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ASSESSING CLINICAL FEATURES OF FISTULA IN ANO AMONG PATIENTS IN DEPARTMENT OF SURGERY AT THE REGIONAL INSTITUTE OF MEDICAL SCIENCES IMPHAL- A CROSS-SECTIONAL STUDY

Surgery

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ABSTRACT

Background: An irregular junction between the anal canal and perianal skin is known as a fistula-in-ano, and it usually happens as a result of cryptoglandular infections that cause abscesses. Additionally, it can be connected to diseases including cancer, TB, and Crohn's disease. An estimated 8.6–10 cases per 100,000 persons are reported each year, with a male–to-female ratio of up to 9:1. It may occur as a result of hormones and a male's higher anal sphincter tone. Intermittent discharge is the main symptom, which frequently occurs after a history of pain, oedema, or recurrent abscesses. Fistulas are classified as intersphincteric (45%), transsphincteric (30%), suprasphincteric (20%), and extrasphincteric (5%), in accordance with the Parks classification. If less than 30% of the anal sphincter is damaged, they are considered simple; if more than 30% is affected, or if there are several, they are considered complicatedThe study aimed to assess the clinical presentation of fistula-in-ano, evaluate different treatment options, and analyze their outcomes. **Method:** A cross-sectional study was conducted over two years (August 2018 to July 2020) in the Department of Surgery at the Regional Institute of Medical Sciences (RIMS), Imphal, Manipur. Study included 71 patients. **Results:** This study found fistula-in-ano to be more common in males 57 (80.3%), with the majority of cases in the 30-39 age group. The most frequent symptoms were perianal discharge 60 (84.5%), swelling 47(66.2%), pain 29(40.8%), and fever 3(4.2%). Intersphincteric fistulas were the most common 45(63.3%), with 80.3% of cases being low-level and predominantly located posteriorly. Fistulectomy was the most performed procedure 58(81.9%), followed by fistulotomy (9.9%), fistulectomy with sphincter repair 3(4.2%), and LIFT 3(4.2%).Postoperative complications included wound infection3 (4.2%), recurrence 3(4.2%), and incontinence (2.8%). **Conclusion:** The study concludes that among the 71 patients with Fistula in ano were studied and above findings were noted. The results suggest fistulotomy and LIFT may offer better outcomes, emphasizing the importance of early diagnosis and appropriate treatment.

KEYWORDS

Fistula in ano, Intersphincteric, Transpincteric, Fistulotomy, Fistulectomy, LIFT.

INTRODUCTION:

Fistula-in-ano is an abnonnal communication, lined by epithelium/ granulation tissue between anal canal and perianal skin. It usually results from cryptoglandular infection causing abscess, which burst spontaneously or was drained inadequately. They may be found in association with specific conditions, such as Crohn's disease, tuberculosis, lymphogranuloma venerum, actinomycosis, rectal duplication, foreign body and malignancy.[1]The prevalence of non-specific anal fistulae has been estimated to be 8.6 to 10/100,000 of the population per year with male to female ratio 1.8:1,[2] nevertheless this ratio can reach up to 9:1 as Eisenhammer[3] has reported. Luniss and colleagues[4] have proposed that hormones, particularly androgens had a possible role in the pathogenesis of fistula in-ano and also the stronger tone of anal sphincters in males compared to females which may lead to ductal obstruction and subsequently inflammation of the anal glands. The chief complaint is intermittent discharge.

There is usually a history of previous pain, swelling & recurrent abscess that ruptured spontaneously or was surgically drained. There may be a pink or red elevation exuding pus, or it may have healed.

The most widespread classification is Parks classification of fistula in ano: intersphincteric (45%), trans sphincteric (30%), suprasphincteric (20%) and extrasphincteric (5%).[5] Fistulas are considered simple if the tract covers less than 30% of anal sphincter and complex if more than 30% of sphincter are involved , presences of multiple tract or abscess.

Fistulas with external opening anteriorly connect to the internal opening radially while those with external opening posteriorly track in a curvilinear fashion to the posterior midline, exception occurs if an external opening is greater than 3cm from the anal margin.The aim of this study is to assess the clinical presentation of fistula-in-ano, evaluate its various treatment modalities, and analyze their outcomes.

MATERIALS AND METHODS

Study Design And Setting

A cross-sectional study was conducted over two years (August 2018 to July 2020) in the Department of Surgery at the Regional Institute of Medical Sciences (RIMS), Imphal, Manipur. The study included all diagnosed cases of fistula-in-ano admitted to the Surgery Ward, excluding congenital fistulas, immunocompromised patients, and those unwilling or unfit for surgery.

Sample Size Estimation And Sampling

A sample size of 258 was calculated using a prevalence rate of 20.2% (from the study by Elhassan YH et al.) and an allowable error of 5%. Key variables included age, sex, religion, district, mode of presentation, number and position of external openings, type and level of fistula, type of surgery, and complications.

Ethical Clearance

Ethical clearance was obtained from the Research Ethics Board, and patient confidentiality and privacy were maintained throughout the study. Regional Institute of Medical Sciences (RIMS), Imphal, Manipur and informed consent was obtained from the study participants individually.

Data Collection

Outcomes assessed were clinical presentations (discharge, swelling, pain) and post-operative results (recurrence, incontinence). Data collection involved a patient proforma form, after obtaining informed consent, which included a detailed history and thorough clinical examination. Tests performed included blood count, urine examination, serum markers (HIV, HBsAg, HCV), chest X-ray, ECG, kidney function tests (KFT), and fistulogram (X-ray or MRI).

Statistical Analysis

The collected data were entered in to Microsoft excel spread sheet and were subjected to statistical analysis by using IBM SPSS Version 21 with descriptive statistics (mean, median, SD, percentages) and Fisher's Exact Test. A p-value of <0.05 was considered statistically significant.

RESULTS

Table 1 Represents The Descriptive Statistics Based On Age And Gender Among The Study Population

PARAMETER	FREQEUNCY	PERCENTAGE
AGE IN YEARS		
20 - 29	9	12.7
30 - 39	30	42.3
40 - 49	23	32.4
50 - 59	9	12.7
GENDER		
MALE	57	80.3
FEMALE	14	19.7
CLINICAL PRESENTATION OF PARTICIPANTS		
DISCHARGE	60	84.5
SWELLING	47	66.2
PAIN	29	40.8
FEVER	3	4.2

Table 1 represents the descriptive statistics based on age and gender among the study population in which males were 57(80.3%) and females 14(19.7%) and age wise distribution shows 20-29 years 9 (12.7%) 30-39 years shows 30(42.3%) 40-49 years shows 23 (32.4%) and in 50-59 years 9 (12.7%). The colinical presentation of participants shows discharge 60 (84.5%), swelling 47(66.2%), pain 29(40.8%) and fever among 3(4.2%) respectively.

Table 2 Represents The Distribution Based On The Assessments Done Among The Study Population

PARAMETER	FREQUENCY	PERCENTAGE
EXTERNAL OPENING NUMBER WISE DISTRIBUTON		
1	57	80.3
2	9	12.7
>2	5	7
DISTANCE FROM ANAL VERGE WISE DISTRIBUTION		
≤ 3 CM	56	78.8
> 3CM	15	21.2
EXTERNAL OPENING POSTION WISE DISTRIBUTION		
ANTERIOR	10	13.3
POSTERIOR	61	86.7
DISTRIBUTION OF PARTICIPANTS BASED ON TYPE OF FISTULA		
INTERSPHINCTERIC	45	63.3
TRANSPHINCTERIC	19	26.7
SUBCUTANEOUS	7	9.8

Table 2 represents the distribution based on the assessments done among the study population in which external opening number wise distribution 1 opening 57(80.3%) 2 opening 9(12.7%) more than 2 opening 5(7%) and the distance between the verge distribution from anal region less than or equal to 3cm 56(78.8%) and more than 3 cm 15(21.2%) like wise external opening position among the study population shows anterior 10(13.3%) and posterior 61(86.7%) and distribution of participants based ion type of fistula intersphincteric 45 (63.3%), transphincteric 19(26.7%) and subcutaneous 7 (9.8%) respectively.

Table 3 Represents The Distribution Of Study Population Based On The Fistula

DISTRIBUTION OF PARTICIPANTS BASED ON LEVEL OF FISTULA			COMPLICATIONS IN DIFFERENT LEVEL OF FISTULA	
LEVEL OF FISTULA	FREQUENCY	PERCENTAGE (%)	RECURRENCE N(%)	INCONTINENCE N(%)
LOW	57	80.3	1(1.7)	1(1.7)
HIGH	14	19.7	2(14.2)	1(7.1)

Table 3 represents the distribution of study population based on the fistula based on the modalities low level of fistula is seen in 57(80.3%) and high level in 14(19.7%) and in complications in different levels of fistula recurrence was seen in low levels 1(1.7%) in incontinence 1(1.7%) and in high level of fistula recurrence 2(14.2%) and incontinence 1(1.7%) respectively.

Table 4 Represents The Distribution Of Study Population Based On The Modalities Of Treatment

DISTRIBUTION OF PATIENTS BASED ON MODALITIES OF TREATMENT			COMPLICATIONS IN DIFFERENT MODALITIES TREATMENT	
OPERATIVE PROCEDURE	FREQUENCY	PERCENTAGE (%)	RECURRENCE N(%)	INCONTINENCE N(%)
FISTULOTOMY	7	9.9	0	0
FISTULECTOMY	58	81.7	3(5.1)	1(1.7)
FISTULECTOMY WITH SPHINCTER REPAIR	3	4.2	0	0
LIFT	3	4.2	0	0

Table 4 represents the distribution of study population based on the modalities of treatment in which based on modalities Fistulotomy 7(9.9%), Fisutelctomy 58 (81.7%), Fistulectomy with sphincter repair 3(4.2%) and lift 3 (4.2%) resprctively. Likewise complications in the different modalities shows only in Fistulectomy 3(5.1%) in recurrence and 1(1.7%) in incontinence.

Table 5 Represents The Association Between The Fistula And Gender Among The Study Population

POSITION OF EXTERNAL OPENING OF FISTULA			
GENDER	ANTERIOR	POSTERIOR	SIGNIFICANCE
Male	4(7)	53(93)	0.008
Female	6(43)	8(57)	

Table 5 represents the association between the fistula and gender among the study population in which males showed anterior opening 4(7%) and in females 6 (43%) and in posterior opening of fistula among males 53 (93%) and in females 8 (1%5) by using fishers exact test it was shown there exist a high statistical significant difference with p value 0.00 which infers that the position of external opening of fistula was different among males and females in the study population clinically.

Table 6 Represents The Distribution Of Patients With Postoprative Complications And Association Of Recurrence With Type Of Fistula

DISTRIBUTION OF PATIENTS WITH POSTOPRATIVE COMPLICATIONS		
COMPLICATION	FREQUENCY	PERCENTAGE(%)

BLEEDING	1	1.4
WOUND INFECTION	3	4.2
RECURRENCE	3 (MALE= 2)	4.2
INCONTINENCE	2	2.8
ASSOCIATION OF RECURRENCE WITH TYPE OF FISTULA		
INTERSPHINCTERIC	1	2.2
TRANS-SPHINTERIC	2	10.5
SUBCUTANEOUS	0	0

Table 6 represents the distribution of patients with postoperative complications and association of recurrence with type of fistula in which bleeding complication shows 1(1.4%) wound infection shows 3(4.2%), reccurence of fistula was seen among 3 (4.2%) and incontinence in 2 (2.8%). Like wise the association between the recurrence of type of fistula shows Intersphincteric 1(2.2%), Trans spinteric 2(10.5%) and in subcutaneous area there were no recurrence seen.

Table 7 Represents The Association Between The Fistula And Gender Among The Study Population

LEVEL OF FISTULA			
GENDER	Low N(%)	High N(%)	SIGNIFICANCE
Male	45(78.9)	12(21.7)	0.299
Female	12(85.7)	2(14.3)	

Table 7 represents the association between the level of fistula and gender among the study population in which males showed low levels 45(78.9%) and in females 12(85.7%) and in high level of fistula among males 12 (21.7%) and in females 2 (14.3%) by using fishers exact test it was shown that no statistical significant difference p value 0.299 which infers that among the gender wise association between low and high levels of fistula showed no clinical significant difference**.**

DISCUSSION

This study examined 71 cases of fistula-in-ano treated at RIMS, Imphal, from August 2018 to July 2020. The majority of cases occurred in individuals aged 30-39 (42.3%), similar to findings from other studies. Of the 71 cases, 80.3% were male, resulting in a male-to-female ratio of 3.35:1, which aligns with other research showing a male predominance. This finding is in accordance with the findings noted in previous study of Qureshi IP et al [6]where 81.1% were male and 18.1% were female. Most patients were from the Meitei (Hindu) community (59.2%), with a large proportion from Imphal-East (31%).
The most common symptom was anal discharge (84.5%), followed by swelling (66.2%) and pain (40.8%). These findings are consistent with other studies, where discharge was the leading symptom. Veerendrakumar HM et al[7] in their study also reported discharge(l00%) as the most common symptoms, pain(52%) as the second most common presentation and swelling(44%) as third common. Co morbidities included diabetes (22.5%), hypertension (9.9%), and tuberculosis (8.5%), with 56.3% having a history of perianal abscess, a known risk factor.

Most fistulas (80.3%) had a single external opening, with 85.9% located posteriorly, particularly among males. In contrast, anterior fistulas were more common in females. .Similar significant finding of anterior fistula-in-ano being more common in female was also reported by Emile SH et al[8]. The majority of cases (80.3%) were low-level fistulas, with females showing a higher proportion of low-level cases (85.7%) than males (78.9%).

Intersphincteric fistulas were the most common type (63.3%), followed by transphincteric (26.7%), consistent with findings from previous studies. . Similar finding were also reported by Mark CG et at[9], Bhupendra KJ et a1[10] and Garcia AJ et al [11] where intersphincteric fistula in-ano was the most common type.

Treatment modalities included fistulectomy (81.7%), fistulotomy (9.9%), and LIFT (4.2%), with fistulectomy being the most common. In the previous study of Sutar MA et al[12], Bhupendra KJ et al[10] and Emile SH et al[13] fistulectomy was the most widely performed modality of treatmentPost-treatment, 68 patients were cured, with a 4.2% recurrence rate. Females had a higher recurrence rate (7.1%) than males (3.5%), and recurrence was more frequent in high-level and transphincteric fistulas. Jordan J et al[14] in their study reported similar finding of higher recurrence rate in high transphincteric type of fistula and 4.2% of recurrence rate in fistulectomy.Postoperative complications included infection (4.2%), bleeding (1.4%), and incontinence (2.8%). Two patients developed incontinence, both with trans-sphincteric fistulas, with higher rates observed in cases involving multiple external openings. There was no mortality in present study.

Study Limitation:

1. The study was conducted in a single tertiary care centre in limited period of time.
2. Only 71 cases were studied which is not sufficient data to generalize in the population.

CONCLUSION

According to this study, fistula-in-ano is more prevalent in men (80.3%), with most occurrences occurring in those aged 30-39. Perianal discharge (84.5%), oedema (66.2%), discomfort (40.8%), and fever (4.2%) were the most common symptoms. The majority of cases (63.3%) were intersphincteric fistulas, with 80.3% of them being low-level and primarily posterior. The most common operation was fistulectomy (81.9%), which was followed by LIFT (4.2%), fistulectomy with sphincter repair (4.2%), and fistulotomy (9.9%).Postoperative complications included wound infection (4.2%), recurrence (4.2%), and incontinence (2.8%). Recurrence (4.2%) and incontinence (1.7%) were noted only after fistulectomy, while no such complications occurred with fistulotomy or LIFT. The results suggest fistulotomy and LIFT may offer better outcomes, emphasizing the importance of early diagnosis and appropriate treatment.

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