



Paul Kitchen

# Pilonidal sinus

## Management in the primary care setting

### Background

Postanal pilonidal sinus is a skin condition in the midline of the natal cleft. A primary pit forms in the midline, caused by a hair follicle that has become infected, into which loose hairs enter to create a track or abscess.

### Objective

This article explains how a pilonidal sinus develops and presents, and details methods of treatment in the primary care setting and specialist management options.

### Discussion

The devastation of recurrence with further pain, embarrassment, and time off work or school (in some cases for months or years), plus the prospect of more surgery is still common for patients with postanal pilonidal sinus. This can be avoided with the correct management. Surgery now has methods that produce early healing, low recurrence rates and acceptable cosmetic results.

**Keywords:** pilonidal sinus; colorectal surgery



Postanal pilonidal sinus (PS) can present acutely as a pilonidal abscess, asymptotically as a small pit or nontender lump, or as a discharging lesion with or without pain or a lump (*Figure 1a, b*). The two main features of the chronic sinus are:

- a midline primary pit (or more than one) at the base of the natal cleft, which is epithelial lined and usually not inflamed and may have a hair (or several hair fragments) inserted into it that can be pulled out
- a secondary opening which, if present, is usually on one side and cranial to the primary pit. It may be a scar of a previous opening. If open, it may discharge pus or blood and be lined by granulation tissue. There may be a palpable track leading from the midline pit. More than one secondary opening means the sinus track has branches.

Seventy-five percent of patients presenting with PS are usually overweight, male, aged 15–40 years, and with hairy skin and a deep natal cleft. It is not seen in young children and is not of congenital origin.

### Formation of pilonidal sinus

It is now thought that the sequence of factors responsible for the formation of PS is as follows:

- a small midline pit develops which may be a hair follicle, which then sheds its own hair and allows keratin and debris to fill it. The stasis may cause a folliculitis which pushes pus into the underlying fat
- loose semicurved strong hairs fall from the buttocks or elsewhere, and migrate to the cleft where they orientate vertically and enter the pit by their roots
- the scales on loose hairs prevent it falling out. A foreign body granuloma develops in the subcutaneous fat
- the depth of the cleft ensures an anaerobic environment that can be an area of continual moisture and pressure in which further debris, hairs and pus are forced into the midline portal and underlying cavity or track
- the direction of the follicle determines the direction of the track, which may exit on one side after sometimes first presenting as an acute abscess then persisting as a chronically discharging sinus.



## Managing the acute pilonidal abscess

An acute pilonidal abscess is an urgent problem as the patient cannot sit and is in great pain. If the abscess has started to drain spontaneously, it may drain itself. Most abscesses develop well beneath the skin and require a general anaesthetic for drainage. Antibiotics will not cure the abscess but may help if there is cellulitis; the other potential benefit of antibiotics is that they may keep things static until the patient sees a surgeon. If used, antibiotics need to cover anaerobes.

If clinical examination shows it is a pointing abscess with a soft, tender fluctuant area at the skin surface, then it is reasonable for the primary practitioner to drain it under a local anaesthetic.

### Procedure for draining an abscess

- Lay the patient on the affected side and elevate the other buttock. If the abscess is midline, the patient should be prone. Perform a light shave over the area
- Insert a small amount of 1% xylocaine (with adrenaline) tangentially into the skin at its thinnest point to raise a bleb, then make a small vertical or a cruciate incision with a small scalpel blade deep enough for pus to exude. Make the incision 1 cm off the midline, even if the abscess is in the midline, and do not extend it into the midline or try to de-roof
- Gently widen the opening once with artery forceps (warning the patient that it will hurt) and apply a gauze dressing. There is no need to irrigate the cavity or insert packing gauze. Most patients can apply self dressings at home.

### Follow up

When the patient returns and the hole has closed, the primary pit may appear, having been invisible earlier due to oedema. The patient has a 40% chance of having no more abscesses, and can decide whether to see a surgeon. In the meantime, instruct the patient to undertake hygiene measures with showers and a towel to rub away loose hairs. A carer or partner could check the area once a week and use tweezers to pull out any small hairs making their way into a primary pit. Shaving may help. The use of a small piece of gauze between the buttocks, replaced daily for a month, aerates the cleft.

### Specialist management options

#### Asymptomatic sinus

This should be treated by reassurance and hygiene.<sup>1</sup> The 'disease' may burn itself out as the patient reaches middle age.

#### Recurrent abscess or small sinus

If an abscess occurs a second time, it is likely to recur repeatedly. Once it has healed after drainage there will usually be a small scar at the site, and one or more noninflamed primary pit(s) in the midline nearby. A small sinus such as this can be treated under local anaesthetic by simple day surgery in the rooms or outpatient theatre



Figure 1a, b. Postanal pilonidal abscess



Figure 2a, b. Using a punch to trephine out the small primary pit



Figure 3a, b. Using gauze to clean out hairs. A second pit is excised



Figure 4. A lateral vertical incision to open the secondary opening and remove hairs

as an elective procedure.

There may be a track beneath the skin containing hairs. If this is the case, then the primary pit(s) needs to be eliminated to prevent recurrence (Figure 2a, b). Laying open the track is a simple method that can be successful,<sup>2</sup> but may be slow to heal and leave an opportunity for more hair insertion into a midline open wound. Some surgeons have advocated the use of a fine brush<sup>3</sup> or phenol<sup>4</sup> to clean out or obliterate the track, but if

the secondary opening is closed as a scar, it will need to be reopened to clean out the track.

The 'pit picking' method means the pit is removed (looks like a grain



of wheat) with a number 11 blade or a skin biopsy punch, the superficial abscess scar is excised, and the track cleaned out (*Figure 3a, b, Figure 4*). The pit wound is then closed with a single suture (*Figure 5*). This leaves the abscess opening to heal again, which it does readily,<sup>5</sup> with rapid return to work.<sup>6</sup> The cleft is still left deep, so there are recurrences<sup>7</sup> (about 15%) but the operation is simple and can be repeated.

### Complex cases

Sometimes there is more than one secondary opening, which may be distant (some centimetres) from the primary pit, and there may be thickening between these, suggesting an abscess cavity (*Figure 6*). These cases need more than simple ‘pit picking’.<sup>8</sup> Traditional approaches have been to excise the whole sinus and either attempt primary closure (sometimes with large tension sutures) or leave the wound to close by second intention (called ‘open healing’). These operations work in many cases, but may result in excessively wide excisions which are unnecessary and can be associated with recurrence rates as high as 22–41%<sup>9,10</sup> (*Figure 7, 8*). Better results can be obtained if attention is taken to the causative factors (the cleft and the midline portal of entry) and only minimal tissue is excised.

Randomised trials have now established that excision, with off-midline primary closure and some elevation of the natal cleft, should be standard practice.<sup>11–14</sup> The entire wound should end up off the midline, especially the lower end, requiring flap formation. Off-midline wounds heal better than deep midline wounds as they are better aerated (there is no longer a deep cleft), easier to keep clean, and more supple (based on fat not bone) and therefore are able to withstand stretching and pressure on sitting (*Figure 9, 10*).

Two procedures gaining in popularity are the modified Karydak operation<sup>15,16</sup> and the Bascom cleft lift operation,<sup>17</sup> which both incorporate similar principles and have excellent results (~1–4% recurrence and return to work or school in 2–4 weeks). The flap is thin, is fashioned first, and is tested to prevent too much skin being excised, and much subcutaneous fat is preserved and rolled in to fill in the cleft (*Figure 11*). Patients usually can be discharged from hospital within 24 hours.

### Therapeutic options for patients presenting with recurrent pilonidal sinus

Patients with occlusive skin conditions, such as suppurative hidradenitis, may develop recurrence and



Figure 5. Primary pit wounds that have been sutured



Figure 8. The fourth recurrence after midline excisions and closure



Figure 6. A complex case with many midline primary pits and several secondary openings



Figure 9. Sutured wound off midline and in ‘open air’



Figure 7. Failure of healing after three operations (excision and open healing)



Figure 10. Healed wound with shallow cleft and cosmetically acceptable result



Figure 11. Sinus excised plus some skin, but fat preserved. The flap has been already made and is shown being elevated

need repeated small operations to de-roof or excise small tracks. Wider excisions based on supposed congenital theories of tracks with many branches are not the answer. Indeed, as Bascom has shown, based on the work of Karydakis, widely spaced secondary openings can be cleaned out, opened up to drain and left alone. They do not need to be incorporated into wide excisions if the primary midline disease is eradicated.

It is important in the second or subsequent operation to elevate or close the midline cleft and get the entire wound out of the deep midline, especially the lower end which may be close to the anus and hard to lateralise. The Karydakis operation can be repeated provided there is still sufficient skin to mobilise. Plastic surgical methods including buttock flaps, Z-plasty, or rhomboid flaps, may flatten the cleft; but if the wound reaches the midline at the lower end new sinuses may form. Laser therapy to depilate buttock hair has been tried and may be useful for further recurrences after several operations, but this only removes the source of local buttock hair.

## Summary of important points

- Be conservative – if no symptoms, reassure and advise on hygiene measures.
- Drain abscess simply with a small stab incision off the midline.
- Small chronic sinuses can be dealt with as day cases.
- Larger sinuses need surgery that excises the track, elevates the cleft and close the wound off the midline.
- Recurrence is common but can be avoided by correcting some of the factors that cause the problem: the cleft and the midline entry portal.
- If antibiotics are used, include anaerobic cover.

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