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Department of Plastic Surgery and Hand Surgery, Cantonal Hospital Lucerne, Lucerne, Switzerland

Strategies after total DIEP flap loss for breast reconstruction: Literature review & single-center experience

E. Frey, J. Moncher, D. Winterholer, E. Fritsche

Introduction

The DIEP flap has become the undisputed “work horse” within autologous breast reconstruction. With its very low failure rates (in literature between 1-8%) the procedure is almost considered as safe success. However free flap loss is an unavoidable risk.

Patient guidance throughout and after the procedure is of tremendous importance, especially if a patient has to moan breast loss twice – first to cancer, secondary due to failed reconstruction.

Therefore the informed discussion already before surgery concerning options for secondary reconstruction might help not only with decision making, but also stress relief and will to actually perform further reconstruction.

Methods

We investigated the DIEP flap floss data between the period 2018-2024. During this time 211 DIEP flap reconstructions were performed in our department by five different surgeons.

Results

Patients with flap failure were on average 45,5 years old with an average BMI of 27 (kg/m2). Within the 211 DIEP reconstructions 10 flaps failed (flap failure rate of 4,74 %).

Salvage procedures in six cases were performed with pedicled latissimus dorsi flaps (three with prothesis) within 2-7 days.

Three Patients received alloplastic reconstruciton, speaking of two expander, one direct implant reconstruction.

One patient denied further reconstruction.

Bilateral mastecotmy

Secondary bilateral DIEP Reconsctruction, left sided flap loss

Pedicled lat, dorsi flap hybrid reconstruction

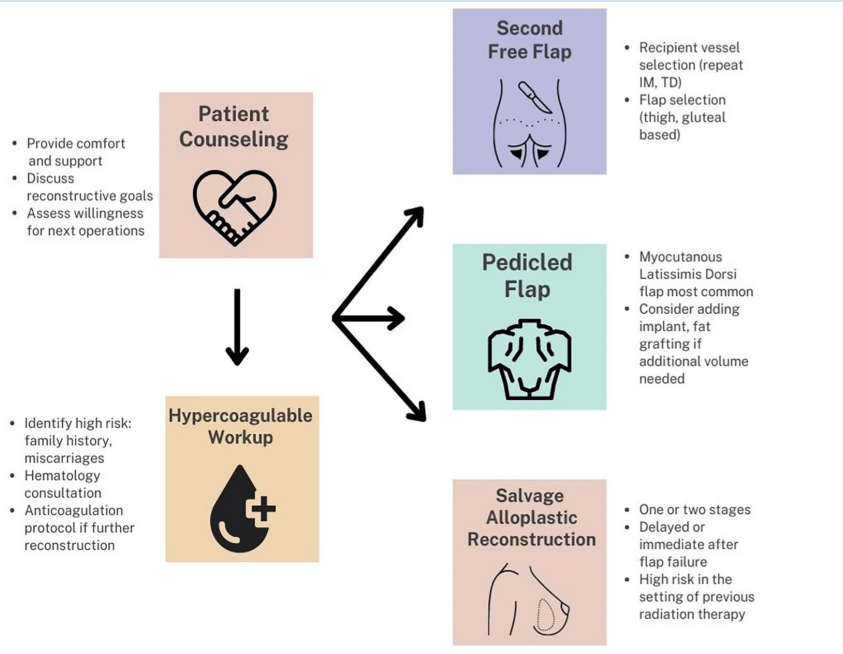

Figure 1. Algorithm for management after flap failure. *(Source 1)*

Pa-tient	Age (y)	BMI (kg/m2)	Recon-struction	Timing	Radiotherapiy (Rx)/ Chemotherapy (CHx)	Mastec-tomy type	Failure type	Solution
1	56	29.19	bilateral (right failed)	primary	Rx	SSM	venous (2x revision)	expander, prothesis, lipofilling
2	53	28.42	unilateral	primary	none	SSM	venous (1 revision)	pedicled latissimus dorsi plus prothesis (Motiva 185cc)
3	52	25.71	bilateral (left failed)	secondary	CHx/Rx	ablatio mammae	arterial (intraoperative flap failure)	patient declined reconstruction
4	57	29.32	unilateral	secondary	none	ablatio mammae	venous (1 revision)	pedicled latissimus dorsi plus prothesis (Motiva 150 cc)
5	50	25.14	unilateral	primary	none	SSM	arterial/ infection (late on set)	expander, later : Prothesis B-Lite 405 g Polytech, lipofilling
6	59	28.57	unilateral	secondary	Chx/Rx	NSM	venous (1 revision)	pedicled latissimus dorsi
7	48	30.27	bilateral	primary	Chx	NSM	venous (1 revision)	prothesis only (300cc Motiva)
8	52	30.04	Bilateral	primary	none	SSM	arterial	pedicled Latissimus dori
9	50	31.25	unilateral	primary	Rx	MRM	arterial (intraoperative flap failure)	pedicled latissimus dorsi
10	24	28.73	unilateral	primary	none	NSM	venous	pedicled latissimus dorsi plus prothesis

preoperative finding, left sided breast cancer

after left sided DIEP loss: alloplastic reconstruction

Discussion

As a high demand for safety after flap failure is given, it is questionable wether a secondary free flap is worth the risk.

The quality of available mastectomy skin, desired breast size and patient wish has to be considered for secondary breast reconstruction.

Latissimus dorsi is a safe strategy for recruiting more autologous tissue, where as immediate breast reconstruction with implant might be preferred in cases of sufficient skin coverage.

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