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AMERICAN SOCIETY OF PLASTIC SURGEONS

Fat Transfer/Fat Graft and Fat Injection
ASPS Guiding Principles

A renewed clinical interest in fat grafting for both reconstructive and aesthetic purposes has prompted plastic surgeons and other medical practitioners to perform fat transfer/fat graft and fat injection procedures. The many scholarly papers published on the subject have provided a starting point for physicians considering the current applications and techniques of fat grafting. Before engaging in the practice of autologous fat grafts, though, plastic surgeons should give consideration to the safety and efficacy of various applications and techniques for both reconstructive and cosmetic purposes.

In light of findings by the American Society of Plastic Surgeons Fat Graft Task Force, recommendations herein are limited to fat transfer in the breast.

1. Background

Today's fat grafting techniques reflect the evolution of the procedure since the first case was reported more than 100 years ago. In 1893, German physician Franz Neuber grafted a piece of upper arm fat to a patient's cheek. Two years later, in 1895, another German physician, Dr. Karl Czerny, performed the first documented breast augmentation when he grafted a fatty tumor from a patient's lumbar region to repair a breast defect. Today, fat transfer procedures are similarly used in cosmetic and reconstructive plastic surgery.

- **Current Applications of Fat Grafting:** Scientific literature describes fat grafting for various indications, both cosmetic and reconstructive including, but not limited to, the breast. Other indications for autologous fat grafting include gluteal augmentation and repair of contour deformities; facial augmentation and correction of defects; hand rejuvenation; lip augmentation; and, penile enlargement and aesthetic improvement.

- **Risks and Complications:** Based on available literature, complication rates associated with fat grafting are not, overall, unduly high. Risks and complications reported in the literature include infection, bleeding, fat embolism and graft volume loss; though, risks and complications of autologous fat grafting are not necessarily limited to these reports. Cases of severe complications and death appear to be extremely rare.

  Concern regarding the interference of autologous fat grafts with breast cancer detection is not validated by the limited number of studies available on the topic.

- **Technique: safety, efficacy and outcome -** The safety, efficacy and final outcome of any given case is dependant on the technique used.[1] Although there is no industry standardization for technique, detailed descriptions of fat graft harvest, preparation, storage and injection have been described in the literature.

2. Scientific Evidence

An evaluation of available literature on autologous fat grafting in plastic surgery indicates that the body of evidence is comprised mostly of case series, case reports and expert opinion. These types of studies provide weaker evidence than high-quality randomized controlled trials or systematic reviews. However, when combined, the studies provide consistent evidence for some aspects of fat grafting, thus resulting in grade B recommendations[2] which include fat grafting for breast augmentation and correction of defects associated with medical conditions and previous breast surgeries; and, as a safe method of augmentation and correction of defects associated with various medical conditions.[3]

3. Guiding Principles

1. Concerns have been expressed regarding the potential that fat grafting to the breast may disrupt or delay diagnosis of breast cancer.[4-9] However, in light of a lack of scientific evidence available on patient selection, expert opinion calls for caution when considering fat grafting procedure in patients at high-risk for breast cancer including a positive BRCA-1, BRCA-2 and/or personal or familial history of breast cancer.

2. Studies indicate that results of fat transfer remain dependent on a surgeon's technique and expertise.[10]

3. Each physician must ensure that a means for providing the appropriate informed consent for each patient has been established prior to the treatment. The consent should include the fact that there is limited scientific evidence available to verify the safety and efficacy of fat transfer procedures.

4. When interpreting and applying these guiding principles to their individual practices, physicians should use their personal and professional judgment. These guiding principles should not be construed as a rule and are not meant to serve as the standard of medical care.

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