If held to the standard of error rates occurring within the airline and finance industries, medical error rates would be considered unacceptable.\(^1\)\(^2\) According to a frequently cited report by the Institute of Medicine, at least 44,000 people die in hospitals in a year due to a preventable medical error.\(^3\) Malpractice claims instigated by medical error continue to affect the cost and quality of health care. Correspondingly, the cost of medical malpractice has increased, with the burden of these costs falling on both the physician and the health care consumer\(^4\): the physician invests valuable time, money, and energy defending claims, and health care consumers face higher insurance premiums.

Plastic surgeons face a comparatively high rate of malpractice claims compared with other specialties, cited at 13\%.\(^5\)\(^6\) Cosmetic surgeons particularly experience substantial litigation.\(^7\) A recent study determining the safety of office-based surgery cited plastic surgery as the most commonly represented specialty in adverse event reporting (42.3\% of all reported complications).\(^8\) Although the literature on specific claims against plastic surgeons is sparse, the available data...
suggest that litigation primarily has been due to lack of informed consent, poor cosmetic results, scarring, or the surgeon’s lack of expertise in performing a given procedure. The objectives of this study were to examine medical malpractice cases related to body contouring procedures and to identify factors influencing case outcome. Delineating and understanding these factors are critical for practicing plastic surgeons to improve patient care and to minimize legal action.

METHODS

All data were collected using the Westlaw legal database (Thomson Reuters, New York, New York). The database, considered comparable to LexisNexis in terms of scope, is a primary source for legal professionals and contains cases from publicly available state and federal court records. Cases are submitted both voluntarily by attorneys and involuntarily by various contributing legal sources that search federal and state cases. The level of case detail and comprehensiveness is heterogeneous due to the variety of sources. Westlaw is publicly available by subscription. No protected health information is disclosed; therefore, no institutional review board approval was necessary for our study. The database search inclusion and exclusion criteria are outlined in Figure 1. Search parameters were not limited by state or date and included the terms contouring, abdominoplasty, liposuction, tummy tuck, body lift, thigh lift, arm lift, brachioplasty, thighplasty, lipectomy, panniculectomy, and surgery and medical malpractice. The initial search yielded 182 jury verdict and settlement reports related to medical malpractice in body contouring procedures. These cases were independently reviewed by two authors (A.M.P. and L.J.M.) to ensure applicable content. Of the 182 results, 69 cases were excluded: duplicate cases (23), allegations concerning non–body contouring procedures (42), allegations involving a nonsurgical physician or allied health professional (3), and cases involving a cross-complainant (1). The remaining jury verdict and settlement reports were analyzed for year of action, geographic location of action, patient and physician demographics, procedure performed, allegations of injury, cause of litigation, verdict, and indemnity payments.

All data were collected in April 2013. Nonparametric statistical analysis was conducted using the Fisher exact test for comparison of categorical data and the Mann-Whitney U test for evaluation of continuous variables (InStat; GraphPad Software, La Jolla, California). Statistical significance was set at $P < .05$.

RESULTS

One hundred thirteen cases matching the search criteria were included for analysis. Jury settlement or verdict for included cases occurred between 1990 and 2012, with the greatest number of cases occurring in 2009 ($n = 14$) (Figure 2A). Court records originated from 25 states and 2
cases from Washington, DC; the geographic distribution of cases is shown in Figure 2B. California (n = 32), New York (n = 16), and Florida (n = 16) experienced the greatest number of cases. Sixty-nine cases included the plaintiff’s age, which ranged from 18 to 69 years (average, 40.9; mean, 40). Most plaintiffs were women (93.8%), only 7 cases were initiated by men (6.3%). Most defendants were men (96.9%), and of the 70 cases that included a reported specialty, 85.7% came from plastic surgery. Other specialties reported were general surgery (n = 6), oral surgery (n = 1), dermatology (n = 1), and obstetrics-gynecology (n = 2).

The frequency of litigation by procedure type is shown in Figure 3. The most common procedures were liposuction (n = 43; 38.1%), abdominoplasty (n = 24; 21.2%), and combined abdominoplasty and liposuction (n = 22; 19.5%). The frequency of alleged injuries cited for litigation is shown in Figure 4. The most commonly sustained injuries as a result of body contouring were disfigurement (n = 38; 33.6%) and necessitation of a revision procedure (n = 38; 33.6%). The next most commonly cited injury was scarring (n = 34; 30.1%). Iatrogenic injuries were less common (n = 16; 14.2%) and included cases of bowel perforation (n = 8), electric burn (n = 2), vessel injury (n = 2), pneumothorax (n = 1), mesh-induced ileus (n = 1), breast implant rupture (n = 1), and vaginal deformity (n = 1). Death (n = 14; 12.4%) was also fairly common and was linked to infection such as aspiration pneumonia or septic shock (n = 6), pulmonary embolism (n = 4), local anesthetic toxicity (n = 2), narcotic overdose (n = 1), and perforated hepatic and portal vein (n = 1). The least commonly cited injuries were seroma (n = 4; 3.5%) and urinary sequelae including renal failure or frequent urinary tract infections (n = 4; 3.5%).

The reasons named for litigation in body contouring are represented in Figure 5. Negligence—either through lack of appropriate knowledge or skill or departure from standards of care—was the most commonly cited legal action at 84.1% (n = 95) of cases. The second most common reason was lack of informed consent, including cases where physicians failed to describe the risks of the procedure or did not offer alternative therapies (n = 37; 32.7%). Failure to diagnose and/or treat an injury resulting from a body contouring procedure (n = 33; 29.2%) was the third most common cause of action, followed by loss of consortium (defined as the deprivation of familial benefits due to injury) (n = 14; 12.4%), and either negligent or fraudulent misrepresentation (n = 11; 9.7%). Seventy-two cases (63.7%) were decided in favor of the defendant and 41 (36.3%) cases were disposed in favor of the plaintiff, of which 33 (29.2%) cases resulted in damages awarded and 8 (7.1%) cases resulted in settlements (Figure 6). Median ages between cases favoring the defendant...
and those favoring the plaintiff differed significantly (Mann-Whitney U test, \( P = .003 \)), at 44.5 and 36 years, respectively (Figure 7A). The median ages were not significantly different between cases resulting in damages awarded and settlements, 36 and 34.5 years, respectively (Figure 7B). Monetary damages awarded to plaintiffs ranged between $11,000 and $60,000,000, with mean and median awards of $5,217,443 and $391,301, respectively. Settlements ranged between $100,000 and $1,162,500, with mean and median settlements of $439,351 and $276,155, respectively. No statistically significant difference was found between the medians of indemnity payments awarded to plaintiffs and settlements (Mann-Whitney U test, \( P = .79 \); Figure 7C).

The following analyses were performed to determine whether certain case characteristics were more likely to result in an outcome favoring the plaintiff. Procedure type and number of procedures performed did not have a significant relationship with case outcome (Fisher exact tests, \( P > .05 \)). Of the alleged injuries, those cases citing an iatrogenic injury were 2.5 times more likely to result in either damages awarded or a settlement (relative risk [RR], 2.5; 95% confidence interval [CI], 1.66-3.80; Fisher exact test, \( P = .001 \)). Cases citing disfigurement were 87% more likely to result in damages awarded to the plaintiff (RR, 1.87; 95% CI, 1.08-3.26; Fisher exact test, \( P = .03 \)). Conversely, cases citing scarring were 52% less likely to result in damages awarded or a settlement (RR, 0.48; 95% CI, 0.24-0.97; Fisher exact test, \( P = .03 \)). Of the reasons cited for litigation, lack of informed consent was significantly less likely to result in damages awarded or settlements (Fisher exact test, \( P = .04 \)). Those cases citing lack of informed consent had a 50% less chance of an outcome favoring the plaintiff (RR, 0.50; 95% CI, 0.26-0.97).

**DISCUSSION**

In the courtroom, a physician’s clinical actions are compared with expected standards of care. In establishing a physician’s “negligence” and awarding the plaintiff compensation, the following criteria must be proven: (1) the physician owed a professional duty to the patient, (2) the physician breached this duty by deviating from the standard of care, (3) the patient suffered personal injury or wrongful death, and (4) the injury inflicted was directly caused by the physician’s infringement on such duty.\(^{12,13}\)

Our study evaluated body contouring litigation from 1990 to 2012, over which time there was a yearly increase in the number of medical malpractice cases related to body contouring procedures. This most likely reflects the national trend of increasing cosmetic procedures in the United States.\(^{14}\) California, New York, and Florida experienced the greatest number of body contouring litigation cases. In 2012, the American Society for Aesthetic Plastic Surgery (ASAPS) reported that patients in the Middle Atlantic (including New York), the Pacific (including California), and the South Atlantic (including Florida) regions of the United States underwent the most cosmetic procedures.\(^{14}\) Our results most likely reflect these national statistics but may also indicate that these states have a more litigious culture.

The most frequently occurring body contouring procedures in our study were liposuction and abdominoplasty. According to national statistics, these 2 procedures respectively were the second and third most commonly performed cosmetic surgical procedures, following breast augmentation.\(^{14}\) In this study, cases involving both abdominoplasty and liposuction were the third most frequently found. In the late 1990s and the beginning of the 2000s, the lipoadminoplasty technique was introduced as a means of combining established liposuction and abdominoplasty principles to achieve preserved vasculature and limited opportunity for flap compromise.\(^{15-17}\) As indicated in Figure 2A, the vast majority of concurrent abdominoplasty and liposuction cases occurred from 2002 to the present, most likely because the lipoadminoplasty technique was gaining popularity. Since case narratives contain varying levels of detail, the specific lower body areas where liposuction was performed were not always apparent. The 2 cases that occurred prior to 2002 (1 in 1990 and 1 in 1993) may have been abdominoplasties with additional liposuction of other areas of the lower body.

In our study, disfigurement, scarring, and dissatisfaction with size or contours were injuries sustained by plaintiffs that implied an unsatisfactory aesthetic result. These 3 types of injuries were among the 5 most common cited in our study. As the procedures we have documented here are elective in nature—undertaken to achieve a superior aesthetic result from a preoperative baseline—patients likely gauge the success of their surgery on how closely the final result aligns with their ideal goals for surgery. Dissatisfaction with aesthetically displeasing results following abdominoplasty has been previously cited; postoperative dog ears, scarring, and abdominal overhang were associated with the greatest level of patient dissatisfaction compared with other adverse outcomes such as numbness.\(^{18}\)

Previous studies on motivating factors for cosmetic plastic surgery indicate that cosmetic patients report body image discontentment prior to surgery\(^{19}\) and highlight patients’ hope of improved cosmesis. Interestingly, a study
of bariatric surgery patients revealed that body contouring procedures improved body image specific to the treated region but also led to increased dissatisfaction in untreated areas. This study also noted that those who underwent body contouring chose thinner silhouettes as their ideals. This suggests that as patients move closer to their preoperative aesthetic goal, their ideals shift as they see these goals attained. The frequency of aesthetic dissatisfaction found in our study may be a result of this changing ideal.

The number of cases citing death following a complication of body contouring was substantial, with 12.4% of cases reporting infection, pulmonary emboli, and local anesthetic toxicity as the most common causes of death. Fatal complications following liposuction and abdominoplasty have been well described in the literature. Whether through media glamorization or reality television’s limited portrayal of adverse events, however, the life-threatening risks of body contouring surgeries have been consistently downplayed. It is not unusual for patients to present with an incorrect notion that they are receiving “just” cosmetic surgery when in reality, as with any surgery, fatal complications constitute a risk. Fully educating cosmetic patients of this risk is essential.

Our study was able to identify plaintiff age as an extremely significant predictor of verdict in body contouring cases. Those cases with a plaintiff-favored verdict (damages awarded or settlement) had a significantly younger median plaintiff age (36 years) than those with a defendant-favored verdict (44.5 years). This disparity suggests that juries are more sympathetic toward younger plaintiffs and are more inclined to offer them financial compensation for their injuries. This age bias is consistent with previous medical malpractice studies.

Our study also revealed a significant relationship between case outcome and certain injuries sustained. Cases citing an
iatrogenic injury were 2.5 times more likely to result in either damages awarded or a settlement. Half the cases citing an iatrogenic injury referred to a bowel perforation during the body contouring procedure. Intestinal or organ injury is a known and potentially fatal complication of liposuction.\textsuperscript{27} Unfortunately, symptoms from organ perforation can be delayed and may present later as an acute abdomen, requiring emergent exploration.\textsuperscript{28,29}

The possibility of adjacent organ injury should be fully disclosed to patients during preoperative counseling. Patients should be educated on the signs and symptoms that warrant emergent evaluation. Studies have shown that organ perforation, while rare, is more likely to occur in the presence of a preexisting abdominal scar as the liposuction cannula may be misdirected in distorted tissue planes.\textsuperscript{30} Liposuction guidelines state that when there is evidence of abdominal scarring, extreme care should be taken during liposuction cannula manipulation. Due to its indolent nature, early detection of a bowel perforation may be difficult; regardless, proper measures should be taken immediately after abdominal liposuction to monitor for early signs of organ injury. Imaging tests should be ordered judiciously if there is any immediate suggestion of bowel injury. All postoperative symptoms suggestive of an acute abdomen or peritonitis should be taken seriously and immediately assessed.

Cases that cited disfigurement as an injury from body contouring were 87\% more likely to result in damages awarded to the plaintiff. Disfigurement was the only aesthetically apparent injury that significantly influenced juries in favor of a plaintiff’s verdict (damages awarded). As with all cosmetic procedures, body contouring is an elective surgery where the goal of the surgery is to improve cosmesis. Disfigurement implies that the end aesthetic result was severely diminished from preoperative baseline. The jury may view disfigurement as an injury worth compensating, as it signals an unsuccessful surgery and may necessitate revision in the future.

Conversely, our results also demonstrated that those cases citing severe or excessive scarring as an injury sustained from a body contouring procedure were 52\% less likely to result in a plaintiff-favored outcome (both damages awarded and settlement). Scarring is a known risk of any surgery. The severity of scarring also depends on factors such as ethnicity and familial predisposition, which are unrelated to the surgeon’s technical skills. Although techniques have evolved to minimize them, scars are unavoidable. This may explain why juries were not inclined to compensate and the defendants were not willing to settle.

Of the causes of action cited, those cases that alleged a lack of informed consent were 50\% less likely to result in a plaintiff-favored outcome. In most of these cases, despite having signed a consent form, the plaintiff claimed a proper verbal discussion of the risks and alternatives to the procedure was not adequately conducted. Our results suggest that juries consider the consent form a legally binding document to which a plaintiff is held accountable; the plaintiff’s signature conveys full understanding of the form’s content. This finding underscores the importance of the consent form as a protective mechanism for physicians against unjust allegations.

While our analysis suggests that a signed consent form is an effective means of physician protection, full verbal disclosure of the risks of a procedure remains a critical component of preoperative counseling. Proper informed consent, which promotes open communication between the physician and the patient, has been previously identified as a means of decreasing litigation.\textsuperscript{12,31-36} Informed consent may be obtained at least 24 hours prior to surgery; however, some studies suggest that counseling be performed as early as the initial preoperative assessment so that possible outcomes can be fully discussed with the patient and the patient’s family.\textsuperscript{31,35} During this discussion, plenty of time should be spent reviewing the risks and the alternatives of the procedure. Procedure-specific consent forms (such as those available from ASAPS) are recommended, as they focus on adverse events highly associated with the surgery to be performed, including long-term implications such as loss of a potential transverse rectus abdominis myocutaneous flap.\textsuperscript{37}

The Westlaw online database is highly acclaimed among lawyers and legal professionals as a source for legal research when gathering information regarding legal cases, jury verdicts and summaries, and trial court documents. It has been ranked as one of the top 3 online databases by the 2012 New York Law Journal Reader Rankings and the 2013 Best of The National Law Journal.\textsuperscript{38,39} In the same rankings, LexisNexis has also been considered a leading online database. On review of both vendors’ databases, our institution decided to use Westlaw because it is more user-friendly while maintaining a comparable caliber of case narratives as LexisNexis. Westlaw has been widely accessed to ascertain case law related to claims of medical malpractice in other specialties.\textsuperscript{2,9-11,25,26,40-44} To our knowledge, this is the first study to use the Westlaw online database in describing body contouring malpractice litigation in the United States.

While Westlaw is a well-known law resource, it also has limitations. We contacted Westlaw research support to better understand the benefits and disadvantages of the database. Westlaw representatives informed us that inclusion of cases is dependent on the discretion of the commercial vendor supplying the data and can vary by jurisdiction. The database obtains most of its cases from federal and state court records, but some cases are voluntarily submitted by attorneys.\textsuperscript{26} This variance permits unpredictable reporting where there is heterogeneity in the content of the cases; it is possible that relevant cases may be missing. Should there be a significant number of neglected cases, our conclusions may not accurately reflect the true characteristics influencing case outcome.

There are several other inherent study limitations related to the database. Since attorneys or other legal professionals prepare case summaries in Westlaw, the terminology used in case details may not always adhere to the terms with which a medical professional would describe the same case. Next, although Westlaw included the pertinent case information discussed in this study, juries may
CONCLUSIONS

We reviewed 113 medical malpractice cases related to body contouring procedures that progressed far enough to be included in state and federal records. We identified 15 injuries commonly alleged in body contouring litigation. Proper verbal discussion of the potential for each of these injuries, as well as clear presentation on consent forms, must be provided early in patient evaluation. Our study reinforces the necessity of consent forms as a means of physician protection against the financial repercussions of medical malpractice. Our analysis also elucidated specific case characteristics most likely to result in indemnity payments to plaintiffs: younger plaintiff age and citation of a sustained iatrogenic injury, specifically bowel injury, were more likely to result in damages awarded to the plaintiff and settlement. Citation of disfigurement from body contouring was more likely to result in damages awarded to the plaintiff. Our study emphasizes the need for adequate communication with the patient regarding realistic aesthetic results. In addition, organ injury must be handled expeditiously with proper postoperative monitoring and watchful follow-up of the patient for 1 week after surgery for signs of an acute abdomen. Incorporating these recommendations into clinical practice may encourage an improved physician-patient relationship while reducing health care costs incurred by litigation.

Disclosures

The authors declare no potential conflicts of interest with respect to the research, authorship, and publication of this article.

Funding

The authors received no financial support for the research, authorship, and publication of this article.

REFERENCES