

ORIGINAL ARTICLE

Perianal Abscess Cavity Packing Versus No Packing A Randomized Control TrialLAJPAT RAI¹, MUHAMMAD ALI GHUFRAN², KHURSHEED AHMED SAMO³, MUNAWAR HUSSAIN MANGI⁴, JAHANZAIB BABAR⁵, SUMMAYA SAEED⁶¹Post Graduate Resident Surgery Dow University of Health Sciences Karachi²Fellow General Surgery Dow University of Health Sciences Karachi³Associate professor Surgery Dow University of Health Sciences Karachi⁴Associate professor Surgery Shaheed Mohtarma Benazir Bhutto Medical College Karachi⁵Consultant General Surgeon Surgery Dow University of Health Sciences Karachi⁶Associate professor Surgery Dow University of Health Sciences KarachiCorrespondence to: Lajpat Rai, Email: rathoddajpat@gmail.com**ABSTRACT****Objective:** To compare the outcome of perianal abscess cavity packing versus no packing following I&D. The primary objective is to compare postoperative pain. The secondary outcomes were the 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. Pfauf Civil Hospital Karachi from March 2020 to July 2021.**Results:** 70 participants' data were analyzed, 35 in the packing group (control) and 35 in the no packing group (intervention). The preoperative and postoperative pain scores at 48 hours are statistically not significant. The mean postoperative pain score showed a significant difference at two weeks, showing that the group receiving no packing experienced less intense pain. The mean wound healing time was 44.09 days in the packing group and 26.91 days in no packing group ($p=0.001$). The occurrence of fistula in ano was 2.8% in the packing group and 5.7% in no packing group ($p=0.55$). Abscess recurrence was 14.2% in the packing group, while 0% in no packing group ($p=0.02$).**Conclusion:** This study revealed that the no-packing technique is superior in decreasing postoperative pain and patient satisfaction.**Keywords:** Perianal Abscess, Randomized trials, No packing, Packing, Anorectal disease**INTRODUCTION**

Perianal abscess is a common anorectal condition in a surgical emergency. Perianal abscess is a clinical condition presenting with swelling in the perianal region, which is erythematous, tender or purulent discharge. The pathophysiology is an infection of crypt glands located at the dentate line in an annular fashion, as proposed by Parks.¹ Perianal abscess is more common in males as compared to females and more in younger males than older.¹ There is an increased risk of anorectal abscess in conditions such as diabetes, obesity and Crohn's disease.²

Incision drainage is the conventional management of perianal abscess followed by packing the cavity. It is frequently accompanied by postoperative pain and discomfort, slow wound healing, and increased financial burden.³ Keeping in view cost-effectiveness and patient satisfaction, the conventional packing of the perianal abscess cavity became questionable. Several studies have compared postoperative perianal abscess cavity packing with no packing. Pearce L., in a multicenter trial, demonstrated that packing is costly and painful with a reduced rate of recurrence in packing group.³

The aim of this trial was to compare the outcome of perianal abscess cavity packing versus no packing following I&D. The primary outcome was to compare the postoperative pain immediately and after 48 hours. The secondary outcomes were the frequency of follow-up visits, fistula formation, time to wound healing and abscess recurrence.

MATERIAL AND METHODS

A prospective, randomized clinical trial was conducted from March 2020 to July 2021 (Clinical Trials Registration ID: NCT04832529) to compare the outcomes of I&D with packing vs incision and drainage with no packing for the management of perianal abscess in the emergency department after approval from ERC. After obtaining the informed consent, patients were assigned to either of the two groups via the lottery method; the process was kept single-blinded. The checklist from the Consolidated Standards of Reporting Trials (CONSORT) was followed while reporting this study.⁴

Inclusion Criteria Adults (> 18 years) who were admitted through the emergency department with the diagnosis of an acute perianal abscess that required surgical drainage were enrolled in the study.

Exclusion criteria included horseshoe abscess, previous pelvic radiation, pregnancy or lactation, immunosuppressive state, pelvic malignancy and active inflammatory bowel disease.

Intervention Following I&D, Dressing was changed on 1st POD in all patients. In the intervention group, the cavity was not packed, and the wound was left for secondary intention healing. The patient was advised to have a sitz bath and apply a dressing over the cavity. While in the control group, packing the cavity was done with sterile gauze with a change of dressing every 24 hours until it was completely healed.

Patients were advised to take antibiotics for 5 days. Patients were followed up on weeks 1, 2, 4 and 26, in which the wound was assessed for healing and recurrence. Wherever there was a recurrence of the abscess, the patient was examined under anaesthesia, and the abscess was drained.

Data Collection: The dataset included the baseline demographic factors, age and gender, comorbidities including diabetes mellitus, immunosuppressive conditions, abdominal TB and inflammatory bowel disease, duration of symptoms before presentation, perianal abscess type, size of abscess measured per operatively and presence of a fistula. The pain in the abscess was recorded at the time of presentation, during the immediate postoperative period, and after 48 hours of surgery using the VAS scale.

Statistical Analysis: SPSS v.25 was used to analyze the data. Statistics were considered significant for a p-value less than 0.05. Categorical data were analyzed as proportions, while continuous parametric data were analyzed as mean with standard deviation. Chi-square was used to measure categorical variables, whereas continuous parametric variables' variance was assessed using the Student's t-test.

RESULTS

A total number of 70 patients met the inclusion criteria and were randomized into packing (control) group 35 (50%) or no packing (intervention) group 35 (50%). Three patients were lost to follow-up, 2 from the packing group and 1 from no packing group, so the telephonic follow-up was taken. The mean age was 42.11 ± 14.67 years in the packing group and 37.20 ± 13.89 years in no packing

group. The male-to-female ratio was 1.7:1 in the packing group and 3.3:1 in no packing group. 14.2% of patients were smokers in the packing group and 16.6% in no packing group, with no statistical significance. The mean abscess size was 3.97 ± 1.29 cm in the packing group and 2.43 ± 1.37 cm in no packing group, with no statistically significant difference. The incidence of fistula in ano was statistically significant, as 40% of patients developed fistula in ano in the packing group; in comparison, 14.2% developed fistula in no packing group. 57.1% of patients in the packing group and 25.7% in the no-packing group had gut-related organisms isolated with a p-value of 0.08. For further results, see Table 1.

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 pre-operatively and pain at 48 hours and 2 weeks postoperatively are shown in table 2. The preoperative pain means score in both groups is the same, with no statistically significant difference. The postoperative pain score at 48 hours was 2.74 ± 1.19 in the packing group and 1.66 ± 1.02 in the no packing group, with no statistical significance (p-value 0.090). At 2 weeks, a significant difference in the mean postoperative pain score was found, demonstrating lesser pain intensity in the no packing group. The mean wound healing time was 44.09 days in the packing group compared with 26.91 days in the no packing group with a significant p-value (p=0.001). The recurrence of abscess in the packing group is 14.2%, while 0% from no packing group with a significant p-value (p-value 0.02). 2.8% in the packing group developed fistula in-ano, and 5.7% in the no packing group p value=0.55. In the packing group compared to the no packing group, skin disfigurement was more pronounced (p-value =0.04). Neither group experienced any unfavourable or unexpected incidents. See Table 2 for further results.

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(11).

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 Sahnun 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 cost-effective.

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, self-care, 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

Therefore, it is strongly recommended to conduct large multi-centre trials to validate the results of the no-packing technique, which can be used as an effective alternative to the packing method. However, it can be safely concluded from our study that both methods are safe and effective. The superiority of one over

another is based on subjective variables such as postoperative pain and patients' satisfaction levels.

REFERENCES

1. Shi RJ. A review of new advances in the diagnosis and treatment of anorectal abscess. *Chin J Integr Trad Chin Western Med* 2018; 4:399-41.
2. Adamo K, Sandblom G, Brännström F, Strigård K (2016) Prevalence and recurrence rate of perianal abscess- a population based study, Sweden 1997–2009. *Int J Colorectal Dis* 31(3):669– 673.
3. Pearce L, Newton K, Smith SR, Barrow P, Smith J, Hancock L, Kirwan CC, Hill J, North West Research C (2016) Multicentre observational study of outcomes after drainage of acute perianal abscess. *Br J Surg* 103(8):1063–1068.
4. Schulz KF, Altman DG, Moher D; CONSORT Group. CONSORT 2010 statement: updated guidelines for reporting parallel group randomized trials. *BMJ*. 2010 Mar 23;340:c332. doi: 10.1136/bmj.c332.
5. Tonkin DM, Murphy E, Brooke-Smith M, Hollington P, Rieger N, Hockley S, Richardson N, Wattchow DA (2004) Perianal abscess: a pilot study comparing packing with nonpacking of the abscess cavity. *Dis Colon Rectum* 47(9):1510–1514
6. Perera AP, Howell AM, Sodergren MH, Farne H, Darzi A, Purkayastha S, Paraskeva P. A pilot randomized controlled trial evaluating postoperative packing of the perianal abscess. *Langenbecks Arch Surg*. 2015 Feb;400(2):267-71.
7. Smith SR, Newton K, Smith JA, Dumville JC, Iheozor-Ejiofor Z, Pearce LE, Barrow PJ, Hancock L, Hill J. Internal dressings for healing perianal abscess cavities. *Cochrane Database Syst Rev*. 2016 Aug 26;2016(8):CD011193.
8. Sahnun K, Askari A, Adegbola SO, Warusavitarnae J, Lung PFC, Hart A et al. Persistent fistula after anorectal abscess drainage: local experience of 11 years. *Dis Colon Rectum* 2019;62:327–332
9. Newton K, Dumville J, Briggs M, Law J, Martin J, Pearce L, Kirwan C, Pinkney T, Needham A, Jackson R, Winn S, McCulloch H, Hill J; PPAC2 Collaborators. Postoperative Packing of Perianal Abscess Cavities (PPAC2): randomized clinical trial. *Br J Surg*. 2022 Sep 9;109(10):951-957.
10. Hasan ZAIY, Mohamed B, AlSayegh R, AlMarzooq R. Incidence of Anal Fistula After Pyogenic Perianal Abscess Drainage in Kingdom of Bahrain. *Ann Coloproctol*. 2021 Aug 9.
11. The EuroQol Group (1990) EuroQol-a new facility for the measurement of health-related quality of life. *Health Policy* 16(3):199–208