



New perspectives in breast reconstruction

Skin sparing and nipple sparing mastectomies allow breast surgeons to preserve the breast envelope in patients affected by breast cancer without direct involvement of the skin or the nipple areola complex, respectively (1). Immediate breast reconstruction provides women undergoing mastectomy for both breast cancer treatment and risk reduction significant psychological benefit (2).

Nowadays, many techniques for breast reconstruction are available. These include both the use of alloplastic materials (i.e., breast implants) and autologous tissue (3). Implant-based techniques remain the most widely used form of breast reconstruction (4).

New techniques, materials and devices are currently available to improve aesthetic outcomes. Examples of such new technologies are acellular dermal matrices (ADMs), synthetic meshes and autologous fat grafting (5).

The use of these devices and ancillary techniques not only improves breast volume and shape but also changes the host tissue response to foreign implants with significant advantages in terms of post-operative complications and stability of the aesthetic result (6).

In the future the implementation of a 3D-printed scaffold, based on pre-operative imaging, colonized with autologous fat, may further improve aesthetic outcomes (7).

A total replacement of the implants with autologous fat would be desirable but it's not realistic at the moment. While waiting for new technologies to replace old ones, a “hybrid breast reconstruction model”, in which implants, ADMs, synthetic meshes and fat grafting are used as integrated tools is used (6). In this model fat grafting planned pre-operatively as part of the reconstruction, both with the sub-pectoral and pre-pectoral approach. The final breast volume constitutes of fat and of an implant in a variable percentage according to the patient body contour and breast morphology.

The hybrid approach could be applied to both pre-pectoral and sub-pectoral implant-based breast reconstructions. The pre-pectoral approach has recently gained wide acceptance among breast oncoplastic surgeons thanks to the excellent surgical outcomes obtained in properly selected patients, also showing a reduced complication rate in women undergoing post-mastectomy radiotherapy (8).

Here we present a series of articles describing the latest developments in breast reconstruction. Taher *et al.* (9) and Saibene *et al.* (10) discussed the role of pre-pectoral implant-based breast reconstruction in improving outcomes in the setting of post-mastectomy radiotherapy using or not ADMs. Esposito *et al.* (11) presented the outcomes on new surgical approaches for implant-based breast reconstruction as the trans-axillary endoscopic one. Di Micco *et al.* (12) and Velotti *et al.* (13) presented the latest evidence on pre-pectoral implant-based breast reconstruction. Gonzalez *et al.* (14) presented the outcomes of immediate fat grafting following breast conserving surgery and Rancati *et al.* (15) a new technique for the immediate reconstruction of the nipple-areola complex over the latissimus dorsi skin paddle in autologous reconstruction.

We hope you will enjoy reading about the constantly evolving field of breast reconstruction.

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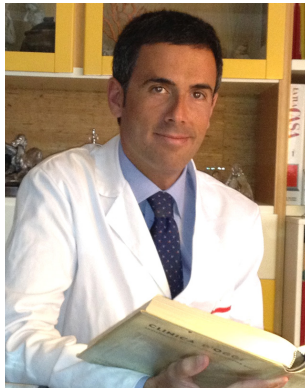
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Nicola Rocco



Giuseppe Catanuto



Giacomo Montagna

Nicola Rocco, MD, PhD

Department of Advanced Biomedical Sciences, University of Naples "Federico II", Naples, Italy.

(Email: nicolarocco2003@gmail.com)

Giuseppe Catanuto, MD, PhD

Humanitas - Istituto Clinico Catanese - Contrada Cubba, Catania, Italy.

(Email: giuseppecatanuto@gmail.com)

Giacomo Montagna, MD, MPH

Breast Service, Department of Surgery, Memorial Sloan Kettering Cancer Center, New York, NY, USA.

(Email: montagnng@mskcc.org)

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