

Endoscopic pilonidal abscess treatment: a novel approach for the treatment of pilonidal abscess

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ABSTRACT

INTRODUCTION Pilonidal abscess is a common surgical emergency. Conventional treatment with incision and drainage is associated with significant postoperative morbidity. We report our initial experience of using minimally invasive endoscopic technique for the treatment of pilonidal abscesses, referred to as endoscopic pilonidal abscess treatment (EPAT).

MATERIALS AND METHODS A prospective database of all patients undergoing EPAT between January 2015 and March 2016 at Whiston Hospital was maintained. Data regarding patient demographics, perioperative variables and postoperative follow-up were recorded.

RESULTS Nineteen patients were included, male to female ratio was 53 : 47 and median age of the cohort was 24 years (interquartile range 22–25 years). EPAT was the primary procedure for 10 patients and 9 had EPAT for recurrent pilonidal abscesses. There were no readmissions and none needed further surgery within 6 weeks of having the procedure. In all patients, complete wound healing was achieved within 6 weeks; all reported minimal postoperative pain (median postoperative visual analogue scale score 1) and immediate return to the activities of daily life. Four of the nineteen patients (21%) required definitive intervention for pilonidal disease in the follow-up period.

CONCLUSIONS EPAT is a novel, minimally invasive technique for the treatment of acute pilonidal abscesses. It is safe, associated with reduced postoperative morbidity, recurrence rate and quick wound healing. Initial encouraging results require further investigations on a larger group of patients in a multicentre setting.

KEYWORDS

Endoscopic pilonidal abscess treatment – Recurrence – Morbidity – Wound healing

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Introduction

Pilonidal disease is a condition of the skin of the sacrococcygeal region. It can manifest acutely as an abscess under tension or as a chronic condition, where it presents as an intermittent discharge in the form of pilonidal sinus. The prevalence of infected pilonidal disease in the general population is approximately 0.7% and the reported incidence is nearly 25/100,000.^{1,2} Risk factors include hairy body, thick skin, high body mass index (BMI > 25kg/m²), a deep gluteal cleft, lack of hygiene and prolonged seated position for several hours per day.³ Treatment is mainly surgical and the principles of management include eradication of the underlying suppuration, obtaining rapid wound healing, reducing morbidity and the risk of recurrence.

A number of techniques have been described for the treatment of chronic pilonidal sinus, varying from simple excision to complex plastic surgical procedures. However, pilonidal abscesses are routinely managed with incision and drainage of the fluctuant swelling accompanied by washout and leaving the wound open for healing by secondary

intention.⁴ The postoperative course of patients undergoing incision and drainage is associated with prolonged wound healing time, pain, regular wound dressing and delayed return to daily activities. In 2011, Meinero described a novel technique using a fistuloscope for the treatment of anal fistulae.⁵ Video-assisted anal fistula treatment is now recognised as an effective and safe treatment for anal fistula and is associated with reduced morbidity.⁶

We report our initial experience of applying the principles of video-assisted surgery for the treatment of acute pilonidal abscesses – endoscopic pilonidal abscess treatment (EPAT). The rationale for this technique is to perform a thorough washout of the abscess cavity using a small incision followed by ablation of the cavity under direct vision using the fistuloscope. Our primary aim was to examine the efficacy of this technique which was established by the need for further procedures within 6 weeks. Secondary objectives were duration of wound healing, postoperative pain score and requirement for analgesia, need for district nurse visits and time to return to usual daily activities.

Materials and Methods

We maintained a prospective electronic database of all patients undergoing EPAT between January 2015 and March 2016 at St. Helen's and Knowsley NHS Trust. The following data were recorded during hospital admission: age, gender, BMI, smoking status, American Society of Anesthesiologists (ASA) grade, previous procedures for pilonidal abscess, duration of symptoms, duration of surgery, length of postoperative hospital stay, inflammatory markers (white blood cell and C-reactive protein), preoperative and postoperative visual analogue scale (VAS) pain scores. All patients were counselled regarding the procedure and given the option of having conventional incision and drainage if desired. The procedure was performed under general anaesthesia, with patients placed in the lateral or prone position. A small (1–2cm) incision was made at the point of maximum fluctuance using a Colorado diathermy needle. After draining the pus, the Meinero scope was introduced and whole abscess cavity was washed under direct vision. The remnant cavity was obliterated using the electrode and a small absorbent dressing was applied to the wound. Patients were discharged with a 10-ml syringe and provided with instructions to self-irrigate the wound with saline twice daily.

Each patient was examined in clinic 2 weeks postoperatively, with subsequent telephone follow-up at 3 and 6 months. Patients requiring elective excision and those in whom the wound had not healed completely at first visit were followed up for a longer period. During the follow-up examination, data regarding requirements for analgesia, healing time, time to return to activities of daily life, district nurse reviews, and need for further incision and drainage or elective procedures were recorded. For statistical analysis, continuous variables were expressed as the median with interquartile range (IQR) and calculations were performed using OriginPro 9 software (OriginLab Corp., Northampton, MA, USA).

Results

The cohort included 19 patients (10 male and 9 female); EPAT was the primary procedure in 10 patients and 9 presented with recurrent pilonidal abscesses. Median age was 24 years (IQR 22–25) years. None had diabetes or inflammatory bowel disease and there were 11 current smokers, 2 ex-smokers and 6 non-smokers in the cohort. Median body mass index was 28 (IQR 27–31); median duration of symptoms was 4 days (IQR 3–6 days); median abscess size was 4cm (IQR 4–5cm) and ASA score was 1 (IQR 1–1).

Median preoperative inflammatory markers were white blood cell count ($12.8 \times 10^9/l$; IQR 10.6 – $14.9 \times 10^9/l$) and C-reactive protein (39mg/l; IQR 17–76). Median operative time was 36 minutes (IQR 29–47 minutes). All patients were discharged within 24 hours of operation. Median pre- and postoperative VAS pain scores were 7 (IQR 6–7) and 1 (IQR 1–2), respectively. Clinical follow-up at 2 weeks revealed complete wound healing in the majority of patients (median 4 weeks; IQR 3.5–6 weeks). None of the patients required postoperative antibiotics or readmission within 6 weeks and

all patients reported minimal requirements for analgesia postoperatively and return to the activities of daily life within 48 hours. Median follow-up was 10.5 months (IQR 6–12 months) and 8 of the 19 patients (42%) required district nurse review.

Four individuals required surgical intervention in the elective setting; two underwent excision and two required lotus-petal flap reconstruction, one of whom developed recurrent pilonidal abscess following the reconstruction. Three of these four patients who required a definitive procedure had previously undergone incision and drainage of pilonidal abscess. Only one patient in the primary pilonidal abscess group required a definitive procedure following EPAT.

Discussion

The advent of endoscopic surgery for the treatment of anal fistula is considered a major advancement in the management of perianal disease.⁶ A number of studies have shown the efficacy and safety of video-assisted surgery for pilonidal sinus and anal fistula^{5–9} but we are the first to report the utility of endoscopic surgery in the acute setting for the treatment of pilonidal abscesses. Fahrni *et al.*¹⁰ reported a relapse rate of 58.9% after incision and drainage of pilonidal abscess and, although the number of patients in our cohort are small, no patients required emergency admission within 6 weeks following EPAT and ten patients (71 %) did not require any further definitive procedure for the duration of follow-up. The postoperative pain score was low in patients undergoing EPAT and all patients reported immediate return to daily activities. Interestingly, in the majority of cases, complete wound healing was achieved within 4 weeks; this may reflect the minimally invasive nature of the surgery.

Our results are comparable with those reported by Husain *et al.*,¹¹ who performed aspiration of pilonidal abscess under local anaesthesia followed by a course of oral antibiotics and subsequent elective excision and primary closure of the underlying pilonidal sinus, thereby converting emergency pilonidal abscess into an elective procedure. However none of the patients in our series required postoperative antibiotics and only four required an elective procedure. Fourteen patients were discharged on the day of the operation and five required overnight admission because the operation was scheduled during the evening or night, making same-day discharge unsafe.

A significant proportion of patients (42%) required district nurse review and analysis of data revealed that majority of these individuals were not compliant with self-irrigation, highlighting the importance of proper counselling regarding irrigation. Interestingly, of the nine patients who had previously had irrigation and drainage procedures, three (33%) ended up having definitive procedures and only one of the ten (10%) in whom EPAT was a primary procedure required elective surgical intervention. This may indicate that primary EPAT could be a definitive procedure for patients presenting acutely with pilonidal disease. Compared with simple incision and drainage, EPAT is time consuming but, in the longer term it is cost-effective, owing to the reduced

hospital stay, reduced need for dressing changes and early return to daily activities.

Our study has limitations; there were a small number of patients in a single centre and results are vulnerable to selection bias, as the procedure is currently only performed by two surgeons in the unit.

Conclusion

Endoscopic pilonidal abscess treatment is an effective, minimally invasive procedure for the treatment of acute pilonidal abscess. It is associated with reduced morbidity, reduced need for further intervention in short term and rapid wound healing. Further studies with larger numbers and multiple centres worldwide would help to establish the efficacy of this novel technique.

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