Mental Nerve Repositioning-A Case Report
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Abstract

Transposition of the mental nerve is a preporosthetic procedure that is effective for patients with hyperesthesia caused by the effect of a dental prosthesis on the alveolar ridge. We present the case of a 48-year-old woman with pain and hyperesthesia of the left mental nerve caused by a dental prosthesis. Distal and caudal transposition of the left mental nerve resulted in postoperative neurosensory controls of the lower lip showing normal nerve function 2 weeks later.

Key Words: Transposition of mental nerve, Vestibuloplasties.

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Introduction

Transposition of the mental nerve is a preporosthetic procedure that is effective for patients with hyperesthesia caused by the effect of a dental prosthesis on the alveolar ridge (1-4). The mental foramen is normally located in the body of the mandible, approximately 1.5 cm. from the crest of the alveolus and 3 cm. from the midline of the mandibular body. This position of course varies from patient to patient (4). According to Thoma (5), extensive atrophy of the alveolar process of the mandible may bring the ridge down to the mental foramen. This is usually seen in the geriatric patient with a mandibular prosthesis. Patient of this type often report symptoms similar to those of Tic Douloureux, with sudden sharp severe pain of short duration (6). On further inquiry, it will be found that pain occurs with functional loading of the prosthesis and during the stresses of mastication. Simulated symptoms can be produced by digital pressure on the mental foramen area. In many cases the trouble can be corrected by relief of the prosthesis on the remaining denture-bearing area (5). A conservative surgical procedure for the correction of this condition is transposition of the mental nerve which was done in the following case report.

We present the case of a 48-year-old woman with pain and hyperesthesia of the left mental nerve caused by a dental prosthesis. Distal and caudal transposition of the left mental nerve resulted in postoperative neurosensory controls of the lower lip showing normal nerve function 2 weeks later.

Case Report

A 48-year-old edentulous woman presented with pain in the alveolar ridge of the left mandible. Examination showed resorption of the left alveolar ridge of the mandible and hyperesthesia of the left mental nerve caused by her dental prosthesis and digital pressure. Panoramic radiograph showed the position of the left mental foramen close to the alveolar crest (Fig. 1 a) (Fig. 1 b).

A distal and caudal transposition of the left mental nerve trunk was done using chisel, mallet, rotary instruments & burs under local anesthesia (Fig. 2 a) (Fig. 2 b) (5). A two-limbed mucoperiosteal flap was raised to expose the nerve. Blunt-ended dissecting scissors were introduced between the
nerve trunk and muscle to separate the nerve trunk from the muscle in the cheek. Careful dissection of the connective tissue off the nerve trunk was done so that the foramen could be identified. The nerve trunk was mobilized sufficiently so that it can be lifted upwards to expose the underlying bone, and give adequate access. After reflecting and protecting nerve trunk in anterosuperior direction, a surgical bur was used to cut open the posterior aspect of mental foramen to create a box (6). The distal rim of the mental foramen was tapped with chisel and mallet to break the cortical rim. The nerve trunk was separated and mobilized from bony canal (5). After removing approximately 8 mm of posterior and 7 mm caudal bone, incisive nerve was transected and the nerve trunk was mobilized. The box was cleared of the cancellous bone. A vertical cut was made in distoinferior aspect of box and nerve was pushed into the cut. The nerve trunk was secured with 1-0 silk suture in the new position. Note that the nerve trunk lies below the inferior margin of the box. The wound is sutured.

Neurosensor function of the mental nerve was assessed objectively with warm and cold sensory tests that were applied to the lower lip and measured with a thermal sensory analyzer (2). There was hypoesthesia of the left mental nerve on the first postoperative day. Healing was uneventful and the neurosensory test 2 weeks after transposition showed normal function of the mental nerve. 2 weeks later secondary stage mandibular anterior vestibuloplasty was done and after 4 weeks period of healing a new mandibular prosthesis was prepared.

Technical Note

Conventionally, the mental nerve is transposed inferiorly to the mental foramen. Here, the mental nerve was transposed distally and inferiorly, keeping in mind the scope for future vestibuloplasty. The nerve was transposed about 8 mm posteriorly and 7 mm inferiorly. The total transposition was 9 mm diagonally as measured intraoperatively. Incisive branch was sacrificed keeping in mind the patient was edentulous and the nerve supplies only the lower anterior teeth, also to mobilize the nerve trunk distally. The nerve was secured in the new position.
by a suture passing through the bone and above the nerve trunk; the bony cavity was packed with bone wax.

**Discussion**

Transposition of the mental nerve is a preprosthetic procedure that is effective for patients with hyperesthesia caused by the effect of a dental prosthesis on the alveolar ridge (1-3). This is a procedure in which the bone is usually cut with rotating instruments and burs. Despite extreme caution, injuries caused by compression or direct trauma by the rotating instrument on nerve tissue cannot be excluded (7). In this case, the nerve was mobilized distally and inferiorly keeping in mind a scope for further vestibuloplasties, also the incisive branch was sacrificed as the patient was edentulous and the nerve supplies only the lower anterior teeth. Undoubtedly a careful operating technique remains critical, because soft tissue could be injured by excessive mechanical force from the tip of the instrument.

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