The face-lift, or rhytidectomy, is a common surgical procedure in the United States. Facial hematoma is the most frequent complication after face-lift. Sometimes an emergent expanding hematoma may require general anesthesia and can present difficulty in securing the airway. This article reviews the frequency and causes of an expanding hematoma and how it affects anesthesia care. The case summary describes an emergent bilateral hematoma after a face-lift in a 50-year-old woman, the emergency treatment, and her subsequent recovery. Details of the procedure are provided. The purpose of examining this case is to inform and educate anesthesia providers about the possibility of a common face-lift complication and how to prepare for securing the difficult airway in this situation.

Keywords: Airway, face-lift, hematoma, postoperative complication.

Emergent Bilateral Face-lift Hematoma: A Case Report

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Rhytidectomy, commonly referred to as face-lift or facial rejuvenation, has evolved into one of the top 5 cosmetic procedures in the United States.1,2 According to the American Society for Aesthetic Plastic Surgery’s Cosmetic Surgery National Data Bank, 126,713 face-lifts were performed in 2014, a 27.7% increase since 1997.1,3 Rhytidectomy is the most common aesthetic surgical procedure performed in patients over age 65 years.3 The most common complication of face-lift surgery is hematoma, which can be expanding and require an emergency return to the operating room.1-12 Of concern to the anesthesia provider are the airway considerations in providing care to this patient. Face-lifts are performed in a variety of settings from private offices and surgery centers to hospitals.

Preventing complications from rhytidectomy involves a number of perioperative factors during anesthesia care. Reducing the risk of face-lift hematoma involves blood pressure control, adequate pain and anxiety control, and prevention of postoperative nausea and vomiting.1 Keeping the patient normotensive by the American Heart Association standard of 120/80 mm Hg during surgery is of primary importance in maintaining hemostasis and preventing hematoma formation.1,3 Of course, surgical hemostasis plays a major role in hematoma formation as well. Limiting postoperative activity and physical exertion for up to 10 days is important to prevent complications.4,7

Although you may not provide anesthesia for face-lifts in your hospital, you may see a patient emergently return to the operating room with a hematoma with airway compromise. The purpose of describing this case report is to provide awareness and educate anesthesia providers to promote adequate preparation for a case of this type.

Studies in surgical literature discuss the risk of complications, preoperative assessment, and perioperative management of patients undergoing face-lift.9 The most common complication of face-lift is hematoma, which occurs in 3% to 8% of cases according to multiple studies.2 As face-lifts increase, the number of cases of emergent hematomas should be anticipated. Preoperatively, both hypertension and smoking increase hematoma risk.3,7,9 Systolic blood pressure over 150 mm Hg is a risk factor and should be well controlled preoperatively.1,3,7,9 Use of anticoagulants, aspirin and other nonsteroidal anti-inflammatory drugs, and blood-thinning supplements (Gingko biloba, vitamin E, garlic) within 2 weeks of surgery have been found to contribute to hematoma formation.7 Higher rates of hematoma formation are also found in male patients and in patients having additional procedures along with the face-lift3,8 (Table). Intraoperatively, regardless of anesthetic technique, control of blood pressure, pain control, and prevention of nausea and vomiting are critical; the use of multimodal pain strategies and drugs, such as clonidine to control blood pressure especially postoperatively, are used to achieve these goals.4,11 The use of general anesthesia increasing hematoma formation has not been substantiated by statistical analysis.7 Patient age and presence of cardiac or respiratory disease are not factors for hematoma formation.7 The only association found between hematoma formation and surgical technique is with anterior corset platysmaplasty, a technique that connects the undermining of the neck with the face-lift and may involve submental vessels.7 Use of antidepressants does not significantly affect bleeding in face-lift surgery.9,13 Surgeons have used fibrin sealants, drains, and supplements, such as Arnica montana, to decrease postoperative bruising.7,9

Postoperatively, it is most important to have trained personnel educate family and other caregivers if the patient goes home within the first 24 hours of surgery.4 An emergent hematoma usually presents within 1.5 to 10 hours postoperatively,9 and most hematomas present...
within 12 to 24 hours of surgery. A major hematoma is a true emergency requiring immediate surgical drainage to prevent flap necrosis and, most importantly, an impending airway compromise or obstruction. Often no discreet bleeding vessel is found. Instead, a large clot formation will be seen when the incision is reopened (Figure 1).

The clinical presentation of such a patient is striking. The presenting signs and symptoms are pain and swelling (Figures 2 and 3). The patient usually has a degree of trismus and hypertension along with extreme anxiety and shortness of breath. A discussion and plan to manage the airway is paramount. The American Society of Anesthesiologists Difficult Airway Algorithm and the Rural Doctors A-B-C-D plans (Figures 4 and 5) will assist providers with primary and alternative strategies for use in this difficult airway case with appropriate thought processes and equipment to gather for this case. A “difficult airway cart” must be within reach in the operating room before induction. It should include a video laryngoscope, a fiberoptic bronchoscope, multiple supraglottic airway devices referred to as SGAs, such as laryngeal mask airways (LMAs) of various types (classic, intubating, i-gel [Intersurgical Ltd], and ProSeal [Teleflex Inc]), and a tracheostomy kit. Because of the emergent nature of the case, one may not discover pertinent information about the cause of the hematoma until after the case and in the days to follow.

Case Summary
A 50-year-old, 61-kg woman who underwent a face-lift under general anesthesia was released from the same-day surgery unit at the hospital. Approximately 8 hours after discharge, however, she returned to the emergency room with extreme mandibular swelling and stridor. Her medical history was obtained from the anesthesia record from earlier in the day. Medical history included hypothyroidism treated with levothyroxine (Synthroid), depression treated with bupropion and desvenlafaxine (Pristiq), and attention-deficit disorder treated with amphetamine-dextroamphetamine (Adderall). Past surgical procedures included cesarean delivery and sinus surgery without incident. Her anesthesia during the face-lift had proceeded uneventfully, and a brief period of hypotension was treated with phenylephrine intraoperatively. The face-lift was performed with a classic approach and incision behind the ear and toward the hairline to tighten the lower face and jaw area.

In the emergency department, bilateral hematomas requiring evacuation were diagnosed. The surgeon immediately brought her to the operating room. The patient had been fasting from solid foods. An 18-gauge intravenous line was started in the operating room, and the patient was preoxygenated in the sitting position because she did not tolerate lying down. The difficult airway cart was brought into the operating room and contained a fiberoptic bronchoscope, multiple types of LMAs or SGAs, bougies, and the video laryngoscope. The woman was hypertensive and extremely anxious, and there were concerns about her ability to cooperate with sedation or awake intubation. The degree of trismus present with examination of the airway awake would make insertion of a fiberoptic bite block difficult. An awake nasal intubation approach was considered along with the possibility of a nosebleed. The anesthesia team along with the surgeon

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**Table. Risk Factors for Hematoma Formation During Face-lift**

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<th>Patient risk factors</th>
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<tr>
<td>• Preoperative systolic pressure over 150 mm Hg</td>
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<td>• Aspirin or nonsteroidal use</td>
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<tr>
<td>• Smoking</td>
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<tr>
<td>• Cardiac or pulmonary disease</td>
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<td>• Older age</td>
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<th>Surgical and other risk factors</th>
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<tr>
<td>• Anterior platysmaplasty</td>
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<tr>
<td>• Type of facelift</td>
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<tr>
<td>• Use of surgical sealants</td>
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<td>• Surgeon</td>
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**Figure 1. Large Clot Formation Can Be Seen When Face-Lift Incision Is Reopened in Patient With Major Hematoma**
decided to proceed with general anesthesia.

The patient was induced with propofol, 60 mg; midazolam (Versed), 1 mg; and lidocaine, 50 mg, intravenously. There was a discussion about the use of muscle relaxation, and it was determined it would be prudent to keep the patient spontaneously breathing. Laryngoscopy was extremely difficult and unsuccessful because of constriction and neck swelling. An emergency cricothyroidotomy would be difficult as well. An oral airway and a nasal airway were also inserted to assist in mask ventilation with sevoflurane. The surgeon determined it necessary to evacuate one side of the bilateral hematoma to facilitate intubation while mask ventilation was maintained. Once the hematoma was released, the patient was successfully intubated with a 6.5-mm oral endotracheal tube with a video laryngoscope (GlideScope, Verathon). After the airway was secured, the stomach was decompressed with an oral gastric tube. Dexamethasone (Decadron), 12 mg, was given to reduce airway swelling, and the case proceeded uneventfully.

Postoperatively the patient was taken to the intensive care unit, intubated, and sedated overnight. She was extubated the next day and discharged home after 2 days.

Discussion
Emergent hematoma usually presents within 1.5 hours to 10 hours postoperatively. In this case, the expanding emergent hematoma occurred within that predicted range, presenting at 8 hours after discharge.

The patient had been receiving bupropion for management of depression, and some classes of antidepressants have been associated with bleeding risk after face-lift.13 No specific bleeding site was located during the case. The patient was intubated and sedated overnight in the intensive care unit. The duration of hospitalization was 3 days after hematoma evacuation. Because the patient presented with severe bilateral mandibular swelling, which made intubation difficult, the use of an oral airway, together with a nasal airway, made mask-assisted spontaneous ventilation easier before the hematoma release. If a similar situation is faced in the future, the use of an SGA such as i-gel, LMA Fastrach (Teleflex Inc), or LMA Supreme device (Teleflex Inc) might be helpful if it is able to be seated properly. This case was performed in a care team model with experienced anesthesia providers, and, because of this experience, the author recommends having 2 skilled anesthesia providers on duty if possible. If 2 providers are unavailable, enlisting the help of the surgeon or circulating nurse may be necessary to secure the airway, including performing an emergency tracheostomy. Until the hematoma is evacuated, there is a high probability that intubation will be difficult or unsuccessful. Evacuation of the hematoma with the patient initially under sedation, with subsequent general anesthesia or fiberoptic intubation, is an option depending on the patient’s cooperation level and the practitioner’s skill set. An emergent tracheostomy is an ever-present possibility in these cases but may be difficult to perform because of hematoma extension into the neck area.
Figure 4. American Society of Anesthesiologists Difficult Airway Algorithm
Abreviation: SGA, supraglottic airway.
(Used by permission from the American Society of Anesthesiologists.)
The author found it of interest when researching this topic that no cases of postrhytidectomy hematoma were described in the anesthesia literature but were abundant in the surgical literature. A possibility is that because of the emergent nature of the patient’s condition, prospective studies do not exist, especially in this elective aesthetic-based population. It is possible that some of the reported cases had earlier intervention because of closer observation in overnight recovery areas, in hospitals, surgery centers, or office-based operating rooms.

There are ways to attempt to limit complications after face-lift. It is critical that patients have well-educated caregivers at home if they are going home the day of surgery. In addition, with the ease of smart-phone technology, it may be advisable to have an hourly photograph sent to the surgeon, who could monitor a patient’s status the night of surgery despite the presence of the postoperative dressing. The surgical literature discusses the current lack of level I or II evidence for hematoma rates and surgical outcomes, while looking to future use of 3-dimensional photography and validated questionnaires in large groups of patients to advance knowledge and try to avoid complications. Because rhytidectomy has become so common, anesthesia providers should anticipate, discuss, and prepare for the use of difficult airway guidelines in the event that a patient presents with an emergent hematoma after a face-lift. It is hoped that this article will assist other anesthesia providers who face the possibility of similar face-lift complications.

REFERENCES
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**DISCLOSURES**

The author has declared no financial relationships with any commercial entity related to the content of this article. The author did not discuss off-label use within the article.

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This is a great opportunity to practice in a beautiful and culturally rich area while being affiliated with a health system with award winning programs, nationally recognized physicians, and world class technology.