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# Pilonidal sinus of hand; presentation and management: A systematic review of literature

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## ABSTRACT

**Pilonidal sinus disease may occur in the hand, the presentation and management of which is not well studied, the aim of this review is to highlight the presentation and management of pilonidal sinus disease of hand. Google scholar engine, Cochrane library, PubMed and Web of Science have been searched for the keywords. After exclusion of the unrelated papers, the search found 26 articles. The cases were presented and discussed collectively as the number of patients included in each study was few. The search found 31 patients complaining from pilonidal sinus of interdigital areas. Twenty-six (83.9%) cases were male, 5 (16.1%) cases were females, 23 (74.2%) patients were barbers; other 8 (25.8%) patients were animal groomers. Right hand was affected in 22 (67.7%) cases and in left hand in 10(32.3%) cases. Chronic painful discharging sinus was the most common presenting symptom occurring in 16 (51.6%) patients. Abscess and cystic-like lesions were found in 10 (32.3%) patients. Excision and daily dressing was done for 28 (90.3%) cases, incision and drainage were performed in 2 (6.4%) cases. Recurrence occurred in 5(16.1%) cases. Hand pilonidal sinus is an occupational disease solely affects those individuals who work with hair including barbers and hairy animal groomers. The main presenting symptoms are similar to the pilonidal sinus disease of other areas. Surgical excision with daily dressing is the main line of therapy.**

**Keywords: Hand, Interdigital, Pilonidal sinus**

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## INTRODUCTION

Pilonidal sinus disease (PSD) is described as a collection of dermoid cysts and sinuses containing hairs and sebaceous glands [1]. Pilonidal sinus is a relatively common acquired condition that most commonly occurs in the sacrococcygeal region. It was originally defined as a congenital condition, but lately increasing report of hand pilonidal sinus (HPS) in barbers suggests its acquired origin [2]. Penetration of skin by hair was suggested by Patey and Scarff about 70 years ago as the mechanism of the disease under frictional impact [3]. Other than sacrococcygeal region, rarely PSD has been reported in intermammary area, scalp, postauricular, preauricular, submental, scalp, endoanal, face, penis, and clitoris [1, 2, 4, 5]. Interdigital localization is one of the rarest types and commonly affects male barbers as an occupational disease due to contact with short and stiff hairs [6].

Hand pilonidal sinus is a rare disease whose presentation and management is poorly addressed in the literature, the aim of the current review is to highlight the presentation and management of PSD occurring in the hand.

## METHODOLOGY

Google scholar engine, Cochrane library, PubMed, and web of science have been searched for these keywords (interdigital pilonidal sinus, pilonidal sinus of hand, pilonidal sinus of palm, pilonidal sinus of the finger, pilonidal sinus of atypical area, atypical pilonidal sinus, interdigital PNS, PNS of hand, PNS of palm, PNS of the finger, PNS of atypical area, atypical PNS, barber disease, interdigital PSD, PSD of hand, PSD of palm, PSD of finger, PSD of atypical area, atypical PSD). The search found 50 items. From which, 20 papers were excluded by titles. From the remaining 30 articles, 4 papers were excluded because they were not fulfilling the inclusion criteria. The inclusion criteria were any article which mentioned the clinical course and treatment of PSD provided that it occurs in the hand. The remaining 26 articles presented and discussed collectively as the number of patients included in each study was few.

## RESULT

The resulting 26 articles contained 31 patients complaining from pilonidal sinus disease of interdigital areas. The number of male patients was 26 (83.9%) with a mean age of 36.5 years ranging from 16–57 years and the number of female patients was 5 (16.1%) with a mean age of 35 years ranging from 24–46 years. Regarding occupation, 23 (74.2%) patients were barbers; other 8 (25.8%) patients were animal groomers. Right hand was affected in 22 (67.7%) cases and in left hand in 10 cases (32.3%). Table 1 shows the distribution of the HPS according to exact location in the hand. The country in which most of HPS have been reported in was United Kingdom (10 patients, 32.3%). Table 2 shows the distribution of patients according to country of origin [1, 3, 6–27].

Chronic painful discharging sinus was the most common presenting symptom occurring in 16 (51.6%) patients. Abscess and cystic-like lesions were found in 10 (32.3%) patients. The presenting symptom was nodule in 5 (16.1%) cases. Excision and daily dressing was done for 28 (90.3%) cases, incision and drainage were performed in 2 (6.4%) cases, while hair removal was done only for 1 (3.2%) patient. Recurrence occurred in 5 (16.1%) cases.

## DISCUSSION

Pilonidal sinus disease is a suppurative disease caused by hair penetrating into the skin, resulting in a foreign body reaction and development of a sinus lined by granulation tissue [2]. Hand pilonidal sinus is a rare disease caused by repeated implantation of foreign hair to the interdigital web space [15]. In literature, HPS is regarded as an occupational disease [6]. The result of this review confirmed this claim. All patients were reported to have some sort of job that exposes them to hair pieces such as barbers and groomers. This finding also indicates that HPS is an acquired disease. The acquired etiology of HPS whether to be generalized to PSD of all other areas or not might need further researches with suitable study designs.

Table 1: Distribution of hand pilonidal sinus according to exact location at the hand

| Location | Number | References |
|---|---|---|
| 3rd interdigital space | 20 (64.5%) | [3, 6–20] |
| 4th interdigital space | 5 (16.1%) | [21–24] |
| 2nd interdigital space | 3 (11.5%) | [1, 10, 14] |
| Tip and subungual region of thumb | 1 (3.2%) | [25] |
| Thenar eminence | 1 (3.2%) | [26] |
| All interdigital spaces | 1 (3.2%) | [27] |

Table 2: The distribution of patients according to country of origin

| Countries | Number | References |
|---|---|---|
| United Kingdom | 10 (32.3%) | [9, 12, 14, 16, 17, 19, 25] |
| Turkey | 6 (19.3%) | [6, 10, 11, 15, 20] |
| United States | 5 (16.1%) | [3, 7, 18, 24, 26] |
| Australia | 4 (12.9%) | [8] |
| Japan | 2 (6.4%) | [21, 22] |
| Germany | 1 (3.2%) | [27] |
| Ireland | 1 (3.2%) | [23] |
| Greece | 1 (3.2%) | [1] |
| Croatia | 1 (3.2%) | [13] |

The current review showed that majority of HPS is from male gender (83.9%). This may be explained by the fact that male barber deals with male customers who have tinier, shorter and stiffer hair than female customers whose hairs are softer and longer. The former helps the hair easier penetration and disappearance in the skin. Incidence of the HPS differs from PSD of other areas. Abdulwahid et al., in their review of umbilical PSD showed that about 90% of umbilical PSD occur in three neighboring countries, namely Turkey, Iran and Iraq [28]. The current metadata showed that majority of HPS occurred in the developed countries. This difference might be due to two factors: first, cultural trends in the developing countries in which people do not prefer living with pets. Second, researches and reporting cases are less developed in these regions and little occurrence of this disease might simply due to failure to report all cases.

The order of predilection is the third web space (20, 64.5%), followed by the fourth web space (5, 16.1%) and the second one 3(11.5%). The first web space has not been reported to be affected by the HPS. This may be explained by the shape and position of the hand during hair cutting. By itself, first web space is much wider than others and during cutting the thumb is more mobile than other fingers making difficult for hair to adhere to the first web and penetrate the skin.

Chronic discharging sinus is the most common presenting symptom of HPS; this is similar to the PSD occurring in other areas of the body [1, 10, 11].

Although non-operative management of PSD started to develop, according to Uysal et al, this condition is usually resistant to antibiotics and conservative management. Surgical excision and secondary healing are the preferred methods of treatment to prevent recurrence [11, 28]. The result of this review confirmed this finding; excision and daily dressing was done for 28 (90.3%) cases, incision and drainage was performed in 2 (6.4%) cases while hair removal was done only for 1 (3.2%) patient. Recurrence was reported to occur in 5 (16.1%) cases. Both of the two cases that are treated with incision and drainage developed recurrence. Among cases treated with excision and daily dressing (28 cases), only two cases developed recurrence.

## CONCLUSION

In conclusion, hand pilonidal sinus is an occupational disease solely affects those individuals who work with hair including barbers and hairy animal groomers. The main presenting symptoms are similar to the pilonidal sinus disease of other areas. Surgical excision with daily dressing is the main line of therapy.

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## Author Contributions

Abdulwahid M. Salih – Substantial contribution to the concept and design, Revising it critically for important intellectual content, Final approval of the version to be published
Fahmi H. Kakamad – Substantial contribution to the concept and design, Revising it critically for important intellectual content, Final approval of the version to be published
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The corresponding author is the guarantor of submission.

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## Conflict of Interest

Authors declare no conflict of interest.