

LETTER TO THE EDITOR

Unusual variation in the course of the inferior alveolar nerve

Dear Madam,

The position of the inferior alveolar nerve (IAN) is essential for the clinician in oral and maxillofacial surgery. Many studies have demonstrated that anatomic variations in the intrabony course of the IAN are frequent, with the possible presence of bifid or trifid mandibular canal (prevalence < 1%)^{1,2}. Variations in the course of mandibular canal could find an embryological explanation in the incomplete fusion of three separate canals at different stages of prenatal development³.

A 28-year-old woman in good health and without significant anamnestic remarks, who was receiving routine general dental care, was in need of lower right third molar extraction due to recurrent pericoronitis. The tooth was partially erupted, in vertical position and classifiable as Level 1 Class A according to Pell and Gregory⁴. In the presurgical planning, its removal presented low surgical difficulty (score = 3), according to Stacchi et al.⁵. Periapical radiograph examination was inconclusive (Fig. 1A) while an enlargement of the mandibular canal in the distal root area was evident in the panoramic radiograph (Fig. 1B). Second-level check was performed, and cone-beam computed tomography (CBCT) indicated an apparent trifurcation of mandibular canal in the third molar area (Fig. 2A). Moreover, one additional branch continued parallel to the buccal side of the third molar roots until reaching the bone crest, running between the buccal cortical of the mandible and the tooth (Fig. 2B).

After performing IAN block with 3% mepivacaine/2% lidocaine (1:100 000 epinephrine) and elevating a minimally invasive full thickness envelope flap, the tooth was first luxated with a straight dental elevator and then extracted with a forceps, without performing osteotomy. Healing was uneventful with no complications or adverse effects.

Anatomic variations of mandibular canal may have significant clinical implications. As accessory canals may contain secondary neurovascular bundles, conventional local anaesthesia techniques could be partially effective or ineffective⁶. In addition, surgical manoeuvres could result in intra- and post-operative complications such as bleeding, paresthesia,

neuropathic pain or traumatic neuroma^{6,7}. In the present case, the course of the accessory canal was particularly insidious, as it ran in the area where bone guttering with rotary instruments is usually performed during third molar extraction, when the tooth presents a deeper impaction pattern.

Even if recent guidelines suggest that CBCT should not be applied as a routine method before removal of mandibular third molars, the detection of possible anomalies in the mandibular canal course on

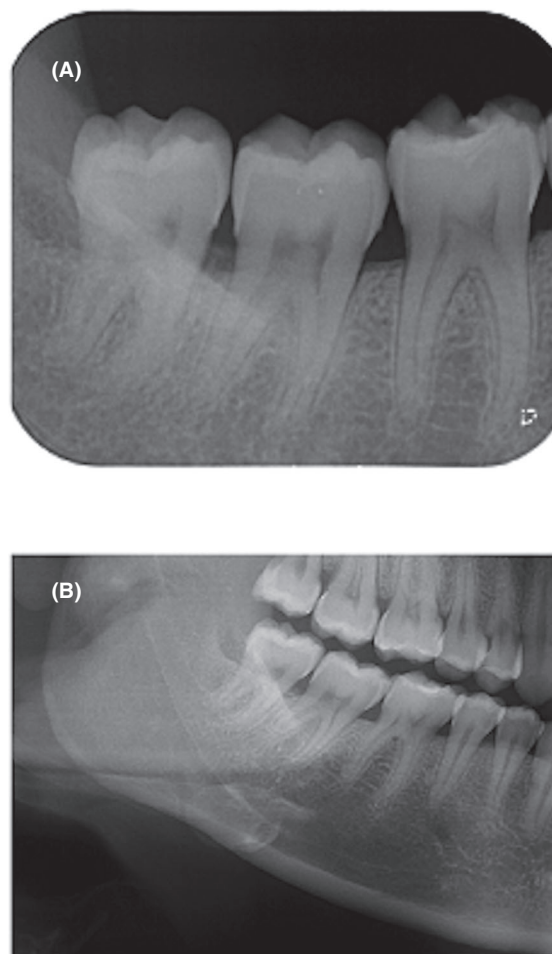


Figure 1 Conventional imaging: (A) Periapical radiograph showing no alterations (B) Panoramic radiograph indicating an enlargement of the mandibular canal in the third molar area.

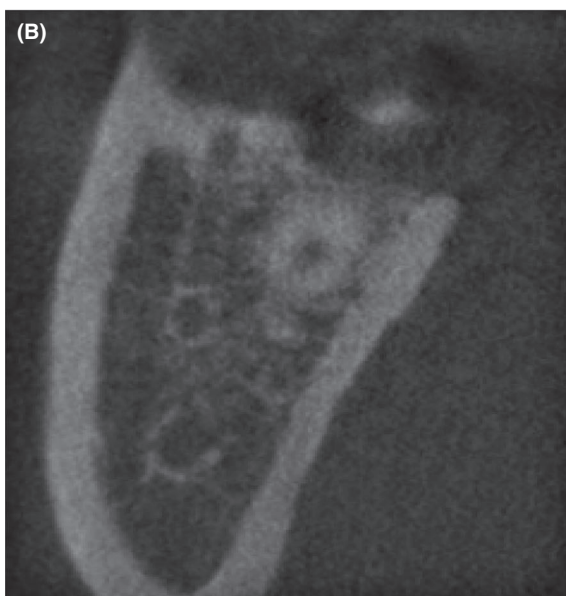


Figure 2 Three-dimensional imaging: (A) Sagittal view indicating a trifurcation of the mandibular canal in third molar area (B) Cross-sectional view showing the course of an additional branch reaching the bone crest, running between the buccal cortical of the mandible and the tooth.

conventional radiographs could be an indication for a deeper study of the case with the help of three-dimensional imaging.

Conflict of interest

Authors declare no conflicts of interest.

Ethics Statement/Confirmation of patient permission

No ethical approval was necessary. We had written consent from the patient for the use of visual images.

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