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Pilonidal sinus disease: a multidisciplinary approach

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Pilonidal sinus disease has a significant effect on the quality of life of patients due to frequent episodes of painful abscesses requiring time off work and limiting of daily activities. It affects mainly young healthy men. The prevalence has persistently increased over the past 50 years. A high rate of recurrence following all types of surgery is reported. In this article the author describes why a multidisciplinary approach to management is needed.

'Pilonidal' is from the Latin words 'pilus' meaning hair and 'nidus' meaning nest: the *nest of hairs* forms under the skin in the gluteal region. The sinus is thought to be caused by hair penetrating the skin. The trapped hair stimulates a foreign body reaction and causes infection,[1] which develops into a chronic non-healing sinus. Pilonidal sinuses occur where there is excessive body hair (see Figure 1 and 2) but it is also known to occur in various occupations such as barbers and shepherds.

Prevalence

The incidence of pilonidal sinus disease (PSD) depends on age, ethnicity and gender (see Table 1). It is more common in Caucasians than Asians or Africans, in hairy men and in hot countries and among those whose lifestyle requires sitting for long periods of time.[2] It is usually seen in young men and rarely occurs in individuals over the age of 45 years.

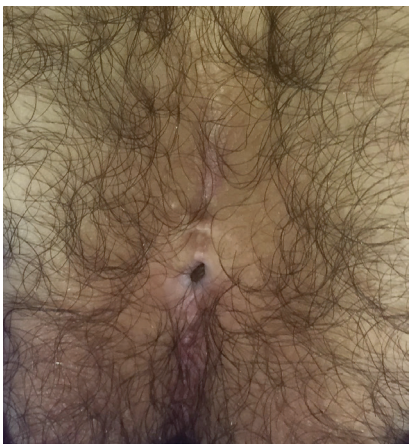


Figure 1. High density of hair in the gluteal area and pit full of hairs. Image courtesy of © L Marza 2018



Figure 2. Hairs removed from pit. Image courtesy of © L Marza 2018

The incidence of PSD has risen continuously during the past 50 years, particularly in European and North American young men.[3] During the Second World War nearly 80 000 US soldiers were admitted and treated for PSD.[4] Consequently, it became known as 'Jeep disease' and was considered an acquired condition from extended periods of driving. Although the incidence of PSD in the general population is about 0.7%, in military personnel it is remarkably higher - with a 9% incidence reported in Turkish soldiers[5] and an increase in Greek soldiers from 4.9% in 1960 to 33% in 1992.[6]

Quality of life for patients with PSD

PSD may lead to significant time off work due to abscess formation, pain and the need for repeated surgical procedures with long recovery times. It affects the quality of life of sufferers who have difficulty in sitting, must avoid sporting activities and live with the constant worry of recurrence. Many patients are too embarrassed to seek medical advice until the condition becomes acute and are often first seen in A&E when an emergency incision and drainage of an abscess is required. If a chronic infected cavity develops then there can be chronic discharge with a foul odour that affects self-esteem and body image.

Presentation

PSD may present as an asymptomatic, acute, chronic or recurrent condition (see Figure 3). In the asymptomatic stage, PSD presents as a small swelling or with small pits in the buttock's cleft but no other symptoms. The NICE recommendation in such cases is to

Non-modifiable factors	Modifiable factors
Age	High density of hair in the gluteal area
Ethnicity	Folliculitis in the perianal area
Gender	Occupation and lifestyle: sitting for over six hours, driving for long periods
Positive family history	Hygiene: fewer than two baths a week
Shape and curvature of the buttocks	Local irritation due to trauma
	High BMI

Table 1. Predisposing factors for pilonidal sinus disease

'wait and watch',[7] while avoiding trauma to the skin and taking care with meticulous personal hygiene. Shaving is also discouraged as the cut ends of the hairs may be sharp and penetrate the skin.

The condition may evolve to an acute stage with pain and abscess formation within a few days. Patients will often present to their GP or A&E and need to be referred for an emergency incision and drainage procedure. A course of pain relief and antibiotics may be prescribed. The wound will require daily dressings and should include the careful removal of all hair and debris from the cavity. Even so, the abscess may then recur and discharge intermittently if the skin heals over the cavity.

Treatment

Drawing from our clinical experience, the incision and drainage procedure, followed by meticulous wound cleaning and packing of the wound to allow healing from the depth up, is essential. In addition, removal of any hairs from the pit immediately prior to laser epilation allows quick healing and assists in preventing the condition developing into chronic phase (see Figures 4 and 5). This reduces the quality of stiff hair that is the cause of the abscess. In fact, many surgeons now recommend laser hair removal prior to further surgery as the presence of hairs will delay wound healing and may result in recurrence (see Figure 6).

A systematic review of laser hair removal involving 14 studies and 963 patients recommended that laser hair removal should be started pre-operatively and surgical treatment of symptomatic PSD should only be undertaken if the natal cleft is completely free from hair.[8]

Recurrence and surgical procedures

Numerous surgical procedures have been proposed over time and there is abundant literature that has been well reviewed in a recent meta-analysis.[9] Many adjunctive treatments have been suggested, such as the instillation of phenol, antibiotics, and platelet-rich plasma, as well as cryotherapy and radiofrequency ablation of the sinus tracts.

The meta-analysis identified 740 papers with information about recurrence rates. From a total of 11 700 patients, the study authors identified a mean recurrence rate of 4.3% at two years and 20.3% at five years. While some techniques initially had better results there was no clear-cut advantage for any one surgical technique. Phenol treatment was associated with high recurrence - 14.1% at 24 months and 40.4% at 60 months. The authors were able to conclude that the rate of recurrence was 67.9% at 240 months after primary midline closure. As a result, the authors called for this technique to be abandoned and proposed the use of an off-midline closure technique. The high recurrence rate (25.9% at two years rising to 40.2% after five years) from incision and drainage also means that this is not recommended as a definitive therapy,

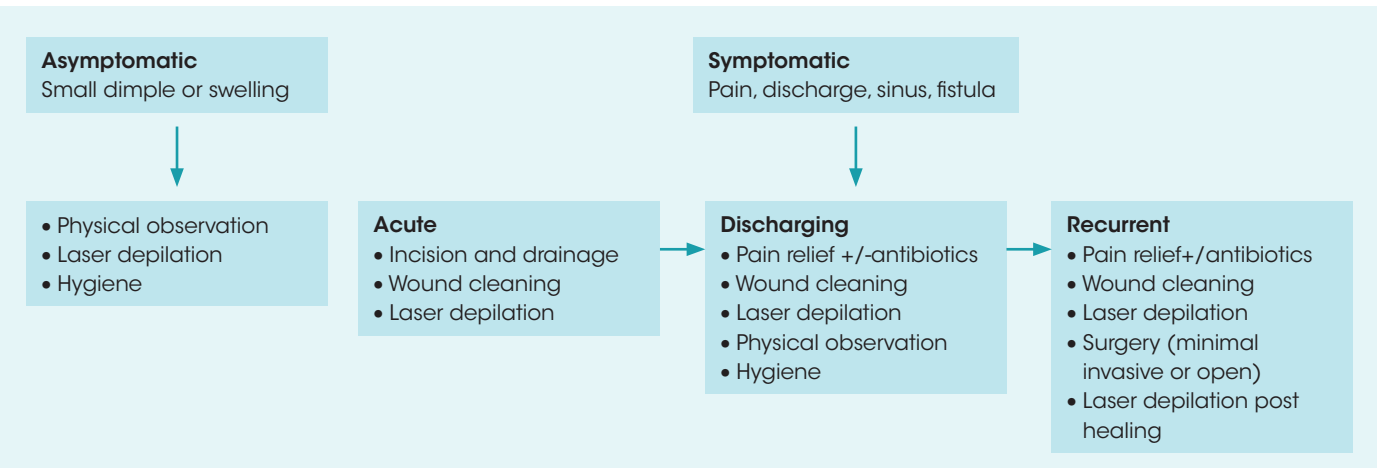


Figure 3. Pilonidal sinus disease: stages, presentation and proposed management



Figure 4. Abscess and folliculitis before wound cleaning and laser epilation. Image courtesy of © L Marza 2018



Figure 5. Abscess and folliculitis healed following wound cleaning and laser epilation. Image courtesy of © L Marza 2018

but should be followed by another procedure to prevent recurrence. The authors of the meta-analysis found that the Karydakis and the Bascom cleft lift procedures show the lowest recurrence at any time of follow-up, followed by the use of a rhomboid or other flap. However, these are substantial surgical procedures with a long recovery period that still run a risk of late recurrence.

In recent years surgical management has changed from invasive excision and secondary healing to either minimally invasive methods or, in severe cases, flap-based techniques[10] (see Box 1 and 2).

Obviously, the chosen technique may differ with the experience of the surgeon and patient's condition. Nevertheless, the widely accepted ideal for PSD treatment is that it should be a simple and painless technique, with rapid discharge from hospital, minimal post-operative complications and low rates of recurrence.[11] The frequency and severity of the recurrence has been attributed directly to the density of the hair present in and around the gluteal cleft[12] (see Box 3). It seems logical to permanently remove the cause of the problem, which is the nests of hairs. Laser depilation of the natal cleft has been proposed as a first choice treatment for recurrent pilonidal disease.[13]

Laser depilation

Laser hair removal offers the chance of a long-term reduction in hair, also making the hairs finer and softer and so less likely to cause damage to the surrounding skin. The treatment usually takes about an hour on the first occasion and is undertaken after carefully cleaning all the sinuses and tracks while taking care to remove all the contained hair. Treatments are repeated at six weekly intervals until all wounds are healed, and then the patient attends annually for maintenance treatment.[2] Alternative methods of depilation (*eg* creams) are less effective as they do not destroy the hair follicle and merely remove the hair temporarily. A systematic review of literature of 963 patients showed a lower recurrence rate after laser hair removal (9.3%) compared with no hair removal (19.7%) or razor/cream depilation (23.4%) after a mean length of follow-up of 37 months following PSD surgery.[14] A study of 504 patients using razors concluded that shaving alone increased the risk of recurrence and should not be recommended.[15]

Compared with surgical treatment of recurrences, laser depilation is an efficient and cost-effective method of preventing recurrence and reducing morbidity.[16] It is now widely accepted that laser hair removal after surgical interventions assists healing and

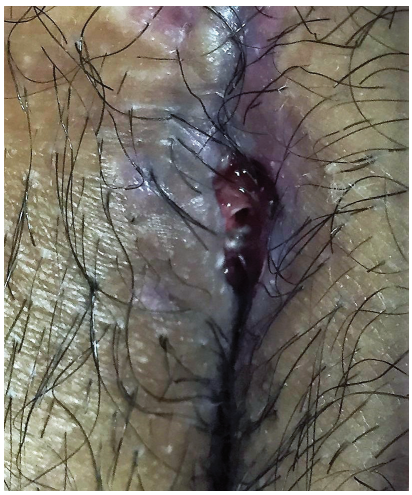


Figure 6. Wound and pit healing delayed due to the presence of course hairs. Image courtesy of © L Marza 2018

reduces the recurrence of PSD. As a result a number of clinical commissioning groups are now funding laser depilation of PSD.

Medical insurance companies, recognising the cost-effectiveness of such treatments, will also now fund laser hair removal as a definitive treatment. However, there is a need for long-term data and larger numbers of participants so that the benefits of laser hair removal as a treatment can

Box 1. Surgical management of PSD

- Incision and drainage
- Excision
- Secondary healing
- Primary closure
- Flap-based techniques

Box 2. Minimally invasive procedures used for PSD

- Phenol sclerotherapy
- Radiofrequency sinus excision
- Sinus excision
- Marsupialisation
- Sinus laser therapy
- Endoscopic techniques
- Seton

Box 3. Factors affecting increase in recurrence of PSD

- Density of hairs present in the gluteal area[17]
- Young age[16]
- Previous surgery[18]
- Presence of abscess[19]
- Surgical technique[9]
- Duration of follow up[9]
- Recurrent folliculitis[13]
- Using razors for hair removal[15]
- Smoking more than 20 cigarettes per day[3]
- Fewer than 2 baths a week[2]

Box 4. Recommendations

- Wound cleaning and meticulous hair removal from the pit when present
- Removal of the hairs in the cleft area and mid lower back by laser
- Surgeons should use off midline techniques
- Regular and long-term follow ups
- Collaboration between nurses, laser experts and surgeons

be recommended in the national guidelines. Treatment of PSD involves several different medical specialties, ranging from plastic reconstructive and colorectal surgeons, to dermatologists and laser experts. They need to work together collaboratively to recommend the best treatment programme rather than relying on one single technique or operation (see Box 4).

Conclusion

PSD is a bothersome chronic condition with a high risk of recurrence. Modifiable factors that are known for recurrence should be addressed before attempting complex surgery, such as meticulous wound cleaning and laser hair management of the natal cleft. Specific nursing experience is important to ensure the best possible outcomes and shortest healing time. The collaboration between nurses, laser experts, and general and plastic surgeons should allow a holistic approach to care for PSD patients by agreeing a plan for definitive treatment and regular long-term follow up.

Declaration of interests: *none declared*

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