

Giant pigmented hairy nevus: clinical and histopathological 3-year follow-up after removal with 1,064 nm Q-Switched Nd:YAG Laser

Nevus Pigmentado Piloso Gigante: Acompanhamento clínico e histopatológico de três anos após remoção com Laser Q-Switched Nd:YAG 1064nm

ABSTRACT

Giant congenital melanocytic nevi are extremely rare, however there is a 5–10% chance they will develop into melanomas. Laser-based treatment of this type of lesion is still very controversial. Some studies report great success without malignant development and others have achieved good aesthetic results but with malignancy. This article describes the clinical and histological development of a case of a female patient with a giant congenital melanocytic bathing trunk nevus, after 14 sessions of 1,064 nm Q-Switched Nd:YAG laser and three years of follow-up without histological signs of malignancy. The authors highlight the need for histological monitoring of this type of lesions.

Keywords: nevus; pigmented, nevus; laser therapy.

RESUMO

Os nevos melanocíticos congênitos gigantes são extremamente raros, apresentando, entretanto, risco variável de 5% a 10% de desenvolvimento de melanoma. O tratamento desse tipo de lesão utilizando lasers ainda é muito controverso, havendo relatos de grande sucesso sem evolução maligna e outros com boa resolução estética porém com malignização. Relatamos a evolução clínica e histológica do caso de paciente do sexo feminino, portadora de nevo melanocítico congênito gigante em calção de banho, após 14 sessões de laser Q-switched Nd:YAG 1064nm e três anos de acompanhamento histopatológico sem sinais de malignidade. Salienta-se a necessidade de acompanhamento histológico nesse tipo de lesão.

Palavras-chave: nevo; nevo pigmentado; terapia a laser.

INTRODUCTION

Congenital melanocytic nevi are potentially malignant lesions that are either present at birth or develop during childhood from pre-existing nevus cells.¹ Giant congenital melanocytic nevi (GCMN) are extremely rare, with an estimated incidence of one in every 20,000 births, but have a 5–10% risk of developing melanoma. They are longer than 20cm along the longest axis, have an area of 100cm², or cover at least 2% of the total area of the body. Since they can cover large skin surfaces and assume the shape of pieces of clothing, they are sometimes called GCMN in bathing trunks, cap, or cape.

Case Report

Authors:

Carlos Roberto Antonio¹
João Roberto Antonio²
Eurides de Oliveira Pozetti³
Solange Corrêa Garcia Pires D'Avila⁴
Izabela Lidia Soares Cardeal⁵
Fabiana Caetano Gerbi⁶
Rafael Leszczynski⁷
Gabriela Blatt Pereira⁸

- ¹ Dermatologic Surgery Instructor, Faculdade de Medicina de São José do Rio Preto (Famerp) – São José do Rio Preto (SP), Brazil
- ² Professor Emeritus of Dermatology, Famerp
- ³ Dermatology Instructor, Famerp
- ⁴ Professor, Pathology and Forensic Medicine, Famerp
- ⁵ Resident Physician, Famerp
- ⁶ Medical student, Famerp
- ⁷ Dermatologist Physician; Member of the Brazilian Society of Dermatology (SBD)
- ⁸ Dermatology Resident, Famerp

Correspondence:

Dr. Carlos Roberto Antonio
R. Silva Jardim, 3.114
Cep: 15010-060 - São José do Rio Preto, SP,
Brazil

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Treatment of those lesions is based on two principles: limiting the risk of malignant transformation and promoting an acceptable cosmetic result. Decades ago, before laser was used in dermatological practice, many lesions were untreatable, since most GCMNs are inoperable.² Currently, laser treatment is seen as a good option for treating such pigmented lesions. This article describes the use of a 1,064 nm Q-switched Nd:YAG laser in the treatment of a 'bathing trunk' GCMN in a female patient. The study was approved by the Ethics and Research Committee of the Faculdade de Medicina de São José do Rio Preto.

CASE REPORT

A 23-year-old female patient, Fitzpatrick skin type III, who was born with a giant hairy melanocytic lesion sought care at the Dermatology Outpatient Clinic of the Faculdade de Medicina de São José do Rio Preto, São Paulo, Brazil. At approximately 30x20cm in diameter, the lesion affected the lower third of the back and the whole posterior hip and infragluteal region, totaling more than 13.5% of the body surface area (Figure 1). The lesion considerably affected the patient's quality of life. Serial dermoscopic assessments, clinical follow-ups, and biopsies of the affected area were proposed in order to monitor the lesion and detect malignization areas early on. All histopathological results suggested an intradermal melanocytic nevus with no malignancy (Figures 2A and 2B). After a five-year follow-up, the patient underwent treatment with 1,064nm Q-Switched Nd:YAG laser (Q YAG5 – Palomar Medical Technologies, Burlington, MA, USA). Local anesthesia was applied around the treated area with anesthetic solution (2% lidocaine with epinephrine diluted in equal parts with 0.9% saline solution). Next, the authors applied the 1,064nm Q-switched Nd:YAG laser at 10Hz frequency, 2mm spot size, and 6.5–12.5 J/cm² fluence. Fourteen sessions were held at one-month intervals (Figures 3, 4, and 5). The authors also conducted three diode laser sessions (Light Sheer), with 30J of energy and a frequency of 30ms, to remove hairs on the GCMN. The lesion was



Figure 1: Pre-treatment– Giant Congenital Melanocytic Nevus before treatment.

followed up for 36 months, and various histological analyses were carried out during that period – all of which resulted in a diagnosis of intradermal melanocytic nevus without hyperplasia or atypia. The microscopic comparison of specimens before and after treatment demonstrated a decreased amount of nevus cells and intradermal melanocytes after the laser treatment (Figure 6).

DISCUSSION

GCMN are located in the lower two-thirds of the dermis, occasionally extending to the subcutaneous layer of individual nevus cells distributed among collagen fibers; are associated with skin appendages, nerves, and vessels within the reticular dermis; and have a greater average thickness than acquired melanocytic nevi.³ The choice of treatment for congenital melanocytic nevi should consider the location, depth, and clinical appearance of the lesion, the risk of developing melanoma, and the aesthetic and psychological factors involved. There are several treatment options such as surgical excision, dermabrasion, curettage, cryosurgery, chemical peeling, and laser therapy.⁴ Laser treatment was chosen in the present case due to the lesion's dimensions and its impact on the patient's quality of life.

The treatment of GCMNs using laser is still very controversial, with some reports of great success without malignization and some of aesthetic success but with malignization.^{5,6} In addition, the incomplete removal of nevus cells, especially deeper ones, does not fully eliminate the risk of emergence of melanoma. Furthermore, decreasing the lesion's pigmentation can hamper the early detection of color changes that indicate malignancy in the deeper layers of the GCMN.⁷ The authors understand that GCMNs can become malignant even without any laser-based intervention; they deemed it more important to improve the patient's quality life and carefully monitor the lesion's development through dermoscopy and biopsy.⁷

Non-ablative laser methods appear to offer advantages over ablative methods – such as the CO₂ laser –in the treatment of GCMN. The authors chose the 1,064nm Q-Switched Nd:YAG

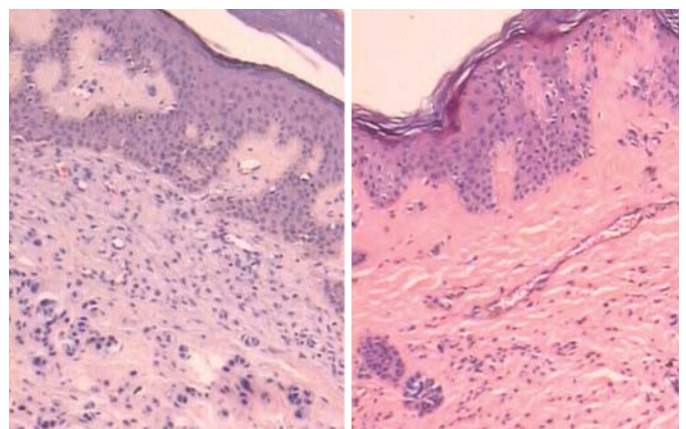


Figure 2: A and B - A. Pre-treatment biopsy, characterized by abundant nests of nevus cells permeating the upper and middle dermis. **B.** Pre-treatment biopsy



Figure 3: Post-treatment – Giant Congenital Melanocytic Nevus after eight 1,064nm Q-Switched Nd:YAG laser sessions



Figure 5: Post-treatment – Giant Congenital Melanocytic Nevus after 141,064nm Q-Switched Nd:YAG laser sessions

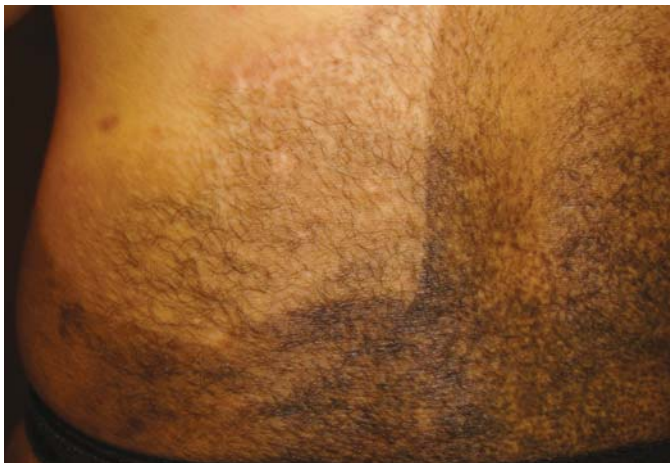


Figure 4: Post-treatment – Giant Congenital Melanocytic Nevus after nine 1,064nm Q-Switched Nd:YAG laser sessions

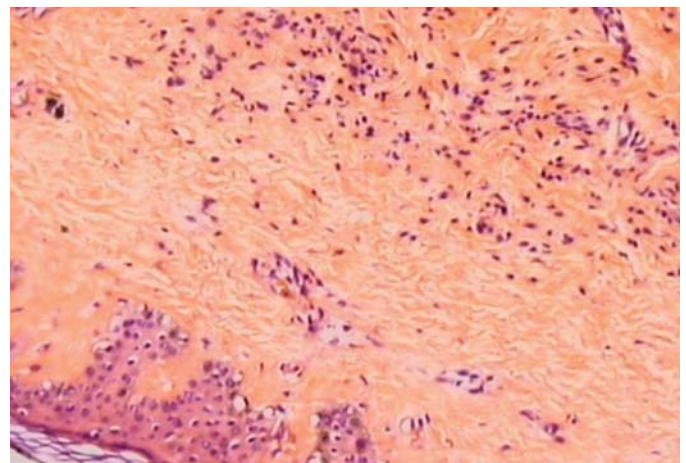


Figure 6: Final biopsy, after end of treatment – Intradermal melanocytic nevus shows a decrease in nests of nevus cells compared with Figure 2

laser since it is one of the most selective regarding the melanocytes chromophores, in addition to its deeper penetration in the dermis and the existence of several published scientific reports regarding its safety and patients' improved quality of life.⁵ In the present study's clinical follow-up, a partial whitening of the treat-

ed area was observed, indicating the difficulty in treating GCMN. Nevertheless, in the serial histopathological three-year follow-up, no signs of malignancy were found. The authors highlight the crucial importance of continually monitoring GCMN patients treated with laser. ●

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