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Original Research Article

Outcome of different surgical procedures for fistula-in-ano: a single centre-based study

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ABSTRACT

Background: Fistula-in-ano is an abnormal communication between anal canal/rectum and perianal skin. It is considered to be chronic sequelae of cryptoglandular perianal abscess. Surgical treatment is the standard of care. However, the surgical techniques have evolved over time in order to give a satisfactory non-recurring result without jeopardising continence mechanism. Our aim was to study the feasibility and outcome of various surgical procedures done for fistula-in-ano.
Methods: This study was conducted in colorectal division of department of general surgery SKIMS Srinagar, from 2017-2019. All patients underwent a surgical procedure which was deemed feasible for a particular case. Pre-operative data and post-operative outcome/complications were studied over a mean follow up of 12 months. Final inferences were drawn after analysing the data using various statistical tools.
Results: Fistula-in-ano has male predominance (8:1), with intersphincteric fistula being the commonest type (48%) in our study. Majority of our patients underwent fistulectomy (72.5%) with or without Seton placement. Over a mean follow up of 12 months, only 19 patients (15.32%) developed recurrence. Incontinence was observed in 15 patients (12.09%). The risk of recurrence was observed to be directly related to the complexity of fistula.
Conclusions: Fistulectomy is safe and effective for low intersphincteric and trans-sphincteric fistulas with acceptable rates of recurrence. Benefit of radical excision in high fistulas with multiple secondary tracts should be carefully weighed against risk of post-operative incontinence.

Keywords: Fistula-in-ano, Fistulectomy, Seton, Recurrence

INTRODUCTION

Fistula-in-ano is a chronic, abnormal, granulation tissue lined communication that connects a primary opening inside the anal canal or rectum to a secondary opening in the perianal skin. Multiple secondary tracts may be present, extending from the same internal opening. Cryptoglandular perianal abscess that ruptured spontaneously or was surgically drained is considered to be the principal cause of anal fistulas.[1,2] Inflammatory bowel disease, tuberculosis, trauma, malignancy are uncommon causes of fistula-in-ano, with predominantly having complex tracts and recurrent course. The usual presentation of patients is continuous or intermittent drainage or discharge of purulent/seropurulent material from perianal external opening. Discharge may be watery

in tuberculosis and Crohns disease.[3] The mainstay of diagnosis is local examination of perianal area with digital rectal examination (DRE) to feel the internal opening and/or fibrous tract. Treatment of fistula-in-ano is still challenging despite the reference of its first surgical treatment dating back to the times of Hippocrates.[4] Actually little has changed since early times about the understanding of the disease process. However, the surgical techniques have evolved over time in order to give a satisfactory non-recurring result without jeopardising continence mechanism. The aim of current study was to assess the outcome of various surgical procedures done for this centuries old baffling disease.

METHODS

This is a prospective observational study, conducted from August 2017 to June 2019 in colorectal division of department of general and minimal invasive surgery at Sher-i-Kashmir institute of medical sciences (SKIMS), Srinagar, Jammu and Kashmir.

Inclusion criteria

All patients with fistula-in-ano admitted for surgical intervention were included in the study.

Exclusion criteria

Patients with recurrent anal fistulas and patients who lost follow up were excluded from the study.

Sampling technique

Convenience sampling technique was used to include all the patients admitted for anal fistula surgery during the study period.

Procedure

All the patients were evaluated and diagnosed on local examination including digital rectal examination and MR Fistulogram was done in selected cases to look for secondary tracts and extensions. Patients underwent different types of surgical procedures. All the data was recorded on predefined proforma including surgical outcome of each procedure and complications in terms of incontinence, recurrence, wound healing, scaring, infection rates etc. The patients were followed postoperatively at 2, 4, 6 weeks and 3, 6, 12 months to assess the outcome of various surgical techniques. The data was finally collected and analyzed using appropriate statistical tests and final inferences were drawn.

RESULTS

A total of 124 patients were included in the study with male to female ratio of 8:1 (Figure 1). 52.4% patients had previous history of incision and drainage of perianal abscess. Intersphincteric (48%) and transphincteric (45%) fistulas were the predominant types, Supra-sphincteric (5 patients, 4%) and Extra-sphincteric (4 patients, 3%) types represented a minority of the cases (Figure 2).

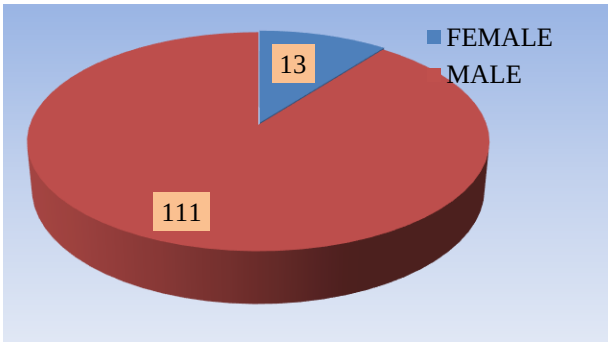

Figure 1: Gender distribution.

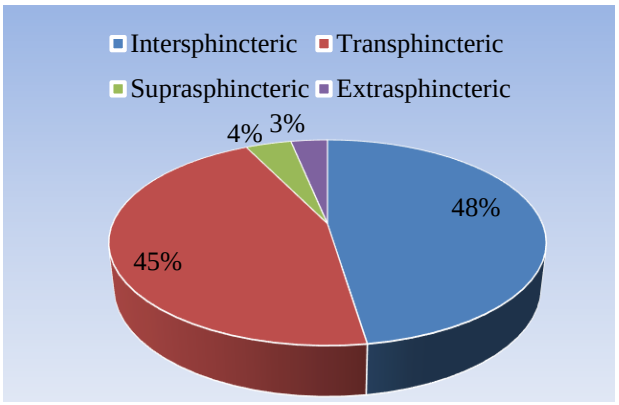

Figure 2: Type of fistula-in-ano.

MR Fistulogram grading of patients was also obtained, showing majority of the patients falling in grade I and grade III (Table 1).

Table 1: MR fistulogram grading.

Grade	Description	%
Grade 1	Simple linear Intersphincteric fistula	34.67
Grade 2	Intersphincteric with abscess or secondary tracts	12.59
Grade 3	Transphincteric	24.19
Grade 4	Transphincteric with secondary tracts or abscess in ischiorectal fossa	20.96
Grade 5	Supra-levator or trans-levator extension	7.25

Patients underwent different surgical procedures with fistulectomy being the commonest one (Table 2). Following every surgical procedure, a tissue specimen was sent for histopathological examination. Around 120 patients had nonspecific chronic inflammation, 2 had tubercular pathology, 1 had Crohn's disease and 1 patient had mucinous adenocarcinoma that underwent wide local excision to achieve negative resection margins.

Table 2: Surgical procedures done.

Surgical Procedure	N	%
Fistulectomy	90	72.58
Fistulectomy with draining seton	11	8.87
Fistulectomy with cutting seton	8	6.45
Fistulectomy with haemorrhoidectomy	7	5.6
FiLAC	5	4.03
LIFT	2	1.61
WLE of Ca in Fistulous tract	1	0.8
Total	124	100

Out of 124 patients, wound infection was observed in 23 patients (18.54%), urinary retention in 6 patients (4.83%) and post-operative headache (due to spinal anaesthesia) in 5 patients (4.03%). Over a mean follow up of 12 months, 19 patients (15.32%) developed recurrence. Incontinence was observed in 15 patients (12.09%). The risk of recurrence increased exponentially with the complexity of the fistula. 3 out of 4 (75%) patients with extra-sphincteric fistula developed recurrence, 3 out of 5 (60%) patients with supra-sphincteric fistula developed recurrence, 9 out of 56 (16.07%) patients with trans-sphincteric fistula had recurrence and only 4 out of 59 (6.77%) patients with inter-sphincteric fistula had recurrence (Table 3).

Table 3: Recurrences related to each type of fistula.

Type of fistula	Recurrences	N	%
Intersphincteric	4	59	6
Trans-sphincteric	9	56	16
Supra-sphincteric	3	5	60
Extra-sphincteric	3	4	75
Total	19	124	15.3

DISCUSSION

The standard treatment of anal fistulas is surgical with ideal surgical procedure being still a debatable topic. Conservative strategy may however, be adopted in minimally symptomatic patients with compromised sphincteric mechanism.[5] Our study showed the disease is more common in males with a ratio of 8:1. Similar results were shown by Hemant et al and other studies.[6-8] Majority of the patients (52%) had previous history of incision and drainage of perianal abscess. Wessam et al showed similar results in their study.[9] These findings uphold the viewpoint of those who consider anal fistulae as sequelae of incision and drainage of perianal abscess or even its spontaneous rupture.

Most common type of fistula observed in our study was intersphincteric type (48%) followed by trans-sphincteric type (45%). Comparable results were shown by Marks et al.[10] Majority of the patients (88%) in our study underwent fistulectomy with or without seton placement. A draining seton was placed in cases with associated abscess formation. Fistulectomy with haemmoroidectomy was done in 5% patients. This resembles the research data published by Kapoor et al and Siddhartha R et al, in which 84% patients were treated by fistulectomy with or without seton placement.[11] Yadu and Toppo's study results are also similar to our results in this respect.[12] Laser assisted closure of fistulous tract (FiLaC) was done in 5 and ligation of intersphincteric fistulous tract (LIFT) in 2 of our study patients. Histopathological reports of excised fistulous tracts and biopsy specimen showed non-specific chronic inflammation in 120 patients (96.7%), tuberculous pathology in 2 patients, crohns disease in 1 patient and adenocarcinoma in 1 patient. Resembling results have been published by Kapoor et al and Veerendra et al.[13] Over a mean follow up of 12 months, recurrence was seen in 15% patients and incontinence in 12% patients. 75% with extra-sphicteric fistula developed recurrence, where as only 6.7% of patients with intersphincteric fistula developed recurrence in our study. This depicts the risk of recurrence increases with the complexity of the fistula. Reccurence patterns have been similar in the study of Poon Chi-Ming et al and Jordan J. Et al, with risk factors for reccurence being previous history of surgical/ spontaneous drainage of perianal abscess, complex fistula, supra-sphicteric or extra-sphicteric fistula, failure to identify the internal opening/ secondary tracts during surgery.[14,15] The percentage of patients who developed incontinenece in our study increasingsfly belonged to high-fistula group with majority being >50 years of age. However, the risk of incontinence after surgery has observed a significant drop after using cutting setons in high fistulas.[16,17]

Limitations

Limitations of current study include adoption of non-probablity sampling technique. Less number of patients in supra-sphincteric and extra-sphincteric group precludes this study to generalise the results in that category.

CONCLUSION

Fistula in ano is a male predominant disease. History of perianal abscess that ruptured spontaneously or was surgically drained, is the most common etiological factor. Surgical treatment for anal fistulas has evolved over the

years with new procedures being added during the last decade, which may confuse the operating surgeon which one to choose from a long list. Fistulectomy is a safe and effective procedure for low intersphincteric and trans-sphincteric anal fistulas with acceptable rates of recurrence. However, in high complex fistulas with supra-sphincteric or extra-sphincteric tracts benefit of radical excision to decrease recurrence should be weighed against the risk of incontinence. Use of cutting setons in such cases has significantly lowered the incidence of incontinence after surgery. Further studies are required to devise a management strategy for complex fistulas, with decreased chance of recurrence superimposed on lesser incidence of incontinence.

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