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Research Article

A Clinico-Pathological Study of Fistula-in-ano

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Abstract: Fistula-in-ano is considered as one of the commonest cause for a persistent seropurulent discharge, irritating the skin in the neighbourhood and causes discomfort. This study deals with its etiology, especially in relation to previously burst opened perianal abscess or surgical drainage. The different modes of treatment and their efficacy will be dealt in detail. This is necessary to know the better treatment of choice. Fifty patients were selected who were diagnosed as fistula in ano admitted in Chigateri General Hospital and Bapuji hospital, Davangere during June 2007 to May 2009. Patient underwent definitive treatment. 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 31 (62%) of patients. Male: Female ratio is 11.5:1. Most of the fistulas are low anal 37 (74%) and 34 (68%) 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 Goods all's rule. Fistulectomy is commonly performed i.e., in about 34 (78%) of cases and the operated wound is healed in a range of 2 weeks to 8 weeks with a mean duration 4 weeks. The postoperative complications were very minimal, there was recurrence of fistula in 1 case (2%) after 30 days and it was excised again. We conclude that the previously burst opened or surgically drained perianal abscess is the main aetiological factor for fistula in ano. Even with advent of newer modalities of treatment fistulectomy is the commonest and best procedure undertaken probably to get rid of the infective pathology. The postoperative complications were very less and the newer modalities of treatment yet to be implemented.
Keywords: Fistula-in-ano, Low anal, Perianal abscess, External opening, Fistulotomy, Fistulectomy.

INTRODUCTION

Throughout the surgical history fistula-in-ano has been a troublesome pathology to both patient and physician. The prevalence of non specific anal fistulae 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].

Anal fistula has been described virtually from beginning of medical history. Hippocrates in about 430 B.C., suggested that the disease was caused by "contusions and tubercles occasioned by rowing or riding on horse back". He was the first person to advocate the use of a seton (from the *Latin seta, a bristle*) in treatment [2]. The early drainage was advised and fistulotomy described even before matter is fully formed. Medicated setons were used much earlier by *Sushrutha*.

Fistula-in-ano is an abnormal communication between the anal canal or rectum and the perianal skin, which causes a chronic inflammatory response. The most common cause is nearly always by a previous ano-rectal abscess. There is usually a history of recurrent abscess that ruptured spontaneously or was surgically drained [3]. The occurrence of such abscess is mostly secondary to infection of an anal gland (Cryptoglandular hypothesis of Eisenhammer) [4].

Tuberculosis, lymphogranuloma inguinale, inflammatory bowel disease like Crohn's or ulcerating proctocolitis can also lead to development of anal fistula. Fistulae have been reported following external injury or probing an abscess or low anal fistula [5]. A fistula may develop in chronic anal fissure. A colloid carcinoma of the rectum can manifest itself through an anal fistula [6]. Occasionally ingested foreign bodies, such as fish or chicken bones may penetrate the rectum. Impalement injury after falling astride a sharp object or as a result of a road traffic accident may result in a high anorectal fistula.

According to Park [7], the anal fistula can be classified into four types –

- Intersphincteric – 70%
- Transphincteric - 25%
- Suprasphinteric - 5%
- Extrasphincteric - 1%

The chief complaint is intermittent or constant drainage or discharge. There is usually a history of previous pain, swelling and recurrent abscess that ruptured spontaneously or was surgically drained. 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 violaceous and the discharge watery [8].

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 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 Sigmoidoscopy ,colonoscopy, Fistulography, Endo anal/ endorectal ultrasound, Magnetic Resonance Imaging (MRI), Computerized Tomography Scan (CT scan), A barium enema / small bowel series, Fistuloscopy [9]. But thorough physical examination is most needed.

The main object of surgical treatment of an anal fistula is to eradicate it without disturbing anal continence. The three basic surgical techniques for the treatment of anorectal fistulae are fistulotomy, use of a seton, and endorectal advancement flaps [10]. The use of fistulectomy is not recommended except when it is necessary to provide histologic material [11].

Fistula-in-ano one of 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 a prospective study on fistula-in-ano was conducted.

METHODOLOGY

This is a prospective study was conducted at the Department of Surgery, Chigateri General Hospital and Bapuji Hospital, Davangere attached to J.J.M. Medical College, Davangere during June 2007 to May 2009.

A number of 50 patients were selected who were diagnosed as fistula in ano admitted in Bapuji Hospital and Chigateri General Hospital, Davangere during study period. Patient 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 be included.

Exclusion criteria

- All fistulas and sinuses occurring in the midline
- 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 intraoperative interventions along with postoperative outcome was collected patients were treated with either fistulectomy, fistulotomy or seton placement according to type of fistulae as shown in Fig. 1-7.

Fig. 1: Fistula-in-ano in the anterior anal axis

Fig. 2: Probe through the external opening

Fig. 3: Probe through the external and internal opening of the fistula

Fig. 4: Fistulectomy procedure

Fig 5: Fistulectomy wound

Fig. 6: Fistulectomy specimen

Fig.7: Seton Placement& retightened at weekly intervals

RESULTS

In our study of 50 patients, the age of patients varies from 8 years to 75 years. Maximum number of patients were in the age group 31 – 60 years i.e., 31 patients (62%). There was 1 patient (2%) in the age group of ≤ 10 years, 16 (32%) in the age between 11 – 30 years and 2 patients in the age above 60 years as shown in Table 1.

In our study of 50 patients there were 46 (92%) male patients, 4 (8%) female patients indicating that the disease is more common in male with a ratio of male to female is 11.5:1 as shown in Table 2.

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 3.

The commonest type of fistula was low anal as shown in Table 4.

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

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 other conditions are shown in Table 6.

Surgically fit 50 cases which were fulfilling the inclusion criteria were treated as depicted in Table 7.

Most of the cases healed within 3-4 weeks but some cases took even 7-8eeeks to heal Table 9.

Follow up

Most of the patients came for follow up only once or twice vary from three months to six months. There was recurrence in one case after 4 weeks and it was excised.

Out of 50 cases, fistulectomy done in 34 cases and the operated specimen sent for histopathological examination. 32 cases were diagnosed as due to nonspecific inflammation and 2 cases were of tubercular aetiology table-10.

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 as shown in table-11.

Table 1: Age Distribution

Age in years	No. of patients	Percentage
≤10	1	2
11 – 30	16	32
31 – 60	31	62
≥61	2	4

Table 2: Sex Incidence

Sex	No. of patients	Percentage
Male	46	92
Female	4	8

Table 3: Symptoms and signs

Symptoms and signs	No. of patients	Percentage
Pain	26	52.0
Discharge	50	100.0
Swelling	22	44.0
Pruritis	34	68.0
External opening	50	100.0
Internal opening	42	84.0
Bleeding per rectus	4	8.0

Table 4: Standard classification

Type	No. of patients	Percentage
Subcutaneous	6	12%
Low anal	37	74%
High anal	2	4%
Submucous	5	10%
Pelvirectal	0	0

Table 5: Distribution of anal fistulae around the anal circumference

Relation to anal axis	No. of patients	Percentage
Anterior	12	24
Posterior	33	66
Lateral	5	10

Table 6: Associated conditions

Type	No. of patients	Percentage
Fissure	2	4
Pulmonary TB	2	4
Haemorrhoids	4	8
BPH	3	6
Anorectal abscess (burst opened or Surgically drained)	22	24

Table 8: Treatment

Type of operation	No. of patients	Percentage
Fistulectomy	34	68
Fistulotomy	14	28
Seton placement	2	4
Mucosal advanced flap	-	-
Fibrin glue injection	-	-
Colostomy	-	-

Table 9: Time taken to heal

Time	No. of patients	Percentage
1 week	1	2
2 week	10	20
3 week	12	24
≥4 week	23	46
Total	50	100

Table 10: Histopathological report

Histopathology report	No. of patients
Non specific inflammation	32
Tuberculosis	2

Table 11: Complications

Complications	No. of patients	Percentage
Postoperative wound infection	8	16
Retention of urine	2	4
Postoperative headache	3	6
Recurrence	1	2

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DISCUSSION

There is a more male dominance in reported series [12]. Kim JW *et al*. reported the male: female of 4.6:1 in Korea [13]. Most patients with an anal fistula present in the third or fourth decade of life [14] and anal fistulas were uncommon after the age of 60 years.

In our study also there is a male predominance with a ratio of 11.5:1. Most of the patients in our study present between the 31 - 60 years and only 2 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 [14] in a series of 793 patients the fistulas were divided as superficial (16%), intersphincteric (54%), trans-sphincteric (21%), suprasphincteric (3%) and extrasphincteric (3%), multiple or unclassified (3%).

In our study intersphincteric in 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 [14], 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 [9].

Vasilevsky and Gordon [15] 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 [16] demonstrated that hospital stay and healing times was much longer in patients treated for trnasphincteric and suprasphincteric as compared with those treated for an intersphincteric fistula.

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

True foecal 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

Our study included 50 patients who were diagnosed to have fistula- in- ano, who underwent surgical intervention. We conclude that the previously burst opened or surgically drained perianal abscess is

the main aetiological factor for fistulain- ano. Operative morbidity is usually low. There is a male preference 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.

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