



Indications for excision of nevi and melanoma diagnosed in a pediatric surgical unit

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Abstract

Background/Purpose: Childhood melanoma is rare but increasing in incidence. Its management relies on early diagnosis. The purpose of this study is to discuss surgical indications of nevi and diagnosis of melanoma in a pediatric surgical unit.

Methods: Data relative to the patients who underwent removal of nevi in our pediatric surgical unit from 1999 to 2005 were reviewed to identify indications, histology, and melanoma occurrence.

Results: The most frequent indication was atypical nevus. Compound nevus was the most common finding, followed by congenital and Spitz nevi. Melanoma was diagnosed in 3 excised nevi, and in 1 case it occurred as a metastatic disease.

Conclusions: Our data showed a pattern of indications for surgery similar to that described in the literature, with a high detection rate of melanoma, nonetheless showing that some rare conditions may delay diagnosis.

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Malignant melanoma (MM) accounts for 1% to 3% of all human malignant tumors. Only 0.3% to 0.4% of all melanomas occur in prepubertal age [1]; 1.3% occur in patients younger than 20 years [2]. The incidence of MM in children is estimated to be 0.7 per million per year in children aged 0 to 9 years, whereas it is 13.2 per million per year in people aged between 15 and 19 years [3]. This incidence is continuing to rise. Management of melanoma relies on prevention and early diagnosis. Diagnostic criteria include the distinction from MM mimics, especially atypical

nevi, Spitz tumors, and lesions presenting clinical changing. Identification of lesions resembling melanoma or prone to melanoma development is essential to obtain early treatment and to avoid unnecessary surgery. We report our experience from 1999 to 2005 concerning indications for surgery, histologic types, treatment of nevi, and occurrence of melanoma in a pediatric surgical unit.

1. Methods

Data relative to the patients who underwent removal of nevi in our pediatric surgical unit from 1999 to 2005 were retrospectively reviewed. Eighty-two children aged 1 month to 14 years underwent surgical excision of 91 nevi.

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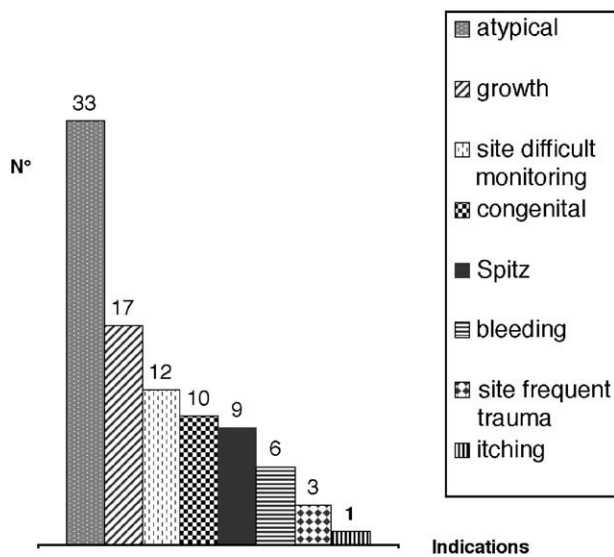


Fig. 1 Indications for excision of nevi.

Indications for excision were recorded and grouped by clinical aspects and signs, either relevant to MM diagnosis or not. Groups of indications included clinical appearance of atypical and Spitz nevi, other isolated warning signs of MM (rapid onset and growth, bleeding, itching, pain), preventive excision of congenital nevi, site of difficult monitoring, and indications unrelated to MM diagnosis, as in the case of exposure to frequent trauma. Surgical therapy followed the most recent recommendations [4]. Excision of the primary tumor was performed with 2-mm margins of normal skin. After diagnosis of MM, the patient underwent sentinel lymph node biopsy (SLNB) for melanoma thickness of 1 mm or more, along with wide excision of the tumor site with 2-cm margins and primary closure or skin graft. Sentinel lymph node biopsy was performed using preoperative lymphoscintigraphy, intraoperative blue dye injection around the site of excision, and handheld gamma probe for radiolocalization. Elective regional lymph node dissection (ELND) was subsequently performed if the result of the SLNB was positive for metastases. Pathologic reports were reviewed for standard pathologic variables including Clark level, Breslow thickness, lymph node involvement, and histologic diagnosis for lesions other than melanoma. The study was approved by the institutional review board.

2. Results

Indications for excision were assessed by dermatologists in 71 (78%) of 91 cases, in 15 cases by pediatric surgeons (16.5%), in 4 cases by pediatricians (4.4%), and in 1 case by a physician (1.1%). Sites of the lesions were trunk in 43 cases (47%), extremities in 40 (44%), and head and neck in 8 (8.8%). Clinical signs of atypical nevi were main surgical indications, followed by abnormal growth, sites of

difficult monitoring, congenital nevi, and clinical appearance of Spitz nevi; less frequent reasons for removal were bleeding, exposure to frequent trauma, and itching (Fig. 1).

In all cases, first surgical excision included 2-mm margins of normally appearing skin around the lesion. Primary skin closure was obtained in all cases except in 3 congenital nevi: a large congenital nevus on the left gluteus was treated by complete excision after skin expansion; an intermediate-sized congenital nevus on the plantar region required skin closure by local flaps after complete removal; a large “garment” nevus in an infant affected by von Recklinghausen disease underwent partial excision at 1 month of age. After the removal of a dorsal schwannoma when 16 months old, at the age of 24 months this baby also underwent an excisional biopsy of an inguinal nodal mass resulting in metastatic melanoma. Three patients underwent scar excision with 2-cm margins and SLNB for MM diagnosis after excision of a nevic lesion. In 2 patients, primary skin closure was obtained. In 1 patient, an inguinal skin graft was used to cover the residual defect on his foot. In the same patient, the result of the SLNB was positive, and inguino-iliac-obturator ELND was required. One of these cases of MM was diagnosed in an 11-year-old girl after excision of a bleeding nevic lesion frequently irritated by brassieres; it was a superficial spreading-type MM of Clark level IV, 3.22 mm thick; the result of the SLNB was negative. A 12-year-old girl underwent excision of a clinically atypical nevus of the dorsal region; histologic examination revealed a Clark level III melanoma, 1 mm thick; she underwent wide local excision, SLNB, and a second axillary nevus removal; the result of the SLNB was negative. A 3-year-old boy underwent surgical excision of a small congenital nevus on his foot that showed rapid growth in the last 6 months from 3 to 4 mm in diameter to 1 cm; after diagnosis of nodular MM of Clark level V with 7-mm thickness, the result of the SLNB was positive, and regional inguino-iliac-obturator lymph node dissection showed micrometastases in a single femoral node. With the exception of 1 case of MM, diagnosed when already

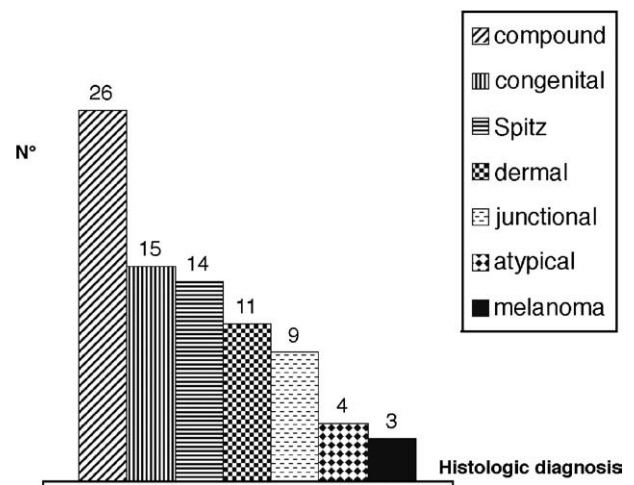


Fig. 2 Histologic findings for excised nevi.

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