Zagazig University Medical Journal
www.zumj.journals.ekb.eg
https://doi.org/10.21608/zumj.2025.365329.3862 Volume 31, Issue 7 July. 2025
**Manuscript ID ZUMJ-2503-3862**
**DOI 10.21608/ZUMJ.2025.365329.3862**

**ORIGINAL ARTICLE**

# Short Term Outcome of Laser Therapy in Management of Pilonidal Sinus Disease

**Ashraf Goda[1], Fady Mehaney Habib[1], Mohamed Ahmed Mohamed Mousa[2]*, Mohamed Negm Abd El Ghafar[1]**

1 General Surgery department, Faculty of Medicine, Zagazig University, Zagazig, Egypt

2 General surgery department, Abo Khalifa Emergency Hospital, Egypt

***Corresponding author:**
Mohamed Ahmed Mohamed Mousa
**Email:**
mohamedgebreel1989@gmail.com

**Submit Date 04-03-2025**
**Accept Date 27-03-2025**

## ABSTRACT

**Background:** As an alternative to standard surgical procedures, laser therapy has recently been available as a less intrusive alternative for treating pilonidal sinus illness. Patients report less pain and a quicker recovery time after laser therapy. This study aimed for evaluation of the minimally invasive treatment efficacy as a tool for management of pilonidal sinus using radial laser probe for obliteration of the pilonidal sinus tracts.

**Methods:** This prospective study was performed on 30 patients who had chronic pilonidal sinus, they were managed using Laser Pilonidotomy at Department of General Surgery at Zagazig University between April 2022 and April 2023. Operating time, healing time, duration of hospitalization, in addition to postoperative complications, as well as recurrence rates during median follows up of 4 months were evaluated among all patients.

**Results**: Three patients experienced minor complications: one with wound infection (3.3%) and two with persistent seroma discharge (6.7%), both resolved with antibiotics and daily dressing. There was no postoperative bleeding, and the average time to resume normal activities was $12 \pm 3.2$ days. Complete wound healing occurred within $23.0 \pm 5.5$ days, with a healing rate of 93.4%, while patients reported walking pain-free within $3.0 \pm 1.2$ days. Narcotics were not required, and most patients did not need analgesics. Complete healing was linked to fewer pilonidal pits and shorter sinus tracks. Recurrence was observed in one patient (3.3%), and another experienced persistent discharge, resolving within two months, with a total wound failure rate of 3.3%. High postoperative satisfaction was found with Laser Pilonidotomy, with 86.7% of patients satisfied, 6.6% fairly satisfied, and 6.6% unsatisfied.

**Conclusion:** Laser therapy could be a quick, safe, and minimally invasive technique for managing pilonidal cysts and sinuses. It demonstrates a high success rate and patient satisfaction, making it an appealing option for most patients with pilonidal disease. However, long-term outcomes still need to be evaluated.

**Keywords:** Short Term, Outcome, Laser Therapy, Pilonidal Sinus

## INTRODUCTION

Pilonidal sinus disease (PSD) affects approximately 26 per 100,000 individuals, primarily young men, and is rare outside puberty. It can cause pain, sepsis, and reduced quality of life, impacting work and education. Risk factors include male gender, obesity, Mediterranean descent, thick body hair, a deep natal cleft, and poor hygiene [1].

Though the exact cause remains unclear, PSD is linked to hormonal changes that enlarge and clog hair follicles in the sacrococcygeal region. The shape of the natal cleft and

buttock movement allow barbed hairs to penetrate these sinuses, acting as foreign bodies and exacerbating infection. Since its first description in the 19th century, the disease's etiology and management remain debated. In the UK, peak incidence occurs between ages 16–25, with an overall prevalence of 0.7% [2].

Risk factors include coarse body hair, obesity, infrequent bathing (less than twice weekly), and prolonged sitting (six hours per day), disproportionately affecting men. Recurrent cases are best managed by experienced colorectal or plastic surgeons [3].

Surgical treatment aims to remove the sinus tract, promote skin healing, and prevent recurrence. Wide excision may be followed by midline closure or flap techniques (Z-plasty, Karydakis, Bascom, or Rhomboid flap) or left open for granulation healing. However, the optimal approach remains debated [4].

While excisional procedures have high success rates, recovery is prolonged due to significant tissue removal. Less invasive options, such as endoscopic ablation and fibrin glue injection, aim to minimize pain, hospitalization, and recovery time while preserving healthy tissue [1].

Laser ablation is a novel approach using radial-emitting laser probes to destroy sinus tracts via heat energy. The thermal effect triggers tissue response, achieving high energy density at a specific wavelength. Studies report 85–92% success rates with pit picking and sinus laser-assisted closure (SiLaC®), a minimally invasive technique [5,6].

This study hypothesizes that laser therapy offers superior short-term outcomes over conventional surgery, including reduced operation time, faster healing, fewer complications, lower recurrence rates, and greater patient satisfaction. We aim to be the first at Zagazig University Hospital to introduce radial laser probe treatment (Biolitec, Germany) for pilonidal sinus disease. Therefore, this study aimed for evaluation of the minimally invasive treatment efficacy as a tool for management of pilonidal sinus using radial laser probe for obliteration of the pilonidal sinus tracts.

## METHODS

This prospective study was performed on thirty patients with chronic pilonidal sinus managed using Laser Pilonidotomy at Department of General Surgery at Zagazig University between April 2022 and April 2023. The study was authorized by the research ethical council of the Faculty of Medicine at Zagazig University, and all participants provided written informed permission. The study was conducted in accordance with the Declaration of Helsinki, which is a part of the World Medical Association's Code of Ethics for Research Involving Humans. Approval from the Institutional Review Board (IRB#6844-29-3-2021) was necessary to proceed with this study.

The inclusion criteria involved patients aged between 16 and 45 years with uncomplicated sacrococcygeal pilonidal sinus (non-infected) were included in the study. All eligible participants were categorized according to the classification suggested by Di Castro et al. [7]: In Stage I, there is a single midline pit that does not extend laterally. In Stage IIa, there are two to three midline pits. In Stage IIb, there are more than three midline pits. Patients in Stages I or II were scheduled for laser pileotomy after they were given a detailed explanation of the technique and gave their informed permission before surgery.

Patients were excluded: If age was below 16 years or above 45 years; presence of an acute stage of pilonidal sinus disease (abscess); uncontrolled diabetes mellitus (insulin-dependent); refusal to participate or lack of cooperation; or recurrent pilonidal sinus or branched pilonidal sinus classified as Stage 3 (more than two openings at different levels).

**Preoperative preparation:**

On the day of surgery, patients were admitted to the hospital and had their hair shaved from the gluteal skin areas to the lumbar region, extending laterally to the mid-axillary line. The procedure was performed under spinal or general anesthesia, with patients positioned in the prone Jack-knife position. In order to have the best view of the natal cleft, which was cleansed with Povidone Iodine, adhesive straps were placed on each gluteal region and pulled laterally. In addition, thirty minutes before the operation, all patients were given a prophylactic antibiotic, more precisely a fourth-generation cephalosporin.

**Surgical technique (Figure 1):** Twenty laser Pilonidotomy procedures were carried out under spinal anesthesia, and ten under general anesthesia. To guarantee a complete evaluation of the afflicted area, a full evaluation of the lower back was performed, reaching from the anal verge to the mid-back. The procedure began with the curettage of the entire sinus tract through the midline and lateral pits (if present) using a small Volkmann's spoon, which successfully removed hair, debris, and unhealthy granulation tissue. The sinus was irrigated multiple times with 0.9% saline and 10% iodine solution, accompanied by repeated curettage, to eliminate all necrotic tissue, debris, and residual hair. This process was repeated several times to ensure complete cleansing of the surgical site.

A 980 nm diode laser with a radial-emitting fibreoptic probe was then used, with the settings adjusted to 15–30 W. Approximately 100 J of energy per centimetre was delivered along the tract, with the fibre withdrawn by one centimetre after each segment. The laser provided homogeneous photothermal destruction of the sinus tract in a 360-degree pattern. The process continued until the fibre was completely withdrawn, leaving the Orb tip at the external pits for an additional 10 seconds before removal, marking the end of the procedure. Cold fomentation was applied to the area after the laser treatment.

Following laser debridement, the residual fluid was squeezed from the treated area and flushed thoroughly with normal saline and hydrogen peroxide. A crisscross incision was made at the natal cleft to allow drainage through the pit. If the sinuses were more than 4 cm long, a second crisscross incision was performed in the middle of the tract to avoid fluid collection while the patient was healing. We accomplished haemostasis and left the incision open to drainage without wrapping it. A sanitary pad should be used by the patient for cleaning up any excess fluid while they undergo healing.

**Follow up for six months as following:** Patients were followed up in the outpatient clinic at regular intervals. The initial follow-up occurred one week after the procedure, followed by weekly visits for one month. Subsequent follow-ups were scheduled monthly for six months to monitor for complications and detect any recurrence of the condition.

**Postoperative Instructions:** To avoid skin closure too soon and make sure wound fluid drains properly, patients were told to maintain the incision open with a fine cotton swab for the first ten days after surgery. Analgesics were recommended as needed to manage postoperative pain. Patients were regularly evaluated in the outpatient department to monitor wound healing and closure, as well as to identify any signs of persistent sinus activity or early recurrences.

Patients were asked to fill out questionnaires evaluating postoperative pain and wound healing during the prospective follow-up period. When the incision had fully closed, there was no more visible or palpable discharge, pain, or infection one month following the procedure, we considered the wound to have healed completely. Recurrence was defined as the return of symptoms after full healing or the inability of the wound to heal six months after surgery, whereas delayed recovery was defined as the continuation of symptoms beyond two months following the operation. To

continuously check the patients' recovery and discover any complications s or recurrence, they were followed up with either phone calls or scheduled visits to the outpatient clinic.

## STATISTICAL ANALYSIS

We used IBM Corp.'s (Armonk, NY) Statistical Package for the Social Sciences, version 20.0, to conduct our statistical study. Various statistical tests, such as Student's t-test, Mann-Whitney U test, and chi-square test, were utilised for data analysis. The means ± standard deviations (SD), median (minimum and maximal range), percentages, and frequency (n) were used to display the results.

**Results**

A male predominance was seen among the 22 males and 8 females that were treated. Patients' ages ranged from 16 to 40 years old, with an average of 23.5 years. The sinuses in the patients were in the chronic stage, characterized by the absence of pus overflow and swelling. Pain and discharge were the primary symptoms, reported by 28 patients (93.3%) and 22 patients (73.3%), respectively (Table 1).

The mean length of the pilonidal sinus tracts was 35 ± 2.3 mm, with 66.7% of cases having a sinus length of less than 30 mm. A single midline pit was observed in 60% of patients, and the duration of the complaint was less than 4 months in 40% of cases. Furthermore, the duration of complaints varied, with a significant portion (40%) reporting symptoms lasting less than four months (Table 2).

There were three cases of minor complications, including one case of wound infection (3.3%) and two cases of persistent seroma discharge (6.7%). These complications were successfully managed with aggressive antibiotic therapy and daily dressing changes. No cases of bleeding were reported following the procedure. The average time for patients to return to normal work and daily activities was 12.0 ± 3.2 days. Complete wound healing occurred within an average of 23.0 ± 5.5 days, achieving a wound healing rate of 93.3%. Patients were able to walk pain-free within an average of 3.0 ± 1.2 days after the operation. None of the patients required narcotics and most of the patients did not need analgesics (Table 3). Complete wound healing is directly related to the smaller number of pilonidal pits and less length of the tracks. In those two patients, they had repeated local redness as well as swelling in the postoperative follow-up and secretion overflow. The recurrence rate was 3.3% in one patient and the other patient failed to heal completely in a picture of persistent discharge which was healed after two months thus the total wound failure (3,3%) (Table 4). High postoperative satisfaction was found with Laser Pilonidotomy, with 86.7% of patients satisfied, 6.6% satisfied, and 6.6% unsatisfied (Table 5). Figure 2 illustrates follow up of a case study after 1st, 4th weeks and after 6 months.

**Table (1):** Demographic data and Presentation of patients

| Patients' inclusion criteria | No and % |
|---|---|
| **Age** | |
| **Range (Average) y** | 16-40(23.5) |
| Mean (± SD) | 25± 2.5 |
| Sex F/M | 8/22 (26.7%) (73.3%) |
| **Presentations** | |
| Pain | 28(93.3%) |
| Discharge | 22(73.3%) |
| Swelling | 1 (3.3%) |

**Table (2):** Intraoperative patient's criteria among studied patients

| **Patients** | Criteria |
|---|---|
| **Length of the pilonidal track mm** | |
| length (average) | **33.3 mm** |
| Range/ mean (mm)± SD) | **25.5 – 45.4 mm (35±2.3) mm** |
| **Length and Patients no (%)** | |
| < than 30mm | **20 (66,7%)** |
| 30 – 40 | **6(20%)** |
| > than 40mm | **4(13.3%)** |
| **Number and site of pits** | |
| One middle pit | **18(60.4%)** |
| More than one midline | **6(20%)** |
| Midline and lat pits | **6(20%)** |
| **Duration of the complaints** | |
| Less than 4 months | **12 (40%)** |
| 4 to one year | **10 (33,3%)** |
| More than one year | **8 (26.7%)** |
| (mean (month)± SD) | **6±2.3** |
| **Type of anesthesia** General /spinal | **10/20 (33.3%/66.7%)** |

**Table (3):** Operative and postoperative findings and analgesic requirements in days among studied patients

| **Patients** | Criteria |
|---|---|
| Operation time, min (Range) | **18 -25 min** |
| (mean ± SD) | **20.5 ± 3.3min** |
| Complications, n (%) | |
| Seroma | **2(6.7%)** |
| Infection' | **1(3.3%)** |
| Bleeding | **0(0.0%)** |
| Complete healing Time, days (mean ± SD) | **23 ± 5.5** |
| Time to walk pain free. (day) | **3.0 ± 1.2** |
| Time to return to work (day) | **12.0 ± 3.2** |
| Rate of healing | **93.4 %** |
| Hospital stay: | |
| <12 hours | **26(86.7%)** |
| 12-24 hours | **3(10%)** |
| >24 hours | **1(3.3%)** |
| **Analgesic requirements in days** | no (%) |
| Non | 25 (83.3%) |
| Paracetamol | 3 (10%) |

| **Analgesic requirements in days** | no (%) |
|---|---|
| NSAD<br>Narcotics | 2 (6.7%)<br>0(0) |

**Table (4):** Healing and Recurrence among studied patients

| **Patients number no (%)** | **Healing no (%)** | **Recurrence and delayed healing** |
|---|---|---|
| Patients with one Midline pit | 18 /18(100) | 0(0) |
| Patients with more than one midline pit | 10/12(83 .3%) | 2(16.7 %) |
| Track length less than 40 mm | 26 /26(100%) | 0(0) |
| Track length more than 40 mm | 2/4(50%) | 2(50%) |

**Table (5):** Postoperative patients' satisfaction

| **Patients Characters** | **n (%)** |
|---|---|
| Satisfied | 26 (86.7%) |
| Fair satisfaction | 2 (6.6%) |
| Unsatisfied | 2 (6.6%) |

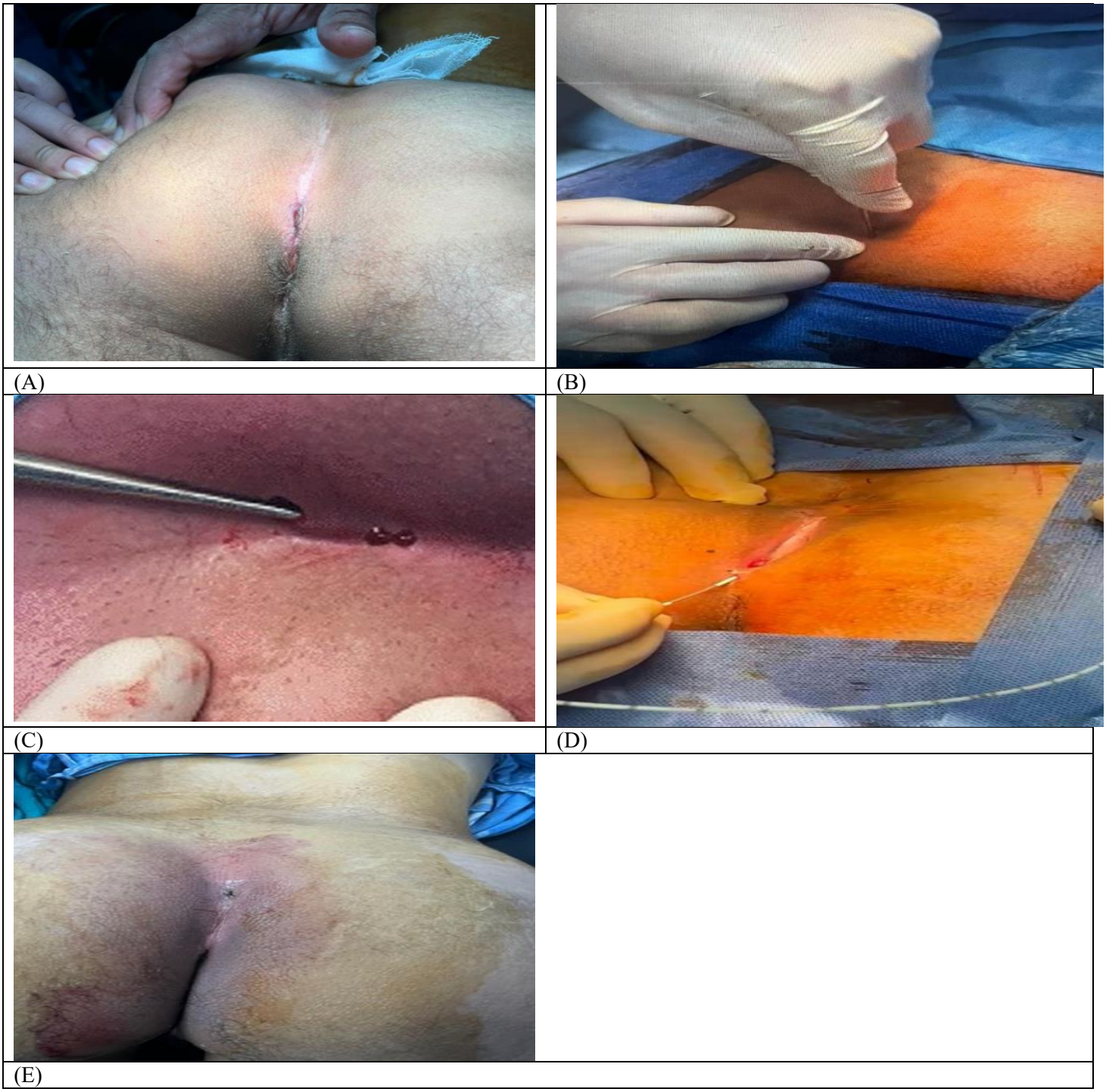

**Figure 1:** Surgical Technique (A): preoperative exposure and hair shaving, (B): The whole sinus tract curetted through the midline pits and lateral pits if present by a small Volkmann's spoon to remove hair, debris and unhealthy granulation tissue, (C): Debridement of sinus cavity and probing it gently, (D): Introducing the laser probe, (E): hemostasias achieved. Wound was kept open for drainage. No dressing. Patient was asked to use sanitary pad over it to absorb the drainage

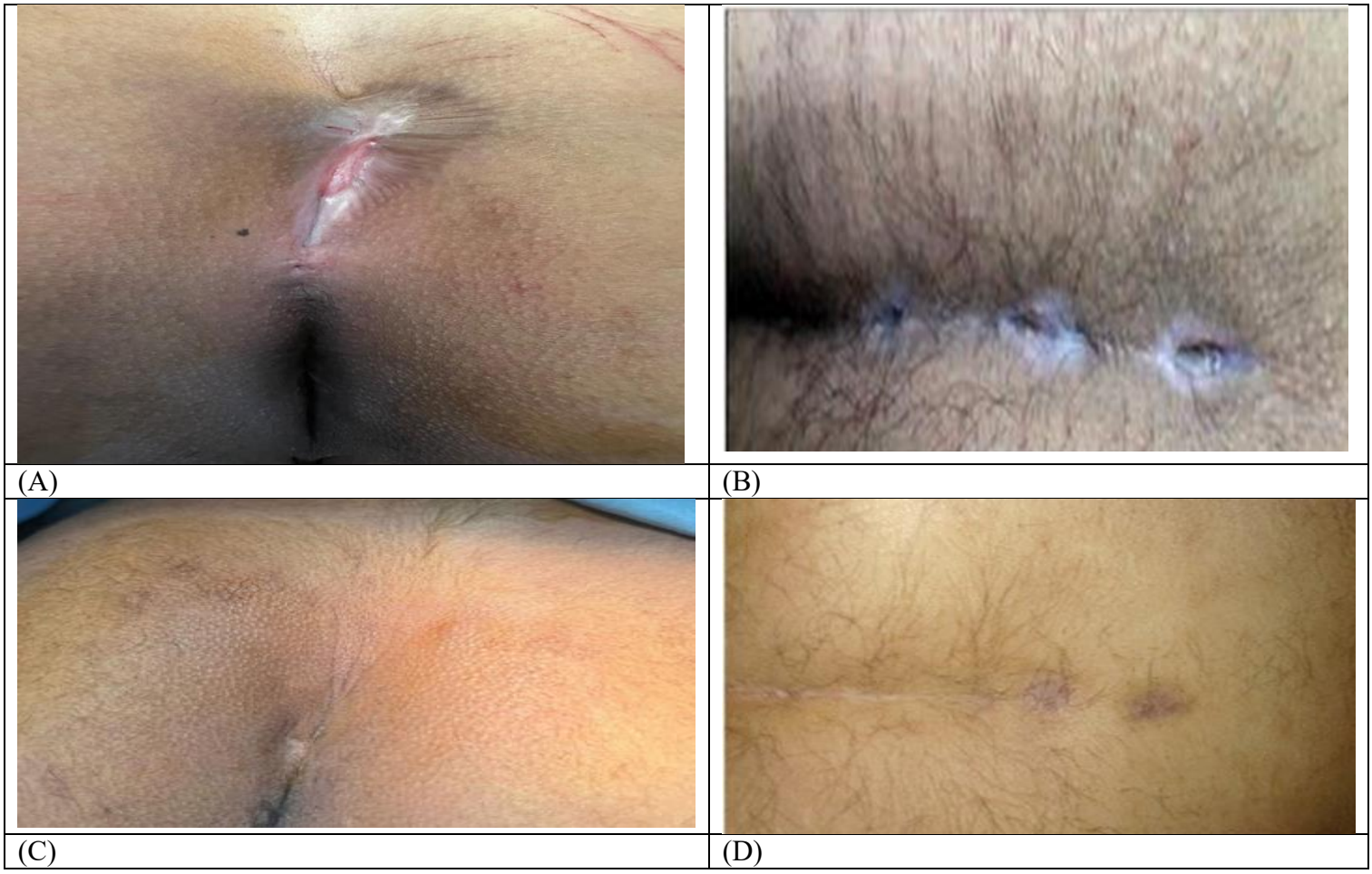


**Figure 2:** (A): Postoperative picture after the first week, (B): Post operative after 4 weeks, (C, D): Fully healed sinus after 6 months one midline pit (C) and multiple midline pits (D).

## DISCUSSION

The chronic inflammatory disease known as pilonidal sinus usually affects healthy, young people. The condition is not fatal, but its recurrence has a major effect on production [8]. Most patients in our study belonged to the age range of 16 to 40 years.

Building on the promising results observed in managing perianal fistula, diode lasers were later utilized for treating pilonidal sinus disease. However, studies evaluating this technique remain limited [9]. The present study marks the first at our center to utilize laser technology for the management of pilonidal sinus disease.

Among surgical treatment options, direct resection is associated with an 85% cure rate, a 15%-25% recurrence probability, and an extensive recovery time [10]. Skin flap techniques including the Karydakis, Limberg, "V-Y," and "Z-shaped" flaps are frequently used for more complicated or recurring instances. These operations are designed to fix and conceal tissue abnormalities that have been created by removing healthy tissue. Postoperative haematoma and subcutaneous effusion are increased risks due to wound dehiscence, which occurs between 3 and 15% of the time [11].

Surgical excision remains the gold standard for pilonidal sinus disease, though healing is prolonged and challenging. In the Netherlands, excision with secondary wound healing is common [12]. This approach burdens young patients with extensive wound care and recovery periods of three to six months, as reported in global studies [13]. In

contrast, our study found that 93.4% of laser-treated cases healed within 23 days.

Minimally invasive procedures offer several advantages, including minimal discomfort, outpatient feasibility under local anesthesia, and rapid return to daily activities [14]. Our findings support these benefits: 83.3% of patients reported little to no pain and did not require analgesics, while only five used paracetamol or NSAIDs—none required narcotics.

Despite literature supporting local anesthesia [14], we initially opted for spinal or general anesthesia due to our early experience with the laser technique.

Laser therapy in proctology began in 2007 with laser hemorrhoidoplasty (LHP), a non-excisional treatment for hemorrhoids [15]. Subsequent studies, including randomized controlled trials, confirmed its safety and effectiveness, with minimal post-procedural discomfort.

In 2011, Wilhelm [16] introduced a minimally invasive, sphincter-sparing laser treatment for anal fistula, reporting a 63% success rate and 8% complication rate. Over the next decade, laser applications expanded, including for chronic pilonidal disease.

Studies confirm the efficacy of radial-emitting lasers in treating chronic pilonidal disease. The PILAT technique has shown a high healing rate (96.7%), a low recurrence rate (3.3%), and minimal complications, making it a safe and efficient approach. Additional benefits include ease of learning, rapid recovery, and the ability to perform the procedure as day surgery under local anesthesia [17].

Our study demonstrated a wound healing rate of 93.4% and a recurrence or delayed healing rate of 6.6% in two cases. Patients returned to work quickly and reported minimal pain postoperatively. However, all procedures in our study were performed under spinal or general anesthesia.

A multicenter trial by Tenia et al. [8] involving 311 patients—the largest cohort to date on SiLaC® treatment for pilonidal disease—reported a 66% success rate. Consecutive laser treatments significantly improved outcomes without increasing complications. In contrast, our study achieved a 93.4% success rate after a single laser procedure during early follow-up.

Results were consistent for both primary and recurrent cases, with 30% of Tenia's cohort [8] having recurrent disease, suggesting SiLaC® is effective at any stage. Our study, however, applied strict inclusion criteria, focusing on primary pilonidal disease with non-branched tracts, regardless of disease stage.

A study by Yardimic [9] comparing Karydakis flap surgery to sinus tract ablation with a 1470 nm diode laser reported a 26% recurrence rate and a 7% persistent disease rate. Our findings align closely, with recurrence and delayed wound healing each occurring in one patient (3.3%).

Pappas and Christodoulou [10] analyzed 237 patients treated with SiLaC®, reporting a median hospital stay of 4 hours, a surgery duration of 21 minutes, and 81.4% of patients resuming daily activities immediately after discharge—similar to our results.

Wu et al. [11] compared Limberg flap and laser treatments, finding that ischemia and wound dehiscence required intensive follow-up in the Limberg group. Despite a higher overall complication rate in the SiLaC® group, seroma formation was the most frequent issue (12.5%), mirroring our study, where seroma occurred in 6.6% of cases, likely due to open wound management.

Romic et al. [12] reviewed 10 studies (2017–2020), reporting a 95% primary healing rate, increasing to 96.6% with a second laser treatment. Our slightly lower initial success rate (93.4%) may reflect early-stage experience, with potential improvement if all patients had undergone a second procedure.

Meinero et al. [13] reported a 94.8% healing rate using endoscopic pilonidal sinus therapy (EPSiT). Despite limitations, laser treatment demonstrated comparable effectiveness,

reinforcing its role as a minimally invasive alternative for pilonidal disease management.

Romic et al. [12] highlighted key advantages of laser treatment, including suitability for day-case surgery, predominant use of local anesthesia, and high patient satisfaction. Although we performed procedures under general or spinal anesthesia, our findings align with these benefits.

Two studies comparing laser treatment to excision for chronic pilonidal disease reported significantly lower pain levels and higher satisfaction rates with laser therapy. Recurrence rates were 3.3% for laser treatment and 16.7% for excision, though the difference was not statistically significant [14]. Iesalnieks et al. [15] further noted in updated German and Italian guidelines that laser treatment offers faster healing than standard excision, albeit with slightly higher recurrence rates.

Proper patient selection is crucial for optimizing laser treatment outcomes. While laser therapy has clear advantages, its novelty and limitations must be considered. Deep natal clefts and poor hygiene increase recurrence risk by failing to address the primary issue: midline closure. This challenge, highlighted in previous studies [18], explains the higher rates of recurrence and persistence.

Despite these limitations, our study found an acceptable recurrence rate within a short follow-up period. Given its effectiveness, high patient satisfaction, and minimal side effects, laser treatment deserves a role in pilonidal disease management.

Iesalnieks and Ommer [2] emphasized that proper patient selection is key to better outcomes. While no standardized classification system for pilonidal disease exists, minimally invasive treatments are best suited for simple or small cases where excision may be excessive.

Our study has several limitations. Firstly, the follow-up period was relatively short, with a maximum of 12 months and a median of 6 months. Since recurrences often occur later, our reported success rate may not fully reflect long-term outcomes. Future studies should extend follow-up durations for more robust results. Secondly, our sample size was relatively small, limiting the generalizability of findings. A larger cohort is needed to ensure statistically significant results, particularly in assessing recurrence rates and the overall effectiveness of laser treatment.

Another major limitation is cost. Laser procedures can exceed thirty thousand pounds, while traditional surgical excision costs less than five thousand pounds. This significant disparity makes widespread adoption challenging, especially in resource-limited settings. Despite these drawbacks, minimally invasive approaches should still be considered alternatives to standard excision for pilonidal disease. While numerous studies compare excision with less invasive techniques, methodological flaws and selection biases have limited strong scientific evidence.

The advantages of our study include reduced postoperative pain, faster recovery, lower infection rates, and higher patient satisfaction. However, the long-term success and cost-effectiveness of these techniques require further well-designed trials to establish their true value.

## CONCLUSION

Laser therapy could be a quick, safe, and minimally invasive technique for managing pilonidal cysts and sinuses. It demonstrates a high success rate and patient satisfaction, making it an appealing option for most patients with pilonidal disease. However, long-term outcomes still need to be evaluated.

**Conflict of interest:** None
**Financial disclosures:** None

## REFERENCES

1. Mahmood F, Hussain A, Akingboye A. Pilonidal sinus disease: review of current practice and prospects for endoscopic treatment. Ann Med Surg (Lond). 2020;57:212-7.

2. Iesalnieks I, Ommer A. The management of pilonidal sinus. Dtsch Arztebl Int. 2019;116(1-2):12-21.
3. Tam A, Steen CJ, Chua J, Yap RJ. Pilonidal sinus: an overview of historical and current management modalities. Updates Surg. 2024;76(3):803-10.
4. Tam A, Steen CJ, Chua J, Yap RJ. Pilonidal sinus: an overview of historical and current management modalities. *Updates Surg*. 2024;76(3):803-10.
5. Galan G, Sterpetti AV, Tartaglia E, Innocenti P, Cianci R, Guidi G, et al. Therapeutic approaches to patients with pilonidal sinus based on specific clinical characteristics. Eur J Plast Surg. 2012;35(8):595-8.
6. Harju J, Söderlund F, Yrjönen A, Rautio T, Heiskanen K, Juusela R, et al. Pilonidal disease treatment by radial laser surgery (FilaC™): the first Finnish experience. Scand J Surg. 2020;56:112-28..
7. Di Castro A, Guerra F, Levi Sandri GB, Ettorre GM. Minimally invasive surgery for the treatment of pilonidal disease. The Gips procedure on 2347 patients. Int J Surg. 2016;36(Pt A):201-5.
8. Tania C, Sluckin TC, Hazen SMJA, Smeenk RM, Ruben SM. Sinus laser-assisted closure (SiLaC®) for pilonidal disease: results of a multicentre cohort study. Tech Coloproctol. 2022;26(2):135-45.
9. Yardimic VH. Outcomes of two treatments for uncomplicated pilonidal sinus disease: Karydakis flap procedure and sinus tract ablation procedure using a 1470 nm diode laser combined with pit excision. Lasers Surg Med. 2020;52(9):848-55.
10. Pappas AF, Christodoulou DK. A new minimally invasive treatment of pilonidal sinus disease with the use of a diode laser: a prospective large series of patients. Colorectal Dis. 2018;20(8):207-14.
11. Wu P, Zhang Y, Zhang Y, Wang S, Fan Z. Progress in the surgical treatment of sacrococcygeal pilonidal sinus: a review. Int J Surg. 2023;109(8):2388-93.
12. Romic I, Augustin G, Bogdanic B, Bruketa T, Moric T. Laser treatment of pilonidal disease: a systematic review. Lasers Med Sci. 2021;36(1):443-52.
13. Meinero P, Stazi A, Carbone A, Fasolini F, Regusci L, La Torre M, et al. Endoscopic pilonidal sinus treatment: a prospective multicentre trial. Colorectal Dis. 2016;18(5):164-70.
14. Khubezov DA, Lukanin RV, Krotkov AR, Ogoreltsev AY, Serebryansky PV, Yudina EA. Laser ablation for pilonidal disease. Coloproctologia. 2020;19(2):91-103.
15. Iesalnieks I, Ommer A, Doll D, Herold A. German National Guideline on the management of pilonidal disease: update. Langenbecks Arch Surg. 2020;405(6):599-609.
16. Wilhelm A. A new technique for sphincter-preserving anal fistula repair using a novel radial emitting laser probe. Tech Coloproctol. 2011;15(4):445-9.
17. Bi S, Sun K, Chen S, Gu J. Surgical procedures in pilonidal sinus disease: a systematic review and network meta-analysis. Sci Rep. 2020;10(1):13720.
18. Staufer VK, Luedi MM, Kauf P, Schmid M, Diekmann M, Wieferich K, et al. Common surgical procedures in pilonidal sinus disease: a meta-analysis, merged data analysis, and comprehensive study on recurrence. Sci Rep.2018;8(1):3058.

Figure legend

Figure 1: Surgical Technique (A): preoperative exposure and hair shaving, (B): The whole sinus tract curetted through the midline pits and lateral pits if present by a small Volkmann's spoon to remove hair, debris and unhealthy granulation tissue, (C): Debridement of sinus cavity and probing it gently, (D): Introducing the laser probe, (E): hemostasias achieved. Wound was kept open for drainage. No dressing. Patient was asked to use sanitary pad over it to absorb the drainage.

Figure 2: (A): Postoperative picture after the first week, (B): Post operative after 4 weeks, (C, D): Fully healed sinus after 6 months one midline pit (C) and multiple midline pits (D ).

## Citation

**Goda, A., Habib, F., Mousa, M., Abd El Ghafar, M. Short Term Outcome of Laser Therapy in Management of Pilonidal Sinus Disease. *Zagazig University Medical Journal*, 2025; (2674-2684): -. doi: 10.21608/zumj.2025.365329.3862**