

# Pilonidal disease practice points

## An update

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### Background

Chronic pilonidal disease is a common debilitating condition often seen in general practice. It is a cause of considerable morbidity and social embarrassment, but recent developments in treatment options provide promising solutions to this problem.

### Objectives

This article recaps pilonidal sinus development and presentation, details methods of treatment in the primary care setting and explores new specialist management options available in Australia.

### Discussion

As a chronic condition, the devastation of recurrence with further pain, embarrassment and time off work – added to the prospect of more surgery – is still common for patients with chronic pilonidal disease. This can be avoided with correct management and timely counselling regarding surgical options available.

**PILONIDAL DISEASE** is an inflammatory condition that typically affects the sacrococcygeal fold. The term ‘pilonidal’ is derived from the Latin words for hair (*pilus*) and nest (*nidus*), implying a nest of hair. The majority of cases are localised to the buttock and gluteal region, with few reported cases involving other parts of the body such as on the scalp, axilla, groin or in between the fingers of sheep shearers/dog groomers.<sup>1,2</sup> Common presentations range from acute abscesses to extensive chronic infection or a sinus formation (a blind epithelial tract, lined by granulation tissue).<sup>1</sup> In particular, the chronic discharging sinus (pilonidal sinus), characterised by painless chronic waxing and waning drainage, has been a challenge for many primary physicians in Australia.<sup>3</sup>

Among the adult population in the Western world, the estimated incidence is 26 per 100,000 people, with incidence peaking in the second and third decades of life. Men are twice as commonly affected as women.<sup>1</sup> Other risk factors include increased body mass index, coarse hair and a deep natal cleft.<sup>4,5</sup>

### Aetiology/pathology

The aetiology of pilonidal sinus is still a matter of controversy, but the three most widely accepted theories include the foreign body response theory as outlined by Karydakis,<sup>6</sup> the Bascom hypothesis of ‘midline pits’<sup>7</sup> and the Stelzner theory of retention dermatopathy.<sup>7</sup> The common point shared by these theories is that chronic retention of keratin/debris in the natal cleft and its associated inflammatory response cause pilonidal disease.<sup>4</sup> Over time, this results in a pattern of waxing and waning inflammation.

Evaluation of pilonidal sinuses has shown that the cystic cavities within the sinus branch outwards and are lined by chronic granulation tissue. The sinus’

lining is characterised by haemosiderin-laden macrophages and sometimes even foreign body giant cells, reflecting the chronic inflammatory picture at play.<sup>5</sup> Surprisingly, only 50–75% of these cavities have been found to contain hair shafts.<sup>4</sup>

### Clinical presentation

#### Asymptomatic sinus

Some patients may be concerned about the presence of asymptomatic pilonidal sinus pits. This should be treated by reassurance and hygiene,<sup>8</sup> because the disease often dissipates as the patient passes the fourth decade of life.

#### Acute pilonidal abscess

During an acute flare-up, patients usually complain of acute pain, with swelling, erythema, and a tender lump in or near the natal cleft. Localised source control is advocated as the mainstay of treatment. Current options include needle aspiration, drainage without curettage of the cavity, or primary drainage and curettage of the cavity to remove any hair follicles or debris.

The value of antibiotic therapy in an acute pilonidal abscess has not been clearly established in the absence of immunodeficiency or concurrent systemic illness.<sup>9</sup> However, should there be associated cellulitis around the abscess, a course of antibiotics is recommended. This is commonly penicillin, with flucloxacillin the most widely prescribed.<sup>10</sup>

#### Chronic pilonidal sinus

Patients usually present with intermittent pain, swelling and discharge at the base of the spine, without significant constitutional symptoms. There is often a history of repeat abscesses that either drain spontaneously or have been drained with incisions away from the midline.

In this group of patients, various surgical techniques can be considered to treat

the chronic symptomatic pilonidal sinus. They comprise radical excision, deroofting, debridement of the sinus tract followed by primary flap coverage (which could be attempted in the day surgery by the primary physician with surgical experience), as well as newer methods including endoscopic pilonidal sinus treatment (EPSiT). A brief review of each is provided below to outline the various treatment options available today.

### Surgical techniques

Traditional techniques have aimed to remove the area of chronic inflammation as well as any potential remaining nidus of infection, with healing achieved via secondary intention or primary coverage with surrounding tissue flaps. The feature of the flap is to create a wound off the midline to allow healing and also to decrease the recurrence of the disease.

The following three techniques have been shown to be effective in the treatment of pilonidal sinus. While Karydakis pioneered the use of tissue

flaps in the treatment of pilonidal sinus, the Bascom and Limberg techniques are also used today. A direct comparison is shown in Table 1.

#### Karydakis method

In the Karydakis method, the sinus is completely excised down to the midline sacral fascia. All affected tissue is removed and the area carefully debrided.<sup>6</sup> To achieve coverage, a covering flap consisting of skin, dermis and the underlying fat is then created by undercutting the medial edge. This flap is then lateralised across the midline. The wound is closed in layers, producing a lateral, vertical scar.

#### Bascom 'cleft lift'

The Bascom lift was developed as a less invasive technique with the additional aim of removing secondary hair follicles to break the cycle of inflammation.<sup>11</sup> Hair follicles are first excised with mini incisions of <5 mm. The use of punch biopsies to excise the core of tissue around the hair follicle has also been

used to similar effect. Thereafter, a lateral incision is made to allow open exploration of the pilonidal cavity and removal of granulation tissue/debris material. This allows secondary hair pits to be debrided/cleaned out. Finally, to lateralise the scar and reduce the depth of the natal cleft, the skin on the opposite side of the cleft is mobilised to lateralise the suture line.

#### Limberg flap procedure

Limberg et al have also advocated excision of the affected sinus and surrounding tissue.<sup>12</sup> However, a rhomboid shaped incision is purported to allow the flap of skin lateral to the incision to be raised and transposed medially to flatten out the natal cleft, producing a Z-shaped scar.

#### EPSiT

In order to overcome the disadvantages of the open techniques, the viability of EPSiT has been explored over the last few years. First developed by Meineiro, this process uses a fistuloscope, which is passed through the sinus tract to

**Table 1. Surgical techniques to treat chronic pilonidal disease**

Procedures	Pros	Cons
<b>Lay open of sinus</b>	Simple procedure. Quickest procedure to perform.	High recurrence rates. Healing by secondary intention requires an extended period of wound care.
<b>Flap procedure 1: Karydakis</b>	Most successful procedure with potentially lowest recurrence rates, found to be as low as 1% by Karydakis himself. <sup>6</sup> Other studies have reported an equally impressive recurrence rate of 3–5%. <sup>15</sup>	Original method had complaints of significant post-operative pain. Post-operative complications include infection and seroma formation. Flap dehiscence implies healing by secondary intention.
<b>Flap procedure 2: Bascom</b>	Healing time is shortest out of the three flap procedures, at an average of 3.5 weeks. <sup>7</sup> Least amount of post-operative pain when compared with other flap procedures.	Recurrence rates of approximately 15%. <sup>7</sup>
<b>Flap procedure 3: Limberg</b>	Lower rates of post-operative pain, infection and seroma formation when compared with the original Karydakis method. <sup>16</sup>	Bigger cut and scar, hence poorer cosmesis. Procedurally takes a longer time in a prone position than the other flap procedures.
<b>Endoscopic pilonidal sinus treatment (EPSiT)</b>	Benefits of laparoscopic surgery. The aesthetic result appears to be good, as opposed to traditional lay open techniques. The reduced healing time (2–3 weeks) translates to a shorter recovery time and more prompt return to work. There is no need for painful packing and dressing changes as per the traditional techniques. Recurrence rates are acceptably low at 5%. <sup>4</sup> The procedure may be repeated.	Lack of long-term data given its novelty. Given there is no excision and flattening of the natal cleft, there are concerns regarding long-term recurrence with this technique.

allow direct visualisation in a minimally invasive manner.<sup>4</sup>

Visual exploration of the pilonidal sinus, as well as any possible fistula tracts or abscess cavities, allows identification of all hair follicles and debris. Subsequently, careful debridement of the granulation tissue can be done under visualisation, allowing a targeted but complete removal of the chronically inflamed area. This targeted approach reduces the risk of unnecessary damage to surrounding tissue structures and thereby reduces the associated post-operative inflammation.

In short, EPSiT is thought to build on the Bascom principle of removing hair and debris, but with an endoscopic focus to improve recovery time and reduce morbidity.<sup>8</sup>

However, there is still a lack of long-term data in comparison to the established traditional techniques. Its reported success rate of 92% from recent small population studies still pales in comparison to the success rates of open flap procedures.<sup>13</sup>

## Follow-up and secondary prevention

### Dressing

Careful wound care to ensure optimal conditions for healing is important. Vacuum dressings applied after laying open the sinuses have not been shown to be significantly better than simple dressings,<sup>9,10</sup> but may be considered on a case-by-case basis after taking into account factors such as patient and practitioner preference.<sup>10</sup>

### Hair removal

Hair removal in pilonidal disease has been a topic of controversy. On the basis of previous understanding that pilonidal disease was a disease of misgrown hair follicles, it followed naturally that hair removal was thought to be a mainstay of treatment.

Today, there is only support in the literature for hair removal with laser treatment.<sup>14</sup> It has been shown that a significantly reduced recurrence rate was recorded in these patients in comparison to patients with no

hair removal. However, patients who removed their hair via shaving or hair removal cream had greater rates of recurrence, thought to be due to skin trauma from shaving and possibly the lack of compliance in the long run.<sup>14</sup>

Nonetheless, good hygiene is still the mainstay of secondary prevention and highly important to stress on individuals suffering from pilonidal disease.

## Key points

- Good hygiene is the main component of secondary prevention. Hair removal via laser treatment can also be recommended.
- Acute infections require urgent local control of sepsis. This includes needle aspiration or incision and drainage.
- There are many surgical options available for chronic pilonidal sinus disease. These range from traditional open methods of removal of sinus to EPSiT, which has shown promising results to date.

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