



A novel combined surgical approach to head and neck dermatofibrosarcoma protuberans



Tommaso Agostini^{a,b,*}, Mario Dini^a, Alessandro Quattrini Li^a, Luca Grassetti^d,
Andrea Mori^a, Giuseppe Spinelli^b, Giulia Lo Russo^a, Davide Lazzeri^c

^a Department of Plastic and Reconstructive, CTO-AOUC, University of Florence, Largo Palagi 1, 50134, Italy

^b Department of Maxillo-Facial Surgery, CTO-AOUC, University of Florence, Italy

^c Department of Plastic and Reconstructive Surgery, Hospital of Cisanello, Pisa, Italy

^d Plastic and Reconstructive Surgery Unit, Hospital of Ancona, Italy

ARTICLE INFO

Article history:

Paper received 27 June 2012

Accepted 2 January 2013

Keywords:

Dermatofibrosarcoma protuberans

Head and neck

Vacuum-assisted closure

Dermal regenerative template

Skin graft

ABSTRACT

Introduction: The surgical management of dermatofibrosarcoma protuberans has historically been a challenge, particularly in the head and neck and other aesthetic areas. The current priority is to achieve local oncologic control and a good reconstructive outcome. Here, we present our experience using a novel combined approach with a dermal regenerative template, sub-atmospheric pressure and skin graft.

Materials and methods: Five patients presenting at the Department of Plastic and Reconstructive Surgery of the University of Florence between January 2010 and October 2011 were included in the study following Institutional Review Board approval. All patients underwent a wide local excision of dermatofibrosarcoma protuberans affecting the head and neck.

Results: The combined approach using the negative-pressure device, a dermal regenerative template and skin grafting proved effective in the management of this type of sarcoma with a good aesthetic and functional outcome, particularly on the neck or the supraclavicular region.

Conclusion: Although the present multi-step technique requires patient compliance, it results in good local oncologic control of the resection margins. It is possible to perform a wider excision in the event of positive margins without interfering with the last reconstructive outcome.

© 2013 European Association for Cranio-Maxillo-Facial Surgery. Published by Elsevier Ltd. All rights reserved.

1. Introduction

The surgical management of Dermatofibrosarcoma Protuberans (DFSP) can be demanding, depending on the area to be treated, particularly if the area is aesthetically important. The metaphor of the reconstructive ladder was introduced in 1982 by Mathes and Nahai to integrate new flap procedures with the existing reconstructive repertoire of grafts and local flaps in an effort to allow surgeons to consider several options for wound closure in a systematic way (Mathes and Nahai, 1982; Bianchi et al., 2011; Fayda

et al., 2009; Ferrari et al., 2012). In addition, to be in ascending order from simple to complex, the reliability of outcomes increases as the morbidity decreases when the most suitable procedure for reconstruction is identified. Excluding primary closure, which is inadequate following soft tissue sarcoma removal, immediate coverage with full- or split-thickness skin grafts often results in a poor cosmetic outcome with inadequate elasticity (Güven et al., 2010; Salgarelli et al., 2010). Local, pedicled and free flaps are traditional alternatives for repairing soft tissue defects resulting from a wide local excision, but they require surgical experience, cannot be used for patients with several co-morbidities and produce additional scars with a variable failure rate, particularly in microsurgical tissue transfer (Eckardt and Fokas, 2003; Mücke et al., 2011). In this paper, we present our approach to soft tissue reconstruction following dermatofibrosarcoma protuberans resection from the head and neck, introducing a new step in the reconstructive ladder.

* Corresponding author. Department of Plastic and Reconstructive Surgery, CTO-AOUC Largo Palagi 1-50100 Florence, University of Florence, Faculty of Medicine and Surgery, Florence, Italy. Tel.: +39 055 7948279, +39 347 6655032 (mobile); fax: +39 0573 364760.

E-mail address: tommasoagostini@gmail.com (T. Agostini).

2. Patients and methods

Five patients presenting at the Department of Plastic and Reconstructive Surgery of the University of Florence between January 2010 and October 2011 were enrolled in the study after Institutional Review Board approval. All patients were analysed according to gender, age, presenting symptoms and signs, surgical margins, treatment methods and functional and oncologic outcomes (Table I).

All patients underwent proper staging before surgery with head, neck and chest CT and a locoregional ultrasound evaluation. The study included 4 males and 1 female, and the mean patient age was 47 years (range, 20–61 years). Three tumours were located in the supraclavicular area, 1 in the right side of the neck and 1 in the scalp. Four patients presented with dermatofibrosarcoma protuberans and one patient was affected by the more aggressive fibrosarcomatous variant. Three tumours were recurrences, and two were primary tumours resected following incisional biopsy. All tumours were resected using a 5-cm wide local excision. The split-thickness skin grafts were harvested from the thigh in all cases.

2.1. Surgical technique

In all cases, dermatofibrosarcoma protuberans (DFSP) resection was performed using wide local excision with 5 cm free clinical margins from the clinically evident lesion. Surgical resection included the skin, subcutaneous layer, the muscular fascia and/or perichondrium or periosteum. Healthy margins were assessed with fresh frozen sections in all cases before definitive closure. Each specimen was properly oriented for definitive histological examination. Reconstruction was performed through the application of a dermal regenerative template, split-thickness skin graft and sub-atmospheric pressure in a multi-step sequence. Specifically, the VAC system was applied over the pierced silicone layer of a dermal regeneration template secured with multiple staples, and the dressing was changed twice a week for fifteen days. This combined approach reduced the risk of dermal substitute loss resulting from infection, haematoma, seroma or shear forces, thus guaranteeing safer integration. Two weeks later, a split-thickness skin graft was harvested to cover the dermal substitute. At this time, the VAC proved to be useful in stabilising the graft because of its versatility to adapt all over the body surfaces improving skin graft integration. The time period between the application of the dermal regenerative template and the definitive skin grafting allowed for further and safer widening of the resection margins without undermining the final reconstructive outcome.

2.2. Case presentations

2.2.1. Case n.1

A 51-year-old man came to our attention for a painless growing mass with an erythematous halo in the right supraclavicular region. He had undergone surgery 3 years before in another institute with unknown surgical margins of resection. Although the histopathological examination showed positive margins, radiotherapy was not

performed. Ultrasonography revealed a 17 × 15 × 4 mm well defined ovoid mass with an internal hyperechogenicity. Chest CT revealed a well-defined mass without enhancement after contrast administration with pathologic infiltration of the underlying adipose tissue. A wide local excision with 5-cm clinically healthy tissue margins down to the muscular fascia was performed for tumour resection. The histopathological specimen measured 12.5 × 10.1 cm. The surgical defect was repaired using a combined approach with an artificial bilaminar dermal template (Integra®-Johnson & Johnson Wound Management, Somerville, New Jersey) and VAC therapy (KCI, Inc., San Antonio, Texas), as shown in Fig. 1. Two weeks later, a split-thickness skin graft from the right thigh was harvested to cover the dermal substitute. A histopathological examination showed grade II fibrosarcomatous degeneration of the DFSP. The margins of surgical resection were free from disease, and post-operative radiotherapy was not performed. After 18 months of follow up, the patient was without evidence of disease and had a good cosmetic outcome (Fig. 2).

2.2.2. Case n.2

A 20-year-old man presented with a subcutaneous nodule in the left supraclavicular region. An incisional biopsy revealed DFSP. He underwent wide local excision with 5-cm free clinical margins down to the superficial fascia, and an artificial bilaminar dermal template was shaped and placed to cover the defect (Fig. 3). One margin of resection showed infiltration and required a further 5 cm widening that was managed using a dermal regenerative template. The integration was performed using vacuum-assisted closure while waiting for the definitive histological examination results, which were negative for tumour invasion. At this time, a split-thickness skin graft was harvested for the left thigh and fixed to the receiving site with VAC therapy. The patient healed without complications and showed a good aesthetic outcome and a wide range of motion of the neck (Fig. 4). He was free from disease after 15 months of follow up.

2.2.3. Case n.3

A 47-year-old man came to our attention with a diagnosis of DFSP of the scalp following an incisional biopsy performed at another institution. A wide local excision down to the periosteum with 5-cm margins from the clinical lesion was performed, and the defect was managed with the combined application of a dermal regenerative template and VAC therapy (Fig. 5). After the final histological examination revealed tumour-free margins, a split-thickness skin graft was harvested from the right thigh, and integration was safely accelerated by vacuum-assisted closure. The scalp healed without complications (Fig. 6). After 2 years of follow up, the patient remained disease free.

3. Results

Four patients had no complications and achieved a good functional outcome and local oncologic control of the disease.

Table I
Characteristics of the 5 patients suffering head and neck dermatofibrosarcoma protuberans.

N.	Gender, age	Histological diagnosis	Margin to wide local excision	Anatomical area	Skin graft donor site	Outcome	Follow-up (months)
1	F, 61	FS-DFSP	5 cm	Supraclavicular, left	Right thigh	No impaired movement	10
2	M, 47	DFSP	5 cm	Scalp	Right thigh	No impaired movement	24
3	M, 55	DFSP	5 cm	Right side of the neck	Right thigh	No impaired movement	9
4	M, 51	DFSP	5 cm	Supraclavicular, right	Right thigh	Partial graft loss (<5%) conservatively healed	18
5	M, 20	DFSP	5 cm	Supraclavicular, left	Left thigh	No impaired movement	15

Download English Version:

<https://daneshyari.com/en/article/6052897>

Download Persian Version:

<https://daneshyari.com/article/6052897>

[Daneshyari.com](https://daneshyari.com)