



Letter to the Editor

Autologous grafts in radiotherapy received breast cancer patients

Yasemin Benderli Cihan*

Kayseri Education and Research Hospital, Department of Radiation Oncology, Turkey

***Address for Correspondence:** Yasemin Benderli Cihan, Kayseri Education and Research Hospital, Department of Radiation Oncology, 38010, Kocasinan/Kayseri, Turkey, Tel: +90 352 336 8884/(Ext) 1573; H/P: +90 536 216 9987; Fax: +90 352 320 7313; Email: cihany@erciyes.edu.tr

Submitted: 05 February 2018

Approved: 08 February 2018

Published: 09 February 2018

Copyright: © 2018 Cihan YB. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



German surgeon, Vincenz Czerny, transplanted a patient's own lipoma located in the hip to it's breast after gland excision due to mastitis in 1895. Dr. Vincenza reported that for at least a year he didnt observe any problem on the operated breast [1]. Injection of adipose tissue to the breast has been used in breast cancer patients during breast reconstruction and lumpectomy. And in cases of revision autologous tissues are used for reconstruction. In clinical practice, many breast cancer patients apply to the clinics mostly after radiotherapy for reconstruction. Rigotti et al used purified autologous lipoaspirates in breast cancer patients with late term complications of radiation therapy and observed increase in neovascularization and wound healing [2]. Panettiere and colleagues compared aesthetic and functional features of fat grafts in radiotherapy received breast cancer patients and control group. In the fat graft group, all clinical symptoms and aesthetic scores were significantly higher than the control group [3].

In plastic surgery especially after the surgical treatment of breast cancer, prosthetic techniques, various autologous flaps or combinations of both are performed for breast reconstruction. Particularly breast reconstructions following adjuvant radiotherapy have less success rates due to adverse effects of radiotherapy [4-10]. There are reports showing reduced complications rates with use of fat grafts before and after breast reconstruction with prosthesis in patients received radiotherapy after lumpectomy or mastectomy.

With that, in patients receiving radiotherapy after fat grafting, local complications such as fat necrosis, infection can be seen more [3,11]. It was reported that adipocytes may had paracrine and endocrine interactions with tumor cells and stromal elements [12]. The fat grafts used in breast cancer were thought to cause local recurrence, distant metastasis or development of new cancers; there was no relationship in the clinical series. There is aromatase activity in the adipose tissue. Thus, fat tissue is the main source of post-menopausal estrogen hormone. Tumor cells and surrounding tissue were found to be higher in aromatase activity. Therefore, when fat tissue is injected subcutaneous or under the gland rather than into the parenchyma local recurrence risk is low [2].

When fat tissue is injected to breast, a good physical examination and mammography should be performed. After fat injection, sometimes calcifications are formed as a result of undergoing necrosis and they interfere with malignancy. Therefore before and after the procedure, mammography must be taken for comparison and existing and or newly developed calcifications should be determined.

References

1. Lexer E. Fettgewebsverplanzung. In: Lexer E, editor. Diefreien Transplantationen. I. Teil. Stuttgart: Enke. 1919; 219-547.

2. Rigotti Gino, Alessandra Marchi, Paolo Stringhini, Guido Baroni, Mirco Galiè, et al. Determining the oncological risk of autologous lipo aspirate grafting for post-mastectomy breast reconstruction. *Aesthetic Plastic Surgery*. 2010; 34: 475-480. **Ref.:** <https://goo.gl/WmvX7i>
3. Panettiere P, Marchetti L, Accorsi D. The serial free fat transfer in irradiated prosthetic breast constructions. *Aesthetic Plast Surg*. 2009; 33: 695-700. **Ref.:** <https://goo.gl/WvM66M>
4. Yoshimura K, Sato K, Aoi N, Kurita M, Hirohi T, et al. Cell-assisted lipotransfer for cosmetic breast augmentation: supportive use of adipose-derived stem/stromal cells. *Aesthetic Plast Surg*. 2008; 32: 48-55. **Ref.:** <https://goo.gl/ufRHqq>
5. Kølle SF, Fischer-Nielsen A, Mathiasen AB, Elberg JJ, Oliveri RS, et al. Enrichment of autologous fat grafts with ex-vivo expanded adipose tissue-derived stem cells for graft survival: A randomised placebo-controlled trial. *Lancet*. 2013; 382: 1113-1120. **Ref.:** <https://goo.gl/p2xY3z>
6. Cordeiro PG, Pusic AL, Disa JJ, McCormick B, VanZee K. Irradiation after immediate tissue expander/implant breast reconstruction: outcomes, complications, aesthetic results, and satisfaction among 156 patients. *Plast Reconstr Surg*. 2004; 113: 877-881. **Ref.:** <https://goo.gl/NLExJq>
7. Biazus JV, Falcão CC, Parizotto AC, Stumpf CC, Cavalheiro JA, et al. Immediate Reconstruction with Autologous fat Transfer Following Breast-Conserving Surgery. 2015; 21: 268-275. **Ref.:** <https://goo.gl/LAjqJ5>
8. Kronowitz SJ, Robb GL. Radiation therapy and breast reconstruction: a critical review of the literature. *Plast Reconstr Surg*. 2009; 124: 395-408. **Ref.:** <https://goo.gl/CYPHyC>
9. Tallet Agnès V, Naji Salem, Vincent Moutardier, Pascal Ananian, Anne-Chantal Braud, et al. Radiotherapy and immediate two-stage breast reconstruction with a tissue expander and implant: complications and aesthetic results. *International Journal of Radiation Oncology Biology Physics*. 2003; 57: 136-142. **Ref.:** <https://goo.gl/b4aXiN>
10. Salgarello M, Visconti G, Farallo E. Autologous fat graft in radiated tissue prior to alloplastic reconstruction of the breast: report of two cases. *Aesthetic Plast Surg*. 2010; 34: 5-11. **Ref.:** <https://goo.gl/oBqkXZ>
11. Rietjens M, De Lorenzi F, Rossetto F, Brenelli F, Manconi A, et al. Safety of fat grafting in secondary breast reconstruction after cancer. *J Plast Reconstr Aesthet Surg*. 2011; 64: 477-483. **Ref.:** <https://goo.gl/84A4LT>
12. Schäffler A, Schölmerich J, Buechler C. Mechanisms of disease: adipokines and breast cancer—endocrine and paracrine mechanisms that connect adiposity and breast cancer. *Nature Clinical Practice Endocrinology&Metabolism*. 2007; 3: 345-354. **Ref.:** <https://goo.gl/NeG8y1>