

## Clinicopathologic Study of Labial Melanotic Macule

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**Background :** Labial pigmented lesions include labial melanotic macule, ephelids, lentigo, venous hemangioma, amalgam tattoo, junctional nevus, Peutz-Jeghers syndrome, Addison's disease, Laugier's disease, and superficial spreading melanoma.

**Objectives :** The purpose of this study was aimed at investigating the clinical and histopathological characteristics of labial melanotic macule during the past 10 years.

**Methods :** Clinical information of 49 patients with pigmented lesion of the lips diagnosed in Asan Medical Center from 1989 to 1999 was obtained from the medical records and clinical follow-ups. We re-evaluated all the biopsy specimens obtained from the patients.

**Results :** Twenty-six patients with labial melanotic macule were enrolled in this study. There were 16 women and 10 men. Age at onset varied from 20 to 65 years in women and from 28 to 68 years in men. The duration of the lesion ranged from 4 months to 12 years (mean, 4.5 years). The majority of patients had solitary lesions on the lower lip. Histopathologic examination of biopsy specimens showed increased pigmentation of the basal layer, mild acanthosis without elongation of rete ridges, and scattered melanophages in the dermis.

**Conclusions :** We suggest that labial pigmented lesions appearing in adults should be biopsied and labial melanotic macule should be diagnosed after the histopathological examination.

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**Key Words :** Pigmented lesion of the lips, Labial melanotic macule

Labial melanotic macule was first proposed by Weathers et al. in 1976 to describe a pigmented lesion on the vermilion border of the lower lip<sup>1</sup>. It is characterized by solitary, well-demarcated, brown or black pigmented macule that occur chiefly in young women, and do not change on sun exposure.

Histopathologically, it shows increased melanin in melanocytes and keratinocytes of the basal layer, scattered melanophages in the dermis, and mild acanthosis without elongation of rete ridges<sup>2-6</sup>. Labial melanotic macule has been regarded as a benign entity<sup>6</sup>. In this study, we retrospectively studied the patients with labial melanotic macule.

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## MATERIALS AND METHODS

Clinical information of 49 patients with pigmented lesion of the lips diagnosed in Asan Medical Center from 1989 to 1999 was obtained from the medical records and clinical follow-ups. We re-evaluated all the biopsy specimens obtained from the patients. After the

**Fig. 1.** Labial melanotic macule. (a) Four brown pigmented macules on the lower lip. (b) Two brown to black pigmented macules on the upper lip.

**Fig. 2.** Hyperpigmentation of the basal layer, mild acanthosis and scattered melanophages in the dermis (H&E stain,  $\times 200$ ).

clinical and histopathological evaluation, 3 patients with pigmented basal cell carcinoma, 1 with malignant melanoma, 8 with venous lake, 4 with fixed drug eruption, 3 with Peutz-Jeghers syndrome, and 4 with Laugier's disease were excluded.

## RESULTS

Twenty-six patients with labial melanotic macule were enrolled in this study. There were 16 women (61.5%) and 10 men (38.5%). Age at onset varied from 20 to 65 years (mean, 48.5) in women and from 28 to 68 years (mean, 38) in men. The duration of the lesion ranged from 4 months to 12 years (mean, 4.5 years). Ten patients (38.5%) had a solitary lesion, seven (26.9%)

**Fig. 3.** Malignant melanoma. Brown to black pigmented patch with variegated color and solitary papule on the lip and perioral area.

had two lesions, six (23.1%) had three, one (3.8%) had four, and two (7.7%) had multiple (more than five) lesions. In 21 patients (80.8%) the lesions were on the lower lip (Fig. 1a), in two (7.7%) on the upper lip (Fig. 1b) and in three (11.5%) on both lips. Other family members of each patient did not have similar skin lesions. In all the patients a skin biopsy specimen obtained from a pigmented lesion showed increased pigmentation of the basal layer and pigment incontinence. Thirteen cases (50%) were also seen an acanthotic epidermis (Fig. 2).

Length of follow-up was from 6 months to 9 years. In the cases of follow-up loss, we asked if the lesions had changed by telephone. The lesions of two patients were cleared with Q-switched alexandrite laser (Candela

Laser Corporation, Wayland, Massachusetts). One patient was cleared with carbon dioxide laser. The lesions were unchanged in the other patients without being treated during the follow-up.

## DISCUSSION

It has been reported that labial melanotic macule is commonly present in adult women in the central third of the lower lip<sup>5,7</sup>. They can occasionally have an irregular edge and there may be a history of color change, which can cause confusion with lentiginous lesions<sup>8</sup>. In our study, male to female ratio was 0.6. About a third had a solitary lesion and a third had more than three lesions.

There has been considerable terminological confusion in the past. Labial melanotic macule has been called ephelides, lentigines, melanosis, solitary labial lentigines and oral melanotic macules<sup>9-13</sup>. Differential diagnoses from ephelides, lentigo simplex, solar lentigo, venous hemangioma, tattoo, junctional melanocytic nevus, Peutz-Jeghers syndrome, Addison's disease, Laugier's disease, lentigo maligna and superficial spreading melanoma can be possible by clinical and histologic features. Ephelides and Peutz-Jeghers syndrome are histologically similar to labial melanotic macule but clinically ephelides present as brown macules in childhood which darken on sun exposure. In Peutz-Jeghers syndrome the features consists of dark brown macules on the lips which are also found on the perioral skin and oral mucosa. Lentigines show elongation of rete ridges on biopsy. In Addison's disease, there are pigmented macules on the oral mucosa with diffuse pigmentation in other sites, with other manifestations of adrenal insufficiency, and histological evidence of increased pigmentation in the basal and upper epidermal layers. Laugier and Hunziker<sup>14</sup> described a rare acquired pigmentary disorder of early or mid adulthood in which spontaneous macular hyperpigmentation of the buccal mucosa and lips occur in the absence of underlying disease. Discrete brown to black macules were found in the lower lips with histopathological features identical with labial melanotic macule. Melanonychia striata was present in half the reported patients<sup>5</sup>. Four patients with Laugier's disease visited our clinic over 10 years. Among them melanonychia was seen in 3 patients and macular hyperpigmentation of the buccal mucosa and tongue in

all 4 patients. In 2 patients brown pigmented macules were noticed on the palms.

Labial melanotic macule may simulate malignant melanoma clinically but histologically there is no contiguous melanocytic proliferation and no significant atypia. Interestingly, our large group of patients with labial pigmented lesions included a case of malignant melanoma (Fig.3). She developed a discrete macule on the upper lip at the age of 20 years, which was diagnosed as "benign pigmented lesion" without histopathological evaluation and then treated with cryotherapy. Eventually the lesions progressed to malignant melanoma. We don't know whether the primary lesion was nevus or lentigo.

We suggest that labial pigmented lesions appearing in adults should be biopsied and labial melanotic macule should be diagnosed after the histopathological examination.

## REFERENCES

1. Weathers DR, Corio RL, Crawford BE, et al: The labial melanotic macule. *Oral Surg* 42:196-205, 1976.
2. Spann CR, Owen LG, Hodge SJ: The labial melanotic macule. *Arch Dermatol* 123:1029-1031, 1987.
3. Maize JC, Ackerman AB: Pigmented lesions of the skin: clinicopathologic correlations. Philadelphia: Lea & Febiger, 1987:318-320.
4. Maiz JC: Mucosal melanosis. *Dermatol Clin* 6:283-293, 1988.
5. Ho KKL, Dervan P, O' Loughlin S, Powell FC: Labial melanotic macule: a clinical, histopathologic, and ultrastructural study. *J Am Acad Dermatol* 28:33-39, 1993.
6. Gupta G, Williams REA, Mackie RM: The melanotic macule: a review of 79 cases. *Br J Dermatol* 136:772-775, 1997.
7. Buchner A, Hansen LS: Melanotic macule of the oral mucosa. *Oral Surg* 48:244-249, 1979.
8. Sexton FM, Maize JC: Melanotic macules and melanocanthomas of the lip. *Am J Dermatopathol* 9:438-444, 1987.
9. Becker SW Jr: Pigmentary lesions common to the skin and oral cavity. *Oral Surg* 28:526-533, 1969.
10. Troadahl JN, Sprague WG: Benign and malignant melanocytic lesions of the oral mucosa: an analysis of 135 cases. *Cancer* 25:812-823, 1970.
11. Tagaki M, Ishikawa G, Mori W: Primary malignant melanoma of the oral cavity in Japan with special reference to mucosal melanosis. *Cancer* 34:358-370, 1974.

12. Shapiro L, Zegarelli DJ: The solitary labial lentigo. *Oral Surg* 31:87-92, 1971.
13. Page LR, Corio RL, Crawford BE: The oral melanotic macule. *Oral Surg Oral Med Oral Pathol* 44:219-226, 1977.
14. Laugier P, Hunziker N: Pigmentation melanique lenticulaire essentielle de la muqueuse jugale et des levres. *Arch Belg Dermatol Syphilol* 26:391-399, 1970.