

The association between interdigital pilonidal sinus and animal groomers is a historical narrative correlation and not a true occupational hazard

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Introduction: Pilonidal sinus (PNS) is a small hole or “tunnel” in the skin that frequently occurs in the sacrococcygeal region. Nevertheless, PNS has been reported to occur between the fingers (interdigital) in barbers, hairdressers, and animal groomers. The aim of this study was to estimate the prevalence of interdigital PNS among animal handlers in Bahrain and to treat any patients encountered.

Methods: This is a cross-sectional study with convenience sampling from November 2020 to October 2021. The study participants were animal handlers from stables, veterinary, and pet shops in Bahrain. There were 43 males and 7 females with direct animal contact. 86% of the study population were handling horses, and 15% were handling different types of animals.

Results: No positive cases of interdigital PNS among participants were found, this might reflect the positive impact of good personal hygiene among our study population. Our study shows that groomers in Bahrain frequently wash their hands after handling animals, and 98% have a daily habit of bathing after work. It was also estimated that 60% of the participants use gloves to handle animals themselves or their waste.

Conclusion: This could be the first study which looks at the prevalence of interdigital PNS in animal groomers worldwide. Our study did not document the presence of any interdigital PNS among animal hair groomers in Bahrain. This might reflect the positive impact of good personal hygiene in the prevention of interdigital PNS. However, together with the absence of any case reports of interdigital PNS among hair groomers in the recent literature, our findings might suggest that the association between interdigital PNS and animal hair grooming could be a narrative coincidence rather than a true occupational hazard. This study could improve our knowledge about occupation-disease association.

TABLE 2 Literature review.

Authors, year & type of paper	History and examination	Investigations	Treatment & prognosis
Olabi et al. (7), case report	41-year-old, right-handed male pet groomer Presented with 2 small sinuses, over the dorsal aspect and the free margin of the webspace of his right fourth finger.	Dermoscopic and histologic examination of the excised tissue	Antibiotics course and removed under general anesthesia, with reconstruction of the defect with a local flap. No recurrence after 2 months postoperatively.
Phillips et al. (11), case report	Male Shearer	Not accessible	
Matheson et al. (12), case report	34-year-old, male shearer Recurrent painful swelling in interdigital space between left middle and ring fingers Previous incident at same sight in the right hand	Block dissection of affected area in third recurrence. Sinus cavity containing wool with serrated margin lined superficially by squamous epithelium and deeply has connective tissue.	Incision and drainage Personal treatment first time by hot fomentos and spontaneous discharge of pus. Second treatment by hot water and removing wool using tweezer.
Mohanna et al. (13), case report	37-year-old, male dog groomer Presented with recurrent PNS in right thumb, oblique split in the distal pulp tissue, discharging purulent fluid	Radiographs showed a destructive lesion involving the tip of the terminal phalanx, consistent with osteomyelitis Collection of hair shafts surrounded by kerati and benign squamous epithelium containing acute and chronic inflammatory cells	Surgical excision of the distal half of the terminal phalanx No recurrence for 8 months
Vaiude et al. (14), case report	31-year-old, right-handed male sheepshearer Painful, inflamed middle finger and nodule in the 3rd web space the left hand	Hitsology: The dermis contains an inflamed pilonidal sinus with evidence of ulceration. The sinus revealed sheep hair.	Erythromycin followed by Surgical excision with primary closure with a local skin flap. One recurrence in 2 months
Ramilo et al. (15), case report	24-year-old, left-handed male dog groomer Third interdigital space of his dominant hand	Histopathologic examination: An acanthotic, hyperplastic epidermis with scale crust, and nodular dermal infiltrates composed of epithelioid histiocytes, plasma cells, lymphocytes, and eosinophils. Transepidermal extrusion of polarizable hair cortical material	Sinusotomy and debridement with healing by secondary intention followed by proper wound care. No evidence of recurrence 3 years after resection
Meneghini et al. (16), case report	Milker	Not accessible	
Sloan et al. (17), case report	55-year-old, male abattoir worker Pain and swollen third web space of left hand.	Ultrasound showed a hypoechoic area consistent with chronic inflammation and a linear hyperechoic structure measuring 4.25 mm	The lesion was explored under local anaesthesia and excised completely. No recurrence after 6 weeks.
Shikowitz-Behr et al. (18), case report	24-year-old, male dog groomer Second web space of his right hand revealed a 0.8 cm abscesses	Histological examination: A cystic follicle with surrounding fibrosis and focal hemosiderin	Incision and drainage and complete antibiotic course 4 weeks later, with recurrent abscess at the same location.
Papa et al. (19), case report	47-year-old, female dog groomer Tender erythematous 1.5 cm nodule in fourth web space of left hand with central pustule	Elliptical biopsy sent for histopathologic examination: purulent drainage cultured for microorganisms. Subcorneal cystic space containing neutrophils surrounding fragment of hair and portion of epidermis absent. Gram stain showed gram positive cocci.	Hairs were removed from cavity. Prescribed cephalixin. Patient returned after 1 month with tenderness and drainage; remaining sinus and tissue containing hair excised and prescribed cephalixin again. Healed and no recurrence.
Ito et al. (20), case report	24-year-old, female dog groomer Fourth web space of the right hand showed a red nodule, 8 mm in diameter, near the fistula, multiple hairs of different colors were seen in the fistula	Culture and histopathological examination: multiple hair shafts surrounded by infiltration of inflammatory cells with keratin and squamous epithelium with some foreign body giant cells	Treated with cefcapene Pivoxil of 300 mg/day for 7 days and surgical excision was performed. No recurrence occurred
Stern et al. (21), case report	39-year-old, female animal groomer Web between the middle and ring fingers of one hand small sinus tract with visible hair and an area of chronic inflammation. An area of chronic inflammatory tissue with a sinus tract and multiple visible hairs	Pathological examination: Sinus tract with abundant keratin, epidermal thickening, dermal fibrosis with chronic inflammation, and multiple embedded hairs	History of treatment with antibiotics therapy, drainage, and surgical excision of the sinus No recurrence