

Soft Tissue Reconstruction in the Sacro-Gluteal Region after Excision of a Large Verrucous Carcinoma

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Rezumat

Reconstrucția părților moi în regiunea sacrofesieră după excizia unui carcinom verucos întins

Carcinomul verucos este o malignitate cutanată cu creștere lentă care neglijată poate produce afectări locale semnificative. Prezentăm cazul unui pacient în vârstă de 55 ani cu o leziune nodular-ulcerată de 12/9 cm în regiunea sacrofesieră, slab delimitată, cu o citologie pozitivă pentru carcinomul spinocelular, infiltrând la examenul IRM ambi mușchi fesieri. Tratamentul inițial radioterapeutic a produs o ameliorare locală semnificativă ușurând ablația radicală a tumorii. Defectul rezultat, de 17/14 cm a fost acoperit prin avansarea V-Y a două lambouri fasciocutaneate triunghiulare bazate pe perforante transmusculare din arterele gluteale superioară și inferioară. Pacientul s-a vindecat complet și tumora nu a recidivat în ultimele 42 luni.

Cuvinte cheie: carcinomul verucos, radioterapie, lambou gluteal

Abstract

Verrucous carcinoma is a slow-growing malignancy which, if neglected, can seriously affect local tissues. We present the

case of a 55-year-old male with a 12/9 cm nodular ulcerated lesion in the sacro-gluteal region, poorly defined, with a cytologic scrape smear positive for squamous cell carcinoma, infiltrating on MRI both gluteal muscles. The initial radiotherapeutic treatment significantly improved local condition facilitating the radical excision of the tumor. The resulting defect, 17/14 cm in size, was covered by V-Y advancement of two fasciocutaneous triangulare flaps based on transmuscular perforators from superior and inferior gluteal arteries. The patient healed completely and the tumor didn't relapse in the past 42 months.

Key words: verrucous carcinoma, radiotherapy, gluteal flap

Introduction

Verrucous carcinoma was first described, in the mouth, by Lauren V. Ackerman in 1948 (1). It is considered a distinct variant of differentiated squamous cell carcinoma, with a low degree of malignancy, slow growth and a low potential for metastasis. Occasionally explosive growth may occur after long periods of slow progression. Skin lesions may affect the genital-crural area or the plantar surface of the foot. At diagnosis, the average disease duration is between 13 and 16 years (2). Gluteal location of proliferative warty lesions is related to the propensity of these tumors for moist skin areas, prone to chronic inflammation (3).

The treatment of choice for these lesions is surgical. For voluminous carcinomas, radiological tumor volume reduction can bring the defect resulting from neoplastic tissue radical ablation in a range of reconstructive options which is better in

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terms of aesthetics and function(4). Median gluteal region can be elegantly reconstructed by redistributing some of gluteal skin areas as advancement flaps, based on transmuscular perforating vessels from upper and lower gluteal arteries (5,6,7, 8,9).

Case report

We present the case of a patient aged 55 years with an ulcerated intergluteal tumor whose squamous-epithelial malignant nature was documented in December 2009 by a cytology, completed by a MRI investigation that revealed a dermal infiltrative lesion, imprecisely delimited, reaching superiorly at the level of last sacral vertebra and inferiorly above the subgluteal fold, with bilateral extension into subcutaneous fat of buttocks and in both gluteus maximus muscle, more pronounced on the left. Based on these results, the patient received oncological treatment with radiotherapy (44Gy, 2Gy/fraction 22 fractions) (10) and local and general antibiotic treatment, in the Radiotherapy Department of Colțea Clinical Hospital, yielding significant local improvement.

On admission in the Clinic of Plastic Surgery of

University Emergency Hospital Bucharest (February 2010) patient had in the sacrogluteal region a hyperchrome tumoral area of 12/9 cm, composed of numerous prominent nodular structures arranged at periphery, surrounding a central ulceration with irregular edges of 5/3 cm (Fig. 1). The patient, with normal weight and blood pressure, was otherwise in good health with normal lab tests.

In one surgery the tumor was resected en bloc with surface safety margin of at least 1 cm from the edges of the indurated skin (11) (Fig. 2). In-depth was respected the same safety limit of 1 cm, the resected tissue block, with a thickness of 4 cm, including part of the surface fibers of the gluteus muscles (Fig. 3). The resulting defect, of about 17/14 cm, was covered by advancing two fasciocutaneous flaps placed on the remaining surface of the two buttocks. To mobilize the flaps was necessary to sacrifice a small number of perforators. In the area of flaps apposition, their edges were partially defatted to recreate the intergluteal depression; in addition, due to the excision contour, the inferior pole of the defect was closed with two triangular plasties. Donor sites was sutured classically, in Y (Fig. 4). Adhesive tapes were applied over sutures. The patient was mobilized 5 days postoperatively.



Figure 1. The tumor after radiotherapy

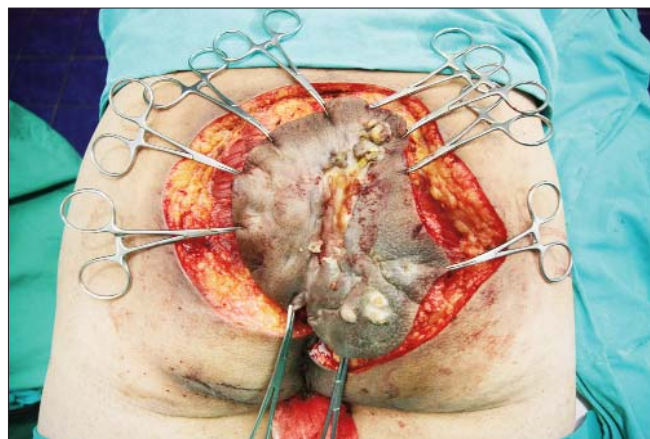


Figure 2. Margins of the tumor excision



Figure 3. The defect after tumor excision



Figure 4. Defect coverage with two V-Y gluteal fasciocutaneous advancement flaps

Result

Histopathology diagnosed the lesion as an ulcerated verrucous carcinoma completely excised. After discharge the patient returned 3 weeks later with a dehiscence of 3 cm in the lower middle area which was excised and sutured, and it healed without further incidents. Six months after the excision of the operated region was stable (Fig. 5). At present, 42 months after surgery, the patient returns to quarterly inspections with no signs of local recurrence.

Discussions

An important intraoperative aspect of this case is the relative ease with which the tumor could be separated in depth from remaining tissues, macroscopical disease-free. The clinical presentation, by the size of the affected area, the immobility of deep tissue plan, and MRI report which stated the infiltration of both gluteal muscles, foretold a more difficult surgical labor and tissue sacrifice of greater depth. One of the explanations for this situation is the very nature of verrucous carcinoma progression, whose tendency to erode rather than to infiltrate is frequently accompanied by a prominent inflammatory reaction in the surrounding tissues (12). Undoubtedly, radiotherapy and antibiotic treatment performed at Colțea Hospital significantly improved local situation thus facilitating deep plane dissection.

A second important aspect is related to reconstructive plan; compared to a common defect, the neoplastic nature of an area of excision impose additional restrictions to the reconstructive surgeon. It is always prudent to be taken into consideration the possibility of early reexcision (in the event that the paraffin examination reveals positive margins). Handling tissues adjacent to the tumor bed should be minimized and, of course, the vascular construction of the covering procedure should be as robust as possible. V-Y gluteal fasciocutaneous advancement flaps meet these conditions. The advancement allows direct suture of tumor excision margins, with minimal communication with donor areas. Because the function of gluteal muscles is unaffected, morbidity directly related to flaps elevation is negligible. If necessary, in case of positive margins, a dehiscence or a local recurrences, flaps can be readvanced (13).

References

1. Ackerman LV. Verrucous carcinoma of the oral cavity. *Surgery*. 1948;23(4):670-8.



Figure 5. Outcome at 6 months

2. Weedon D. Tumors of the epidermis. In: Weedon's Skin Pathology. 3rd edition. Edited by Houston M. Maryland Heights, MO: Churchill Livingstone Elsevier; 2010. p. 700.
3. Klima M, Kurtis B, Jordan PH Jr. Verrucous carcinoma of skin. *J Cutan Pathol*. 1980;7(2):88-98.
4. Hawrot A, Alam M, Ratner D. Squamous cell carcinoma. *Current Problems in Dermatology*. 2003;15(3):91-133.
5. Nakajima H, Fujino T, Adachi S. A new concept of vascular supply to the skin and classification of skin flaps according to their vascularization. *Ann Plast Surg*. 1986;16(1):1-17.
6. Taylor GI, Palmer JH. The vascular territories (angiosomes) of the body: experimental study and clinical applications. *Br J Plast Surg*. 1987;40(2):113-41.
7. Koshima I, Moriguchi T, Soeda S, Kawata S, Ohta S, Ikeda A. The gluteal perforatorbased flap for repair of sacral pressure sores. *Plast Reconstr Surg*. 1993;91(4):678-83.
8. Stingu C. Reconstructive option in the surgical treatment of recurrent pilonidal cyst. *Chirurgia (Bucur)*. 2009;104(6):737-40. Romanian
9. Nae S, Antohi N, Stingu C, Stan V, Parasca S. Options for flap coverage in pressure sores. *Chirurgia (Bucur)*. 2010;105(5):663-8. Romanian
10. Smigielski J, Rychter A, Fijuth J, Brocki M. Advanced anal squamous cell carcinoma - radiotherapy or surgery? *Chirurgia (Bucur)*. 2012;107(5):626-30.
11. Dragomir R, Herold J. Clinical measurement technique of clear margin for excision of oral squamous cell carcinoma (SCC). *Chirurgia (Bucur)*. 2012;107(2):265-6.
12. Spiro RH. Verrucous carcinoma, then and now. *Am J Surg*. 1998;176(5):393-7.
13. Hamdi M and Gagnon AR. Ch 28. Gluteus flap. In: Wei and Mardini, eds. *Flaps and Reconstructive Surgery*. Saunders; 2009. p. 375-393.