The Malpractice Experience of Plastic Surgeons 2015–2018: Setting Realistic Expectations May Mitigate Risk of Claims

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The Doctors Company conducted a review of 415 claims (written demands for payment) against plastic surgeons that closed between July 2015 and December 2018.

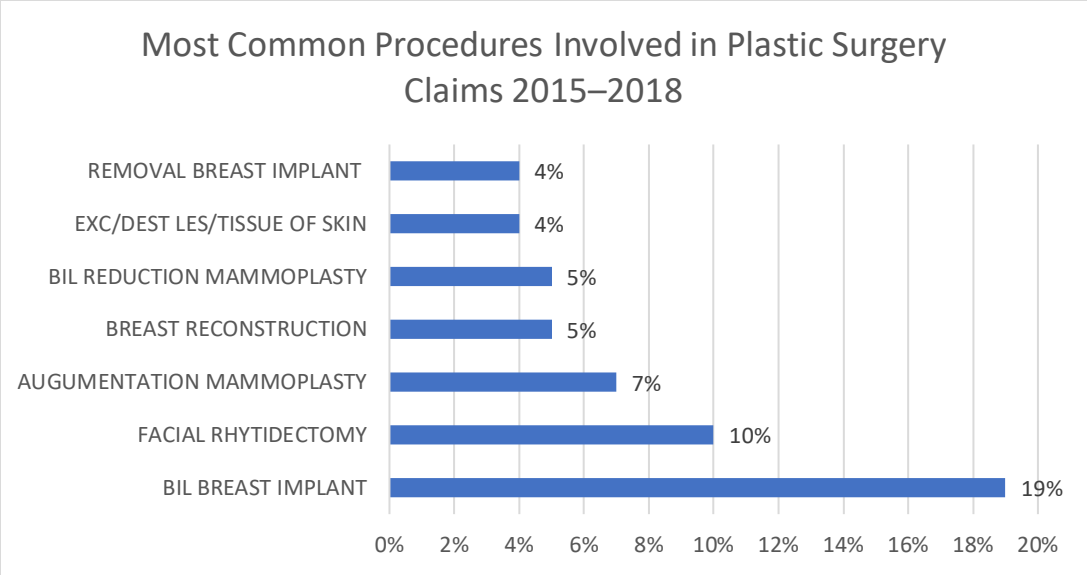
Study Design
Regardless of the outcome, all plastic surgery claims against our members that closed within this time frame were included in this analysis. This approach helps us better understand what motivates patients to pursue claims and gain a broader overview of the system failures and processes that result in patient harm.

This study, reinforced by expert insights and relevant case examples, focuses on the following areas:

- Most common case types.
- Most common patient injuries.
- Primary drivers / frequent allegations.
- Strategies for mitigating risk.

Our analysis team studies all aspects of each claim to capture the key clinical areas, understand the full scope of harm, determine whether the standard of care was met, identify contributing factors that led to patients' injuries, and identify risk mitigation strategies that physicians can use to decrease the risk of injury, thereby improving the quality of care.

Types of Procedures
The most common procedures associated with patient injuries are listed in the chart below.



Patient Injuries

This study identified 66 different types of patient injuries, reflecting the range of procedures and conditions treated by plastic surgeons. The most common injuries in this analysis were emotional trauma (33 percent), need for additional surgeries or procedures (31 percent), scarring (24 percent), cosmetic injury (16 percent), and infection (13 percent).

Patients also suffered from tissue necrosis (8 percent) and pain (8 percent). At times, there was a need for additional ambulatory care (7 percent). Other injuries included aggravated or worsened conditions (5 percent), burns (5 percent), nerve damage (5 percent), and death (4 percent). Additionally, in 4 percent of the claims, dehiscence, adverse reactions, hematomas, and/or mobility dysfunction occurred. Less frequent patient injuries included foreign body retention, punctures/perforations, hospitalization, deformity, sensory impairment, incision infections, sepsis, organ damage, cardiac arrest, and embolism/thrombosis. (Note: Patients may suffer more than one injury, so the percentages total more than 100 percent.)

In the 4 percent of claims involving a patient death, the cause of death was attributed to pulmonary embolus, acute blood loss due to punctures during liposuction, excessive levels of narcotic medications causing respiratory depression, cardiac arrest, malignant hypertension, abdominal compartment syndrome, and/or aspiration pneumonia.

Indemnity

Only around one-quarter of plastic surgery patient claims (26 percent) resulted in a payment to the patient or family members. Of the claims studied from this five-year period, 58 percent resulted in an indemnity of less than $100,000, and only 3 percent resulted in a payment greater than or equal to $1 million.

Drivers in Plastic Surgery Claims

In our study, we found three primary drivers related to plastic surgery claims across procedures: improper performance of surgery (44 percent), improper management of the surgical patient (31 percent), and improper performance of treatment or procedure (12 percent). In addition, we have included gluteal fat grafting as a fourth driver due to concerns about the higher rate of death (estimated to be as high as 1:3,000) with this procedure.

Driver 1: Improper Performance of Surgery
This driver decreased from appearing in 64 percent of claims in our prior analysis (January 2007 through June 2015) to appearing in 44 percent of claims in this analysis (July 2015 through December 2018). In improper performance of surgery claims, the most common procedures were abdomen, skin, and/or buttocks reductions; bilateral breast implants / augmentation mammoplasty; face lifts; bilateral breast reductions; and breast reconstructions.

The allegation of improper performance of surgery was often made when the outcome of surgery differed from the patient's expectations. This driver consisted of three primary contributing factors, with 69 percent of these claims involving a possible technical issue related to a known complication from a procedure. The other two notable factors—each identified in 33 percent of these claims—were patients seeking care from other providers because they were dissatisfied and poor communication with the patient about the expectations with surgery.

Case 1: Improper Performance of Surgery
A female patient presented to the plastic surgeon for a consult for breast reconstruction. She was a smoker in her early forties with a family history of breast cancer and diffusely nodular breasts. Her plan of care was to have a subcutaneous bilateral nipple-sparing mastectomy by another surgeon, followed by breast reconstruction by the plastic surgeon. The plastic surgeon and the patient discussed the breast reconstruction procedure, including its risks and benefits—and the need for the patient to stop smoking. The patient signed the consent forms, initialing that she was a smoker, and she indicated that she understood the risks that could arise from tobacco use.

The patient had the subcutaneous bilateral nipple-sparing mastectomy. The insured plastic surgeon proceeded with the breast reconstruction and had enough tissue to place a 550 cc implant rather than a 500 cc implant. Noting that there was no active bleeding or fluid buildup, the insured plastic surgeon decided that no drain was required. The wounds were closed, and the nipples were noted to be viable with no discoloration. The patient was discharged the same day.

Three days later, on a Saturday, the patient called the insured plastic surgeon, stating that her nipples were black. The plastic surgeon examined the patient in the office and saw that the nipples were discolored but not black and noted no signs of infection, drainage, or fluid buildup. The patient was instructed to avoid smoking, wear a loose-fitting bra, and follow up in few days.

Three days later, the patient returned to the insured plastic surgeon, who documented that the right implant was slightly higher than the left and that there were no signs of infection. The patient said she had cut back on smoking. The plastic surgeon again stressed the importance of stopping smoking.

On the 10th postoperative day, the insured plastic surgeon noted skin necrosis at the incision line and around the nipples. The patient was instructed to continue using ointment and follow up in one week.

Three weeks later, the patient had exposure of the right implant, and it was removed on the same day, along with the nipple. A drain was placed. The implant was sent to pathology. The left implant was removed one month later.

After both implants were removed, the patient experienced good healing. The patient later went to a different plastic surgeon and had a staged breast reconstruction with tissue expanders and a complete right nipple reconstruction. The patient has significant disfigurement and intermittent pain and filed a claim against the insured plastic surgeon alleging improper performance of surgery.

Takeaways: Given that this was an elective procedure, the plastic surgeon had the ability to insist the patient stop smoking because of the risks imposed by smoking. The surgeon and patient had the option to not proceed with the procedure until the patient quit smoking. Additionally, the use of a drain could have avoided the risk of skin breakdown. When the plastic surgeon noted nipple discoloration, other interventions, such as nitropaste, could have been employed.

Case 2: Improper Performance of Surgery
A female patient in her sixties presented to a plastic surgeon for liposuction of her back, a tummy tuck, and mastopexy reduction. The plastic surgeon did not take preoperative photographs, and the operative note was not dictated and transcribed until six weeks after the surgery.

Seven months later, the patient had revision of a right nipple scar and tummy tuck scar in the suprapubic area due to hypertrophic scarring. The consent form noted, however, that the procedures were for revision of bilateral areola scars and revision of a vertical scar on the abdomen. The patient had also signed a consent for facial lasering and fat grafting, but those procedures were not completed, according to the operative report. The revision procedures took under one hour to complete. The operative report was not dictated or transcribed until three weeks after the procedure.

One month later, the plastic surgeon wrote that the patient "looks great and well healed." One month after that entry, the plastic surgeon noted that he performed an abdominal spot liposuction in the supraumbilical region and a revision of a right breast scar in the inframammary fold. A total of 650 cc of fat was removed. Again, the operative note was dictated and transcribed three weeks later. Postoperatively, the plastic surgeon completed several aspirations of a seroma on the patient's abdomen.

Three months later, the patient was noted as having supraumbilical rippling. The plastic surgeon advised the patient to massage it. Two months later, the plastic surgeon provided two Kenalog injections to the wrinkled area above the patient's umbilicus.

A few months later, the patient and her husband demanded a refund. The surgeon wrote that the husband threatened him, but no witnesses could confirm this statement.

Takeaways: Preoperative photographs are standard and were missed in this case. The consent process was not well documented, including the risks of the procedures and the risks of steroid injections leading to skin discoloration. The third procedure was not a spot liposuction, because 650 cc of fat was removed, and the procedure was likely too aggressive, leading to skin retraction. The selection of surgery was important, as the surgeon could have staged liposuctions of smaller amounts, from 100 cc to 150 cc each, that would have allowed the skin to shrink back gradually. Now the patient will require a complete revision of an entire abdominoplasty under general anesthesia, but it may not be possible to completely use just the lower anterior incision to tighten the skin. The patient may require some lateral extension or more of a truncal approach to skin removal, an expensive procedure. While not a deviation in the standard of care, there were long

delays in dictating operative notes—a breach of The Joint Commission's requirement that operative notes be dictated within 24 hours after surgery.

Driver 2: Improper Management of the Surgical Patient
The second most common driver of claims was improper management of the surgical patient. These allegations arose when surgical complications were not managed effectively or errors, such as wrong-site surgery (a never event), occurred. The prevalence of this driver increased from 15 percent (January 2007 through June 2015) to 31 percent (July 2015 through December 2018) of studied claims. Examples of patient injuries included the need for an additional surgery or procedure, infection, scarring, emotional trauma, and tissue necrosis.

The contributing factors associated with this driver involved a number of causes. In 54 percent of these cases, claims arose when the patient experienced a known complication from a procedure. Insufficient documentation was a contributing factor in 25 percent of these cases. Some of the specific areas of concern involved insufficient documentation of clinical rationale (13 percent), patient history (10 percent), informed consent (10 percent), and clinical findings (8 percent).

Other contributing factors included selection and management of surgical and invasive procedures (23 percent), patients seeking other providers due to dissatisfaction with the physician's care (17 percent), poor rapport with the patient due to inadequate communication from the provider (16 percent), poor communication with the patient about expectations for surgical outcomes (14 percent), and patient nonadherence with the treatment plan (12 percent).

Case 1: Improper Management of the Surgical Patient
A 54-year-old female underwent a bilateral subcutaneous mastectomy due to breast cancer. Immediately afterward, she underwent a bilateral breast reconstruction using Becker prostheses.

Seven years later, she presented to the plastic surgeon with complaints of irregularly shaped and hardened breasts. The surgeon noted a Baker Grade IV capsular contracture as a result of infected bilateral breast implants. He recommended implant removal with breast reconstruction with a deep inferior epigastric perforator (DIEP) flap, but noted that this extremely difficult and technically challenging procedure would last up to 10 hours. The patient consented to the procedure and was advised to stop smoking.

The patient underwent surgery four weeks later. Two days post-op, the patient developed ecchymosis and eschar on her right breast and experienced significant draining due to an infection. She was returned to the operating room for evaluation, but no irregularities were noted except for significant soft tissue edema. During the postoperative period, jugular vein access was lost and the patient did not receive prescribed IV antibiotics for 12 hours. She developed significant erythema and cellulitis of the right breast.

The surgeon completed a third operation to insert an implantable Doppler probe in the right breast, which indicated good audible flow through the vein. The patient developed epidermolysis of the medial aspect of the breast skin and tissue necrosis. A swab of the serosanguinous, non-purulent drainage from the right breast showed gram-positive cocci; however, a culture could not be obtained. She was started on empiric therapy for a staph infection. She was discharged on the seventh postoperative day in good condition, receiving IV antimicrobial therapy with vancomycin. The left breast remained soft and supple with no abnormalities and healed without sequelae.

Eleven days later, she was seen by the surgeon, and he noted necrosis and a 3 cm by 6 cm defect in her right medial breast. She returned to the hospital three days later with continued progressive necrosis of the right breast skin and right breast flap. The majority of the flap was necrosed and looked infected. The patient underwent a fourth surgery for removal of the right breast DIEP flap and reconstruction with a superior gluteal artery perforator (SGAP) flap. The area was copiously irrigated and drained with double antibiotic solution.

Subsequently, the patient developed an infection of the SGAP flap, and it was removed two days later. On the sixth postoperative day, the patient was discharged.

Two months later, she presented to a different surgeon with a right breast infection and underwent an exploration with debridement and incision and drainage of a right breast abscess. A (peripherally inserted central catheter) PICC line was inserted for antibiotic therapy. Upon follow-up by this surgeon, he noted significant asymmetry of her breasts.

Takeaways: Plastic surgeons should check prior to surgery that patients have stopped smoking, since it carries a high risk of morbidity into the postoperative period. The patient did develop cellulitis, and this may have developed even without the patient's smoking status, but the delay in the delivery of the antibiotic, the fact that one was not ordered prophylactically in a patient with a history of infections, and continued smoking were likely factors in the patient's undesirable outcome.

Additionally, the original surgeon was aware that the patient smoked and that he should have waited six weeks after she stopped smoking before performing surgery. Even though the patient had been warned to stop smoking, she was scheduled for surgery only four weeks later. This may have led to the poor perfusion.

Driver 3: Improper Performance of Treatment or Procedure
The prevalence of this driver among studied claims increased from 8 percent (January 2007 through June 2015) to 12 percent (July 2015 through December 2018). Examples of improper performance of a treatment or procedure included sclerotherapy injections that resulted in edema and scarring, fat injections that resulted in disfigurement, and pulsed light treatments that resulted in hypopigmentation of the face. Patients also suffered nerve damage and scarring from liposuction of the face and burns during laser hair removal or resurfacing of the face.

Case 1: Improper Performance of Treatment or Procedure
A female in her fifties with a history of a previous facelift was treated by a plastic surgeon for evacuation of an infected facial hematoma sustained in a fall. Three years later, the patient returned to the surgeon and complained of brow ptosis, facial skin laxity, and residual malar soft tissue deficit from the previous hematoma surgery. The surgeon recommended an endoscopic brow lift and a limited incision midface lift with sutures. He also recommended fat injection to her cheek and canthopexy laterally. For facial skin laxity and wrinkling, he recommended a trichloroacetic acid (TCA) peel. The plan was to do primary areas of the perioral, corrugators, and forehead, with feathering to the rest of her face with TCA.

The surgeon documented the discussion of risks, including delayed healing, scarring, and swelling. He gave a prescription for Renova to use preoperatively to prepare the skin. The patient signed the consent for all the procedures, including the TCA peel. Her skin type was listed on the Fitzpatrick scale as a 2 or a 3.

After completing the surgical procedures, the chemical peel was performed with TCA at 50 percent. Feathering of margins was done with 25 percent TCA. A light frost was allowed but was somewhat uneven in penetration. The peel was neutralized prior to any evidence of invasion of the reticular dermis. The entire peel area was soaked with cold compresses and then coated with a layer of Aquaphor and antibiotic ointment prior to covering the skin with gauze. The patient was discharged in stable condition.

Following this treatment, the patient was seen in the office more than 15 times with complaints of burns and scarring of the face. The surgeon gave cortisone injections to soften the scars from the chemical peel.

The patient then sought treatment from a second surgeon. He performed two surgeries for ectropion of both lower eyelids. Surgery was successful.

Takeaways: The patient filed a claim against the first plastic surgeon, alleging improper performance of the skin peel procedure. Experts disagreed about the concentration of TCA and whether Renova should have been prescribed prior to surgery. Consider the patient's skin type when determining the concentration of TCA.

Case 2: Improper Performance of Treatment or Procedure
A female in her sixties with a history of thyroid disease consulted a plastic surgeon about laser resurfacing of her face to address sun damage. The plan was for a fractional CO_2 laser treatment and volumization.

A Total FX treatment to her face used Deep FX and Active FX. The laser settings were recorded as set at the higher limit for this treatment. The patient tolerated the treatment well. She was examined by the surgeon the next day. The patient was using Aquaphor. She was told to avoid sun exposure and to start showering and washing her face gently using her fingers. She was also advised to keep her face moisturized.

During a follow-up examination five days later, areas of fibrinous exudate were identified in deeper treatment areas. The patient also complained of decreased sensation along her jawline. Other areas were healing well, but the patient complained of feeling swelling and tightness with occasional itching. She was advised to use Benadryl cream and continue using Aquaphor when the skin looked dry. During the next office visit nine days later, most scabs were off.

Seven weeks following surgery, the surgeon noted some areas of concern. The lid-cheek junction showed scarring. A scar was noted in the middle of her forehead, and others were noted in preauricular areas. The patient was advised to use topical hydrocortisone cream. The surgeon gave her silicone gel sheeting to use at night. The patient was given intense pulsed light treatments, with some flattening of the scars. The surgeon made an addendum in the chart indicating that the Deep FX settings were incorrectly recorded on the date of the procedure, and then included his "routine" Deep FX settings.

The following week, the surgeon examined the patient and discovered that she had developed a new hypertrophic scar over her right temple area. He treated it with desonide cream and injected it with Kenalog. He then talked with the patient about her scarring and expressed his opinion that the scars were not due to the laser treatment but were, instead, a reaction to the skin products she had

received. He asked if she had a history of connective tissue disorders and about her history of healing. He then referred her to another plastic surgeon. It was determined that the patient's scars were permanent but could be reduced with additional treatment.

Takeaways: There were two main concerns in this case, with the core issue being the documented laser settings at high levels. Additionally, the physician's addendum to the chart was made well after complications manifested—corrections made immediately after a procedure, but before a complication arises, give more credibility to the changes. The choice of laser over a chemical peel was noted as a method to limit potential healing issues. This case highlights how, as always, having a detailed discussion about all options with patients is beneficial.

Case 3: Improper Performance of Treatment or Procedure
A female in her thirties requested the removal of a tattoo above her right ankle. The tattoo was relatively large, dark, and multicolored. The plastic surgeon discussed the laser removal technique with the patient, and she agreed to proceed. The surgeon used a standardized vascular treatment consent form that was not specifically for tattoo removal. The risks listed on the consent form (scarring, burning, and infection) were, however, the same as for tattoo removal.

The patient received one laser treatment each month. A YAG laser was used to remove dark pigments, and an Alexandrite laser was used to remove blue and green pigments. The surgeon performed the first four laser treatments, but the fifth treatment was performed by an aesthetic technician who had been trained in the process. The day following this treatment, the patient experienced swelling and pain around the treatment site. She went to her family physician, who suspected cellulitis and a remote possibility of necrotizing fasciitis.

She was told to call the plastic surgeon and go to the emergency room. When she called the office, the staff told her that the surgeon was not available and that he would receive her message. The plastic surgeon did not receive the message until the next day. He called the patient and left a voicemail message, but the message was not returned. Later the same day, he reviewed her emergency room records, which had been faxed to him. He called and left a second message. The patient did not return the calls and she did not contact the surgeon again.

The following day, the patient was seen again in the emergency room and was diagnosed with cellulitis and wound infection. She received treatment through her family physician for cellulitis, an abscess of the leg, and third-degree burns (10 cm in length) with full-thickness skin loss. She continued treatment with her family physician for a year and then was referred to another plastic surgeon for further management. She was given the option of continuing the wound treatment or undergoing skin grafting. She chose the latter option.

The patient alleged burns with resulting scarring due to improper removal of the tattoo.

Takeaways: This case brings forward several issues. The first is the lack of an adequate consent for tattoo removal. The next is the lack of communication within the surgeon's office and not relaying messages the same day. A process should be in place so that all telephone messages are received and acted upon by the physician. The last involves the loss of trust and poor rapport developing between the patient and the provider. Once the patient did not hear back from the surgeon on the same day, the patient sought care from other providers rather than allowing the plastic surgeon to continue treatment.

Driver 4: Gluteal Fat Grafting
Gluteal fat grafting ("Brazilian butt lift" or "BBL") quickly became a popular aesthetic surgery procedure; however, the death rate is the highest for any aesthetic procedure. The most serious—and potentially fatal—complication from this procedure is pulmonary fat embolism. Additionally, complications such as fat necrosis, skin healing, and infection have been noted. In his 2017 commentary, Dr. Peter Pronovost noted that this purely cosmetic procedure had a mortality rate approximately 20 times higher than any other procedure performed in facilities accredited by the American Association for Accreditation of Ambulatory Surgery Facilities.

Case 1: Gluteal Fat Grafting
A female in her forties presented to the plastic surgeon, requesting a BBL, liposuction, vaginoplasty, abdominoplasty, and breast augmentation. Her medical history included four live births, smoking for 16 years, anemia, and pneumonia. Her red blood cell indices indicated ongoing anemia, her white blood cell count was elevated, and her urine test was positive for nitrates. Although she was instructed to stop smoking for 30 days, she smoked one pack of cigarettes the day before surgery to lessen her anxiety.

She arrived at the surgery center for vaginoplasty and liposuction with autologous fat transfer to the buttocks. On arrival, she signed consent forms for the BBL. The plastic surgeon documented that he had discussed the risks, complications, and alternatives with the patient, and she had agreed to go forward with procedure. The certified registered nurse anesthetist (CRNA) spoke to the patient preoperatively, and the patient denied any past anesthesia complications and any abnormal preoperative lab results. She also denied that she had been smoking. The CRNA noted the details of her discussion with the patient—including anesthesia risks, benefits, and alternatives—and noted that the patient wished to proceed.

A gynecologist performed a pelvic exam, which revealed loss of perineal support and a distended vagina. The cervix was clean, and the uterus was of normal size, shape, and position with no prolapse. The plan was that the vaginal repair and perineorrhaphy would be performed first, followed by the BBL, under general anesthesia.

Anesthesia was started with the patient's blood pressure at 116/88, pulse 74, respirations 18, and oxygen saturation 100 percent. Forty-five minutes into the first surgery, the patient's blood pressure was 93/45, pulse 64, respirations 10, and oxygen saturation 99 percent. The first procedure was completed 15 minutes later. The patient was noted to be stable, but an estimated blood loss was excessive at about 250 cc.

The plastic surgeon then proceeded with liposuction of the lower abdomen, hips, flanks, lower back, inner and outer thighs, and knees with fat transfer to the buttocks. One hour and 15 minutes into the procedure, the CRNA noted that the patient's blood pressure was 93/50, pulse 67, respirations 8, and oxygen saturation as 99 percent. Vital signs remained stable at these levels for the next 90 minutes.

Thirty minutes later, the patient's blood pressure dropped to 80/35, pulse 64, and the oxygen saturation dropped to 85 percent. At that time, the plastic surgeon was beginning to suture the liposuction sites, and according to the nursing notes, a code blue was called five minutes later. The CRNA gave 1 mg atropine. CPR was started, but the patient could not be resuscitated at the surgery center.

Fifteen minutes later, 911 was called, and the paramedics transferred the patient to a nearby medical center. The patient received two units of blood. An abdominal ultrasound did not reveal any free fluid in the patient's abdominal cavity. Despite efforts, the patient could not be resuscitated and was pronounced dead.

Blood loss during the second procedure was estimated at 150 cc. The operative report noted that approximately 750 cc of fat was placed in the deep subcutaneous plane of each buttock, along with some placed into the gluteus muscle using a "specially designed blunt bullet-tip cannula."

An autopsy reported the cause of death as intra-abdominal hemorrhage post liposuction and fat transfer. No reference was made to fat embolus. Pathology experts disagreed with the autopsy determination, as slides showed massive fat emboli in the lungs from inadvertent fat transfer to the vascular system. It was felt that the 2,000 cc of blood found in the abdomen was not the cause of death but a result of resuscitation efforts and disseminated intravascular coagulation (DIC) from the fat emboli syndrome.

Takeaways: Initially, there were concerns regarding the number of procedures being conducted on this patient in one day. The patient was a heavy smoker, with anxiety and anemia. Those preoperative concerns should have been addressed by the surgical team. Notes from the first procedure indicated an excessive loss of blood and systolic blood pressure drop of 20 mmHg, but there was no discussion of whether to continue or stop the remaining procedures. Fat was placed into the gluteus muscle, which is a deviation from the standard of care. The surgeon should have assumed this was a fat embolism unless proven otherwise. There was a very slow response to a code, including 15 minutes to call 911 to the ambulatory surgery center.

Case 2: Gluteal Fat Grafting
A 46-year-old-female consulted with the plastic surgeon via telephone for body contouring and a BBL. She was 5 feet 8 inches tall and weighed 185 pounds. The surgeon met the patient and examined her. He found excess fat underneath her arms and on her stomach and back. The surgical plan included liposuction from the abdomen, flanks, back, and arms, with fat transfer to gluteal and hip areas. The physical exam was unremarkable.

Preoperatively, the surgeon discussed the procedure's risks and benefits, which included (but were not limited to) bleeding, infection, damage to surrounding tissues, asymmetry, deformity, scarring, need for revisions, need for additional surgery, contour deformities, loss of grafted fat, calcifications, seromas, fat embolism, thromboembolism, loss of hand function, loss of an extremity, risks of anesthesia, and possible death. The fat grafting consent noted that serious complications, although very rare, included the risk of fat embolism—which was explained as a piece of fat finding its way into the blood stream, resulting in a serious or life-threatening condition. The surgeon answered the patient's questions.

At the beginning of the procedure, the patient was placed in the supine position, and bilateral compression devices were applied to her lower extremities. She was given preoperative antibiotics and placed under general anesthesia. Incisions were placed in the suprapubic, anterior axillary line, posterior elbow, and umbilical regions for cannula placement. Tumescent solution was prepared, and a total of 1,700 cc was infiltrated to the abdomen and flanks. An additional 200 cc was placed into each arm. This was followed by suction-assisted lipectomy with the 3 mm and 4 mm cannulas. A total of 1,800 cc of fat was removed from the abdomen and flanks, and 200 cc of fat was removed from each arm. Access incisions in the posterior elbow and axilla were closed.

The patient was then turned to the prone position. Access incisions were placed in the back midline and intergluteal regions. A total of 1,700 cc of tumescent solution was infiltrated to the back-fat rolls, flanks, and presacral region. Liposuction of the back and flanks removed 1,700 cc of fat with the 3 mm and 4 mm cannulas.

The harvested fat was processed. Using a superficial and lateral entrance, a total of 600 cc of fat was grafted into the left gluteal region. During the fat placement into the right gluteal region, there was a rapid decrease in the end-tidal CO_2 with significant hypotension. The patient was immediately returned to the supine position and advanced cardiac life support (ACLS) protocols were initiated with medications and chest compressions (the patient was pulseless). The staff called 911, and the patient was transferred to a medical center with resuscitation in progress. She expired two hours later.

An autopsy revealed the presence of a massive fat embolism in the patient's lung tissue. Experts believed that it was likely the surgeon injured the gluteal vein, sending fat into the patient's bloodstream.

Takeaways: The high mortality rate associated with gluteal fat grafting has created concern about the serious complications that too often result from this procedure. It is essential that plastic surgeons who perform BBLs should follow recommendations that ensure fat is injected only into the subcutaneous space and never into the muscle. This patient had a classic sign of fat embolism, with a rapid decrease in end-tidal CO_2 and significant hypotension.

Patient Expectations

Our study found that many times, patients alleged improper performance of surgery (44 percent of all studied plastic surgery cases) when the outcome of the surgery differed from their expectations. Often, these claims arose from complications that were known to the patient as a risk of the procedure, and the documentation showed that the potential risks were discussed with the patient prior to surgery in 97 percent of such cases. Our expert physician reviewers identified poor technique in only 9 percent of the alleged improper performance cases. Only one case involved surgery on the incorrect body site, and one case noted the surgeon's inexperience with the procedure.

This raises the question: When a patient experiences an undesirable outcome, can the surgeon help the patient understand the cause and relate it to the informed consent discussion that took place prior to the procedure? Yes, but only if the preoperative discussion included detailed information that allows a patient to have appropriate expectations. (See Risk Mitigation Strategies, below.) Physicians should remain mindful that patients may begin the informed consent discussion with unrealistic expectations that procedures performed by plastic surgeons, even noncosmetic procedures, will yield superior outcomes. For instance, a patient undergoing excision of a basal cell cancer may expect a result with no scar.

Patient Communication

We find communication issues in closed claims studies of all physician specialties. Here are examples of the percentage of claims found to involve communication issues in claims filed against other specialties during the same period: 22 percent for surgeons (excluding plastic surgeons); 28 percent for medical providers; 26 percent for obstetrician-gynecologists; and 17 percent for emergency medicine providers. In the plastic surgery cases, physician reviewers identified

communication issues in 38 percent of studied claims—a higher percentage than for other specialties. This consideration is especially important for cosmetic procedures.

The two most common communication issues with plastic surgeons in this study were identified as unmet or differing expectations and poor rapport, such as when the physician was unsympathetic to the patient's concerns. Lack of informed consent, inadequate discharge and follow-up instructions, and language barriers rounded out the most frequent issues related to communication.

Patient Behaviors
Patient behaviors (involved in 42 percent of claims) also had an impact on physicians' ability to manage treatment. Most frequently, patients went to other physicians due to dissatisfaction with the care that they had received, likely stemming from poor communication. By seeking care from another physician, a patient eliminates the surgeon's ability to address concerns and provide follow-up care. This reduces the surgeon's ability to help the patient understand the causes of the outcome and address complications that may have developed. It also provides an opportunity for another surgeon to be critical of the first surgeon, making the patient potentially more likely to seek legal redress.

In some cases, patients did not adhere to treatment plans or follow-up appointments. Patient adherence may be related to the quality of communication between patients and their physicians. Failure to follow through may be a result of poor rapport, inadequate discharge and follow-up instructions, or language barriers.

Patient Assessments
In the plastic surgery arena, 16 percent of the contributing factors were patient assessment issues. These were identified when patients suffered harm from failure or delay in ordering a diagnostic test; an inadequate history and physical; failure to appreciate and reconcile relevant signs, symptoms, and test results; and failure to respond to repeated patient concerns. We found that patient assessment issues are found in both primary diagnostic errors and in postoperative diagnostic errors in plastic surgery.

Risk Mitigation Strategies
The following strategies can assist plastic surgeons in preventing some of the issues identified in this study:

- Stress that complications can and do occur with plastic surgery. Unlike most surgeons, plastic surgeons have patients self-referring to them because of the elective nature of cosmetic plastic surgery. Patients pursuing plastic surgery may not have considered the risks, and should be reminded to do so.
- Help patients set reasonable expectations about outcomes by discussing the possibility of less-than-optimal results, as well as complications that could delay recovery and affect appearance. In plastic surgery, more than in any other physician specialty, the patient's appearance following a procedure determines whether the outcome was a success. Subjective judgments—particularly with elective procedures—drive many patients to file medical malpractice claims against plastic surgeons.
- Use of American Society of Plastic Surgeons (ASPS) consents is vitally important to the consent process. While these consents may raise concerns with patients, they ensure that every complication is reviewed and understood. Consider ASPS consents as prompts to hand out to

patients preoperatively, with encouragement for patients to read through, ask questions, and bring significant others back to the office to ask questions about the procedure. This then guarantees a true informed consent process.

- Verify clear communication by asking patients to write down in their own words what they can expect from their surgery, as well as its risks. Make a copy of this document and place it in the medical record.
- Consider new techniques for improved preoperative education, such as an online program. Many have two-way capabilities that give the patient an opportunity to ask questions and document the amount of time spent and the questions asked in the EMR.
- Use patient selection criteria to evaluate and determine if a patient is a good candidate for surgery. Use checklists.
- Complete medical and surgical histories. Patient histories are important in determining whether a patient is an appropriate candidate for surgery and for selecting a venue that fits the patient's needs. Patients are not always reliable historians, so it is essential to elicit information about bleeding disorders, family histories of reactions to anesthesia, sleep apnea, and other conditions that increase risk during or following surgery. If you have any doubt, involve the patient's primary doctor.
- Ensure your surgery center has clear criteria for patient discharge following a procedure or surgery. For example, criteria should include when the patient can be discharged by someone other than the surgeon.
- Confirm that patients understand discharge instructions, follow-up care, and medication plans. Rely on your own instruction lists. Use read-back or repeat-back techniques. Patient adherence is a major problem, especially when patients don't understand discharge instructions or do not receive adequate instructions.
- Train office staff to recognize complaints from patients or families that warrant immediate follow-up. Allocate office time to seeing patients who may be experiencing complications. Direct patients who have potentially serious conditions to an emergency department for immediate care. It is important for surgeons and staff to listen to concerns. Patients may experience complications, such as bleeding, fever, swelling, pain, or redness. Although uncommon, deep vein thrombosis, pulmonary embolism, compartment syndrome, peritonitis, and wound infections are outcomes that represent serious threats to patients' well-being. It is always better to err on the side of caution.
- Document the details of phone calls, including any recommended follow-up. Ensure office staff also document phone calls with patients and family members.
- Document when patients do not follow the treatment plan. Unauthorized activity and failure to complete prescribed antibiotics or other medications may affect the desired results of care. Consider postponing or canceling surgery in patients who continue to smoke, especially those having procedures that involve extensive undermining (e.g., facelift or abdominoplasty) or tissue transfer (e.g., autologous breast reconstruction or complex wound closures). Document if patients are continuing to smoke with ongoing infections.
- Follow these recommendations on gluteal fat grafting, from the ASPS "Gluteal Fat Grafting Advisory":
  - Stay as far away from the gluteal veins and sciatic nerve as possible. Fat should only be grafted into the superficial planes, with the subcutaneous space considered safest. If the aesthetic goal requires more fat than can be placed in the subcutaneous layer the surgeon should consider staging the procedure rather than injecting deep.
  - Concentrate on the position of the cannula tip throughout every stroke to assure there is no unintended deeper pass, particularly in the medial half of the buttock overlying the critical structures.

  - Use access incisions that best allow a superficial trajectory for each part of the buttock; avoid deep angulation of the cannula; and palpate externally with the non-dominant hand to assure the cannula tip remains superficial.
  - Use instrumentation that offers control of the cannula; avoid bendable cannulas and mobile luer connections. Vibrating injection cannulas may provide additional tactile feedback.
  - Injection should only be done while the cannula is in motion in order to avoid high-pressure bolus injections.
  - The risk of death should be discussed with every prospective BBL patient.
- Perform a self-assessment of your practice by contacting your patient safety risk manager at patientsafety@thedoctors.com or (800) 421-2368.

The guidelines suggested here are not rules, do not constitute legal advice, and do not ensure a successful outcome. The ultimate decision regarding the appropriateness of any treatment must be made by each healthcare provider considering the circumstances of the individual situation and in accordance with the laws of the jurisdiction in which the care is rendered.

We sincerely thank Scot Bradley Glasberg, MD, for his insightful review of this study. He is a cosmetic, plastic, and reconstructive surgery specialist from New York, New York. He is certified by both the American Board of Plastic Surgery and the American Board of Surgery. Dr. Glasberg is a Past President on the Executive Committee and Board of Directors of the American Society of Plastic Surgeons.