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### Clinical case

## Rare case of inferior alveolar nerve buccal fenestration



Carla Renata Sanomiya Ikuta, Luciana Maria Paes da Silva Ramos Fernandes, Rosana Mara Adami Tucunduva\*, Dayane Kemp Grandizoli, Renato Yasutaka de Faria Yaedu, Cássia Maria Fischer Rubira, Izabel Regina Fischer Rubira-Bullen

Department of Stomatology, Bauru School of Dentistry, University of São Paulo, Bauru, São Paulo, Brazil

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#### ABSTRACT

It has been related that only 7% of MCs are in contact with the mandible buccal cortex. This case report illustrates one mandibular canal with an atypical trajectory with fenestration at the buccal mandible cortex through a cone beam computed tomography exam from a 45 years old, Caucasian female patient, through ICat Vision® (Imaging Science International, Hatfield, PA) and InVivo software (Dental Anatomage, Version 5.1.10). This anatomic variation was not observed in the left side. Preoperative planning should consider a well-recommended cone beam computed tomography, which will allow identification of trajectory variations that are not visualized in panoramic radiographs.

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#### Caso raro de fenestração bucal do nervo alveolar inferior

#### RESUMO

São descritos que apenas 7% dos MC estão em contato com o cortical bucal mandibular. Este relato de caso ilustra um canal mandibular com trajetória atípica e fenestração na cortical bucal da mandíbula, através de um exame de tomografia computadorizada de feixe cônico em paciente, mulher, 45 anos de idade, leucoderma, obtido por ICAT Vision® (Imaging Science International, Hatfield, PA) e software InVivo (Dental Anatomage, versão 5.1.10). Esta variação anatômica não foi observada no lado esquerdo. O planeamento pré-operatório deve considerar a indicação da tomografia computadorizada de feixe cônico, o que irá permitir a identificação de variações de trajetória que não são visualizadas em radiografias panorâmicas.

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##### Palavras-chave:

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\* Corresponding author.

E-mail addresses: [carlaikuta@hotmail.com](mailto:carlaikuta@hotmail.com), [enroen@hotmail.com](mailto:enroen@hotmail.com) (R.M.A. Tucunduva).

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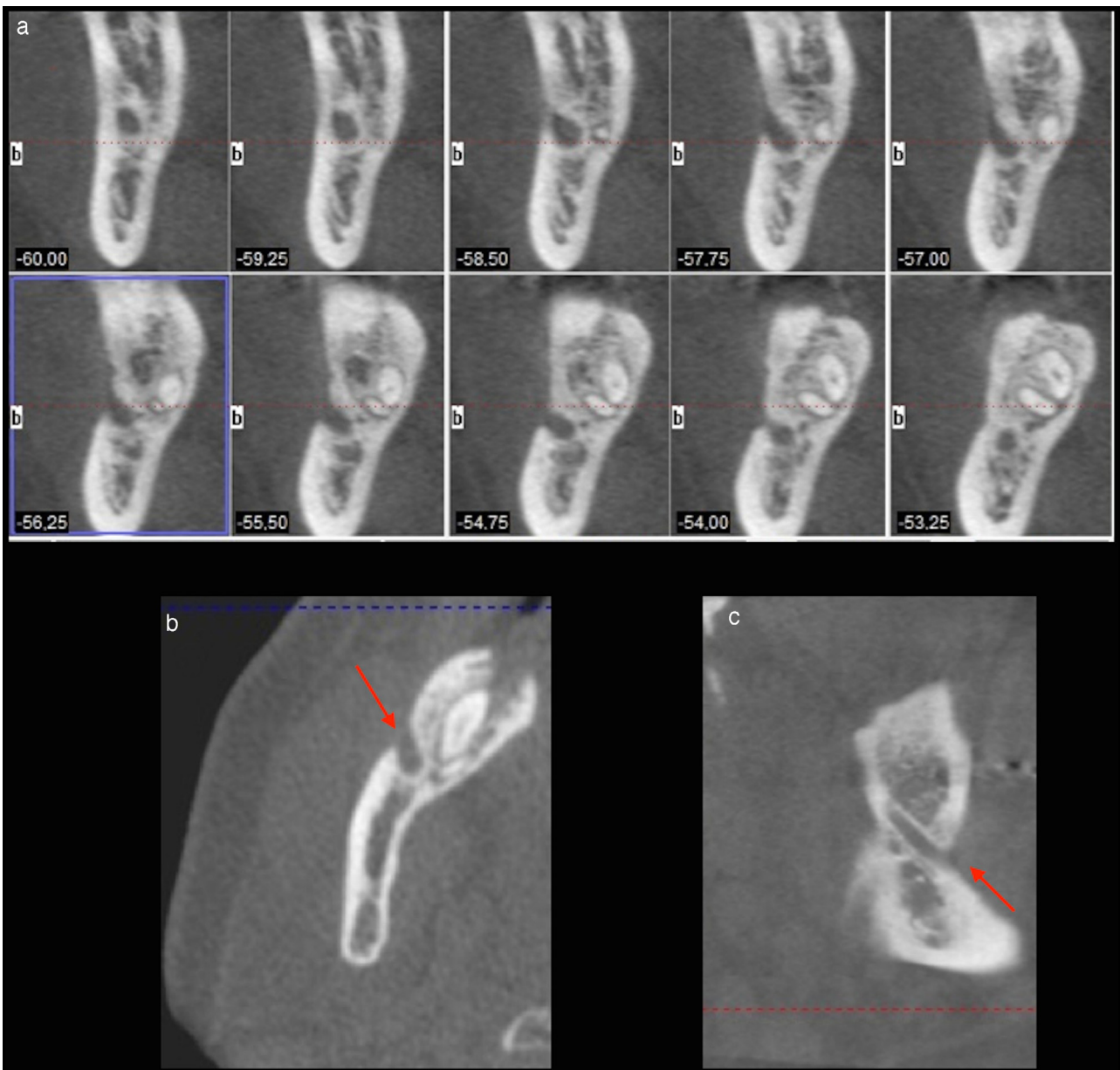
## Introduction

Injuries to the inferior alveolar nerve (IAN) may be caused by nerve traction, trauma, bone screw placement, or cutting from instruments during surgical procedures.<sup>1</sup> To avoid iatrogenic injuries to the IAN, the course, shape, curve, and direction of the mandibular canal must be considered, and damages may cause paresthesia and vessel injuries, bleeding, or hematoma.<sup>1-3</sup> Sometimes, the mandibular canal (MC) course is close to the roots of the teeth or to the lower border of the mandible,<sup>4</sup> and MC anatomical or trajectory variation has been described.<sup>3-5</sup> Even though textbooks do not provide a detailed description of the MC course, it has been reported that nerve and vascular bundles may be close to the buccal cortex. It was related that 7% of the MC are in contact to

mandible buccal cortex.<sup>6</sup> The aim of this case report is to illustrate one unusual CM with an atypical trajectory at the buccal mandible cortex through a cone beam computed tomography (CBCT) exam.

## Case report

A 45-year-old Caucasian female patient was referred for a CBCT exam in order to evaluate jaw bone conditions prior to dental implant placement surgery. The scan was performed using an i-CAT Classic device with  $8\text{ cm} \times 0.3\text{ voxel size} \times 20\text{ s}$  of protocol scanning. During the evaluation of tomographic images using i-CAT Vision software (Imaging Science International, Hatfield, PA), an atypical IAN fenestration in the buccal



**Fig. 1 – Parasagittal view (a), axial view (b), and sagittal view (c) of mandibular canal fenestration on the right side of the mandible.**

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