Pneumocephalus as a Complication After Facelift Surgery

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Following facelift surgery, a number of complications can occur. Some of the most common postoperative facelift complications are hematoma, bleeding, infection, injury to the nerves that control facial muscles, problems with healing of the skin, scarring crust on the incisions, numbness or tingling around the incision areas, skin or hair loss, and skin discoloration.1 The risk of nerve damage or infection after a facelift surgery is low but does exist. We report a case of severe pneumocephalus after facelift, which to our knowledge is the first such report in the literature.

A healthy 70-year-old man was referred to us with deep forehead lines resulting from chronic frontalis muscle activity. He sought treatment for brow ptosis and upper lid redundancy, wrinkling of the lower lid and malar area, upper lid hooding, and scleral show. To address these concerns, an operative course was planned, including a bilateral upper blepharoplasty and frontal lift by skin excision, along with a permanent microscrew. On the first postoperative day, the patient was discharged from the hospital. On the third postoperative day, the patient presented to an emergency treatment center with sudden onset of frontal headache, nausea, vomiting, dizziness, and weakness in the upper leg muscles. We suspected embolism; a computed tomography (CT) scan showed air collection all over the brain, especially in the frontal lobes bilaterally (Figure 1). It was diagnosed as pneumocephalus. The patient was seen by a neurosurgeon and subsequently treated with an antiepileptic agent (phenytoin) and bed rest for four weeks. Spontaneous regression was seen on CT scan after seven days. One month postoperatively, the patient requested removal of the microscrews and a second operation was performed to extract them. After the operation, the area of the pneumocephalus was checked again with magnetic resonance imaging (MRI; Figure 2).

Intracranial aeroceles were first described at autopsy by Chiari and later named pneumocephalus by Wolf. The first radiographic diagnosis was made by Lucket.2 Cases of pneumocephalus have been seen following intrathecal procedures, sinus fractures, sinus ostomas, skull base fractures, congenital skull defects, infections of gas-producing organisms, barotrauma, neurosurgical operations, paranasal sinus operations, and nasal continuous positive-airway pressure applications.1,2 Trauma is the most common cause of pneumocephalus2-5 because air accumulation is the result of a traumatic communication between the paranasal sinuses (especially ethmoidal air cells), cribiform plate, or mastoid air cells and the cranial fossa through the associated dural tear.2,3,5 There are two types of pneumocephalus: tension (an easily reversible but potentially life-threatening complication) and nontension (a common consequence of cranial surgery and a relatively benign complication that is usually asymptomatic and that regresses spontaneously).2,5

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In the literature, we found no reports of a pneumocephalus case related to facelift surgery. In our case, excessive drilling for screw placement and an increased negative intracranial pressure may have contributed to the development of the pneumocephalus. Although surgical devices should always be under the control of the operating surgeon, in our case, the pedal of our drilling device’s control had been adjusted by adjunct medical personnel, which may have also contributed.

In conclusion, aesthetic surgeons should be aware of pneumocephalus, which is a very rare but serious complication, when microscrew application is part of the surgical plan.

**Disclosures**

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**REFERENCES**