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BRIEF REPORT

# *Demodex* Mites within Nevus Sebaceus Lesion of an Immune-Competent 7-Month-Old Infant

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Dear Editor:

*Demodex* mites are normal skin fauna that live in the human pilosebaceous unit. Their survival depends on the two key components, host immunity and the amount of sebum produced in the skin[1]. Therefore, the density of *Demodex* increases in immunosuppressed patients, while *Demodex* mites are rarely found in children under the age of five due to minimal production of sebum in early years of life[1]. Although there have been quite a few reports of *Demodex* mites found in immunosuppressed children, with the youngest being a 19-month-old boy who suffered from Langerhans cell histiocytosis[2], there has been only one case series of demodicosis which occurred in immune-competent, healthy young children ranging in age between 10 months and 5 years[3]. We report the presence of *Demodex* mites within a nevus sebaceus lesion of an immune-competent infant, who is, to our best knowledge, the youngest and the second case ever reported of a non-immune deficient infant with *Demodex* colonization. We received the patient's consent form about publishing all photographic materials.

A 7-month-old Korean female infant presented with a congenital skin lesion on the right temporal scalp. She was otherwise healthy and had no birth or developmental problems. Physical examination revealed orange-colored linearly grouped papules within an alopecic patch (Fig. 1A). A punch biopsy demonstrated enlarged sebaceous glands, heterotopic apocrine glands, and defective hair follicles which are all histological characteristics of nevus sebaceus. To our surprise, in addition to these typical findings, a colony of *Demodex* consisting of at least 8 mites also stood out from the section (Fig. 1B).

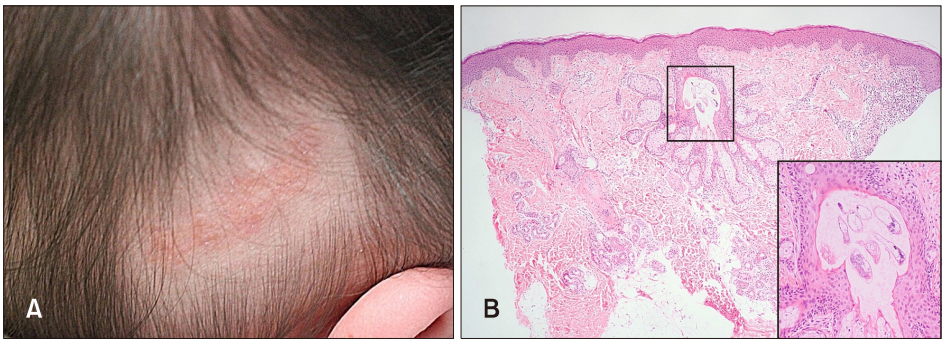


**Fig. 1.** (A) Biopsy-proven nevus sebaceus within an alopecic patch. (B) Hematoxylin-eosin-stained biopsy section demonstrating *Demodex* colonization in the follicle and marked sebaceous gland hyperplasia (original magnification, ×40); inset: higher-power view of the sebaceous duct which reveals compaction with several *Demodex* mites (original magnification, ×100).

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Nevus sebaceus is a benign hamartomatous tumor where immature sebaceous glands and malformed pilosebaceous units dominate, and defective pilosebaceous follicles are known to cause excess production of sebum which *Demodex* mites can nourish on[4]. As aforementioned, sebum production in the skin is a key factor, next to host immunity, for *Demodex* survival[1]. Therefore, although the patient in this case is immune-competent, it seems plausible that *Demodex* mites flourished in a sebum-rich local milieu. Furthermore, recent studies showed that the integrity of the pilosebaceous unit and sebum lipid take an important role in terms of skin-immunobiology[5].

We believe that our case brings attention to *Demodex* mites which are ubiquitous and yet easily overlooked. Our report demonstrates that even in an immune-competent young infant, a sebum-rich local skin lesion such as nevus sebaceus can cause *Demodex* colonization. For patients with nevus sebaceus, not only the cosmetic distress but also symptoms such as pruritus and irritation can become bothersome, and putting *Demodex* mites in the picture could enrich the treatment options for these symptoms. In these patients, a simple potassium hydroxide scraping and topical antibiotics might be beneficial. Also, we hope that this report can be a stepping stone to further investigation of local immunomodulation in a sebum-rich skin milieu.

## CONFLICTS OF INTEREST

The authors have nothing to disclose.

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