Risk Factors Causing Recurrence After Surgery for Fistula-in-ano: Experience in a Peripheral Medical College Hospital

*Hossain MM,[2] Islam MS,[2] Nurullah A,[3] Sarker S,[4] Tarik B,[5] Siddique AB[6]

The prospective study was conducted at Surgery Department of Dinajpur Medical College Hospital, Dinajpur, Bangladesh for a period of January 2013 to December 2014. The objective of the study is to make an effort in eliciting a detail information regarding fistula-in-ano specially factors associated with its recurrence and to help in the prevention of the undesirable circumstances. Fifty cases were selected by inclusion and exclusion criteria. All patients were presented with perianal discharges and most were in their fourth decade. Median age to recurrence was 32 years. Diagnosis was made on clinical and radiological grounds. All patients received surgery for fistula-in-ano. The study was designed to review operation notes and follow-up records in patients admitted with fistula-in-ano for further treatment. 23 (46%) patients had perianal sinus. The most common operation was excision of sinus tract (23 patients, 46%) due to failure to find out internal opening of the fistula. Median time to recurrence was 8 months. Histopathological examination of all excised specimen showed chronic non specific infection in 46 cases (92%) and tuberculosis in 4 cases 8%). Three factors namely 1) Technical fault-failure to find out internal opening of the fistula and treated them as a sinus, 2) close proximity and deliberate avoidance of damage to anal sphincters and 3) Ano rectal tuberculosis are significantly associated with recurrence. Sinus tract excision was the independent factor to predict recurrence.

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Key words: Fistula-in-Ano, Factors causing recurrence

Introduction

Fistula -in- ano is a common colorectal complaint. It is defined as an epithelized abnormal tract connecting two surfaces, usually the rectal mucosa and perianal skin.[1] It is associated with appreciable morbidity and inconvenience to the patient.[2] The unpleasant reputation of recurrence following an operation of fistula-in-ano has not diminished though a wide variety of diagnostic aids are now available to assist the surgeons to identify tracts and equal number of surgical procedures are also designed to reduce risk factors. Despite of the advancement in preoperative imaging and surgical technique recurrence is not uncommon.[1] There is a significant recurrence rate of 4% up to 45%.[3-8] Modification of conventional surgical treatment for closure of

1. *Dr. Mohammad Monjur Morshed Hossain, Junior Consultant (Surgery), Upazila Health Complex, Chirirbandar, Dinajpur. monjur.1973@gmail.com
2. Dr. Md. Shafiqul Islam, Registrar (Ortho-Surgery), M Abdur Rahim Medical College Hospital, Dinajpur.
3. Dr. AFM Nurullah, Associate Professor of Radiology and Imaging, M Abdur Rahim Medical College, Dinajpur.
4. Dr. Shibesh Sarker, Associate Professor of Radiology and Imaging, M Abdur Rahim Medical College, Dinajpur.
5. Dr. BMA Tarik, Emergency Medical Officer, Rangpur Medical College Hospital, Rangpur
6. Dr. Abu Bakar Siddique, Resident Surgeon (Urology), Sheikh Abu Naser, Specialized Hospital, Khulna.

*For correspondence

fistula tract by primary closure, endorectal advancement flap, fibrin glue injection and fistula plug has been extensively investigated in the prevention of recurrence.[9-12] The results regarding reduction of recurrence are not impressive. Either recurrence is due to the natural history of the disease itself, or the choice of surgery has not been clearly identified. Commonly a fistula is preceded by an abscess.[13] It can also appear in the course of specific infections such as tuberculosis, actinomycosis, lymphogranuloma venereum, Crohn's disease, ulcerative rectocolitis, trauma, foreign bodies, malignant tumours of rectum, prostate, bladder, uterus or anus, Hodgkin's disease, leukaemias and post-radiotherapy[4]. A study was undertaken in the Department of Surgery, University of Minnesota Medical School, St. Paul, USA between 1988 and 1992. Here records of 624 patients who underwent surgery for fistula-in-ano were reviewed. Among them 375 patients were attended for follow-up. The fistula recurred in 31 patients (8 percent). Factors associated with recurrence included complex type of fistula, horseshoe extension, lack of identification or lateral location of internal opening, previous fistula surgery. In this prospective study we aimed to investigate the possible risk factors of recurrence and to work out the histopathological findings of excised fistula tract.

Methods

This study was conducted in prospective way. Patients were selected from the various surgical units of Dinajpur Medical College Hospital. Patients who underwent surgery for fistula-in-ano confirmed by clinical and radiological evidence diagnosed as recurrent fistula-in-ano and was considered in this study. Emphasis was given on taking detailed history of perianal discharge and other related factors like bleeding, pain etc. Number of previous surgical technique and post operative outcome was considered also. Various other factors such as mode of onset, presence of any other morbid conditions like anaemia. HTN, COPD, diabetes, tuberculosis was looked for. Clinical examinations included D/R/E and proctoscopy was routinely done in each patient. Laboratory investigations like blood for Hb% TC. DC. ESR, S. creatinine, urine analysis, X-ray chest P/A view, X-ray abdomen A/P view, ultrasonogram of whole abdomen & ECG were carried out. Post operative follow up for every patient was given up to 6 months in the out-patient department to see the outcome. Thus all the data was collected in a tabulated form and analyzed by using standard statistical tools. The purpose of the study was explained to the patient and informed written consent was taken from the patient. Approval was also taken from ethical review committee of this institute to conduct the study.

Results

Table I: Age distribution of recurrent fistula-in-ano (n = 50)

Range of age	No of cases	Percentages (%)
21-30	24	48
31-40	18	36
41-50	06	12
51-60	02	04

The recurrence of fistula in ano is most frequent in 21 to 40 years' age group and constitutes about 84%. Median age to recurrence was 32 years.

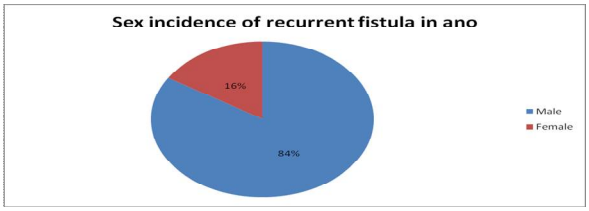

Figure 1. Sex incidence of recurrent fistula-in-ano (n = 50)

Male patients were 42 and female patients were 8, i.e. incidence of fistula in ano in female is only 16% compared with male in this study. Lower incidence of this disease in female is due to social and customary limitation of our female folk as most of the surgeons of the country belong to opposite sex.

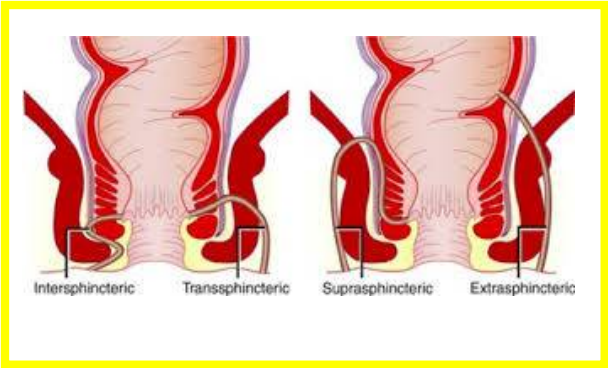

Table II: Clinical presentation of Fistula-in-ano

Clinical Presentation	Number of cases
Intermittent rounded swelling in the peri-anal region	50
Discharge (pus/serous fluid)	50
Pain	9
Itching	05
Presence of external opening	50
Presence of internal opening	27
History of previous surgery	50

Rounded swelling in the perianal region are the common findings in all cases. In all fifty cases there is discharge through the opening form surface of the swelling. Pain (18%) and itching (10%) are found in some cases.

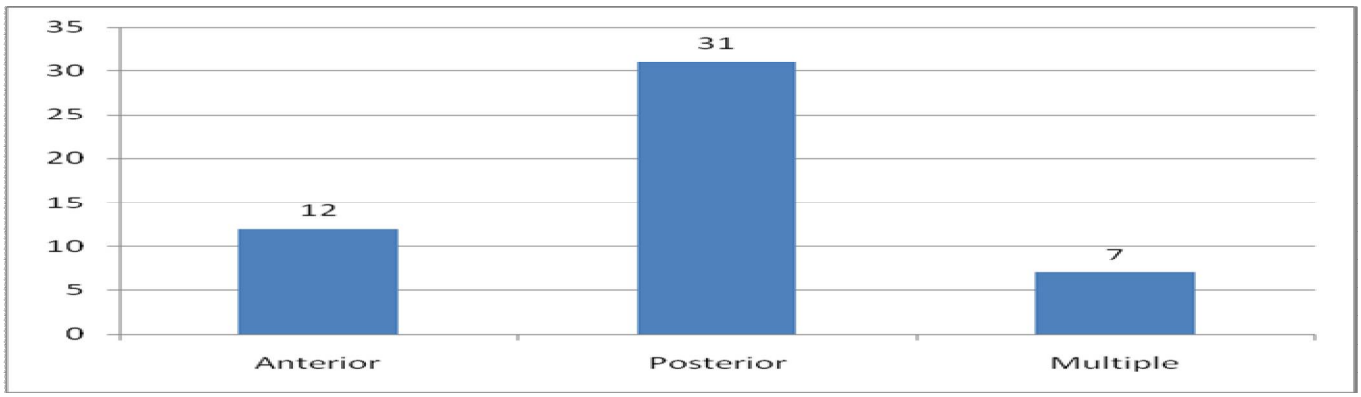

Figure 2. Location of external opening (n =50)

External opening was found in all cases and more on posterior of the anal opening (31 cases, 62%). Anteriorly placed opening was found in 12 cases (24%) & multiple opening in 7 cases (14%)

Table III: Location of internal opening

Site of opening	No. of cases	(%)
Anterior	08	29.63
Posterior	16	59.25
Lateral	03	11.12
No Internal Opening Found	23	11.50
Total	50	100

Internal openings are found in 27 (54%) cases and in 23 (46%) cases no internal opening can be demonstrated in the clinical examination. The internal openings are found to be more on the posterior of anal canal which constitute about 59.25 %, majority of them are single.

Table IV: Types of fistula-in-ano

Types of fistula-in-ano	Number of cases
Intersphincteric	11
Transsphincteric	13
Suprasphincteric	2
Extrasphincteric.	1
Blind Ended Fistula	23

Types of fistula-in-ano are classified according to Parks et al, namely intersphincteric, transsphincteric, suprasphincteric and extrasphincteric. Intersphincteric fistula are found in 11 cases (40.74%), transsphincteric fistula are found in 13 cases (48.15%), suprasphincteric fistula are found in 2 cases (7.41%) and extrasphincteric fistula are found in 1 cases (3.70%)

Table V: Types of previous operations performed in fistula-in-ano

Name of operation	Number of patient with recurrence (n = 50)
Fistulectomy	07
Fistulotomy	09
Combined fistulectomy-fistulotomy	10
Excision of sinus tract	23
Seton placment	01

Most of the patient underwent attempted excision of sinus tract

Table VI: Time of recurrence

Duration	Number of patients (n = 50)
0-6 months	08
7-12 months	34
13-18 months	05
19-24 months	03

Out of 50 patients-eight patients came within 6 months, 34 patients came within 12 months, five patients came within 18 months & three patients came within 24 months after operations.

The median time to recurrence was 8 months

Personal habits

Table VII: Bowel habit

Bowel habit	No of cases	%
Constipated	32	64
Regular	18	36
Total	50	100

For the purpose of this study constipation is taken to mean that no defecation for 3 days or more. It is seen that more than half of the patients are habitually constipated

Table VIII: Smoking and betel nut chewing and taking of wine

Habit	No of cases	%
Smoking	36	72
Betel nut chewing	12	24
Wine	02	04

72% of the cases are habituated in smoking 24% of cases take betel nut and two patients are addicted in wine.

General health status

Table IX: Relation to debilitating diseases

Diseases	No of cases	%
Pulmonary tuberculosis	4	8
Diabetes mallitus	5	10

Out of 50 cases in 8% cases there is pulmonary tuberculosis and 10% cases there are diabetes mellitus.

Table 1X: Histopathological study (n = 50)

Histopathology report	Number of cases	%
Chronic infection	46	92
Tuberculosis	4	8
Malignancy	0	0
Crohn's disease	0	0
Ulcerative colitis	0	0

In 50 cases the excised specimen are submitted for the histopathological examination and nearly all reports are in favour of chronic non specific infection. Four reports are found to be in favour of tuberculosis.

Discussion

The result of this study showed that male-female ratio was 5.25:1. Fistula-in-ano was most frequent between 21 to 40 years' age group of peoples. A study by Sainio P found male-female ratio 1.8:1 and the mean age of the patients was 38.5 years.[14] The study was done in the city of Helsinky for a period of 10 years during 1969-1978. Another study by Dr. Suborna Islam found male-female ratio 5.6:1 & most of the affected peoples were in 21 to 40 years' age group. This study was done in Dhaka Medical College Hospital during 2000-2001.[15] The number of female patients with fistula-in-ano was more in the study of Sainio P and less in the study of Dr. Suborna Islam in comparison to this study. The cause of difference between the number of male and female patients may be due to social and customary limitation of our female folk as most of the surgeons of the country belong to opposite sex. Clinically in every case there was intermittent rounded swelling in perianal region and there was discharge of serous fluid or pus. Itching was found in nine cases. In 24% cases, external opening were found anteriorly & in 62% cases posterior to anal canal and it was multiple in 14% cases. In a study by Chi-Ming et al. found that no internal opening is identified in 20% cases.[1] This study was done in Department of Surgery, North district Hospital, Sheung Shui. N.T. Hong Kong SAR China. In another study by, Sangwan YP, Rosen L, Reither RD, Stasik JJ, Sheets JA, Khubchandani It found that 53.3% of recurrent fistula-in-ano were accounted by missed internal opening at initial surgery.[16] In this study internal opening could not be identified in 23 (46%) cases. In 29.63% cases, internal opening was found anteriorly and in 59.25% cases internal opening was found posteriorly. Laterally placed internal opening was found in 11.12% cases. The number of missed internal opening was more in the study by Sangwan YP and less in the study by Chi-Ming et al in comparison to this study. The cause of difference may be due to lack of availability of Magnetic resonance imaging (MRI) and endo anal ultrasound (EUA) to identify the fistula tract with its internal opening in this institute. In a prospective study at St. Mark's Hospital noticed that fistula were superficial in 11% patients, intersphincteric in 31% patients, transsphincteric in 53% patients, suprasphincteric in 3% patients & extrasphincteric in 2% patients. They also noticed that 54%, cases with an internal opening in the posterior anal canal, 31% opening in the anterior anal canal and 14% opening laterally.. In another study by Barwood N, Clarke G. Levitt S. Levitt M. found that superficial fistula-in-ano was 15%, intersphincteric 43%, transphincteric 35% and high 7%.[17] This study was done in Sir Charles Garden Hospital, Nedlands, Western Australia. Internal openings could not be identified in 23 patients (46%) and they were labeled as perianal sinus & treated by excision of sinus tract. Seven patients underwent fistulectomy, nine patients underwent fistulotomy, ten patients underwent combined fistulectomy- fistulotomy and twenty three patients underwent excision of sinus tract. In one patient seton was placed. Most of recurrence followed the operation of attempted excision of sinus tract. In histopathological examination of the excised tissue non-specific chronic infection was found in most of the cases and it was 92%. Four cases were diagnosed as tubercular fistula-in-ano as granuloma was found. In Bangladesh incidence of tuberculosis is high. So granuloma goes in favour of tuberculosis. In study by Barwood N, Clarke G. Levitt S,

Levitt M. found unremarkable results in 87% cases in histopathological examination of fistula material & 3 cases of Crohn's disease.[17] In this study no case of Crohn's disease or malignancy was found. In another study by Sukla HS; Gupta SC, Singh G, Singh PA found 15.6% of tubercular fistula-in-ano on histopathological examination in Department of Surgery, Banaras Hindu University, Varanasi, India[18]. They found no cases of Crohn's disease in their study, Sainio P found 1.3% cases of Crohn's disease. No case of malignancy or actinomycosis was found in that study. So anorectal tuberculosis is a remarkable cause of recurrent fistula in-ano but Crohn's disease is not common in our region. The incidence of tubercular fistula-in-ano in the study by Sukla is double than the incidence of this study and also reflects the high incidence of TB in this sub-continent in comparison to other developed part of world as evidenced by report of only three cases in 10 years in a study in the Prince Of Wales Hospital, Hongkong, China.[19].

Conclusion

This study has done on recurrent fistula-in-ano to highlight possible risk factors and histopathological findings of excised tract during the period of January 2008 to December 2009 in Surgery ward of Dinajpur Medical College Hospital, Dinajpur. Commonly 21-40 years age groups of peoples are affected and male-female ratio 5.25:1. Intersphincteric fistula are found in 40.74% cases, transsphincteric fistula are found in 48.15% cases, suprasphincteric fistula are found in 7.41% cases and extrasphincteric fistula are found in 3.70% cases. On the histopathological examination of excised fistula tract nearly all (92%) reports are in favour of chronic non specific infection. Four (8%) reports are found to be in favour of tuberculosis and no malignancy or Crohn's disease is found in histopathological examination. In this study, the possible risk factors for recurrence are: Technical fault-failure to find out internal opening of the fistula and treated them as a sinus tract, close proximity and deliberate avoidance of damage to anal sphincters, ano rectal tuberculosis.

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