Ulnar Neuropathy as a Complication of Retinal Detachment Surgery and Face-Down Positioning

Dimitrios Brouzas Nikolaos Gourgounis Stavroula Davou
Eleni Loukianou Ilias Georgalas Chryssanthi Koursandrea

1st Department of Ophthalmology, University of Athens Medical School, Athens, Greece

Key Words

Face-down positioning · Ulnar neuropathy · Vitrectomy complications

Abstract

Purpose: To report a case of bilateral ulnar neuropathy as an extraocular complication following retinal detachment surgery and face-down positioning.

Methods: Case report.

Results: Bilateral hypoesthesia and numbness of the 4th and 5th finger started 2 weeks after vitrectomy for retinal detachment and face-down positioning. Due to progressive symptoms 6 months later, unilateral ulnar nerve decompression at the elbow was performed.

Conclusions: This case report demonstrates that strict face-down positioning bears the risk of ulnar neuropathy.

Introduction

Face-down positioning after silicone or gas tamponade for retinal surgery is an established practice mainly for upper retina tears and posterior pole surgery. The use of long-acting gases for conventional retinal surgery and vitrectomy is subjected to some restrictions regarding gas concentration, altitude [1], airplane travel [2–4], and general anesthesia [5]. However, no guidelines for surgeons exist concerning the duration of face-down positioning. Strict face-down positioning after use of long-acting gas or silicone tamponade bears the risk of ulnar neuropathy [6–8]. This case report draws attention to this risk.

Case Report

A 57-year-old, overweight woman presented to the eye casualty department complaining of flashing lights, floaters, and decreased visual acuity in the left eye. Best-corrected decimal visual acuities were 10/10 OD and 7/10 OS. Fundus examination revealed an upper temporal bullous rhegmatogenous retinal detachment emanating from a hole along the border of a lattice degeneration. A 23-gauge vitrectomy with 16% SF₆ gas tamponade was performed. The patient was instructed to assume a face-down position for 10 days.

Two weeks later, she was complaining of hypoesthesia and numbness along the left 4th and 5th finger, as well as hypoesthesia, numbness, and a burning sensation along the right 4th and 5th finger. An appointment with the orthopedic clinic was arranged for her, and a bilateral ulnar nerve neuropathy was diagnosed. Six months later, a surgical intervention with decompression of the right ulnar nerve at the elbow was performed due to progressive deterioration of symptoms ([fig. 1](#)).

One year later, she still complained of bilateral hypoesthesia and numbness in the 4th and 5th fingers and ‘weak grip’ in the right hand.

Discussion

In 1996, Ciulla et al. [6] reported 2 cases of ulnar nerve palsy after maintaining a face-down position for 2–4 weeks after vitrectomy with intraocular perfluorooctane. One of the patients underwent surgical decompression of the nerve at the elbow. In 1999, also Holekamp et al. [7] reported 7 cases of ulnar neuropathy during the immediate postoperative period after vitrectomy with fluid gas exchange for macular hole surgery followed by at least 1 week of strict face-down positioning. All patients had persistent symptoms during a follow-up period ranging from 3 to 24 months.

In 2004, Salam et al. [8] reported another case of bilateral ulnar neuropathy at the elbow confirmed by reduced conduction velocities in nerve conduction studies with minimal recovery during a follow-up period of 10 months.

In our case, the postoperative instructions included 10 days face-down positioning, and the symptoms started 2 weeks after surgery. The patient was overweight, and it is possible that the pressure on the bent elbow during face-down positioning was therefore increased.

Conclusions

As there are no specific guidelines for surgeons, patients must be instructed to minimize the time spent with their elbows in a flexed position to avoid any undue pressure on the elbows during face-down positioning. Moreover, patients should be made aware of warning signs of any early ulnar nerve damage symptoms, such as hypoesthesia, numbness, and a burning sensation in the 4th and 5th fingers.

Fig. 1. Decompression of the ulnar nerve at the elbow.

References

- 1 Ferrini W, Pournaras J, Wolfensberger T: Expansion of intraocular gas bubbles due to altitude: do meteorological factors play a role? *Klin Monbl Augenheilkd* 2010;227:312–314.
- 2 Gandorfer A, Kampik A: Expansion of intraocular gas due to reduced atmospheric pressure. Case report and review of the literature. *Ophthalmologe* 2000;97:367–370.
- 3 Kokame GT, Ing MR: Intraocular gas and low-altitude flight. *Retina* 1994;14:356–358.
- 4 Lincoff H, Weinberger D, Stergiu P: Air travel with intraocular gas. II. Clinical considerations. *Arch Ophthalmol* 1989;107:907–910.
- 5 Kodjikian L, Fleury J, Garweg J, Rouberol F, Gambrelle J, Burillon C, Grange JD: Blindness after nitrous oxide anesthesia and internal gas tamponade. *J Fr Ophthalmol* 2003;26:967–971.
- 6 Ciulla TA, Frederick AR Jr, Kelly C, Amrein R: Postvitrectomy positioning complicated by ulnar nerve palsy. *Am J Ophthalmol* 1996;122:739–740.
- 7 Holekamp NM, Meredith TA, Landers MB, Snyder WB, Thompson JT, Berman AJ, Williams S: Ulnar neuropathy as a complication of macular hole surgery. *Arch Ophthalmol* 1999;117:1607–1610.
- 8 Salam A, Harrington P, Raj A, Babar A: Bilateral ulnar nerve palsies: an unusual complication of posturing after macular hole surgery. *Eye* 2004;18:95–97.