

## A Case of Nevus of Nanta

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Nevus of Nanta is a pigmented nevus associated with secondary ossification. We describe a case of nevus of Nanta with no evidence of Albright's hereditary osteodystrophy. A 26-year-old Korean woman presented with a small asymptomatic brownish nodule on the right forehead. Histopathologic examination revealed nests of nevus cells in the dermis. Round ossification was in the base of intradermal nevus.

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### INTRODUCTION

Secondary cutaneous osteomas have been reported in various lesions, including acne, melanocytic nevi, cellular blue nevus, pilomatricoma, epidermoid cyst, basal cell carcinoma, squamous cell carcinoma, or malignant melanoma<sup>1-6</sup>. Among these, melanocytic nevus associated with one or several foci of cutaneous ossification, is known as nevus of Nanta. In several large series of reports in international literature, the nevus of Nanta was the single most common lesion with cutaneous osteoma formation<sup>1,2</sup>. To the best of knowledge, only one case of Nanta nevus has been reported in Korean dermatologic literature<sup>6</sup>. Herein, we report a case of nevus of Nanta and review the literature.

### CASE REPORT

A 26-year-old Korean woman presented to our outpatient clinic who had suffered from a small asymptomatic pigmented nodule on the right of her forehead for several months. There was no evidence

of Albright's hereditary osteodystrophy or Gardner's syndrome in either the patient or her family. On the physical examination, 0.5 × 0.5 cm sized, relatively well defined, brownish nodule was seen on the right of her forehead (Fig. 1). It gave the clinical impression of an intradermal nevus. The lesion was excised totally for histopathologic examination.

Nests of nevus cells were observed in the entire dermis, and rounded ossification was in the base of intradermal nevus (Fig. 2). Fat tissue was located within the central chamber of the osteoma (Fig. 3).

### DISCUSSION

Ossification of the skin occurs in various lesions.



Fig. 1. A 0.5 × 0.5 cm sized, brownish nodule on the right of the forehead.

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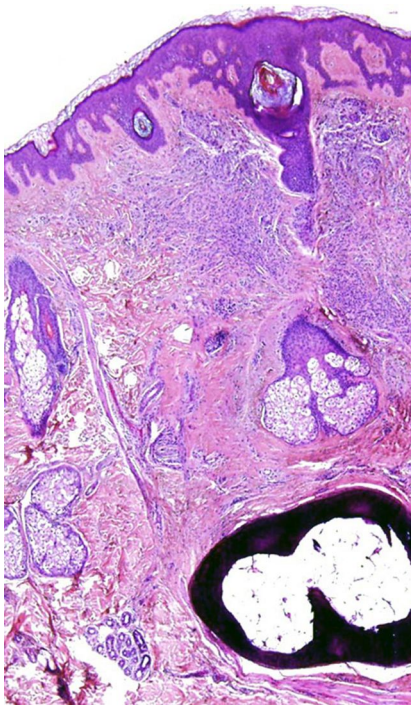


Fig. 2. Rounded ossification is in the base of intradermal nevus(H & E,  $\times 40$ ).



Fig. 3. Fat tissue is within the central chamber of the osteoma(H & E,  $\times 100$ ).

There are two major forms of cutaneous ossification. Primary cutaneous osteoma is a primary tumor without a preceding cutaneous lesion. And secondary ossification, that is secondary osteoma cutis, has preexisting lesions, such as pilomatricoma, basal cell carcinoma, acne, melanocytic nevi, cellular blue nevus, epidermal cyst, or malignant melanoma<sup>1-6</sup>.

Melanocytic nevus with bone was described first by Heidingsfeld<sup>7</sup> in 1908. Since Nanta<sup>8</sup> reported it in detail in 1911, it has been called osteo-nevus of Nanta. In the large series of reports in international literature, the most common cause of secondary osteoma cutis was melanocytic nevus<sup>1,2</sup>. Most cases of nevus of Nanta occurred on the face or head, and women are more commonly affected than men<sup>1,2,6,9</sup>. Faces are easily stimulated by such things as trauma or infection and are abundant in follicles, and nevi on faces may be of more concern for cosmetic reasons. Intradermal nevus are most common and ossification was localized to the lower part, of or beneath the nevus lesion<sup>1,2,9</sup>.

The mechanism of secondary ossification has not been clarified. Sasaki et al<sup>9</sup> proposed two possible ossifying mechanisms in the nevus cell nevus. First, ossification may be induced by hamartomatous proliferation on embryonic germ cells. Second, ossification may be induced by the differentiation of pluripotential mesenchymal cells. Keida et al<sup>10</sup> examined the positive staining of nevus cells for transforming growth factor beta (TGF- $\beta$ ) and connective tissue growth factor (CTGF) in the tissue from the nevus of Nanta, and suggested the involvement of these growth factors. Conlin et al<sup>1</sup> reviewed 74 cases of osteoma, and identified 15 cases of nevus of Nanta among them. 13 of 15 cases occurred in female patients, so they speculated that a higher incidence in women may be related to estrogenic effect on osteoblasts. Moulin et al<sup>2</sup> studied 125 cases of nevus of Nanta, and observed that all nevi contained hair follicles. It is likely that folliculitis by trauma or neoplastic proliferation, stimulates dermal fibroblasts and, given some appropriate stimulation, these indigenous fibroblasts differentiate into osteoblasts. Although there are several hypotheses, the exact pathogenesis is currently unclear. So further additional studies would be needed to prove these hypotheses.

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