

The relative buccolingual position reflects the horizontal course of the inferior alveolar canal more accurately than morphometric measurements

The inferior alveolar neurovascular bundle that is housed within the inferior alveolar canal (IAC/mandibular canal) is an important anatomical structure transversing the body of mandible but can become injured during various dental procedures that include restorative dentistry, endodontology, orthodontics, and dentoalveolar/maxillofacial surgery.^[1] Hence, many studies have been conducted to determine the course of this neurovascular bundle by studying the IAC, which is a structure that is visible radiographically. Most of these studies utilized dentopantomographs which provide two-dimensional image of the IAC in a vertical relationship. In essence, the IAC has been reported as having an elliptic-arc curve or the catenary-like configuration.^[1]

In the article titled “Buccolingual course of the IAC in different mental foramen locations: A cone-beam computed tomography (CBCT) study of an Iranian population” being published in the current issue, the authors included the mental foramen as one of the landmarks in the study, and reported that the most common (modal) position was at below the apex of the second premolar. This finding concurs with those reported for the position of the mental foramen in Iranian subjects.^[2,3] However, Haghanifar and Rokouei^[4] reported an almost equal distribution between Types 1 and 2 position of mental foramina, where this difference may be the result of local differences. Local differences appear to happen more commonly in the Caucasoid race and have been reported in the Turkish population, who showed two different modal positions.^[5,6]

The introduction of computed tomography or CBCT has enabled us to determine the buccolingual (horizontal) course of the IAC, besides the usual apicobasal (vertical) relationship.^[1] Kim *et al.*^[7] reported that the buccolingual orientation of the IAC followed either of these three different patterns: Type 1 (70%): The canal follows the lingual cortical plate at the mandibular ramus and body; Type 2 (15%): The canal follows the middle of the ramus behind the second molar and the lingual plate passing through the second and first molars; Type 3 (15%): The canal follows the middle or the lingual one-third of the mandible from the ramus to the body.

The current authors reported that the mean distance from the outer buccal cortex to the IAC increased from the second premolar to the second molar region with the maximum value

recorded at the second molar area, while in many cases, the mandibular canal was near or in contact with the lingual cortex. The former finding concurs with our experience but, a finding different than ours was reported for the latter (unpublished data).^[1] This shows that Iranian subjects most probably have a higher incidence of Type 1 course based on the classification proposed by Kim *et al.*^[7] The current authors also acknowledged that mean buccal distances between the IAC and buccal cortex at the premolars, and first and second molars were larger than in other published reports, as summarized by Al-Siweedi *et al.*^[1] Again this finding is suggestive of another racial characteristic of Iranian subjects, who are morphologically larger in size.

Because of these anatomic and morphometric differences, the authors had wisely calculated the relative buccolingual position of the mandibular canal, which turned out to be 0.83, 0.71, and 0.53 at the second molar, first molar, and second premolar regions, respectively. This is larger than the ratios of 0.68, 0.64, and 0.47, respectively reported by Pyun *et al.*,^[8] and that of 0.68, 0.63, and 0.48, respectively, recalculated from our previously unpublished data. As our data and Pyun's report were based on Asian subjects, the difference between findings again suggests that Iranian subjects have a different horizontal course of IAC when compared to Asian subjects. Most important of all is the finding that at all regions (second premolar, first molar, and second molar), the more distally the mental foramen was located, the more buccally the mandibular canal progressed in the mandibular body. Such a finding is important clinically and has not been reported elsewhere.

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