

Surgical Decompression of the Greater Auricular Nerve: A Therapeutic Option in Neurapraxia Following Rhytidectomy

John R. Barbour, MD; Gil Gontre, MD; David Halpern, MD, FACS

Background: Nerve injuries following rhytidectomy are uncommon and are rarely permanent. The great auricular nerve (GAN) is most frequently injured in the course of rhytidectomy, due to its anatomical location and superficial course. Post-operative edema and traction neuropraxia may result in temporary tingling and numbness; however, the dilemma is differentiating a recoverable injury from a nerve which is severed. In the event of a complete or persistent nerve injury, the proximal end of the irritated nerve may become attached to the scar or anterior skin flap. Neuroma formation or stitch impingement will cause a trigger point on the lateral part of the neck, which may lead to migraine-like pain on the side of the face. We present our recent experience of patients presenting with persistent nerve allodynia. All patients underwent surgical exploration, nerve release and wide decompression, with significant improvement in symptomatology.

Methods: Four patients with persistent dysfunction of the great auricular nerve were seen after rhytidectomy by outside surgeons. In each patient, a traditional open exploration was performed with careful identification of the GNA at its normal anatomical location. Diagnosis of compression and suture impingement was confirmed at operative exploration, and extensive decompression was performed with care to protect the nerve from post-operative scar formation.

Results: Four patients presented with suture impingement of the GAN and extensive peri-neural scarring. All four patients were successfully treated with exploration and decompression. Cosmetic appearance of re-exploration was acceptable in all four patients, and all patients exhibited improved sensibility at six months post-operatively. All patients healed with minimal scarring of the posterior auricular incision.

Conclusion: Re-exploration and surgical decompression of the greater auricular nerve may represent an excellent adjunct for sensory defects following rhytidectomy. Repair of this nerve, either at the time of the operation or several years later, has a very favorable prognosis. Knowledge of anatomical relationships, nerve decompression techniques, and close patient follow-up may allow for appropriate operative planning.

References:

1. Günther M, Danckwardt-Lillieström N, Gudjonsson O, et al. Surgical treatment of patients with facial neuromas--a report of 26 consecutive operations. *Otol Neurotol.* 2010 Dec;31(9):1493-7.
2. de Chalain T, Nahai F. Amputation neuromas of the great auricular nerve after rhytidectomy. *Ann Plast Surg.* 1995 Sep;35(3):297-9.
3. Azizzadeh B, Mashkevich G. Nerve injuries and treatment in facial cosmetic surgery. *Oral Maxillofac Surg Clin North Am.* 2009 Feb;21(1):23-9.

Disclosure/Financial Support: None of the authors has a financial interest in any of the products, devices, or drugs mentioned in this manuscript.