

Traumatic Neuroma Following Mandibular Angle Reduction : A Case Report

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• Abstract

A traumatic or amputation neuroma can develop as a result of nerve injury caused by hemorrhage, infection, ischemia, trauma, etc. A traumatic neuroma can be considered as the attempted regeneration of the amputated nerve rather than a true neoplasm. Occasionally, a traumatic neuroma will develop after oral or maxillofacial surgery. Here, we report a case of traumatic neuroma after mandibular angle reduction in a 24-year-old woman.

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Introduction

A traumatic neuroma can develop following nerve damage resulting from hemorrhage, infection, ischemia, or trauma to the tissues surrounding the nerve^{1-5).}

A traumatic or amputation neuroma is the growth or proliferation of nerve fibers or tissues adjacent to an injured peripheral nerve in an attempt at regeneration rather than an actual neoplasm.

Here, we report a traumatic neuroma that developed after surgery along with a review of the literature.

A case report

1. **Sex** : Female
2. **Age** : 24 years
3. **Initial diagnosis date** : August 16, 2007
4. **Chief symptoms** : Some discomfort at the tip of the



Fig. 1. Panoramic radiograph showing a radiolucent area in the right ascending ramus of the mandible.

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Fig. 3. Postoperative panoramic radiograph.

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Fig. 2. Preoperative three-dimensional computed tomography showing a cavity near the right side of the mandibular ramus.

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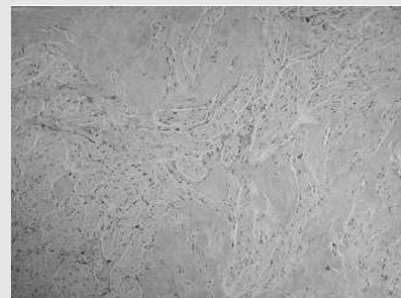


Fig. 4. Microscopic analysis. Hypertrophied nerve bundles with congestion (hematoxylin & eosin $\times 100$).

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tooth after facial contour surgery

5. The past history : Three years earlier, facial contour surgery, thought to be bilateral angle reduction, was performed at a private plastic surgery clinic. Subsequently, a radiolucent lesion was detected in the area below the 3rd molar on radiograph (Figs. 1, 2), and she was referred to our hospital by a private clinic.

6. Present symptoms : (1) No swelling or tenderness; (2) paresthesia of the right lower lip; and (3) hypoesthesia of left lower lip.

7. Systemic findings : No specific abnormality was detected.

8. Surgery and treatments : On August 28, 2007, she was placed under general anesthesia and the surgical field was sterilized. For hemostasis, local injection of lidocaine containing 1:100,000 epinephrine was performed. An incision was made using a #15 blade, and a flap was elevated using a periosteal elevator. Odontectomy was

performed using a fissure bur, and the mandibular right third molar was extracted using an extraction elevator. Then, the incision was extended, and a hole was made on the line where the osteotomy would be performed using a fissure bur. The cortical bone was cut with a reciprocating saw, and the proximal and distal bone fragments were separated with an osteotome. The mass suspected of being the inferior alveolar nerve was identified and curettage was performed. The extracted lesion consisted of reddish-brown soft tissues measured approximately 1 \times 1 cm. Then, the proximal and distal bone fragments were fixed with miniplates and wire; occlusion was confirmed, and the incision was sutured in layers.

9. Result : The patient was discharged on September 11, 2007, and showed no sign of infection (Fig. 3). There was mild pain on pressing the right cheek and the paresthesia of the right lower lip and facial area were comparable to those before surgery.

10. Diagnosis : Traumatic neuroma (Fig. 4)

Discussion

The areas within the oral cavity where neuromas develop preferentially are in the vicinity of the mental foramen, the lower lip, and the tongue area. Most lesions are associated with previous soft tissue tumors, tooth extraction, and other forms of trauma⁶. Traumatic neuromas in the oral cavity have been reported to develop after injury of the inferior alveolar and mental foramen nerves. The characteristics of traumatic neuromas of the oral cavity are similar to those of traumatic neuromas in other parts of the body.

The symptoms of traumatic neuromas are diverse, and range from tenderness to paresthesia; continuous pain may be present or the patient may be pain-free. Rasmusen⁴ described the clinical characteristics of a traumatic neuroma in the oral cavity. First, pain may develop in association with surgery; atypical neuralgia of neuropathological origin or burning sensation or paresthesia may be present. On pressing the corresponding area, the pain may become severe. This pain may be alleviated by injection of 0.5 ml of local anesthetic.

Sheridan³ reported that even in cases without radiological changes, traumatic neuroma should be considered as a potential cause of facial pain after mandibular sagittal split ramus osteotomy.

In this case, at the time of the initial examination, the patient

had no pain or pain only on palpation and no edema, although paresthesia of the lower facial area and lower lip was present. Radiographs showed a radiolucent area near the right 3rd molar in the lower mandibular canal.

Numerous surgical and non-surgical methods have been reported for the treatment of traumatic neuromas. Non-surgical methods include the local administration of steroids, blocking the sympathetic ganglia, and ultrasound⁷. However, recent reports have recommended surgical methods, and in almost cases, surgical resection of the lesion without injuring the nerve has been preferred; the prognosis is good, and recurrence is infrequent in cases treated in this manner.

Conclusion

We reported a case of traumatic neuroma referred from another hospital. After removing the traumatic neuroma under general anesthesia, the patient has been followed up for approximately 18 months, and no recurrence of the lesion has been detected clinically or radiologically. In this case, the cause of nerve injury could not be determined conclusively, although it was thought to be due to previous mandibular angle reduction surgery.

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