female ratio and age incidence.

As per the study done by Marks and Ritchie^[15] in a series of 793 patients, the fistulas were divided as intersphincteric (49.5%), transsphincteric (27.7%), suprasphincteric (6.5%), extrasphincteric (2.9%) and others at 13.4%.

In our study, intersphincteric is 96% and suprasphincteric is 4%. This disparity may be explained by the fact that our study constituted a very small study group (50 patients).

In a study done by Marks and Ritchie,^[15] the site of internal opening is anterior, posterior and lateral. In our study anterior in 24%, posterior in 66% and lateral in 10% almost matches with the above said study.

A patient with a fistula-in-ano often recounts a history of an abscess, drained either surgically or spontaneously.

Patients may complain of drainage, pain with defecation, bleeding.^[10] Vasilevsky and Gordon^[16] recorded a history of discharge, anal pain, a recurrent perianal swelling, bleeding and pruritis. Associated fissure-in-ano was recorded in their patients. Many patients also have haemorrhoids.

In our study, a history of discharge was in 100%, anal pain in 52%, a recurrent perianal swelling in 44%, bleeding in 8% and pruritis in 68% of patients. Associated fissure-in-ano was recorded in 4% of patients and haemorrhoids in 8% of patients, almost nearer to their study.

Parks and Stitz^[17] 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.

In our study also, the suprasphincteric anal fistulas took 10 weeks and intersphincteric fistulas 1 week to 5 weeks to heal matches with their study.

True faecal incontinence is variable, ranging from nil to 26%. In our study, few patients had transient incontinence for fluids and flatus for about 2 weeks matches with the most of the case reports. The morbidity is much low and the present record for more conservative methods for treating extrasphincteric fistulas is more encouraging and holds real promise for a more successful outcome for fistula surgery in the future.

CONCLUSION

This study comprises 50 patients diagnosed to have fistula-in-ano. Analysis of the data obtained regarding the aetiopathogenesis and the various treatment modalities employed, the following conclusions were drawn –

1. Majority of patients belonged to age group of 31-60 years, which accounts for 26 (52%) patients.
2. Male:female ratio was higher, i.e. 7.3:1. The disease thus affects mainly males.
3. 80% patients were from heavy working class.
4. Among the series of cases studied, the commonest type of fistula were low anal and posterior.
5. The commonest aetiology was inadequately treated as pyogenic abscesses from non-specific cases. Two cases were of tubercular aetiology.
6. The most common presenting symptom was discharge through the external opening and the physical findings observed on examination were tenderness, induration, swelling and internal opening.
7. Digital examination per rectally and examination with a probe were satisfactory methods by which the varieties, relation to anorectal ring could be assessed.
8. Conservative treatment not advised to any patient.
9. In majority of the cases fistulectomy was done in 46 (92%), in two cases fistulotomy with scooping of the discharge and in two cases seton placement operation was done. The wound was allowed to heal by granulation tissue. Routine toilet of the wounds was done. One case had a recurrence within 4 weeks, wherein the track was excised and wound allowed to heal by granulation tissue.
10. The immediate postoperative complication was acute retention of urine in 2 cases for which catheterisation was done.
11. The wound healed in majority of cases within 2-4 weeks.
12. The specimen after fistulectomy sent for histopathological examination in 46 cases, the report was non-specific inflammation in 44 cases and tubercular infection in 2 cases.
13. Many cases of fistula-in-ano could have been prevented by proper and adequate treatment of perianal and ano-rectal suppurations and by proper instructions to the patient about the future consequences and sequelae of suppuration.

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