



A COMPARITIVE STUDY OF PACKING VS NON PACKING IN PERIANAL ABSCESS MANAGEMENT

General surgery

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ABSTRACT

Objective: To compare outcomes of perianal abscess cavity packing versus no packing following incision and drainage (I&D). The primary objective was to assess postoperative pain, while secondary outcomes included number of follow-up visits, fistula formation, wound healing time, and abscess recurrence. **Methods:** A randomized clinical trial was conducted at Dr. Ruth K. M. Pfau Civil Hospital, Karachi, from March 2020 to July 2021. Seventy patients were enrolled, with 35 randomized to the packing group (control) and 35 to the no-packing group (intervention). **Results:** Preoperative and postoperative pain scores at 48 hours showed no statistically significant difference between the groups. However, at two weeks, the no-packing group reported significantly less postoperative pain. The mean wound healing time was 44.09 days in the packing group versus 26.91 days in the no-packing group ($p = 0.001$). Fistula-in-ano occurred in 2.8% of the packing group and 5.7% of the no-packing group ($p = 0.55$). Abscess recurrence was higher in the packing group (14.2%) compared with none in the no-packing group ($p = 0.02$). **Conclusion:** The no-packing technique is superior in reducing postoperative pain, promoting faster wound healing, and improving patient satisfaction, without increasing fistula formation or recurrence.

KEYWORDS

Perianal Abscess, Randomized Trial, No Packing, Packing, Anorectal Disease

INTRODUCTION

Perianal abscess is a common anorectal condition frequently encountered in surgical emergencies. It typically presents as a painful, erythematous swelling in the perianal region, often accompanied by purulent discharge. The underlying pathophysiology, as described by Parks, involves infection of the anal crypt glands located at the dentate line in an annular distribution.¹ Perianal abscesses occur more commonly in males, particularly younger men, than in females.¹ Certain comorbid conditions, such as diabetes mellitus, obesity, and Crohn's disease, are known to increase the risk of anorectal abscess formation.²

The conventional management of perianal abscess involves incision and drainage (I&D), followed by packing of the abscess cavity. However, this traditional approach is often associated with significant postoperative pain and discomfort, delayed wound healing, and increased healthcare costs.³ Given these limitations, the necessity of routine postoperative packing has been questioned in recent years. Several studies have investigated the outcomes of packing versus no packing following I&D. Notably, Pearce et al., in a multicenter randomized trial, reported that packing was not only more painful and costly but also did not provide a clear benefit in reducing recurrence rates.³

Considering the impact on patient comfort, cost-effectiveness, and clinical outcomes, this study was designed to compare cavity packing with no packing after I&D of perianal abscess. The primary outcome was to assess postoperative pain at baseline and 48 hours postoperatively. Secondary outcomes included the number of follow-up visits, incidence of fistula formation, time to complete wound healing, and abscess recurrence.

METHODS

A prospective, randomized clinical trial was conducted between January 2023 and december 2024 at the General surgery Department in sri Siddhartha medical college tumkur. The study was approved by the institutional Ethical Review Committee (ERC).

After obtaining informed written consent, eligible patients were randomized into two groups using the lottery method. Group A underwent incision and drainage (I&D) with conventional cavity packing, while Group B underwent I&D without packing. Randomization was performed in a single-blinded manner, whereby patients were unaware of their allocation.

The trial was conducted and reported in accordance with the Consolidated Standards of Reporting Trials (CONSORT) guidelines.

Inclusion and Exclusion Criteria

Adults aged >18 years presenting with an acute perianal abscess requiring surgical drainage were eligible for inclusion. Exclusion criteria included horseshoe abscess, history of pelvic radiation, pregnancy or lactation, immunosuppressive state, pelvic malignancy, and active inflammatory bowel disease.

Randomization and Intervention

Patients were randomized by the lottery method into two groups. Group A (control) underwent incision and drainage (I&D) with conventional cavity packing, while Group B (intervention) underwent I&D without packing. Randomization was single-blinded, with patients unaware of their group allocation.

In both groups, dressings were first changed on postoperative day (POD) 1. In the intervention group, the abscess cavity was left unpacked, allowing secondary intention healing; patients were advised to perform sitz baths and apply a clean dressing over the wound. In the control group, the cavity was packed with sterile gauze, with daily dressing changes until complete healing. All patients received a 5-day course of antibiotics.

Follow-up

Patients were reviewed at weeks 1, 2, 4, and 26. At each visit, wound healing and abscess recurrence were assessed. In cases of recurrence, patients were examined under anesthesia and underwent repeat drainage as necessary.

Data

Baseline data included demographic characteristics (age, gender), comorbidities (diabetes mellitus, immunosuppressive conditions, abdominal tuberculosis, inflammatory bowel disease), duration of symptoms, abscess type, intraoperative abscess size, and presence of fistula. Pain was assessed at presentation, immediately postoperatively, and 48 hours after surgery using a Visual Analogue Scale (VAS).

Statistics

Data were analyzed using SPSS version 25.0. Categorical variables were expressed as proportions and compared using the Chi-square test. Continuous parametric variables were reported as mean $\pm$ standard deviation (SD) and compared using the Student's t-test. A p-value <0.05 was considered statistically significant.

RESULTS

A total of 70 patients met the inclusion criteria and were randomized equally into the packing group (control, $n = 35$; 50%) and the no-

packing group (intervention, n = 35; 50%). Three patients were lost to in-person follow-up (2 in the packing group, 1 in the no-packing group), but telephonic follow-up was obtained for these patients and their data included in the final analysis.

The mean age was 42.11 ± 14.67 years in the packing group and 37.20 ± 13.89 years in the no-packing group. The male-to-female ratio was 1.7:1 in the packing group and 3.3:1 in the no-packing group. Smoking history was present in 14.2% of patients in the packing group and 16.6% in the no-packing group, with no significant difference.

The mean abscess size was 3.97 ± 1.29 cm in the packing group and 2.43 ± 1.37 cm in the no-packing group, which was not statistically significant.

The incidence of fistula-in-ano was significantly higher in the packing group, with 40% of patients developing fistula, compared with 14.2% in the no-packing group. Gut-related organisms were isolated in 57.1% of patients in the packing group and 25.7% in the no-packing group ($p = 0.08$).

Table 1 summarizes the baseline characteristics and key outcomes between the two groups.

Table 1: Demographic factors and abscess characteristics (%)

	Abscess cavity packed	Abscess cavity not packed	P value
Age (mean)	42.11 ± 14.67	37.20 ± 13.89	0.15
Gender	M=22 F=13	M=27 F=8	
Smoker	5 (14.2)	6 (16.6)	0.34
Type of Abscess	Superficial = 22(62.8) Deep = 13(37.1)	Superficial = 30(85.7) Deep = 5(16.6)	
Size	3.97 ± 1.29	3.43 ± 1.37	0.09
Primary vs recurrent	Primary = 33(94.2) Recurrent = 2(5.7)	Primary = 32(91.4) Recurrent = 3(8.5)	
Fistula in ano present	14(40)	5(14.2)	0.01
Gut related organism	20(57.1)	9(25.7)	0.008
Co-morbid	DM= 11 IBD = 2 Malignancy= 1 None = 21	DM = 10 IBD = 0 Malignancy = 0 None = 25	

Pain scores were similar preoperatively between the two groups. At 48 hours, mean postoperative pain was higher in the packing group (2.74 ± 1.19) compared with the no-packing group (1.66 ± 1.02), but the difference was not statistically significant ($p = 0.09$). At two weeks, patients in the no-packing group reported significantly lower pain scores.

The mean wound healing time was significantly shorter in the no-packing group (26.91 days) compared with the packing group (44.09 days, $p = 0.001$). Abscess recurrence was significantly higher in the packing group (14.2%) than in the no-packing group (0%, $p = 0.02$). Fistula-in-ano developed in 2.8% of the packing group and 5.7% of the no-packing group ($p = 0.55$). Skin disfigurement was more common in the packing group ($p = 0.04$). No unfavorable or unexpected adverse events were observed in either group. Clinical outcomes are summarized in Table 2.

Table 2: Postoperative outcome (%)

	Abscess cavity packed	Abscess cavity not packed	P value
Preop pain score	9.83 ± 0.74	9.83 ± 0.56	1.0
48 hours pain score	2.74 ± 1.19	1.66 ± 1.02	0.090
2 weeks pain score	1.54 ± 1.19	0.23 ± 0.64	0.000
Time of wound healing	44.09 days	26.91 days	0.001
Recurrence of Abscess	5(14.2)	0	0.02
Fistula formation	1(2.8)	2(5.7)	0.55
Skin disfigurement	6(17.1)	1(1.8)	0.04

DISCUSSION

This study was conducted in the adult emergency department to compare the I&D with no packing vs the conventional I&D with packing in managing perianal abscess. A first pilot study was conducted by Tonkin et al. (5) in 2004, contrasting two groups of patients who had perianal abscess packed or not after drainage. According to their findings, a perianal abscess may be safely managed without packing, and there was no significant difference in healing duration or pain levels. Another pilot study by Perera et al. (6) demonstrates the advantages of not packing the abscess cavity after I&D in patients with perianal abscess resulting in faster healing and less discomfort after surgery. Additionally, a study discovered that packing offered little protection against the chance of abscess recurrence.

A systemic review of the Cochrane database in 2016; showed no evidence to support the packing of abscess cavity on wound healing, postoperative pain, development of fistula and recurrence of the abscess. Despite the lack of supporting data, packing abscess cavities remains a widespread technique. Due to the absence of high-quality data, packing decisions may be based on department practice or patient choice. Additional clinical investigation is required to evaluate the outcomes and patient experiences of packing.

This study concluded that no packing technique resulted in less postoperative pain and decreased fistula formation and recurrence of the abscess. Postoperative pain reduction with less discomfort without packing while packing has significant post-op pain and discomfort during the immediate postoperative period and after 2 weeks. These findings are consistent with those reported in other observational studies by Pearce L and Sahnan K. 3,8 over the first 2 weeks; the maximum daily discomfort was consistently lower in the no packing group. This is consistent with the studies conducted previously. 3,9. Based on these findings, it is recommended that the no-packing technique leads to decreased postoperative pain, lesser discomfort for the patients and several hospital visits for dressing while simultaneously being costeffective.

Now moving toward secondary outcomes, a significant secondary endpoint of this trial was the formation of a perianal fistula. One of the sequelae of perianal abscess is perianal fistula which may be present at the time of diagnosis or may develop anytime during the course of disease 8. As Hasan et al. reported, one-third of patients develop fistula in ano postoperatively, 10 while this study reported 8% of patients developed perianal fistula postoperative. While comparing both the packing group and the no-packing group showed no significant difference in fistula formation over the first six months of follow-up. Previous research by Newton et al. and Perera et al. reported similar findings.6, 8. Healing time (defined as complete epithelialization of abscess cavity) is decreased in no packing group as compared to the packing group; these findings are in concordance with previously conducted research by Perera et al., while newton et. Al reported healing time is similar in both packing and no packing groups. 6, 9. Perera et al. reported no difference in the recurrence of abscess among both groups in contrast to our study, which showed an increased number of abscess recurrences in the packing group.6 This may be a strong reason not to pack the abscess cavities.

EQ-5D reflects the quality of life comparable in mobility, selfcare, usual activities, pain/ discomfort and anxiety/depression between the two groups. EQ-5D is a validated assessment tool for assessing the quality of life in surgical trials 11. Because preoperative or baseline scores were not gathered as part of this investigation, the study could not conclude the patient's quality of life. However, patients who underwent abscess drainage without packing experienced much higher levels of patient satisfaction than those who underwent abscess incision, drainage, and packing.

The small sample size and single-centre study design are the main drawbacks of this research. In addition, preoperative baseline QOL scores were not assessed as described above.

Similarly, this study did not record the use of analgesics since it is believed that patient reports of analgesic usage are unreliable

CONCLUSION

Both packing and no-packing methods are safe and effective in the management of perianal abscesses. However, the no-packing technique demonstrates superiority by reducing postoperative pain, expediting wound healing, and lowering recurrence rates, without increasing fistula formation. It can be considered a preferable alternative to conventional packing.

Future large-scale, multicenter randomized trials are strongly recommended to validate these results and to establish standardized guidelines for the postoperative management of perianal abscess

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