SPLIT-THICKNESS SKIN GRAFTING IN ONCOLOGIC SURGERY OF THE LIMB – A CASE REPORT

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SPLIT-THICKNESS SKIN GRAFTING IN ONCOLOGIC SURGERY OF THE LIMB – A CASE REPORT (Abstract): Large excision of tumor soft tissues is often complicated by infections, seriously undermined blood supply and venous drainage, tendon exposure, functional impairment. We report the case of a 67 years old woman admitted for a sarcoma of the right forearm occurring 14 years after a modified radical mastectomy and adjuvant chemotherapy for carcinoma of the right breast. A wide excision of the lesion and split-thickness skin graft was performed with uneventful recovery and satisfactory healing of the graft tissue and functional aspect of the arm. In the last few decades, there has been a search for solutions in tissue repair without need for auto grafts, such as biological substitutes that could repair or improve the function of tissue. In case none of these products are available, auto graft is a good choice and it may be commonly used in the surgical treatment of postoperative soft tissues defects after oncologic surgery. Keywords: SKIN GRAFT, MULTIPLE NEOPLASM, LYMPH EDEMA

Direct closure is the reconstruction of choice for surface soft tissue defects. Major causes of recipient site morbidity after skin grafting a postoperative defect of the upper limb are lack of skin graft take to complete loss, functional impairment, infection, hematoma/seroma and paresthesia. Long-term cosmesis remains poor. In the last few decades, there has been a search for solutions in tissue repair without need for auto grafts. This has produced a development of biological substitutes that could repair or improve the function of tissue.

The use of these products enlarges the spectrum of therapeutic resources available for the treatment of skin lesions, thereby changing the approach to many diseases (1). In case none of these products are available, auto graft is a good choice and it may be commonly used in the surgical treatment of postoperative soft tissues defects after oncologic surgery.

CASE REPORT
A 67 years old woman was hospitalized in our clinic for a swelling of the right forearm that appeared 9 months ago.

She has a history of modified radical right mastectomy (Madden operation) 14 years ago for infiltrating ductal carcinoma
of the right breast- $T_2N_0M_0$; followed by 6
cures of chemotherapy and antiestrogen
treatment (Tamoxifen) for 5 years; no radi-
otherapy was commenced. She also de-
clares the presence of mild lymphedema of
the upper limb in the last 8 years.
The patient noticed the gradual increase in
size of the swelling described and com-
plains of non-radiating, moderate burning-
like pain of the area; further on she noticed
the appearance of several nodules along the
anterior face of the forearm that ulcerated
in the last 6 weeks. An ultrasound and CT
scan of the forearm performed on outpa-
tient basis 6 months ago revealed chronic
cellulite; therefore she received a topical
anti-inflammatory treatment. The local
physical examination when presenting in
our service showed the presence of mild
lymphedema of entire right arm and purpu-
ric spots from the elbow to the wrist. On
the anterior face of the forearm, a 12 × 8
cm purple area with multiple nodular le-
sions, tending to confluence, some of them
ulcerated, with surrounding erythema and
induration was noted; apparently, on clin-
ical examination, the subcutaneous tissue of
the described area was infiltrated (fig 1).
We did not find any motor, vascular (pe-
ripheral arteries) or sensitivity changes
from the right shoulder joint to the right
fingers.

The actual blood tests showed no modi-
fications, abdomino-thoracic CT scan and
bone scintigraphy did not reveal any patho-
logical modification related to the current
condition or to the breast cancer from her
history. PET scan and MRI scan were not
available.

The anatomopathological examination
on the tissue prevailed by biopsy showed
conventional high-grade angiosarcoma
and microscopically examination exhibi-
ted a mixture of vasoformative features,
including intravascular infiltration tumoral
vascular lumen, papillary projection into
the lumen of the vessels; therefore, given
the history, symptoms and pathology, our
first diagnosis was angiosarcoma de-
veloped on upper limb lymphedema. But the

Fig. 1. Lesion aspect on admission
great dilemma was brought by the immu-
no-histochemical tests showing specific
aspects of Kaposi sarcoma (positive CD_{31},
CD_{34} and HHV_{8}), without succeeding a
final, reliable differentiation between the
two forms of sarcoma. Under these cir-
cumstances, an oncologic wide excision of
the lesion and free split skin graft in tied
over manner was performed under general
anesthesia (fig 2).

The immediate postoperative recovery
was uneventful with satisfactory healing of
the graft tissue and functional aspect of the
arm and the patient was discharged 8 days
postoperatively in order to initiate oncolog-
ic treatment recommended by the oncology
board. On the 3rd week postoperative the
patient was one again hospitalized for a
local relapse represented by the same as-
pect cutaneous nodules on the edge of the
graft. A local re-excision was performed;
even if there was a great probability that
the lesion would invade the antebrachial
aponeurosis, we did not excise it because
of the risk of harming the radial vessels
which would not bring the patient any ben-
efit considering the disease’s fulminant
evolution. We used the same type of skin
graft to cover the defect with graft applica-
tion after receiving a granular bed on the
recipient site. Although the patient begins
chemotherapy, there were no postoperative
complications or delay in maturation of the
graft. Evolution of the patient was unfavor-
able due to the emergence of many skin
nodules along the upper limb and lung
metastases, the patient passing away in 8
months after surgery.

**DISCUSSION**

Large excision of tumoral soft tissues
is often complicated by infections, seri-
ously undermined blood supply and ve-
nous drainage, tendon exposure, func-
tional impairment. That is why repairing a
postoperative skin defect continues to be a
challenging problem for plastic surgeons.
Direct closure by skin grafting may not be
suitable for larger defects due to extensive
tension. A variety of techniques are avail-
able for achieving tension free closure,
including split-thickness skin grafts, skin
flaps, and internal or external tissue expansion (2).

Difficulty of the case is enhanced by diagnostic ambiguity; there are two serious diseases entering into discussion. First, with patient’s symptoms and history giving a perfect match is the Stewart Treves syndrome: angiosarcoma, a rare and aggressive tumor with a very poor prognosis associated with lymph edema occurred after ipsilateral mastectomy for breast cancer. Concerning the surgical treatment, there are studies that show that there is no significant difference in survival comparing those initially treated with wide excision and those treated with amputation (3).

Giving the aggressive nature of the tumor, high rate of local recurrence, and tendency for early and multiple metastases, long-term survivorship is rare with a median survival of 2.5 years after diagnosis, most patients dying within 2 years from metastatic disease (4). Although liver and bone metastases may occur, spread of disease to the lung or chest wall is often the cause of death in patients with Stewart-Treves syndrome. We consider that, even if there is no evidence of distant metastases at diagnosis, the neoplastic disease is advanced because of the long time elapsed between the onset of the disease and the time of diagnosis. Surgical treatment can be preceded or followed by radiation therapy. Locally advanced tumors or metastatic forms can be treated with mono or polychemotherapy, on systemic or local administration.

Cases with good response using courses of intra-arterial mitoxantrone (MX) and paclitaxel (PTX) are reported (5, 6). Knowing that long-term survivorship is rare with a median survival of 2.5 years after diagnosis, most patients dying within 2 years from metastatic disease (4), wide oncologic excision with skin graft will give the patient a better quality of life than amputation. Moreover, if the final immunohistochemical test would have shown the tumor is Kaposi sarcoma, knowing that it has a better prognosis than angiosarcoma, the large excision with this type of skin graft would give the patient a satisfactory local healing and comfort.

REFERENCES