The significance of the mental foramen in clinical procedure

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Introduction

The mental foramen is defined as the entire funnel-like opening in the lateral surface of the mandible at the terminus of the mental canal. This foramen is contained entirely within the buccal cortical plate of bone. The average size of the foramen is 4.6 mm horizontally and 3.4 mm vertically on the lateral surface of the mandible. The foramen is usually larger on the left side of the mandible. According to Yosue and Brooks, the radiographic appearance of the mental foramen can be classified into four types:

Type I:
mental canal is continuous with the mandibular canal

Type II:
the foramen is distinctly separated from the mandibular canal

Type III:
diffuse with a distinct border of the foramen

Type IV:
"unidentified group"

The mental foramen marks the termination of the mandibular canal in the mandible, through which the inferior alveolar nerve and vessels pass. At this point, the mandibular canal actually bifurcates and forms the mental and incisive canals (Figure 1). The mental bundle passes through the mental foramen and supplies sensory innervation and nutrition to the soft tissues of the chin, lower lip and gingiva on the ipsilateral side of the mandible (Figure 2).

Generally the mental foramen is difficult to locate. There are no absolute anatomical landmarks for reference and the foramen cannot be clinically visualised or palpated. As a result, the reported anatomical position of the mental foramen has been variable. In most studies and textbooks, however, the location of the mental foramen is reported as being below the apex of the premolar or in between the apices' first and second premolars.

Fig 1: Type 1 mental foramen

Fig 2: A mental nerve exposed during surgery.

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