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Original Research Article

A prospective clinical study of fistula in ano: comparing different treatment modalities in a tertiary care hospital

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ABSTRACT

Background: Fistula in ano is one of the common anorectal condition, which is easy to diagnose but difficult to manage because of post-operative complications like incontinence and recurrence. Also numerous procedures have been described for its treatment so as to individualize treatment options.The aim of the study was to assess the efficacy of different treatment modalities in fistula in ano.
Methods: This is a prospective study carried out in a tertiary medical college hospital where 75 patients with fistula in ano are analysed for clinical features and surgical modalities compared.
Results: Total 75 patients are studied. 82.70% patients presented with discharge in perianal region. Posterior fistulas are seen in 93.30% and anterior in 6.70% patients. 94.70% patients have low level fistula, 84% patients had simple fistula & 16% had complex fistula. 49.30% patients were treated with fistulectomy. 36.0% have undergone fistulotomy. 8.0% had LIFT and 6.7% had SETON. Recurrence is seen in 6.70% of patients.70.70% patients have stayed 4-6 days.
Conclusions: Most of the fistulas are simple, posterior and low level fistulas. Fistulectomy is the most common procedure performed. Newer procedures like LIFT and Seton application show promising results with less complications.

Keywords: Fistula in ano, Fistulectomy, Fistulotomy, LIFT, Seton

INTRODUCTION

Fistula in ano is an abnormal communication, lined by granulation tissue between the anal canal and the skin, which causes chronic inflammatory response.[1] Most commonly these fistulae develop following an anal abscesses secondary to infection of an anal gland. It is the most common cause of seropurulent discharge in perianal region.[2]

Anal fistula originate from anal glands, which are located in the sub-epithelial layer of anal canal at the level of dentate line.[3] If the outlet of the gland is blocked secondary to faecal material, foreign bodies or trauma, it may result in infection and abscess can form which can eventually point to skin surface. The tract formed by this process is the fistula.[4] Surgery for fistula in ano is considered essential for decompression of acute abscesses and to prevent spread of infection. Fistula may present with pain, discharge (either bloody or purulent), pruritis, bleeding PR, diarrhoea, skin excoriation and systemic manifestation if the abscess becomes infected.[5]

Two classifications are in common use. The standard classification is subcutaneous, low anal, high anal, sub mucus and pelvirectal. The classification more commonly used now is that proposed by Sir Alan Park. It classifies

fistulas as inter-sphincteric (most common -45%), trans-sphincteric, supra levator and extra-sphincteric fistulas.[6]

Digital rectal examination reveals a fibrous tract or cord beneath the skin. Sphincter tone should also be assessed. Preoperative injection of diluted solution of methylene blue into the external opening helps in localizing the internal opening. It may result in staining of tissues.Injection of hydrogen peroxide is seems to be a good alternative for methylene blue. Hydrogen peroxide does not stain the operating field and can often be helpful in identifying internal anal opening.[7] Fistulography involves injection of iv contrast via the internal opening followed by anteroposterior, lateral and oblique radiographic images to outline course of tract. False negative and false positive rates noted about 64 and 8% of cases.[9] Endorectal USG with a 7 or 10 MHz transducer helps in defining muscular anatomy differentiating intersphincteric from transsphincteric type.[10] Water filled transducer helps to evaluate rectal wall for supra sphincteric extension. Addition of hydrogen peroxide via the external opening helps to outline entire fistula course.[11,12] MRI scans show 80-90% concordance with operative findings when primary tract course and secondary extensions observed.[13,14] MRI is investigation of choice for complex fistula and recurrent fistula. CT scan is used in perirectal inflammatory disease. Better in delineating fluid pockets that require drainage than for small fistulas.[15] Barium study is indicated only in multiple fistulas or recurrent disease – to rule out inflammatory bowel disease. Various treatment options include Fistulotomy, Fistulectomy, Seton and LIFT.

The objective of this study is to study the different types of anal fistulas and to compare the efficacy of different treatment modalities.

METHODS

Study design

Prospective study.

Study subjects

First 75 patients of consecutive sampling who met the inclusion and exclusion criteria from December 2017 to December 2018 were selected for the study.

Study setting

Study was conducted in the Department of General Surgery, S.V. Medical College/ SVRRGG hospital, Tirupati.

Study period

The study was conducted for a period of one year from the time of approval of IEC.

Inclusion criteria

All patients having a clinical diagnosis of fistula in ano presented to General Surgery OPD- S.V.R.R.G.G.H.

Exclusion criteria

Exclusion criteria were severe comorbidities; fistulas due to IBD, active TB, HIV, previous radiation therapy, Malignancy; perianal trauma; patient's refusal for surgical intervention.

Operative procedures

Common operative procedures include fistulotomy, in which entire fistula track is laid open, fistulectomy, in which entire fistula tract is excised, Seton placement and LIFT (ligation of the intersphincteric fistula tract).

Post-operative care

Sitz bath twice a day is advised with daily dressing to ensure, the wound heals from within outwards and also right from the bottom upwards, without any pockets. Analgesia and antibiotics are given as a routine as for any other surgery, avoiding narcotic analgesia, which may produce constipation. Per rectal examination is done on 10^{th} day to ensure adequacy of the anal canal.

Statistical analysis

The data has been entered in to MS-EXCEL and statistical analysis has been done by using IBM SPSS version 22.0 for categorical variables, the data values are represented as number and percentages. To test the association between the groups, Chi- Square test was used. All the 'P' values are having less than 0.05 are considered as statistical significant.

RESULTS

In this study 75 cases who underwent fistula surgery were taken analysis of results according to age, sex, complaints, type of fistula, type of surgery, duration of hospital stay, complications and histopathological examination

Table 1: Age wise distribution.

Age (years)	No of patients	Percentage (%)
16-20	1	1.30
21-30	7	9.30
31-40	21	28
41-50	32	42.70
>51	14	18.70

In this study 42.7% are in age group of 41-50 yrs, 28% are in 31-40 yrs and 18.7% are more than 50 yrs.

Table 2: Sex wise distribution

Sex	No. of patients	Percentage (%)
Males	60	80
Females	15	20

In this study majority of patients were male (80%) and 20% are females.

In this study, 29 patients (38.6%) are treated with fistulotomy, 36 patients undergone fistulectomy and 5 patients undergone lift.

Table 3: Surgery wise distribution of patients.

Type of surgery	No. of patients	Percentage (%)
Fistulectomy	36	48
Fistulotomy	29	38.60
Seton	5	6.70
LIFT	5	6.70

In this study, the mean age of patients undergoing fistulectomy is 44.81, fistulotomy is 39.52, lift is 44.5 and seton is 42.6.

Table 4: Age and procedure cross tabulation.

Type of surgery		N	Mean	Std. deviation	F-value	P value
Age	Fistulectomy	37	44.81	9.31	1.988	0.124
	Fistulotomy	27	39.52	9.02		
	LIFT	6	44.50	5.21		
	Seton	5	42.60	4.28		
	Total	75	42.73	8.93		

Table 5:Post-operative complications- type of surgery.

			Type of surgery				Total
			Fistulectomy	Fistulotomy	LIFT	Seton	
Post op complication	Bleeding	Count	2	0	0	0	2
		% within post op comp.	100.0	0.0	0.0	0.0	100.0
		%within type of surgery	5.4	0.0	0.0	0.0	2.7
	Discharge	Count	0	2	1	1	4
		% within post op comp	0.0	50.0	25.0	25.0	100.0
		%within type of surgery	0.0	7.4	16.7	20.0	5.3
	No	Count	3	4	0	0	7
		% within post op comp	42.9	57.1	0.0	0.0	100.0
		%within type of surgery	8.1	14.8	0.0	0.0	9.3
	Pain	Count	31	21	4	4	60
		% within post op comp	51.7	35.0	6.7	6.7	100.0
		%within type of surgery	83.8	77.8	66.7	80.0	80.0
	Pain + Discharge	Count	1	0	1	0	2
		% within post op comp	50.0	0.0	50.0	0.0	100.0
		%within type of surgery	2.7	0.0	16.7	0.0	2.7
Total		Count	37	27	6	5	75
		% within post op comp	49.3%	36.0	8.0	6.7	100.0
		% within type of surgery	100.0%	100.0	100.0	100.0	100.0

Chi-Square value = 15.142, p=0.234 (Not Sig.)

Table 6: First follow up vs. type of surgery.

			Type of surgery				Total
			Fistulectomy	Fistulotomy	LIFT	Seton	
Post op visit	Faecal incontinence	Count	2	0	1	0	3
		% within post op visit	66.7	0.0	33.3	0.0	100.0
		% within type of surgery	5.4	0.0	16.7	0.0	4.0
	Persistent sepsis	Count	1	2	3	2	8
		% within post op visit	12.5	25.0	37.5	25.0	100.0
		% within type of surgery	2.7	7.4	50.0	40.0	10.7
	Wound healthy	Count	34	25	2	3	64
		% within post op visit	53.1	39.1	3.1	4.7	100.0
		% within type of surgery	91.9	92.6	33.3	60.0	85.3

Continued.

		Type of surgery				Total
		Fistulectomy	Fistulotomy	LIFT	Seton	
Total	Count	37	27	6	5	75
	% within post op visit	49.3	36.0	8.0	6.7	100.0
	% within type of surgery	100.0	100.0	100.0	100.0	100.0

Chi-Square value = 21.705, p=0.001 (Sig.)

Table 7: Subsequent follow up vs. type of surgery.

			Type of surgery				Total
			Fistulectomy	Fistulotomy	LIFT	Seton	
Follow up	Recurrence +	Count	1	1	2	1	5
		% within sub. visit	20.0	20.0	40.0	20.0	100.0
		% within type of surgery	2.7	3.7	33.3	20.0	6.7
	Wound healthy	Count	36	26	4	4	70
		% within sub. visit	51.4	37.1	5.7	5.7	100.0
		% within type of surgery	97.3	96.3	66.7	80.0	93.3
Total		Count	37	27	6	5	75
		% within sub. visit	49.3	36.0	8.0	6.7	100.0
		% within type of surgery	100.0	100.0	100.0	100.0	100.0

Chi-Square value=9.601, p=0.022 (Sig.)

Table 8: Recurrence vs. type of surgery.

			Type of surgery				Total
			Fistulectomy	Fistulotomy	LIFT	Seton	
Recurrence	No	Count	36	26	4	4	70
		% Within recurrence	51.4	37.1	5.7	5.7	100.0
		% Within type of surgery	97.3	96.3	66.7	80.0	93.3
	Yes	Count	1	1	2	1	5
		% Within recurrence	20.0	20.0	40.0	20.0	100.0
		% Within type of surgery	2.7	3.7	33.3	20.0	6.7
Total		Count	37	27	6	5	75
		% Within recurrence	49.3	36.0	8.0	6.7	100.0
		% Within type of surgery	100.0	100.0	100.0	100.0	100.0

Chi-Square value = 9.601, p=0.022 (Sig.)

Table 9: Duration of hospital stay.

Stay in hospital	No. of patients	Percentage (%)
3 days	9	12
4-6 days	53	70.70
Above 6 days	13	17.30

In this study 70.7% stayed for 4-6 days, 17.3% more than 6 days.

DISCUSSION

Fistula in ano is an abnormal communication lined by granulation tissue between anal canal & skin. Anal glands are the main source of infection, which are located at the sub epithelial layer of anal canal.

In this study 42.70% patients were of age group 41-50 years, 28% patients were of age group 31-40 years, above 51 years age were 18.70%. It showed that most common age group involved is middle age around 40 years. In this study 80% of patients were male and 20% are female. This disease is more common in male. In this series 82.70% patients presented with discharge in perianal region. 33.30% patients presented with history of perianal abscess. 66.70% patients presented with pain. 89.30% patients presented with only one opening in perianal region, 8.0% patients are presented with 2 openings and 2.70% patients presented with >2 openings. Posterior fistulas are seen in 93.30% and anterior in 6.70% patients. 94.70% patients have low level fistula & 4.3% are having high level of fistula. 84% patients had simple

fistula and 16% had complex fistula. Most of the findings correlate with western studies.[16-21]

Type of surgery

49.30% patients were treated with fistulectomy. 36.0% have undergone fistulotomy. 8.0% had lift and 6.7% had seton.

Seton

Seton was applied for "5" cases in this study. These cases had high intersphincteric fistulas. This procedure has less post-operative hospital stay (3 days), less pain and recurrence is rare. The disadvantages of this procedure are regular follow up needed for Seton tightening, post-operative complications are more and wound healing is comparatively less.[22,23]

Lift

This procedure is done in 6 cases, all are intersphincteric fistulas. Post-operative pain was less with better wound healing. Mean period of stay is 4 days. 2 patients had recurrence after 1 month which was managed by Fistulectomy.

In this study pain is the major complaint. Complete healing seen in 93.30% of patients. Recurrence is seen in 6.70% of patients.70.70% patients have stayed 4-6 days. 97.33% of patients are presented with non-specific crypto glandular infection, remaining 2.67% are associated with granulomatous lesions. This correlates with study conducted by Rojanasakul.[24,25]

Recurrence

Failure to recognize an internal opening and hence incomplete excision of the tract, specific etiology of the fistula, multiple tracts & failure to lay open all the secondary tracts, recurrence is common

CONCLUSION

Incidence of Fistula in ano is more common in men (80%) with most common age group being 30-50 yrs (70.7%). Discharge and pain are common presenting symptoms. Most of the fistulas are simple, posterior and low level fistulas. Fistulectomy is the most common procedure performed. Mean hospital stay is 4-6 days. Most common etiology being non-specific cryptoglandular infection. Newer procedures like LIFT and Seton application show promising results with less complications.

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