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A study on occurrence of fecal incontinence in Tran sphincteric fistula-in-Ano post fistulectomy versus fistulotomy with the help of Wexner incontinence score.

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Abstract

Background: Fistula-in-Ano usually originates in the infected crypt and tracks to the external opening. Simple fistulae also carry a risk of incontinence though not as high as following surgery for complex fistulae.[1]

Aims and objectives

- To evaluate fistulotomy outcome in terms of frequency of occurrence and severity of anal incontinence.
- To evaluate fistulectomy outcome in terms of frequency of occurrence and severity of anal incontinence.
- To compare frequency of occurrence and severity of anal in continence post fistulotomy versus post fistulectomy.

Methods: Patients satisfying inclusion criteria underwent clinical assessment in the OPD and details entered in a proforma. Categorization into two groups was done by Simple Random Sampling. Patients selected for that particular procedure underwent the surgical technique accordingly. Patients were observed for three post operative days and subsequent follow-up at 7 days and 3 months. During the follow up, subjects were given the Wexner Incontinence Score and the data was collected.[7]

Results: Majority of patients belonged to the age group of 31-39 years which accounts for 44% of patients. M: F is 2:1. On Post op day 3, in the Fistulectomy group, 9 had mild, 4 had moderate and 1 had severe incontinence and in the Fistulotomy group, 7 had mild, 2 had moderate and no patient had severe incontinence. On Post op day 7, in the Fistulectomy group, 3 had mild and 2 had moderate incontinence and in the Fistulotomy group, only 2 had mild incontinence. 3 months after surgery only 1 patient in the Fistulectomy group had mild incontinence and no patients from Fistulotomy

group had incontinence. When incontinence rates were compared, the P value on post op day 3, post op day 7 and 3 months after surgery were 0.216,0.235 and 1 respectively which isn't significant.

Interpretation and conclusion: Even though Fistuloto my group had lower incontinence rates when compared with Fistulectomy group on post op day 3 and 7, there was no statistical significance found when the two groups were compared. And incontinence rates 3 months after surgery were comparable between the two groups.

Keyword: Fistula-in-Ano; Low anal; Fistulotomy; Fistulectomy; Wexner's Incontinence Score.

Introduction

Fistula- in - Ano is an abnormal connection between the epithelialized surface of the anal canal or rectum and usually in continuity with one or more external openings in the perianal skin.

Fistula- in- Ano is seen quite frequently and the frequency virtually mirrors perianal – perirectal suppuration. The chronicity of the disease associated with its annoying symptoms. Soiling, pruritis and recurrent suppuration renders an otherwise healthy and active person, an economic burden, retraction from social engagements and he loses self -confidence.

There has been a lot of progress in the understanding of the anatomy of anal canal and rectum and mechanisms of continence of the rectum. This has enabled the surgeon to deal with keeping the spastic anorectal ring intact without interfering with the continence and eradicating the disease.

Fistula- in- Ano rarely heal spontaneously and requires surgical therapy to achieve a cure. It is therefore possible at the present time to obtain more precise evaluation of various methods of anal fistula- treatment.

The improved surgical techniques have rendered post operative period uneventful and steep fall in recurrence rate. With better training in colorectal surgeryover recent decades and more experience in surgery of the anal sphincters, surgeons now have the confidence to try new methods for the treatment of an anal fistula to preserve the external sphincter

Materials and methods

Source of data and materials

Patients admitted in the Department of General Surgery who are clinically diagnosed with Tran sphincteric Fistula – in - Ano at ESICMC & PGIMSR Rajajinagar Bengaluru -10.

- Period of study: March 2021 TO June 2022, 1.5 year
- Study design: Longitudinal prospective comparative study

Inclusion criteria

- Patients willing to give consent. [Annexure - 1]
- Patients with Low-lying Tran sphincteric Fistula-in-Ano according to Park's Classification.
- Both Males and Females aged 18 to 60 years

Exclusion criteria

- Patients older than 60 years of age
- Recurrent or complex fistulas
- High-lying Tran sphincteric fistulas
- Fistulas associated with Crohn's disease and Tuberculosis
- Fistulas associated with malignancy.
- Patients with h/o previous anorectal surgeries or radiation.

Methodology

The present study was conducted in the Department of Surgery, ESIC MC PGIMSR, Bangalore over a duration of eighteen months. The study was a prospective study

comparing Fistulotomy and Fistulectomy for the management of low fistula in Ano.

The study was approved by the institutional ethics committee and in line with the declaration of Helsinki and followed the guidelines laid out by Indian Council of Medical Research (ICMR). Written informed consent was taken from the patients participating in the study.

Eighty patients undergoing surgery for low lying Tran sphincteric fistula in Ano at ESIC MC PGIMSR, Bangalore who fulfilled the criteria were included in the study. Patients were divided in two groups of forty each using non probability purposive sampling, a computer-generated number was given for rando mization. Patients who received odd numbers were selected for fistulotomy and all the patients on even numbers were selected fistulectomy. Forty underwent fistulotomy and forty underwent fistulectomy.

Patients were subjected to clinical examination, routine laboratory investigations and MR Fistulogram preoperatively. All patients were operated on an inpatient basis after obtaining fitness for surgery. Preoperatively patients were kept nil per oral overnight and received a Sodium phosphate enema on the morning of day of surgery. One dose of ciprofloxacin and metronidazole were given at the time of anaesthesia for surgery. All operations were performed in the lithotomy position under spinal anaesthesia. Patients were re-examined under anaesthesia to confirm the internal opening and to rule out associated anal pathologies like anal fissure and haemerhoid. Post-operative management consisted of standard nursing care and analgesia.

Patient were started on a soft oral diet within 6 hours postoperatively. Dressing is removed on the morning after surgery and a local external visual examination is done. Post-operative pain was managed using IV analgesics.

Patients were observed for three post operative days and subsequent follow-up at 1 month and 3 months after surgery.

During the follow up subjects will be given the Proforma of Wexner Incontinence Score and data is collected on Post op Day 3.

A score of <4 indicated that the patient had very mild symptoms. Scores 4–6, 7–12 and ≥ 13 were considered mild, moderate, and severe, respectively. A score of 0 indicated perfect continence and a score of 20 was complete incontinence. Pelvic floor strengthening exercises and high fiber diet were prescribed in patients having incontinence.

Patients were discharged when pain control and home circumstances permitted with analgesics, Antibiotics (in tablet form) Ciprofloxacin 500mg twice daily, Metronidazole 400 mg thrice daily and Syrup Lactulose 20 ml at bedtime for two weeks. An outpatient appointment for review was given one week after surgery. Patients were advised to report immediately in cases of emergency.

Patients were reviewed at 1 week and 3 months post operatively. On follow up patients were asked to fill the Proforma of Wexner's Incontinence score and data collected. A physical examination was also carried out at each follow up.

Statistical Methods

The information collected was entered in Microsoft Excel. Quantitative/Continuous variables was using descriptive statistics. Qualitative/Categorical variables was analyzed using frequency and percentage. Wexner Incontinence Score was compared and tested for statistical significance between the groups using

Student's T-test. Chi-Square test was used to compare incidence of incontinence rates between the two groups.

Results

Table 1: distribution of cases according to age

Age	Fistulectomy	Fistulotomy	Total	Percentage
<30	9	8	17	21.25 %
30-39	16	19	35	43.75 %
40-49	9	7	16	20 %
50-59	6	6	12	15 %
	40	40	80	

Graph 1: distribution of cases according to age.

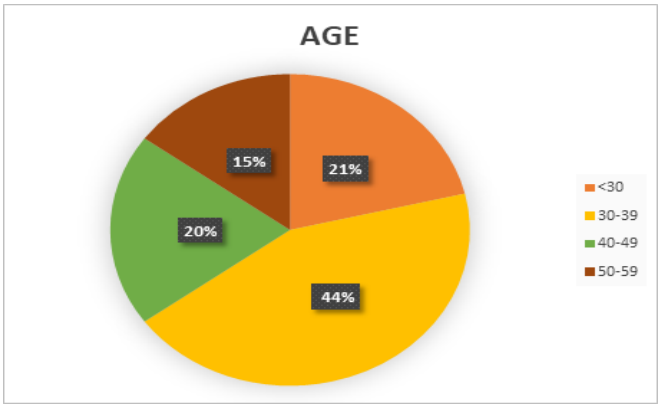


Table 2: distribution of cases according to sex

Sex	Fistulectomy	Fistulotomy	Total	Percentage
Male	26	27	53	66.25 %
Female	14	13	27	33.75 %
	40	40	80	

Graph 2: distribution of cases according to sex.

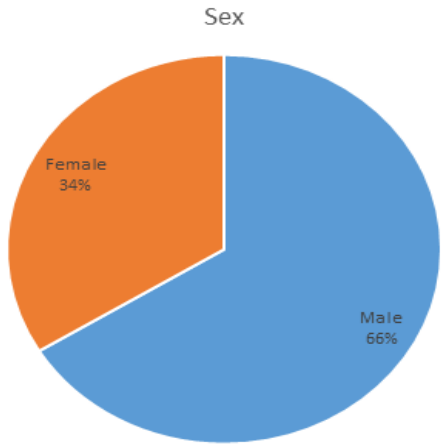


Table 3: association of age and sex

Age (in Years)	Male		Female		p value
	N	%	N	%	
<30		26%	3	11%	0.0295
30-39	17	32%	18	67%	
40-49	12	23%	4	15%	
≥50	10	19%	2	7%	
Total	53	100	27	100	

Using Chi-square test with significance level of 0.05, X2 (3, N = 80) = 8.97, p = 0.029 which is significant.

Graph 3: association of age and sex.

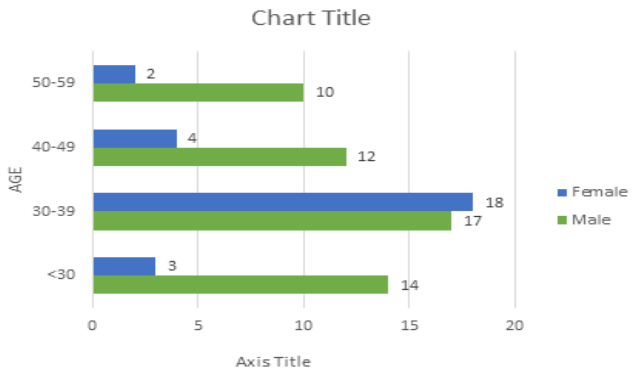


Table 4: Distribution of cases according to type of surgery

Type of surgery	**N**	**%**
Fistulotomy	40	50.0
Fistulectomy	40	50.0
Total	80	100

Graph 4: distribution of cases according to type of surgery

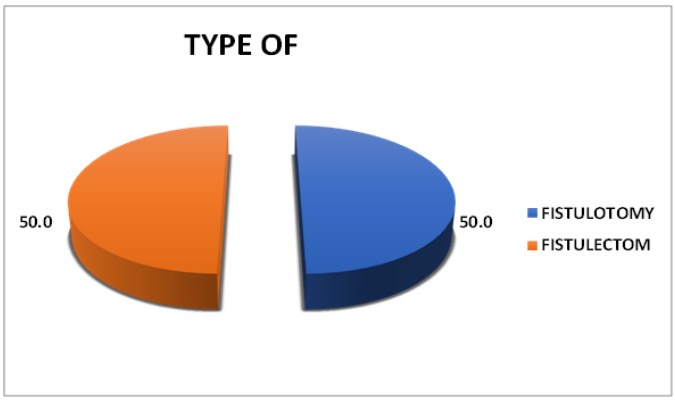


Table 5: distribution of cases according to degree of incontinence in fistulectomy group

	= 40		
Incontinence [Wexner's score]	Day 3	Day 7	3 Months
Continent [0-3]	26	35	39
Mild [4-6]	9	3	1
Moderate [7-12]	4	2	0
Severe [12-20]	1	0	0
Total number of Incontinent subjects	14	5	1
Frequency of Incontinence	35%	12.5%	2.5%

Graph 5: distribution of cases according to degree of incontinence in fistulectomy group

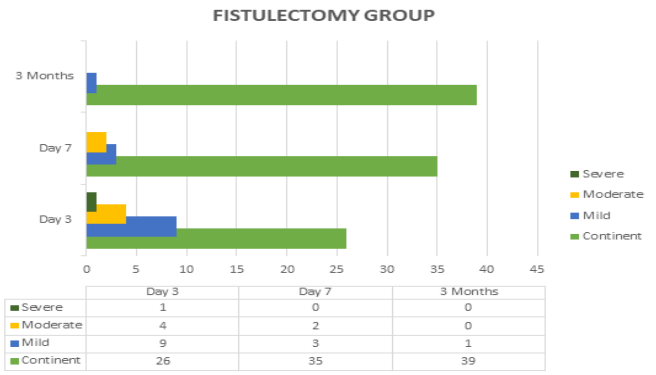


Table 6: distribution of cases according to degree of incontinence in fistulotomy group

	= 40		
Incontinence [Wexner's score]	Day 3	Day 7	3 Months
Continent [0-3]	31	38	40
Mild [4-6]	7	2	0
Moderate [7-12]	2	0	0
Severe [12-20]	0	0	0
Total number of Incontinent subjects	9	2	0
Frequency of Incontinence	22.5%	5%	0%

Graph 6: distribution of cases according to degree of incontinence in fistulotomy group.

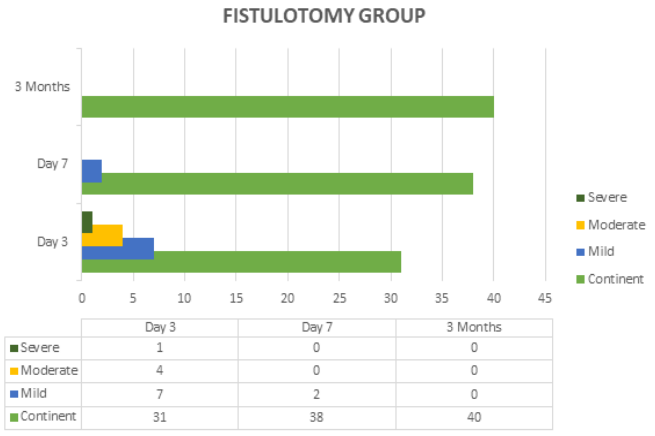


Table 7: comparison of age between patients of Fistuloto myand fistulectomy

Age (in Years)	Fistulectomy		Fistulotomy		p value No of cases
	N	%	N	%	
<30	9	22.5	8	20	0.904
30-39	16	40	19	47.5	
40-49	9	22.5	7	17.5	
≥50	6	15	6	15	
Total	40	100.0	40	100.0	

Using Chi-square test with significance level of 0.05, X2 (3, N = 80) = 0.056, p = 0.9.

Graph 7: comparison of age between patients of fistulotomy adfistulectomy.

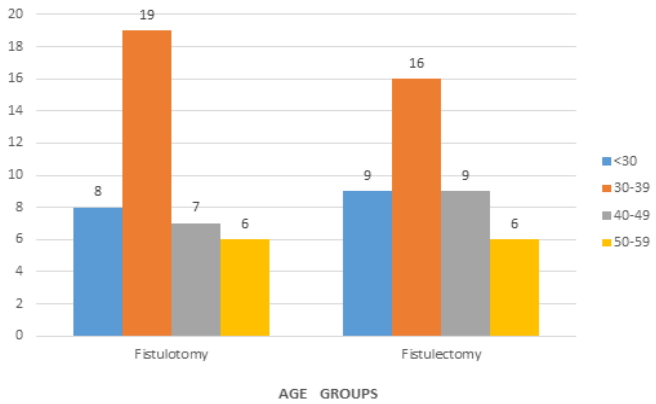


Table 8: comparison of mean age between fistulotomy andfistulectomy

Variables	Fistulotomy		Fistulectomy	
	Mean	SD	Mean	SD
AGE (IN YEARS)	37.4	8.9	37.2	9.4

Graph 8: comparison of mean age between fistulotomy and fistulectomy.

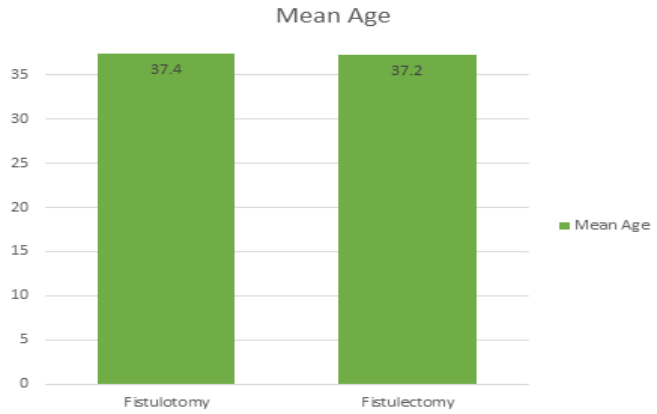


Table 9: comparison of sex between patients of fistulotomyand fistulectomy

SEX	Fistulectomy		Fistulotomy		p value
	N	%	N	%	
Male	26	65	27	67.5	
Female	14	35	13	32.5	
Total	40	100.0	40	100.0	1.00

According to Fisher Exact Test, the statistical value is 1 implying that Age and Treatment group are independent variables.

Graph 9: Comparision of sex between patients of fistulotomyand fistulectomy.

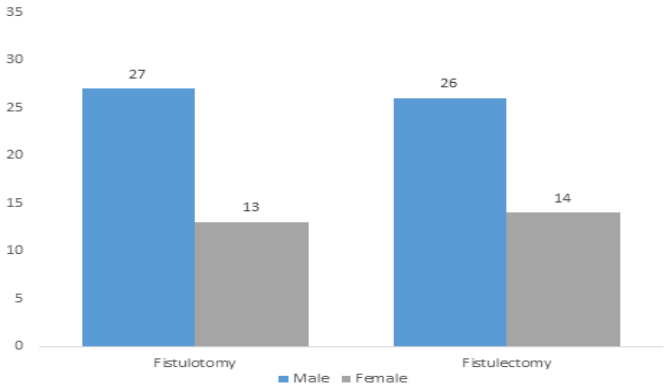


Table 10: comparison of frequency of incontinence on post op day 3 between patients of fistulotomy and fistulectomy

Incontinence	Fistulectomy		Fistulotomy		p value
	N	%	N	%	
Mild	9	67	7	78	
Moderate	4	28	2	22	0.216
Severe	1	7	0	0	
Total	14	100	9	100	

Table 11: comparison of frequency of incontinence on post op day 7 between patients of fistulotomy and fistulectomy

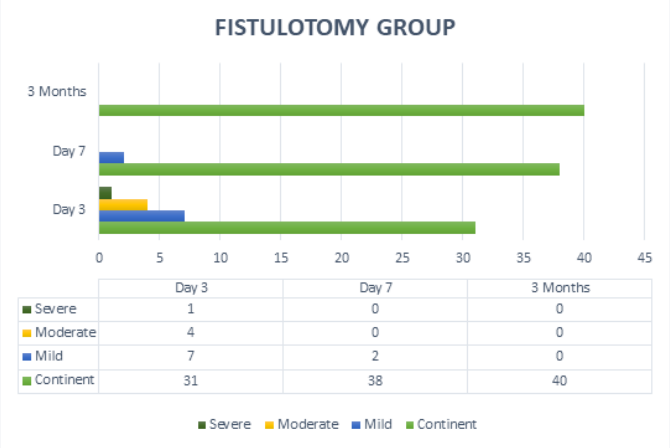
Incontinence	Fistulectomy		Fistulotomy		p value
	N	%	N	%	
Mild	3	60	2	100	
Moderate	2	40	0	0	
Severe	0	0	0	0	0.235
Total	5	100	2	0	

Table 12: comparison of frequency of incontinence 3 months after surgery between patients of fistulotomy and fistulectomy

Incontinence	Fistulectomy		Fistulotomy		p value
	N	%	N	%	
Mild	1	100	0	0	
Moderate	0	0	0	0	1
Severe	0	0	0	0	

Total	1	100	0	100	

Graph 10: frequency and severity of incontinence according to Wexner's incontinence score in fistulotomy and fistulectomy group.



	Day 3	Day 7	3 Months
Severe	1	0	0
Moderate	4	0	0
Mild	7	2	0
Continent	31	38	40

Discussion

Eighty patients undergoing surgery for fistula in ano in ESIC MC PGIMSR, Bangalore fulfilled the criteria and were included in our study. Forty underwent fistulotomy and forty underwent fistulectomy.

The mean age was 37.4 years in fistulotomy and 37.2 years in fistulectomy groups. In our study, 66.25% were males and 33.75% were females. There is a more dominance in almost every reported series (Adams and Koralcik, 1981). The male: female ratio in the 5year review of 793 patients at St. Marks Hospital was 4.6:1 (Marks and Ritchie, 1977). In Nigeria the male dominance is 8:1 (Ani and Solanke, 1976). Most patients with an anal fistula present in the third or fourth decade of life and anal fistulas were uncommon after the age of 60 years (Vasilevsky and Gordon 1984; Bruhl, 1986).[2]

A study Deepanshu Sharma et al in 2013, which was a descriptive study with a sample size of 30 came to the conclusion that the incidence of incontinence post fistulotomy and fistulectomy was 25% and 50% respectively. The rates of incontinence on post op day 3 in our study is comparable to this study.[3] A study by Qaidzohar Kanchwala, Dinesh Jain, Deepak Phalgune in 2018, which was a prospective observational study with a sample size of 110 came to the conclusion that Fistulotomy and fistulectomy are equally effective in the treatment of low anal fistulas with rate fecal incontinence at 6 months follow-up to be 7.6% and 8.8% after fistulectomy and fistulotomy respectively. The rates of incontinence 3 months after surgery in our study was 2.5% in Fistulecvtomy group and 0% in fistulotomy group which was not comparable to the study. This may be attributed to the fact that only simple low-lying Tran sphincteric fistula in Ano cases were included in our study. [4] A study by Zuhair Bashir Kamal in 2012, which was a prospective observational study with a sample size of 76 came to the conclusion that Fistulotomy can be used as a primary treatment of low fistula in Ano as the operating time is shorter and the incidence of incontinence was 6.25% and 11.36% post fistulotomy and fistulectomy respectively. The rates of incontinence in the above study is comparable to the rates of incontinence on post op day 7 in our study. [5]

A study by Maher A. Abbas, MD; Christopher H. Jackson, BS; Philip I. Haigh, MD, MSc, in 2011 which was a retrospective review with a sample size of 179 came to the conclusion that Patients with high trans sphincteric or suprasphincteric fistula and those older than 45 years were at higher risk of developing post operative incontinence. Though in our study as only simple low-lying Tran sphincteric fistula in Ano were included which may have been the reason for low rates of long-term incontinence. [6]

Conclusion

The findings of our study confirm that rates of incontinence is more with Fistulectomy when compared with Fistulotomy. Even though the rates of incontinence

when compared between the two groups is not statistically significant, they were comparable to the multiple studies regarding incontinence post fistulecto my and fistulotomy as mentioned in discussion. Therefore, Wexner's Incontinence score can be used as a reliable tool to estimate the severity of incontinence post fistulectomy and fistulotomy.

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