

LETTER TO THE EDITOR

THORACO-ACROMIAL ARTERY PERFORATOR (TAAP) FLAP FOR RECONSTRUCTION OF A RECURRENT DERMATOFIBROSARCOMA PROTUBERANS OF THE CLAVICULAR REGION

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Summary

Dermatofibrosarcoma Protuberans is a rare mesenchymal tumor, highly infiltrative and with a high recurrence rate. Despite its localization may vary, the trunk is widely recognized as the most common interested site. We read with interest the recent article published by Longo et al. "Recurrent dermatofibrosarcoma protuberans of the clavicular region: radical excision and reconstruction with Latissimus Dorsi myocutaneous flap"; since their case is very similar to one we faced in 2016. In this letter, we present our experience with the Thoraco-acromial artery perforator flap (TAAP) for reconstruction of a recurrent DFSP of the clavicular region.

Sir,

We read with interest the recent article published by Longo et Al. "Recurrent dermatofibrosarcoma protuberans of the clavicular region: radical excision and reconstruction with Latissimus Dorsi myocutaneous flap" ¹. This article reports a difficult case of recurrent dermatofibrosarcoma protuberans (DFSP) of the clavicular region. DFSP is a rare mesenchymal tumor, highly infiltrative and with a high recurrence rate ². Despite its localization may vary, the trunk is widely recognized as the most common interested site ³. In a previously published paper, our group pointed out the existence of a "hot spot" of DFSP localization in the subclavicular/parasternal region of the left chest, which is the same site reported in Longo et al.'s patient ⁴. In their report, a 53-year-old female patient underwent a wide excision of 5.5 x 5.2 cm and reconstruction with a partial thickness skin graft. Histological examination showed infiltration of DFSP at the deep margin of resection. Thus, radicalization of the previous excision with a pedicled Latissimus Dorsi (LD) myocutaneous flap reconstruction was planned. This time the resection was complete and no flap related complications were reported.

This case is very similar to one we faced in 2016. A 27 years old male patient came back to our clinic for recurrence of a DFSP of the left supra clavicular area. Patient already underwent surgery for DFSP wide excision at our institution 9 months before, with a split thickness skin graft reconstruction. A new wide excision of the recurrent DFSP was planned with 2 cm skin margins;

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Figure 1. A) residual defect after 2 cm excision of recurrent DFSP of the supraclavicular area and TAAP propeller flap ready to rotate; B) propeller flap rotated 105° to defect and donor site direct closure.

reconstruction of the defect was planned with a thoracoacromial artery perforator (TAAP) flap. The perforator vessel was identified preoperatively with a hand-held Doppler and the flap designed accordingly for propeller movement. Under general anesthesia, with the patient in supine decubitus, the wide excision was carried out, including the fascia and the periosteum of the left clavicular bone. The defect consequent to the wide excision measured 5.1 x 5.2 cm. The flap, raised on the chosen perforator, measured 6 x 17.5 cm and was rotated 105° with a clockwise movement to cover the defect⁵. (Fig. 1A-B) The postoperative course was uneventful and the flap healed nicely. At 6 years follow-up the patient is still free of disease. Whenever a wide excision of the clavicular region involves the periosteum, or even includes a bone resection, pedicled or free flaps should be used. The LD myocutaneous flap is a reliable option for clavicular region defects reconstruction. Other alternatives described for this purpose are the Pectoralis Major myocutaneous flap⁶, Pectoralis Minor pedicle flap with split thickness skin graft⁷, internal mammary artery perforator flap⁸, deltopectoral flap (Bakamjian flap)⁹ and free flaps. TAAP flap represents a more modern perforator flap option with propeller movement and is a valid alternative for clavicular area reconstruction in selected patients. The TAAP flap is relatively easy to harvest; it has a constant and adequate pedicle in terms of caliber and length, and provides adequate color match, texture, and pliability for local adjacent defect reconstruction. Furthermore, direct closure is often possible; no muscular impairment is caused and there is no need of pedicle tunneling¹⁰. Nevertheless, in female patients or for wider defects, the TAAP flap may be not suitable because of its anterior scar pattern and its limited paddle dimensions.

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All the Authors meet the authorship criteria.

CONFLICT OF INTEREST STATEMENT

The Author declares no conflict of interest.

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AUTHOR CONTRIBUTIONS

FS: O (performed the surgery) and D.

AC, GP: W.

FD'A: O (checked the manuscript and approved the version to be published).

Abbreviations

A: conceived and designed the analysis

D: collected the data

DT: contributed data or analysis tool

S: performed the analysis

W: wrote the paper

O: other contribution (specify contribution in more detail)

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REPLY: THORACO-ACROMIAL ARTERY PERFORATOR (TAAP) FLAP FOR RECONSTRUCTION OF A RECURRENT DERMATOFIBROSARCOMA PROTUBERANS OF THE CLAVICULAR REGION

Sir,

We thank Cavaliere and Schonauer for their letter in response to our paper "Recurrent dermatofibrosarcoma protuberans of the clavicular region: radical excision and reconstruction with Latissimus Dorsi myocutaneous flap"¹. The Authors reported their previously published paper², which highlighted the existence of a "hot spot" of dermatofibrosarcoma protuberans (DFSP) localized in the subclavicular/parasternal region of the left chest, which is the same site reported in our patient. The authors described an interesting case of DFSP recurrence of the left supraclavicular area in a 27-year-old male patient. They planned a tumor excision with 2-cm excision margins and immediate reconstruction using a thoracoacromial artery perforator (TAAP) flap. Choosing perforator flaps is an excellent surgical alternative, less invasive than a

myocutaneous flap. Thanks to the perfusion ensured by the perforator vessels, only the skin, and subcutaneous tissue can be used, sparing the muscle component. Subsequently, following a propeller movement, it is rotated to cover an adjacent loss of substance. Despite all these advantages of a perforator flap, we did not consider this indication the most appropriate choice for our patient.

Firstly, recruiting adjacent skin appeared unsafe to us as the patient had multiple surgeries with incomplete excisions and several local recurrences. The most appropriate procedure was to recruit tissue far from the affected site, safe from an oncological point of view.

As a second point, the large width of the defect required a non-adjacent flap to provide further tissue without causing a closure under tension. Furthermore, besides the considerable size of the excision, the defect after the resection was very deep since it included the muscular component (i.e. part of the clavicular portion of the pectoralis major muscle and clavicular fibers of the deltoid muscle) and the external clavicular cortical bone. Therefore, we needed thick coverage of the defect with exposed bone, and a Latissimus Dorsi myocutaneous flap appeared to be the best choice for our patient.

Lastly, using a propeller thoracoacromial artery perforator (TAAP) flap would have resulted in an extensive scar in the patient's décolleté region, which for a woman would have been a notable cosmetic defect. Therefore, opting for a pedicled Latissimus Dorsi myocutaneous flap, we also obtained a horizontal scar in the patient's dorsal region, easily camouflaged with the bra and the bathing suit.

CONFLICT OF INTEREST STATEMENT

The Authors have no financial interest to declare in relation to the content of this communication.

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