

# Total subcutaneous fistulectomy combined with Karydakis flap for sacrococcygeal pilonidal disease with secondary perianal opening

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## Abstract

**Objective** Flap techniques have been performed with success in the treatment of pilonidal disease. However, some complex cases such as perianal pilonidal disease need special attention. We describe a modification of a well-known flap technique for secondary perianal pilonidal disease and its early results.

**Patients and method** Total subcutaneous fistulotomy combined with Karydakis flap was performed on 14 patients. An elliptical incision, described by Karydakis, was made while not including the perianal opening. Both sides of the elliptical incision were deepened down to the gluteal muscle and postsacral fascia. At the level of subcutaneous tissue, attention was directed to the secondary perianal opening. A fine probe was inserted through the perianal skin pit, and the connection site between the fistula and the cyst was observed. A small circular skin incision was made around the probe and the

fistula tract was totally excised using electrocautery together with the main cyst. The flap was prepared as described by Karydakis. Before suturing the flap to the other side, perianal subcutaneous tissue was sutured with a fine absorbable material, then, the flap was sutured with 4/0 polypropylene.

**Results** One patient developed seroma. Neither early failure in wound healing nor recurrence was observed at a mean of 16.2 months (range 4–36 months) follow-up.

**Conclusion** Total subcutaneous fistulectomy plus Karydakis flap as a single-stage procedure is an effective surgical modality for sacrococcygeal pilonidal disease with secondary perianal opening.

**Keywords** Pilonidal sinus, perianal, sacrococcygeal, fistulectomy, Karydakis flap

## Introduction

Numerous techniques have been described for treatment of pilonidal disease. The common aim of those surgical procedures is to provide a high cure rate, low recurrence rate and a short healing time. There are many reports in the literature on this subject suggesting technique that can provide the best results. According to recent reports, flap techniques including the one described by Karydakis have the best outcomes [1–4]. Today, flap techniques are performed in many centres with a high cure and low recurrence rates.

Despite the successful results of new techniques some complex cases such as patients with secondary openings

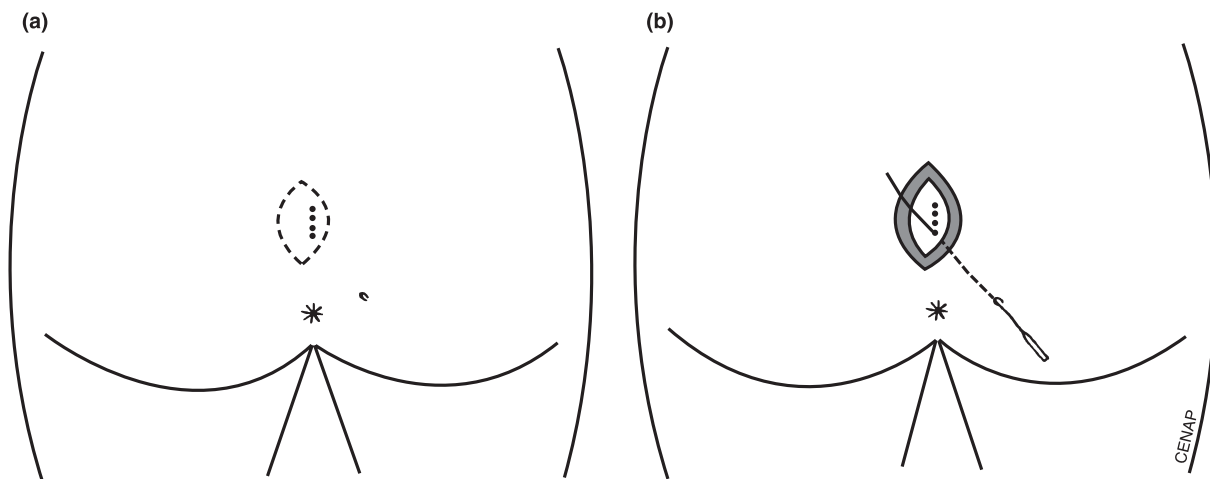
away from the midline can create problems. Although those cases may usually be cured by asymmetric techniques, the problem is still challenging when the secondary opening is close to the anus.

We describe a single-stage surgical procedure for treatment of sacrococcygeal pilonidal disease with secondary perianal opening(s).

## Patients and methods

Between April 2001 and December 2004, we performed the technique on 14 patients. All patients but one were male with a mean age of 25.7 years (range 18–31 years). Disease duration was 10 months on average (range 3–24 months). Ten patients had undergone abscess drainage once or twice previously. The mean number of midline pits was 2.1 (range 1–4). All patients had one single secondary perianal tract (9 left and 5 right).

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**Figure 1** (a) Elliptical asymmetric incision originally described by Karydakias [1] (perianal opening shown in the left side). (b) Incision is deepened and a probe inserted through the perianal opening.

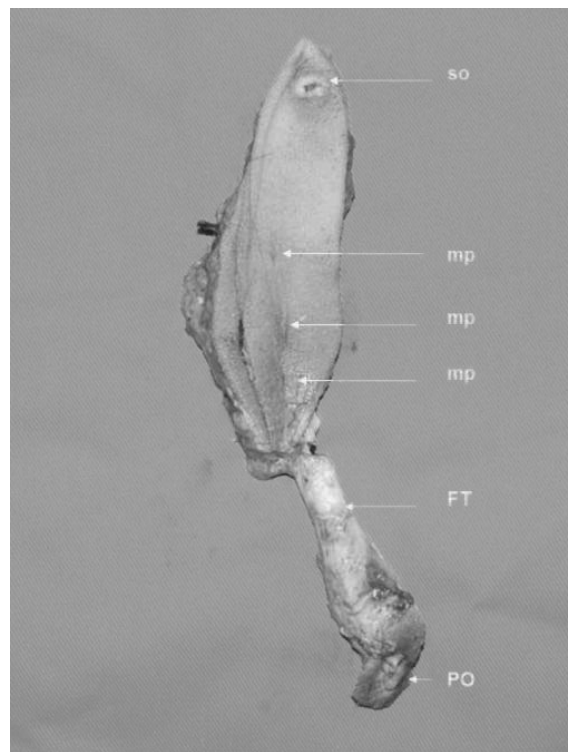
### Technique

Single dose cephazoline (1 g; intravenous injection) and metranidazole 500 mg (intravenous infusion) were administered in all cases one hour before the surgery. An asymmetrical elliptical incision is made as described in Karydakias technique [1]. The cranial and caudal tips of the incision are put into place at the opposite side of the perianal opening (Fig. 1a). The ellipse is based only on the pits in the vicinity of the midline. The incision covers closer lateral secondary openings, but no effort is made to include the perianal opening. Using electrocautery, both sides of the elliptical incision are deepened down onto the gluteal muscle and postsacral fascia. The secondary perianal opening is located at the level of the subcutaneous tissue. A fine probe is inserted through the perianal skin pit, where the connection site between the fistula and the cyst is observed (Fig. 1b). A small circular skin incision is made around the probe and the fistula tract is totally excised with the main cyst using electrocautery together with the main cyst (Fig. 2). The cavity is irrigated with saline.

The flap is prepared as described by Karydakias [1]. Before suturing the flap to the other side, perianal subcutaneous tissue is sutured with a fine absorbable material. The flap is then sutured in two layers as previously described, leaving a small vacuum drain insitu. Finally, the skin and circular perianal incision are closed separately with 4/0 polypropylene (Fig. 3).

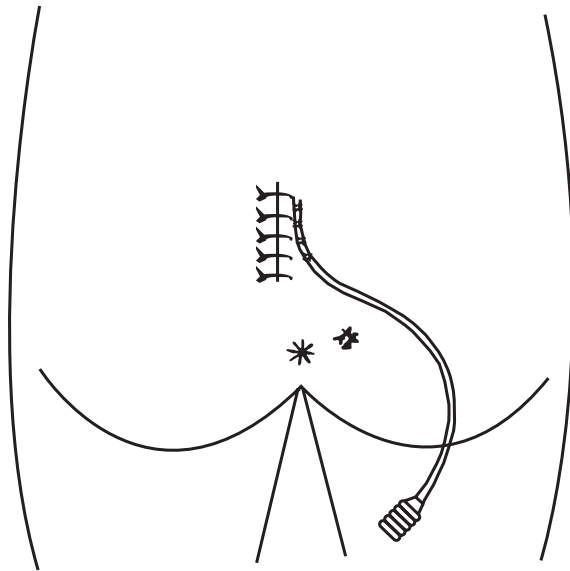
### Results

Eight patients were operated under general anaesthesia, whereas spinal anaesthesia was used in six cases. Macroscopic examination of the operative specimen



**Figure 2** Gross appearance of operative specimen. mp, midline pit; so, secondary opening; T, totally excised fistula tract; PO, secondary perianal opening.

showed hair accumulation in the secondary perianal fistula tract in 10 cases. Histopathological examination revealed chronic inflammation and foreign body reaction in all cases. No intra-operative complications were recorded. Patients were discharged on postoperative



**Figure 3** Schematic appearance of completed operation with a small vacuum drain left *in situ* before suturing the flap.

day-2, following drain removal. One patient developed seroma after discharge and he was treated with daily aspiration for one week. No failure in wound healing was observed in the early postoperative period. The patients were seen in clinic as outpatients on postoperative days 7, 15 and 30 then monthly thereafter. All patients returned to work within four weeks. Mean postoperative follow-up was 16.2 months (range 4–36 months). Seven patients were followed for longer than 1 year. No patients developed either early recurrence or local sepsis.

## Discussion

Perianal pilonidal sinus may be primary or secondary to sacrococcygeal disease but the primary form has been reported in a very few patients [5,6]. It mimicks fistula-in-ano and sometimes requires magnetic resonance imaging for the correct diagnosis [7]. On the other hand, secondary perianal pilonidal disease is an extension of sacrococcygeal disease. Most secondary openings run in a lateral and cranial direction from the primary midline sinus, however, in some cases the tract follow a caudal course and open next to the anus [5]. The subcutaneous communication between sacrococcygeal disease and secondary perianal opening may penetrate deep spaces such as the ischioanal fossa and may cause perianal sepsis. For this reason, both midline pathology and the perianal opening must be treated in a proper manner.

Differentiation between primary or secondary perianal pilonidal disease is important because the surgeon may experience recurrence if an appropriate procedure has not been chosen. The surgical procedure for the two diseases is completely different. Generally, primary perianal pilonidal sinus is treated by simple fistulotomy and laying the tract open, by keeping the sphincter mechanism intact [5,6]. A short healing time can be expected with this simple procedure as seen in fistula-in-ano cases in which the healing time is significantly shorter when the tract is laid open in comparison to tract excision.

In contrast to perianal fistula treatment, it has been shown that pilonidal sinus can be treated by total excision and primary flap techniques with satisfactory results, while ‘lay open’ procedures have a longer healing time [1]. The authors believe that secondary perianal pilonidal disease with midline pit(s) should not be considered a different entity to the usual sacrococcygeal pilonidal disease therefore secondary perianal pilonidal disease with midline pits is best treated with a flap procedure.

The technique described here is a small modification of the Karydakís flap. Another minor modification of the Karydakís flap for the cases with lateral secondary openings on both sides of midline was described formerly. In this modification, a small V-shaped side-cut is made along with the usual elliptical incision, and the closure is done by forming a T-junction [2]. However, this modification is suitable only for lateral openings and it is obvious that a perianal opening requires further technical consideration as described here.

Although the follow-up period is much longer in Karydakís’ personal series [1] and Kitchen’s experience with the Karydakís flap [2] the early results of the modified technique reported here is as promising as those of the Karydakís flap in midline sacrococcygeal disease. This single solution for both midline and perianal sinuses avoids a long healing period that fistulotomy requires without resulting wound failure or recurrence.

## Conclusion

Although sacrococcygeal pilonidal disease with perianal opening seems to be a complex pathology, it can be cured with a simple modification of a well-known flap technique. The results of the present series have demonstrated that total subcutaneous fistulotomy plus Karydakís flap is an effective procedure in treatment of this pathology.

## References

- 1 Karydakís GE. Easy and successful treatment of pilonidal sinus after explanation of its causative process. *Aust NZ J Surg* 1992; **62**: 385–9.

- 2 Kitchen PRB. Pilonidal sinus: experience with the Karydakias flap. *Br J Surg* 1996; **83**: 1452–5.
- 3 Chintapatla S, Safarani N, Kumar S, Haboubi N. Sacrococcygeal pilonidal sinus: historical review, pathological insight and surgical options. *Tech Coloproctol* 2003; **7**: 3–8.
- 4 Petersen S, Koch R, Stelzner S, Wendlandt TP, Ludwig K. Primary closure techniques in chronic pilonidal sinus: a survey of the results of different surgical approaches. *Dis Colon Rectum* 2002; **45**: 67.
- 5 Walsh TH, Mann CV. Pilonidal sinuses of the anal canal. *Br J Surg* 1983; **70**: 23–4.
- 6 Vallance S. Pilonidal fistulas mimicking fistulas-in-ano. *Br J Surg* 1982; **69**: 161–2.
- 7 Taylor SA, Halligan S, Bartram CI. Pilonidal sinus disease: MR imaging distinction from fistula in ano. *Radiology* 2003; **226**: 662–7.