

Short convalescence and minimal pain after out-patient Bascom's pit-pick operation

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ABSTRACT

INTRODUCTION: Treatment of pilonidal sinuses with Bascom's pit-pick operation can easily be performed under local analgesia. We describe pain during and after the operation, time to return to work, time to healing and success rate.

MATERIAL AND METHODS: The study comprised a cohort of 75 primary pit-pick (PP) operations performed at our department between August 2007 and December 2009. The median age was 30 years (range 15-64 years) and 57 (76%) were male. A total of 55 patients were interviewed daily by phone for one week with a view to registering their ability to return to work and their scoring of maximum pain on a numerical rating scale with a pain score ranging from 0 (no pain) to 10.

RESULTS: The mean maximum pain during the first post-operative day was 2.2 (95% confidence interval (CI) 1.8-2.7) and at day four 1.0 (CI 0.7-1.3). Within 24 hours, 51% could return to work and the mean time was 3.2 (CI 1.8-4.5) days. Postoperative infection was related to the presence of secondary sinus ($p = 0.03$) and increasing number of midline sinus excisions ($p = 0.02$). Complete wound healing was achieved in 84% of the patients after a mean period of 3.5 (CI 3.1-3.9) weeks. Incomplete wound healing was significantly related to a small number of PPs ($p < 0.05$), increasing number of midline sinus excisions ($p < 0.05$) and no postoperative infection ($p = 0.01$). At one-year follow-up 80% were considered successfully treated.

CONCLUSION: The majority of patients with simple pilonidal sinuses can be treated successfully with Bascom's PP procedure as out-patients. This regimen causes only mild postoperative pain and patients can resume work after a few days.

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Treatment of pilonidal sinuses (PS) ranges from conservative treatment with shaving of the area to large, complicated flap-reconstructions [1]. A Cochrane review [2] has shown the superiority of methods with off-midline closure compared with midline surgery. These procedures seem too extensive in patients with small PS, and simpler techniques like Lord-Millar's brush method [3-6], sinotomy [7, 8], use of trephines [9] and Bascom's pit-pick (PP) operation [10-12], where only small midline

excisions are made, have been described to have low recurrence rates. These procedures can be performed under local analgesia [11], but reports concerning post-operative pain and time to return to work are few.

This study describes pain during and after Bascom's PP operation under local analgesia, time to return to work, time to healing, complications and recurrence rates.

MATERIAL AND METHODS

A total of 78 patients underwent first-time PP operation at our department from August 2007 to the end of December 2009; patients no. 75-77 participated in a trial on a novel wound-healing product and were therefore excluded. During this period, 60% of the patients treated for chronic PS underwent the PP procedure, while Bascom's cleft-lift operation was the standard procedure for more complex cases not suitable for PP. The operations were performed as standard under local analgesia in our out-patient clinic or department of day-surgery.

The median age was 30 years (range 15-64 years) and 57 (76%) were male. Thirty (40%) patients had an abscess incised prior to surgery and 12 (16%) had a history of 1-4 elective midline operations for PS. A total of 34 cases (45%) underwent first-time PS surgery.

A total of 73 patients underwent PP operation under local analgesia. Patients were placed in the prone position and the cleft opened with tape straps. Lidocaine 5 mg/ml with adrenaline 5 microgram/ml was infiltrated with a 21G needle around the pits and the planned lateral incision. All midline pits were identified and one or more pit-picks (excisions equivalent to the size of a grain of rice) were made with a scalpel no. 11 blade. A lateral incision was made on the most appropriate side approximately 2 cm from the midline through which the underlying sinuses were curetted or excised. Secondary pits were excised as part of the lateral incision, or if close to the midline separately with subsequent skin closure. Where possible, the midline wounds were closed subcutaneously with transcutaneous polypropylene 3-0 or 4-0 madras suture and the skin with polypropylene 4-0. The lateral wounds were left open and covered (not stuffed) with a bandage of hydrofibre and transparent film dressing (**Figure 1**). Further description was published in a previous article [13].

The median number of midline primary pits, where

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hair and debris can enter the sinus, was two (range 1-7). A total of 22 had one secondary pit (openings after spontaneously or surgically drained abscess) and three patients had two, needing two lateral incisions. The median number of pit-picks per operation was two (range 1-5). In some cases, more than one pit was included in the same excision.

The wound dressings were removed by the patient after 2-3 days and the wounds flushed with a hand shower twice a day. Panty liners were recommended to avoid soiling of the underwear. Sutures were removed after two weeks and the wound was assessed every second week or more often if indicated until complete wound healing was achieved; such healing was defined as complete epithelisation (assessed by the surgeon). One patient was lost to follow-up as he did not show up for suture removal. All patients were offered a visit one year postoperatively for clinical assessment of any recurrences.

During 2009, all patients (n = 57) were asked to describe the pain experienced during infiltration of local

analgesia and surgery. Pain was rated on a numerical rating scale (NRS) described to the patients before the operation. The scale used ranged from zero (no pain) to ten (worst pain imaginable). An NRS score of 1-3 was considered mild pain, 4-6 moderate pain and > 6 severe pain. During the first postoperative week, patients were offered a daily telephone interview with the surgeon to record the daily maximum pain score, the intake of analgesia, and the time at which they were able to return to work. One patient was excluded from the pain study due to paraplegia with impaired sensibility. One operation was performed under general anaesthesia (no pain recorded during surgery) and another patient was lost to follow-up immediately after the operation with no postoperative data recorded.

Complications

Postoperative bleeding was defined as bleeding leading the patient to consult a doctor or needing intervention at a scheduled control visit. Postoperative infection included any kind of infection, ranging from a small, spon-

 FIGURE 1

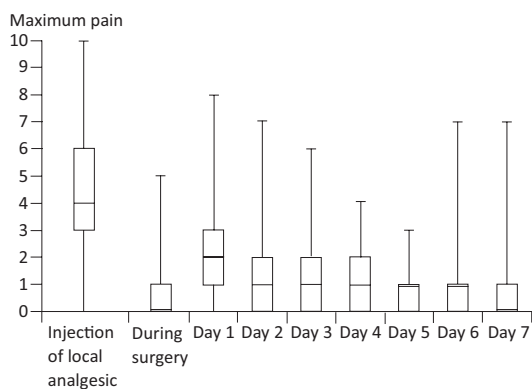
Bascom's pit-pick operation. **A.** In this case, a single primary pit is identified. **B.** A small excision of the primary pit (pit-pick) is made together with a larger lateral incision. **C.** The sinus is open through the lateral incision. **D-E.** Hair is removed. **F.** The cavity is curettaged. **G.** Closure of the small wound in the midline with polypropylene (no subcutaneous closure in this case) while the lateral wound is left open with hydrofibre dressing (removed after two-three days). **H.** Same patient four months after Bascom's pit-pick operation.





FIGURE 2

The maximum pain as a numerical rating scale (0 = no pain, 10 = worst pain imaginable) in 55 patients. Maximum pain during injection of local analgesic, during surgery and each day postoperatively as a boxplot with minimum, lower quartile, median, upper quartile and maximum observation related to Bascom's pit-pick procedure.



taneously drained abscess to infection treated with reoperation. Incomplete wound healing was defined as prolonged (more than 60 days) or troublesome wound healing to a degree warranting further surgery (surgeon's assessment or patient's request).

Recurrence

Recurrence was defined as a range from asymptomatic recurrences discovered during thorough examination of the natal cleft at the 1-year control visit to symptomatic recurrences requiring reoperation. Only cases where wound healing with complete epithelisation had occurred were included in the analyses of statistical analysis.

Means are presented with 95% confidence intervals (CI). Pearson's tests were used to analyse categorical variables. All tests were two-sided and p values below 0.05 were considered significant. These statistical analyses were performed with SAS JMP 8.0.2. Cox proportional hazards tests were performed with R version 2.13.0.

Trial registration: not relevant.

RESULTS

For the 55 patients included in the perioperative pain study, the mean duration of infiltration of local analgesic was 3 min. (CI 2.5-3.4 min.), the mean duration of the operation (from incision to final stitch) 15 min. (CI 13.5-16.8 min.) and the mean amount of lidocaine used was 23.8 ml (CI 21.7-25.9 ml) with a maximum of 42 ml.

The maximum pain experienced during the infiltration of lidocaine, during surgery and in the postoperative period is shown in **Figure 2**. The mean NRS under

infiltration was 4.1 (CI 3.5-4.7), during surgery it was 0.8 (CI 0.5-1.2). During the first postoperative day NRS was 2.2 (CI 1.8-2.7) and at day four it was 1.0 (CI 0.7-1.3). The mean time to restore the capacity to work was 3.2 (CI 1.8-4.5 and range 1-31) days and 28 (51%) patients were capable of returning to work within 24 hours. The postoperative intake of analgesics is shown in **Table 1**.

Complications

In 56 patients (76%), there were no postoperative complications. Four (5%) had postoperative bleeding causing them to consult a doctor. In one case, a suture was needed for haemostasis, while this was achieved by compression in the remaining cases. Seven (9%) had local postoperative infection; three of whom had small abscesses that drained spontaneously and subsequently healed, while the remaining four did not heal and required further surgery. Postoperative infection was significantly related to the presence of secondary pits ($p = 0.027$) and number of pit-picks ($p = 0.017$) with means of (infection) 3.4 versus (no infection) 2.6.

Wound healing

In 62 (84%) patients, all wounds healed completely within 3.5 (CI 3.1-3.9) weeks. Time to wound healing is shown in **Figure 3**. Lack of wound healing was significantly related to increasing numbers of pits with means of 3.9 (unhealed patients) versus 2.4 (healed patients) ($p = 0.008$), presence of secondary pits ($p < 0.05$), number of pit-picks with means of 2.7 (unhealed patients) versus 2.0 (healed patients) ($p < 0.05$), and to postoperative infection ($p = 0.01$).

One-year outcome

A total of 74 (99%) patients were followed for a minimum of one year with a planned one-year follow-up



TABLE 1

Postoperative daily intake of analgesics after Bascom's pit-pick procedure for pilonidal sinus.

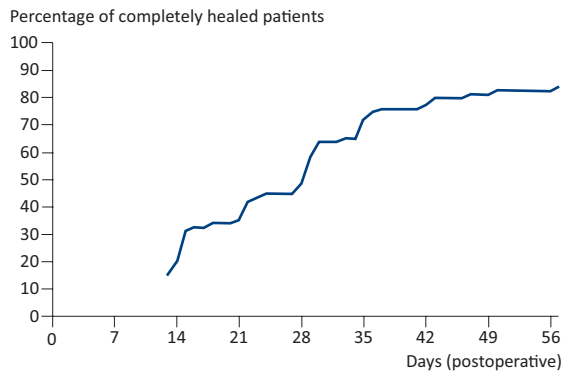
| | Paracetamol, g/day, mean (CI) | Ibuprofen, mg/day, mean (CI) | Patients with no intake, n (%) |
|--------------------|-------------------------------|------------------------------|--------------------------------|
| Day 1 ^a | 1.0 (0.7-1.4) | 357 (235-497) | 16 (29) |
| Day 2 | 0.4 (0.1-0.6) | 129 (49-208) | 40 (71) |
| Day 3 | 0.2 (0.1-0.4) | 57 (-6-129) | 47 (84) |
| Day 4 | 0.2 (0.0-0.3) | 57 (9-105) | 47 (84) |
| Day 5 | 0.1 (0.0-0.2) | 36 (-1-73) | 48 (86) |
| Day 6 | 0.2 (0.0-0.3) | 21 (-3-46) | 49 (88) |
| Day 7 | 0.1 (0.0-0.2) | 7 (-7-21) | 51 (91) |

CI = 95% confidence interval.

a) Day 1 was from time of surgery (between 9 a.m. and 3 p.m.) until the next day at 8 p.m.

FIGURE 3

Time to complete wound healing after pit-pick in 74 patients treated with Bascom's pit-pick procedure.



visit. Three patients did not wish to participate in this one-year follow-up visit, but, as confirmed by phone interviews, none of these patients had any symptoms of recurrent disease or any other complaints. Fourteen patients were not assessed at the planned one-year visit due to lack of wound healing or recurrence of disease within the first year.

Nine patients (12%) had recurrent disease at the site of the primary operation, and one year postoperatively one patient developed symptoms from a primary pit that had been left intentionally at the first operation (as it was located 6 cm from the other pits and caused no symptoms).

No patients with complete wound healing after postoperative bleeding ($n = 4$) or infection ($n = 3$) had recurrent PS after one year. After complete wound healing, no significantly increased risk of one-year recurrence was related to the number of pits, secondary pits, or the number of PPs (Cox proportional hazards test).

The 22 patients with either recurrence or incomplete wound healing were treated as follows:

- successful second PP operations ($n = 3$)
- second PP operation after end of follow-up ($n = 1$)
- small abscess incised laterally with no subsequent surgery needed ($n = 3$)
- cleft-lift operation ($n = 6$)
- cleft-lift operation after a second unsuccessful PP operation ($n = 3$)
- candidates for cleft-lift under continuous observation ($n = 3$)
- hair removed from a new asymptomatic pit 6 cm away from the PP ($n = 1$) (primary operation considered a success)
- small recurrence without symptoms ($n = 2$).

In total, 59 (80%) patients were considered successfully treated within this study according to our very strict definition. Most needed one PP operation, while seven (9%) needed a second or another minor procedure (incision of an abscess, removal of hair).

DISCUSSION

A PP operation is associated with acceptable recurrence and complication rates in patients with pathologically mild, chronic PS. Patients can return to work shortly after the operation and they experience only mild discomfort during both the procedure performed in local analgesia and the postoperative period.

Owing to the use of local analgesia, the costs of PS treatment can be reduced as anaesthesiological assistance is not needed and the patients can leave the hospital immediately after the procedure without postoperative surveillance.

The majority of patients experienced only mild pain during the days following the operation, the need for mild analgesics was very low and no opiates were needed. The fact that the interviews were conducted personally by the surgeon carries a risk of underreporting the severity of pain as patients may wish to please their doctor. However, the importance of giving correct answers was stressed. Postoperative pain has not been reported in many studies and it can be difficult to compare the findings across different studies due to differences in culture, sex and age. To our knowledge, no other study has reported the level of postoperative pain after the PP procedure, but it seems to be less painful than more extensive off-midline procedures [14, 15] and midline surgery [16].

It is difficult to compare the 51% who were capable of returning to work within 24 hours in this study with results from studies performed in countries with different social security and health care systems. However, reporting results from USA, Bascom [10] found the mean time to return to work to be just one day, which is in contrast to the two weeks after simple procedures including PP reported by others [8, 12]. The operation itself, with its limited postoperative nuisance, seems to be part of the reason for the earlier return to work.

Our rates of postoperative bleeding and infection are similar to those reported by others [11]. All cases of bleeding were, however, very mild and haemostasis was easily achieved. Senapati [11] found a significantly higher rate of abscess formation when omitting to suture a subcutaneous flap to the skin between the midline and lateral wounds. This was not used as standard in this study; but the subcutaneous tissue was closed as described, if possible. Our rate of postoperative infection may have been lower if this procedure had been carried out for all patients.

Impaired wound healing is a common problem associated with PS surgery. Incomplete wound healing after midline surgery can leave the patient with a bigger problem than prior to surgery [17]. In this study, the wounds did not heal in 16% of patients. This correlates with a similar finding [12], whereas Senapati [11] reported incomplete wound healing in only 1% of the patients. Unhealed wounds after the pit-pick procedure are usually not large and, unlike the wounds of larger midline procedures, do not make off-midline surgery, such as cleft-lift, more difficult to perform. Incomplete wound healing seems to be related to increasing numbers of midline pits, secondary pits, number of PPs and postoperative infection, although these factors obviously interact. It is impossible to draw any conclusions about which patients are most suitable for PP and who would benefit more from e.g. cleft-lift.

Our recurrence rate of 14% seems higher than that reported by others [11, 12, 18]. This might be due to our rather strict definition of both symptomatic and asymptomatic recurrences. In addition, our patients were clinically assessed in contrast to other studies where questionnaires or phone interviews were used. Another reason could be that in our department, the PP procedure was offered on a liberal indication as an alternative to cleft-lift in patients with multiple pits or evidence of large sinuses. In terms of recurrence rates, the PP procedure seems equal to techniques such as sinotomy [7, 8], use of trephines [9] and Lord-Millar's brush method [3-6].

Bascom's PP operation seems an acceptable treatment option in mild pilonidal disease where off-midline procedures with lower recurrence rates but a higher morbidity [2, 12, 14, 19] may be excessive. Further studies are needed to determine in which patients the PP procedure is an adequate treatment.

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