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Bathing Trunks Nevus: Case Report of Giant Congenital Melanocytic Nevus

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Bathing trunks nevi, a subtype of giant congenital melanocytic nevi (CMN), are skin tumors that present by 2 years of age and occur in a low percentage of all births. We report a case of bathing trunks nevus that was initially suspected to be melanoma, and describe the history, pathophysiology, and treatment options for CMN. We also discuss the risk for neurocutaneous melanosis (NCM), which is a rare syndrome in patients with giant CMN.

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Bathing trunks nevus is a specific subtype of giant congenital melanocytic nevus (CMN) with spread resembling bathing trunks. This rare variant is clinically significant because of the increased risk for progression to melanoma and its association with neurocutaneous melanosis (NCM).[1] We report a case of a newborn with bathing trunks nevus that was initially suspected to be melanoma. The history, pathophysiology, and treatment options are discussed, along with a pictorial timeline of our patient's lesion progression.

Case Report

A term newborn girl was born at 39 weeks' gestation via spontaneous cephalic delivery to a mother aged 34 years. All maternal and prenatal history was unremarkable. Upon initial physical examination as a newborn (1 hour following delivery), the infant had a large (≥5% body surface area), circumferentially pigmented area from the umbilicus to mid thigh bilaterally (Figure 1). Interposed darkened lesions were present, with 3 distinct, raised, lipomatous-type nodules (2 cm, 1.3 cm, and 3 cm in diameter from left to right) over the lower lumbar spine (Figure 2). There were no signs of jaundice, hemolysis, meningomyelocele, or abnormal hair growth. The rest of the physical examination was unremarkable, including cardiovascular, pulmonary, and abdominal systems, and genitourinary functioning was normal. Cord blood testing revealed A Rh-positive blood type, and a direct Coombs test was negative for antibodies. Complete blood cell count was within reference range, with the exception of a low platelet count of $234\times10^3/\mu L$ (reference range, $250–450\times10^3/\mu L$). Transcutaneous bilirubin level at 24 hours was 6.3 mg/dL (low-intermediate risk zone per the Bhutani scale).

Four days postdischarge, one of the lower spine nodules developed serosanguineous drainage and the infant was taken to the emergency department. There was immediate concern of melanoma by pediatric dermatology and general surgery physicians. Biopsy specimens were obtained and pathologic examination revealed benign congenital intradermal nevus without evidence of malignancy. Magnetic resonance imaging of the lumbar spine and brain revealed no intracranial abnormalities, hydrocephalus, or suggestion of meningeal inflammation.

At 1 year of age, the patient had progressed along normal growth and development parameters (75th percentile for weight and 50th percentile for height). Physical examination continued to remain unremarkable, except for the dermatologic findings.

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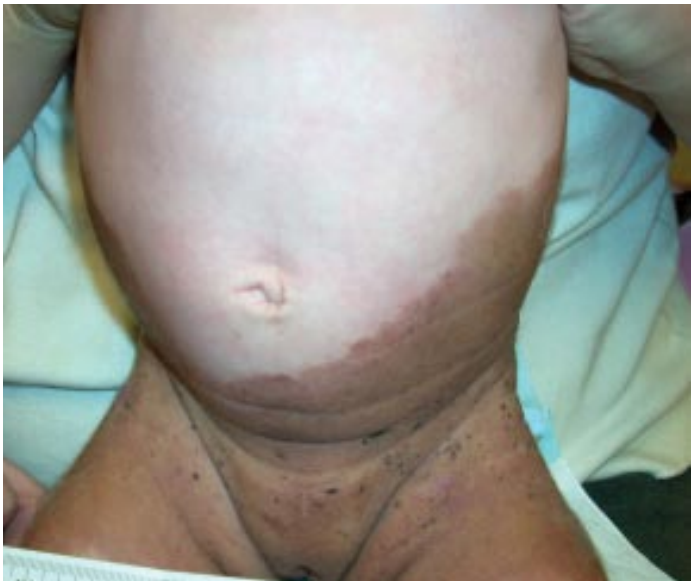

Figure 1. Initial appearance of the anterior aspect at 1 day of age, with a large, circumferentially pigmented area from the umbilicus to mid thigh bilaterally.

The lesions had slightly faded at 4 months of age along the anterior and posterior/superior aspects as well as the distal thigh margins (Figure 3). Routine follow-up with pediatric dermatology and general surgery is conducted every 6 to 8 months until puberty.

Comment

Congenital melanocytic nevi are benign pigmented skin tumors present at birth or evident by 2 years of age. They are usually brown and elevated with an irregular surface and may contain hair. Tardive CMN may be present at birth but do not become pigmented until infancy. Congenital melanocytic nevi tend to grow proportionally with the child and are thought to be the overgrowth or malmigration of melanocytes and neural elements during embryogenesis. These lesions commonly are referred to as a type of birthmark.

Congenital melanocytic nevi are classified as small (<1.5 cm in diameter), medium (1.5–19.9 cm in diameter), and large (>20 cm in diameter or ≥5% of body surface area).[1,2] Large CMN also are referred to as giant CMN, and if found on the trunk and buttocks, they are commonly called bathing trunks nevi. Approximately 1% to 6% of infants born in the United States have at least one CMN, usually small or medium. Large or giant CMN are rare, occurring in 1 of every 20,000 to 500,000 infants.[3]

Infants with CMN are at a higher risk for developing melanoma compared to acquired nevi. It is estimated that approximately 20% to 30% of melanomas occur from CMN.[1] Small and medium CMN have an approximately 1% lifetime risk for progression to melanoma.[4] These lesions should be carefully observed for any change using the ABCD (asymmetry, border irregularity, color, diameter) screening principles. Characteristics such as multiple nevi (>50) or small satellite nevi around a larger central lesion are more concerning for development of melanoma. Large or giant CMN have shown a 3% to 14% higher incidence of progression to melanoma than the small or medium type over the patient's lifetime, with an even greater risk for nevi that lie over the lower lumbar spine.[5]

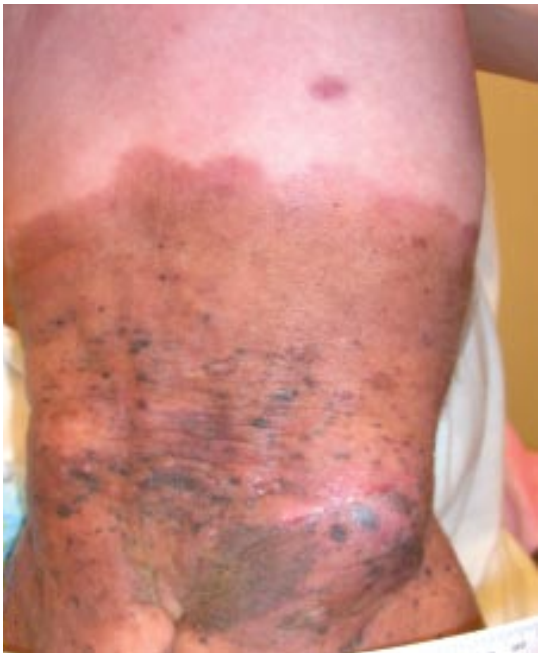

Figure 2. Initial appearance of the posterior aspect at 1 day of age, with interposed darkened lesions and 3 distinct, raised, lipomatous-type nodules (2 cm, 1.3 cm, and 3 cm in diameter from left to right) over the lower lumbar spine.

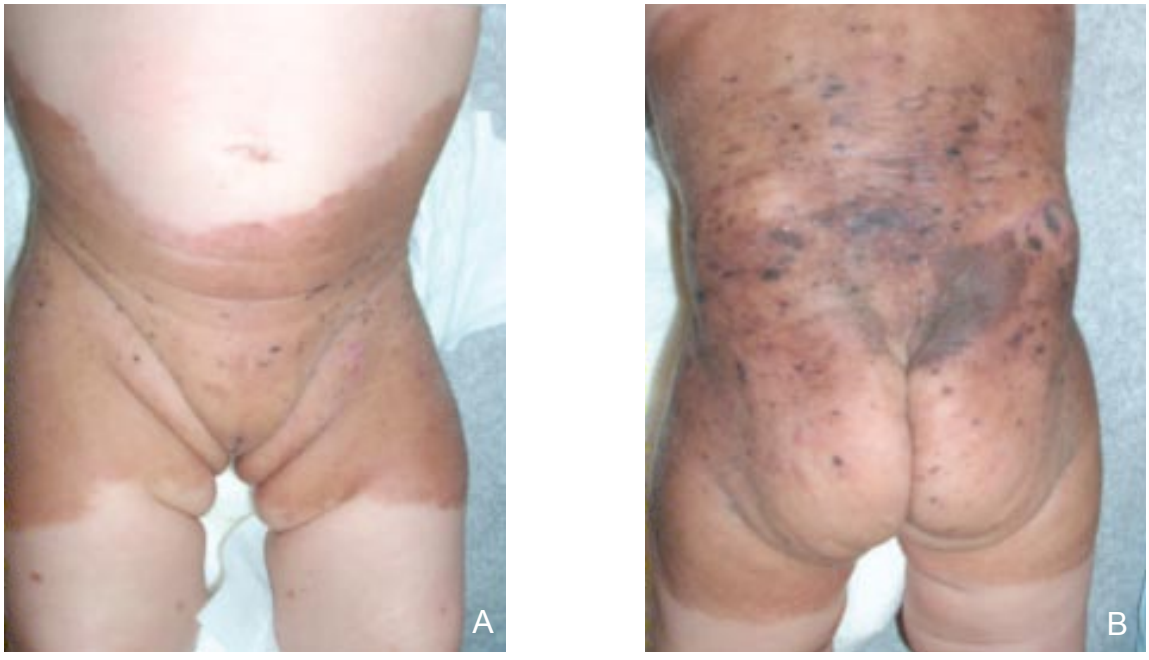

Figure 3. At 4 months of age, the infant's lesions had slightly faded along the anterior (A) and posterior/superior aspects (B) as well as the distal thigh margins.

Because of this greater risk, removing these lesions as early as possible is recommended to prevent malignant transformation.

Patients with large or giant CMN also have a 10% incidence of NCM,[6] a rare congenital syndrome that presents with multiple CMN and melanocytic tumor cells in the central nervous system, specifically on the leptomeninges, arachnoid, and pia mater. Neurocutaneous melanosis is more frequent if the nevi are found on the spine, head, or neck. The tumors cause increased intracranial pressure with initial presentation of seizures, hydrocephalus, or other neurologic symptoms depending on the degree of spinal cord compression. The melanocytic tumor cells also carry a 40% to 60% prevalence of melanoma progression.[6] In patients with large or giant CMN, magnetic resonance imaging of the brain and spine is sufficient to determine neurologic involvement.[7] Magnetic resonance imaging is the test of choice because the paramagnetic effects of melanin lead to a decrease in both T1 and T2 relaxation times. Neurologic involvement has a highly characteristic appearance, with the most common finding being T1 shortening in the cerebellum, temporal lobes, pons, and medulla.[7] Knowledge of these locations helps to differentiate melanotic deposits that are characteristic of NCM from metastases secondary to malignant degeneration of a large or giant CMN. Patients with NCM have a poor prognosis, as they usually die within the first year of life.[8]

Treatment of large or giant CMN without neurologic involvement primarily is removal of the lesion, which usually occurs when the patient is 6 months or older, as there is less risk associated with anesthesia, but before puberty when the risk for malignancy increases.[9] Because of the size of these large nevi, treatment has proved to be more difficult than originally thought. Some surgical techniques have been used with success, including serial excision with skin grafts, skin flaps, tissue expansion, or artificial skin replacement. An emerging therapy involves the use of a dermal regeneration template, followed by split-thickness graft after stable integration of the dermal matrix.[10] Some lesions are too large or potentially deforming to fully remove and they must be carefully monitored. Alternative treatments include phenol chemical peels, dermabrasion, and laser therapies for lesions that cannot be surgically treated but cosmesis is desired. These techniques, however, do not demonstrate complete destruction of the nevus cells.[11] There have been studies with normal-mode ruby laser and Q-switched alexandrite laser treatments as well as curettage followed by erbium:YAG laser ablation. Each of these treatments demonstrated reduced pigmentation and improvement in color and cosmetic appearance.[12,13] A full discussion of these treatments and their associated risks and benefits is beyond the scope of this article. Chronologic photographs are useful to compare lesions over time and to guide

biopsies. Most dermatologists follow up with patients with CMN every 6 months and approach changing lesions aggressively.

Conclusion

The presence of CMN is a unique challenge for patients, family members, and physicians. The concern for progression to melanoma and NCM can be alarming. In addition to the cosmetic appearance, the physical, social, and psychological aspects of CMN can be overwhelming. Balancing vigilance with cosmesis and choosing a treatment that will be effective is a dilemma for physicians. The most important concern is increased risk for melanoma and the vigilance for detecting new lesions.

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