

## Case Reports

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# Basal cell carcinoma growth over a nevus sebaceous: treatment of the field cancerization with photodynamic therapy

*Carcinoma basocelular desenvolvido sobre nevo sebáceo: tratamento com terapia fotodinâmica abordando campo de cancerização*

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### RESUMO

Nevo sebáceo de Jadassohn é hamartoma congênito que pode apresentar evolução para neoplasia cutânea maligna. A terapia fotodinâmica é utilizada para tratamento de ceratoses actínicas e carcinomas basocelulares superficiais ou nodulares, podendo-se observar o campo de cancerização cutâneo através da lâmpada de Wood, durante a realização da técnica. Relata-se um caso do uso da terapia fotodinâmica para o tratamento de um carcinoma basocelular, que se desenvolveu sobre nevo sebáceo, demonstrando-se o campo cancerizável através do uso da lâmpada de Wood. O procedimento consistiu em alternativa de tratamento não cirúrgico para o carcinoma basocelular, com excelente resultado estético. A paciente encontra-se em seguimento clínico, não apresentando recidiva da neoplasia 18 meses após o tratamento.

**Palavras-chave:** carcinoma basocelular; nevo sebáceo de Jadassohn; fotoquimioterapia

### ABSTRACT

*The sebaceous nevus of Jadassohn is a congenital hamartoma that may develop into a malignant cutaneous neoplasia. Photodynamic therapy is used to treat actinic keratoses and superficial or nodular basal cell carcinomas, and the cutaneous field cancerization can be observed using the Wood's lamp during the performance of the technique. This article describes a case of photodynamic therapy used in the treatment of a basal cell carcinoma, which developed on a sebaceous nevus, where the field cancerization was demonstrated through the use of Wood's lamp. The procedure is a non-surgical alternative for the treatment of the basal cell carcinoma, with excellent aesthetic outcome. The patient is on clinical follow-up, with absence of recurrence of the neoplasia 18 months after the treatment.*

**Keywords:** carcinoma, basal cell; nevus, sebaceous of Jadassohn; photochemotherapy

**INTRODUCTION**

The sebaceous nevus of Jadassohn is a congenital hamartoma<sup>1</sup> commonly located on the scalp and face, being found in 0.5 to 1% of the population. Its etiology is unknown, however recent studies suggest a possible link with the human papilloma virus or mutations in the patched gene (PTCH).<sup>2</sup> The development of malignant neoplasms in this lesion is rare, and typically involves basal and squamous cell carcinomas.<sup>3</sup>

Photodynamic therapy (PDT) is currently used for the treatment of actinic keratoses on the face and scalp and as an alternative to surgical treatment of superficial or nodular basal cell carcinomas (BCCs).<sup>4</sup> The visualization of the cancerization field in PDT is possible with the assistance of a Wood's lamp three hours after the use of methyl aminolevulinate (MAL) photosensitizing cream, followed by occlusion with clear plastic film and aluminum foil.

On examination, a reddish fluorescence is observed in the areas corresponding to the actinic keratoses visible on dermatological examination or in subclinical lesions<sup>5</sup> (Figure 1). In BCC lesions, it is possible to delimit the margins of poorly defined lesions, which helps in future surgical procedures.<sup>6</sup> The authors describe a clinical case of a patient who underwent PDT for the visualization of the cancerization field and treatment of nodular BCC that developed over a sebaceous nevus.

**CASE REPORT**

A 28-year-old female patient (Fitzpatrick phototype IV) with history of congenital lesion in the right temporal region sought medical advice. Irritation and pruritus had emerged at the site six months before, with biopsies having been performed in two points: one at the lesion's upper border – whose anatomopathological study confirmed the presence of a sebaceous nevus – and the other at the lesion's lower third – which indicated the presence of a nodular BCC, with compromised margins (Figure 2). The proposed treatment comprised two sessions of PDT using MAL cream, with an interval of one week. Curettage of crusty and rough areas of the nevus was performed on the day of the first procedure, with the subsequent application of

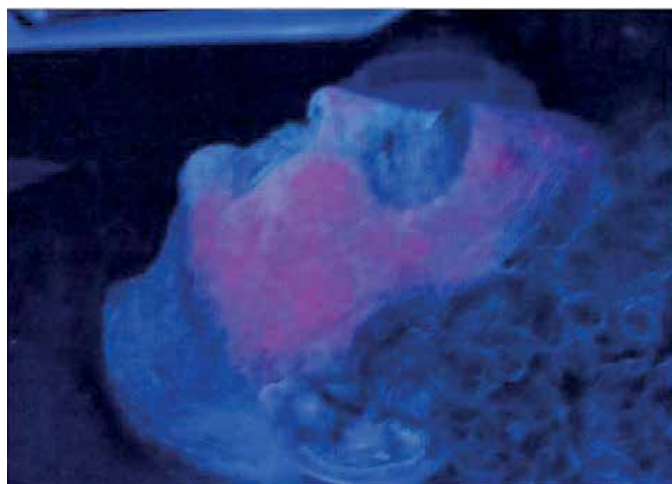
MAL cream and occlusion with plastic film and aluminum foil for three hours. The dressing and product were removed after that period, when the field cancerization could be visualized



**FIGURE 2:** Sebaceous nevus with area marked at the site of anatomopathology compatible with BCC



**FIGURE 3:** Visualization of areas with risk of malignization on a sebaceous nevus



**FIGURE 1:** Reddish fluorescence in areas of visible actinic keratoses



**FIGURE 4:** Minimum fluorescence after the second session of PDT

through fluorescence with the assistance of a Wood's lamp (Figure 3). Irradiation with red light was then applied for eight minutes with a diode light emitting equipment whose wavelength ranged between 631 and 637nm, at a fluence of 37 J/cm<sup>2</sup>. After a one-week interval, the procedure was repeated. Re-examination with Wood's lamp did not show fluorescence, evidencing the therapeutic effect of the photosensitizing agent in the neoplastic areas or at risk of malignization (Figure 4). A new biopsy was then performed in two points in the lower third of the sebaceous nevus, where a BCC lesion had been identified. Both specimens showed absence of signs of neoplasia (Figure 5). The cutaneous lesion histopathological images obtained before and after the therapy are shown in Figure 6.

The patient remains under clinical follow-up, with no signs of neoplasia recurrence 18 months after the treatment.

## DISCUSSION

Sebaceous nevi have the clinical appearance of yellow or orange plaques with a well-circumscribed verrucous sur-



FIGURE 5: Sebaceous nevus after clinical treatment of the BCC with PDT

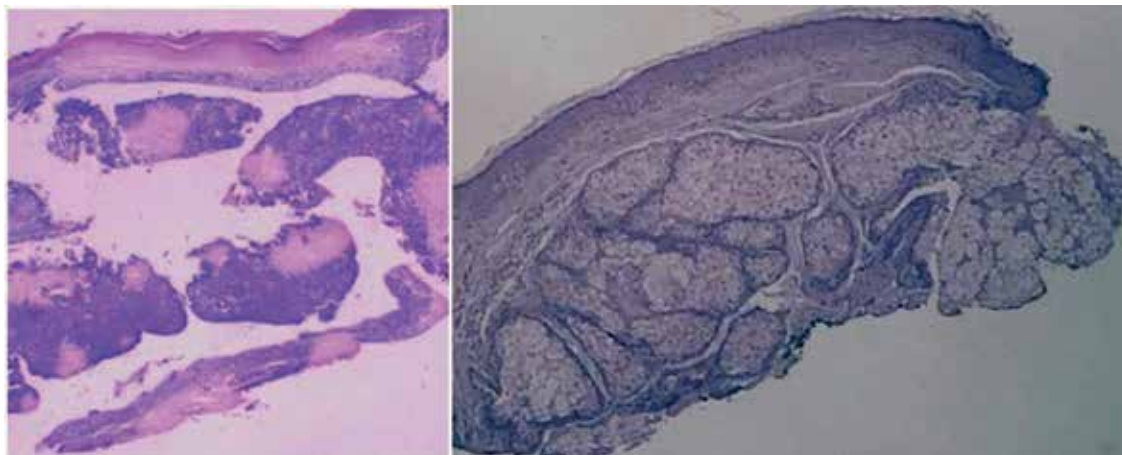


FIGURE 6: Histopathology evidencing a nodular basal cell carcinoma and absence of signs of neoplasia

face.<sup>7</sup> Dermoscopic observation reveals isolated or grouped yellow-whitish rounded structures, which correspond to mature superficialized sebaceous glands.<sup>8</sup> From the histological perspective, there are a series of abnormalities in the sebaceous and sweat glands, and in hair follicles, which are not well differentiated.<sup>2</sup> The lesion's size increases proportionally to the patient's age, presenting velvety appearance, small protrusions and verrucous surface at puberty.<sup>7</sup> Some neoplasms can arise over sebaceous nevi, especially after puberty: <sup>1</sup> benign tumors (trichoblastoma and syringocystadenoma papilliferum) and malignant tumors, among which BCC is the most common,<sup>7</sup> arising in approximately 0.8% of patients with this type of lesion.<sup>1</sup> There is no consensus regarding an ideal therapy. Some authors recommend early surgical excision in order to prevent malignant and aesthetically disfiguring transformations. Nevertheless, others advocate a more conservative approach. Future research should identify molecular markers or genetic alterations that might indicate a greater risk of neoplastic transformation, in this manner avoiding unnecessary surgical interventions.<sup>1</sup> Lasers and PDT are currently being explored for the treatment of sebaceous nevi, with different degrees of response.<sup>2</sup>

Photodynamic therapy with MAL has been used in the treatment of superficial or nodular BCC with varying rates of efficacy and recurrence depending on the lesion's characteristics, namely dimensions, periorificial location and recurrent nature. It is also effective for the mapping of actinic keratoses in the field cancerization.<sup>9,10</sup>

In this way, in the case in question, it was possible to show: i) the efficacy of PDT-MAL as an alternative to surgery in patients with BCC growth over sebaceous nevi, and ii) the usefulness of the Wood's lamp as a tool for observing subclinical malignant lesions on hamartomas.

## CONCLUSION

Photodynamic therapy is an effective treatment option for BCC as a non-surgical alternative and also useful for visualizing areas of risk of cancerization in a sebaceous nevus, as observed in the present case. ●

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