

The Gips Procedure for Pilonidal Disease: A Retrospective Review of Adolescent Patients

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PRACTICE POINTS

- The Gips procedure is an easy-to-use outpatient procedure for adolescents with pilonidal disease.
- This procedure has a high success rate and does not restrict school or social activities.

Surgery for pilonidal disease (PD) often is followed by an unpleasant postoperative course that restricts school and social activities. We performed a retrospective medical record review to evaluate the outcome of the Gips procedure on 19 adolescents with PD. We recorded each patient's age at surgery, surgical history, symptoms, duration of operation and hospital stay, time to return to activity, wound healing time, and recurrence. Our review demonstrated that the Gips procedure is an easy-to-use technique in adolescents with PD and had a high success rate. Furthermore, it is less restrictive on school and social activities than traditional surgical therapies.

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Pilonidal disease (PD) is common in Turkey. In a study in Turkey, 19,013 young patients aged 17 to 28 years were examined; PD was detected in 6.6% of patients (0.37% of females in the cohort and 6.23% of males).¹ The incidence of PD in military personnel (women 18 years and older; men 22 years and older) is

remarkably higher, with an incidence of 9% reported in Turkish soldiers.²

Pilonidal disease has become common in Turkish adolescents, who now experience an increase in desk time because of computer use and a long duration of preparation for high school and university entrance examinations. In adolescent and adult population studies, Yildiz et al³ and Harlak et al⁴ reported that sitting for 6 hours or more per day was found to significantly increase the risk for PD compared to the control group ($P=.028$ and $P<.001$, respectively).

Surgery for PD often is followed by a considerable and unpleasant postoperative course, with a long period of limited physical activity, loss of school time, and reduced social relationships. The recurrence rate of PD is reported to be as high as 40% to 50% after incision and drainage, 40% to 55% with rigorous hygiene and weekly shaving, and as high as 30% following operative intervention. Drawbacks of operative intervention include associated morbidity; lost work and school time; and prolonged wound healing, which can take days to months.⁵⁻⁷

For these reasons, minimally invasive surgical techniques have become popular for treating PD in adolescents, as surgery can cause less disruption of the school and examination schedule and provide an earlier return to normal activities. Gips et al⁸—who operated on 1358 adults using skin trephines to extirpate pilonidal pits and the underlying fistulous tract and hair

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debris—reported a low recurrence rate and good postoperative functional outcomes with this technique. Herein, we present our short-duration experience with the Gips procedure of minimally invasive sinusectomy in adolescent PD.

Methods

Patients—We performed a retrospective medical record review of patients with symptomatic PD who were treated in our clinic between January 2018 and February 2019 using the Gips procedure of minimally invasive sinusectomy. We identified 19 patients younger than 17 years. Patients with acute inflammation and an acute undrained collection of pits were treated with incision and drainage, with close clinical follow-up until inflammation resolved. We also recommended that patients take a warm sitz bath at least once daily and chemically epilate the hair in the affected area if they were hirsute.

Gips Procedure—For all patients, the Gips procedure was performed in the left lateral position under general anesthesia using a laryngeal mask airway for anesthesia. Patients were closely shaved (if hirsute) then prepared with povidone-iodine solution. First, each fistulous opening was probed to assess depth and direction of underlying tracts using a thin (0.5–1.0 mm), round-tipped probe. Next, a trephine—comprising a cylindrical blade on a handle—was used to remove cylindrical cores of tissue. All visible median pits and lateral fistulous skin openings were excised using skin trephines of various diameters (Figure, A and B). Once the pilonidal cavity was reached, attention was directed to removing all residual underlying tissue—granulation tissue, debris, and hair—through all available accesses. The cavity was cleaned with hydrogen peroxide and normal saline. Then, all trephine-made openings were left unpacked or were packed for only a few hours and were not sutured (Figure, C and D); a light gauze bandage was eventually applied with a minimum of tape and skin traction. Patients were kept supine during a 1- or 2-hour clinical observation period before they were discharged.

Postoperatively, no regular medications other than analgesics were recommended; routine daily activities were allowed. Patients were encouraged to sleep supine and wash the sacrococcygeal region with running water several times a day after the second postoperative day. Frequent showering, application of povidone-iodine to the wound after defecation, and regular epilation of the sacrococcygeal area also were recommended to all patients.

All patients were routinely followed by the same surgical group weekly until wound healing was complete (Figure, E).

Medical Record Review—Patients' electronic medical records were reviewed retrospectively, and parameters including age at surgery, surgical history, symptoms, duration of operation and hospital stay, time to

return to activity, wound healing time, and recurrence were recorded.

Results

Of the 19 patients who underwent the Gips procedure, 17 (90%) were male; 2 (10%) were female. The mean (standard deviation [SD]) body mass index was 25 (3.7). (Body mass index was calculated as weight in kilograms divided by height in meters squared.) The mean age (SD) of patients was 15 (1.1) years (range, 12–17 years). The most common symptom at presentation was purulent discharge (11/19 [58%]). Other common symptoms included pain (8/19 [42%]), pilonidal abscess (6/19 [32%]), and bleeding (4/19 [21%]). Nine patients (47%) had prior abscess drainage at presentation; 1 (5%) had previously undergone surgery, and 5 (26%) previously had phenol injections.

The median (SD) length of stay in the hospital was 15 (3.2) hours (range, 11–22 hours). The mean (SD) time before returning to daily activities and school was 2 (0.6) days (range, 1–3 days). In our patients, the Gips procedure was performed on either a Thursday or more often a Friday; therefore, patients could be scheduled to be discharged from the hospital and return to home the next day, and then return to school on Monday. All patients were advised to take an oral analgesic for 2 days following the procedure.

The mean (SD) duration of the operative procedure was 14 (3) minutes (range, 10–20 minutes). One patient (5%) developed bleeding that ceased spontaneously. The mean (SD) complete wound healing time was 3 (0.6) weeks (range, 2–4 weeks).

Postoperative clinical examination and telephone interviews were performed for follow-up. The mean follow-up period was 5 months (range, 1–13 months); 17 of 19 patients (89%) made a complete recovery. Two patients (11%) reported recurrence in the third and fourth months following the procedure and were treated with a repeat Gips procedure 6 months after the first treatment. Improvement was noted after a second Gips procedure in 1 of 2 patients who had recurrence, leaving the success rate of the procedure in our practice at 95% (18/19).

Comment

Treatment Options for PD—Various treatment methods for PD have been postulated,^{5–7} including incision and drainage, hair removal and hygiene alone, excision and primary wound closure, excision and secondary wound closure, and various flap techniques. More recently, there has been a dramatic shift to management of patients with PD in an outpatient setting. The Gips procedure, an innovative minimally surgical technique for PD, was introduced in 2008 based on a large consecutive series of more than 1300 patients.⁸ Studies have shown promising results and minimal recovery time for the Gips procedure in adult and pediatric patients.^{8–10}

Nevertheless, conventional excision down to the sacral fascia, with or without midline or asymmetrical closure, is still the procedure performed most often for PD worldwide.^{5,10} This surgery often requires general anesthesia and a long period of postoperative care; furthermore, children who undergo conventional excision at this age generally experience lengthy periods of missing school. In addition, conventional excision is associated with a notable recurrence rate and a potentially unacceptable cosmetic result.^{10,11} Therefore, we prefer the Gips procedure of minimally invasive sinusectomy to treat PD in adolescents.

A larger study from an Israeli military pilonidal sinus clinic, in which 1358 adult PD patients were treated with

the Gips procedure under local anesthesia, showed a recurrence rate of 13% at 5 years and 16% at 10 years.⁸ Di Castro et al¹⁰ reported use of the same technique on 2347 patients and demonstrated a recurrence rate of 5.8% at a median follow-up of 16 months. Speter et al⁹ compared minimal incision using trephines and wide excision on a matched cohort of 42 adolescent patients (mean age, 16 years). Findings indicated better functional outcomes, shorter duration of analgesia required (≤ 48 hours), and fewer sick days in the minimal incision group but failed to demonstrate a statistically significant difference in overall recurrence. An overall favorable outcome was reported in 61.9% (26/42) of patients in the minimal incision group and 45% (19/42) in the wide excision group. Reoperation



A, Pilonidal disease in an adolescent girl who was treated with the Gips procedure. B, Subcutaneous granulation tissue, debris, and hair were removed with a skin trephine, which was advanced over the metal probe connecting the 2 sinus orifices. C and D, Trephine-made openings in a female patient and a male patient, respectively, were left unpacked or were packed for only a few hours and were not sutured. E, At 3-month follow-up, the male patient experienced complete wound healing.

was performed in 28% (12/42) of patients in the minimal incision group and 9% (4/42) of the wide excision group.⁹ Delshad et al⁵ found that pit-picking procedures resolved pilonidal symptoms in 92% (47/51) of patients, without recurrence at 5 months on average.

Advantages of the Gips Procedure—Advantages of the Gips procedure are numerous. It is easily applicable, inexpensive, well tolerated, and requires minimal postoperative care. Placing the patient in the lateral position for the procedure—rather than the prone position that is required for more extensive surgical procedures—is highly feasible, permitting the easy application of a laryngeal mask for anesthesia. The Gips procedure can be performed on patients with severe PD after a period of improved hygiene and hair control and allows for less morbidity than older surgical techniques. Overall, results are satisfactory.

Health services and the hospital admissions process are less costly in university hospitals in Turkey. This procedure costs an average of 400 Turkish liras (<US \$50). For that reason, patients in our review were discharged the next day; however, patients could be discharged within a few hours. In the future, it is possible for appropriate cases to be managed in an outpatient setting with sedation and local anesthesia only. Because their postoperative courses are eventless, these patients can be managed without hospitalization.

Recovery is quick and allows for early return to school and other physical activities. Because the procedure was most often performed on the last school day of the week, we did not see any restriction of physical or social activities in our patients.

Lastly, this procedure can be applied to PD patients who have previously undergone extensive surgery or phenol injection, as was the case in our patients.

Conclusion

The Gips procedure is an easy-to-use technique in children and adolescents with PD. It has a high success rate and places fewer restrictions on school and social activities than traditional surgical therapies.

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