Hematoma Formation in Deep Plane Rhytidectomy

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Hematoma formation following rhytidectomy procedure is unfortunately common and one of the more devastating complications that can occur. Various reports have cited the incidence of hematoma formation using the superficial musculoaponeurotic system–platysma technique; but, to our knowledge, no report has specifically addressed the incidence of hematoma formation following deep plane rhytidectomies. We retrospectively reviewed the medical records and deep plane rhytidectomy worksheets of 451 consecutive deep plane rhytidectomies performed at one institution by one surgeon. The incidence of major hematoma was 2.2% (10/451) and of minor hematoma was 6.65% (30/451). All hematomas that did occur did so in the subcutaneous plane of dissection. There were no facial hematomas.

RESULTS

MAJOR HEMATOMAS

There were 410 women and 41 men who underwent a deep plane rhytidectomy. The incidence of major hematomas was 2.2% (10/451). There were 8 women (1.9%) and 2 men (4.9%) with the average age of 58 years. Of these 10 patients, 6 required intervention with anesthesia in the operating department and the other 4 were treated in the recovery or treatment department with no anesthesia. The period for the development of these major hematomas ranged from 1.5 to 10 hours after surgery. None of these major hematomas occurred after the initial 12-hour postoperative period (Table). All major hematomas occurred in the subcutaneous cervical plane of dissection. None developed in the face beneath the deeper plane of dissection.

MINOR HEMATOMAS

The incidence of minor hematomas was 6.65% (30/451). There were 25 women (6.1%) and 5 men (12%) with the average age of 56 years. The recognition of the minor hematomas ranged from 1 postop-
PATIENTS AND METHODS

A total of 451 consecutive deep plane rhytidectomies (410 women and 41 men) were performed from February 1994 to December 1998 at the Lasky Clinic, Beverly Hills, Calif. The senior surgeon (F.M.K.) performed all operations. A retrospective review of the patients’ medical records and deep plane rhytidectomy worksheets were evaluated for the occurrence of a hematoma. A hematoma was defined as a collection of blood that required evacuation. The hematomas were further categorized as major or minor. Owing to its expansile nature, major hematomas required urgent surgical intervention with evacuation in the operating or treatment department, while minor hematomas were treated secondarily by needle aspiration. Other data were acquired such as the patient’s sex, age, medical history, type of anesthesia used, period before the development of the hematoma, location of the hematoma, and any further sequelae.

MEDICAL HISTORY

Medical history review noted 2 patients with a history of hypertension. However, preoperative, perioperative, and postoperative blood pressure did not note any clinically significant high blood pressure (ie, systolic blood pressure >150 mm Hg and diastolic blood pressure >90 mm Hg). None of these patients had any cardiovascular or peripheral vascular disease, or known blood coagulopathy. All patients had normal platelet counts on their preoperative laboratory studies and denied use of platelet-inhibiting medications within the prior 2 weeks.

ANESTHESIA

All patients, with the exception of 2, received monitored intravenous sedation with propofol (Diprivan) titrated to the patient’s weight, and local anesthetic infiltration consisting of 0.75% lidocaine hydrochloride with 1:150000 epinephrine. Two patients received general anesthesia because of concomitant nonfacial plastic surgical procedures performed. These 2 patients developed minor, not major, hematomas.

OTHER COMPLICATIONS

Other complications included 5 minor wound infections (1.1%). Four patients had some degree of hypoesthesia (0.89%), and 28 (6.2%) had some postauricular hypertrophic scarring requiring steroid injection. There were no cases of facial paresis or paralysis.

Postoperative Time Until the Formation of Major and Minor Hematomas

<table>
<thead>
<tr>
<th>Type of Hematoma</th>
<th>Postoperative Time Until Formation</th>
<th>No. of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>&lt;3 h</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3-6 h</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6-12 h</td>
<td>4</td>
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<tr>
<td>Minor</td>
<td>1-7 d</td>
<td>15</td>
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<tr>
<td></td>
<td>7-14 d</td>
<td>13</td>
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<td></td>
<td>&gt;14 d</td>
<td>2</td>
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</tbody>
</table>

This study specifically addresses the rate of hematoma formation following a deep plane rhytidectomy performed at the Lasky Clinic by one of us (F.M.K.). The incidence of major hematomas following the deep plane rhytidectomy was 2.2%. All of the hematomas developed in the subcutaneous cervical plane of dissection with none occurring in the deeper plane of the face beneath the superficial musculaponeurotic system flap.

As with previously reported data, the major hematomas all occurred within the first 12 hours. We share the belief that this may be due to a combination of increased activity and the sympathetic response of the patients to their anxiety and discomfort. There have been studies that have shown the effectiveness of using various sedating medications to counter the patient’s anxiety postoperatively and thus the formation of hematomas. At the Lasky Clinic, an anxiolytic, zolpidem tartrate (Ambien), and a nonnarcotic pain reliever are routinely prescribed for the patient to use as necessary. Stronger medications are not prescribed unless the patient has a history of chronic anxiolytic use and if so, they are given their preoperative medication.

Although a discussion of the deep plane technique is beyond the scope of this article, we believe it offers many advantages. In brief, the deep plane rhytidectomy uses a thicker, musculocutaneous flap containing skin, muscle, and fat that is widely mobilized and can be advanced with some tension. It is a more extensive plane of dissection and one would postulate that this would increase the risk of bleeding and thus hematomas. However, the plane of dissection between the deep and superficial fascial layers of the face is avascular and although quite extensive, only one significant communicating cutaneous facial vessel is usually encountered. A subcutaneous flap interrupts many subdermal and fatty vascular channels, with significantly more interoperative bleeding, as well as postoperative swelling and hematoma formation. The fact that there is little subcutaneous facial dead space using the deep plane technique most likely accounts for the lack of any hematomas developing in the face. The hematomas developed in the neck where the dissection was subcutaneous, and despite a suction drain being routinely used. Other advantages of the deep plane rhytidectomy include a dramatic improvement in the jawline and jowl area; softening of the temporal, cheek, and nasolabial areas; and optimum wound healing with mini-
mal hair loss due to the thickness and rich vascularity of the flap raised. The natural, nontaut mandibular line with a lack of subcutaneous facial irregularities results in a pleasing aesthetic outcome.

Every surgeon performing rhytidectomies, whatever the technique, must be familiar with the signs and symptoms of hematoma. Hematoma, left untreated or delayed, can result in a compromised and potentially suboptimal aesthetic result. Any patient reporting severe unilateral facial or neck pain, swelling, or ecchymosis should be expeditiously examined for a potential hematoma. It is better to be safe than sorry. The facial and neck dressing are immediately removed and, if required, staples or sutures opened to immediately evacuate the expanding blood and relieve the pressure. Usually, evacuating the clot and applying pressure terminates any further bleeding. Previous studies have shown that generalized oozing, and not a discrete arteriolar bleeder, is usually the culprit. However, if this does not terminate the reaccumulation of blood, then wider exploration, irrigation, and cauterization may be required. Most major or expanding hematomas occur in the first 12 hours as was also noted in our series. Thus, all patients undergoing rhytidectomy are observed carefully in the recovery room for 3 hours after surgery by a registered nurse and examined by a physician prior to being discharged home. A trained medical professional familiar with the signs and symptoms of an evolving hematoma cares for the patient and monitors the drainage during the first postoperative night. This medical professional is integral during this critical period in which major hematomas occur and invaluable in keeping the patients comfortable and is anxiety free.

CONCLUSIONS

As a rule, an elective surgical procedure should produce optimal aesthetic results while limiting and minimizing complications. The deep plane rhytidectomy offers these benefits in facial rejuvenation with few complications and specifically a low hematoma rate. In this study, the rate of major and minor hematoma is within the reported incidence, if not slightly lower. All hematomas occurred in the neck; there were no facial hematomas.

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REFERENCES


Quotable

“Quidquid sub terra est in apricum proferet aetas.”
“Everything under the ground will come to the surface in the sunlight.”

L. M. A. Caldanio
Padua, 1773
“ex libris”
(Caldani [or Caldanio] studied human physiology and in particular olfaction, and the nervous system in depth.)