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COMPARATIVE STUDY BETWEEN FISTULECTOMY AND FISTULOTOMY WITH MARSUPIALISATION IN THE TREATMENT OF SIMPLE ANAL FISTULA

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ABSTRACT:

Background- Fistula-in-ano is one of the common ano-rectal disorder in Indian community which causes appreciable morbidity and discomfort to the patient.

Methods- Hospital based randomized comparative study conducted at Department of surgery, SMS hospital. 45 patients were taken in fistulectomy group and 35 in fistulotomy with marsupialization group. The primary outcome measure was wound healing time while secondary outcome measures were operating time, postoperative wound size, postoperative pain, wound infection.

Results- Postoperative Wound healed earlier in fistulotomy with marsupialisation group (4.30±0.64 weeks) than in fistulectomy group (7.38 ±1.83 weeks). This difference in healing time reached statistical significance with a P-value of 0.0003. Wound size was smaller in fistulotomy with marsupialisation group (1.96 cm^2± 0.52) than fistulectomy group (3.38 cm^2 ± 0.46). Wound stops oozing earlier in fistulotomy with marsupialisation group (2.23 wk ± 0.65) than in fistulectomy group (4.81 weeks ± 0.79). No difference in pain score was noted in both the groups at 24 hour and 12 week after surgery.

Conclusion-Keeping in view the faster recovery, less duration of wound discharge, shorter wound healing time, smaller wound size and lower complications, it can be concluded that fistulotomy with marsupialisation is much safer and cost effective than the fistulectomy for the management of fistula in ano.

Keywords: Fistulectomy, Fistulotomy, Anal fistula

Introduction

Anal fistulas are considered one of the commonest cause for a persistent seropurulent discharge that irritates the skin in the neighbourhood and causes discomfort.[1] Fistula-in-ano is seen quite frequently and in frequency virtually mirrors perianal-perirectal suppuration. Fistula-in-ano is one of the common ano-rectal disorder in Indian community which causes appreciable morbidity and discomfort to the patient.

Fistula-in-ano rarely heal spontaneously and requires surgical therapy to achieve a cure.[2] Surgical techniques like fistulotomy, fistulectomy, fistulotomy with marsupialisation and staged operations have rendered the postoperative period uneventful, short and steep fall in recurrence rate. Appropriate use of each techniques comes with experience. A careful discussion with the patient regarding options and potential risks must be performed pre-operatively with concentration on the risk of recurrence balanced against risk of incontinence because the precise procedure may not be clear until operative examination.

Conventional surgical options for a simple anal fistula include a fistulotomy and a fistulectomy.[3]A fistulectomy involves complete excision of the fistulous tract, thereby eliminating the risk of missing secondary tracts and providing complete tissue for histopathological examination. A fistulotomy lays open the fistulous tract, thus leaving smaller unepithelized wounds, which hastens the wound healing.

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Marsupialization of the fistulotomy wounds can reduce the healing time further.[4]

MATERIAL AND METHODS

Study area – Department of surgery, SMS hospital.

Study period – 1st may 2016 to 30th april 2017 or till the sample size would be achieved.

Study design – Hospital based randomized comparative study

Sample Size – sample size to be calculated 33 for each group at an alpha error of 0.05 and power 80%,assuming difference in means to be detected in wound discharge in fistulectomy(grp A) and fistulotomy with marsupialization (grp B) 1.35+/-0.91days(as per Journal of the Korean Society of Coloproctology (2012:28(2);78-82) .

So for study purpose 45 patients were taken in fistulectomy group and 35 in fistulotomy with marsupialization group.

Sampling Technique- Simple random technique through chit box method

Study population – study population is to be selected as per the inclusion and exclusion criteria.

Inclusion criteria

- Those patients who have given written and informed consent.
- Age group 18-85 years in either sex
- Patients with symptomatic simple anal fistulas.
- Low trans-sphincteric (fistula tract involving less than the lower third of the anal sphincter),
- Inter sphincteric fistula, and
- Subcutaneous fistula
- The absence of a secondary tract.

(A simple anal fistula is defined clinically as one that had one internal opening, one external opening, a completely palpable tract, and no palpable abnormality in the upper anal canal or the lower rectum.)

Exclusion criteria

- High fistula in ano,
- Recurrent fistula,
- Patients with associated co-morbid conditions(chrons disease, malignancy,anal fissure, hemorrhoids, chronic colitis)
- HIV+ and immunocmpromised patient.

Methodology

- Patients diagnosed with symptomatic simple anal fistulas were selected.
- Preoperative randomization by chitbox method was done.
- Group A undergone fistulectomy.
- Group B undergone fistulotomy with marsupialisation.

The patients were operated under regional or general anesthesia. Under anesthesia, an anorectal examination was performed to verify the findings of the clinical examination. A dye study of the fistula tract was performed by placing moist gauze in the anal canal and injecting about 2 mL of methylene blue through the external opening. Staining of the gauze piece was denoted patency of the fistula tract. A probe was gently passed into the fistulous tract through the external opening.

In the fistulotomy with marsupialization, the fistula tract was lay opened over the probe placed in the tract. After the fistula tract had been laid open, the tract was curretted and examined for secondary extensions. Wound edges were sutured with the edge of fistula tract by using interrupted 3-0 chromic catgut sutures to marsupialize the operative wound from distal to proximal.

In the fistulectomy, a keyhole skin incision was made over the fistulous tract and encircle the external opening. The incision was deepened through the subcutaneous tissue, and the tract was removed from surrounding tissues. Towards the anal verge, fibers of the anal sphincters overlying the tract was divided, patient was followed up for 12 weeks. Patients were analysed is terms of wound healing time, operating time, postoperative wound size, wound discharge,

postoperative pain, wound infection, anal incontinence.

Statistical analysis:-

• Qualitative data was expressed in the form of proportion.

• Quantitative data was expressed in mean ± SD (complications)

• Qualitative data was compared by Chi square test

• Unpaired t test was used to infer the difference in means.

• For significance, following at the level of "p" value was taken

1. P > 0.05 = Not significant
2. P = 0.05 = Just significant
3. P < 0.05 = Significant
4. P < 0.001 = Highly significant.

OBSERVATIONS AND RESULTS

In our study the age of the patient varied from 18-70 years. Majority of the patients were between 26 and 45 years of age. Both groups were comparable in terms of age distribution and sex distribution.

Table 1: Socio-demographic charasterics

Variable	Fistulectomy (N=50)	Fistulotomy with marsupialisation (N=40)	p-value
Mean age ±SD(Yrs)	37.22 ±12.62	34.98 ±10.76	0.373
Sex (M:F)	44:6	35:5	0.943
Type of fistula (subcutaneous/ intersphincteric/low trans-sphincteric)	17/30/3	16/22/2	0.838

Postoperative Wound healed earlier in fistulotomy with marsupialisation group(4.30±0.64 weeks) than in fistulectomy group (7.38 ±1.83 weeks). This difference in healing time reached statistical significance with a P-value of 0.0003.

Table 2: Wound healing time (weeks)

	Mean(weeks)	SD	P value
Fistulectomy (N=50)	7.38	0.92	0.0003 (S)
Fistulotomy with marsupialisation (N=40)	4.30	0.64	

No differences in the operating times were noted between the two groups.

Table 3: Operating time (minutes)

	Mean	SD	P value
Fistulectomy (N=50)	29.74	3.64	0.576
Fistulotomy with marsupialisation (N=40)	29.33	3.28	

Wound size was smaller in fistulotomy with marsupialisation group (1.96 cm^2± 0.52) than fistulectomy group (3.38 cm^2 ± 0.46). This reached to a statistical significance.

Table 4: Post operative wound size (cm^2)

	Mean	SD	P value
Fistulectomy (N=50)	3.38	0.46	0.0004
Fistulotomy with marsupialisation (N=40)	1.96	0.52	

Wound stops oozing earlier in fistulotomy with marsupialisation group(2.23 wk ± 0.65) than in fistulectomy group (4.81 weeks ± 0.79). This difference reached to a statistical significance.

Table 5: Wound discharge

	Mean	SD	P value
Fistulectomy (N=50)	4.81	0.79	0.0002
Fistulotomy with marsupialisation (N=40)	2.23	0.65	

Pain was accessed at 24 hrs and 12 weeks after surgery. No difference in pain score was noted in both the groups at 24 hour and 12 week after surgery.

Table 6: Post operative pain (24 hr)

	Mean	SD	P value
Fistulectomy (N=50)	4.00	0.78	0.216
Fistulotomy with marsupialisation (N=40)	4.20	0.72	

No infection was noted in both the groups.

DISCUSSION

In our study, statistically significant difference in healing times were noted between the two groups, the mean healing time was longer in fistulectomy group (7.38±0.92 weeks) than in fistulotomy with marsupialization group (4.30±0.64 weeks). The differences in healing rate were found to be statistically significant. Also, in the study B.K. Jain et al[5] healing time were statistically significant (4.85±1.39 weeks v/s 6.75±1.83 weeks, p value 0.003).

Postoperative wound size was measured after completion of surgery. In our study, Wound size of fistulotomy with marsupialization group was 1.96 cm^2 ±0.52 compare to fistulectomy group 3.38±0.46 which was significantly smaller with p value of 0.0004. In the study by Jain B K et al[5] wound size were smaller in fistulotomy with marsupialization group than fistulectomy group (1.23±0.87 cm^2 v/s 8.06±1.90 cm^2) but did not reach the statistical significance. In a study done by Pescatori et al[6], the mean wound size was 1.17±0.31 cm^2 in patients who underwent either a laying open or excision of the fistula in comparison to 0.81±0.38 cm^2 in the case of marsupialization wound.

Persistent wound discharge was observed in fistulectomy group for a mean period of 4.81±0.79 weeks and in fistulotomy with marsupialization group for 2.23±0.65. This difference on statistical analysis was found to be significant. (p=0.0002, students 't' test) and in study conducted by Jain BK et al[5] found continues to ooze in fistulectomy group for 4.10±1.91 weeks and in fistulotomy with marsupialization group for 2.75±1.71 weeks which was also significant.

Though the mean post-operative VAS score was higher for the fistulotomy with marsupialization, on statistics analysis, no difference in the pain score was noted between the groups. Pain scores at 24 hours after operation and at 12 weeks were compared. At 24 hour mean VAS score in fistulotomy with marsupialization group was 4.2±0.72 as compare to fistulectomy group 4±0.78, which was statistically insignificant (p value 0.216). And at 12 weeks, no patient had pain in both the groups. According to Pescatori et al[6] who found that the mean pain score at 12 hours post operatively was 3.4±1.6 and 3.5±1.5 is the non marsupialized group and the marsupialized group, respectively. However, the difference between the two group was statistically insignificant (p>0.05). Even in the study by Jain BK et al, [5]no significant statistically difference was seen between both the group in terms of postoperative pain. In both group, subsidence of pain was noted at about 3 weeks.

CONCLUSION

Keeping in view the faster recovery, less duration of wound discharge, shorter wound healing time, smaller wound size and lower complications, it

can be concluded that fistulotomy with marsupialisation is much safer and cost effective than the fistulectomy for the management of fistula in ano.

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