

Case report

Treatment of basocellular carcinoma with the association of photodynamic therapy and Mohs micrographic surgery

Tratamento de carcinoma basocelular com associação de terapia fotodinâmica e cirurgia micrográfica de Mohs

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ABSTRACT

The treatment of extensive, recurrent and poorly delimited basocellular carcinomas, located in high-risk areas of the body in patients with several comorbidities, is a challenge for the dermatologic surgeon. Mohs micrographic surgery is usually employed in such cases, presenting the risks inherent to large surgeries, in addition to the difficulties of closing the operative wound – which very frequently extends beyond the clinical limits of the lesion. In this paper, we report the use of photodynamic therapy prior to Mohs micrographic surgery in a 90-year-old diabetic and hypertensive female patient, with the objective of reducing and better delimiting the lesion for the subsequent exeresis.

Keywords: mohs surgery; photochemotherapy; carcinoma; basal cell; surgical flaps.

RESUMO

O tratamento de carcinomas basocelulares mal delimitados, recidivados, extensos, localizados em áreas de risco, em pacientes com várias comorbidades representa sempre um desafio para o cirurgião dermatológico. A cirurgia micrográfica de Mohs, geralmente utilizada nesses casos, apresenta riscos inerentes a uma cirurgia extensa, além da dificuldade no fechamento da ferida operatória, que muitas vezes se estende além dos limites clínicos da lesão. Demonstra-se, em paciente com 90 anos, diabética e hipertensa, a utilização da terapia fotodinâmica anterior à cirurgia micrográfica de Mohs, visando à diminuição e melhor delimitação da lesão para posterior exérese.

Palavras-chave: cirurgia de mohs; fotoquimioterapia; carcinoma basocelular; retalhos cirúrgicos.

INTRODUCTION

Some studies have proven that combining photodynamic therapy (PDT) and Mohs micrographic surgery (MMS) can help treat selected cases of non-melanoma skin cancer^{1,2} when large surgeries present a significant risk. Such cases include poorly delimited and extensive tumors, location in high-risk area, elderly patients and associated comorbidities. PDT is used to reduce the size of the tumor area in order to shorten the time of the surgery and reduce mortality rates.

METHODS

The combined procedure was conducted in a 90-year-old patient with *diabetes mellitus* and systemic arterial hypertension who presented with two poorly delimited lesions that deve-

loped over a 10-year period. One lesion was approximately 40 x 30mm in the right malar region, invading the internal canthus; the other measured approximately 30 x 20mm and was located in the nasal dorsum (Figure 1). The histologic analysis confirmed solid and superficial basocellular carcinoma (BCC) in the first lesion, and a solid BCC in the nasal lesion. The first lesion had been excised previously, and the second had been treated with three cryotherapy sessions without success.

The patient was initially administered two PDT sessions, one week apart, with methyl aminolevulinate. A red light of 635 nm was employed for eight minutes per session, with a dose of 37J/cm² and potency ranging from 70 to 100 Mw/cm². A significant reduction was verified in the tumor (Figure 2). Three months later, MMS was performed on the two lesions, in three stages. The operative wound in the right canthus was reconstructed with a transposition flap, and the one on the nose with primary closing (Figure 3). Three years after the surgery, the patient experienced no signs of recurrence (Figure 4).

DISCUSSION

The treatment of extensive and scarcely delimited BCC in elderly patients with weakened health poses a constant challenge for the dermatologic surgeon.

MMS has an excellent cure rate, but also has limitations. Patients with large areas for excision who would be at high risk during surgery motivate surgeons to search for new alternatives involving such procedures.

Using PDT before MMS helps better delimit lesions and reduce their expansion, thus simplifying and shortening the procedure. This process speeds patient recovery and reduces intra- and post-operative complications.

We found no mention of the use of PDT as an adjuvant treatment prior to MMS in the literature. There are studies that use photodynamic diagnosis before MMS^{3,4} and five cases of patients who were treated with PDT after the MMS.^{1,2} In four of the five cases, the patients presented BCC lesions with a great number of subtypes, which were removed by MMS followed by PDT to treat residual superficial BCC lesions. The fifth case



Figure 1: Basocellular carcinoma in the right malar region, invading the internal corner of the eye and on the nasal dorsum, before treatment



Figure 3: Operative wound after MMS. Reconstruction with transposition flap in the internal canthus, and primary closing on the nasal dorsum



Figure 2: Reduction and better delimitation of tumors after photodynamic therapy



Figure 4: No signs of recurrence after three years

describes the treatment of an erythroplasia of Queyrat lesion in the penis, with MMS. The latter was treated

with PDT later on. In the opinion of the authors, the prior use of PDT in those cases would also be a good treatment option in order to shorten the surgery and reduce complications.

Although PDT is traditionally indicated for superficial lesions (such as superficial BCC, Bowen's disease, and actinic keratosis) because it offers improved cure probabilities, the case described also employed it in a solid subtype of BCC, due to the following reasons: 1) the PDT was used to reduce and delimit, rather than remove, the tumor; 2) the BCCs' histology indicated

that 35% of it was of the mixed subtype, and that the results of an incisional biopsy only represented part of the tumor – which could justify the reduction of the solid subtype lesion on the nasal dorsum; 3) as reported by Kuijpers and others, many cases of patients with the solid or aggressive subtype of multiple BCCs on the face present the superficial subtype on the borders.²

The use of these procedures to treat selected cases of BCC is considered relevant due to benefits to the patient. More studies should be developed and more cases should be described to better evaluate the results and enhance the technique. The findings of this case can be considered important. ●

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