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CORRESPONDENCE

# Unilateral seborrheic dermatitis following the excision of the trigeminal schwannoma

*Dear Editor,*

Seborrheic dermatitis (SD) is a common chronic recurrent dermatitis characterized by ill-defined erythematous patches with overlying fine scaling either with or without yellow crusts.[1] A transient infantile form of SD often resolves within the first 3–4 months of life. The majority of SD appears to affect adult men more than women, and it is not uncommon for it to present after 50 years of age.[1] SD is mainly distributed symmetrically in areas rich in sebaceous glands. Face, ears, scalp, and upper part of the trunk are the most commonly affected areas. Unilateral distribution is rare in SD. Only two cases are reported in the literature, and both are associated with certain neurological or neurosurgical conditions.[2,3] Herein, we describe a patient with unilateral SD.

A 49-year-old man had a history of right trigeminal schwannoma, which was surgically removed in 2002 and 2006. Radiosurgery was performed for recurrence of the tumor in January 2008. However, the follow-up magnetic resonance imaging still showed a residual tumor at the right parasellar area (Figure 1A). He received regular follow-up outpatient services. The neurologic sequelae included paresthesia of the right face, increase in the temperature over the affected side of the face, paralysis of the right masseter, and alacrima of the right eye.

After the first surgery, itchy red scaling patches predominantly developed on the right side of the scalp, forehead, glabella, and right nasolabial fold (Figure 1B). The skin condition waxed and waned despite treatment from local clinics. A biopsy was performed on the skin specimen taken from the right side of forehead. Results of a histopathological analysis showed perifollicular spongiosis, hyperkeratosis, and perivascular lymphocytic infiltrates (Figure 2). Skin scraping or collection of skin specimens for microbiological identification was not carried out. However, basophilic fungal spores were easily seen by hematoxylin and eosin staining. The patient was then treated with oral antihistamines and tetracycline, topical steroid cream, polytar liquid shampoo, and steroid-containing shampoo alternatively. However, the dermatitis still fluctuated.

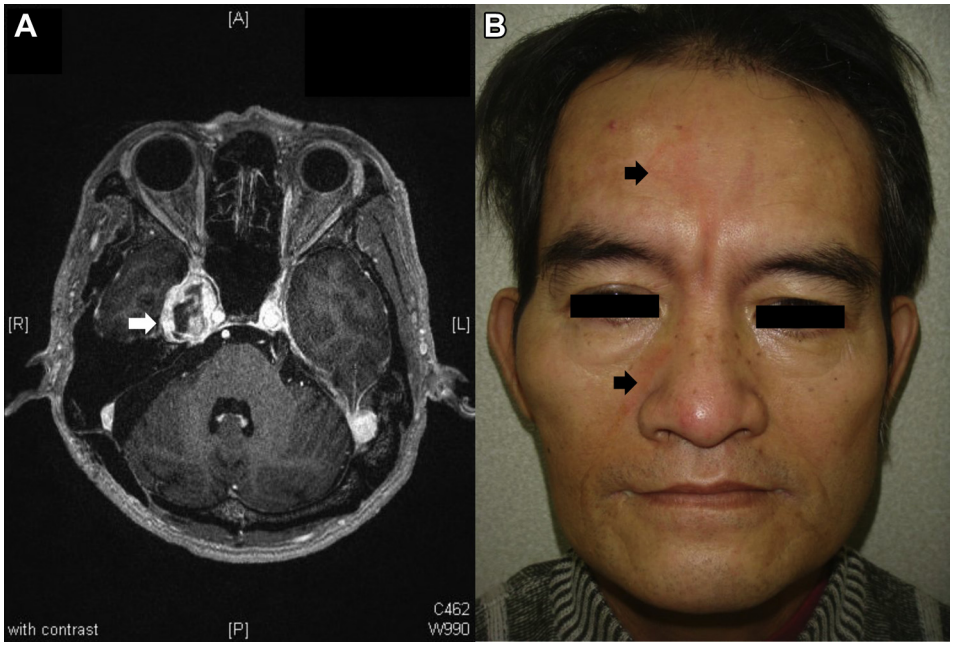


**Figure 1** (A) Magnetic resonance imaging showed the tumor located at the right presellar area (white arrow). (B) Erythematous scaling patches were found predominantly on the right side of the forehead, glabella, and nasolabial fold (arrows).


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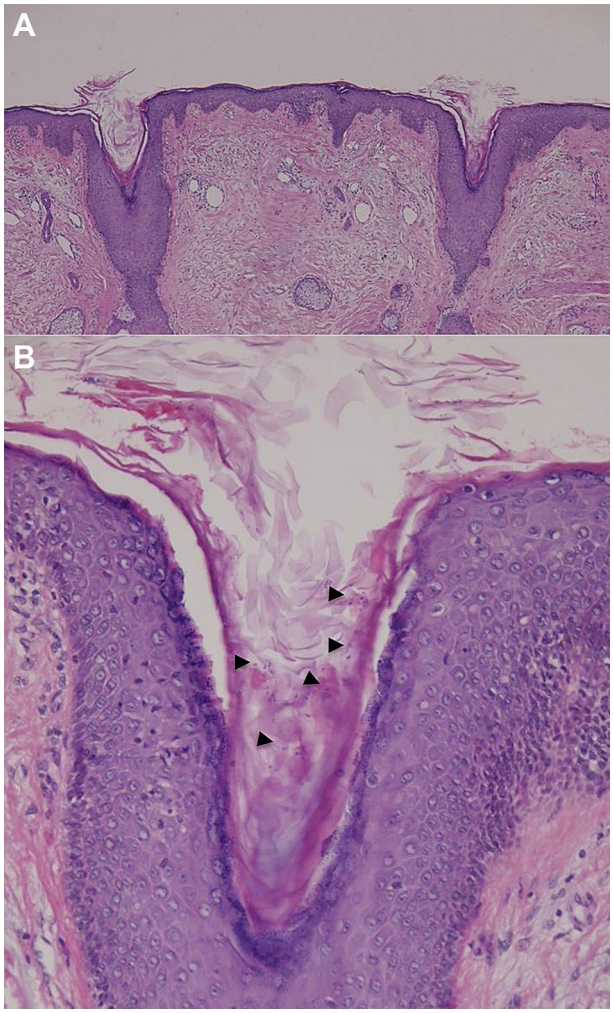


**Figure 2** Histopathology of the affected side of the forehead. (A) Follicular hyperkeratosis, mild spongiosis, and superficial perivascular inflammatory cell infiltration [hematoxylin and eosin (H&E), 40×]. (B) Spongiosis and lymphocytic exocytosis at the follicular epithelium. Numerous basophilic fungal spores were easily seen in the horny layer (arrowheads) (H&E, 200×).

Typical epidermal histopathologic features of SD consist of perifollicular psoriasiform hyperplasia, parakeratosis on either side of the follicular ostium, and variable degree of spongiosis.[4] Our patient has been treated at local clinics, and therefore psoriasiform hyperplasia was not found and parakeratosis was very subtle. Taking the clinical presentation into consideration, the histological findings were consistent with the diagnosis of SD.

The pathogenesis of SD remains unknown. Genetic factors, dysregulation of sebaceous glands, microbial effects, neurotransmitter abnormalities, and nutritional disorders are all shown to play roles in the pathogenesis of SD.[1] Neurological conditions, such as postencephalitic Parkinsonism, epilepsy, poliomyelitis, syringomyelia, and quadriplegia, were reported to be associated with SD.[1]

The first case report in the literature of unilateral SD is a patient with a meningioma encasing the trigeminal nerve.[2] The patient was first treated with irradiation, following which facial numbness and unilateral SD developed. The affected side demonstrated a slight increase in temperature, slightly decreased sweating, and increased numbers of *Staphylococcus* colonies than the unaffected side. Interestingly, when the patient's numbness resolved, her SD also resolved.

The second case in the literature is a patient with Chiari I malformation and syringomyelia extending from the fourth ventricle to T11.[3] Greasy, scaly, papulosquamous eruption limited to the right side of his face developed 7 months after the decompression surgery. Physical examination also showed ipsilateral anesthesia in the trigeminal nerve distribution. A histopathological examination showed that sebaceous glands of the affected side demonstrated less differentiation and thicker germinative layer than the unaffected side in addition to the findings of SD. The lesion responded poorly to conventional treatment of SD. The clinical features of all three cases are summarized in Table 1.[2,3]

SD seems to be more frequent in patients with Parkinsonism, in whom sebum production is increased.[5,6] L-3,4-Dihydroxyphenylalanine was found to be able to reduce the sebum production, and was expected to improve the SD condition. However, SD is not that closely connected with sebum production in adult patients. Burton et al[5] provided some evidences against the existence of any increase of sebum output in patients with SD. Nonetheless, Cowley et al[7] proposed that there is not an absolute increase in sebum production, but there is an increase of the static pool of already secreted sebum due to immobility, and muscular paralysis plays a permissive role for growth of *Malassezia* yeasts and SD development. In a previous study, the levels of skin-surface lipids were not elevated, but the lipid composition was characterized by an increased proportion of cholesterol, triglycerides, and paraffin, as well as a decrease in squalene, free fatty acids, and wax esters.[8] In summary, both neurologic condition and cutaneous condition may take part in the development of SD.

In our patient, the presentation is similar to the previous two cases reported in the literature. The eruption appeared in all the patients with neurosurgical conditions following neurosurgical intervention and nerve damage. Neurologic deficits such as paresthesia and anesthesia of the right face could be found in these three cases. The motor part of the trigeminal nerve was also involved in our patient. Consequently, these neurologic complications may facilitate the development of SD. In other words, the unusual unilateral

**Table 1** Summary of three cases of unilateral seborrheic dermatitis after the neurosurgery procedures in the literature.

| Author | Age/sex | Surgery | Clinical presentation of skin rash | Neurologic sequelae | Course and treatment |
|---|---|---|---|---|---|
| Bettley et al[2] | 42/F | Removal of the right temporal meningioma | Redness and severe scaling confined to the right side of the forehead, eyebrow, nose, and upper part of the cheek | Complete anesthesia of the right trigeminal nerve | SD resolved as the numbness improved |
| Chen and Fitzpatrick[3] | 44/M | Decompression of Chiari I malformation and syringomyelia of the right side | Greasy, scaly papulosquamous eruption limited to the right side of the face | Ipsilateral anesthesia in the trigeminal nerve distribution | Mild improvement despite aggressive treatment |
| Our case | 49/M | Removal of the right trigeminal schwannoma | Itchy red scaly patches developed predominantly on the right side of the scalp, forehead, glabella, and right nasolabial fold | Paresthesia of the right side of the face, increase in the temperature over the affected side of the face, paralysis and atrophy of the right masseter, and alacrima of the right eye | Waxed and waned |

SD = seborrheic dermatitis.

manifestation of SD is believed to be associated with the aforementioned neurocutaneous mechanism. However, further investigation is still needed to elucidate the pathogenesis and mechanism of the underlying condition.

Yao-Yu Chang, Pei-Hsuan Lu*, Chih-Hsun Yang
*Department of Dermatology, Chang Gung Memorial Hospital, Taipei, Taiwan*

* Corresponding author. Department of Dermatology, Chang Gung Memorial Hospital, Taipei, Taiwan. Tel.: +886 975 365 698.
*E-mail address:* peihsuanlu0613@gmail.com (P.-H. Lu)

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