

Original Article

Postoperative Management with Wound Irrigation in Large Perianal Abscesses: A Case Series Study

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Key Words

Perianal abscess;
Wound irrigation;
Packing

Purpose. The present study aimed to assess the postoperative pain score, abscess recurrence rate, and fistula formation rate in patients with large perianal abscesses after undergoing incision and drainage with wound irrigation.

Methods. We retrospectively analyzed patients who underwent incision and drainage with wound irrigation at Kaohsiung Veterans General Hospital between March 2016 and March 2019. We evaluated the abscess recurrence rate, fistula formation rate, postoperative admission duration, and postoperative pain score.

Results. Nineteen patients underwent postoperative wound irrigation. The median postoperative admission duration was 7 days (interquartile range 17) (range, 2 to 59 days). The median postoperative day 1 pain score was 3/10 (range, 2/10 to 5/10). The rate of abscess recurrence was 21.1% (4/19) and the fistula formation rate was 15.8% (3/19).

Conclusions. Management of perianal abscess using incision and drainage with wound irrigation may decrease postoperative discomfort; it is also relatively easy to care for the patient at their home. Moreover, it provides the benefits of low abscess recurrence and fistula formation rates.

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Anorectal abscess is a localized collection of infected fluid at different locations in the anorectal area. Patients usually present with erythematous swelling and pain near the anus. About 90% of idiopathic perianal abscesses are caused by infection of the cryptoglandular glands. Abscesses can be classified as perianal, ischiorectal, intersphincteric, or supralelevator.¹ In most cases, the infection begins in the sphincteric plane. If the infection tracks downward, it could lead to formation of a perianal abscess; if it tracks upward in the intersphincteric plane, a supralelevator abscess might form. If the infection penetrates

the external sphincter, an ischiorectal abscess might form.²

At present, the standard treatment for anorectal abscess is incision and drainage, followed by packing or drainage with a small mushroom-tipped catheter (a de Pezzer catheter).^{3,4} Antibiotic treatment alone is usually inadequate and inappropriate. Operations are usually performed under spinal anesthesia; general anesthesia may need to be used for large abscesses. Blunt palpation is often used intraoperatively to ensure that no other septation or abscess is missed. After curettage and irrigation of the abscess cavity, drainage

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and packing of the residual cavity is performed, chiefly to allow wound healing through secondary intention and prevent further abscess or fistula formation by preventing premature closure of the incision.⁵ However, packing the cavity and dressing changes cause significant discomfort to the patient; they also require considerable medical resources. Frequent dressing changes are required after operation and may be needed for an extended period. An alternative to frequent dressing changes is drainage and frequent warm sitz baths, which provides the benefits of immediate pain relief and low recurrence rate of abscess and fistula.⁶

Therefore, we tried to use wound irrigation via an irrigating tube instead of packing the wound, with the intention to reduce patient discomfort and resource use. We conducted this study to determine the total outcomes of performing incision and drainage with wound irrigation in perianal abscesses.

Materials and Methods

We performed a retrospective study of patients who underwent incision and drainage for an anorectal abscess with an irrigating tube placed in the abscess cavity at Kaohsiung Veterans General Hospital between March 2016 and March 2019.

Measured outcomes

The outcome measures were: time to remove irrigating tube, including removal by a doctor at the outpatient clinic department or dropped accidentally. Pain scoring was assessed using the Numeric Pain Rating Scale (NPRS) on postoperative day 1. The pain scoring was: no pain (0), mild pain (1-3), moderate pain (4-6) and severe pain (7-10).⁷ The other measures assessed were abscess recurrence and analgesic requirement (non-steroidal anti-inflammatory drug – based analgesia) during the post-operative course.

Operative technique

All patients received fasciotomy or incision and

drainage under general or spinal anesthesia. All the patients were operated on in the lithotomy position. After the skin incision was made, blunt palpation was used to break septation in the abscess. Then, curettage and irrigation of the abscess cavity were performed. The irrigating tube was created using a 20-24 Fr two-way Foley catheter with additional side holes added by the surgeon. The irrigating tube was then placed in the abscess cavity, with close attention paid to placing the tip in the deepest part of the abscess cavity and ensuring the entire abscess cavity was covered. The opening of the irrigating tube passed through the intact skin on the lateral side of the abscess (Fig. 1).

Wound care and follow-up

Wound irrigation started the day after the surgery. Sterilized normal saline passed through a Foley catheter was used to irrigate the abscess cavity, after which the wound was covered with gauze pads. The frequency of irrigation was one to three times per day, depending on the wound condition and volume of exudate. Before discharge, patients or their caregiver were provided instructions on wound care. Patients were asked to return to the clinic approximately 7-10 days after hospital discharge and then every 2-4 weeks till wound healed.

Results

In the study period, 19 patients underwent incision and drainage of an anorectal abscess with an irrigating tube placed in the abscess cavity. Patient data are shown in Table 1.

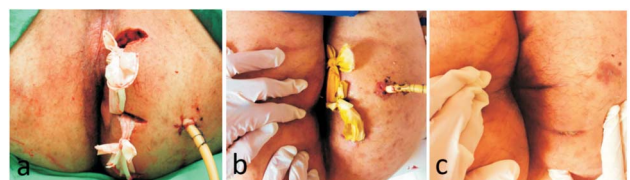


Fig. 1. The postoperative wound of left side ischiorectal abscess with drainage seton and irrigating tube (a). Prepare to remove irrigating tube 5 weeks later in the outpatient clinic (b). Complete healing after 9 weeks follow-up (c).

Table 1. Basic data of patients who underwent incision with wound irrigation

Variable	Incision with wound irrigation (n = 19)
Median age (range)	60 (29-93)
Sex (M/F)	18/1
Median duration of symptoms (days)	7
Median duration of follow-up (weeks)	15
ASA score, n (%)	
I	0
II	10 (52.6%)
III	9 (47.4%)
Anesthesia, n (%)	
General anesthesia	12 (63.2%)
Spinal anesthesia	7 (36.8%)
Diabetes mellitus, n (%)	8 (42.1%)
Hypertension, n (%)	11 (57.9%)
Cirrhosis, n (%)	1 (5.3%)
Acute myeloid leukemia, n (%)	1 (5.3%)
Systemic lupus erythematosus, n (%)	1 (5.3%)

Four (21.1%) patients had abscess recurrence during follow-up period (Table 2). One patient received incision and drainage at the outpatient clinic. Two patients required debridement with drainage seton. The fourth patient, who was bed-ridden with a large recurrent abscess, required a second incision and drainage with an irrigating tube in place.

Discussion

Traditionally, anorectal abscesses have been treated with incision (the skin over the abscess) and drainage (the pus). Hemostasis has been achieved by using internal dressing and packing the wound. The packing is usually changed daily until the abscess cavity heals

(by secondary intention). Changing the dressing daily causes the patient discomfort and requires nursing support, which means it cannot be done at the patient's home. Other options for managing postoperative cases have been relatively unexplored, until our study.

In the study by Tonkin et al.,⁵ no difference was noted in the pain score at the first dressing change. A systemic review failed to provide sufficient evidence regarding whether packing or nonpacking of the perianal abscess cavity influences wound pain.⁹ However, a multicenter observation study of 141 patients showed that dressing change caused a twofold to threefold increase in pain scores.¹⁰ In the study by Hasan,⁶ the immediate postoperative pain score in the group with corrugated rubber drain placed in the perianal abscess was 2/10. In our study, the median pain score on day 1 postoperatively was 3/10, which was well-tolerated by most patients. The median duration of taking postoperative basic analgesics was 14 days as seen in the follow-ups that were conducted in the outpatient clinic.

Sitz baths have long been used for anorectal disease and after incision and drainage or fistulotomy.^{11,12} Although a review of literature showed lack of scientific data to support the use of sitz baths in the treatment of anorectal disease, it is considered reasonable to regularly irrigate an infected wound.¹³ However, a sitz bath is not convenient for a bed-ridden or disabled patient. It is time consuming and changing the patient's dressings after the bath may need nursing help. In our study, we irrigated the wound via the irrigating tube with clean water or normal saline. Usually, the patient lies down in the lateral decubitus position. The irrigation system is easy to operate; the caregiver can

Table 2. Outcomes of patients who underwent incision with wound irrigation

Variable	Incision with wound irrigation
Operation time (mean, min)	45.7 ± 21.6
Abscess recurrence, n (%)	4 (21.1%)
Fistula development, n (%)	3 (15.8%)
Hospital stay (median, days)	7
Irrigating tube placement duration (median, days)	14
Postoperative basic analgesic duration (median, days)	14
Postoperative day 1 pain score (median, /10)	3

easily learn how to irrigate the wound. If the wound condition worsens, it is convenient to increase the frequency of irrigation. In our study, the median tube placement duration was 14 days. The attending surgeons assessed the wound and removed the tube during hospitalization or during follow-up at the outpatient clinic.

The chief treatment goal for perianal abscess is adequate drainage of the abscess and preventing abscess recurrence or fistula formation. In the study by Beck et al.,⁸ 31 patients were treated using placement of a 10-16-Fr soft latex mushroom catheter into the abscess cavity; the abscess recurrence rate was 26%. In the study by Cox et al.,¹⁴ a 12.5% abscess recurrence was observed after incision and drainage and seton. Two studies have evaluated non-packing for perianal abscess; the abscess recurrence rate and fistula formation rate was 13% & 33.3% and 8.7% and 0%, respectively.^{5,15} The study by Hasan,⁶ reported on the use of corrugated rubber drains to treat perianal abscess. In this study, the abscess recurrence rate was 32.8% (22/67) and the fistula formation rate was 31.3% (21/67). In comparison, in our study, the abscess recurrence rate was 21.1% and the fistula formation rate was 15.8%. The lower abscess recurrence rate in our study was likely due to wound irrigation. Passive drainage is known to be driven by the internal pressure of the abscess cavity. It therefore makes sense that some residual matter in the abscess may not be drained. Postoperative wound irrigation can dilute the residual purulent fluid, thus decreasing the possibility of abscess recurrence.

The chief limitation in defining a large perianal abscess is that CT evaluation is not the gold standard for diagnosis. In our study, only 4 patients underwent pre-operative CT image evaluation. Thus, the attending surgeon evaluated the abscess cavity after blunt palpation and determined the placement of the irrigating tube. In our experience, if the abscess cavity is more than 5 cm in length or depth, placement of an irrigating tube is indicated. In our study, we found that using the combination of drainage seton and wound irrigation to treat a large perianal abscess can also reduce wound size and avoid further wound debridement (Fig. 2).

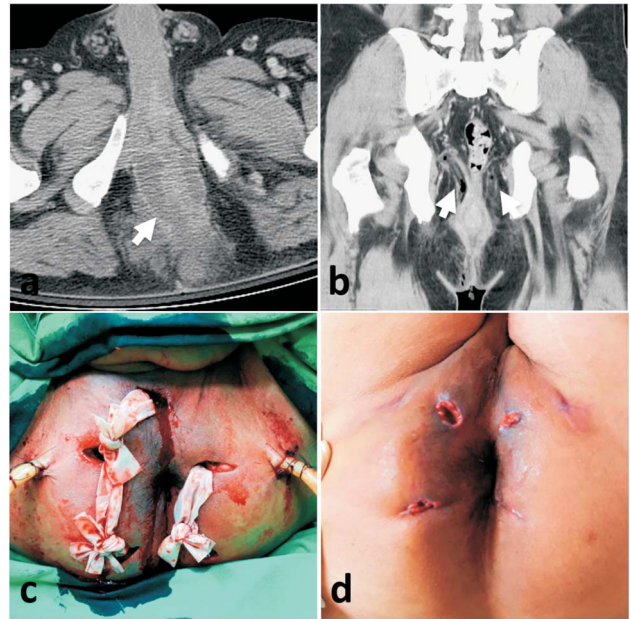


Fig. 2. A 54-year-old man was diagnosed with horseshoe perianal abscess (arrow) (a). Two irrigating tubes (arrow) were placed in the ischiorectal fossa (b). Postoperative wound with drainage seton and irrigating tube (c). Wound condition after 6 weeks follow-up (d).

We can therefore state that placement of an irrigating tube in the abscess cavity is feasible and safe. It can prevent the discomfort of dressing change and reduce the need for nursing help. It may also be associated with a lower abscess recurrence rate and fistula formation rate.

The present study has some limitations. This was a single-center retrospective study with a small sample size. No comparative/control group was included. Long-term follow-up was not obtained to evaluate the whole fistula formation rate. This might lead to a selection bias.

Conclusion

Management of perianal abscess using incision and drainage with wound irrigation may decrease the postoperative discomfort and makes it easy to care for the patient at home. It also yields the benefits of low abscess recurrence rate and fistula formation rate.

References

1. Whiteford MH, Kilkenny J 3rd, Hyman N, Buie WD, Cohen J, Orsay C, Dunn G, Perry WB, Ellis CN, Rakinic J, Gregorcyk S, Shellito P, Nelson R, Tjandra JJ, Newstead G; Standards Practice Task Force; American Society of Colon and Rectal Surgeons. Practice parameters for the treatment of perianal abscess and fistula-in-ano (revised). *Dis Colon Rectum* 2005; 48:1337-42.
2. Rickard MJ. Anal abscesses and fistulas. *ANZ J Surg* 2005; 75:64-72.
3. Isbister WH. A simple method for the management of ano-rectal abscess. *Aust N Z J Surg* 1987;57:771-4.
4. Kyle S, Isbister WH. Management of ano-rectal abscesses: comparison between traditional incision and packing and de Pezzer catheter drainage. *Aust N Z J Surg* 1990;60:129-31.
5. Tonkin DM, Murphy E, Brooke-Smith M, Hollington P, Rieger N, Hockley S, Richardson N, Wattchow DA. Perianal abscess: a pilot study comparing packing with nonpacking of the abscess cavity. *Dis Colon Rectum* 2004;47:1510-4.
6. Hasan RM. A study assessing postoperative Corrugate Rubber drain of perianal abscess. *Ann Med Surg (Lond)* 2016; 11:42-6.
7. Hjermstad MJ, Fayers PM, Haugen DF, Caraceni A, Hanks GW, Loge JH, Fainsinger R, Aass N, Kaasa S; European Palliative Care Research Collaborative. Studies comparing Numerical Rating Scales, Verbal Rating Scales, and Visual Analogue Scales for assessment of pain intensity in adults: a systematic literature review. *J Pain Symptom Manage* 2011;41: 1073-93.
8. Beck DE, Fazio VW, Lavery IC, Jagelman DG, Weakley FL. Catheter drainage of ischio-rectal abscesses. *South Med J* 1988;81:444-6.
9. 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;(8):CD011193.
10. Pearce L, Newton K, Smith SR, Barrow P, Smith J, Hancock L, Kirwan CC, Hill J; North West Research Collaborative. Multicentre observational study of outcomes after drainage of acute perianal abscess. *Br J Surg* 2016;103:1063-8.
11. Tang CL, Chew SP, Seow-Choen F. Prospective randomized trial of drainage alone vs. drainage and fistulotomy for acute perianal abscesses with proven internal opening. *Dis Colon Rectum* 1996;39:1415-7.
12. Vasilevsky CA, Gordon PH. The incidence of recurrent abscesses or fistula-in-ano following ano-rectal suppuration. *Dis Colon Rectum* 1984;27:126-30.
13. Tejirian T, Abbas MA. Sitz bath: where is the evidence? Scientific basis of a common practice. *Dis Colon Rectum* 2005; 48:2336-40.
14. Cox SW, Senagore AJ, Luchtefeld MA, Mazier WP. Outcome after incision and drainage with fistulotomy for ischio-rectal abscess. *Am Surg* 1997;63:686-9.
15. 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;400:267-71.

原 著

術後沖洗傷口用於較大的肛門膿瘍： 病例系列報告

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目的 觀察及追蹤術後沖洗傷口於較大的肛門膿瘍病患之術後疼痛、肛門膿瘍復發機率及肛門瘻管發生機率。

材料及方法 我們以回溯性分析之方式，於高雄榮民總醫院收集自 2016 年 3 月至 2019 年 3 月接受肛門膿瘍切開引流手術及術後沖洗傷口之所有病人。統計資料包括肛門膿瘍復發、新形成肛門瘻管、術後住院天數及術後疼痛評估。

結果 共收得 19 位病人接受術後沖洗傷口照護。術後住院天數中位數為 7 天 (四分位距為 17 天)，住院天數最短為 2 天，最長為 59 天。術後第一天自評疼痛分數中位數為 3 分 (滿分 10 分)，術後疼痛最低分為 2 分，最高分為 5 分。術後肛門膿瘍復發機率為 21.1% (4 位病人)，新形成肛門瘻管發生機率為 15.8% (3 位病人)。

結論 對於接受引流手術的肛門膿瘍病人，術後沖洗傷口可以減少術後疼痛以及便於居家照顧。另外有較低的肛門膿瘍復發機率及肛門瘻管發生機率。

關鍵詞 肛門膿瘍、沖洗傷口、紗布填塞。