

THIERSCH SKIN GRAFTING IN COMPLEX PATIENTS-CASE REPORT

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Abstract

We present a patient which is complex patient regarding the risks for skin graft survival. Multidisciplinary management of the risks is the only way of skin grafting survival.

Choosing the right time, right donor region, right techniques of harvest the skin grafts, choice and preparation of graft, fixation techniques, good preparation of the recipient region and controlling the chronic diseases which are bringing risks such as Diabetes mellitus, arteriosclerosis, vascular diseases, infection, are the key of surviving the skin graft.

Keywords: Autologous skin grafts, complex patient, skin graft survival.

Introduction

Autologous skin grafts are commonly considered as the gold standard treatment. A free skin graft is a piece of skin that has been completely separated from its local blood supply and transferred to a wound at another site, where it must establish new vascular connections through the recipient bed to survive [1]. Skin grafts (an autograft) usually are the first consideration when primary wound closure cannot be achieved.

Split Thickness Skin graft takes the top layer of the skin called the epidermis leaving some of the deeper layer (the dermis) intact. Once the skin is taken, the wound that this produces heals like a graze over two to three weeks.

Graft survival depends on the ingrowth of capillaries from the recipient site for survival, so a viable base of tissue with some vascularity is needed. Skin graft survival is on risk, if inosculation from the recipient bed is unreliable with repeated motion or trauma to the area, or in wound infection.

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CASE REPORT

We are presenting 80- year-old man, with not controlled Diabetes mellitus (20,4 mmol/L), with cardiovascular diseases like atrioventricular block, with triple aortocoronary bypass performed in 24 December 2010 year and significant stenosis of carotid artery on right side.

Patient with general arteriosclerosis, with history of intracranial bleeding with hemiparesis of the right side of the body one month ago. Patient with femoral amputation of the left leg due to gangrene from 2010 year.

Patient after trauma of the right lower leg develop hematoma in the latero-posterior part with necrosis of the skin. KT angiography of the lower extremities was performed (intermediary obstruction of the blood supply in the lower leg). The collective of the hospital has indicated amputation of the leg, family has rejected.

On first act necrectomy, evacuation of the hematoma with lavage and VAC dressing was performed (picture1). The VAC dressing was performed on 2 days for 2 weeks (picture 2). The wound was positive for Escherichia coli sensitive on all antibiotics. A classification of skin grafts according to depth is seen in [Table 1](#).

Table 1. Classification of skin grafts according to depth

			Thickness (mm)
Name			
Split thickness	Thin (Thiersch-Ollier)		0.15-0.3
	Intermediate (Blair-Brown)		0.3-0.45
	Thick (Padgett)		0.45-0.6
Full thickness	(Wolfe-Krause)		"/0.6



Picture 1. Necrectomy and evacuation of the hematoma,

Picture 2. 3-VAC dressign

Patient for 2 weeks was on 2 antibiotics (Klindamicin and Lendacin), in consultation with specialist of cardiology implantation of pejsmaker was performed.

In consultation with specialist of transfusiology patient was on anticoagulant therapy (Clexane 0.4 1x1), in consultation with specialist of endocrinology correction of the insulin therapy was made (Novo Max 20 + 16IE at morning and at night).

After 2 weeks therapy and VAC dressing (picture2), skin grafting (Thiersch-Ollier table1) was performed (picture3).



Picture 3. Transplantation in the operating room

Donor region where booth the anterior sides of the femoral regions. Recipient region, the defect was prepared for skin grafting.

Transplantation was made by the surgical protocols for skin grafting with hand dermatome, hand preparing the graft and good fixation on the recipient region. First follow up was 5 days after the surgery (picture4), the skin graft was alive. Follow ups every 3 days for period of one month were performed (picture5,6). The skin graft was accepted and alive, the donor wounds healed.



Picture 4. Follow up 1



Picture 5. Follow up 2

Picture 6. Follow up 3

Discussion

Split thickness skin grafts are used for larger wound areas, such as burns or wounds made on the arms or legs after accidents or bite injuries. It is important to remember these are nonvascularized grafts, initially nourished by plasmatic imbibition. A good recipient bed is essential for success.

The risks of the procedure, including graft failure, should be reviewed with the patient before procedure [2].

Skin grafting success is dependent on multiple factors but common factors leading to failure include hematoma formation, seroma formation, trauma to the area (mostly shearing forces), and infection. It is important to obtain good hemostasis to avoid a hematoma.

Meshing or pie crusting the graft will help avoid hematoma or seroma formation that leads to graft failure. A bolster dressing, whichever design is chosen, will reduce the risk of failure secondary to seroma/hematoma or shearing forces [2].

Finally, it is important to recognize that superficial layers of the graft may undergo necrosis and slough off, but this does not necessarily mean the graft has completely failed. In some cases, the underlying layer of dermis will remain and epidermis will regenerate [3].

Conclusion

Multidisciplinary management of the risks is the only way of skin grafting survival. Choosing the right time, right donor region, right techniques of harvest the skin grafts, choice and preparation of graft, fixation techniques, good preparation of the recipient region and controlling the chronic diseases which are bringing risks such as Diabetes mellitus, arteriosclerosis, vascular diseases, infection, are the key of surviving the skin graft.

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3. Skin grafts Get access Arrow Siobhan O’Ceallaigh, Mamta Shah <https://doi.org/10.1093/med/9780199682874.003.0007> Published: August 2021 Step-by-Step: Skin Grafting Nicholas Broccoli, DDS, MS* · Michael Rechten, DMD† · Deepak G. Krishnan, DDS‡ · James A. Phero, DDS, MD§ pheroja@ucmail.uc.edu Received July 17, 2020; Accepted July 17, 2020 DOI: 10.1016/j.joms.2020.07.025 Copyright: © 2020 Published by Elsevier Inc. on behalf of The American Association of Oral and Maxillofacial Surgeons.