Facial Surgery

Case Report

Can an “Aesthetic” Intervention (Braided Hair Coil) Cause Hair Loss After an Aesthetic Operation?

Alexander Dionyssopoulos, MD, PhD; Antony Papaconstantinou, MD; Alexandra Stoltidou, MD, PhD; and Georgia-Alexandra Spyropoulou, MD, PhD

Abstract
Postoperative pressure alopecia (PPA), defined as hair loss caused by prolonged pressure on the patient’s scalp during surgery, is an uncommon condition after aesthetic surgery. Originally, it was described for patients who underwent lengthy cardiovascular and gynecologic operations. The authors present a rare case, in which hair loss occurred after secondary breast augmentation (replacement of breast implants). The PPA appeared in the occipitoparietal region of the patient’s scalp approximately 2 weeks after surgery. The operation was completed in less than 3 hours, without any fluctuations in the patient’s blood pressure or any unusual blood loss. There were no other precipitating factors such as anemia or coagulopathies. The probable cause of this unexpected result was the patient’s braided hair coil, which had not been noted before the operation. The patient habitually, and on the day of her operation, combed her hair into a braided coil, which placed extra pressure on the occipitoparietal region. The hair loss was temporary, and hair regrowth was complete within 2 months. This incident may have been avoided if the braided hair coil had been noted by nursing or other medical staff preoperatively. Repositioning the head every 30 minutes and providing adequate head padding during surgery are advised to protect the patient and prevent such incidents.

Keywords
hair loss, breast augmentation, braided hair coil, temporary alopecia, postoperative pressure alopecia

Accepted for publication November 8, 2013.

Postoperative pressure alopecia (PPA) refers to a restricted area of hair loss resulting from prolonged application of scalp pressure at the point where the head has been supported during a lengthy surgical procedure. Although PPA is usually self-restoring, it can be a cause of serious concern for the patient and the attending physician. The types of operations usually associated with PPA are lengthy surgical procedures (> 6 hours’ duration) and cardiopulmonary operations. Factors other than the type of operation itself, such as low blood pressure and low tissue perfusion, are probably the main cause.

We present a case of PPA that occurred in an otherwise healthy woman following a relatively short aesthetic operation. The patient presented without any general risk factors but with a specific initiative cause: a braided hair coil in the occipitoparietal region of her head.

CASE PRESENTATION

Due to breast implant failure confirmed by magnetic resonance imaging, a 39-year-old woman (weight, 61 kg; height, 170 cm) underwent secondary breast augmentation (replacement of breast implants). The operation was completed in less than 3 hours, without any fluctuations in the patient’s blood pressure or any unusual blood loss. There were no other precipitating factors such as anemia or coagulopathies. The probable cause of this unexpected result was the patient’s braided hair coil, which had not been noted before the operation. The patient habitually, and on the day of her operation, combed her hair into a braided coil, which placed extra pressure on the occipitoparietal region. The hair loss was temporary, and hair regrowth was complete within 2 months.

Dr Dionyssopoulos is an Associate Professor of Plastic Surgery, Dr Papaconstantinou is a consultant in plastic surgery, and Dr Spyropoulou is a lecturer in plastic surgery in the Department of Plastic Surgery, General Hospital “Papageorgiou,” Thessaloniki, Greece. Dr Stoltidou is a plastic surgeon in private practice in Thessaloniki, Greece.

Corresponding Author:
Dr Alexander Dionyssopoulos, Department of Plastic Surgery, School of Medicine-Aristotle University of Thessaloniki, General Hospital “Papageorgiou,” Periferiaki Odos Thessalonikis, 56403 Thessaloniki, Greece.
E-mail: adionys@auth.gr
165 cm) underwent an operation for breast implant replacement, without capsulectomy, 10 years after the initial augmentation. Her medical history was unremarkable for any comorbidities that might be associated with alopecia or affect skin resistance.

During the operation, the patient lay supine on the surgical table, with only the usual padding in place. The duration of anesthesia was 210 minutes, and the operating time was 160 minutes. As documented in the anesthesia notes, her systolic blood pressure ranged from 80 to 100.5 mm Hg and diastolic pressure from 50 to 60 mm Hg. The patient’s operation and immediate postoperative recovery period were uneventful, and she was discharged on the third postoperative day. No symptoms were recorded postoperatively other than itching after the 12th day, when the hair loss was first noticed. By the 20th day, occipitoparietal hair loss was complete in an area measuring 4.5 × 3.5 cm (Figure 1). Following dermatologic consultation, a diagnosis of alopecia areata was ruled out, and the patient was reassured that the hair loss would likely be temporary. By 53 days postsurgery, the hair had regrown completely; 14 months after the incident, the skin and hair follicles of the affected area were normal again (Figure 2).

What makes this case remarkable—and what passed unnoticed by nursing and medical staff—is the fact that this patient habitually combed her hair into a braided coil, which she also did on the day of the operation. During the operation, her head was supported by a small silicone head ring measuring 4.5 × 3.5 cm—the exact size of her braided coil. Apparently, the support provided by the head ring was inadequate to prevent this complication. During a postoperative follow-up consultation, the patient herself identified the braided coil as the possible cause of alopecia, which likely increased the local pressure.

Any prolonged pressure concentrated on a small body surface area can affect blood supply to the area and possibly cause hair loss, especially in an anesthetized patient who lacks the mechanisms of self-regulation for tissue perfusion at the microcirculation level. Diffuse hair loss also may be attributable to stress following anesthesia and surgery. Similar to pressure-induced alopecia, this type of hair loss tends to be self-limited, with hair returning to the anagen phase and regrowing within 3 months. Factors such as severe hypotension, massive blood loss, and treatment with vasoconstrictors can severely aggravate local ischemia. Other risk factors include prolonged endotracheal intubation, prolonged head immobilization, and intraoperative Trendelenburg position. However, none of these factors was observed in our patient. To our knowledge, there are only 2 reports of similar cases of PPA after an aesthetic plastic surgery operation: 1 after reduction mammaplasty and the other after synchronous 1-sided reduction mammoplasty and 1-sided mastopexy.

In general, hair loss associated with PPA is complete within 3 to 28 days. Most cases are self-restoring, and regrowth is complete within 12 weeks. In another report, it was suggested that regrowth starts at 18 weeks, with full regrowth within 24 weeks. In our case, regrowth was complete within 8 weeks. Lawson et al reported permanent alopecia in 27 of 56 patients who had cardiopulmonary bypass.
surgery and were intubated for >24 hours. In contrast, not a single case of permanent alopecia occurred in the patients who had been intubated for <17 hours.7

Postoperative pressure alopecia also has been caused by pressure from a strap used to secure the intubation tube.9 In another case,5 the patient’s head was in contact with the wrist-rest assembly placed around the head during the operation. These cases are similar to our case in that pressure beyond the weight of the head itself was applied to the scalp. Supplementary head support in the form of a soft foam “doughnut” cannot always prevent PPA, as demonstrated in a report of postoperative alopecia despite placement of head padding.3 Differential diagnosis for alopecia areata10 should be conducted if prodromal symptoms are not manifested, if more than 1 hairless spot is present, and/or if full hair regrowth does not occur.

Our case study differs from other reported cases in several significant ways. First, our patient presented with no preexisting risk factors (eg, anemia or fluctuations in blood pressure, hypovolemia, or hypoproteinemia) that would precipitate poor microcirculation conditions. Second, the surgery was not lengthy (duration, 210 minutes). Finally, there was no blood loss during the operation that potentially could have caused diminished skin perfusion. Instead, the patient’s habit of combing her hair into a braided coil was probably the cause of enhanced pressure in the occipitoparietal region. In our opinion, this is a very rare cause of postoperative pressure alopecia. To avoid PPA, frequent (every 30 minutes)6 head repositioning during the procedure is advised.11,12

CONCLUSIONS

Any intraoperative complication can result in patient concern or distress postoperatively. Although this case report may heighten concerns about PPA, it may also help prevent similar problems in the future. Careful investigation for points of avoidable added pressure (such as our patient’s braided hair coil), coupled with frequent repositioning of the head and placement of adequate padding/support, should be standard practice for cardiopulmonary, gynecologic, or aesthetic surgery procedures—regardless of their duration.

Disclosures

The authors declared 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