

# Self-inflicted injury following parotidectomy, a rare case of greater auricular trophic syndrome.

Kevin P Stavrides, MD and Thomas L Kennedy, MD  
Geisinger Medical Center, Danville, PA

Geisinger

## Abstract

### Title:

Self-inflicted injury following parotidectomy, a rare case of greater auricular trophic syndrome.

### Abstract

### Objective

1. Describe an unusual case of self-inflicted injury following parotidectomy. 2. Discuss the differential diagnosis of self-inflicted cutaneous injury.

### Study Design

Case report with literature review.

### Methods

A case report of a parotidectomy patient who presented with significant tissue loss of the lobule and superficial excoriations on the operative side found to have self-induced cutaneous injury. Photographs of the lesions were obtained.

### Results

A parotidectomy patient presented roughly one month post-operatively with cutaneous injury including significant lobule tissue loss and superficial excoriations. She was previously noted to be healing routinely. The patient was seen by dermatology and diagnosed with self-inflicted injury, specifically a trophic syndrome related to her greater auricular nerve sacrifice.

### Conclusions

Self-induced cutaneous injury following parotidectomy has only been rarely reported in the literature and has not been labeled specifically as a trophic syndrome previously. Trigeminal trophic syndrome is a rare condition characterized by self-inflicted skin lesions or ulcerations caused by self-manipulation following injury to the trigeminal nerve. Here we present a unique case of trophic syndrome of the greater auricular nerve. In this case a patient caused significant tissue loss of her lobule and excoriations of her neck due to her lack of sensation following greater auricular nerve syndrome. Self-induced injury due to greater auricular nerve trophic syndrome following parotidectomy is a diagnosis of exclusion. Given its rarity, diagnosis may initially be missed. Otolaryngologists should keep the diagnosis in their differential for any cases of suspicious skin lesions post-operatively.

## Background

Greater auricular nerve (GAN) sacrifice is commonly performed during parotidectomy as a means to improve exposure. The GAN is a sensory somatic nerve and the largest nerve originating from the cervical plexus; it most commonly divides into anterior and posterior branches; though some authors have described a third lobular branch<sup>1,2</sup>. Numerous studies have shown GAN sacrifice to cause sensory deficits that carry increased risk of neuromas and traumatic injury as well as functional difficulties including shaving, using the telephone, wearing earrings, combing hair, and sleeping on the operative side<sup>3,4</sup>. An additional rare potential complication of GAN sacrifice is self-mutilation or self-inflicted injury<sup>5-7</sup>. To the best of our knowledge only 5 cases of self-inflicted injury after GAN sacrifice during parotidectomy have been described in the literature<sup>5-7</sup>. Two of these five cases were diagnosed with obsessive-compulsive disorder (OCD) and a third diagnosed with neurotic excoriations (now known as excoriation disorder)<sup>5-8</sup>. Greater auricular nerve trophic syndrome is a previously undescribed complication of GAN sacrifice during parotidectomy. Trophic syndrome is most commonly associated with injury to the trigeminal nerve<sup>9-10</sup>. In severe cases this can lead to tissue loss, particularly of the nasal ala<sup>8,10</sup>. The diagnosis is broad including skin neoplasms, vasculitis, infections, and granulomatous disease<sup>8</sup>. A variety of psychiatric conditions may be present in patients with self-induced ulceration and can include malingering and factitious disorder. Malingering is defined as the intentional production of false or exaggerated problems for consciously desired secondary gain; factitious disorder (previously Munchausen syndrome) is similar except the motive is a pathological need to obtain the role of a patient<sup>11</sup>. Factitious and malingering ulcers can closely mimic those from a trophic syndrome, however the presence of sensory loss would not be present in malingering or factitious dermatitis<sup>9</sup>. In addition, most patients with factitious disorder will deny lesion manipulation where as those with trophic syndrome will not<sup>11</sup>. Management of trophic syndrome is difficult. Primary focus should be on treatment of the ulcerations with local wound care and cessation of manipulation. Occlusive dressings. Following this, numerous different medication regimens have been proposed including amitriptyline and diazepam as well as chlorpromazine and pimozidine<sup>9</sup>.



Figure 1. 1 month post-operative picture sent by patient

## Case

A 28 year-old woman with past medical history of multiple sclerosis, depression, anxiety, and fibromyalgia presented with a parotid mass incidentally discovered on MRI. Pre-operative fine-needle aspiration biopsy was consistent with pleomorphic adenoma. Superficial parotidectomy was performed. The great auricular nerve was cleanly divided with a scalpel during the procedure and Aloderm graft sutured in place over the facial nerve. Surgical pathology confirmed pre-operative diagnosis of pleomorphic adenoma. The post-operative course was initially unremarkable with routine healing noted one week post-operatively. Roughly 1 month post-op the patient reported increased ear discomfort as well as concerns for an exposed stitch and open areas of her incision. A picture sent by the patient did show what may have been an exposed suture as well as a small post-auricular ulceration. The lobule was completely intact and unremarkable in this picture. The physical exam from a visit to her primary care physician (PCP) 2 months post-op described a "small area of superficial erosion with a small necrotic area (approx 2x4mm)" of the ear lobe as well as a 1x1 cm ovoid area of superficial erosion with honey colored crusting surrounding" on the infra-auricular skin. The patient was repeatedly advised to present to the clinic but did not return until her 3-month post-op appointment. At that time the ipsilateral inferior lobule was noted to be absent with a ragged appearing edge without surrounding necrosis or significant inflammation. A small shallow ulceration of the incision inferior to the lobule was also noted. The patient was started on Bactrim DS and significant improvement was noted on repeat exam 1 week later. She was seen by Dermatology that same day. At that visit she admitted to "picking the crust" off her ear since surgery but did not feel she caused the injury. The patient smoked 0.5 packs per day during the entire peri-operative period. Presumptive diagnosis of greater auricular nerve trophism was made. Unfortunately, patient was lost to follow-up and has not responded to any attempts to contact her.



Figure 2. Three months post-operative, seen in clinic



Figure 3. Three months post-operative, seen in clinic

## Discussion

GAN sacrifice is common in parotidectomy. Several studies have described sensory and functional morbidity associated with GAN sacrifice including anesthesia and paresthesia as well as difficulty with activities of daily living such as shaving or using the telephone<sup>3,4</sup>. To the best of our knowledge only five cases of self-inflicted injury after GAN sacrifice during parotidectomy are described<sup>5-7</sup>. Here we present a case of such self-inflicted injury that involved significant tissue loss of the lobule. The diagnosis in this case is GAN trophism, which has not been previously described following parotidectomy and GAN sacrifice. We seek to raise awareness of this rare clinical entity, as diagnosis may initially be elusive. While our patient was lost to follow-up and could not be reached to arrange psychiatric testing, she does have a past medical history of anxiety and depression. Similarly, two of the five previously published cases received a diagnosis of obsessive-compulsive disorder (OCD) on post-operative psychiatric testing and one was diagnosed with ED<sup>5-7</sup>. Therefore, otolaryngologists should consider self-inflicted injury including GAN trophism in the differential diagnosis on any patient that develops suspicious excoriation or tissue loss following parotidectomy. This is especially true in cases where post-operative healing was initially without complication, suggesting some other source of injury rather than surgery alone.

## Conclusion

GAN sacrifice is common during parotidectomy and the associated morbidity of this is well described. Some of the more common complications include anesthesia and paresthesia of the associated dermatome as well as functional difficulties including combing one's hair or using the telephone. A more rare complication that has only been described five times previously is self-inflicted injury. We present a case of what is strongly believed to be GAN trophism following parotidectomy that resulted in significant tissue loss of the lobule. While this is a rare phenomenon, otolaryngologists that perform parotidectomy should be aware of its existence and keep self-inflicted injury in their differential diagnosis in any cases of suspicious skin lesions post-operatively.

## References

1. Vieira MB, Maia AF, Ribeiro JC. Randomized prospective study of the validity of the great auricular nerve preservation in parotidectomy. Arch Otolaryngol Head Neck Surg. 2002;128(10):1191-5.
2. Zumeng Y, Zhi G, Gang Z, Jianhua W, Yinghui T. Modified superficial parotidectomy: preserving both the great auricular nerve and the parotid gland fascia. Otolaryngol Head Neck Surg. 2006;135(3):458-62.
3. Ryan WR, Fee WE. Great auricular nerve morbidity after nerve sacrifice during parotidectomy. Arch Otolaryngol Head Neck Surg. 2006;132(6):642-9.
4. Ryan WR, Fee WE. Long-term great auricular nerve morbidity after sacrifice during parotidectomy. Laryngoscope. 2009;119(6):1140-6.
5. Colella G, Rauso R, Tartaro G, Biondi P. Skin injury and great auricular nerve sacrifice after parotidectomy. J Craniofac Surg. 2009;20(4):1078-81.
6. Fardy MJ. Neurotic excoriations complicating superficial parotidectomy--a case report. Br J Oral Maxillofac Surg. 1993;31(1):41-2.
7. Brown AM, Wake MJ. Accidental full thickness burn of the ear lobe following division of the great auricular nerve at parotidectomy. Br J Oral Maxillofac Surg. 1990;28(3):178-9.
8. Osaki Y, Kubo T, Minami K, Maeda D. Trigeminal trophic syndrome: report of 2 cases. Eplasty. 2013;13:e60.
9. Kumar P, Thomas J. Trigeminal trophic syndrome. Indian J Dermatol. 2014;59(1):75-6.
10. Tollefson TT, Kriet JD, Wang TD, Cook TA. Self-induced nasal ulceration. Arch Facial Plast Surg. 2004;6(3):162-6.
11. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Washington DC: American Psychiatric Association; 2013.