

LETTER TO THE EDITOR

Clinicopathologic Manifestations of Patients with Fordyce's Spots

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Editor:

In 1896, Fordyce¹ described whitish spots on the vermilion border of the lips, oral mucosa and, rarely, genital mucosa. Fordyce's spots are ectopically located sebaceous glands¹⁻⁴.

To date, few reports have been published to describe the clinicopathologic study of Fordyce's spots in the Korean population. We herein review the clinicopathologic characteristics of Korean patients with Fordyce's spots.

Data were collected retrospectively from the medical records of patients diagnosed with Fordyce's spots between January 2000 and December 2009 in the Department of Dermatology of 4 medical centers in Korea. We reviewed biopsy slides, treatment regimens, and other relevant information. Sixteen patients were finally enrolled in this study. All patients were confirmed with Fordyce's spots following biopsy. This study was approved by the Institutional Review Board of the Catholic University of Korea. Distribution of the patients' age, sex, incubation period, symptoms, signs, anatomical locations, and treatment were evaluated. Histopathologically, the morphology of Fordyce's spots, distribution, and existence of sebaceous ducts-whether they opened onto the skin surface or not-were investigated.

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The male to female ratio was 11 : 5. The average patient age was 34.3 years and ranged from 17 ~ 67 years (mean \pm S.D., 34.3 ± 15.0 years). The average age was 41.1 years old in men and 19.4 years old in women. Duration of illness prior to diagnosis ranged from several days to five years, and the mean incubation period was 1.9 years. Most patients were asymptomatic. However, one patient with concurrent contact dermatitis complained of pruritus. The observed lesions were multi-centric and whitish to yellowish in color. Slightly elevated papules and plaques with sizes ranging from 1 to 3 mm were seen. In 8 patients, the lesions were found on the upper lip (50%), on both lips in 4 (25%), and on the lower lip in two (12.5%) (Fig. 1A, B). The spots mostly presented on the vermilion portion of the lips. The lesions in one patient presented on the buccal mucosa (Fig. 1C) and glans penis, respectively. The family history of the patient was unknown. Two patients were treated with a carbon dioxide (CO₂) laser, 1 with electrodesiccation (E/D), 5 with excision of the lesions, and 7 were put on observation. Among those treated, no recurrence was reported (Table 1).

Histologically, the size of sebaceous glands ranged from 1.62 ± 0.55 mm. The glands were located in both the upper dermis (81.3%) and lower dermis (18.7%). The sebaceous glands of Fordyce's spots mostly do not associate with hair follicles. Sebaceous ducts of Fordyce's spots have been observed to open directly onto the surface of the skin (81.3%, Fig. 2).

DISCUSSION

Fordyce's spots are ectopic sebaceous glands on the lips and buccal and genital mucosa (glans penis and labia minor)¹⁻⁴. The term "Fordyce's condition" has been used on rare occasions⁵. Although it is infrequent, ectopic sebaceous glands may also be found in the esophagus,



Fig. 1. Multiple, pin-head-sized, whitish to yellowish papules on the vermilion border of both lips in case 9 (A), upper lip in case 11 (B), and buccal mucosa in case 8 (C).

Table 1. Epidemiologic and clinical characteristics of 16 study patients with Fordyce's spots

| Case no. | Gender/Age (yr) | Duration (yr) | Symptom | Localization | Treatment |
|----------|-----------------|---------------|--------------|---------------|-----------------------|
| 1 | F/51 | 0.67 | Asymptomatic | Lower lip | Observation |
| 2 | M/30 | 3 | Asymptomatic | Upper lip | Observation |
| 3 | M/17 | 1 | Asymptomatic | Upper lip | Unmentioned |
| 4 | M/19 | 0.5 | Asymptomatic | Glans penis | Unmentioned |
| 5 | M/31 | 0.16 | Asymptomatic | Both lips | Observation |
| 6 | F/38 | 0.12 | Asymptomatic | Upper lip | Observation |
| 7* | M/27 | 1 | Pruritic | Both lips | Unmentioned |
| 8 | M/42 | 0.02 | Asymptomatic | Buccal mucosa | Unmentioned |
| 9 | M/25 | 5 | Asymptomatic | Both lips | CO ₂ laser |
| 10 | M/26 | 1 | Asymptomatic | Upper lip | E/D |
| 11 | F/58 | 3 | Asymptomatic | Upper lip | Excision |
| 12 | F/67 | 0.16 | Asymptomatic | Lower lip | Unmentioned |
| 13 | M/41 | 6 | Asymptomatic | Both lips | Observation |
| 14 | F/19 | 1 | Asymptomatic | Upper lip | CO ₂ laser |
| 15 | M/41 | 6 | Asymptomatic | Upper lip | Observation |
| 16 | M/17 | 1.5 | Asymptomatic | Upper lip | Observation |

F: female, M: male, E/D: electrodesiccation. *The patient with concurrent contact dermatitis complained of pruritus.

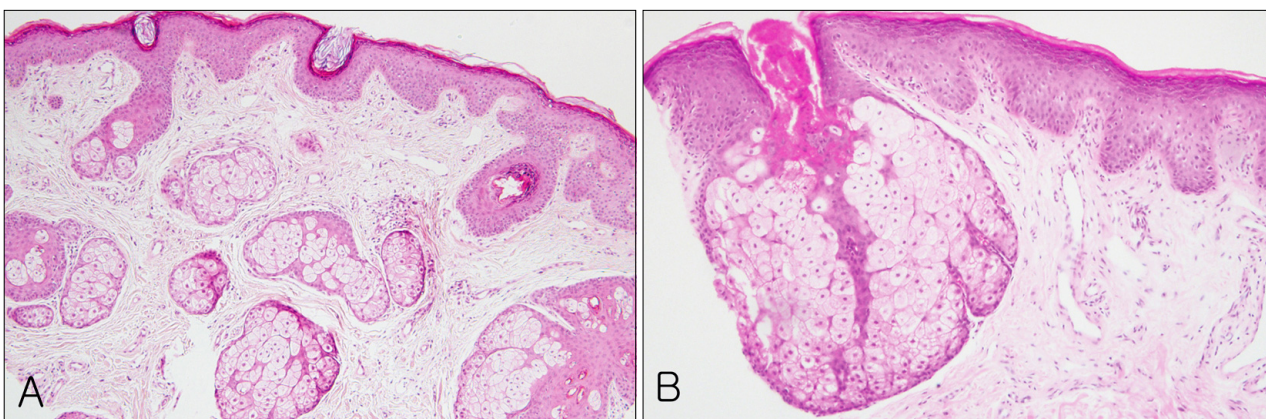


Fig. 2. Sebaceous glands in the dermis on the lip in case 11 (A) and in case 13 (B). Fordyce's spots open directly onto the surface and do not associate with hair follicles (H&E, ×100).

gastroesophageal junction, uterine cervix, sole of the foot, thymus, or tongue⁶⁻¹¹. A previous study reported a female predilection for Fordyce's spots². Some studies reported a male predilection or no significant difference in the prevalence between males and females¹²⁻¹⁴. In this study, they

were predominant in men. It has also been previously reported that the incidence of Fordyce's spots increased with age, and 60~80% of patients were elderly^{15,16}. According to Olivier¹⁴, Fordyce's spots in a selected South African population reach a peak between 20 and 29 years

of age. Our study has shown that most patients were in their early or middle adulthood. We think that the prevalence of younger patients in this study may be due to cosmetic concerns, in addition to a larger proportion of individuals in the younger population who are willing to seek medical help. The vermilion border of the upper lip is the most common site of lesions found on the lip^{2,12,14}. In this study, 16 cases of Fordyce's spots were found on the lips, and one case each on the buccal mucosa and glans penis. In most patients with Fordyce's spots, the upper lip (75%) was involved. There were also several cases in which Fordyce's spots were found on the vermilion border of the lips.

The size of normal sebaceous glands range from 0.2 mm to 2 mm. Ninety percent (90%) of normal sebaceous glands are associated with hair follicles¹². The glands may also be found in certain hairless sites, such as Fordyce's spots. Histopathologically, Fordyce's spots are a normal feature of sebaceous glands¹⁴. They consist of a single sebaceous lobule or gland located in the dermis or submucosa². The well-formed lobule consists of small clusters of mature sebocytes with a sebaceous duct. This lesion is characterized by the presence of an opening directly onto the epithelial surface. In this study, no hair follicle was observed, and most sebaceous ducts in the dermis open directly onto the surface.

The pathophysiology of Fordyce's spots has not been elucidated. However, since the incidence tends to increase with age, a hypothesis suggests an endocrinary influence on sebaceous glands¹⁵. However, this study showed that most cases present in early or middle-aged adulthood. We hypothesize that ectopic sebaceous glands occur with abnormal disposition during embryonic development.

Most patients are asymptomatic; therefore, demand for treatment is not high. However, some patients consider receiving treatment for cosmetic reasons since the lesions do not resolve spontaneously. CO₂ laser and oral isotretinoin can be considered as treatment options. However, CO₂ laser ablation can leave scars afterwards, and isotretinoin cannot be taken for long periods of time. There is a report on 5-aminolevulinic acid-photodynamic therapy for Fordyce's spots. However, side effects, such as a burning sensation, vesiculation, and post-inflammatory hyperpigmentation have been reported¹⁷. Recently, successful therapy that combines CO₂ laser ablation and topical trichloroacetic acid or bichloroacetic acid has been reported, and cauterization with chemical agents is now considered an alternative treatment option for Fordyce's spots. Several patients in this study received treatment for cosmetic reasons and experienced no recurrence after

CO₂ laser, E/D, or excision.

Sixteen patients who were diagnosed with Fordyce's spots in dermatology clinics from 2000 to 2009 were included in the study. This report is a review upon the first report on Fordyce's spots in Korean individuals, and we expect that this will provide a foundation for further study or medical treatment of patients with this condition.

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