

Outcome of Open Fistullectomy versus Fistulectomy with Primary Closure in Low Level Fistula in Ano- Comparative Study

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Abstract

Background: Fistula-in-ano form a major part of treatable benign lesions of the rectum and anal canal. 90% or more of these cases are end results of cryptoglandular infections. **Objective:** To compare period of stay in hospital and duration for the wound to heal after open fistulectomy and fistulectomy with primary closure. **Materials and methods:** Patients admitted in all the surgical unit wards of Aarupadai Veedu Medical College & Hospital, Kirumampakkam, Puducherry were included in the Study without bias on a serial basis. This is a randomized prospective study comprising 104 patients (n=104) of Fistula in ano over a period of 24 months from October 2017 to October 2019. **Results:** The high incidence of cases was in the age group between 30- 50 years. The incidence was equal among both sexes. The common presenting features were swelling, pain and discharge from the external opening. In the cases treated by classical method—excision of fistula tract and laying open of the wound and allowing to heal by granulation tissue from depth, the wound healing time was 3-6 weeks. In cases treated by excision of fistula tract and primary closure, the healing occurred quickly, within a period of 7-14 days. **Conclusion:** Considering the benefits of primary closure over open fistulectomy, primary closure seems to be an ideal method for low level anal fistulas. **Keywords:** Open Fistullectomy, Fistulectomy with Primary Closure, Fistula in Ano, hospital stay, wound healing

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Introduction

Fistula-in-Ano is the most common malady and an intriguing problem of the Ano-rectal region in general population. Fistula-in-Ano is mostly a preventable disease provided the perianal-perirectal suppurations are treated timely and in a corrective manner. The anatomical location of the diseased part makes the patient refrain from early consultation. The common pathogenesis is the bursting open of an acute or inadequately treated ano-rectal abscess into the peri-anal skin. [1]

The cause for the delay in treating the patients with perianal suppurations are the shy patients themselves who come to the surgeon late. The most important determinant is that a noteworthy percent of these diseases persist or even recur when the rite reliable modality of surgery is not adopted or when the post-operative care is inadequate. [2] The chronicity with its annoying symptoms like soiling of the under garments, itching, repeated abscess formation, makes an otherwise healthy and active person lose their earning capacity, with lowered self-confidence.

Open Fistulectomy, though considered as the standard treatment for fistula in ano, primary closure after fistulectomy has the benefit of short hospital stay for patients, early wound healing, lowers costs and is a safe procedure. [3]

Materials & Methods

Patients admitted in all the surgical unit wards of Aarupadai Veedu Medical College & Hospital, Kirumampakkam, Puducherry were included in the study without bias on a serial basis. This is a randomized prospective study comprising 104 patients (n =104) of Fistula in ano over a period of 24 months from October 2017 to October 2019.

Inclusion Criteria

Patients with low level fistula in ano.

Exclusion Criteria

Patients with high level fistula in ano, recurrent fistula in ano and anal fistula associated with inflammatory bowel disease. If the patients were found to have any complicating medical conditions like Diabetes mellitus, Hypertension, Ischaemic heart disease and COPD, were treated for the condition first and re assessed for fitness for surgery. The 104 patients admitted for the study were divided into two equal and comparable groups. Patients subjected to open fistulectomy were classified under Group I and those who underwent fistulectomy with primary closure were classified as Group II.

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Table 1: The patient's characteristics of the two groups

	Group I	Group II
No. of patients	52	52
Range of age group	20-70	20-70
Male-Female ratio (M:F)	3:1	7:1

Patients were subjected to either open fistulectomy or fistulectomy with primary closure. All patients were given pre-operative antibiotic prophylaxis with Inj. Cefaperazone 1gm IV. Only regional (spinal) anesthesia was administered to both the cohorts. Open fistulectomy was done in 52 patients and fistulectomy with primary closure was done in rest of the 52 patients. Postoperatively, Inj Diclofenac 75 mg IM BD was given as analgesia for 48 hours to both the cohorts. Post operatively Inj. CEFAPERAZONE 1gm IV, BD was given for 48 hours to both the cohorts.

Post operatively, the following was evaluated

- Period of stay in hospital was compared by using the hospital records.
- Period of healing was compared by measuring the time taken for Re epithelialisation of the operated site in open fistulectomy cases and complete wound healing in fistulectomy with primary closure.
- Work load on the hospital was compared on the basis of number of days of bed occupancy, use of dressings and other medications.

Patients were reviewed once a week in the first one month, once in every month for three months, every three months thereafter in 1st year and once in 6 months in the next year and assessed for recurrence. Ethical clearance has been obtained from the institution for the present study.

Radiological Examination

All the patient were subjected to fluoroscopy of the chest. No radiological abnormality detected.

Fistulogram

Fistulogram was not much useful in our study, as these cases studied were low anal fistula and we could make out both internal and external openings clinically.

Majority of cases were between 30-50 years in both groups (65.4% in fistulectomy with primary closure group and 71.2% in open fistulectomy group). Table 1

Histopathology

All the fistulous tracts excised were subjected to histopathological examination and reported as non-specific.

Pre-operative preparation

Only the patient with low anal fistulae with straight track were taken for this study. All the patients were examined clinically and by investigation for fitness of surgery. On the previous night patient was advised only liquid diet and kept nil orally after 10 P.M. Enema was given on previous night and on the day of operation

Post operative

On the day of operation, I.V.fluids, analgesics (diclofenac sodium) and antibiotics (Ciprofloxacin, cefotaxium) and metronidazole were given. Oral liquid given on the evening of operation. Next day low residue diet given for first 2 days, afterwards regular solid diet started. The dressing or pack removed after 24 hours of operation in lay open technique. The wound were reviewed and dressings changed. 2nd post operative day.

Statistical analysis

All the statistical analysis was performed using SPSS version 19. The clinical profile of patients was analyzed by chi-square test for qualitative variables. Student t test was performed for comparison of quantitative variables. 5% probability level was considered as statistically significant i.e., $p < 0.05$.

Results

In this study, 104 cases of low anal fistulae were selected for comparative study. 52 cases were treated by laying open technique and 52 cases were treated by fistulectomy and primary closure.

Table 1: Age in years and Groups

		Groups		Total	
		Fistulectomy with Primary Closure	Open Fistulectomy		
Age in years	Less than 30 years	Count	17	10	27
		% within Group	32.7%	19.2%	25.95%
	30-50 years	Count	34	37	71
		% within Group	65.4%	71.2%	68.3%
	Greater than 50 years	Count	1	5	6
		% within Group	1.9%	9.6%	5.75%
Total		Count	52	52	104
		% within Group	100.0%	100.0%	100.0%

The independent 't' test results shows that there is a significant difference in mean of Age in years between the groups (t value = -3.437, $P < 0.001$). Table 2

Table 2: Relation between Age in years and Group

Group	N	Mean	SD	t Value	P Value
Fistulectomy with Primary Closure	52	32.596	7.005	-3.437	< 0.001*
Open Fistulectomy	52	38.135	9.269		

There is no significant difference between the groups with respect to Sex ($p > 0.553$). Table 3

Table 3: Correlation between Sex and Group

		Group		Total	
		Fistulectomy with Primary Closure	Open Fistulectomy		
Sex	Male	Count	31	28	59
		% within Group	59.6%	53.8%	56.7%
	Female	Count	21	24	45
		% within Group	40.4%	46.2%	43.3%
Total		Count	52	52	104
		% within Group	100.0%	100.0%	100.0%

The chi-square test shows that there is a significant difference between the groups with respect to discharge Type ($p < 0.05$), but 100% of the patients had history of discharge from the external opening which was also a main presenting complaint in both the groups. Table 4

Table 4: Correlation between Discharge Type and Group

		Group		Total	
		Fistulectomy with Primary Closure	Open Fistulectomy		
Discharge Type	BD	Count	12	8	20
		% within Group	23.1%	15.4%	19.2%
	PD	Count	30	21	51
		% within Group	57.7%	40.4%	49.0%
	SD	Count	10	23	33
		% within Group	19.2%	44.2%	31.7%
Total		Count	52	52	104
		% within Group	100.0%	100.0%	100.0%

In the present study 50% of the patients had associated anal diseases along with fistula in ano. This was insignificant role in the outcome in both the treatment groups.

In the current study population 54 (52%) patients had low anal anterior fistula and 50 (48%) patients had low anal posterior fistula.

The independent 't' test results shows that there is a significant difference in mean of Post Op Hospital Stay (Days) between the groups (t value = -12.758, $P < 0.001$). Table 5

Table 5: Relation between Post Op Hospital Stay (Days) and Group

Group	N	Mean	SD	t Value	P Value
Fistulectomy with Primary Closure	52	8.538	2.733	-12.758	< 0.001*
Open Fistulectomy	52	14.750	2.204		

The independent 't' test results shows that there is a significant difference in mean of Duration of Wound Healing (Days) between the groups (t value = -25.811, $P < 0.001$). Table 6

Table 6: Relation between Duration of Wound Healing (Days) and Group

Group	N	Mean	SD	t Value	P Value
Fistulectomy with Primary Closure	52	9.15	3.806	-25.811	< 0.001*
Open Fistulectomy	52	35.192	6.199		

Discussion

104 cases of low anal fistulae, both anterior and posterior, were selected for comparative study of low fistula-in-ano which were treated by fistulectomy with primary closure and laying open technique, in each category 52 cases were studied. In this study the patients with high level fistulae with branching tracts, and multiple fistulae secondary to tuberculosis and Crohn's disease are excluded. The high incidence of cases was in the age group between 30- 50 years. The incidence was equal among both sexes. The common presenting features were swelling, pain and discharge from the external opening. The physical findings were tenderness, induration of external opening around anus. Often this indurated fistula tract was palpable. In the cases treated by classical method—excision of fistula tract and laying open of the wound and allowing to heal by granulation tissue from depth, the wound healing time was 3-6 weeks. In cases treated by excision of fistula tract and primary closure, the healing occurred quickly, within a period of 7-14 days. The majority of the cases came from rural areas. Socio economic standard was low. Poor personal hygiene. Out of 104 cases selected 59 were male and 45 were female. Predominant symptoms were purulent discharge and pain during defecation. Previous anorectal abscess was found to be the commonest cause of fistula in this study. Among 104 cases taken for this study, 54 low anterior fistula and 50 low posterior fistula were present. In the cases treated by classical method—period of hospital stay was 14 days on average and excision of fistula tract and laying open of the wound and allowing to heal by granulation tissue from depth, the wound healing time was 3-6 weeks (mean – 35 days). In cases treated by excision of fistula tract and primary closure, the period of hospital stay was 7 days on average and the healing occurred quickly, within a period of 7 -14 days (mean – 8 days). In the cases treated by classical method – period of hospital stay was 14 days on average and excision of fistula tract and laying open of the wound and allowing to heal by granulation tissue from depth, the wound healing time was 3-6 weeks (mean – 35 days). The patients needed frequent dressing. The dilation of anal canal was required to prevent anal stenosis. Because of long time taken to heal, number of hospital visits for

dressings were more and more antibiotics were prescribed. Hence expenditure was more for patients and work burden increased for doctors and hospital staff. More working days were lost by the patients. In cases treated by excision of fistula tract and primary closure, the period of hospital stay was 7 days on average and the healing occurred quickly, within a period of 7 -14 days (mean – 7 days). The numbers of days of hospital stay were less and hospital visits for dressing were once or twice. A prospective Research carried out in Mayo Hospital, Lahore, Pakistan by C.M. Shahbaz, A. Ghazanfar and A.R. Goraya from January 1998 to December 2000 had concluded that fistulectomy with primary closure was better technique than open fistulectomy in treating low level fistula in ano. A.C. Dash and Prakash Agarwal also conducted a comparative study of surgical techniques for fistula in ano in 1997. 50 patients admitted within a span of 2.5 years were included in this study. They concluded that, as fistulectomy with primary closure had the merits of short hospital stay for patients and early wound healing, it should be the operation of choice of low anal fistula. In 1993 Tocaceli S, Minervini S et al opined that fistulectomy with primary closure is a safe and better procedure indicated in the treatment of anal fistula in consideration of earlier healing and minor costs. A study by Prakash S, Laksmiratan V and Gajendran conducted on treatment of fistula in ano in 1985. One hundred and twenty cases of fistula were treated by fistulectomy with primary closure over a span of 11 years. Of the cases, 83.3% healed well in 2 weeks as compared with 4-5 weeks or more with conventional methods[4].

Conclusion

From this study we can conclude fistulectomy with primary closure is ideal for low anal fistula. This saves number of days required for wound healing, hospital stay and results in less expenditure for patients, saves the number of working days lost. This lessens the work load on doctor and hospital staffs. The most important criteria is careful selection of the patient, pre – operative bowel preparation, preoperative antibiotics and low residue diet. On the operation table identification and complete excision of fistula tract and securing

perfect hemostasis is essential. Primary closure of the wound should be without tension of sutures.

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