Nevus of Ito on the Upper Extremity: A Case Report & Review

Newer treatment options exist for this rare condition, but many patients may forgo therapy.

By Wendy Miklos, MD, MAJ, USA, MC, Chris Collins, MD, CPT, USA, MC and Chad Hivnor, MD, MAJ, USAF, MC

Nevus of Ito is a rare dermal melanocytic nevus that is predominantly observed in Asian and darker skinned races. The nevus appears as a blue-hued patch and occurs within the distribution of the posterior supraclavicular and lateral cutaneous brachial nerves.

M. Ito first described a congenital pigmented patch or nevus fusoceruleus acromiodeltoideus in 1954. Nevus of Ito is a slate blue patch of dermal pigmentation involving the distribution of the posterior supraclavicular and lateral brachial cutaneous nerves. While Ito's description is one of a congenital dermal melanocytosis (CDM), there have also been reports of acquired dermal melanocytosis (ADM) in the circumscribed area. Some authors have chosen to describe these lesions as acquired or late-onset nevus of Ito. Other literature has suggested that the dermal melanocytes of ADM lesions exist from birth. While the acquired cases of nevus of Ito have been included in our summary of the literature, our discussion later will focus on the reported congenital cases.
Case Report
A 51 year-old male of Chinese descent presented with an asymptomatic blue patch on his distal right arm (Figure 1, next page). The lesion had been present since birth. There was no contributory family history. On examination, a slate-blue pigmented patch was present at the right elbow and measured 6.5cm in diameter. General examination showed no similar facial or shoulder pigmented patches, nor any other abnormalities. Histopathological examination of the lesions showed dermal proliferation of dendritic melanocytes scattered in the upper portion of the dermis (Figure 2). There was no junctional proliferation of melanocytes, maturing nests of melanocytes, heavy pigmented dermal spindled melanocytes, nor any melanophages within sclerotic collagen.

Identification and Diagnosis
In 1961, seven years after Ito’s description of the nevus fusco-ceruleus acromiodeltoideus, four descriptions of possible nevus of Ito appeared in Mishima and Mevorah’s review of American and European literature on nevus of Ota and nevus of Ito. Two of these reviewed cases pre-dated Ito’s publication, however, we do not concur with one, as it did not fit the neurologic distribution. The other case, from a 1926 Italian publication, lacked both English translation as well as photographic evidence. The review’s third case, from 1954, was consistent with an ADM. The last case, reported here, was consistent with a nevus of Ito and is included in our discussion.

Nevus of Ito is predominant in Asian and darker-skinned races and may be associated with an ipsilateral or bilateral nevus of Ota. Differential diagnosis includes pigmented macular ADM, acquired patch or plaque blue nevus, a nevus spilus that develops blue nevi, an aberrant Mongolian spot, melanoma metastasis, ecchymoses, vascular malformations, and a fixed drug eruption. Common blue nevi are usually less than 1cm and well circumscribed macules or papules. The blue-gray pigmentation seen on exam is due to the commonly known Tyndall effect, in which blue light is scattered as it passes through the dense dermis. History and physical exam help one differentiate amongst most of these conditions.

Histopathology of Nevus of Ito and Ota are identical, showing pigmented, spindle-shaped, bipolar or dendritic melanocytes within the upper and mid dermis. Pathology shows melanocytes that are generally more numerous and more superficially located than in the Mongolian spot. The melanocytes have an extracellular sheath composed of fine filaments and granules and are more developed than what is detected in melanocytes of the Mongolian spot. Hyperpigmentation of the basal layer and an increase in basal melanocytes may occur, but there is no increased activity.

While clinical presentation of the nevus of Ito commonly involves the shoulder, side of the neck and supraclavicular areas, our case involved the distal inferior branch of the lateral brachial cutaneous nerve with appearance at the elbow. No other case involving solely this distal location is reported in the literature. Of the twelve congenital cases in our summary (Table 1), gender breakdown includes seven males (58 percent) and five females (42 percent). In comparison, this is a significantly lower percentage of female gender predominance associated with nevus of Ota (80 percent). However, the female predominance in cases of nevus of Ota may actually reflect a higher incidence of cosmetic complaints in this population.

Color variation is also a common observation in our findings. Excluding two cases for lack of information, color variations of nevi of Ito include blue, grey, slate, and brown as well as a spectrum of other dermatologic findings to include intraleisional flecks, freckles, macules, and sweat and sensation changes. In half (50 percent) of the cases of Ito, a nevus of Ota was present. Both of these types of nevi may become more intensely pigmented following puberty. Spontaneous regression has not been described for the nevus of Ito.

Management
The Q-switched ruby (694nm) and alexandrite (755nm) lasers have been employed in the past to lighten dermal melanocytic lesions, particularly the Nevus of Ota. Most recently, the Nd:YAG (1064nm) was used to lighten a Nevus of Ota with favorable results. Cosmetic camouflage is an
Nevus of Ito

Table 1. Nevus of Ito Case Reports

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>No.</th>
<th>Gender, Age, Race</th>
<th>Congenital v. Acquired</th>
<th>Color</th>
<th>Other Characteristics</th>
<th>Location</th>
<th>Nevus of Ota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ito 1</td>
<td>1954</td>
<td>1</td>
<td>F, 17y, J</td>
<td>Congenital</td>
<td>Blue</td>
<td>Flecks, freckles sweat dysfunction</td>
<td>Left acromion to extensor surface of arm</td>
<td>No</td>
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<tr>
<td>Mishima et al.</td>
<td>1961</td>
<td>1</td>
<td>F</td>
<td>Congenital</td>
<td>Blue-Slate</td>
<td>Brown lentigo-like lesions</td>
<td>Right scapula, posterior deltoid, acromioclavicular region</td>
<td>Yes</td>
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<tr>
<td>Gold 2</td>
<td>1963</td>
<td>1</td>
<td>F, 20y, E</td>
<td>Acquired at 12y</td>
<td>Dusky Blue</td>
<td>Blue-black Areas</td>
<td>Left shoulder and upper arm</td>
<td>No</td>
</tr>
<tr>
<td>Hidano et al.</td>
<td>1965</td>
<td>1</td>
<td>M, 23y, J</td>
<td>Congenital</td>
<td>Gray-Blue</td>
<td>Violet, pinhead-sized spots</td>
<td>Right cervical, supraclavicular, scapular region</td>
<td>Yes</td>
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<td>Stankler 22</td>
<td>1965</td>
<td>1</td>
<td>F, 19y, B</td>
<td>Congenital</td>
<td>Slate-Grey</td>
<td>Mottled</td>
<td>Right supraclavicular fossa, right lateral arm</td>
<td>No</td>
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<tr>
<td>Furukawa et al.</td>
<td>1970</td>
<td>1</td>
<td>F, 25y, J</td>
<td>Congenital</td>
<td>Blue</td>
<td>NM</td>
<td>Right shoulder</td>
<td>Yes</td>
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<tr>
<td>Okawa et al. 16</td>
<td>1979</td>
<td>2</td>
<td>M, 39y, J, M, 64y, J</td>
<td>NM</td>
<td>Blue</td>
<td>Melanoma</td>
<td>Left acromion to extensor surface of arm</td>
<td>No</td>
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<tr>
<td>Burge et al. 3</td>
<td>1985</td>
<td>1</td>
<td>F, 34y, MA</td>
<td>Acquired at 31y</td>
<td>Blue</td>
<td>Dull sensation</td>
<td>Right scapula</td>
<td>No</td>
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<tr>
<td>van Krieken et al.24</td>
<td>1988</td>
<td>1</td>
<td>M, 78y, C</td>
<td>Congenital</td>
<td>Variable</td>
<td>Dermal melanoma</td>
<td>Left upper arm</td>
<td>No</td>
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<tr>
<td>Dekio et al. 25</td>
<td>1989</td>
<td>1</td>
<td>M, 59y, J</td>
<td>Congenital</td>
<td>Blush-Brown</td>
<td>Blush macules</td>
<td>Left neck, supraclavicular, shoulder region</td>
<td>Yes</td>
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<td>Mohan et al. 4</td>
<td>1992</td>
<td>1</td>
<td>F, 26y, IE</td>
<td>Acquired at 18y</td>
<td>Blue-grey</td>
<td>Diffuse macular, mottled</td>
<td>Left lower face, neck, upper chest and upper back</td>
<td>Yes</td>
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<td>Mukhopadhyay 26</td>
<td>2004</td>
<td>1</td>
<td>M, 38y, IE</td>
<td>Congenital</td>
<td>Blue-grey</td>
<td>Diffuse, darker Macules</td>
<td>Left shoulder</td>
<td>Yes</td>
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<tr>
<td>Tan et al. 27</td>
<td>2006</td>
<td>1</td>
<td>F, 43y, NM</td>
<td>Congenital</td>
<td>Blue-Brown</td>
<td>Partial depigmentation</td>
<td>Left neck</td>
<td>No</td>
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<tr>
<td>Mataix et al. 5</td>
<td>2007</td>
<td>1</td>
<td>F, 72y, C</td>
<td>Acquired at 70y</td>
<td>Grey-blue</td>
<td>NM</td>
<td>Left upper back, shoulder, neck, breast</td>
<td>No</td>
</tr>
<tr>
<td>Current case</td>
<td>2008</td>
<td>1</td>
<td>M, 51y, Ch</td>
<td>Congenital</td>
<td>Blue</td>
<td>Mottled</td>
<td>Right elbow</td>
<td>No</td>
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</table>

Female (F); Male (M); Years (y); African-American (AA); British (B); Caucasian (C); Chinese (Ch); English (E); Japanese (J); Mexican-American (MA); Not Mentioned (NM); Indian Ethnicity implied (IE); melanoma arising within the lesion.24

The authors report no conflicts of interest. The opinions expressed in this article are those of the authors and do not represent the viewpoints of the United States Air Force, the United States Army, or the Department of Defense.
Nevus of Ito

Figure 1

6.5 cm slate-blue patch on distal right arm.

Figure 2. Dermal proliferation of dendritic melanocytes.
2A. H&E, original magnification x 4
2B. H&E, original magnification x 20