

Our Complication, Your Problem

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In reading the *Journal* and teaching residents, we have sensed a disturbing trend with regard to complications. There is an invisible line between those complications for which surgeons take ownership and the rest, which are the patients' "fault." In the first group, we include hematomas, wound infections, dehiscence, flap necrosis, and scars. More disturbing are the complications in the second group, such as stroke, myocardial infarction, and thromboembolism. This was emphasized to us personally when we were compiling our monthly morbidity and mortality list. We inadvertently omitted a postoperative death of a healthy 49-year-old patient who died of a cardiac event 17 days after an otherwise successful outpatient Mohs' reconstruction. The omission was rectified the next month, but it illustrates our point. Could our patient have had a myocardial infarction without surgery? Certainly. Was it related to anesthesia? Probably.

As we have a keen interest in thromboembolism, having written reviews and taught courses on the subject, we thought it the best complication on which to elaborate. Thromboembolism is a good example of a complication that the patient "gets." It is nonsurgical, is related to perioperative stasis, and occurs even in medical patients. To make matters worse, its treatment or prophylaxis increases the risk of the surgical complication of bleeding.

Thromboembolism is like a big white elephant for plastic surgery. As so much of our care is elective, part of our election should be to protect the patient from subsequent harm. Yet since the risk of prophylaxis is bleeding, the balance is weighted away from thromboembolism protection. A recent survey showed that 60 percent of American Society for Aesthetic Plastic Surgery members believe that chemoprophylaxis is not

worth the risk. Yet from the same study, 7.8 percent of surgeons had experienced an episode of deep venous thrombosis in at least one patient in a 3-month period.¹ Extrapolated over a period of 12 months, the incidence rate is 31.2 percent that a surgeon will have at least one case of deep venous thrombosis each year. Another survey of board-certified plastic surgeons published in *Plastic Surgery News* in January of 2007 gave similarly disturbing results. Despite surgeon experience of thromboembolism and associated mortality rates, as high as 13 percent and 3 percent, respectively, in combined procedures, prophylaxis was sporadic. No prophylaxis was utilized in 18.4 percent of face lifts, 25.2 percent of liposuction procedures, and 8.6 percent of combined procedures. Only 48.7 percent of surgeons performing face lifts, 43.7 percent of those performing liposuction, and 60.8 percent of surgeons performing combined procedures used prophylaxis all the time. This means that, in essence, prophylaxis was utilized less than 50 percent of the time. The survey found enormous variation, inconsistency, and deviation from practice norms for patients managed by plastic surgeons after thromboembolism was diagnosed.

Since developments in European plastic surgery can be ahead of the curve (e.g., vertical scar reduction, cohesive gel implants, and liposuction), a recent article should be mentioned. Peter Durnig and Walther Jungwirth² reported a series of face lift patients treated with low molecular weight heparin, stating that there is significant pressure for prophylaxis in Europe. This retrospective review showed a statistically significant increase in bleeding in face lift patients treated preoperatively with low molecular weight heparin prophylaxis. However, before this article is used as a torch to champion that prophylaxis is indeed too great a risk, there are important negatives to the conclusions that should be considered. First, there was no risk stratification or selective prophylaxis. Second, the dose was preoperative, a regimen that is recommended in the United States only for the highest-risk patients (80 percent deep venous thrombosis rate), such

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as those undergoing joint replacement. In the working algorithm, Davison, the first author of this editorial, proposed a postoperative dose of low-molecular-weight heparin 12 hours after surgery, for a substantially decreased bleeding risk.³

Two recent articles on patient safety touch on thromboembolism. Clayman and Seagle examined Florida office-based safety data.⁴ Only 11 deaths out of 600,000 procedures were attributable to plastic surgeons, yet seven of the 11 deaths (or 64 percent) were due to thromboembolism. In their recent review of circumferential body contouring, Rohrich et al.'s only major complication was thromboembolism in 2 percent of the patient group.⁵ In recent discussions, eminent cosmetic surgeons Stuzin⁶ and Mustoe⁷ reported no deep venous thrombosis in 600 face lifts or 3000 outpatient procedures, respectively, yet both emphasized that they use only intravenous sedation and not general anesthesia. This is one of the known prophylactic measures for thromboembolism.

Certain patient populations have considerably greater risk for this type of complication. We cannot categorize all plastic surgery patients or procedures into one group. A higher risk with abdominoplasty, especially abdominoplasty combined with other procedures, is being revealed.^{4,8} Despite a very high acuity for deep venous thrombosis risk and prophylaxis, we experienced three thromboembolic complications in 570 operations in the last year. Our population group was a higher-risk group than the average surgeon sees, but it underscores the need for appreciation of this problem. Every surgeon needs to understand the risk and utilize a rational regimen based on the science as we have rather than on a fear of hematomas, whether that regimen be intravenous sedation, sequential compression devices, or anticoagulation in the highest-risk patient.

A hematoma is a medical stress, an inconvenience, an embarrassment, or an additional procedure, but rarely does it kill a patient. Thromboembolism that progresses to a pulmonary

embolism kills the patient 50 percent of the time.^{9,10} Let's not think of a hematoma as a complication the surgeon causes and a thromboembolism as a complication the patient acquires. As a specialty, we should do everything possible to maximize patient safety. When we do have a patient who "gets" this complication, let's involve consultants to assist in treatment.

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DISCLOSURE

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REFERENCES

1. Spring, M. A., and Gutowski, K. A. Venous thromboembolism in plastic surgery patients: Survey results of plastic surgeons. *Aesthetic Surg. J.* 26: 522, 2006.
2. Durnig, P., and Jungwirth, W. Low molecular weight heparin and postoperative bleeding in rhytidectomy. *Plast. Reconstr. Surg.* 118: 502, 2006.
3. Davison, S. P. Prevention of venous thromboembolism in the plastic surgery patient. *Plast. Reconstr. Surg.* 114: 43e, 2004.
4. Clayman, M. A., and Seagle, B. M. Office surgery safety: The myths and truths behind the Florida Moratoria—Six years of Florida data. *Plast. Reconstr. Surg.* 118: 777, 2006.
5. Rohrich, R. J., Gosman, A. A., Conrad, M. H., and Coleman, J. Simplifying circumferential body contouring: The central body lift evolution. *Plast. Reconstr. Surg.* 118: 525, 2006.
6. Stuzin, J. M. Low-molecular weight heparin and postoperative bleeding in rhytidectomy (Discussion). *Plast. Reconstr. Surg.* 118: 508, 2006.
7. Mustoe, T. A. Abdominoplasty: A comparison of outpatient and inpatient procedures shows that it is a safe and effective procedure for outpatients in an office-based surgery clinic (Discussion). *Plast. Reconstr. Surg.* 118: 523, 2006.
8. Broughton, G., II, Rios, J. L., Rohrich, R. J., and Brown, S. A. Deep venous thrombosis prophylaxis practice and treatment strategies among plastic surgeons: Survey results. *Plast. Reconstr. Surg.* 119: 157, 2007.
9. Van Uchelen, J. H., Werler, P. M., and Kon, M. Complications of abdominoplasty in 86 patients. *Plast. Reconstr. Surg.* 107: 1869, 2001.
10. Caprini, J. A., Arcelus, J. I., and Rayna, J. J. Effective risk stratification of surgical and nonsurgical patients for venous thromboembolic disease. *Semin. Hematol.* 38(2 Suppl. 5): 12, 2001.