Gastroschisis, Omphalocoele Patients Can Benefit From Umbilicoplasty Procedure

New Umbilicoplasty Procedure for Postoperative Umbilical Defect Using a Rabbit Head-Shaped Scar Flap With Bilateral Subcutaneous Pedicles.

Watanabe K, Kiyokawa K, et al:
Plast Reconstr Surg; 123 (June): 1724-1728

Rotating local flaps with sufficient subcutaneous tissue volumes helps to create a more natural appearing neoumbilicus in congenital abdominal wall defect patients.

**Background:** Patients born with congenital defects of their periumbilical abdominal wall, such as gastroschisis and omphalocele, are left with scars in the center of their abdomen and no umbilicus. Attempts to recreate a neoumbilicus are challenging due to the lack of sufficient local subcutaneous tissue as well as the presence of scar.

**Objective:** To describe a technique that allows for reconstruction of a fairly natural-looking neoumbilicus in children after repair of their congenital abdominal wall defect.

**Design:** Retrospective case review series.

**Methods:** The authors' technique consists of designing caudally based flaps within the abdominal scar left after the abdominal defect repair. The design of these flaps has a "rabbit-head" appearance, as small triangles are included in the vertically oriented flaps that, when inset, minimize contraction of the final result. The flaps are folded downward, incorporating the subcutaneous tissue from the abdomen lateral to the abdominal scar. This additional subcutaneous tissue provides the bulk around the neoumbilicus, contributing to its more natural, depressed appearance. Five patients are described, 2 after gastroschisis repair and the others after omphalocele repair. Four of the 5 patients were female. The average age at operation was 7 years (range, 3 to 14 years). Patient follow-up ranged from 7 months to >5 years.

**Results:** No complications were reported, and satisfactory maintenance of the umbilical shape was achieved.

**Conclusions:** Rotation of caudally based vertical flaps within the abdominal scar that persists after repair of congenital abdominal defects allows successful creation of a neoumbilicus without creating new scars.

**Reviewer's Comments:** This is an interesting technique description that successfully deals with creating an umbilical depression in the center of the patient's scarred abdomen. The clinical cases included had nice results. The authors are correct in that the paucity of subcutaneous fat in these pediatric patients has made recreation of a neoumbilicus, with its associated 3-dimensional contour depression, difficult to achieve in previously described attempts at repair. Elevation of longer portions of the "rabbit-ear" flap beyond what is needed to recreate the neoumbilicus allows for trimming of the flap and avoidance of flap necrosis and contraction of the final result. Unfortunately, use of these flaps is restricted to patients who already have large scar volumes on their abdominal walls. It would not be appropriate to make use of this technique in adult patients who require neoumbilicoplasty. Less than optimal additional visible scarring would be created on the exposed abdominal wall.

**Additional Keywords:** Neoumbilicus

**print tag:** () Refer to original journal article.
Quantitative Patient-Reported Scar Assessment--Stay Tuned

The Patient Scar Assessment Questionnaire: A Reliable and Valid Patient-Reported Outcomes Measure for Linear Scars.

Durani P, McGrouther DA, Ferguson MW:
Plast Reconstr Surg; 123 (May): 1481-1489

The period of most rapid scar improvement is between 3 and 6 months following the wound.

**Background:** Traditionally, scar assessment has been limited to measurement of scar dimensions and a clinical judgment regarding "scar quality." Lack of a patient-reported scar assessment instrument has hampered evaluation of scars and scar treatments. This paper attempts to fill that void.

**Objective:** To describe the development of a scar assessment questionnaire and the results of a study of its reliability and validity.

**Design:** The Patient Scar Assessment Questionnaire was administered to several patient populations with scar issues. The information obtained was tested for reliability and validity according to psychometric principles.

**Methods:** The authors used tests of internal consistency, re-test reliability, convergent validity, consistency with known group differences, and sensitivity to recognized changes to determine the effectiveness of the newly designed instrument. Each test was analyzed statistically.

**Results:** The Patient Scar Assessment Questionnaire's design, application, and testing were intended for and confined to linear scars. This questionnaire is comprised of 3 pages of instructions and 8 pages of 39 multiple-choice questions. The test population took an average of 7.3 minutes to complete the questionnaire, which covered patient assessment of scar aesthetics, scar symptoms, scar-related self-consciousness, and patient satisfaction. The authors state that, as currently defined, it is a reliable and valid instrument for measuring patient perception of scar aesthetics, self-consciousness, and satisfaction but not scar symptoms. They also noted that scar symptoms were of no significance to patients with hairline scars.

**Conclusions:** The authors concluded that their Patient Scar Assessment Questionnaire was sufficiently reliable and valid to merit further development as an instrument to assess scars and their treatment.

**Reviewer's Comments:** Plastic surgeons should familiarize themselves with the concepts, terminology, science, and uncertainties of patient-reported outcomes. Increasingly "results" of this type will be offered as the basis for treatment decisions, compensation, and credentials. Unfortunately, their fundamentally subjective nature limits their value to an unknown degree. The geographical, cultural, and personality differences among test subjects and populations profoundly affect responses. Yet, these differences remain undefined and uncontrolled. For the reader, the value of this questionnaire in its current form remains undefined. The paper discloses that all 3 authors are principals of the Renovo Group, a biopharmaceutical company developing drugs for scar treatment and prevention. Its potential value to them is unmistakable. As results from this evolving questionnaire will likely be offered as support for future treatments, the reader is well advised to understand its strengths and limitations. It is available in supplemental digital content. Interesting collateral information is also offered: the interval of most significant scar improvement was between 3 and 6 months, followed by the interval from 6 to 12 months. This confirms, from a patient perspective, what clinicians commonly observe.

**Additional Keywords:** Quality

**print tag:** () Refer to original journal article.
Get Ready for 3-D Analysis of Breast

Surface Area Measurement of the Female Breast: Phase I. Validation of a Novel Optical Technique.


Quantitative measurements of breast volume, surface area, and projection can be reliably obtained with the use of optical scanning techniques.

**Background:** Numerous previous investigators and anthropologists have studied breast anatomy, surface area, and projection. The techniques that have been utilized are limited in their clinical utility by being cumbersome or expensive or because their use distorts the breast being evaluated.

**Objective:** To describe the authors' optical system developed for objective, valid, and reproducible evaluation of numerous surface parameters of breast tissue.

**Design:** Prospective study of the technique using known volumes of inert objects with application to scanned images of normal breasts.

**Methods:** Inert objects of different geometries with known surface parameters were scanned by the authors' system. Seven pairs of normal patient breasts were photographed in the prone position (to neutralize the effects of ptosis on imaging) utilizing this system of grid projection on the breast photographed by 2 different video cameras 45 degrees apart. A computer program analyzed these results after the images were digitally processed, and a 3-dimensional (3-D) matrix of the breast surface was generated. Plaster casts of the same breasts were made to allow a determination of how accurately the optical scanning method calculates the true volume, surface area, and projection of the breasts under study.

**Results:** Study of the geometric solids with representative shapes and known surface area values confirmed the accuracy, reproducibility, and validity of this technique. Applying the optical scanning technique to normal breasts also demonstrated high degrees of reliability, validity, and usefulness when the data obtained were compared to that derived from measurements of the plaster casts made of the normal breasts being studied.

**Conclusions:** The authors describe a straightforward and relatively inexpensive way to obtain breast surface area parameters. Future studies are planned to demonstrate the clinical utility of their technique.

**Reviewer's Comments:** 3-D breast surface imaging is being heavily promoted by manufacturers of commercially available systems as a way to morph patients' preoperative photographs into ones that demonstrate the anticipated postoperative change in breast appearance. Thomson and colleagues report on a similar system, demonstrating that it really does work well as a tool for measuring surface anatomical parameters. We await published reports of peer-reviewed studies that confirm the effectiveness of this technique and its impact on preoperative surgical planning, patient education, documentation of asymmetry, and visualization for the patient and significant others on a reasonable expectation of the result of the cosmetic or reconstructive breast procedure.

**Additional Keywords:** 3-Dimensional Analysis

**print tag:** () Refer to original journal article.
Is Breast Reconstruction Technique Related to Surgeon Reimbursement?

**Financial Impact of Breast Reconstruction on an Academic Surgical Practice.**

Alderman AK, Storey AF, et al:  
*Plast Reconstr Surg;* 123 (May): 1408-1413

Breast reconstructions after mastectomies benefit surgical departments and hospitals financially, but poor physician reimbursement may limit certain techniques.

**Background:** Reimbursement for breast reconstruction surgeries is generally considered low. Nationally, the rate of breast reconstruction after mastectomy is also low. As the population of uninsured patients increases, surgeons who perform breast reconstruction may see further declining professional fee reimbursement.

**Objective:** To study the financial impact of providing breast reconstruction for the surgeons and the hospital.

**Design:** Review of billing and collections data.

**Methods:** The records of 97 patients who underwent postmastectomy breast reconstruction in a single year at an academic medical institution were examined. The patients received immediate or delayed reconstruction with pedicled transverse rectus abdominis myocutaneous (TRAM) flaps, latissimus dorsi flaps, or tissue expanders. Professional and facility charges, collections, and costs generated related to breast reconstruction were analyzed.

**Results:** 70.1% of the patients had private insurance, and 2.0% of the patients were uninsured. Professional revenue for breast reconstruction was calculated at $242,078, while costs totaled $177,411, for a net profit of $64,667. The health system facility net profit was calculated to be $165,786. Delayed tissue expander placement had the highest physician reimbursement by surgical time ($1977.70/hour of operating room time), while immediate TRAM had the lowest reimbursement ($327/hour). However, the facility has the highest average direct margin on TRAM flaps ($3471). Reimbursement for autologous breast reconstruction procedures has remained relatively flat or decreased slightly, while reimbursement for expander/implant procedures has increased.

**Conclusions:** At the University of Michigan Health Care System, postmastectomy breast reconstruction is financially advantageous. However, the type and timing of reconstruction greatly affects reimbursement. Poor physician reimbursement for the more labor-intensive but aesthetically superior autologous reconstructions may affect a surgeon's ability to provide these procedures.

**Reviewer's Comments:** This paper provides some hard data about the financial impact of providing breast reconstruction in an academic medical center. Although both the provider and facility can see some profit, there is a clear and dramatic difference in reimbursement between implant-based and autologous reconstruction. This study looks only at 1 institution, and the financial data may be very different in other institutions or other states where reimbursement rates and costs might be different. Also, there were no data about microvascular breast reconstructions that cost more and usually take more time, but also may be reimbursed differently. However, the findings are alarming because they confirm the poor reimbursement for postmastectomy breast reconstruction. There are documented quality-of-life improvements with breast reconstruction, and a worthy goal would be to increase the rates of breast reconstruction nationwide. However, if reimbursement does not correspond to effort, especially for the more time-consuming autologous procedures, surgeons may not be able to continue to provide patients with breast reconstruction.

**print tag:** () Refer to original journal article.
Single-Stage Breast Reconstruction With Areola-Sparing Mastectomy--Enhanced Cosmesis Possible

Single-Stage Breast Reconstruction Following Areola-Sparing Mastectomy.
Ma G, Richardson H, et al:
Plast Reconstr Surg; 123 (May): 1414-1417

Single-stage breast reconstruction is feasible following areola-sparing mastectomies, yielding natural-appearing results.

Background: Skin-sparing mastectomies have made it easier for plastic surgeons to obtain cosmetically superior results in breast reconstructions. Following the primary reconstruction, the nipple-areola complex is usually created in 1 or 2 additional procedures. However, despite the multitude of techniques described for nipple-areola reconstruction, it remains difficult to reproduce the texture and color of a patient's pre-existing areola.

Objective: To assess the feasibility of performing single-stage breast reconstructions by preserving a patient's own areola, and then reconstructing the nipple at the time of mastectomy and autogenous tissue reconstruction.

Design: This was a retrospective review of the records of 2 patients who had undergone areola-sparing mastectomies and single-stage reconstructions. Patients were considered candidates for the procedure if their tumor did not involve the areola and was not considered too close to the areola to enable it to be safely preserved. Patients with Paget's disease of the nipple and inflammatory breast cancer were not considered candidates for the procedure. Relative contraindications for this surgery included macromastia or significant ptosis requiring removal of central breast skin.

Participants: One patient in the study had bilateral latissimus dorsi reconstructions with implants, and the other patient had bilateral pedicled transverse rectus abdominis myocutaneous flap reconstruction.

Description of Technique: At the time of mastectomy, the nipple is removed with the rest of the breast specimen. An autogenous tissue flap is then raised, preserving enough skin to perform the nipple reconstruction. Once the flap is in the desired position, a C-V flap technique is used to make a new nipple at the appropriate location. The remainder of the flap's skin island is then de-epithelialized prior to full in-set of the flap.

Results: The 4 nipples created in these 2 patients who underwent bilateral reconstructions all remained viable postoperatively. In several of the nipples, repigmentation occurred spontaneously from the surrounding skin, eliminating the need to tattoo those nipples.

Conclusions: Single-stage breast reconstruction following areola-sparing mastectomies is feasible in appropriately selected candidates and can result in a very natural-appearing breast. The authors also believe that preserving the areola in properly selected patients involves no oncologic compromises compared to nipple-sparing mastectomies in which some surgeons remain concerned about leaving ductal tissue behind.

Reviewer's Comments: This is a very interesting article because it presents a breast reconstruction technique that attempts to produce superior cosmetic results without compromising oncologic principles. Unfortunately, there are only 2 patients in the study, and follow-up is limited to 6 months in one patient and 2 months in the other. However, the authors' results are encouraging, and I definitely believe the technique warrants more investigation in properly selected patients.

Additional Keywords: Areola-Sparing Mastectomy

print tag: () Refer to original journal article.
**Better to Reconstruct Post-Cardiac Surgery Sternal Wounds Immediately**

*Immediate Versus Delayed One-Stage Sternal Debridement and Pectoralis Muscle Flap Reconstruction of Deep Sternal Wound Infections.*

Cabbabe EB, Cabbabe SW:

*Plast Reconstr Surg;* 123 (May): 1490-1494

Patients who undergo one-stage debridement and closure of sternal wound complications have fewer complications and shorter stays.

**Objective:** To compare cardiac surgery patient outcomes after immediate versus delayed debridement and muscle flap closure for deep sternal wound infections.

**Background:** There is a great deal of variety in the management of sternal wound infections after cardiac surgery. Some cardiac surgeons manage the infections for an extended period and then refer the patient to a plastic surgeon for reconstruction. Others consult a plastic surgeon immediately for combined debridement and reconstruction.

**Design:** Retrospective review.

**Methods:** A single plastic surgeon's 20-year experience from 1988 to 2008 was analyzed. The immediate group consisted of patients referred to the plastic surgeon prior to any debridement and immediately after the diagnosis of deep sternal wound infection. The delayed group contained patients referred much later after prolonged management by the cardiac surgeon. Treatment consisted of radical sternal debridement and bilateral pectoralis muscle flap reconstruction as bilateral rotation flaps, bilateral turnover flaps, or one of each. Morbidity, mortality, and length of stay were compared.

**Results:** Of the 583 total patients, 497 were referred immediately and 86 had delayed referral. The delayed group had significantly more complications including major wound dehiscence, prolonged ventilator dependence, pressure sores, and the need for tracheotomy. The average length of stay for this group was 19.3 days compared with 4.7 days for the immediate referral group. Mortality rates for the immediate and delayed groups were 1% and 4.7%, respectively.

**Conclusions:** Treating patients with deep sternal wound infections immediately with 1-stage debridement and muscle flap reconstruction significantly decreases morbidity, mortality, and length of stay.

**Reviewer's Comments:** This paper confirms our experience with sternal wound infections. We work with a large group of busy cardiac surgeons, and deep sternal wound infections are not uncommon. It has been their habit to refer patients immediately upon suspicion of a deep sternal wound infection. We regularly perform single-stage debridement and bilateral pectoralis muscle flap closure. As a retrospective review, one point this paper does not address is selection bias. Patients who were not immediately referred to a plastic surgeon may have been sicker as a group and not stable enough to undergo a more prolonged surgery. If that were the case, these patients would have had higher morbidity and mortality, regardless of the timing of the reconstruction. However, many other papers have had similar findings; namely, that the sooner a wound infection is debrided and reconstructed, the better.

**Additional Keywords:** Pectoralis Flaps

**print tag:** () Refer to original journal article.
Rhinoplasty Should Be Based on Individual--Not Ethnicity

Rhinoplasty for Middle Eastern Noses.
Rohrich RJ, Ghavami A:
Plast Reconstr Surg; 123 (April): 1343-1354

Avoid tip over-rotation when performing rhinoplasty in Middle Eastern patients.

Background: Many ethnic groups exhibit traits of nasal appearance that are identifiable as typical. Recognition of these traits, both desirable and undesirable, may help the surgeon enhance the individual's nasal aesthetics while preserving a natural look.

Objective: This paper attempts to characterize nasal features typical of Middle Eastern noses and to suggest appropriate surgical procedures for their correction or preservation.

Design: The paper reports the findings of a retrospective review of clinical records and photographs from 3 consecutive years of the authors' rhinoplasty practice.

Methods: Based on patient demographics in clinical charts, 71 patients were judged to be of Middle Eastern origin. Fitzpatrick skin type classification, facial analysis, and nasal analysis were performed on photographs of these patients. Of the total group, 36 elected to have corrective rhinoplasty. Their operative techniques and postoperative results were analyzed.

Results: The authors found that the non-aesthetic characteristics encountered in at least two-thirds of Middle Eastern noses were: amorphous, bulbous tip; thick sebaceous skin/soft tissue; wide bony and middle vaults; dorsal hump; nostril-tip imbalance; tip ptosis and under-projection; high anterior septal angle; high, shallow radix; and lateral crural malposition. The authors stressed that, although typical, these findings were not invariable; an individualized approach to each patient was crucial.

Conclusions: The authors concluded that the most effective surgical techniques were: wide soft-tissue undermining for fibrofatty resection and re-draping; assessment of dorsal height with possible tip under-projection in mind; component conservative dorsal reduction; 6 to 10 mm tip-to-dorsum height differential (as assessed with the nose open); columellar strut/septal extension grafts for tip stabilization; lateral crural grafting for weak or deformed cartilage; and correction of tip ptosis without over-rotation. The authors also found other measures helpful: consultation that included the patient's family for a "family-friendly" process; preoperative imaging to avoid potential miscommunication and unfavorable surprises; and preoperative retinoic acid preparation for thick sebaceous skin.

Reviewer's Comments: As a review of Middle Eastern nasal traits, this paper is well constructed. However, as the authors clearly stress, no ethnic group is comprised of individuals who always manifest all of the traits of that group, and Middle Easterners are no exception. The most important message offered is that an individualized approach is crucial for all rhinoplasty patients of any ethnic background. Failure to address the patient's individual nasal features and personal preferences risks the appearance of racial incongruity between the patient's rhinoplasty and his or her other features. The paper is a very worthwhile review of the most effective surgical techniques currently available for the correction of these types of deformities, regardless of the patient's ethnicity.

Additional Keywords: Middle Eastern Nose

print tag: () Refer to original journal article.
In rhinoplasty, PDS suture is as good as nylon in shaping cartilage; its degradation gives it an advantage.

**Background:** Cartilage shaping is a basic step in the majority of rhinoplasties and otoplasties. Plastic surgeons traditionally have used non-absorbable sutures to hold the bends in the cartilage in place. Plastic suture material, however, creates scars and may become palpable.

**Objective:** While absorbable sutures would be a preferred material for use in nasal cartilage shaping, it has never been scientifically established that absorbable sutures will hold long enough to prevent recurrence.

**Methods:** 3 dozen adult rabbit ears were used in this study. Each rabbit served as its own control. A rectangular strip of ear cartilage was isolated, and a 3 mm wide x 4 mm high fold was created and sewn on each side. On one side, nylon was used; on the other side, either polydioxanone (PDS), monocryl, or plain catgut was used. There were one dozen rabbits in each group. At the end of 3 months, the animals were sacrificed, and the ears were grossly measured and histologically examined.

**Results:** The nylon and PDS maintained approximately 88% of the fold at 3 months. The monocryl and plain catgut maintained about 50% of the fold at 3 months. The histologic sections revealed that the more fibrofatty tissue, the more the fold was maintained, regardless of the type of suture material used. There was a foreign body reaction around the absorbable suture as well as around the non-absorbable suture.

**Conclusions:** In the short term, the PDS suture was just as good as the nylon suture in holding folds in cartilage. This study also showed the superiority of PDS over monocryl and plain catgut. The more the scar fibrofatty scar tissue, the better the maintenance of the fold.

**Reviewer's Comments:** I applaud the authors for attempting to add some real science to rhinoplasty surgery. The authors conclude that PDS is as good as nylon in creating and maintaining cartilage folds. I agree and have used PDS in my practice for several years. However, there is a serious flaw in this study. Since PDS maintains its tensile strength for 4 months and does not fully degrade for 6 months, the 3-month period for this study made no sense. Of course, PDS would be expected to perform just like nylon for 4 to 6 months. The real question is what happens after the PDS completely degrades. That is the clinically relevant question. Logically and through my own clinical observation, I believe that PDS is as good as nylon in maintaining the fold and has the great advantage of disappearing when it is no longer needed.

**Additional Keywords:** Sutures
Preserve Alar Cartilage, Do Not Waste It!

Preserving Structural Integrity of the Alar Cartilage in Aesthetic Rhinoplasty Using a Cephalic Turn-in Flap.

Murakami CS, Barrera JE, Most SP:
Arch Facial Plast Surg; 11 (March/April): 126-128

Turn-in the cephalic rim of alar cartilage to preserve strength while reducing vertical dimension.

**Background:** Cephalic resection of the lateral crus of the alar cartilage is one of the most commonly used procedures in aesthetic rhinoplasty. Unfortunately, it can lead to alar retraction, nostril collapse, over-rotation, and bossae.

**Objective:** This paper offers the authors' technique for alar cartilage turn-in flap as an alternative to cephalic resection.

**Design:** The paper is nominally a retrospective study of a very small case series. In reality, it is a description of a personal technique with a limited literature review.

**Methods:** The authors' operative technique for cephalic turn-in flap is described. They also report the findings of a retrospective review of 18 cases in which cephalic margin turn-in flaps were used during aesthetic rhinoplasty.

**Results:** The authors stress and photographically illustrate several technical details: (1) all cases were performed via the open approach; (2) a minimum of 8 mm of lateral crus was preserved; (3) vestibular skin was separated from the lateral crus prior to turn-in; (4) the cephalic rim above the 8-mm rim strip was turned medial, not lateral, to the intact rim strip; and (5) mattress sutures, avoiding vestibular skin, fixed the turn-in flap to the medial surface of the rim strip. All patients were judged to have satisfactory nasal tip refinement. No patient exhibited excessive bulk of the tip sidewall or of the nasal vestibule.

**Conclusions:** The authors conclude that turn-in of a cephalic strip is preferable to resection of that same strip of alar cartilage. They state that the maneuver is non-destructive, reversible, and incremental. They suggest that turn-in of the cephalic margin preserves alar cartilage strength, tip support, and can correct alar contour. They acknowledge that it does not prevent vertical retraction of the ala, "caused by the skeletal void between the upper lateral cartilage and the alar cartilage."

**Reviewer's Comments:** This paper reports the authors' personal surgical technique for preservation of cephalic alar cartilage in the form of a turn-in flap. This technique is in agreement with an important trend in rhinoplasty toward tissue and strength preservation through use of reversible shaping techniques in preference to resections. I feel this technique is not entirely non-destructive or incremental as the authors suggest, but it is certainly preferable to resection. Use of a cephalic strip by turn-in should preserve the majority of lateral crural strength and is a logical way to correct certain contour deformities of the lateral crus. Unfortunately, this technique does not prevent alar retraction that may result from even a conservative reduction of vertical dimension.

**Additional Keywords:** Tipoplasty

**print tag:** Refer to the original journal article.
Can Cadaver Skin Allografts Sometimes Be Permanent?

The Skin Allograft Revisited: A Potentially Permanent Wound Coverage Option in the Critically Ill Patient.

Pomahac B, Garcia JA, et al:

Plast Reconstr Surg; 123 (June): 1755-1758

An occasional patient may enjoy long-term survival of an allograft skin graft

Background: Allografts of skin harvested from cadaveric sources has been used for many years as a temporary wound dressing, especially in patients with severe burn or other wounds where donor sites for autografts are not available. In most cases, the allograft is rejected and then replaced with autografted skin.

Objective: To demonstrate how, on occasion, allograft survival can be prolonged for time periods longer than what is typically expected.

Design: Retrospective, selected, case series review.

Methods: 3 cases (1 elderly burn patient and 2 patients on chronic high-dose steroids with extremity wounds) had their wounds treated with placement of skin allografts.

Results: In all cases, 100% allograft survival was achieved. Definitive autografting was not recommended initially in the 2 open extremity wound patients due to the acute severity of the patients’ comorbid conditions. Ultimately, the allografts were replaced with autografts when these 2 patients were able to tolerate that procedure, which occurred at 33 days and 19 days, respectively, after allograft placement. The burn case patient's allograft remained intact and viable for 6 weeks following the allograft, without the need for it to be replaced at the time this paper was written.

Conclusions: Skin allografts may survive indefinitely on occasion. Use of this technique can be beneficial in some critically ill patients or those on chronic immunosuppression for their underlying medical diseases who have wounds that require coverage with skin grafts.

Reviewer’s Comments: At New York-Presbyterian Hospital, we make liberal use of cadaver skin allografts (as do the authors) in burn patients who undergo burn excision, but who lack sufficient donor sites for autografts, as well as for non-burn wound patients with large wounds in whom we are not sure clinically if the autograft would "take." Successful "take" of the allograft usually translates into successful "take" of the subsequently placed autograft. Nonetheless, despite an extensive personal experience with use of cadaveric skin allografts, I personally I have never seen an allograft last "indefinitely." Even in this series, only in 33% of the cases was the allograft not removed. I am sure the authors had to search deep through their clinical database to find even these 3 cases of "long-term" allograft take. I also have seen long-term allograft survival (and the authors also reference skin allografts surviving as long as 10 weeks post-application!). So, I am not sure there is much new in this paper. But in this era of composite tissue transplantation, I am sure that there will be times when skin-alone allografts will be a preferred reconstructive option. One such example might be in patients who are being immunosuppressed, say for an alloplastic liver transplant, who develop an abdominal wound that requires skin grafting. The patient would then be spared the donor deformity associated with harvest of an autograft.

Print tag: () Refer to original journal article.
Abdominoplasty With Direct Resection of Deep Fat.
Brink RR, Beck JB, et al;
Plast Reconstr Surg; 123 (May): 1597-1603

Direct resection of deep fat is a safe alternative for thinning the abdominoplasty flap.

**Background:** In recent years, the idea of liposuctioning the abdominoplasty flap has been designated as a potentially dangerous undertaking, and has been the subject of intense scrutiny within the plastic surgical community. Several different techniques involving various limitations on the amount of flap undermining have been proposed in an effort to improve the safety of concomitant liposuction, but the overwhelming recommendation is still one of extreme caution when combining the 2 procedures.

**Objectives:** To review an alternative method of thinning the abdominoplasty flap: direct resection of deep fat.

**Design:** Retrospective chart review.

**Participants:** 181 patients who underwent full abdominoplasty with direct resection of deep fat at a single institution over a 10-year period from January 1998 to December 2007.

**Methods:** The medical records of 181 patients who underwent full abdominoplasty with direct resection of deep fat were analyzed to determine the incidence of the following complications: flap erythema, epidermolysis, tissue necrosis, seroma formation, deep vein thrombosis, pulmonary embolus, transfusions, and death. Thirty patients received concomitant flank liposuction, and the incidence of complications was compared separately in this group.

**Results:** There was no statistically significant difference in the complication rate between the 2 groups. The overall complication rate of patients who underwent abdominoplasty with deep fat resection was lower than patients who underwent abdominoplasty with limited undermining and flap liposuction in previously published literature.

**Conclusions:** Deep fat resection is a safe and effective way to thin all zones of the abdominoplasty flap.

**Reviewer’s Comments:** Although this study is limited by the biases inherent in its retrospective design and by the small sample size of the liposuction group, it facilitated the entrance of a commonly used technique into the literature. The authors provided evidence to support their conclusion that the technique of deep fat resection is a safe way to thin the abdominoplasty flap, but they failed to make a scientific comparison with the technique they alluded to as the previously established standard (limited undermining with concomitant liposuction). A randomized, controlled trial evaluating the differences between those techniques would be a welcome follow up to this study.

**Additional Keywords:** Scarpa’s Fascia

**print tag:** () Refer to original journal article.
Surgically Managing the Symptomatic Unstable Sternum

Surgical Management of the Symptomatic Unstable Sternum With Pectoralis Major Muscle Flaps.
Cabbabe EB, Samer W:
Plast Reconstr Surg; 123 (May): 1495-1498

Leaving the firm fibrous tissue intact in the retrosternal area may preserve existing preoperative pulmonary function.

Background: Sternal nonunion following median sternotomy is an uncommon, but potentially disabling complication that occurs in <1% of patients who undergo open heart surgery. It is defined as sternal pain with clicking, instability, or both, for >3 months. For "sterile" non-union, there cannot be any sign or symptom of infection.

Objective: Analysis of the authors' technique of management of sternal nonunion by utilization of pectoralis flaps.

Design: Retrospective review.

Participants/Methods: 24 patients with symptomatic sternal nonunion who underwent surgery between 1993 and 2008 were studied. The author's procedure consisted of the removal of wires/plates, culture of bone/fluid at the nonunion site, subtotal resection of the sternum, preservation of the fibrous scar tissue in the retrosternal area, bilateral pectoralis major muscle flaps, and skin closure. In all patients, the muscle flaps were wedged between the sternal edges and tacked securely to surrounding tissue to provide adequate padding. In the majority of cases, the right pectoralis major was based on the internal mammary perforators, while the left was based on the thoracoacromial vessels. In 83.3% of patients, the left internal mammary artery was used as a bypass conduit. The authors reviewed preoperative and postoperative symptoms, pain scores, procedures, lengths of hospital stay, operating times, complications, morbidities, and mortality.

Results: The gender ratio was 11:1 (men: women). All patients were referred when stability was not achieved by other means, with times ranging from 5 to 48 months since initial operation. The average preoperative pain severity was 7.7 out of 10 and dropped to 2.2 postoperatively. Mean length of stay was 2.5 days. Follow-up ranged from 2 to 15 months, with an average of 4.2 months, during which time all patients demonstrated clinically improved sternal stability.

Conclusions: All patients experienced improvement of their preoperative symptoms, particularly pain, popping, and grinding. While 2 patients developed seroma requiring operative drainage, both went on to completely heal.

Reviewer's Comments: This is an interesting paper suggesting that local advancement flap surgery may alleviate pain in patients without the standard indications for the sternal debridement and pectoralis muscle flap closure. The authors cite the various specialties of referring doctors to highlight the frustration of patients with their painful, popping, and grinding sternums in the absence of infection. A sternum that did not endure the original closure and stabilizing procedure is at risk of recurrent failure because many of the predisposing factors continue to be present. These authors share successful treatment of sterile sternal dehiscence with aggressive bony debridement and interposition of pectoralis flaps. They note the importance of blood supply and understanding if an ipsilateral internal mammary had been used. In sum, the described surgery relieved or reduced patients' symptoms in all cases and improved sternal stability, with very minimal risk.

Additional Keywords: Management/ Pectoralis Flaps

print tag: () Refer to original journal article.
Excellent Results With Contralateral Nipple for Nipple Reconstruction

Zenn MR, Garofalo JA:
Plast Reconstr Surg; 123 (June): 1648-1653

Nipple-sharing reconstruction can also be performed in the irradiated breast.

**Background:** While nipple-sharing reconstruction has been performed for many years, multiple barriers remain to its more frequent implementation. While these barriers are important for consideration, the projection and results achieved long-term with this nipple-sharing technique warrant that rationale for its greater use to be studied.

**Objective:** To analyze the authors' experience with a nipple-sharing technique in breast reconstruction patients.

**Design:** Retrospective review.

**Participants/Methods:** 57 patients underwent nipple-sharing reconstruction and were sent questionnaires regarding their satisfaction with the reconstruction.

**Results:** The majority of patients were very satisfied with the outcome of the reconstruction and reported minimal donor site morbidity. Scars, numbness, and asymmetry were reported at the donor nipple site. Approximately 87% of patients had residual erectile function, 87% had nipple sensation, but only 47% said it was "normal". Nearly 88% of patients reported they would undergo the procedure again.

**Conclusion:** Nipple-sharing reconstruction is a good alternative for patients with large nipples undergoing unilateral breast reconstruction, even if they have been irradiated.

**Reviewer's Comments:** While this paper does demonstrate the excellent results the authors achieved using this technique, it does not compare their results with other techniques in terms of patient satisfaction, (ie, are the results similar). The mean follow-up is also highly variable, with patients completing their questionnaires at very different postoperative time periods. It would also have been useful to know whether these patients were happy with their reconstructions overall; perhaps this too affected their responses about the nipple itself. Finally, there are no criteria established by this article for determining which patients are candidates for the procedure (ie, nipple size/shape). I find it interesting how there is an increased focus nowadays on the use of the patients’ own tissue for nipple reconstruction, just as we are seeing more papers published that describe success with nipple-sparing mastectomy. This speaks to the general long-term dissatisfaction with the results we achieve with skate flap and other "standard" techniques of nipple reconstruction.

**print tag:** () Refer to original journal article.
Thoracodorsal Perforator Flap Is Excellent Tx for Elbow Burn Contractures

Reconstruction of Postburn Antebrachial Contractures Using Pedicled Thoracodorsal Artery Perforator Flaps.

Uygur F, Sever C, et al: 
Plast Reconstr Surg; 123 (May): 1544-1552

Near complete elbow range of motion in burn contracture patients can be achieved with the use of the thoracodorsal perforator flap reconstruction after scar release.

Background: Loss of flexion at the elbow can occur as a direct result of a burn injury or if deep burns are not adequately treated.

Objective: To describe the authors' technique for using pedicled thoracodorsal perforator flaps to resurface a patient's antecubital fossa after burn scar contracture release/excision.

Design: Retrospective review.

Participants/Methods: 9 patients with postburn elbow contractures demonstrating extension lag ranging from 50 degrees to 90 degrees were treated with a pedicled thoracodorsal perforator flap. Reference points for the most dominant perforator were identified as 8 cm distal to the posterior axillary fold and 2 cm posterior to the lateral border of the latissimus dorsi muscle. Average operating room (OR) time for the entire contracture excision and resurfacing procedure was 185 minutes.

Results: At least 6, and through 12 months of follow-up, all patients regained complete range of flexion at the elbow. Two of the 9 flaps developed transient venous congestion that resolved without additional treatment or untoward sequelae. No other complications were reported. All results were rated good to excellent by independent observer physicians. The authors state that all patients were "satisfied" with their postoperative results.

Conclusion: The authors suggest the excellent outcomes they describe in this paper make the pedicled thoracodorsal perforator flap a recommended choice for reconstruction of elbow burn contractures.

Reviewer's Comments: Perforator flaps based on tributaries of the circumflex scapular arterial system have been previously described, but most often used in parascapular free flap harvest for large fascial reconstructions. The donor deformity of the parascapular flap and other extremity-based pedicled or free fascial flaps have limited their use in burn patients undergoing contracture releases. These authors use a thoracodorsal perforator flap with excellent outcomes in a small series of patients. Clearly a suitable non-burned donor area on the lateral chest wall is necessary, along with familiarity and surgeon experience with perforator flap anatomy and dissection for others to achieve similar results. This paper serves as a good description of a useful technique in selected patients with contractures about the elbow. A minor criticism is that the authors do not more fully explain the metrics by which their "independent" physicians or patients themselves evaluated the assessment of the outcomes. However, the paper does include a number of photos from each of the cases, allowing the reader to make his or her own judgement about the quality of the outcomes achieved here.

Additional Keywords: Pedicled Thoracodorsal Artery Perforator Flaps

print tag: () Refer to original journal article.
Temporary Percutaneous Nylon Sutures Useful Aid to Define Antihelix in Otoplasty

New Technique for Marking the Location of Mustarde Horizontal Mattress Sutures.

Pearl CB, Wallace RD:
Plast Reconstr Surg; 123 (May): 1468-1470

Temporary nylon sutures placed full-thickness are easily visible on the posterior auricular cartilage, facilitating placement of Mustarde sutures.

Background: Correction of a prominent ear deformity in the upper third of the auricle typically requires use of permanent sutures placed in a horizontal mattress fashion (Mustarde sutures). Many plastic surgeons currently utilize a hypodermic needle dipped in Bonney's blue dye to temporarily, percutaneously tattoo and create an antihelical fold in the auricular ear cartilage from an anterior approach. This aids in identifying the exact position for the placement of the Mustarde sutures on the posterior cartilage surface.

Objective: To describe a simpler, less expensive way of achieving the same simulated shape of the antihelical cartilage using a single 5-0 nylon suture.

Design: An ideas and innovations paper, with a clinical case demonstrated.

Methods: As many percutaneous 5-0 nylon sutures as is necessary to recreate the antihelical fold are placed from an anterior approach (after the post-auricular skin excess has been excised). Flipping the ear over demonstrates the exact location for the placement of the permanent Mustarde sutures in the posterior surface of the auricular cartilage.

Results: The desired shape and location of the antihelical fold is easily obtainable, allowing ideal positioning of the Mustarde sutures.

Conclusion: The authors heartily recommend this surgical tip as simple and cost-effective, highlighting the fact that the cost of the single suture used is <33% the cost of the Bonney's blue dye and hypodermic needle.

Reviewer's Comments: This is a neat little trick. I seem to always have "dye bleed" so that the Mustarde suture entry and exit sites seemed less exact in my hands when I use Bonney's blue dye. The authors do point out that the only disadvantage of their innovation is that the suture material might have a tendency to cut and pull through the cartilage inadvertently. Careful suture placement while keeping the anterior skin adherent to the cartilage framework makes this a rarely seen problem. This article also contains a quick review and summary of the history of surgery for prominent ears. The 6 tenets and the ear to scalp measurements postulated by McDowell as necessary to be achieved as goals for correction of the prominent auricle are also discussed.

Additional Keywords: Mustarde Horizontal Mattress Sutures

print tag: () Refer to original journal article.
NPWT of Great Value for Tx of Pediatric Extremity Wounds

An Algorithmic Approach to the Use of Gauze-Based Negative Pressure Wound Therapy as a Bridge to Closure in Pediatric Extremity Trauma.

Chariker ME, Gerstle TL, Morrison CS:
Plastic Reconstr Surg; 123 (May): 1510-1520

Immediate post-injury NPWT facilitates management of pediatric extremity trauma.

**Background:** Pediatric patients tolerate the pain and emotional discomfort associated with wound dressing changes much worse than adults.

**Objective:** To analyze the applicability and utility of negative-pressure wound therapy (NPWT) when applied to pediatric extremity wounds.

**Design:** Retrospective review.

**Participants/Methods:** Of 30 pediatric patients with open extremity wounds treated over an 8-year period (2000-2007), 24 qualified for this study. All patients had complex extremity wounds with exposed joints, bone, or neurovascular structures. All patients had their wounds treated with the Chariker-Jeter method (wound covered with moist gauze, then -80 mm Hg suction pressure applied via Jackson-Pratt drain placed over gauze secured with transparent occlusive bandage; open joints had additional topical silver ion therapeutic agents placed as well). When needed, definitive wound closures were performed after an average of 10 days of NPWT. Dressings were changed every 2 to 3 days either in the operating room or with bedside sedation. Dressing changes took 5 to 7 minutes.

**Results:** Granulation tissue appeared in all wounds by day 4 after application of NPWT. Four patients healed with use of NPWT alone after an average of 17 days and 3 patients required microvascular free flap closure. The remaining patients underwent skin grafts or local flaps. One patient developed osteomyelitis. Wound follow-up averaged 24 months. No other complications were reported.

**Conclusions:** NPWT facilitates wound healing by secondary intention or by allowing for use of skin grafts or local flaps rather than more extensive means of wound closure like free flaps.

**Reviewer’s Comments:** High energy and crush injuries with large zones of injury around an open wound are not usually seen in kids. Therefore, I find it necessary to think differently about wound management in children with open extremity wounds. I too have had good results using NPWT in kids in seeing wounds close or being able to skin graft wounds that if the same wound was present in an adult, a free flap would have been necessary to successfully manage the open wound. My institution uses vacuum-assisted closure (VAC) technology as the means to deliver NPWT. The authors contrast the success they have achieved using the Chariker-Jeter technique for application of NPWT. The authors also discuss differences in mechanism of action between these differing NPWT technologies without offering any scientific basis to support their hypotheses. They also note how much better tolerated wound care is for kids with NPWT. However, the paper offers no comparison between VAC therapy and lacks a control group of patients treated with moistened gauze and no NPWT. The authors do show some extraordinary clinical results. I feel the paper is worth reading to see how they managed these complex wounds. But the paper fails to fully explore the mechanisms of action of NPWT in the pediatric population.

**Additional Keywords:** Negative Pressure Wound Therapy

**print tag:** () Refer to original journal article.