

Original Article

## Study On Morphological Study Of Mental Foramen In Dry Adult Human Mandible

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### Abstract

**Background:** Many dental treatments need the location of the mental foramen and the presence of an accessory mental foramen because it is beneficial in anesthetists in nerve block for any surgical procedures. It also prevents the nerve from injury.

**Objectives:** To determine the shape and orientation of the mental foramen by a visual examination.

**Material and Methods:** The present study used 200 dried human mandibles of both unknown sexes.

**Results:** Our study found 23 irregular shapes, 87 ovals, 90 round on the left side, and 24, 87, and 91 on the right side.

**Conclusion:** The knowledge about variations in shape and presence of accessory mental foramen may be helpful to dental surgeons to achieve complete anesthesia after a nerve block.

**Keywords:** mental foramen, mandible, premolar tooth

### Introduction

The mental foramen is one of two foramina located on the front surface of the lower jaw. It is part of the mandibular canal which transmits the terminal branches of the inferior alveolar nerve and mental vessels. The mental foramen is located on the front surface of the lower jaw. It is directly below the commissure of the lips and the tendon of the depressor labii inferioris muscle.<sup>1</sup> It transmits the terminal branches of the inferior alveolar nerve (mental nerve), the mental artery, and the mental foramen in edentulous individuals descending slightly.<sup>2</sup>

The mental foramen aligns with the longitudinal axis of the 2nd premolar in 63% of humans. It generally lies at the level of the vestibular fornix and about a finger's width above the lower border of the mandible.

In the general population, 17% of mandibles have an additional mental foramen or a foramen on at least one side, while 4% show multiple mental foramen on both sides. Most are uneven, often with one large opening, while others are smaller. A penetrating mental foramen is seen in 1% of the mandibular side.<sup>3</sup>

### Material and Methods

**Study Population** This was a retrospective study of 200 dry adult complete human mandibles collected from the Department of Anatomy, Index Medical College, Indore, from January 2022 to June 2022. The study was conducted on 200 dry adult complete human mandibles available in our college.

**Inclusion criteria**

Complete unbreakable mandibles

**Exclusion criteria**

Broken mandibles

**Methodology**

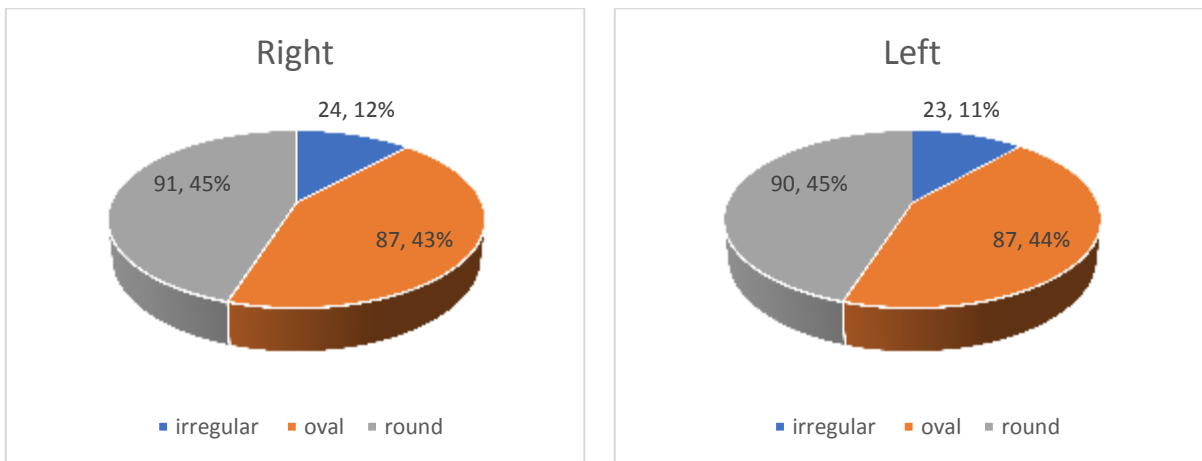
A visual examination determined the mental foramen's number, shape, and orientation.

**Table no. 1** shows the shape of the Mental foramen in the Mandible.

Shape	Left Side	Right Side
Irregular	23	24
Oval	87	87
Round	90	91

Table no 1 shows the shape of the mental foramen.

Our study found 23 irregular shapes, 87 oval, 90 round on the left side, and 24 irregular shapes, 87 Oval, and 91 round on the right side, as shown in pie chart no. 1 and table no. 1.



**Pie chart No. 1** shows the shape of the mental foramen on the left side and right of the mandible.



**Fig No 1** shows the shape of the mental foramen, Round and oval in the same mandible.

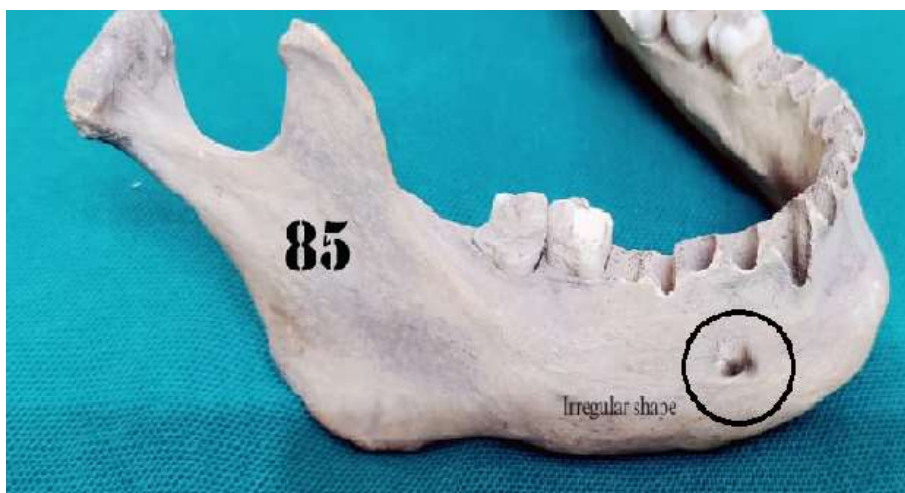


Fig No 2 shows the mandible no 85 has mental foramen have a irregular shape

### Accessory Mental Foramen

During the study on the shape of the mental foramen, we found accessory mental foramen in 15 mandibles out of 200 mandibles. There were 2 accessory mental foramen on both the left and right side in two mandibles out of 15 mandibles. The percentage of accessory mental foramen was 7.5 %



Fig 3:- showing Accessory mental foramen.

### Discussion

In our current, we observed that the most common shape of mental foramen was Round, in 90 mandible on left side and in 91 mandible on the right side. Our study is similar with **Sumit Gupta et al**<sup>4</sup>. Who studied in 240 sides of the 120 mandibles and observed that most of the shape of the mental foramen was round, i.e., in 89% cases while rest were oval in shape.

It was also similar to **Rahul Rai et al**<sup>5</sup>, who studied 40 mandibles and found that the most common shape was round in 75% cases and oval shape in 25% cases. **Srinivas Moogala et al**<sup>6</sup> studied on 219 mandibles in which 127 were dentate, and rest was edentate. They found that shape of mental foramen was round in 87 cases and oval in 40 in the dentate mandible and in edentate mandibles, 56 were round and rest were oval in shape on the right side. On the left side, it was round in 99 cases and oval in 28 cases in the dentate mandible, and in edentulous, it was round in 57 cases and oval in 35 cases.

Our study conflicted with the survey of **Abu Ubaida Siddiqui & Syed Rehan Daimi et al**<sup>7</sup>, who studied 93 mandibles, and they found that the shape of mental foramen was oval in 70% cases followed by a round shaped in 30 % cases.

**Ajay Parmar et al**<sup>8</sup>. studied 50 mandibles and observed that the most common shape of the mental foramen was oval, i.e., in 69% of cases followed by round shape in 31% cases.

**K. Udhaya & K.V. Saraladevi et al**<sup>9</sup>. I studied on 90 mandibles and found that the most common shape was oval, i.e., in 75 mandibles and rest were round on both sides.

### Accessory Mental Foramen

In our present study, we observed 200 mandibles with 400 sides and we observed the accessory mental foramen. We also found some accessory mental foramen in 15 mandibles in a total of 200 mandibles. There were two accessory mental foramen on the left and right side in two mandible out of 15. The percentage of accessory mental foramen was 7.5 %. **K. Udhaya et al.**<sup>9</sup>. Studied 90 mandibles and found that accessory mental foramen was 3.33% on the right and 2.22% on the left. Hence, our study findings are higher compared to the K.Udhaya study made on accessory mental foramen.

**Rakesh Kumar Shukla et al**<sup>10</sup>. studied 70 mandibles and found three accessory mental foramina on the left side, i.e., 4.28%, and two on the right side, i.e., 2.85 %. In this case, the accessory mental foramen findings are close to our study.

### Conclusion

It is very important in diagnosing radiographic periodical areas; it is a susceptible area for periodontal and endodontic surgery. The pre-operative radiograph should be taken to locate the mental foramen or any accessory mental foramen to avoid any unforeseen injury. The knowledge of the variations of the mental foramen are important for dental surgeons while they perform endodontic and periodontal surgeries, dental implantations, and orthogenetic surgeries

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