

Pilonidal sinus wounds: the clinical approach

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Pilonidal disease, or 'jeep disease', is a well-known complex surgical problem. It is an unglamorous condition that is often difficult to treat (Purkiss, 1993). The treatment costs for the NHS are significant in terms of surgical procedures, medications, in-patient stay, and post-operative wound care in the community. As it tends to affect a younger age group, time taken off work and loss of earnings are also important considerations. Goligher (1984) defined it as an epithelium-lined track (sinus) situated a short distance behind the anus and generally containing hair.

Aetio-pathogenesis

This painful and distressing condition was found commonly among Jeep drivers (Buie, 1944) during World War II. It was hypothesised that sitting in bumpy vehicles for long periods drove neighbouring hair ends into hair follicles and skin adnexal glands and initiated a foreign-body reaction. The resulting abscess then ruptures spontaneously leaving a painful discharging sinus. It is, however, not restricted to the inter-gluteal region alone. It is known to occur in the inter-digital space in barbers' hands (Patel et al., 1990), in the axilla, the umbilicus (Schoelch & Barrett, 1998), the nose (Paulose et al., 1989) and an above-knee amputation stump (Goligher, 1984).

Although the precise aetiology of pilonidal sinus disease is debatable, two main schools of thought exist:

The congenital theory

Chamberlain and Vawter (1974) examined subcutaneous tissue from the sacrum and coccyx of children up to the age of four years at post-mortem. They noted that from 100 samples, seven had either sinuses or epithelial lined spaces. Each sinus communicated with the skin, but no hair follicles or epidermal appendages were seen. Data collected on sibling incidence from older patients revealed a higher incidence of the disease. It was, therefore, suggested that sinus was congenital in its origin, but the disease develops as a result of secondary factors such as obesity, hirsutism and endocrine changes.

The acquired theory

Bascom (1983) noted on microscopic examination, that hair follicles removed from patients with pilonidal sinus disease had expanded with

keratin. This had initiated an inflammatory reaction resulting in folliculitis, eventually forming an abscess in the subcutaneous tissue. Notaras (1970) observed that an abscess and secondary track usually then travel in a cephalad direction (as it is the path of least resistance), eventually rupturing through the skin onto the sacrum. Bascom also suggested that once a follicle has ruptured, epithelium then grew into the wall forming an epithelial tube or track. In more advanced disease, hair from elsewhere may enter this track causing a foreign body reaction. Sondenaar and Pollard (1995) examined specimens from patients who had undergone radical excision, and discovered that pits (defined as darker spots of varying width in the midline of the natal cleft) in the skin were keratin plugs and debris penetrating the dermis. However, not all of these were associated with hair follicles. Of the sinuses with hair follicles these were thought to maintain an inflammatory process, as they initiated the action of a foreign body. They also suggested that a mid-line pit is large enough to allow foreign bodies to enter and continue the inflammatory process. They may be isolated or connected with hair follicles. Notaras (1970) also observed the absence of hair in sinus cavities; a more common feature in females. He, therefore, suggested that other reasons as well as hair needed to be considered in the cause of pilonidal sinus disease, but did not state what these could be.

Pilonidal disease has a reported incidence of 26 per 100,000 and is three times more common in males (Surrell, 1994). The incidence is higher in Europeans than in people of Asian and African origin. The clinical presentation is classified into three categories (Solla and Rothenberger 1990).

Acute pilonidal abscess: Patients suffering from this condition present typically with moderate to severe pain and swelling in the region of the natal cleft or lower back.

Chronic pilonidal sinus: This is the commonest clinical presentation. Patients usually present to their own doctors with a painful discharging site at the base of the spine. On examination, the sinus opening can be identified in the mid-line within the natal cleft with a palpable cephalad-tracking sinus. Occasionally, there may be multiple sinus openings.

Complex or recurrent pilonidal disease: This condition results from re-infection within neighboring hair follicles or due to hair entering the wound during healing. Having been left unchecked for a long duration, the track gets completely lined by squamous epithelium.

Management of this condition depends on the clinical presentation and

needs to be tailored to the patient's individual circumstances and lifestyle. Numerous approaches and techniques in treatment exist and there is no general consensus of opinion regarding any one method. It does, however, seem that recurrence occurs regardless of which technique is used. The following options may be considered.

Conservative treatment: A few 'early' cases may subside with a course of antibiotics and regular depilation. The majority, however, require surgical intervention.

Incision and drainage: This is the usual treatment for an acute pilonidal abscess. If the abscess is only incised and drained, 60 per cent will recur. If, on the other hand, the sinus is identified and excised a few days after the initial drainage, 85 per cent will not recur.

Complete excision and healing by secondary intention: This is the most widely used treatment modality. The sinus track is excised down to the pre-sacral fascia and the elliptical wound is allowed to heal by granulation tissue. This procedure requires saucerisation of the wound possibly combined, in certain cases, with marsupialisation of the skin edges. It has been suggested that the definitive treatment of chronic pilonidal disease can be accompanied only by excision of all infected tissue and sinus tracts (Surrell, 1994). Both marsupialisation and bevelling serve to minimize the chance of premature skin closure and promote complete healing of the site from the inside out. Any secondary infection, characterized by pain and redness in the surrounding area and/or foul discharge, should be treated with broad-spectrum antibiotics, including anaerobic cover. Superficial 'bridging' must be discouraged and, if necessary, 'laid open' under an appropriate anesthetic. The wound is best dressed with silastic foam cavity dressing (e.g. Cavicare®) and appropriate secondary dressings, such as, Telfa® and Mefix® (Figure 4). The foam dressing needs to be changed weekly to allow for wound contracture and is very 'user-friendly'. The wounds generally heal by 8-10 weeks and the recurrence rate is low (46 per cent) (Surrell, 1994). The use of Inadine® for packing and topical antiseptics such as Flamazine may also be indicated.

Complete excision and primary asymmetric closure.

Primary suture techniques should attempt to eliminate wound dead space. This type of closure must be achieved without undue tension on the wound. This method of surgery prevents hairs causing recurrence of pilonidal sinus. It was felt that the depth of the inter-gluteal fold is extended further by surgical incision along this line, and also becomes a site for hair entry. Therefore, by forming a flap which leaves a suture line to one side and removes the raphe, this problem is avoided. An understanding of the hair

insertion process made it possible to avoid hair insertion in 6,545 cases of the condition with the use of the advancing flap operation (Karydakis, 1992). Although this technique has the advantages of a short hospital stay and a quicker healing time, the recurrence rate may be as high as 25 per cent (Surrell, 1994), and is more technically difficult.

Techniques using skin flaps.

These operations are more specialized and are recommended only for recurrent pilonidal disease. These techniques include Z-plasty, VY advancement flaps and the gluteus maximus musculocutaneous flap.

Other treatments.

Phenol injection (Shorey, 1975) and sinus brushing are examples of currently available non-operative treatment modalities. These are simple, safe and painless methods, which may be used as day case procedures. Although there are various different treatment regimes and dressing methods for the management of pilonidal disease, the Wound Healing Research Unit, Cardiff, recommends the 'open' technique for the uncomplicated sinus. The wound is dressed with Cavicare® foam and any secondary infection treated with broad-spectrum antibiotics. The surrounding skin is kept 'hair-free' by shaving or by using depilatory agents. Rest and diligent personal hygiene aid the healing process. More complex sinuses or recurrent disease should be treated by plastic surgeons.

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