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SURGERY

Barber's Abscess: Pilonidal Sinus in a Female Barber's Hand

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Abstract

Barber's abscess is an acquired occupational disease, thought to be caused by short hair clippings that enter the susceptible web space skin, usually seen in male barbers. This case report is to report a rare case of a female barber, who developed a pilonidal sinus (PS) in the interdigital web space of her non-dominant left hand, requiring excision with a flap reconstruction and also to review the relevant literature. A 46-year-old female barber underwent day case surgical excision of the PS with a Foucher flap reconstruction of her left non-dominant hand, third web space. The patient remains disease-free 3 years on. PS of the interdigital space of the hand is a rare and preventable acquired occupational disease. Personal hygiene and meticulous removal of any hair clippings from the web space could prevent the formation of the pilonidal sinus.

Keywords Barber's abscess · Pilonidal sinus · Hand flaps · Foucher flap

Introduction

Hair fragments that penetrate the skin may lead to pilonidal sinuses (PS); the condition arises from a chronic inflammatory response that ultimately ends up forming a sinus, which then may accommodate more hair fragments [1]. The commonest area for PS is the sacral area [2], but it has also been described in the web spaces—interdigitally [3] usually in male [4] barbers.

We present a case of a female barber who developed a pilonidal sinus in the third web space of her non-dominant left hand.

Case Presentation

A 46-year-old female barber with dominant right hand presented to our outpatient clinic with a draining sinus in the third web space of her left, non-dominant hand. She reportedly had repeatedly discharged foul smelling, purulent material and was on occasion able to remove short hair clippings from the inlet orifice of the sinus. The patient complained that the pain and swelling would only temporarily subside after expression of this discharge and the occasional hair clippings, and that shortly after, the cycle would repeat itself—usually every 6 to 8 weeks. She also reported that customers' short cut hair often penetrated the web space skin, and that her symptoms would improve slightly during periods of prolonged holidays.

The patient was not suffering from any other dermatological conditions, did not suffer from diabetes, nor did she suffer from any vascular pathology, such as Raynaud's disease.

Her symptoms had started approximately 18 months earlier, as a localised erythema around a 5-mm papule to the third web space of the left hand, that when expressed produced a small amount of frank pus. This readily responded to a course of oral 500 mg Flucloxacillin, four times a day, for 5 days. The acute infection settled down; the patient however was left with a small punctum, where the papule had previously been. This punctum increased and deepened, as the cycle repeated itself on a regular basis, until the patient was referred to us by her general practitioner. After a brief examination in the plastic surgical outpatient, it had become apparent that the initial papule had developed into a deep sinus that on sounding had reached a depth of approximately 2.5 cm and reached the apex of the third web space of her non-dominant left hand (Fig. 1).

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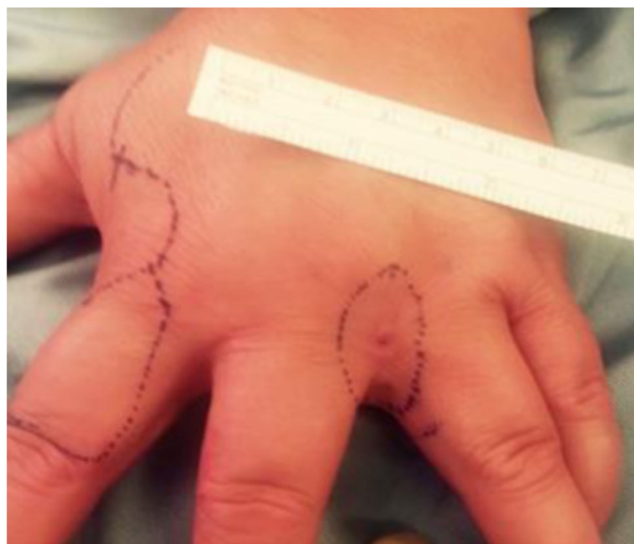

Fig. 1 Initial papule had developed into a deep sinus, reached a depth of approximately 2.5cm, and reached the apex of the third web space of her non dominant left hand

No other skin pathology was noted, nor was any regional lymphadenopathy seen.

The patient was consented for surgery with a first dorsal metacarpal artery (FDMA) reconstruction as a definitive closure, as it was suspected that the sinus was deep and encroaching on the digital nerves, and the author did not want to risk web space contracture.

Methylene blue dye was injected into the sinus to ensure complete resection. Under tourniquet, the entire web space was resected en bloc with the punctum of the sinus (Figs. 2 and 3.

The resection reached the common digital nerves and vessels of the middle and ring fingers (Fig. 4), which prompted us to reconstruct the defect with a flap that is a more robust and secure choice when compared with a skin graft. The donor site was the entire zone four of the dorsum of index, which was

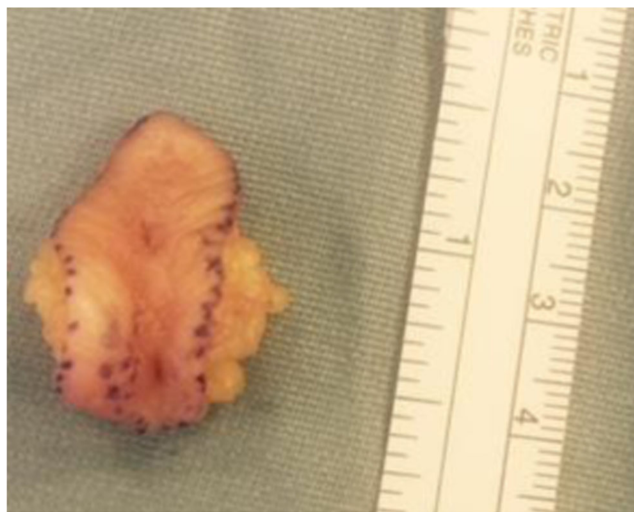

Fig. 2 Under tourniquet the entire web space was resected

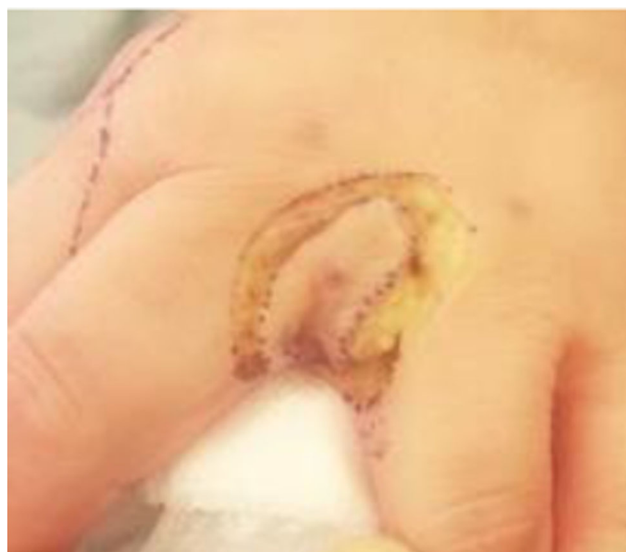

Fig. 3 The punctum of the sinus

raised above the level of the paratenon, and was kept alive on a pedicle of loose areolar tissue that contained the nutrient artery and vein, in the form of a Foucher flap, based on the FDMA. The dissection was traced back to the first dorsal metacarpal perforator (Figs. 5, 6 and 7). Once raised, the flap was tunnelled under a skin bridge of the third ray, to reduce the amount of visible scarring (Fig. 5). The flap was set-in with Prolene 5/0 mattress sutures; no deep sutures were used to reduce the tissue reaction. The donor site was closed with a full thickness skin graft that was taken from the ipsilateral hypothenar area on the ulnar border of the hand (Fig. 8). All sutures were removed at 14 days after surgery. Histology confirmed the clinical findings of a PS. The patient suffered from patchy hypo- and hyperesthaesia to the dorsum of her hand, that gradually settled completely with massaging, after

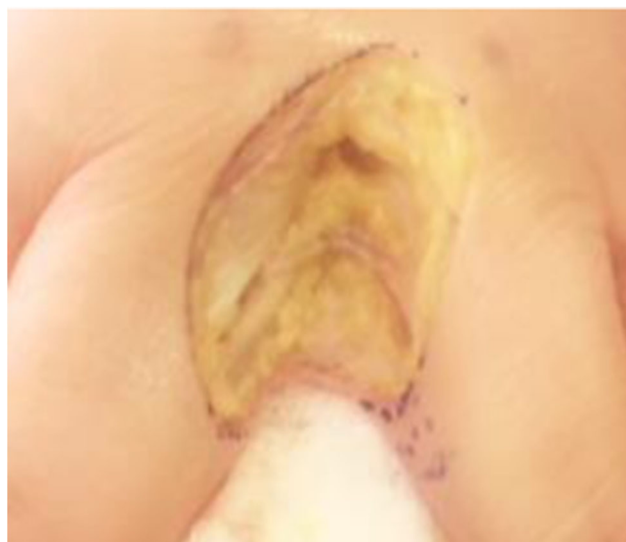

Fig. 4 Resection reached the common digital nerves and vessels of the middle and ring fingers

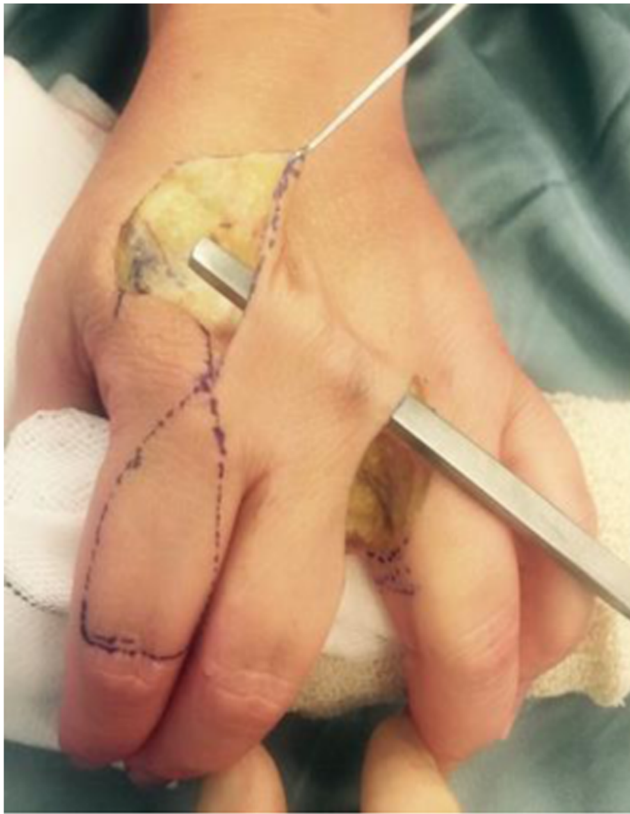

Fig. 5 The flap was tunnelled under a skin bridge of the third ray, to reduce the amount of visible scarring

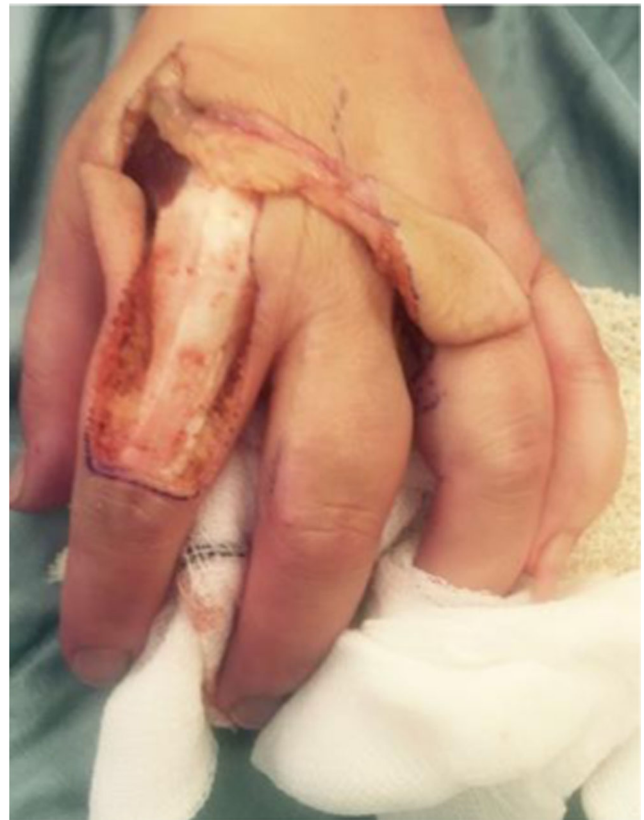

Fig. 7 The dissection was traced back to the first dorsal metacarpal perforator

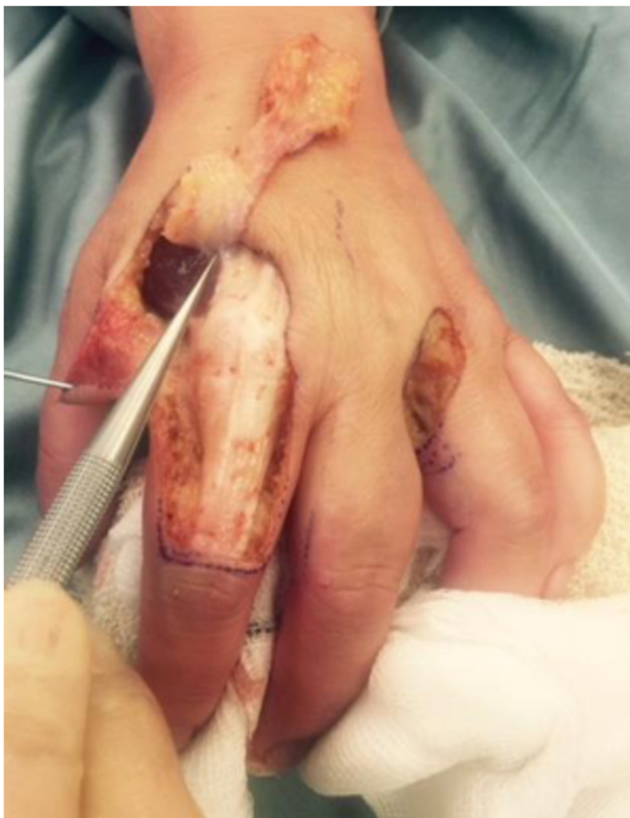

Fig. 6 Foucher flap, based on the FDMA

11 weeks. There has been no recurrence over the past 36 months, and the patient continues working as a barber.

Discussion

No matter in which anatomical location PS occurs, it is considered an acquired condition [5]. It is most commonly encountered in the sacral area, less so in other hair-bearing areas. There is an increased frequency in anatomical clefts, which aid the accumulation of hair fragments [6]. Occupational pilonidal sinuses, however, tend to occur in non-hair-bearing areas and do not contain the individual's own hair [7]. This variant of the disease is mostly frequently seen in barbers, but it has also been reported in other professions, such as sheep shearers, dog groomers, or cow farmers that manually milk their cows [3, 7–9].

PS of the hand web spaces is mostly described as an occupational disease of male barbers [4]. This propensity of the disease in male barbers is because it has been shown that female barbers care more for the web spaces of their hands and feet, than their male counterparts [10].

The delicate skin of the interdigital spaces is readily penetrated by hair clippings, especially when the skin is macerated from repeat use of shampoos and moisturising products,

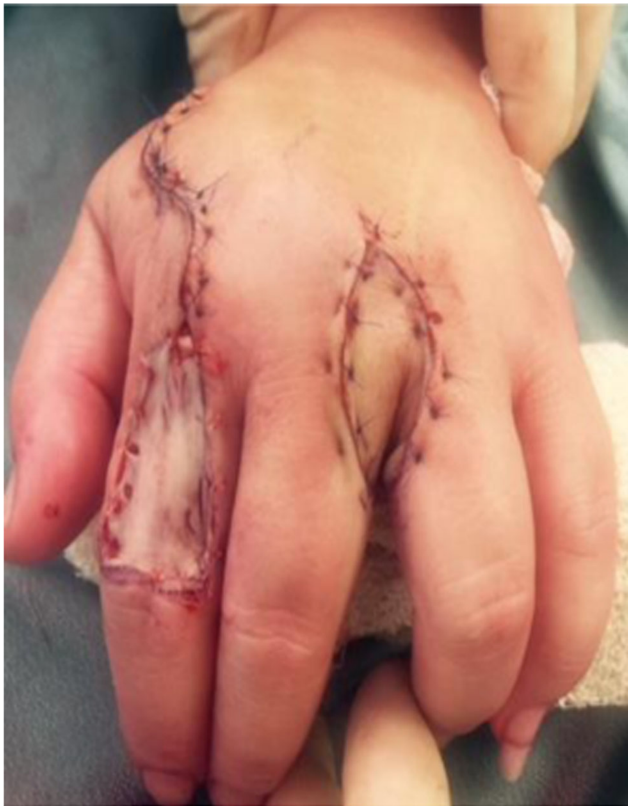

Fig. 8 The flap was set-in with donor site was closed with a full thickness skin graft

frequently used by barbers. In addition, the hair clippings are as sharp as needles, are short and rigid, are electrostatically charged, and have a tendency to amass in the interdigital spaces [5].

The exact pathogenesis of the disease is not known; several theories exist: Penetration by hair clippings, prolonged maceration of the interdigital space, and recurrent acute and chronic infections are all considered factors that aid the establishment of PS in the web [11]. After the penetration by hair, a host inflammatory reaction is mounted that leads to the formation of foreign body granuloma [12]. If the condition is not swiftly resolved it becomes chronic. If the condition becomes chronic, a cyst and later on a sinus ensues and a chronic, repetitive cycle of pain swelling, purulent discharge [13], and temporary relief becomes the classical presenting clinical picture. Abscess formation, cellulitis, lymphangitis, and even osteomyelitis are possible complications of barber's abscess [9, 15], which may warrant surgery [12].Some cases of late recurrence have been reported; this is usually because patients return to the same occupation without changing their working habits or circumstances [14, 15].

PS of the web space is a rare, preventable pathology.

Careful cleansing and drying of the interdigital spaces [5] as well as use of protective barrier creams [7], adhesive band-aid strips, or gloves [8] could prevent the formation of the disease. In addition, barbers are advised to wear socks with closed shoes, in an attempt to prevent the formation of a PS on the feet [5, 7].

Authors' Contributions All authors contributed the same.

Compliance with Ethical Standards

Consent Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief.

Competing Interests The authors declare that they have no competing interests.

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