

Greater Auricular Trophic Syndrome Following Parotidectomy

Collin Evenson, BS; Daniel Hertel, MD; Robert Sonnenburg, MD

ABSTRACT

Introduction: Trigeminal trophic syndrome causes self-injurious lesions secondary to cutaneous dysesthesia following damage of the trigeminal nerve. A similar syndrome, greater auricular trophic syndrome, can result following sacrifice of the greater auricular nerve during a parotidectomy.

Case Presentation: A 59-year-old woman presented with ulceration and crusting of her right ear 5 months after parotidectomy. She was determined to have greater auricular trophic syndrome with prurigo nodularis-like histopathologic changes and was successfully treated with topical clobetasol, occlusive dressing, and behavioral modification.

Discussion: Six similar cases have been reported. Mental health disorders were noted in 4 of these cases, and treatment focused on managing psychiatric comorbidities. This case considers treatment of a patient without a prior mental health disorder.

Conclusions: Greater auricular trophic syndrome is a rare complication following a parotidectomy. Occlusive dressing and behavioral modification led to subsequent improvement of the ulceration for this patient.

INTRODUCTION

Trigeminal trophic syndrome is a well-documented complication resulting from damage of the trigeminal nerve, often secondary to nerve ablation to treat trigeminal neuralgia.¹ This nerve damage results in cutaneous dysesthesia—or discomfort and unpleasant sensation—that can lead to subsequent self-inflicted damage and ulceration of de-innervated tissue, most commonly the nasal ala.¹

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Author Affiliations: University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin (Evenson, Hertel, Sonnenburg).

Corresponding Author: Collin Evenson; email cjeverson2@wisc.edu; ORCID ID 0009-0005-1774-7252

In this case, we describe a similar syndrome that occurred following damage to the greater auricular nerve rather than the trigeminal nerve. The greater auricular nerve (GAN) provides cutaneous innervation of the lobule, antitragus, and inferior helix of the ear. Identification and preservation of the facial nerve and its branches is a critical part of parotid surgery. Surgical landmarks for identifying the main trunk of the facial nerve as it leaves the stylomastoid foramen include the tragal pointer, origin of the posterior belly of the digastric muscle, and tympanomastoid suture line. In order to optimize exposure of these structures, the greater auricular nerve (see Figure 1) or some of its individual branches are often sacrificed. This sacrifice can lead to residual numbness, dysesthesia, and paresthesia of the de-innervated area that is well known to surgeons who perform parotidectomies.^{2,3} A syndrome similar to trigeminal trophic syndrome can occur following sacrifice of the GAN, of which there are 6 known reports.⁴⁻⁷ The term greater auricular trophic syndrome (GATS) has been established and is used in this report.⁴ We report a case of GATS affecting the cutaneous innervation of the GAN.

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CASE PRESENTATION

A 59-year-old woman underwent a right-sided parotidectomy for a mass that was revealed to be low-grade mucoepidermoid carcinoma with negative surgical margins and negative surrounding lymph nodes. Her initial postoperative recovery was uneventful with mild incisional pain. At 5-month follow-up, she reported sporadic bleeding and drainage from her ear and

Figure 1. Intraoperative Photo of Greater Auricular Nerve Emerging From Erb's Point, Crossing the Sternocleidomastoid Muscle and Crossing Parotid Fascia Close to Tragal Cartilage

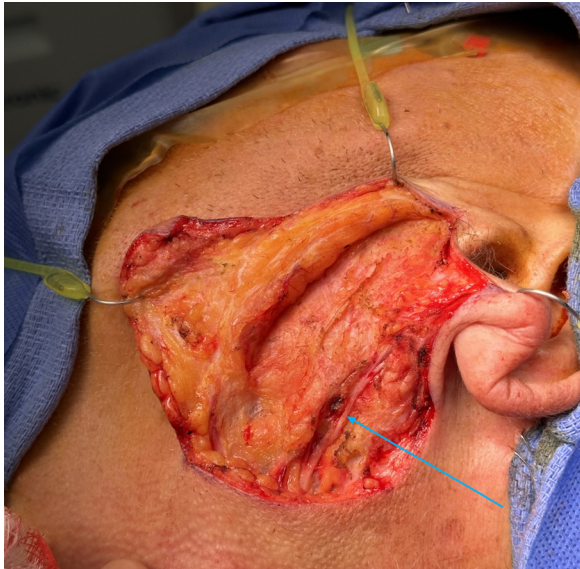


Figure 2. Cutaneous Findings Upon Presentation 5 months Post-Parotidectomy



Erosions and erythema along with intermittent areas of crusting, bleeding, and serous drainage distributed in a geometrical pattern affecting the helix and lobule of the right ear.

admitted to manipulating/picking at her right ear due to numbness and tingling. On physical examination, there was ulceration and erythema along with areas of crusting, bleeding, and serous drainage in a geometric pattern affecting the helix and lobule of the right ear and inferior preauricular area as seen in Figure 2. There was concern for secondary infection due to excoriations, and she was placed on a 10-day course of oral clindamycin and topical mupirocin.

Due to the lack of improvement and uncertain etiology, a punch biopsy of the inferior helix was obtained after 10 days. The result demonstrated histologic changes consistent with prurigo nodularis, which was thought to be secondary to chronic excoriation of the skin. Dermatology was consulted and recommended topical clobetasol for 10 days for the prurigo nodularis-like component and occlusive dressing to aid with healing and behavioral modification. The patient's numbness and tingling were most consistent with paresthesia. She was advised to avoid picking, scratching, and rubbing the affected area. After this course of treatment, the appearance and symptoms were improved, with minimal residual erythema and hemorrhagic crusting affecting a smaller area of the right helix as well as some scarring with posttraumatic milia in the inferior preauricular area (see Figure 3).

DISCUSSION

Trigeminal trophic syndrome and GATS can be challenging to treat, relying on behavioral modification to reduce self-manipulation of focal areas of skin dysesthesia or paresthesia. It can be difficult for patients to avoid manipulating the affected skin, as doing so often will provide relief despite damaging the skin

Figure 2. Cutaneous Findings 2 Months After Development of Trigeminal Trophic-like syndrome.



This is after therapy of occlusive dressing, clobetasol, and education about manipulation through picking/itching will worsen the skin.

further. One patient resorted to applying a hot water bottle to relieve his discomfort and developed full thickness burns of his ear lobe.⁷ Of patients who have their GAN sacrificed, approximately 46% will have permanent symptomatic nerve dysfunction, while the remaining patients eventually achieve spontaneous resolution of nerve dysfunction.⁸ The exact mechanism of why a very small subset of these patients develop GATS is unclear. Mental health disorders (anxiety, depression, obsessive-compulsive disorder) were noted in 4 of the 6 previously reported cases.⁴⁻⁷

Our patient did not have a history of a mental health disorder, and the small sample size makes it difficult to infer a reliable correlation between mental health disorders and GATS. Previous cases focused on treating psychiatric comorbidities with benzodiazepines, selective serotonin receptor inhibitors, and antipsychotics.⁵ In this case, clobetasol was used to reduce surrounding inflammation, skin discomfort, and to reverse secondary skin changes. Maintaining a physical barrier with an occlusive dressing was used to help prevent self-injurious behavior.

CONCLUSIONS

Greater auricular trophic syndrome is a rare complication following parotidectomy. Occlusive dressings and behavioral modification led to improvement of cutaneous ulceration for this patient. Clobetasol likely helped to reduce the skin thickening associated with chronic rubbing/picking.

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