



An insight to pilonidal sinus etiology; interdigital pilonidal sinus

Pilonoidal sinüs etiolojisine bir bakış; interdijital pilonidal sinüs

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Abstract

A 46-year-old man who was working in leather tanning industry presented to our department with a mass and intermittent purulent discharge on his left hand for three years. Total excision was performed using transpositional flap. Histopathology was compatible with pilonidal sinus. Interdigital pilonidal sinus of the hand is a rare occupational disease. It is frequently encountered in hairdressers. Penetration of foreign hair to the interdigital web space is the cause of the disease.

Keywords: Interdigital pilonidal sinus, occupational disease, dermatological surgery

Öz

Kırk altı yaşında dericilik mesleği ile uğraşan bir erkek hasta interdijital bölgede akıntı ve kitle şikayeti ile tarafımıza başvurdu. Kitlenin total eksizyonu yapıldı. Histopatolojik incelemede kitlenin pilonidal sinüs ile uyumlu olduğu görüldü. Interdijital pilonidal sinüs, ellerde nadir görülen bir meslek hastalığıdır. Sıklıkla saç kesimi ile ilgili meslek dallarında görülür. Interdijital alana yabancı bir kılın penetre olması ile meydana gelir.

Anahtar Kelimeler: Interdijital pilonidal sinüs, meslek hastalıkları, dermatolojik cerrahi

Introduction

Interdigital pilonidal sinus (IPS) of the hand is a rare occupational disease. Joseph and Gifford¹ defined barber's IPS and the pathogenesis in 1954. It is caused by repeated implantation of foreign hair to the interdigital web space²⁻⁵. It is most frequently seen in hairdressers. This is the first reported case in a patient working in leather tanning industry. IPS is a clue for the acquired origin of pilonidal sinuses. Correct diagnosis and accurate surgical therapy is important for the treatment.

Case Report

A 46-year-old male presented to our department with a mass

and intermittent purulent discharge on his left hand for three years. He was working in leather tanning industry. He defined that he worked with bare hand and he was exposed to foreign hair from animal leather. He was prescribed antibiotic therapy several times without any success. On dermatological examination, there was a crusted purple papule, 0.5 mm in diameter on the third web space of the left hand and 1 mm sinus opening beneath the papule (Figure 1a, 1b).

An informed consent was obtained prior to treatment. Total excision was performed after administration of methylene blue to visualize the extent of pilonidal sinus. A random transpositional flap was designed to close the defect on his third web space. The flap was transposed to the interdigital space and the donor site was closed primarily (Figure 2. a-c).

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Figure 1. a) Crusted purple papule, 0.5 mm in diameter on the web space, b) 1 mm sinus opening beneath the papule

The flap healed without complications and with good cosmetic outcome. Histopathological examination revealed sinus tract opening to the surface. The sinus tract was lined with stratified squamous epithelium and hair shafts were observed in the deeper portion of the sinus (Figure 3a, 3b). There was no recurrence in one-year follow-up. Histopathology was compatible with pilonidal sinus.

Discussion

For many years, sacrococcygeal pilonidal sinus etiology could not be understood. In the 19th century, congenital origin and developmental abnormalities were claimed. It was suggested that persistence of a caudal remnant of the neural canal was the reason for pilonidal sinus. IPS was an insight to acquired origin of pilonidal sinus. Histologically, IPS was identical with sacrococcygeal pilonidal sinus. The acquired etiology of interdigital sinus in barbers was obvious, thus, it was suggested that sacrococcygeal sinus could also be acquired. It is accepted that pilonidal sinus is caused by penetration of hair into the subcutaneous tissues. Karydakís⁶ defined factors in the hair insertion process of sacrococcygeal pilonidal sinus; these were 1) loose hair, 2) pressure, 3) vulnerability of the skin.

These factors are also important in the development of IPS with some differences. First, IPS occurs in non-hair bearing areas opposed to pilonidal sinus, second, IPS is a reaction to foreign body whereas pilonidal sinus contains individual's own hair, third, the root of hair penetrates⁷ the skin in pilonidal sinus whereas not the root but sharpened edge penetrates the skin in IPS. In IPS, penetration of cut hair leads to the formation of sinus and then cyst. Infection and discharge are among the frequent complaints. Pilonidal sinus is frequent, although interdigital

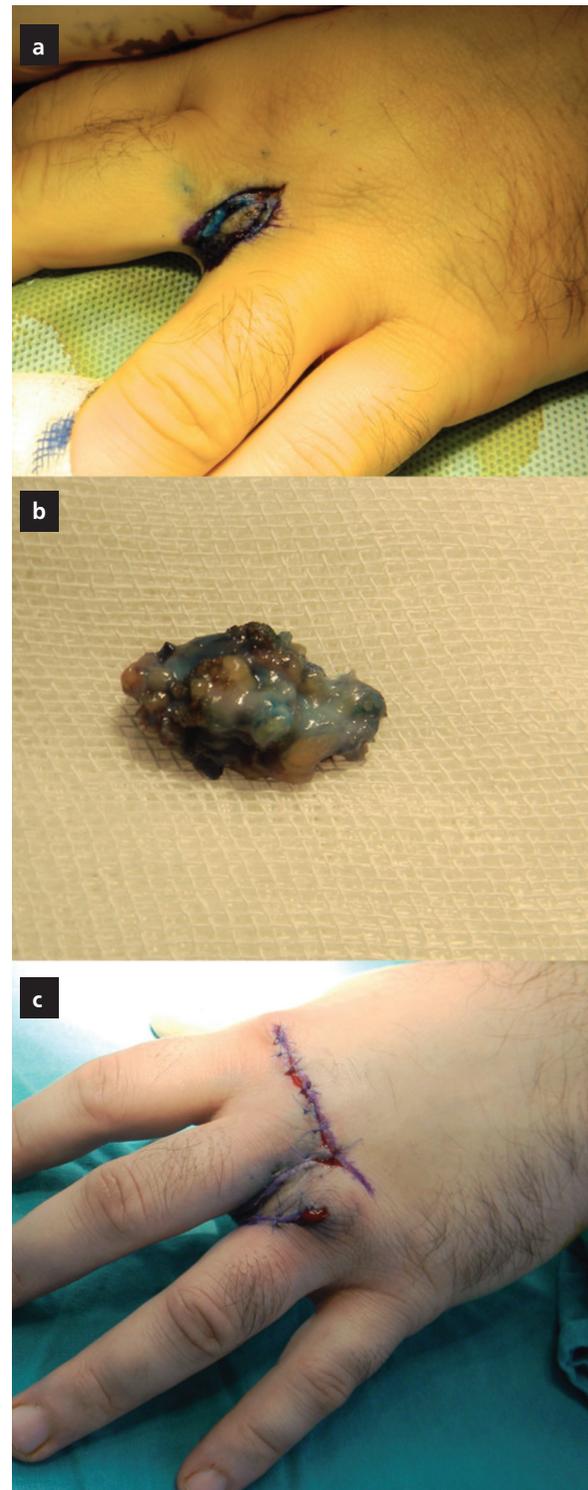


Figure 2. a) A total excision was performed after administration of methylene blue to visualize the extent of pilonidal sinus. b) Excised specimen, c) a random transpositional flap was designed to close the defect on his third web space. The flap was transposed to the interdigital space and the donor site was closed primarily

localization is very rare. It is mainly reported in hairdressers, although two cases were reported in dog groomers⁸⁻¹¹.

The main treatment of choice is surgery¹². Closure in secondary cases or in cases where an extensive resection has to be done can be challenging.

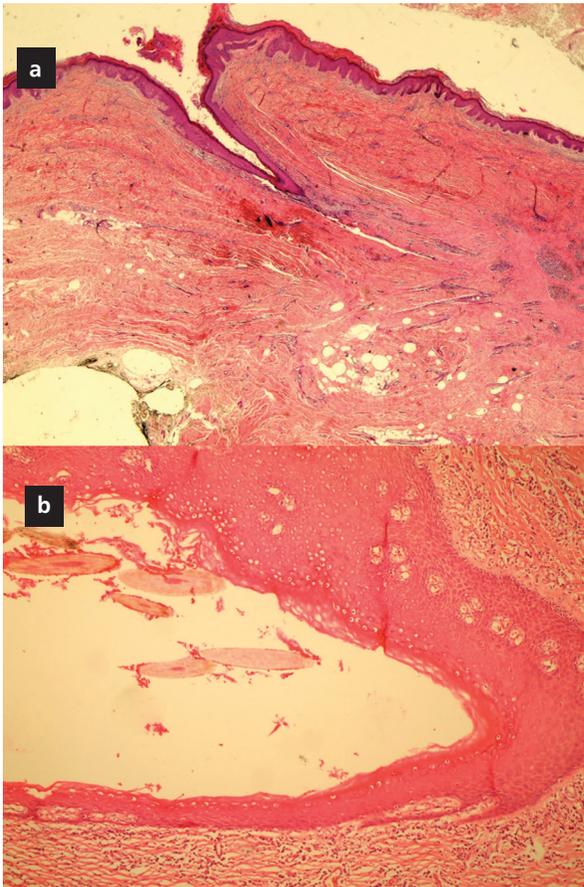


Figure 3. a) Sinus tract opening to the surface lined with stratified squamous epithelium accompanied with lymphocytic cell proliferation and fibrosis. (hematoxylin and eosin X40). b) Hair shafts inside the sinus were observed (hematoxylin and eosin X200)

In such cases, skin flaps can be required to close the defects and to obtain better healing. Transpositional flap, as performed in our patient, can be a good choice. It is simple and safe and it provides potent skin coverage which can possibly avoid penetration of hair into web space with minimal donor site morbidity. As far as we know, this is the first reported case in a patient working in leather tanning industry. IPS is a clue for the acquired origin of pilonidal sinuses. Correct diagnosis and accurate surgical therapy is important for the treatment. In addition, application of preventive measures as wearing gloves or good personal hygiene is crucial for avoiding recurrences.

Ethics

Informed Consent: Informed consent was taken.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: S.K.Y., Concept: S.K.Y., Design: E.K.A., Data Collection or Processing: C.L., Analysis or Interpretation: E.K.A., Literature Search: M.S., Writing: M.S.

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