

New Techniques

Zetaplasty as an alternative for reconstructing double surgical defects

Zetaplastia como alternativa para fechamento de defeito cirúrgico duplo

Authors:

Airton dos Santos Gon¹
Fernanda Mendes Araújo²

¹ PhD in Medicine and Health Sciences, Associate Professor of Dermatology, Medical Clinic Department, Center for Health Sciences, Universidade Estadual de Londrina, Londrina (PR), Brazil

² Dermatologist Physician, Londrina (PR), Brazil

DOI: <http://dx.doi.org/10.5935/scd1984-8773.201572515>

ABSTRACT

The authors present the surgical reconstruction after excision of two synchronous adjacent basal cell carcinomas in the left infraclavicular region, using the Zetaplasty transposition flap technique. Being versatile and simple to perform, Zetaplasty was proven a useful solution for the reconstruction of double defects within a single procedure.

Keywords: carcinoma, basal cell; skin neoplasms; surgical flaps

RESUMO

Apresentamos a reconstrução cirúrgica após exérese de dois carcinomas basocelulares sincrônicos e próximos, em região infraclavicular esquerda, utilizando a técnica de retalho de transposição do tipo zetaplastia. Por ser versátil e de execução simples, a zetaplastia demonstrou ser técnica útil na reconstrução de defeitos duplos num único procedimento.

Palavras-chave: carcinoma basocelular; neoplasias cutâneas; retalhos cirúrgicos

Correspondence:

Airton dos Santos Gon
Hospital Universitário Regional do Norte do Paraná
Depto. de Clínica Médica
Centro de Ciências da Saúde
Av. Robert Koch, 60 – Vila Operária
Cep: 86.038440 – Londrina (PR), Brazil
Telephone: +55 (43) 3371-2000
E-mail: airton@sercomtel.com.br

Received on: 22 July 2014

Approved on: 23 May 2015

This study was performed at the Dermatology Service, Hospital Universitário Regional do Norte do Paraná, Universidade Estadual de Londrina, Londrina (PR), Brazil.

Financial support: None
Conflict of interest: None

INTRODUCTION

The ultimate objective in the surgical treatment of skin cancer is the complete removal of the tumor with the best possible aesthetic and functional results. In the case of extensive tumors or those located in body areas where a primary closure is not possible, reconstruction techniques using grafts or rotation flaps are required. One of them, the zetaplasty, allows the position of the surgical scar to be changed, adjusting it to the tension lines and favoring greater mobility, making it widely-used in extension areas of limbs and in the revision of burn scars.

Despite being a classic technique, there are few reports of its use in the reconstruction of surgical defects arising from the removal of skin tumors.

The authors describe the use of the zetaplasty in the reconstruction of a double surgical defect caused by the removal of two adjacent basal cell carcinomas (BCC).

CASE REPORT

A 65-year-old male patient, Fitzpatrick phototype III, had two erythematous plaques with pearly borders on the left infraclavicular region, both diagnosed as superficial multifocal BCC, confirmed by histology. The initial treatment plan was surgical removal with 5 mm safety margins and a primary

closure. However, due to the proximity of the lesions, the plan was to carry out a double advancement flap, where one of the defects would act as the compensation triangle (Burow) for the other defect and vice-versa (Figure 1).

During surgery, after the removal of the lesions and the undermining of the borders (Figure 2), a simulation of the flap's movement showed excessive tension and formation of tissular redundancy, implying the need for the additional removal of healthy tissue in order to compensate for the formation of "dog-ears" (Figure 3). Faced with this situation, the alternative of transposing the flaps (zetaplasty) was simulated when a more natural accommodation was demonstrated, with less tension in the surgical borders (Figure 4). After the transposition of the flaps, the fixation was carried out with mononylon 4.0 (Figure 5), followed by suture of the borders with mononylon 5.0. The final result in the immediate and late post-operative periods are shown in Figures 6 and 7, respectively, with excellent functional and aesthetic results.



FIGURE 1: Double advancement flap planning; a defect acting as a compensation triangle (Burow) for the other flap



FIGURE 2: Intraoperative: appearance after the removal of the lesions and detachment of the borders



FIGURE 4: Simulation of an alternative of transposition of flaps (zetaplasty), with more natural accommodation and less tension



FIGURE 3: The simulation of the movement of a double advancement flap showed excessive tension and formation of tissular redundancy



FIGURE 5: Closure using zetaplasty: fixation points of the flap



FIGURE 6: Immediately post-operative



FIGURE 7: Late post-operative

DISCUSSION

The occurrence of synchronous BCCs represents a therapeutic challenge, especially when lesions are in close proximity to each other. In the reconstruction of double surgical defects after the removal of adjacent BCCs – as in the present case – the dermatologic surgeon is required to use knowledge, technique, and creativity in order to get the most appropriate result. In the present case, the first option to be considered was that of taking advantage of the two surgical defects in order to carry out a double advancement flap in opposite directions, so that one of the defects would act as a compensation triangle (Burow) for the second defect, and vice-versa.¹ This is an already described variant of the advancement flap that allows a simultaneous approach for the two closely located lesions.^{2,3} During surgery, however, the simulation of this movement did not show a natural accommodation of the borders, which would require the implementation of additional corrections. As a result, the authors opted for the transposition of the flap elements,

in a movement similar to that of a zeta-plasty, allowing proper closure, with good accommodation and satisfactory functional and aesthetic results.

The zeta-plasty technique is commonly used in reconstructive surgery, facilitating the change of the scar's direction so that it assumes a more suitable position in relation to the natural lines of the skin, providing greater mobility, relief of the stress caused by scar contracture, and improvement of the aesthetics and functionality. It is a tool that is widely used for the reconstruction of burn scars.⁴ In its original conformation, it consists of the rotation of two triangular and symmetrical flaps aimed at closing a central defect, with a 60° angle.⁵

Although rarely reported in the literature, the use of zeta-plasty for the removal of skin tumors located close to each other should be considered an efficient alternative in the reconstruction of surgical defects, with interesting results. ●

REFERENCES

1. Metz BJ, Katta R. Burow's advancement flap closure of adjacent defects. *Dermatol Online J.* 2005;11(1):11.
2. Boggio P, Gattoni M, Zanetta R, Leigheb G. Burow's triangle advancement flaps for excision of two closely approximated skin lesions. *Dermatol Surg.* 1999;25(8):622-5.
3. Krishnan R, Garman M, Nunez Gussman J, Orengo I. Advancement flaps: a basic theme with many variations. *Dermatol Surg.* 2005;31(8 Pt 2):986-94.
4. Oliveira CL, Arruda AM, Reis Filho GC, Santos L, Anbar RA. Tratamento cirúrgico de retrações axilares e mentotorácica com zeta-plastia. *Rev Bras Cir Plást.* 2010;25(1):2136.
5. Rodriguez AHR, Guimarães ASC, Abreu e Souza RR, Padrão TM, Souza NFA. Fissura congênita cervical da linha média. *Rev Bras Cir Plást.* 2012;27(4):6447.