



Unilateral Large Mylohyoid Bridging the Dry Human Mandible

Mandibula'da Görülen Unilateral Geniş Mylohyoid Köprü

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ABSTRACT

Forty-five mandibles (90 cases) used in education at the Anatomy Departments of Bezmialem Vakıf University, Hitit University and Marmara University Faculty of Medicine were examined macroscopically and the incidence of mylohyoid bridge was investigated. In some cases, the proximal part of the mylohyoid groove (sulcus mylohyoideus) may appear as a canal through a bony bridge (mylohyoid arc = mylohyoid bridge). Knowledge the frequency of mylohyoid bridge variations will contribute to the literature studies on this subject and will guide the practice of oral surgery and dentistry. Investigating anatomical variations, as well as collecting anthropometric data, is important to draw attention to clinical practices and guide clinicians.

Keywords: Mandible, mylohyoid bridge, sulcus mylohyoideus, canalis mylohyoideus, mandibular foramen

ÖZ

Bezmialem Vakıf Üniversitesi, Hitit Üniversitesi ve Marmara Üniversitesi Tıp Fakültesi Anatomi Anabilim Dalları'nda eğitimde kullanılan 45 alt çene (90 olgu) makroskobik olarak incelenerek mylohyoid köprü görülme sıklığı araştırıldı. Sulcus mylohyoideus'un proksimal kısmı bazı durumlarda arcus mylohyoideus adı verilen kemik bir köprü aracılığıyla kanal şeklinde gözükülebilir. Mylohyoid köprü varyasyonlarının bulunma sıklığının bilinmesi, bu konudaki literatür çalışmalarına katkı sağlayacağı gibi klinik uygulamalardaki olası komplikasyonların önlenmesi için oral cerrahi ve diş hekimliği uygulamalarında yol gösterici olacaktır.

Anahtar Kelimeler: Mandibula, arcus mylohyoideus, sulcus mylohyoideus, canalis mylohyoidus, foramen mandibulae

Introduction

The mandible is a strong and mobile bone that forms the skeleton of the lower jaw and consists of a corpus and two rami. On the inner surface of the ramus mandibulae, there is mandibular foramen, and on the front side, there is a protrusion called lingula mandibulae, which is formed by the fusion of the medial and lateral laminae of the compact bone. Under this protrusion is the sulcus mylohyoideus, which starts from the mandibular foramen and moves downwards. Mylohyoid branch of inferior alveolar nerve. courses in sulcus mylohyoideus. This nerve innervates the venter anterior of the mylohyoid and

anterior belly of the digastric muscles (1). Studies have reported that the mylohyoid nerve is mainly a motor nerve but also contains sensory fibers (2). In some cases, the proximal part of the sulcus mylohyoideus may appear as a canal through a bone bridge (arcus mylohyoideus = mylohyoid bridge) (3).

The mylohyoid bridge is a hyperostotic derivation that develops from Meckel's cartilage on the sulcus mylohyoideus. In cases where a mylohyoid bridge is observed, the nerves and vessels running in this canal may remain under pressure and may create a barrier during anesthetic injection (4,5).

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Investigating anatomical variations, as well as collecting anthropometric data, is important to draw attention to clinical practices and guide clinicians. This study aimed to determine the frequency of mylohyoid bridge variation on the sulcus mylohyoideus in the mandible and to reveal its clinical importance.

Case Report

Forty-five mandibles (90 cases) used in education at the Anatomy Departments of Bezmi Alem Vakıf University, Hitit University and Marmara University Faculty of Medicine were examined macroscopically and the frequency of mylohyoid bridge was investigated. In cases where mylohyoid bridge variation was detected, the vertical lengths of the sulcus mylohyoideus and mylohyoid bridge were measured with a digital caliper. During the examinations, a wide mylohyoid bridge was detected on the proximal part of the sulcus mylohyoideus on the left side, extending towards the mandibular foramen, in one of the 90 cases (1.1%). The vertical length of this bridge (between x-y) was measured as 12.41 mm, and the length of the exposed sulcus mylohyoideus (between y-z) was measured as 20.21 mm. In this case, the length of the sulcus mylohyoideus on the right side (between x-z) was measured as 22.7 mm (Figure 1, 2).

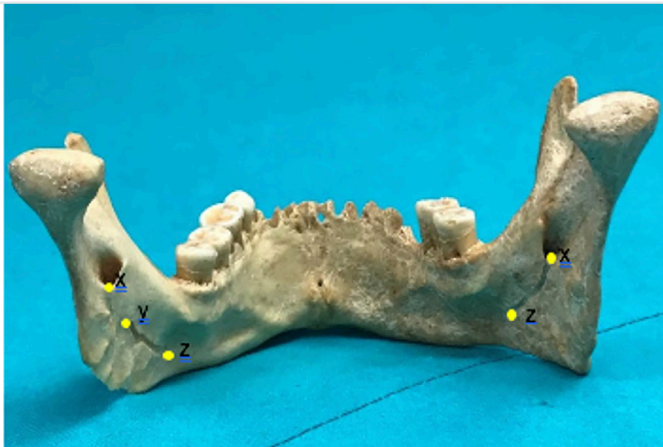


Figure 1. Rear view of the mandible

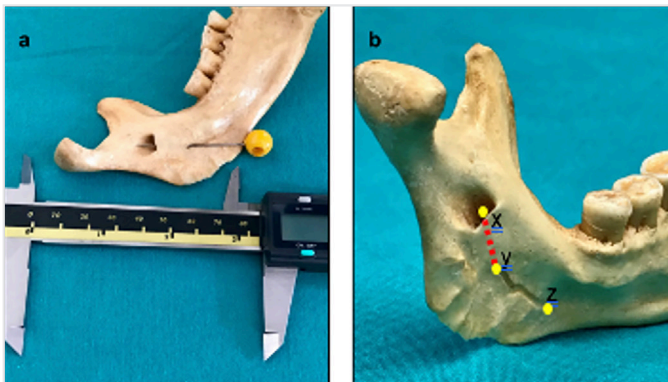


Figure 2. Left ramus mandibulae; a) inner view b) mylohyoid bridge (red line)

Additionally, the transverse diameter of the mandibular foramen was measured in this case on both sides; the average diameter on the left side was 7.04 mm, and the diameter on the right side was 5.57 mm. Informed consent was obtained.

Discussion

It has been reported by many researchers that there is a bone bridge on the sulcus mylohyoideus. In research, the mylohyoid bridge is defined as a morphological variation and is referred to as arcus, ponticulus or canalis mylohyoideus (5).

Bennett and Townsend (3) reported that both lingula and bridge types are present in a mandible.

Rusu et al. (4) found unilateral mylohyoid bridge variation in cone beam computed tomography imaging of a patient. They stated that this variation might prevent the anesthesia of the lower jaw teeth in dental applications.

In our study, in the examination of 45 mandibles (90 cases), a unilateral mylohyoid bridge was found in one case, which was compatible with the results of Rusu et al. (4) and, Bennett and Townsend (3).

Knowing the frequency of mylohyoid bridge variations will contribute to literature studies on this subject and will be a guide in oral surgery and dentistry practices to prevent possible complications in clinical practices.

Ethics

Informed Consent: Informed consent was obtained.

Authorship Contributions

Concept: M.P., F.M., Design: M.P., F.M., Data Collection or Processing: Y.A., M.P., F.Ö., F.M., E.Z., Analysis or Interpretation Y.A., U.V., Literature Search: F.M., E.Z., Writing: Y.A.

Conflict of Interest: No conflict of interest was declared by the authors.

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References

1. Arifoğlu Y. Her Yönüyle Anatomi, 4. Baskı, İstanbul Tıp Kitapevleri; 2024.
2. Standring S, Gray's anatomy: The anatomical basis of clinical practice. 42nd ed. Elsevier; 2021.
3. Bennett S, Townsend G. Distribution of the mylohyoid nerve: anatomical variability and clinical implications. Aust Endod J. 2001;27:109-11.
4. Rusu MC, Săndulescu M, Bichir C, Muntianu LAS. Combined anatomical variations: The mylohyoid bridge, retromolar canal and accessory palatine canals branched from the canalis sinuosus. Ann Anat. 2017;214:75-9.
5. Balcioglu HA, Kose TE, Uyanikgil Y. Multiple morphological variations in a human mandible. Int J Morphol. 2015;33:1023-6.