

Original Research Article

Clinical study of fistula in ano with special reference to its surgical management

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ABSTRACT

Background: The present study was undertaken to evaluate the results of “Lay open method” fistulectomy technique in treating fistula-in-ano in terms of relief of symptoms, healing of wound, recurrence rate and post-operative complications.

Methods: Total 45 cases with definite history of fistula and clinically diagnosed cases of fistula in ano selected for the study. A final diagnosis was made after proctoscopic examination under anaesthesia during operation and by histopathological examination after completion of operation. In all the patients, lay open method fistulectomy was done. Post-operative period was closely monitored and all the cases were meticulously followed for a variable period of time.

Results: The common fistulas were low anal type (80%). External opening was mostly located in the posterior mid zone (44.44%). Internal opening was found in 30 cases (66.66%) during per rectal digital examination while proctoscopic examination revealed internal opening in 26 cases (57.77%). Pain (22.22%), retention of urine (8.88%) were the commonest immediate as well as incontinence (1; 2.22%) and recurrence (1; 2.22%) were the delayed post-operative complications. 90% of cases had a satisfactory healing of their wounds within 21 days. Excellent results were achieved in 77.77% cases and only one case of recurrence (2.22%).

Conclusions: Encouragingly high success rates were achieved in our patients, but this series comprised a very small number of patients in a short period of time with limited amenities; also follow up of very short duration and irregular for which a definite conclusion is difficult to arrive at.

Keywords: Fistula-in-ano, Fistulectomy, Fistula, Histopathology, Incontinence, Proctoscopy, Posterior, Recurrence

INTRODUCTION

A fistula-in-ano is an abnormal hollow tract or cavity that is lined with granulation tissue and that connects a primary opening inside the anal canal to a secondary opening in the perianal skin; secondary tracts may be multiple and can extend from the same primary opening.¹ It is a chronic suppurative disease which is well-known for chronic perianal pus discharge, frequent

exacerbations, and recurrences after treatment. The most accepted etiologic factor for causation of fistula-in-ano is infection beginning in the anal crypt glands to perirectal abscess.²⁻⁵ The abscess represents the acute inflammatory event, whereas the fistula is representative of the chronic process. Symptoms generally affect quality of life significantly, and they range from minor discomfort and drainage with resultant hygienic problems to sepsis.⁶ The treatment of fistula-in-ano remains challenging.⁷ No

definitive medical therapy is available for this condition, though long-term antibiotic prophylaxis and infliximab may have a role in recurrent fistulas in patients with Crohn disease. Surgery is the treatment of choice, with the goals of draining infection, eradicating the fistulous tract, and avoiding persistent or recurrent disease while preserving anal sphincter function.^{4,8} Moreover, it must be admitted that our knowledge about fistula in ano is still very limited regarding the aetiopathogenesis, location of tracks and the choice and extent of surgical operations, so there is still scope for improvement in all aspects of study and management of fistula in ano. Several methods of treatment are available but fistulectomy - the excision of the fistulous track and 'lay-open' of the wound and its' modifications in some situations, is preferred by most of the surgeons. Out of the many methods, the surgeon's preference play the key role in selecting the specific method and the rate of success can be increased by appropriately selecting a particular procedure suitable for a particular patient.⁹

The basic plan of present study was to done a clinical study of fistula-in-ano with special reference to its surgical management, so that we can evaluate the results of surgical treatment in terms of relief of symptoms, healing of the wound, recurrence rate and post-operative complications, especially functional defects of anal continence.

METHODS

After obtaining Institutional Ethical Committee approval and written informed consent from all the patients, this study was conducted in 45 patients presented with definite history of Fistula and clinically diagnosed cases of fistula-in-ano attending both OPD and IPD Department of Surgery of Silchar Medical College and Hospital, Silchar, Assam during a period from 1 September 2018 to 31st August 2019. Cases refusing operative treatment were excluded from this study. A detailed history was taken from all selected patients. Thorough clinical examination including the proctological examination was done with a view to elicit full clinical impression. 2% lignocaine ointment was applied to produce analgesia for both proctological and digital examination. The routine examination of urine and stool were done and special investigations like P.A View chest X-ray, Montoux test, VDRL test, blood sugar, were advised. The diagnosis was made on the basis of the clinical examination, presence of discharge through the fistulous opening and pre-operative probing was done under general or spinal anaesthesia for confirmation. The final diagnosis was made after proctoscopic examination under anaesthesia during operation and by histopathological examination after completion of operation. Only, after the diagnosis was confirmed and assessment completed, the operative treatment undertaken.

Lay open method fistulectomy operation

All the selected cases were thoroughly assessed and treated for systemic diseases by antibiotics, anti-hypertensive drugs, haematenics, anti-amoebic, anti-helminthic drugs accordingly. In cases with special anaesthetic problems were submitted to anaesthetist prior to surgery. All the cases were given a povidine-iodine solution hip bath two times daily for 3-5 days prior to operation. On the evening prior to operation, clean shaving and antiseptic dressing of perineum, upper parts of both thighs and back were done. All the patients were a given light diet and two enemas, one at bedtime and another next day morning. All the patients were operated under general or spinal anaesthesia according to the condition of the patient. Patient was placed in lithotomy position. A bidigital examination of rectum and anal canal and examination by anal speculum was done for assessment of any pathology, internal opening of fistula and extension of the primary and secondary fistulous track and relation of anorectal ring to the internal opening. If necessary in some cases, by injecting methylene blue (diluted) to the external opening, the internal opening and the fistulous track was detected. Occasionally the internal opening could not be located by the above methods or examination, then the tip of the probe could be felt just below the mucous membrane and in such cases the probe is brought through the mucous membrane into the lumen of the bowel, after which its' tip was brought out of the anus. Excision of the track with surrounding normal tissue covering it is carried out with the probe in situ, till whole track is removed in toto, along with the probe from the surrounding normal tissue. After proper haemostasis, the edges of the track were trimmed (1-3 mm) which now becomes triangular or pyriform in shape with its wider part on the outside. The wound was packed with ribbon gauze soaked in povidine iodine ointment very firmly.

Postoperatively, intravenous drip of 5% plain dextrose was administered for 8-12 hours. Routine antibiotics, analgesics for pain relief as when required were used. Dressings were observed for soaking and were left undisturbed till the next morning. Liquid diet was started from the second day and semi-solid diet from the third day morning. Solid foods were allowed after 5 days of operation. In almost all cases warm hip bath with povidine iodine solution was started on the 3rd day after operation. Dressings were changed daily after warm hip bath. From the 4th day after operation, digital dilatation of the anal canal was done and the patient was normally ready for discharge from hospital after 14 days by which time the wound was nearly healed up and the risk of secondary haemorrhage was over. The patients were asked to attend outpatient department after one week and thereafter two weeks and then after 3 months and thereafter in 6 months' time. Patient failing to report was treated as lost cases.

A thorough examination of anorectum was done to detect any complications of treatment and the results of the operation was recorded, particularly with the points in mind as pain, bleeding, delayed healing, stricture/stenosis, abscess formation, recurrence, incontinence-(normal/onstress, flatus-, faeces-, soiling).

After completion of the follow up, the results of the operation performed was graded as Excellent: - no symptoms at all, good: - no symptoms but having occasional/slight discomfort, fair: - an acceptable result, but complaining of slight regular discomfort, recurrence: - recurrence of signs and symptoms as before. Data were entered into Microsoft Excel to calculate number and percentages.

RESULTS

Total 45 cases of fistula-in-ano were enrolled in the study, among them 42 (93.33%) were male and only 3 (6.66%) cases were female with a male and female ratio of 14:1. The maximum numbers of cases were in the age group of 21-30 years (31.11%) followed by 31-40 years (26.66%).

The youngest patient was 16 years of age and oldest was 61 years of age. The highest incidence of the disease was found in the business community (46.66%) followed by service holders (44.44%). No definite correlation could be made between the occupation and the disease (Table 1).

Table 1: Socio-demographic data of the patients.

Characteristics	Male (%)	Female (%)	Total (%)
Age groups (years)	0-10	0 (0)	0 (0)
	11-20	8 (88.88)	1 (11.11)
	21-30	14 (100)	0 (0)
	31-40	10 (83.33)	2 (16.66)
	41-50	5 (100)	0 (0)
	51-60	4 (100)	0 (0)
	≥60	1 (100)	0 (0)
	Total	42 (93.33)	3 (6.66)
Religion	Hindus	33 (91.66)	3 (8.33)
	Muslims	9 (100)	0 (0)
Occupation	Businessman		21 (46.66)
	Cultivator		2 (4.44)
	Student		1 (2.22)
	Teacher		0 (0)
	Service holder		17 (44.44)
	House wife		3 (6.66)
	Daily wage labourer		1 (2.22)

The chief complain of all the cases were discharge from external opening (100%). The next most common complaint was pain around anus (31.11%), followed by pruritus (17.77%). The duration of illness when patient reported for treatment was < 1 year (> 90 %), and only one patient had the disease for > 5 years. External opening was mostly located in the posterior mid zone (44.44 %), followed by posterior left lateral and anterior midzone (13.33 % each). The presences of associated diseases were recorded as shown Table 2.

Out of 45 cases, 9 cases (20%) had a past history of abscess drainage earlier and 3 cases (6.66%) with fistulectomy operation while examined digitally, one case (2.22%) showed chronic case of posterior anal fissure. The internal opening was found in only 30 cases (66.66%). Rest of the cases with doubtful opening (7; 15.55%) and in 8 cases (17.77%) no internal opening was detected at all by digital examination. Only 26 (57.77%) cases were detected with internal openings during

proctoscopic examination by anal speculum. Most of the fistula was of low anal type (80%) as shown in Figure 1.

In all 45 patients, lay open method fistulectomy was done (100%). Postoperatively, majority of patients (31; 68.88%) stayed in the hospital for 7-14 days, and 10 (22.22%) patients stayed in hospital for 14-21 days. The shorter duration of stay was >7 days in 2 cases (4.44%) whereas longest duration of hospital stay was 24 days in 2 cases (4.44%). 90% of cases had a satisfactory healing of their wounds within 21 days, the longest being 32 days in 1 case, and the rest within 4 weeks after operation.

Out of 45 cases, 3 patients had significant bleeding which was managed by change of dressing with firm pressure; 2 patients complained of soiling their underwear; 10 patients complained of severe pain which was managed with injectable analgesics; and 4 patients had retention of urine immediate postoperatively and had to be catheterised, (Figure 2).

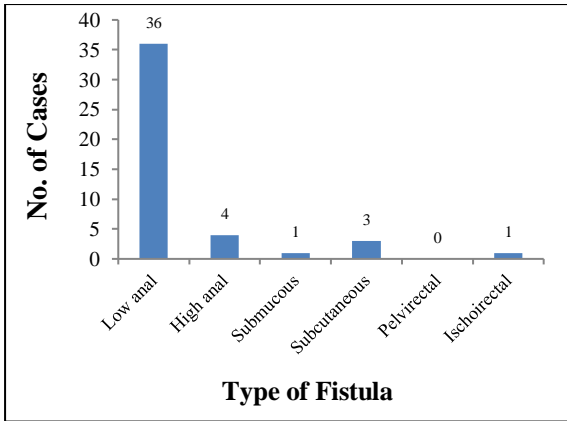


Figure 1: Incidence of different types of fistula in ano.

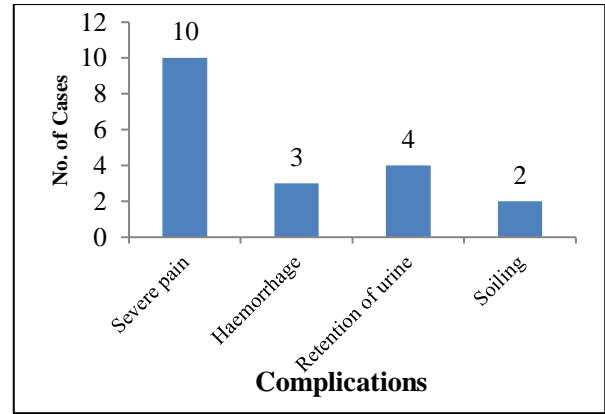


Figure 2: Post-operative complications (early) in the present series.

Table 2: Chief complaints with their duration, presence of associated diseases and local examination of patients.

Variable	Chief complaints				
Duration (months)	Discharge	Pain	Swelling	Bleeding	Pruritus
0-12	24	7	0	0	0
13-24	10	2	2	0	1
25-36	8	5	0	0	5
37-48	2	0	0	0	3
>48	1	0	0	0	0
Total (%)	45 (100)	14 (31.11)	2 (4.44)	0 (0)	8 (17.77)
Associated diseases					
Fissure in ano	Internal haemorrhoids	Tuberculosis	Diabetes mellitus	Hypertension	Amoebic colitis
1 (2.22%)	1 (2.22%)	2 (4.44%)	3 (6.66%)	6 (13.33%)	10 (22.22%)
Local examination					
Zone	Anterior (%)	Posterior (%)	Total (%)		
Mid zone	6 (13.33)	20 (44.4)	26 (57.77)		
Right lateral	3 (6.66)	5 (11.11)	8 (17.77)		
Left lateral	5 (11.11)	6 (13.33)	11 (24.44)		
Total	14 (31.11)	31 (68.8)	45 (100)		

Table 3: Results of follow up of cases or delayed post-operative complications.

Period in months	No. of cases	Percentage	Results		
			Incontinence	Stenosis	Recurrence
0-1	35	77.77	1	Nil	Nil
1-2	20	44.44	Nil	Nil	1
2-3	13	28.88	Nil	Nil	Nil
3-6	3	6.66	Nil	Nil	Nil
>6	0	Nil	Nil	Nil	Nil

Only 77.77% cases could be followed up upto the first month, 44.44% cases upto the second month and only 3 cases (6.66%) could be followed upto 6 months. The rest 10 cases did not attend for follow up and were treated as lost cases. Delayed post-operative complications were encountered in only 2 cases. One patient (2.22%) complained of incontinence and another one patient (2.22%) had recurrence, (Table 3). 88.88% (40 cases) of

the specimens sent for histopathological examination had chronic non-specific inflammatory changes and only 1 specimen had a case of tubercular change. Excellent results were achieved following fistulectomy operation in 35 cases (77.77%) while good and fair results were seen in 13.33% and 6.66% cases respectively. Recurrence was in only 1 patient (2.22%), (Figure 3).

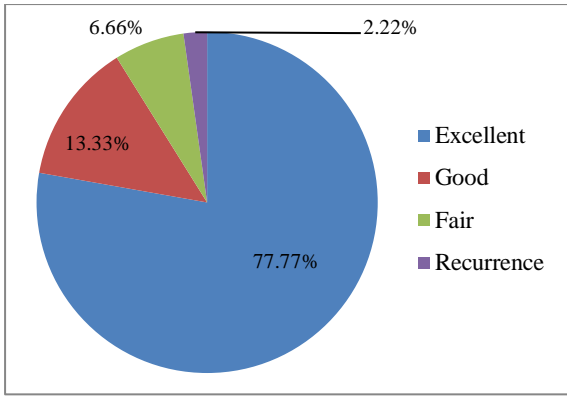


Figure 3: Results of treatment/operation in the present series

DISCUSSION

Fistula-in-ano is a commonly found surgical condition, which accounts for discomfort which is out of proportion to the severity of the disease. The condition is usually encountered in young and middle aged adults, but also seen in the extremes of ages. Males are found to be suffering exclusively from this disease but still than females are not spared. However, the true prevalence of fistula-in-ano is unknown. The incidence of a fistula-in-ano developing from an anal abscess ranges from 26% to 38%.^{4,10} One study showed that the prevalence of fistula-in-ano is 8.6 cases per 100,000 population. In men, the prevalence is 12.3 cases per 100,000 population, and in women, it is 5.6 cases per 100,000 population.¹¹ During the study period of twelve months, our hospital records revealed total number of 180 cases with diseases of anorectal region, among them most of the patients who attended the outpatient department of this institution were from nearby districts and mostly from the local district. Out of 180 cases, only 45 had Fistula in Ano, the frequency being 25%. This incidence is slightly elevated in comparison to other Indian study like Khanna et al who cited an incidence of 14.7%.¹² The rate of frequency cited above may indicate that there is a increase in incidence which may be attributed to patient's growing awareness about the disease and about their health.

The female suffers less (6.66%) than the males (93.33%) in all age groups and extremely rarely during early periods of life (21-30 years). This age and sex distribution are in accordance with the other studies on anal fistula.^{1,13,14} The higher incidence among male may be partly due to the female hesitancy to report to the clinics for such ailments. Partly to more male population in our society and less fastidious attitude of men in general towards anal cleanliness, by their rougher type of underclothings causing greater friction on the perianal skin and by their often hardous work causing more sweating in the anal region.¹⁵

Fourty nine percent of the patients had no co-morbidities. In those with co-morbidities, amoebic colitis was the

predominant co-morbid factor (22.22%). The chronicity of disease (>90%) is well comparable to those reported by Despande et al in respect that they also found the maximum number of cases in the first year. According to Gholighar et al discharge is the main frequent symptom found in almost all cases of fistula in ano.¹⁶ Also in current study, perineum discharge was the commonest symptom in all cases (100%) and which was either continuous or intermittent in nature as similar to the previous studies.^{1,17-21}

Almost all cases had one opening either on one side of midline to right or left and anterior or posterior to the anal opening. Only two cases had 2 openings each in this present series. Most commonly the external opening was seen in the posterior mid zone (44.44%) as like prior studies.^{1,13,20} However, Mark et al mentioned a significant relationship between a posterior opening and a single track fistula.²² Multiple openings have a higher incidence of complicated fistulas. Most of the fistula was of low anal type (80%) and the observation made in present series as regards to the types of fistula are more or less in close similarity to those of other Indian series while closely corresponds to those reported by Satyaprakash et al.^{16,20,23}

All 45 cases were treated by fistulectomy operation (100%). Also, in previous studies the most common surgical approach done was fistulectomy.^{20,24,25} Fistulectomy is a less aggressive procedure with better healing outcomes and least rates of complication. In present study, the postoperative complications were mostly minor and during follow up period most of them have regressed with few permanent debility, due to post operative care and immediate treatment. No functional defects like inadequate flatus or faecal control were seen. The average hospital stay was about 15 days approximately within a range of 6-24 days which is correlated with the study done by Mazier.²⁶ The larger duration of present series was due to delayed stay of 12 patients who had associated diseases like diabetes mellitus, tuberculosis and longer time taken in healing of the wound. A complete follow up of all the cases were not possible, because patients did not attend O.P.D regularly or not at all for regular checkup. 1 case of incontinence and 1 case of recurrence were observed during the follow up period. No doubt, the time period was very short which ranged from 1 month to 1 year only and a quite large number of post-operative cases were lost, during follow up period. Hence, the final assessment of the cases is difficult to accurate.

The results of fistula surgery vary considerably from series to series. The results obtained in our series cannot be substantiated or compared with other workers in this field because of the plan of selection of cases, and treatment modalities were different. However, as regards to rate of recurrence, it can be concluded that the cause of a recurrent anal fistula might be due to failure to identify and treat the primary opening. Unrecognised lateral or

upward extensions might also be followed by recurrences. Kodner et al also stated that failure to open the fistulous track for the fear of causing incontinence may result in a recurrence and when aetiological factor is a specific disease, recurrences are not infrequent. They further suggested that all of these possible causes should be remembered when faced with a patient having recurrent fistula.²⁷

CONCLUSION

Encouragingly high success rates were achieved in our patients in this present series, however observations incorporated in this compilation are to be viewed with consideration and caution because this series comprised a very small number of patients in a short period of time with limited amenities. Moreover, follow up is also of very short duration and irregularity on the part of the patients, for which a definite conclusion is difficult to arrive at. Also, no comments could be made regarding the recurrence rate of this disease. Long term regular follow up is necessary for this. It is felt that should a long term study with larger number of cases is undertaken, such an endeavour will surely be more rewarding and informative.

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