

Reclaiming the Wastelands

Fat Grafting Before Autologous Breast Reconstruction

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Background

- Radiation (XRT) is an important part of breast cancer treatment
- XRT causes skin fibrosis, which is detrimental to breast reconstruction (1-3)
- Free tissue transfer after XRT often requires excision of the radiated skin which results in a patch-like appearance, diminishing the aesthetics of the breast reconstruction
- Autologous fat grafting (AFG) can reinvigorate radiated mastectomy flaps prior to alloplastic reconstruction (4-5)
- We present a novel approach to salvage and revitalize radiated mastectomy flaps prior to microsurgical breast reconstruction

Methods

- Retrospective analysis of patients who underwent breast reconstruction with deep inferior epigastric perforator (DIEP) flap preceded by AFG to radiated mastectomy flaps
- Demographics, peri-operative complications, volume of AFG, and area of salvaged skin were noted

Results

- Figures 1-3 are exemplary cases
- N=3 (50%) with minor fat necrosis, none required removal
- No complications after DIEP

Pt.	Age	Mastectomy Type	1 st Recon.	Complications after 1 st Recon.
1	59	NSM	TE	TE loss due to exposure after XRT
2	52	NSM	TE + mastopexy	TE loss due to infection
3	57	SSM	TE	None

Table 1. Demographics and initial reconstruction history

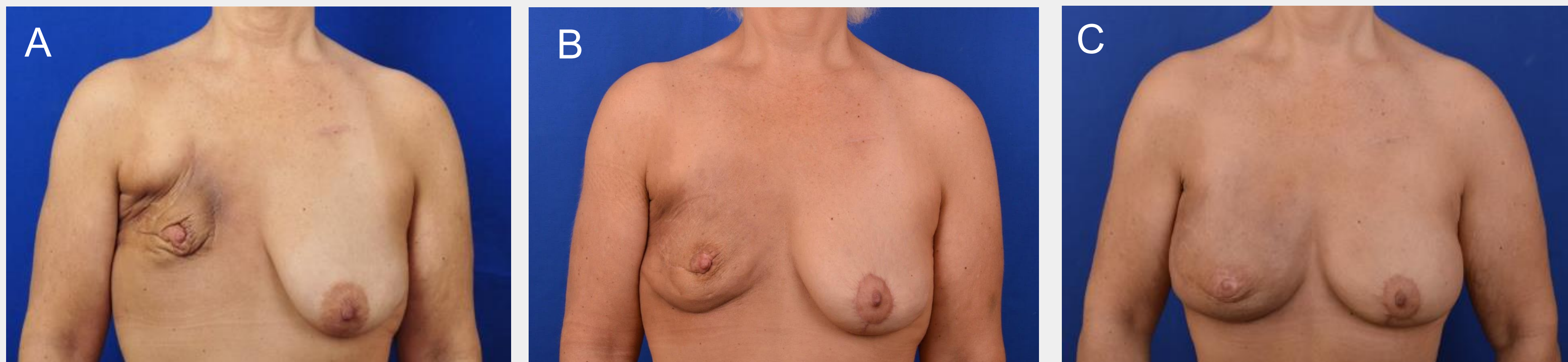


Figure 1. 49F after RT NSM, TE loss, and XRT presenting with leathery adherent skin (A). After 250cc of AFG to revitalize the skin of RT breast (B). Post bilateral DIEP flaps with all skin and nipples salvaged (C).

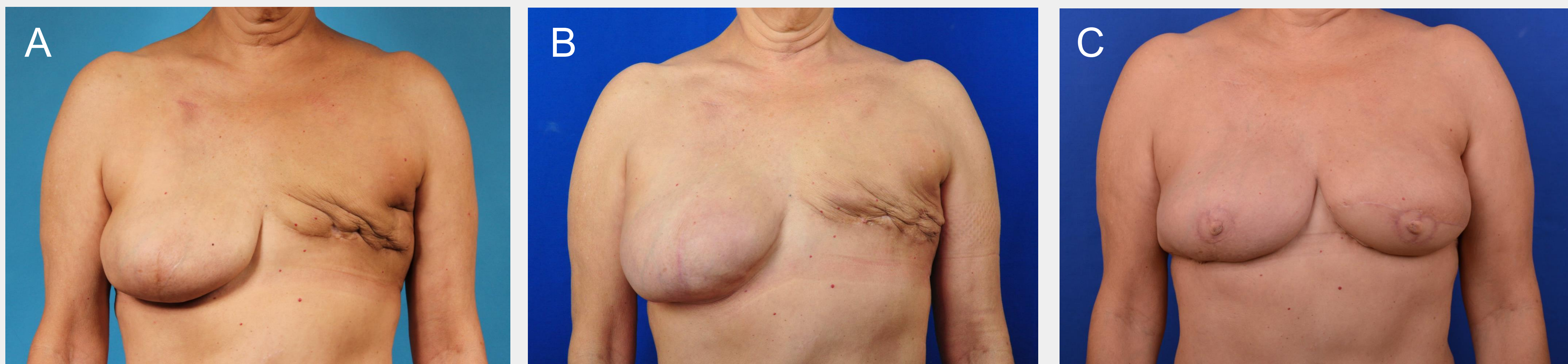


Figure 2. 61F after LT TE loss and XRT with fibrous tight skin (A). After 150cc AFG to loosen the mastectomy envelope (B). After bilateral DIEP flaps with entire LT breast skin saved (C).

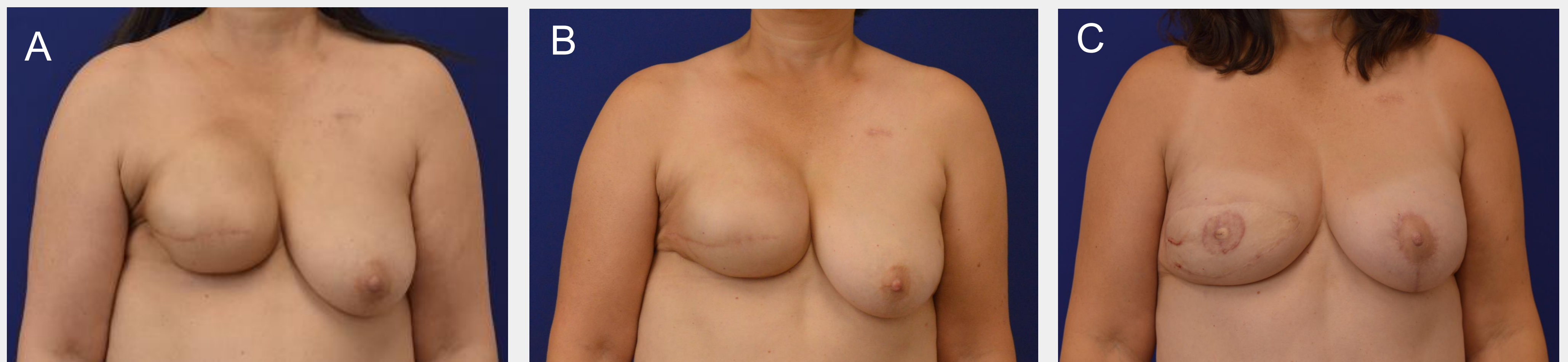


Figure 3. 49F with severe capsular contracture and soft tissue deficiency in RT lateral chest wall after XRT (A). After 120cc of AFG rebuilt the lateral chest wall soft tissue and relaxed the skin envelope (B). After RT DIEP with all available mastectomy skin utilized (C).

Results Continued

Pt.	Age	Mastectomy Type	1 st Recon.	Complications after 1 st Recon.
4	61	SSM	TE	TE loss due to infection
5	49	NSM	None	NA
6	49	SSM	TE	Necrosis debridement, severe capsular contracture

Table 1. Cont.

Pt.	Time after XRT to AFG (days)	AFB (cc)	Time between AFG to DIEP (days)	AFB after DIEP (cc)	Area of salvaged skin
1	105	300	175	none	All + nipple
2	505	140	362	40	All + nipple
3	62	247	229	260	All
4	132	150	183	none	All
5	156	250	131	290	All + nipple
6	340	120	418	50	All
ALL	217 ± 171	211 ± 77	250 ± 114	160 ± 133	All

Table 2. Outcomes and timeline for AFG and DIEP transfer

Conclusion

AFG prior to autologous tissue transfer can salvage mastectomy skin and yield aesthetically superior results with low complication rates.

Citations

