Pluripotent stem cells can be induced from differentiated cells.

**Background:** Stem cells offer the potential to enhance the body's natural repair capabilities with regeneration of damaged organs and tissues beyond that normally possible in adult life. Clinical plastic surgeons need to be familiar with the nature and capabilities of stem cells in order to fully realize their benefits as they become available.

**Objective:** The authors provide a review of stem cell biology, principles, and terminology, as well as an overview of current advances in the field of stem cell research and prospects for future clinical applications.

**Review:** Not a study at all, this paper represents a topic and literature review. Stem cells have the capability to self-replicate and to differentiate into multiple different cell lines. Traditionally, stem cells have been divided into 2 main groups. Pluripotent stem cells (embryonic) are those that can differentiate into any kind of cell in the body, and multipotent stem cells (adult) can differentiate into multiple, but not all, cell lines. A third, new hybrid group is induced pluripotent stem cells, which are adult stem cells that have been reprogrammed to pluripotent capability. Embryonic stem cells are derived from the inner cell mass of the blastocyst. Their ability to form a wide variety of specialized adult cells has been confirmed in the laboratory. Their pluripotentiality and unlimited ability to self-renew make them attractive for cell replacement therapy, but also brings the risk of unregulated differentiation and formation of teratomas and malignancies. Somatic nuclear transfer into enucleated ova leads to a blastocyst of unlimited pluripotential, but controversies about harvesting human 'eggs' continue to rage. Adult stem cells have been harvested from bone marrow, umbilical cord blood, and suction lipectomy aspirate. Lipectomy-derived adult mesenchymal stem cells have demonstrated the ability to differentiate into cartilage, bone, muscle, and adipose tissue. Japanese researchers defined a specific set of transcription factors that can induce differentiated cells to revert to a pluripotential state. Such induced pluripotent stem cells may be the key to widespread availability. Unfortunately, the threat of viral integration and oncogenesis limits the clinical applicability of such induced pluripotent cells at the present time.

**Conclusions:** The authors suggest that embryonic stem cells have the greatest power and potential for regenerative and reparative healing, but are also dangerous for uncontrollable or malignant behavior. Adult stem cells, due to their more limited potential for differentiation, may offer safer and more focused benefits in the near future. Induced pluripotential cells may be the fastest route to the wide availability of stem cells for clinical applications.

**Reviewer's Comments:** This paper is informative and easy to read. For clinicians working far from the research laboratory, it is an excellent primer and update on a subject that is likely to have far-reaching implications for plastic surgery. (Reviewer-Norman V. Godfrey, MD).

**Keywords:** Stem Cells, Omnipotent, Pluripotent

**Print Tag:** Refer to original journal article
In women undergoing bilateral skin-sparing prophylactic mastectomies and 1-stage reconstructions with permanent expander implants, there are no significant differences in outcomes between anatomically shaped and round implants.

**Background:** Bilateral mastectomy procedures are becoming more common, particularly with improved genetic testing for mutations such as BRCA1 and BRCA2. Many of these patients elect to undergo bilateral reconstructions with implants, and with their surgeons, must decide between anatomically shaped and round implants.

**Objective:** To compare differences in outcomes in women who underwent bilateral prophylactic mastectomies and 1-stage reconstructions with anatomically shaped versus round implants.

**Design:** Randomized, prospective study.

**Participants:** 36 of 59 patients who underwent bilateral prophylactic mastectomies and reconstructions with textured permanent expandable implants between 2004 and 2006 at the Karolinska University Hospital in Stockholm, Sweden agreed to participate in the study, understanding they would receive either short anatomically shaped or round permanent expandable implants. The other 23 women had a preoperative implant shape preference, and thus were not enrolled in the study. Of the participating women, none had previous breast surgery or a diagnosis of breast cancer.

**Methods:** Participants were randomly assigned to an implant group, with 18 receiving anatomically shaped implants and 18 receiving round implants. Minimum follow-up time was 2 years. Aesthetic outcome was assessed by an expert panel that also tried to determine if round or anatomically shaped implants had been used. The panel included 3 plastic surgeons not involved in the surgeries and a nurse with special expertise in breast reconstruction. Patient satisfaction was evaluated with a questionnaire. Breast symmetry and complications were also studied.

**Results:** The average follow-up period was 30 months. There were no statistically significant differences in complications, symmetry measurements, aesthetic evaluations, or patient satisfaction between the 2 groups. The expert panel guessed the correct implant shape in 66% of the round implants and 42% of the anatomically shaped implants.

**Conclusions:** The authors concluded that following bilateral skin-sparing prophylactic mastectomies, there is no significant difference in reconstructions performed with round versus anatomically shaped 1-stage permanent expander implants with regard to complications, symmetry, aesthetics, and patient satisfaction. Furthermore, they found that even experts often have trouble determining postoperatively which type of implant was used.

**Reviewer’s Comments:** This is a very useful and timely paper, as plastic surgeons have recently been seeing many more women who are undergoing bilateral prophylactic mastectomies. The data from this study will be helpful in counseling women in this group who are struggling with regard to what implant shape is best, as we can explain to them that in many cases, it is difficult to distinguish between the round and contoured styles. However, with regard to unilateral reconstructions, I still believe that in many patients with decreased superior pole fullness, the contoured implants can give significantly improved symmetry compared to round implants. (Reviewer-Jeffrey A. Ascherman, MD.)

**Keywords:** Permanent Expander Implants, Anatomically Shaped Implants, Round Implants
Patients who undergo muscle-sparing free transverse rectus abdominis myocutaneous flaps have similar rates of abdominal complications and patient satisfaction as abdominoplasty patients.

**Background:** Autologous breast reconstruction has evolved with increasing use of microsurgical techniques and increased focus on abdominal wall morbidity. There are studies comparing abdominal wall morbidity between the various abdominal breast reconstruction techniques. However, there are also similarities with abdominoplasty patients.

**Objective:** To compare abdominal wall morbidity between muscle-sparing-2 (MS-2) transverse rectus abdominis myocutaneous (TRAM) flap patients and cosmetic abdominoplasty patients.

**Design:** Matched-pair analysis and survey.

**Methods:** By age and body mass index (BMI), 52 abdominoplasty patients with wide anterior rectus plication were matched with 52 MS-2 TRAM flap patients whose abdomens were repaired with wide rectus sheath plication and without mesh. Postoperative complications related to the abdominal site, particularly hernia and abdominal bulge, were compared. Patient satisfaction and impact on daily living were assessed.

**Results:** The mean age and mean BMI were similar between the 2 groups, as was mean follow-up time (69 years and 70 months, respectively). Three TRAM flap patients had major complications that included flap loss, deep venous thrombosis, and abdominal skin necrosis, while 2 patients in the abdominoplasty group had a major complication (hematoma and infection). There were minor complications in 7 TRAM flap patients and 10 abdominoplasty patients. There was one hernia in the TRAM flap group, which was diagnosed 39 months after reconstruction, and no hernias in the abdominoplasty group. No statistically significant differences were noted between the 2 groups surveyed in terms of abdominal contour, perceived abdominal strength, level of pain, or quality of life. There was no statistically significant difference in "client satisfaction scores," with both groups having a high level of patient satisfaction. TRAM patients had a higher satisfaction with the postoperative scar appearance and were less likely to engage in sporting activities.

**Conclusions:** MS-2 TRAM flaps patients do not have a significantly higher rate of abdominal complications than abdominoplasty patients and they have similar patient satisfaction in regard to abdominal wall morbidity.

**Reviewer's Comments:** This is a compelling study in that it focuses on the abdominal site in what seems, at first glance, to be very different patient populations: cosmetic abdominoplasty patients and breast cancer reconstruction patients. However, close examination shows that the authors really are comparing apples to apples and not apples to oranges. The abdominal site is excised and closed in a similar fashion, and the abdominoplasty patients serve as a proxy for superficial inferior epigastric artery flap patients. The patients are matched pairs, which makes their results more valid. The difference in scar satisfaction likely relates to cosmetic patients being more demanding in general than reconstructive patients who might focus more on the appearance of the breast reconstruction. This study provides further evidence that the donor-site morbidity from muscle-sparing free TRAM flaps is minimal and acceptable. (Reviewer-Christine H. Rohde, MD).

**Keywords:** MS-2 TRAM, Autologous Breast Reconstruction, Abdominal Morbidity
**Background:** Many potential advantages have been described when acellular dermal matrix products are used in tissue expander/implant-based breast reconstructions.

**Objective:** The authors hypothesize that the use of an acellular dermal matrix may decrease the inflammatory response to a foreign body (breast implant) thereby reducing the incidence of capsule formation.

**Design:** Nonrandomized prospective study where analysis was blinded.

**Participants/Methods:** 20 patients underwent 2-stage breast reconstruction using tissue expander placement in a subpectoral and subdermal matrix (AlloDerm) dual plane pocket. During the second stage of the reconstruction, the resultant capsule was sampled, both at the level of subpectoral implant placement and at the level of acellular dermal matrix. Biopsy specimens were then evaluated by blinded pathologists to assess for evidence of fibrosis and inflammatory response.

**Results:** The AlloDerm specimens demonstrated a significant decrease in inflammation and fibrosis per all parameters assessed.

**Conclusions:** These findings suggest that the use of acellular dermal matrix in breast implant reconstruction may help to prevent or reduce the formation of thick capsules around the implant.

**Reviewer's Comments:** The results of this study suggest that the acellular dermal matrix may act as a barrier to the interface between the implant and the native tissues, influencing the nature of the capsule that forms. What remains to be determined is whether this effect endures once the AlloDerm has been completely resorbed. While the second stage of the reconstruction took place several months after the placement of AlloDerm, one could argue that this is not enough time for complete resorption of the acellular dermal matrix. In that case, the biopsied sample is not representative of the ultimate capsule, but rather of the AlloDerm itself, with some native tissues and cells incorporating into it. One would then expect to find a marked decrease in fibrosis and cellularity in those specimens. In order to better answer the question as to whether the differences seen histologically are ultimately physiologically significant, an appropriate follow-up to this series would be to examine biopsy specimens from the capsules in the subpectoral and subdermal matrix locations in patients who present with capsular contracture at a later date. (Reviewer-Robert T. Grant, MD).

**Keywords:** Acellular Dermal Matrix, Capsule Formation, Breast Capsule

**Print Tag:** Refer to original journal article
Acellular dermal matrix is safe and effective for correction of breast deformities after esthetic breast augmentation.

**Background:** It can be very difficult to correct secondary breast deformities after cosmetic breast augmentation. Human acellular dermis has been reported for correction of these deformities.

**Objective:** To review the use of human acellular dermal matrix for correction of secondary deformities after breast augmentation.

**Methods:** A retrospective review was conducted of patients who had revision augmentation mammaplasty with an acellular dermal matrix done by a single surgeon from 2005 to 2009. Indications, results, complications, and costs were evaluated.

**Results:** 23 patients (38 breasts) were included in the study. Twenty breasts with saline implants were changed to silicone gel implants at the time of revision and acellular dermal matrix placement. Surface irregularities and implant malposition were the main presenting complaints, with a subset of patients demonstrating a hyperdynamic deformity from the pectoralis muscle. The average follow-up was 25 months (range, 4 to 66 months). During the follow-up period, 3 patients had another cosmetic breast procedure. There was 1 infectious complication requiring explant in a patient who had undergone placement of acellular dermal matrix twice in an onlay fashion. There were no recurrences of capsular contracture within the follow-up period. The use of thick or ultra thick sheets costs the patient between $3536 and $4856 per breast per operation.

**Conclusions:** Acellular dermal matrix is a safe and effective tool for improvement of secondary deformities after esthetic breast augmentation. However, the cost may be prohibitive for some patients.

**Reviewer's Comments:** The use of acellular dermal matrix is widespread for both reconstructive and cosmetic breast surgery. This paper shows its safety and efficacy for a small group of patients operated on by a single surgeon. Although the number of patients is small, it is the largest single surgeon’s experience I am aware of in the literature. It would have been useful for the authors to examine patient satisfaction with the results, especially since there is such a discussion about the cost borne by the patients. I imagine patients who feel deformed after cosmetic surgery will be willing to spend the extra money for an improved result, but that is a topic for further study. The infectious risk is also a concern since more and more papers bring up concern for an increased infectious risk using aseptic AlloDerm in reconstruction patients. The use of terminally sterile products, such as AlloMax™ or Strattice®, might alleviate some of those concerns. Certainly, acellular dermal matrix is another tool in the plastic surgeon’s armamentarium for correction of secondary deformities. (Reviewer-Christine H. Rohde, MD).

Keywords: Acellular Dermal Matrix, Alloderm, Breast Augmentation

Print Tag: Refer to original journal article
**Background:** Ablative lasering of the skin with the carbon dioxide (CO₂) or Erbium laser has lost popularity because of a high complication rate and intolerable recovery. However, fractional CO₂ and Erbium lasers have gained popularity in the last 5 years. Holes are drilled in the skin and are spaced out, with untouched tissue in between holes, allowing for less pain and quicker recoveries. Because the Erbium laser required multiple treatments, the fractionated Lumenis CO₂ laser has gained popularity. This laser imparts an additional heat injury to the skin, which seems to be responsible for an improved cosmetic effect.

**Objective:** This study evaluated the detrimental side effects of this laser.

**Design:** Retrospective review. **Methods:** 373 charts were reviewed of patients who had undergone ActiveFX/DeepFX treatments. The face, hands, chest, and neck were treated. Only light-skinned people were treated. Pliaqlis cream was used for anesthesia, and the skin was cooled while lasered. Treatment densities and energies were varied depending on the degree of wrinkling and photodamage. Patients used Aquaphor healing ointment for the first 4 days after the treatment and were then switched to Pyratine-6 moisturizer. Patients were evaluated in the clinic 24 hours afterwards and again at 4 weeks postoperative; the average follow-up time was 7.2 months.

**Results:** 13.9% of patients had complications: 4.6% were allergic reactions; 3.5% were acne breakouts; 1.1% had erythema >4 days on the face or >7 days on the neck or chest; and 1.1% had Herpes simplex infections. The more areas treated, the more likely there was to be a complication; patients who had 3 areas treated had nearly a 3-fold higher risk of a complication than those who had 1 area treated. There was no increase in the complication rate in patients who had second treatments at least 6 weeks later.

**Conclusions:** The overall complication rate was higher than fractionated Erbium lasering, but lower than ablative lasering. The rate of Herpes infection was lower than the 7% seen with ablative CO₂ lasering. The complication rate rose treatment to multiple body locations. No patient had long-term scarring despite any complication.

**Reviewer’s Comments:** This was a good study that added much needed data on an office procedure that many plastic surgeons perform. The low complication rate can be further reduced by the routine use of Valtrex antiviral and by the use of less allergenic moisturizers, such as Squalene. One important take-home lesson is to limit the number of anatomic zones lasered in any one sitting to 1 or 2. (Reviewer-Arthur W. Perry, MD).

**Keywords:** Fractionated Carbon Dioxide Laser, Complications

**Print Tag:** Refer to original journal article
Patients May Have Different Esthetic, Functional Priorities Than Surgeons

Functional and Aesthetic Concerns of Patients Seeking Revision Rhinoplasty.
Yu K, Kim A, Pearlman SJ:

Arch Facial Plast Surg 2010; 12 (September/October): 291-297

The majority of patients cite difficult nasal breathing as a reason to seek secondary rhinoplasty.

**Background:** Success or failure in rhinoplasty has traditionally been measured against objective benchmarks. This paper reviews patients' subjective assessment of the esthetic and functional results of prior surgery.

**Objective:** To analyze the subjective esthetic and/or functional reasons that motivate patients to seek revision rhinoplasty. In addition, the authors attempt to correlate the patients' subjective impressions with objective abnormalities found on clinical examination.

**Design/Participants:** This paper is based upon a case series report of 104 consecutive patients who sought revision rhinoplasty in the practice of the senior author in the 18-month period from January 2008 through June 2009.

**Methods:** Subjective data were obtained with the use of a patient questionnaire, and objective findings were those noted from the senior author's clinical examination. A comparison of the two was used to assess the correlation between patients' subjective impression and the surgeon's objective findings for the patient cohort as a whole.

**Results:** The 3 most common esthetic concerns cited by patients seeking revision rhinoplasty were tip asymmetry, crooked middle third of the nose, and upper third irregularity. These were also the 3 most common esthetic physical findings noted by the senior author. A subjective impression of nasal blockage occurred in 62% of patients seeking revision. Specifically, these functional concerns were reported as a sensation of nasal blockage, mouth breathing, and snoring. In these patients, 94% had physical findings that the surgeon judged as significant possible causes of nasal obstruction. Overall, the correlation between patient's subjective perception and surgeon's confirmation varied between roughly 60% and 98%. By contrast, patients felt that the esthetic deficits noted by the surgeon were of importance to them only 55% of the time.

**Conclusions:** The authors concluded that the most frequent reasons for revision rhinoplasty were tip asymmetry, nasal obstruction, and crooked middle third.

**Reviewer's Comments:** This paper is of value insofar as it highlights the importance of issues as identified by patients – the outcomes approach. In addition, it offers a reasonable review of prior studies of patient satisfaction following rhinoplasty. As a valid study of the specific issues, however, it is lacking. The deficiencies appear to lie chiefly in 2 areas. First, is the questionnaire itself. It was not designed and validated as a proper outcomes instrument. Clearly, the effectiveness of the questionnaire is in doubt. The second deficiency is in the characterization of the functional perceptions. That characterization is limited to the notation of anatomic findings that had the potential to affect airway performance. It falls short of determining the significance and exact cause of the perception. (Reviewer-Norman V. Godfrey, MD).

Keywords: Outcomes, Rhinoplasty, Patient Satisfaction

Print Tag: Refer to original journal article
A proper dissection plane makes nostril reconstruction possible.

**Background:** The absence of cartilage support in the lateral half of the nostril rim and recurring scar contraction make nostril stenosis difficult to repair.

**Design:** This article is a topic and literature review that includes a description of the authors’ personal approach and surgical technique for nostril reconstruction.

**Methods:** The author’s approach is based upon a fundamental judgment of whether the vestibular stenosis is caused by simple nostril collapse or whether it is associated with vestibular contracture. Nostril collapse is treated by cartilage graft support of the alar margin and temporary stenting. Vestibular contracture requires release of contracture, possible lining replacement, cartilage graft support of the alar margin, and stenting. Begin by correcting the nostril collapse. To achieve the best functional improvement and esthetic symmetry, use the contralateral normal nostril (if available) to create foil templates for the alar rim cartilage graft and the nostril stent. The alar graft should support the entire lateral nostril rim. In short, it is an extra-anatomic graft. Harvest an adequate-sized conchal cartilage graft via a retroauricular incision. Carve the conchal cartilage to the exact configuration of the template. Next, insert the cartilage graft through a limited marginal incision into a tight pocket placed at the exact edge of the future nostril. Place the stent in the nostril and secure it in place with sutures passed through the nostril and tied over Telfa bolsters. Leave the stent in place for 2 to 3 weeks. If cicatrix remains a limiting issue, return to the operating room 2 months later to incise the nostril through a rim incision, dissect the lining free, and excise the contracted scar. If the lining is deficient, incise it radially to recreate the defect and tack the splayed flaps of lining to the nostril rim. Insert a full-thickness retroauricular skin graft into the lining defect, and re-stent for another 2 to 3 weeks.

**Conclusions:** The authors stressed that the 2-staged nature of the approach was necessary to permit revascularization of the supporting nostril rim cartilage graft prior to the release and grafting of the vestibular skin deficiency. They also stressed that the cartilage graft must be placed just below the external rim skin, while the lining dissection must be just below the lining skin to prevent surgical injury of the cartilage graft.

**Reviewer's Comments:** This is an excellent technical description of a specific surgical approach to a difficult problem that arises in nasal surgery. As with much of nasal surgery, the details matter; the authors have recognized this and included those details that will help deliver success. (Reviewer-Norman V. Godfrey, MD).

**Keywords:** Nostril Collapse, Nostril Stenosis, Nostril Reconstruction

**Print Tag:** Refer to original journal article
Atraumatic harvesting of fat cells combined with low g-force centrifugation for short time periods improves fat cell viability.

**Background:** Fat is tremendous; it is easily accessible, abundant, and not rejected by the host. However, there is no standard for harvest and preparation.

**Objective:** To evaluate a new investigative technology (Viafill) for harvesting fat.

**Participants:** 6 female subjects.

**Methods:** 3 patients underwent liposuction of the bilateral upper and lower hips, and 3 patients underwent liposuction of the bilateral lower hips alone. Liposuction was performed by hand using the Viafill system. Then, power-assisted liposuction (PAL) was performed at the same sites. All Viafill syringes were spun within 50-g centrifuge for 2 minutes. Following this, 1-mL samples were taken from the top, middle, and bottom sublayers of the centrifuged fat. Samples were processed and viable fat cells counted.

**Results:** In all body areas, PAL samples had significantly lower mean cell counts. There was a significant difference in the number of viable cell counts between the sublayers, with the bottom sublayer having greater cell counts than the middle sublayer, which had greater cell counts than the top sublayer. The upper hip had significantly greater cell counts versus the lower hip.

**Conclusions:** The authors advocate atraumatic harvest and centrifugation for fat transfer. In addition, low-force, short-duration centrifugation increases fat cell viability. A recent paper by Rohrich et al is contradicted; it suggested that the area of harvest does not make a difference in fat cell viability. Finally, the Viafill system yielded greater cell counts.

**Reviewer’s Comments:** Fat grafting is a valuable tool, having become an important adjunct for many procedures. A drawback is the length of time needed to perform it in order to provide lasting, consistent results. This is highlighted by the Coleman technique, which involves hours of harvest and transplantation of very small aliquots. Many surgeons find the technique cumbersome and time-consuming. The authors attempted to use Viafill to improve the process, which allows the erythrocytes and fluid to be decanted from the syringes such that only viable fat cells remain and centrifuged at low g-forces. There are many weaknesses to this study. The study sample was very small. Also, one of the main points of this article was to describe the efficiency of the Viafill system. Time saved in the operating room was never provided; an objective measurement was never used. In addition, while it is believed that hand aspiration disrupts fat cells less than PAL, the design of this study was poor in that PAL was performed in an area after hand aspiration had already been done. The authors did confirm their previous study that showed that the bottom layer of fat cells has the greatest viability. However, the authors admit that a viable cell count is not the only determinant of a successful fat grafting process, as volume and recipient location also play a significant role. (Reviewer-Jerome D. Chao, MD, FACS).
Clear Surgical Margins Do Not Mean a Cure

What Is the Best Surgical Margin for a Basal Cell Carcinoma: A Meta-Analysis of the Literature.
Gulleth Y, Goldberg N, et al:

Plast Reconstr Surg 2010; 126 (October): 1222-1231

Positive surgical margins for basal cell carcinoma result in a 27% recurrence rate.

**Background:** Surgical excision remains the ideal management for basal cell carcinoma. Because 85% of basal cell carcinomas occur in the head and neck region, plastic surgeons are frequently consulted to perform the excision.

**Objective:** Ideal treatment achieves total tumor eradication with the lowest possible recurrence risk, the best possible cosmetic outcome, and in the most cost-effective way. Design of an appropriate surgical margin may help. The authors’ objective was to use a systematic review of the literature to meta-analyze histological and recurrence data toward defining an ideal surgical margin for basal cell carcinoma.

**Design/Participants:** The study described herein is a systematic review of articles from the PubMed database that met the search terms "basal cell carcinoma surgery margins" and "basal cell carcinoma surgery recurrence." The original yield was culled on the basis of study quality. Ultimately, 89 articles met all criteria and were reviewed in detail.

**Methods:** Data on patient demographics, lesion location and lesion size, dimension of surgical margin, histological margin, recurrence, and secondary treatment were extracted and entered into SPSS software to obtain descriptive statistics and perform statistical analysis. A total of 16,066 lesions on 10,261 patients were so analyzed.

**Results:** Lesion size ranged from 3 to 30 mm, with an average of 11.7 mm. Surgical margins varied from 1 to 10 mm. Negative histological margins varied from 45% to 100%, with a mean of 86% clear margins. Recurrence rates varied from 0% to 9.7% (mean, 2%). For lesions <2.5 cm in diameter, there was an inverse relationship between the size of the surgical margins and the recurrence rate; larger margins yielded lower recurrence rates. By contrast, larger surgical margins yielded only slightly lower rates of positive histological margins. Overall, lesions >2.5 cm had high recurrence and positive margin rates. This was in spite of the finding that larger lesions were typically excised with larger surgical margins. In the study population as a whole, positive histological margins had a recurrence rate of 27%.

**Conclusions:** The authors concluded that for lesions <2.5 cm, increasing the margin of surgical resection correlated with a decreasing recurrence rate of disease, but did not correlate well with achieving a clear histological margin. They also observed that although a larger surgical margin lowers the risk of recurrence, achieving a clear histological margin does not correlate with lower recurrence risk.

**Reviewer’s Comments:** This paper is thoughtful, well written, and informative. The authors emphasize the difference between histological clearance of margins and the total extirpation of disease. They remind us that it is cure that matters and that correlates well with the size of the surgical margin. (Reviewer-Norman V. Godfrey, MD).

Keywords: Basal Cell Carcinoma, Margins, Recurrence

Print Tag: Refer to original journal article
Plan 2 Stages to Address Skin Envelope Excess When Reconstructing Ptotic Breasts

Staged Wise-Pattern Skin Excision for Reconstruction of the Large and Ptotic Breast.
Liu TS, Crisera CA, et al:
Plast Reconstr Surg 2010; 126 (December): 1831-1839

Staged skin excision minimizes wound complications when this technique is applied in breast reconstruction for large and/or ptotic breasts.

Background: Breast reduction for the large and ptotic breast usually requires skin excision in the horizontal and vertical planes. For these procedures, the Wise pattern skin excision is usually necessary to achieve an appropriate resultant skin envelope. While this technique is generally safe and successful in breast reduction procedures, it yields a high complication rate in cases of breast reconstruction.

Objective: The authors describe a 2-stage Wise-pattern skin excision to minimize morbidity and maximize esthetic results for prosthetic breast reconstruction in ptotic breasts.

Design: Retrospective review.

Methods: As a first stage, patients undergo mastectomy via vertical pattern skin excision and placement of a tissue expander. Patients then return a few months later for the second stage, consisting of a horizontal skin excision, implant exchange, and nipple/areolar reconstruction where appropriate.

Results: 12 patients underwent breast reconstruction with a staged Wise-pattern skin excision, all with good cosmetic results and no cases of wound breakdown.

Conclusions: This technique allows for appropriate breast shaping, correction of ptosis, and minimizing of postoperative complications related to the traditional Wise-pattern incisional pattern.

Reviewer’s Comments: Breast reconstruction in the large and ptotic breast is very challenging. Transverse skin excisions often become exceedingly long and extend into the axilla, in an effort to excise enough skin. Even when sufficient skin is removed, the shape of the reconstructed breast is often far less than ideal. Wise-pattern skin excisions are prohibitively fraught with problems in the setting of long flaps and prosthetic material. The staged approach to these reconstructions is an excellent concept. Many of these patients require revisional surgery, and nearly all will undergo staged nipple reconstruction. The flexibility afforded by a staged incision in 2 planes allows for optimizing results. While the results shown by the authors are not outstanding, a few things are clear: the breast footprints are tailored to a smaller breast size, ptosis is resolved, and the scars are contained in optimal locations. The vertical skin excision and time elapsed between procedures surely decreases the length of the horizontal incision by a significant amount, and this alone makes the staged procedure worthwhile. Increased safety with regard to the implant is another strong justification for staging accordingly. Overall, a well-thought out and strategic approach. (Reviewer-Robert T. Grant, MD).

Keywords: Breast Reconstruction, Ptosis, Large Breasts

Print Tag: Refer to original journal article
Routine Exam of Breast Capsules -- Waste of Time and Money

Breast Capsulectomy Specimens and Their Clinical Implications.

Roth FS, Felder JM, Friedman JD:

Plast Reconstr Surg 2010; 126 (December): 1848-1852

Significant pathologic findings are a rarity in capsulectomy specimens.

**Background:** Surgeons performing capsulectomy procedures routinely send specimens for pathology evaluation, especially in cases in which the patient has a history of malignancy in the breast.

**Objective:** To establish the clinical utility of this routine analysis as it relates to the ultimate management and outcome for these patients.

**Design:** Retrospective review.

**Methods:** 264 patients who underwent breast capsulectomy had pathologic evaluation of their surgical specimens.

**Results:** 434 specimens were evaluated, with benign findings present in 78% of samples; 21.6% of samples exhibited signs of inflammation and/or tissue necrosis with no evidence of malignancy. One patient with known invasive carcinoma had a biopsy specimen that demonstrated evidence of this known disease.

**Conclusions:** While the routine analysis of capsulectomy specimens represents a significant health care cost and use of resources, there is no evidence that this practice yields clinically significant information.

**Reviewer's Comments:** In this era of medicolegal medicine, surgeons routinely over-use resources. Most plastic surgeons would attest to the fact that they routinely send capsulectomy specimens to pathology, although only certain parts of the capsule are sampled. Most plastic surgeons will also confirm that they have seldom, if ever, received a positive result in these cases. It is important to establish the utility of this routine testing and to better establish indications for testing. This paper makes a convincing argument for discarding capsulectomy specimens. The question remains as to the amount of evidence that is necessary for defensive surgeons to begin adopting more judicious use of available resources. At what point is it "safe" to not send the specimen? Do Insurance companies require us to submit capsular tissue as objective evidence that a capsulectomy rather than a capsulotomy was performed? (Reviewer-Robert T. Grant, MD).

Keywords: Pathology Examinations, Breast Capsules, Medical Economics

Print Tag: Refer to original journal article
Anticipate the negative effects of subsequent radiation therapy on the treatment choice made for breast reconstruction after breast sarcoma excision.

**Background:** Breast sarcomas make up a small percentage of all soft-tissue sarcomas. Many are thought to develop after radiotherapy. Given the increased therapeutic utilization of breast radiation, it is expected that rates of breast sarcoma will increase over time.

**Objective:** The authors describe their approach to breast reconstruction after surgical excision of primary and recurrent breast sarcomas.

**Design:** Review article.

**Methods:** The authors review their treatment of 23 breast sarcoma patients seen at their tertiary care cancer hospital over a 21-year period.

**Results:** 83% of the reconstructions were performed in the most recent decade; 83% of patients underwent reconstruction with the use of local flaps, native tissue, or oncoplastic techniques. The remaining patients had implant-only reconstructions. Eighty-three percent of the reconstructions were done immediately, and 25% of reconstruction patients suffered major complications ranging from flap loss to implant exposure to seroma at a latissimus donor site. All cases were successfully managed with additional surgery. Radiation-induced sarcomas (angiosarcomas) were associated with higher mortalities independent of reconstruction. All patients who did not receive radiation previously were treated with radiation therapy. Chemotherapy was given in both adjuvant and neoadjuvant settings to all patients.

**Conclusions:** Despite the heterogeneity of histologic sarcoma subtypes and the need for necessary adjuvant and neoadjuvant treatments, reconstruction of the breast after breast sarcoma excision is possible and should be individualized for each specific patient.

**Reviewer's Comments:** In this review paper, the authors also present an algorithm for the reconstruction of both partial and total mastectomy defects that result after breast sarcoma resection. There are many similarities to the treatment choices the M.D. Anderson group suggests after excision of breast carcinomas, whether primary or recurrent, with their reconstruction choices favoring a bias toward the use of autologous tissue. The impact of the use of radiation therapy in many, if not all, of these patients is the key determinant for this recommendation. The paper also follows the clinical course of a breast sarcoma excision patient who had postoperative radiation therapy. Her implant reconstruction was successfully salvaged after prosthesis exposure with an latissimus dorsi flap. Breast sarcoma is uncommon. It is probably best treated in tertiary care centers like the one where the authors practice, where reconstruction can be performed. (Reviewer-Robert T. Grant, MD).

Keywords: Sarcoma, Breast Reconstruction

Print Tag: Refer to original journal article
Background: A variety of flap options exist for reconstructing defects that result after pharyngolaryngectomy.

Objective: The authors describe their experience with the jejunal free flap and compare their results with others reported in the peer-reviewed literature.

Design: Retrospective review.

Methods: The case records of 43 patients who underwent free jejunal reconstruction for post-laryngopharyngectomy defects at a single center over a 10-year period were analyzed.

Results: All flaps survived. Complications reported included a benign fistula rate of 5% (from the proximal anastomosis only; no distal fistulas were reported), a stricture rate of 14%, and a successful tracheoesophageal puncture (TEP) rate of 78% demonstrated by successful communication after TEP. A case of carotid blow-out led the authors to begin the use of an additional pectoralis muscle flap at the time of the jejunal free flap to cover the carotid vessels and the suture lines of the jejunal anastomoses. No fistulas were reported from anastomoses performed with the gastrointestinal stapler.

Conclusions: Jejunal free flap reconstruction of pharyngolaryngectomy defects is preferred over other fasciocutaneous methods. Reliable one-stage reconstructions with lower rates of fistula and stricture and better functional outcomes regarding speech and swallowing are achieved.

Reviewer's Comments: The best feature of this paper is the discussion section in which the authors do a fine job reviewing the reported complication rates and results of the various methods of microvascular reconstruction of the post-extirpative head and neck defect they describe. Since this paper is a retrospective analysis, with no standardization of size defect, preoperative or postoperative radiation therapy, or primary or secondary nature of the disease presentation, I believe the authors' conclusions about the pre-eminence of the jejunal flap may not be as generally applicable as they describe. Other groups achieve equally excellent results with other flaps (anterolateral thigh flap, radial forearm, etc). The fasciocutaneous flaps avoid the laparotomy needed to harvest the jejunum and the potential intra-peritoneal complications associated with jejunal harvest—a point the authors do not focus on in their discussion. I believe the reconstructive team should choose whatever technique the microsurgical reconstructive group feels works best for them, their skill set, and their experience, with the goal of maximizing the function and recovery of the patients they are treating. (Reviewer: Robert T. Grant, MD).

Keywords: Jejunal Free Flap, Pharyngolaryngectomy, Fistula, Stricture

Print Tag: Refer to original journal article
Epinephrine Use Not Contraindicated in Digital Blocks

Do Not Use Epinephrine in Digital Blocks: Myth or Truth? Part II. A Retrospective Review of 1111 Cases.

Chowdhry S, Seidenstricker L, et al:

Plast Reconstr Surg 2010; 126 (December): 2031-2034

The use of epinephrine containing local anesthetics in hand surgery procedures is associated with better patient comfort and less bleeding with equivalent complication rates compared to the use of epinephrine free blocks.

Background: Conventional teaching holds that local anesthetic blocks containing epinephrine should not be performed in the distal upper extremity.

Objective: To determine the validity of this standard, the authors reviewed 1111 cases of digital block performed with or without epinephrine.

Design: Retrospective review.

Methods: An analysis was performed using the charts of 1111 patients who underwent digital blocks with or without epinephrine. Charts were reviewed for evidence of complications linked to epinephrine use in these blocks.

Results: 500 patients underwent digital blocks without epinephrine, and 611 patients underwent similar blocks performed with lidocaine with epinephrine. No patients in either group suffered complications related to anesthetic-induced vasospasm.

Conclusions: The use of epinephrine in digital blocks does not correspond to an increased risk of vascular compromise.

Reviewer’s Comments: I would surmise that nearly all hand surgeons will attest to the fact that they have never witnessed epinephrine-induced digital necrosis in the setting of a properly executed digital block. However, despite a number of previous articles demonstrating the safe utility of epinephrine in digital surgery, the teaching remains that the use of vasoconstrictors is taboo. The same argument has been made prohibiting the use of epinephrine when blocking the “tip” of the nose; however, most surgeons use high concentrations of epinephrine in routine nasal block during rhinoplasty. Furthermore, the authors make a good argument that failing to use epinephrine leads to excess bleeding, the need for re-injection, and surgical delays. There has always been a paucity of evidence to support the non-use of epinephrine in hand surgery, and it is important to now examine the evidence that it should not be prohibited. The hand surgery literature routinely describes using epinephrine in carpal tunnel surgery, and the reality is that most hand surgeons have realized it is safe when properly implemented. (Reviewer-Robert T. Grant, MD).

Keywords: Epinephrine, Digital Blocks, Local Anesthetics

Print Tag: Refer to original journal article
Validated postoperative research questionnaires demonstrate significantly enhanced quality of life and patient satisfaction after otoplasty both in children and adults.

**Background:** Prominent ears are present in 1 of 20 Caucasian children, potentially subjecting them to stress and teasing.

**Objective:** The authors applied validated age-appropriate health-related quality of life questionnaires to patients undergoing otoplasty to scientifically assess their satisfaction after this procedure.

**Design:** Retrospective review.

**Methods:** 21 adult patients and 41 children (aged <14 years) underwent reduction otoplasty with Mustardé sutures for prominent ears between 2005 and 2009. These subjects returned the Glasgow Benefit Inventory or the Glasgow Children's Benefit Inventory questionnaire an average of 19 months (range, 3 to 51 months) after surgery.

**Results:** Statistical analysis confirmed a significant benefit to the operation in the overall score and the emotional, physical learning, and vitality subscores. More than 95% of the children (and their parents) and 100% of the adults were satisfied with their postoperative appearance.

**Conclusions:** Surgical treatment of prominent ears results in scientifically proven health quality of life improvement.

**Reviewer's Comments:** An important point to understand when analyzing this paper is that for patients aged <12 years in Germany, otoplasty for prominent ears is considered a covered expense for government and private insurance. While the authors claim in the paper's discussion that >90% of their patients would have had the surgery at their own expense, I think the fact that a third-party payor was financially responsible for the procedure makes the conclusions of this “scientific” study suspect, regardless of the validated survey instruments used. Despite low complication rates and high patient satisfaction (no surprise to plastic surgeons in general who perform otoplasty), the bias introduced by not having the patient as the financially responsible party makes this paper’s conclusions less valuable than if the study had been performed in a truly self-pay patient population. At best, this study provides some numeric data to support our anecdotal assertions that the majority of our otoplasty patients are highly satisfied. (Reviewer-Robert T. Grant, MD).

Keywords: Otoplasty, Health Related Quality of Life, Prominent Ears

Print Tag: Refer to original journal article