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Fistulotomy With Marsupialization Versus Fistulectomy With Wound Sutures In Simple Anal Fistula, A Comparative Clinical Trial.

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ABSTRACT

Fistulotomy and fistulectomy are effective in treatment of simple anal fistula, marsupialization of fistulotomy and closure of fistulectomy wounds were introduced as attempts for improving healing time, in this study we are comparing both techniques regarding all aspects of their outcome. Two groups of patients with simple anal fistula each one 46 patients, group I; underwent fistulotomy and marsupialization of wound edges, group II; underwent fistulectomy and closure of fistulectomy wound, preoperative and postoperative data including healing time, recurrence, rate and incontinence rate were collected and properly analyzed. We recorded non-significant differences regarding demographic and preoperative data between both groups, transsphincteric fistula is more common in both groups than low intersphincteric fistula, operative time and postoperative pain are more or less the same in both groups, healing time was 33.78±6.3 in group I and 18.97± 2.58 in group II, temporary incontinence occurred in 2 cases of group I and 1 case in group II, recurrence rate was 6 cases in group II and 1 case in group I. Marsupialization of the fistulotomy wound edges has significantly longer healing time, but fistulectomy with wound closure carries significantly higher complication rate especially , local wound complications and recurrence rate in treatment simple anal fistula.

Keywords: Fistulotoy, anal fistula, fistulectomy, wound sutures.

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INTRODUCTION

Perianal fistula is not uncommon surgical situation [1], simple anal fistula is more feasible in its management than the complex one[2], simple anal fistula is defined as non-branched fistulous track involving less than one third of the anal sphincter muscle bulk [3,4]. Different surgical options for management of simple anal fistula do exist, among these fistulotomy and fistulectomy are the most common [3,5, 6], the outcome of surgical management is the rate of recurrence, the continence status and the time taken for complete healing of the surgical wound [6], many trials carried out to enhance wound healing as sucralfate local application and marsupialization of fistulotomy or fistulectomy wounds [7,8]. In the current study our objective is to compare between the outcomes of marsupialization of fistulotomy wound edge and closure of fistulectomy wound in simple anal fistula.

PATIENTS AND METHODS

We conducted this comparative clinical trial in the period between April 2017 and March 2019, on 92 patients with simple anal fistula, patients were randomly allocated into 2 groups, group I, the fistulotomy group; 46 patients they underwent fistulotomy and marsupialization of wound edges. Group II, the fistulectomy group they underwent fistulectomy with closure of the wound.

Randomization was done using computer generated cards, the trial was approved by institutional review board (IRB) and the ethical committee of our hospitals, this study was registered in clinical trials with the identifier number NCT04215718, all study participants signed an informed written consent.

The condition of this trial is simple anal fistula defined as non-branched fistula confined to the lower third of the anal sphincter diagnosed by anorectal examination or MRI if needed, the primary outcomes are; the time taken for complete healing, fistula recurrence and anal incontinence diagnosed by Vaizey score patient's questionnaire. The secondary outcomes are local wound complications and postoperative pain calculated by visual analogue score (VAS). Study participants number was calculated through the IRB depending on the incidence of simple anal fistula in our locality.

In this study we included patients above 18 years diagnosed with simple non recurrent anal fistula.

Patients excluded are those with:

- Anorectal malignancy.
- Specific disease (Crohn's disease).
- ASA class III, VI and any contraindication for surgery
- Immunocompromized patients and those on steroid therapy or cytotoxic drugs.
- Perianal collection.

Patients of the study were subjected to proper history taking and full clinical examination for diagnosis of the condition, detection of any associated disease and \ or exclusion factor. MRI was ordered if there is any doubt about diagnosis, preoperative investigations were ordered as per usual.

The procedure in both groups was carried out by the study surgeons, under spinal anesthesia in lithotomy position, anorectal examination was done to identify the internal and external openings, course of fistulous track and any side tracks if present. When the internal opening couldn't be identified the operator used methylene blue dye injection through the external opening. Any patient with branched or complex fistula was discarded from the study.

In fistulotomy group and after probing of the track it was let open by diathermy, its floor was curetted and the wound edges marsupialized by polygalactin (Vicryl) sutures 3\0 as shown in figure 1.

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Fig 1 marsupialization of fistulotomy wound.

In fistulectomy group and after probing, the fistulous track was excised by diathermy together with its internal and external openings, after hemostasis the wound was closed by polygalactin (Vicryl) sutures 3\0 as shown in figure 2, 3

Fig 2 fistulectomy wound

Fig 3 closure of fistulectomy wound

In both groups the wound was dressed with non-adhesive dressing, non-steroidal analgesics were given as per need and patients were discharged after 24 hours if there is no contraindication to do so.

After discharge patients were encouraged for self-cleaning by antiseptic baths.

Follow up was carried out in the outpatient clinics by the study surgeons, the clinic visits were planed every week for 12 weeks then monthly for another three months, in each visit the investigator recorded the state of wound healing, anal continence, postoperative pain, any local wound complications, and any recurrence after complete healing in the follow up time.

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Preoperative data, demographic data, operative time, intraoperative complications and follow up data were collected and properly analyzed using paired t test and Z tests in SPSS 22 program package.

RESULTS

In the current study we have two groups of patients with simple anal fistula: group I; fistulotomy with marsupialization group (46) patients and group II fistulectomy with wound closure group (46) patients.

The mean age in group I was 31.8 ± 8.13 years, in group II it was 30.39 ± 8.59 years, male represents 71.7% of group I and 67.4 % of group II patients, female represents 28.3% and 32.6% of group I and II respectively, the mean duration of the disease was 12.7±5.17 months and 13.17±5.49months in groups I and II respectively, the presenting manifestations were discharge, pruritus and anal pain in the same order in the study groups, in group I, low trans sphincteric fistula (LTF) was found in 16 patients (34.8%) and intersphincteric fistula (ISF) was found in 30 patients (65.2%), while in group II (LTF) was found in 20 patients (43.48 %) and (ISF) present in 26 patients (56.52%). In group I we had two patients diabetic and one patient hypertensive while in group II we had one diabetic patient, one hypertensive ischemic heart and one asthmatic patient as presented in table 1 there were non-significant differences regarding demographic and preoperative evaluation data.

Demographic data, pathological types, presenting manifestations and duration are presented in table 1,

		Group I	Group II	P value
Gender	M	33 (71.7%(	31 (67.4%)	0.62
	F	13 (28.3%)	15 (32.6%)	
Age in years		31.8±8.13	30.39±8.59	0.34
Presentation	Discharge	36 (78 %)	39 (84.8%)	0.41
	pruritus	22 (47.8%)	20 (43.5%)	0.67
	pain	12 (26%)	12 (26%)	1
Duration of symptoms in months		13.03 ± 5.49	12.7 ± 5.17	0.43
Pathologic type	Low transsphincteric	16 (34.8%)	20 (43.48 %)	0.39
	intersphincteric	30 (65.2%)	26(56.52%)	

The mean operative in group I was 23.15±5.1 minutes, in group II it was 23.91±4.65 minutes, calculation of visual analogue score (VAS) for pain assessment was 5.5 ± 94 in group I, and 5.39 ± 0.9 in group II, after 24 hours, after 1 week it was 0.91 ± 0.98 in group I and 0.85 ± 0.96 in group II.

Post-operative complications, in group I; there were, one case of incontinence to flatus improved after 2 months, two cases with urine retention, needed catheter evacuation and one case recurrence, in group II there were 2 cases of wound hematoma that needed evacuation, and 4 cases of wound dehiscence those 6 cases reported recurrence of anal fistula, two cases of incontinence to flatus were reported in this group both improved after 2 months follow up, also there was one case of urine retention that needed catheterization. Time needed four complete healing in group I was 33.78±6.3 days , in group II it was 18.97± 2.58 days. As presented in table 2, marsupialization group is significantly better regarding wound dehiscence, and recurrence rate, but healing time is significantly better in fistulectomy with wound closure.

Table 2 follow up data

		Group I	Group II	P value
Operative time in minutes		25.15±5.1	23.91±4.65	0.13
V.A.S values	After 24 hours	5.5 ± 94	5.39 ± 0.9	0.25
	After 1 week	0.91 ± 0.98	0.85 ± 0.96	0.37
Complications	Hematoma	0	2	0.15
	Wound dehiscence	0	4	0.041

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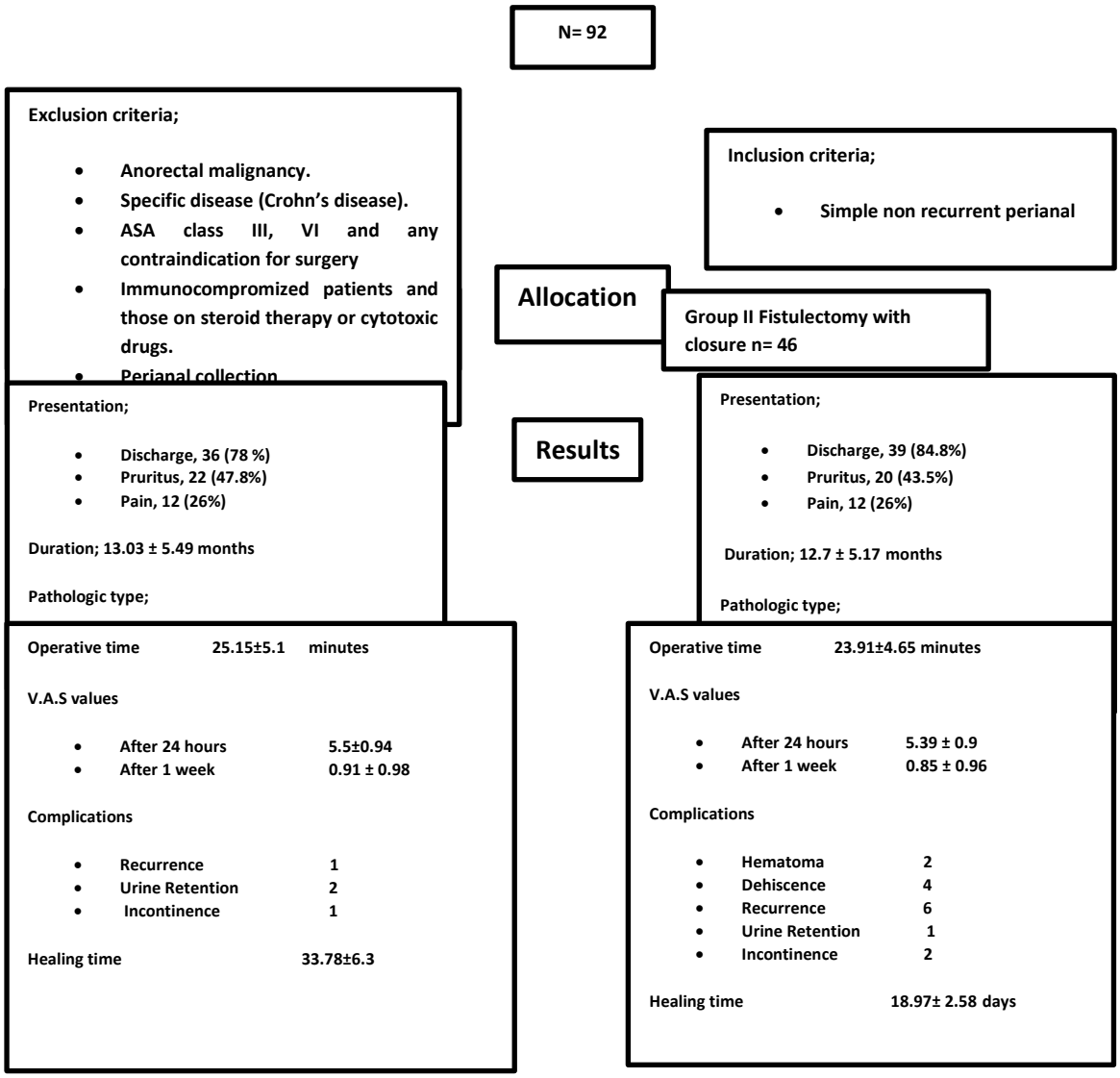
	Recurrence	1	6	0.048
	Urine Retention	2	1	0.56
	incontinence	1	2	0.56
Healing time		33.78±6.3	18.97± 2.58	>0.001

The following flow chart summarizes the study data



DISCUSSION

The principal outcome of anal fistula management is the state of anal continence, recurrence rate and healing time, in treatment of simple anal fistula, fistulotomy and fistulectomy proved to be effective, but some literatures introduced additional techniques as marsupialization of wound edges and closure or marsupialization of wounds after fistulectomy. In the light of the current study, demographic data showed higher male prevalence, mean age around 33 years and 31 years in groups I and II respectively without significant differences, perianal discharge was the main presenting symptom in both groups, intersphincteric fistula was more common than low intersphincteric fistula, this was found by Anan et al [3] and Ho et al [8]

We reported longer operative time in group I than group II but without significant difference, fistulectomy entailed dissection of the track from the surrounding tissue that takes some time but suturing of the fresh wound edges is more rapid than marsupialization of fistulotomy wound. Jain et al [9] and Pescatori et al [10] reported shorter time in marsupialization as they used continuous sutures.

VAS calculation for pain after 24 hours is slightly higher than that reported by other studies [9, 10] higher pain score may be caused by use of interrupted sutures as most of the previous studies used continuous locked sutures.

Healing time in marsupialization group is comparable to that of other studies but it is significantly longer than that of fistulectomy and closure group, Kronborg [11] reported average healing time 4.55 weeks and hoe et al [8] at 6 weeks average, data about healing time after closure of fistulectomy wound are not sufficient but Prakash et al[12] reported healing time 2 weeks after fistulectomy of different types of anal fistula, excision of the fistulous track leads to a larger wound cavity but primary wound closure helps healing by primary intention in a shorter time. Wound closure without drains carries a higher risk of collection and hematoma formation which occurred in 2 cases of group II, that needed surgical evacuation, here also wound dehiscence occurred in 4 cases, wound dehiscence and the resulted sepsis entailed healing by secondary intention with a higher rate of recurrence in this group (13.4 %) which is significantly higher than that in group I. transient incontinence that occurred in this study was less than incontinence of other studies as , as we are operating on simple anal fistula here a small bulk of the sphincter muscles was severed.

CONCLUSION

Marsupialization of the fistulotomy wound edges has a longer healing time but better complication rate than fistulectomy with wound closure especially local wound complications and recurrence rate in treatment simple anal fistula.

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