ORIGINAL RESEARCH PAPER

General Surgery

A COMPARATIVE STUDY BETWEEN FISTULOTOMY AND FISTULECTOMY IN MANAGEMENT OF LOW ANAL FISTULAE.

KEY WORDS: Fistula-in-ano, low anal fistula

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ABSTRACT

Objective: This study was undertaken to compare operating time, length of hospital stay, wound healing time, post-operative complications (urinary retention, bleeding, infection, incontinence) and rate of recurrence between the two surgeries for low anal fistulae- fistulotomy and fistulectomy.

Methodology: This was a comparative retrospective study carried out at a tertiary care hospital of patients operated from July 2018 to December 2019. 50 patients were studied who were equally divided into 2 groups, Group A – fistulotomy and Group B – fistulectomy.

Results: The outcomes were compared between both groups.

Conclusion: Fistulotomy has a slight edge over fistulectomy in the treatment of low anal fistulas since it has shorter operating time, less post-operative hospital stay, and a quicker wound healing time. However, the complications rate and recurrence rate between the two were comparable.

INTRODUCTION:

A fistula-in-ano is a track lined by granulation tissue which connects perianal skin superficially to anal canal, anorectum or rectum deeply. It usually occurs in a pre-existing anorectal abscess which burst spontaneously.

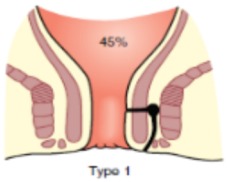
The vast majority of anal fistulae are secondary to infection of anal gland which present as perianal abscess which may spontaneously burst or inadequately drained. Anal fistula may be associated with number of disease processes such as Tuberculosis, Crohn's disease, malignancy etc. Anal fistulae are classified into two subtypes on the basis of their location-

1. Low lying fistulas—these open into the anal canal below the anorectal ring.
2. High level fistulas—these open into the anal canal at or above the anorectal ring.

Fistula-in-ano can be:
- Simple fistula without extensions.
- Complex fistula with extensions.

It can present with:
- Single external opening.
- Multiple external openings which are often seen in tuberculosis, ulcerative colitis, Crohn's disease, LGV, hidradenitis suppurativa, actinomycosis

Anal fistulae can be classified using Park's classification:
- Type 1 - Intersphincteric: The fistula is confined to the intersphincteric plane.
- Type 2 - Trans-sphincteric: The fistula traverses the external sphincter, communicating with the ischiorectal fossa.
- Type 3 - Suprasphincteric: The fistula extends cephalad over the external sphincter and perforates the levator ani.
- Type 4 - Extrasphincteric: The fistula extends from the rectum to the perianal skin, external to the sphincter apparatus.



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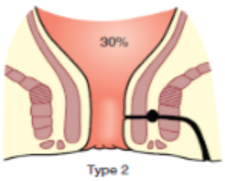

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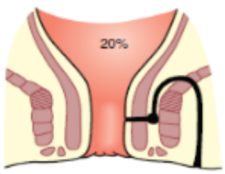

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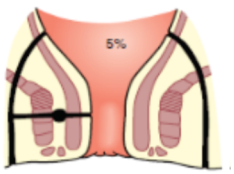

Type 4

The commonest symptom is a watery or purulent discharge and recurrent episodes of pain. Pain increases gradually until temporary relief occurs with pus discharge. It may also be associated with along with skin irritation and one or more external opening may be present with induration of the surrounding skin. Often it may heal superficially but pus may collect beneath forming an abscess which again discharges through same or new opening. Ischiorectal fossa on each side, most often communicates with each other behind the anus causing horseshoe fistula

The main principle of management of low anal fistula is to treat the condition without hampering anal continence. Low fistulas can be treated in different ways, which are fistulotomy or fistulectomy. In fistulotomy the tract is laid open, curetted and then allowed to heal by secondary intention. In fistulectomy the whole fistulous tract is excised (with diathermy or knife), and it is then also allowed to heal by secondary intention.

MATERIALS AND METHODS:

The present study is a retrospective study carried out with 50 patients at the Department of Surgery at GCS Medical College, Hospital and Research Centre, Ahmedabad from July 2018 to December 2019.

Inclusion Criteria:

1. Patients with age between 20 and 50 years of both genders.
2. Patients with simple low anal fistula.

Exclusion Criteria:

1. Recurrent fistula
2. Complex fistula
3. High anal fistula
4. Patients with any previous anorectal surgery
5. Patients with fistula due to diseases like Crohn's disease
6. Patients on cancer chemotherapeutic drugs.
7. Patients on immunosuppressant therapy.

8. Age <20 or >50 years.
9. Pregnant females.

Variables studied:
1. Operative time
2. Post-surgery hospital stay
3. Wound healing time
4. Complications: Intra-operative- Bleeding Post-Operative- Urinary retention, Infection, Incontinence
5. Recurrence rate

All cases were operated under spinal anesthesia and in lithotomy position. A preoperative enema was given to clear the operative filed and shaving of the perineal and perianal region was done.

The perineal and perianal area were thoroughly cleaned with 10% povidone-iodine. Proctoscopy was done to visualize the anal canal and to rule out any other anal pathology. Probing was done from external opening with a fistula probe to identify the external opening only. Further probing till the internal opening was not done to avoid creation of any false passage. Methylene blue dye was injected through the external opening in order to clearly pin-point the internal opening and render the fistula tract visible.

Fistulotomy: The track was laid completely open and curettage was done to remove the mucosa / granulation tissue lining the track.

Fistulectomy: The fistula track was located and the openings confirmed. Then a 5 Fr nasogastric tube was passed in the tract. The whole tract was then excised using either diathermy or scalpel. Haemostasis was achieved and the excised track was sent for histopathology examination.

Postoperatively the patients were treated with antibiotics (Augmentin and Metronidazole) and oral analgesics (diclofenac sodium) as well as local lignocaine jelly. They were also prescribed laxative liquid to be taken before going to bed, starting from the day of surgery. Patients were administered daily sitz baths starting from first post-op day. Operating time, healing time and hospital stay were recorded. The patient was discharged from the hospital when the pain was controlled and there was no evidence of immediate post-operative complication, with advice towards regular dressing.

Patients were followed up in surgery OPD on bi-weekly basis till complete wound healing for postoperative infection, postoperative pain and fecal incontinence. A monthly follow-up till six months was done for evidence of recurrence.

The findings were tabulated and appropriate statistical tests were applied to arrive at the conclusion.

Statistical Methods:
Mean and standard deviation were used as descriptive statistics. For Inferential statistics chi-square test and paired t-test were used. A P-value of ≤ 0.05 was considered statistically significant.

OBSERVATIONS AND RESULTS:-
Group A – fistulotomy, n=25
Group B – fistulectomy, n=25

In our study, out of total 50 patients, 86% (n=43) patients were males and 14% (n=7) were females.

Operative Time:-
In Group A, mean operative time was 12.16 ± 1.21 (standard deviation) minutes.

In Group B, mean operative time was 25.2 ± 3.12 (standard deviation) minutes.

It is clear that the operative time for Fistulectomy group was longer than that of the Fistulotomy group.

Post-surgery hospital stay:-
In Group A, mean hospital stay was 3.4 ± 1.6 (SD) days.
In Group B, mean hospital stay was 5.08 ± 2.1 (SD) days.
In the Fistulotomy group, the patients were discharged earlier as compared to the Fistulectomy group.

Wound healing time:-
In Group A, Wound healing time was 23.8 ± 3.7 (SD) days.
In Group B, Wound healing time was 34.32 ± 3.9 (SD) days.

In the Fistulotomy group, the wound healing time was shorter as compared to the Fistulectomy group and as the p-value was <0.0001, it was statistically significant.

Variables	GROUP	MEAN	Standard Deviation	p VALUE
Operating Time (in minutes)	Fistulotomy	12.16	1.21	<0.0001
	Fistulectomy	25.2	3.12	
Post-surgery Hospital Stay (in days)	Fistulotomy	3.4	1.6	<0.0001
	Fistulectomy	5.08	2.1	
Wound Healing Time (in days)	Fistulotomy	23.8	3.7	<0.0001
	Fistulectomy	34.32	3.9	

Complications:-

Intra Operative Complications		Fistulotomy		Fistulectomy	
		No.	%	No.	%
Bleeding	Yes	2	8%	4	16%
	No	23	92%	21	84%

Post Operative Complications		Fistulotomy		Fistulectomy	
		No.	%	No.	%
Urinary Retention	Yes	2	8%	3	12%
	No	23	92%	22	88%
Infection	Yes	2	8%	4	16%
	No	23	92%	21	84%
Incontinence	Yes	0	0	1	4%
	No	25	100%	24	96%

Rate of Recurrence:-
In Group A, 1(4%) patients had recurrence during the follow up period of 6 months.

In Group B, no patient had recurrence during the follow up period of 6 months.

The difference was statistically not significant between both the groups. (p >0.05)

Recurrence		Fistulotomy		Fistulectomy		p Value
		No.	%	No.	%	
	Yes	1	4%	0	0	0.113
	No	24	96%	25	100%	

DISCUSSION:-
Anal fistula is a common problem encountered in the surgical field, and there are various techniques available to tackle the problem. In this study, the focus has been on the two modalities commonly used for the treatment of low-lying, uncomplicated anal fistula – fistulectomy and fistulotomy.

The optimal surgical treatment for any anorectal fistulae would be the one that is associated with least recurrence rates, minimal incontinence and ultimately a good quality of

life. Fistula-in-ano seems to be a disease that affects the male population predominantly, as evidenced by the present study where 86% of the patients studied were male. Also, the presenting complaint usually encountered was discharge from an external opening with itching of the surrounding skin. On comparing the results of two groups, the mean operating time in the fistulotomy group was significantly less. The need for meticulous dissection in fistulectomy, as well as adamant care for achieving complete haemostasis usually increases the operating time. Hospital stay is also less in fistulotomy group, most probably due to less post-operative pain and smaller wound size.

As the tract is merely divided over a probe without excision of the tract completely, the resultant wound is small; thus wound healing is faster in fistulotomy and this study confirms the same. In a study by Kronberg et al in low anal fistulas comparing fistulotomy with fistulectomy fistulotomy wounds healed quicker than fistulectomy wounds by at least 1 week.

Intra-operative complication of bleeding was incidentally witnessed more in the fistulectomy group due to the procedure involved, and bleeding in both the groups was easily controlled with cauterization and pressure-packing. In view of post-operative complications, there was no significant difference between the two groups regarding the incidence. Urinary retention as a complication was due to the sequelae of spinal anaesthesia. There were no adverse sequalae to this complication. Infection seen in both groups post-operatively was mild, associated with minimal slough, and easily controlled with regular dressing and anti-biotic coverage.

Incontinence, to gas, was encountered only in one patient of the fistulectomy group without any serious sequalae. Shouler et al reviewed Birmingham results, 96 of 115 patients had a fistulotomy and among them only ten experienced soiling, and only one patient complained of temporary incontinence of flatus. In the study by Kronberg et al the incidence of incontinence in fistulotomy group was 3.8% (1/26) whereas in fistulectomy group it was 14.28% (3/21).

The incidence of recurrence was looked for till 6 months of follow-up, and as such, not much can be commented upon any difference between the two procedures regarding the criteria. However, in the present study, there was 1 episode of recurrence in the fistulotomy group, and none in the fistulectomy group. Shouler et al reported 7 recurrences in 96 out of 115 patients who underwent fistulotomy for low anal fistulas (8%).9 In the fistulectomy group, Khubchandani et alreported recurrence rate of 5.8% (4/68 cases), Vasilevsky and Gordon et al reported recurrence of 6.3% (10/160), Kronberg et al reported 9% (2/21) recurrence rate.

LIMITATIONS:-

- The comparison was only between two methods of low-lying anal fistula surgery, other procedures were not included in study.
- In regards to recurrence, proper comment cannot be made due to less time considered for follow-up, that is, 6 months.
- Most patients were from Ahmedabad district and surrounding areas so the sample does not represent the entire Indian population.
- The antecedent cause and post-operative pain are not addressed in the current study and will have to be evaluated separately.
- Moreover, the surgeries were not performed by a single doctor; in view of hospital setting, the surgeries were performed by different doctors. Even though the steps might remain the same, the technicalities may differ with each surgeon; this consideration was not taken into account in this study.

CONCLUSION:-

Both the procedures are easy to perform, provide excellent healing rates and will result in division of only a small portion of the external anal sphincter. However, fistulotomy has a slight edge over fistulectomy in the treatment of low anal fistulas since it has shorter operating time, less post-operative hospital stay, quicker wound healing time, less incontinence and a comparable recurrence rate.

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