Trigeminal Tropic Syndrome Following Radiosurgery: A Case Report

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Abstract

Learning Objectives: At the conclusion of this presentation, participants should be able to: 1) Describe the complications of radiosurgery that are pertinent to the otolaryngologist and their patient. 2) Discuss the etiology, pathophysiology, clinical presentation, and treatment options for Trigeminal Trophic Syndrome.
Objectives:. Present a case of self-induced traumatic facial ulcers following radiosurgical ablation of the trigeminal nerve
Study design: Case Report. Trigeminal Trophic Syndrome (TTS) is an infrequently described disease process characterized by self-induced traumatic facial ulcerations following denervating insult to the trigeminal nerve. We present a case report of a patient who developed this syndrome after radiosurgery for trigeminal neuralgia.
Methods: Case Report.
Results: A patient developed facial numbness and ulcerations on her nasal sill, upper lip, and temple, 6 months after undergoing Gamma Knife radiosurgery for trigeminal neuralgia. After extensive workup ruling out and treating infectious and neoplastic diseases, the patient was diagnosed with Trigeminal Trophic Syndrome.
Conclusions: Facial numbness is the most common complication of SRS for TN, and TTS is a described complication of trigeminal nerve surgery. This case represents an uncommon manifestation of a common treatment complication. TTS lesions can become quite erosive, and they represent a diagnostic challenge. The otolaryngologist is well served to be familiar with this rare disease and its underlying cause.

Case Report

84 year old woman with unilateral right ulcerative facial lesions

- Previously had Stereotactic Radiosurgery (SRS) for Trigeminal Neuralgia (TN)
- 6 months later she developed numbness and paresthesia in the right face
- Subsequently, facial lesions developed (Figure 1,2)

Physical Exam

- Ulcerative lesions
- Decreased soft/sharp discrimination in the right face and decreased light touch sensation.
- Absent right corneal reflex
- Vertical contraction of the skin of right upper lip due to scar contracture
- Patient noted to pick and scratch lesions

Prior workup & treatments

- Wound culture grew pansensitive S. Aureus and Pseudomonas. No improvement with antibiotics
- Antivirals and steroids for possible zoster infection did not improve lesions.
- Wound biopsies showed chronic inflammation without evidence of neoplasm

Figure 1: Ulcerative lesion on the right upper lip, nasal ala, and septum. These lesions can become very erosive.

Trigeminal Trophic Syndrome (TTS)

- self-induced traumatic facial ulcerations
- Follows insult to the trigeminal nerve
- Most commonly involves ala nasi.

Causes

- Surgical complication (most common)
- Post-viral
- Brainstem infarct
- Vertebrobasilar insufficiency
- Trauma

Differential Diagnosis of Nasal Ulceration

- Malignancy
- Zoster
- Infection
- Granulomatous disease
- Vasculitides
- Pyoderma gangrenosum
- TTS
- Factitious disorder

Figure 2: Excoriations on the right forehead. These are easily mistaken for healing zoster lesions

Stereotactic Radiosurgery (SRS) for Trigeminal Neuralgia (TN)

- First-line, minimally invasive
- Targets root of CN 5
- 82-96% initial pain relief. More modest but still encouraging results with longer follow-up.
- Most common complication is numbness/paresthesia
- Usually mild, can be severe
- 6-50% patients undergoing SRS for TN have numbness
- Risk factors include radiation dose-rate, length of nerve irradiated, radiation dose delivered to brainstem, and a combined dose-volume statistical effect
- Less common complications include eye irritation/dryness, keratopathy, anesthesia dolorosa, decreased corneal reflex, masticator weakness, trismus, dysesthesia.

Conclusion

- TTS is an uncommon manifestation of a common adverse effect of SRS
- Hypoesthesia/paresthesia and decreased tactile feedback allows destructive digital manipulation
- Nasal/facial ulceration following trigeminal ablation is diagnostic of TTS
- Lesions can be extensive and are difficult to treat.

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