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Lingually displaced third molar root and its salvage treatment can lead to lingual nerve damage

KEYWORDS
Lingual nerve injury;
Wisdom tooth complication;
Iatrogenic trauma

The lingual nerve is a sensory branch of the mandibular nerve, which is a branch of the trigeminal nerve. It travels adjacent to the median surface of the mandibular third molar region and separates to the tongue. Lingual nerve injury can be caused by needle injection during mandibular block anesthesia, lingual flap retraction or tearing, inappropriate lingual vertical incision, compression from a lingual displaced root, or iatrogenic trauma when removing a displaced root.[1,2] In short, lingual nerve injury is closely related to the surgeries of the mandibular third molar and the lingual plate.[1] Here, we presented a case of lingual nerve paresthesia due to a displaced third molar root fragment, the removal of which led to complete recovery.

A 29-year-old man was referred to our outpatient department with the complaints of tongue numbness and a displaced root fragment of the lower right third molar following odontectomy. Clinical and X-ray examinations revealed the displaced root of tooth 48 in the right sublingual space (Fig. 1A). Sensory disturbance, presented as hypoesthesia, was detected over the right mandibular lingual mucosa, right lateral border and tip of the tongue, which are innervated by the lingual nerve. The scale of sensation was scored as 3 (visual scale, numb to normal: 0–10) based on the patient's statement. After the patient was informed about the risk of permanent lingual nerve damage, surgery was arranged under general anesthesia 7 days post-odontectomy. An envelop flap was designed to extend from the mesial lingual gingival sulcus of tooth 46 to the retromolar region. Once the lingual cortical plate of tooth 48 was exposed, extra caution was exercised to avoid any further damage upon the lingual nerve while dissecting the lingual tissue and locating the root fragment after the lingual flap reflection. The root was found trapped inside the loosened soft tissue and was removed smoothly (Fig. 1B). Nerve paresthesia improved significantly to score 7 immediately after surgery, and the range of affected area narrowed down to only the tongue tip. During the follow-up, the scale of numbness was scored as 8 at the first week post operation, 9 at the sixth week post operation, and almost 10 at the eleventh week post operation. No numbness was reported by the patient during the twelfth week post operation.

Wisdom tooth extraction is associated with several complications, such as dry socket, emphysema, infection, and nerve injury.[3–5] Nerve injury is the most concerning because of its irreversible nature, and the degree of sensory loss cannot be measured objectively. Inferior alveolar nerve injury is the most well-known neural complication associated with wisdom tooth extraction, whereas lingual nerve injury attracts less attention. Although the incidence of lingual nerve injury is low,[1–4] it could not only lead to mucosa numbness but also alter the taste sensation in the tongue. Therefore, it should not be neglected during the risk evaluation of wisdom tooth extraction or salvage surgeries. In this case, although the lingual nerve paresthesia was a complaint before surgery, the surgeons still needed

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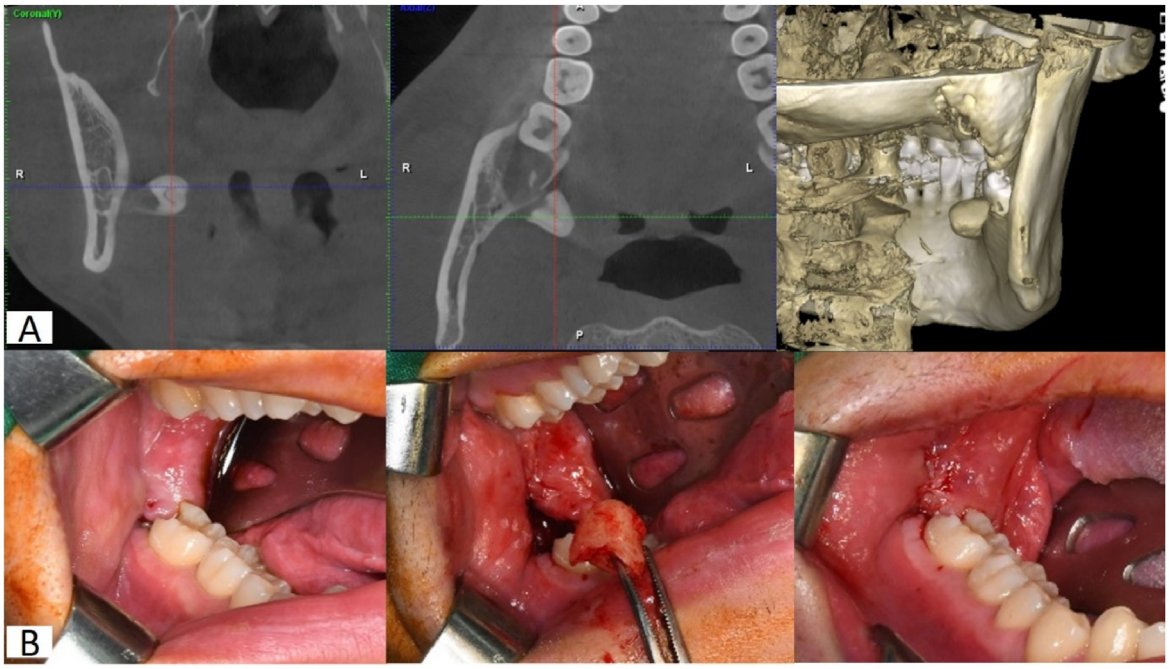

Figure 1 The cone-beam computed tomography and clinical photographs of our case. (A) The cone-beam computed tomography showing the lingually displaced root fragment in our patient. (B) Surgical procedures and photographs demonstrating the removal of the lingually displaced root fragment during the operation.

to pay extra attention during the flap reflection and tissue dissection for the optimal recovery from the paresthesia.

Declaration of competing interest

No conflict of interest.

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