



ORIGINAL RESEARCH PAPER

General Surgery

COMPARATIVE STUDY OF OUTCOME OF OPEN FISTULECTOMY VERSUS FISTULECTOMY WITH PRIMARY CLOSURE IN SINGLE LOW LEVEL ANAL FISTULA

KEY WORDS: Fistula in ano, Fistulectomy, VAS(visual analogue scale).

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ABSTRACT

Background: Fistula-in-ano is the most common problem of the ano rectal region in general population. Fistula usually follow suppuration of anal glands opening in the anal crypts.
Objectives:To compare the study of outcome of open fistulectomy versus fistulectomy with primary closure in low level anal fistula.
Material and Methods: A prospective interventional study was done with 30 randomly selected patients subjected to the open fistulectomy and 30 to the fistulectomy with the primary closure. All patients were followed up for one year.
Results: Majority of parients in both groups presented with discharge and swelling in perianal region. There is significant difference between duration of stay of patients of open (11 days) and closed(8 days)(p value 0.0001). There is significant difference between duration of wound healing of open(27 days) and closed(10 days)(p value 0.0001). Patients who had undergone fistulectomy with primary closure had a mean VAS pain score of 3.36 while patients who had undergone open fistulectomy had a mean VAS pain score of 7.4 on the first post-operative day.
Conclusion: The study proved that the primary closure after fistulectomy showed better results in terms of patient's compliance, lesser pain management and short hospital stay as compare to the open fistulectomy.

INTRODUCTION

Fistula-in-ano is the most common problem of the ano rectal region in general population. Fistula usually follow suppuration of anal glands opening in the anal crypts¹. The common pathogenesis is the bursting of an acute or inadequately treated ano-rectal abscess in to the peri-anal skin². Open fistulectomy, though considered as the standard treatment for fistula in ano, fistulectomy with primary closure has the merits of short hospital stay, early wound healing, lower costs and is a safe procedure³.

MATERIAL AND METHODS

The source of data were the patients admitted in general surgery ward fulfilling the inclusion criterias. This is a randomised prospective study comprising 60 patients of fistula in ano over a period from October 2011 to April 2013.

Inclusion criteria: Patients with single low level fistula in ano.

Exclusion criteria:

- Patients with high level fistula in ano.
- Recurrent fistula in ano and fistula in ano associated with inflammatory bowel disease.
- Patients unfit for the surgery.

Patients were subjected to either open fistulectomy or fistulectomy with primary closure. All patients were given pre operatively prophylaxis with inj ofloxacin and ornidazole 100 ml.IV.

Spinal anaesthesia were administered to both the cohorts.

Open fistulectomy was done in 30 patients and fistulectomy with primary closure was done in the rest of the 30 patients. Post operatively, adequate analgesia and antibiotics given for 48 hours to both the cohorts.

RESULTS:

A total of 60 patients were included in the study and were divided in to two equal and comparable groups. Patients subjected to fistulectomy with primary closure were classified as Group A and those who underwent open fistulectomy were classified as Group B. The characteristics of the two groups were well matched as given in the table given below.

Age Incidence:

Table 1: Distribution of cases by age (present study).

Age (years)	Group A(Close)		Group B(open)	
	No	Percentages(%)	No	Percentages(%)
21-30	11	36.67	2	6.67
31-40	12	40	16	53.33
41-50	4	13.33	8	26.66
51-60	2	6.67	2	6.67
61-70	1	3.33	2	6.67

In our study, the incidence of fistula in ano was noticed more in 31 to 40 years age group(40%) in Group A and Group B(53.33%) in 31 to 40 yrs age group.

Sex incidence

Table 2: Distribution of male and female under "close" and "open"

Sex	Group A(close)		Group B(open)	
	No	percentage	No	percentage
Male	20	66.66	26	86.66
Female	10	33.33	04	13.33
Total	30	100	30	100

In our study, the distribution of cases in group A, male were 66.66% and female were 33.33% in comparison to group B, male were 86.66% and female were 13.33%.

Type of discharge from external opening

Table 3: Discharge(presentation to the hospital)

	Group A(close)		Group B(open)	
	No	%	No	%
Purulent	22	73.33	16	53.33
Serous	08	26.66	14	46.66

In our study, 73.33% of patients had purulent discharge, 26.66% had serous discharge in group A while compared to group B, 53.33% had purulent and 46.66% had serous discharge.

Type Of Fistula

External opening: External opening were noted in all patients in our study.

Internal opening: Per rectal and proctoscopic examination showed the presence of internal opening in all the cases studied.

Table 4: Type of fistula

	Group A(Close)		Group B(Open)	
	No	%	No	%
Anterior	23	76.66	19	63.33
Posterior	07	23.33	11	36.66

In our study, anterior type of fistula was more common in both, group A(76.66%) and group B(63.33%) compared to posterior type of fistula noted in group A(23.33%) and group B(36.66%).

Complications in the immediate post operative period

Pain:

Pain score on a scale of 1-10; 1 being no pain and 10 being maximum bearable pain, was considered by evaluating the patient using a visual analog scale.

Table 5- Pain score on first post-operative day

Measures	Group A (close)	Group B (open)	Z-Value	P-Value
Mean	3.36	7.4		
SD	0.80	1.04	16.86	0.0001
MAX	5	9		
MIN	2	6		

In the present series, patients who had undergone fistulectomy with primary closure had a mean VAS pain score of 3.36 while patients who had undergone open fistulectomy had a mean VAS pain score of 7.4 on the first post operative day. The pain score observed between Group A and Group B in fistula in ano showed a significant p value. (P value 0.0001). This suggests that the pain is less in fistulectomy with primary closure compared to open fistulectomy.

Wound Healing Time

Table 6(a): Wound healing in present study Group A(close method)

Type Of Fistula	<1 weeks	1-2 weeks	2-3 weeks
Low Level Fistula	0%	90%	10%

Table 6(b): Wound healing in present study Group B(open method)

Type of Fistula	1-2 weeks	2-4 weeks	4-6 weeks
Low level Fistula	0%	60%	40%

Table 6 (C): Test of significance between wound healing duration of closed and open.

	Group A (Close)	Group B (Open)	Z- Value	P- Value
	Mean+/-SD	Mean+/-SD	17.16	0.0001
Duration of Stay in days	9.79+/-1.49	26.73+/-5.11		

Table 6(d): Test for association between wound healing duration and mode of operation.

Duration	Group A (Close)	Group B (Open)	Odds Ratio	P value
5 to 10	15	1	29.0	0.0001
Above 10	15	29		

We noted in our study, that the healing time was considerably less in the group A patients which healed by 8-10 days while in group B patients, it took about 3-6 weeks for complete healing.

The evaluation of duration of wound healing in patients of close and open methods showed a significant P value. (p value 0.0001).

Hospital stay

Table 7(a):

Test of significance between duration of stay in hospital in closed and open methods.

	Group A (Close)	Group B (Open)	Z-Value	P-Value
	Mean+/-SD	Mean+/-SD	4.538	0.0001
Duration of stay in days	7.93+/-2.46	11.46+/-3.42		

Table 7 (C): Test of association between hospital stay and mode of operation

Duration	Group A	Group B	Odds ratio	P value
5 to 10	24	11	6.90	0.01
Above 10	6	19		

The duration of hospital stay following the open fistulectomy was more even for a low level fistula(11.46 days) in comparison to close method(7.93days).

A statistically significant P value was obtained considering the duration of hospital stay of patients among close and open methods(p value 0.0001).

DISCUSSION

In our study, the incidence of fistula in ano was noticed in the commonest age group of 21-40 years among 76% in group A and 60% in group B. The highest age was 70 years and the lowest age was 21 years in our study.

Our results were comparable to the reports of Sushil Damor et al, who also noted the incidence of fistula was more in 21 to 40 yrs of age, with 64% patients in group A and 60% in group B in this age group'. Similar observations were also noted by Chaudhary Muhammad shahbaz et al study, with a peak incidence at 21-40 years⁵.

In our study, majority of patient were male, 65.5% in Group A and 86.6% in Group B. Sushil Damodar et al noted, 32% male in open method and 48% males in primary closure. The observations were in accordance to those made in our study. In our study, the duration of hospital stay in group A was 7.93 days and group B was 11.46 days as compared to Stewart MP et al⁶, who reported 4 days in group A and 14.1 days in group B. Prakash S et al⁷, reported mean hospital stay was 5.2 days. Sushil Damor et al reported mean hospital stay as 5.1 days in group A and group B as 12.88 days.

In our study, the duration of wound healing treated under group A was 9.79 days and group B was 26.73 days as compared to Sushil Damor et al was 8.24 days in group A and 21.24 in group B. In Stewart MP et al studies, group A was 7 days and group B was 25.1 days. In Prakash S et al studies, wound healed in 2 weeks in group A as compared to 4-5 weeks in group B.

In our study pain score in group A was 3.36 and group B was 7.4 on the first post operative day as compared to Sushil Damor et al, who reported a pain score in group A as 4.124 and group B as 5.8.

In our study anterior type of fistula (70%) was more common and posterior type of fistula was (30%) which was in accordance to the observations made by previously reported studies.

Postoperative pain score evaluation showed, pain was more in group B(80%) in comparison to group A (10.4%). In the present series as only low level fistulae were selected, the anorectal ring was not damaged during surgery. Hence incontinence was not a sequel.

In our study 73% of patients had purulent discharge, 27% has serous discharge in group A, compared to group B, 53% had purulent and 47% had serous discharge.

Table 8: Success rate of fistulectomy(open and close methods)

Starr Series	Goligher Series	Sushiln Damor series	Poon Chi-Ming series	Present series
100%	60%	100%	84%	100%

In our study, cases treated for low level anal fistula showed 100% result in securing successful and uneventful outcome following fistulectomy with primary closure.

Starr of Sydney, treated low level fistula in ano by primary suturing under antibiotic cover before and after operation and claimed almost 100% result in securing successful and uneventful outcome.

In Poon Chi-Ming et al, study(135 patients),there was recurrence in 13.3% of patients operated by fistulectomy. Goligher performed fistulectomy with primary closure on 20 cases of low level anal fistulae, 12 had uneventful and sound healing but in the remaining 8 cases, sepsis occurred, necessitating re-opening and refashioning of the wound, which was followed by satisfactory healing by granulation.

In Goligher study, convalescence period was one week for primary closure when compared to 4-5 weeks by classical methods.

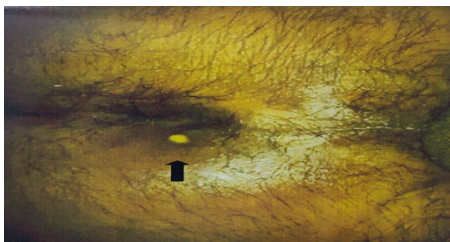
In observations in our study showed a high success rate for fistulectomy with primary closure as reported by previous other studies.

CONCLUSION:

- In the present series, the patients who had undergone fistulectomy with primary closure had a mean VAS pain score of 3.36 while patients who had undergone open fistulectomy had a mean VAS pain score of 7.4 on the first post operative day.
- In cases treated by Group A, the period of hospital stay was 7-13 days on average and the healing occurred quickly, within a period of 8-13 days.
- In cases treated by Group B, the period of hospital stay was 12 days on average and excision of fistula track and laying open of the wound and allowing it to heal by secondary intention, the wound healing time was average 26-34 days.
- Thus in group B, the expenditure was more for patients.
- From the study we can conclude that the fistulectomy with primary closure is ideal for low level anal fistula. This saves number of days required for wound healing, hospital stay and results in less expenditure for the patients, saves the number of working days lost.

DIAGRAMS

1) External opening of low level anal fistula



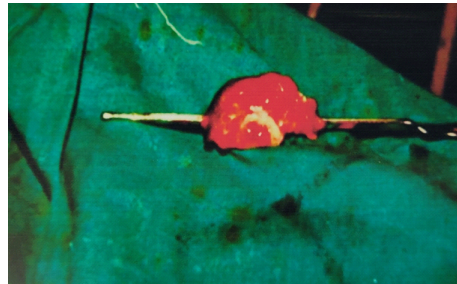
2) Injecting dye in to the fistulous tract



3) Probing of the tract



4) Post operative specimen of fistulous tract



5) Fistulectomy with primary closure



6) Laying open of the fistulous tract.



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