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STUDY ON VARIATIONS IN SHAPE OF MANDIBULAR CORONOID PROCESS IN 200 SOUTH INDIAN SUBJECTS.

Anatomy

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ABSTRACT

Introduction: Mandible being largest and strongest bone of skull, having various morphological features which show changes with reference to age, sex, and race. With this objectivity in the mind present study was undertaken to furnish more information on variations in shape of coronoid process of mandible.

Materials and Method: The present study was under taken in 200 dry human mandibles of South Indian subjects. The data pertaining to above was taken and subjected for statistical analysis.

Results: Overall triangular type of coronoid process (67%) was more prevalent than hook shaped (30%) and rounded (3%). Triangular type being more prevalent in males (72.2%) than females (51.1%), whereas hook shaped coronoid process was more prevalent in females (44.9%) than males (25.2%) and rounded type was more prevalent in females (4.1%) than males (2.6).

Conclusion: Shape of coronoid process may be used for sexing of mandibles. Coronoid process is used to identify the site for injection of local anaesthetic or for excision of nerve for facial neuralgia.

KEYWORDS

Triangular, rounded, hook, coronoid process, Gender, Facial neuralgia.

Introduction:

Mandible is an interesting bone since it depicts morphological changes in relation to age[1]. Morphological changes like alteration in shape of certain bony process of mandible like coronoid process. And these variations forms interesting line of investigation from clinical point of view. An extensive literature is available on the shape of coronoid process[2].The coronoid process seems to be suitable for paranasal augmentation in the dry skull study. Its clinical application is also favourable because its size and morphology fits into the paranasal region, with the additional advantages of biocompatibility, availability and reduced operation time for harvesting3. Hence an attempt is made in present study to provide more information on morphology of coronoid process.

Materials and methods

The present study was undertaken on 200 dry human mandibles available in the department of Anatomy, Shimoga Institute of Medical Sciences, Shimoga. Out of 200, 180 belong to adults and 20 belong to elderly individuals. Out of 180 adults, 135 were of males and 45 were of females. And out of 20 elderly, 16 were of males and 4 of females.In this study coronoid proces of 200 mandibles were observed on both sides for its shape. Different shapes of coronoid process observed were triangular, rounded and hook shaped. (As shown in Fig-1 to 3)

FIG 1

FIG 2

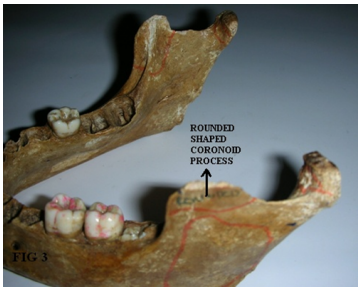

FIG 3

Statistical analysis was done by Descriptive statistics and Chi-Square test

Observation

Overall triangular type of coronoid process (67%) more prevalent than hook shape (30%) and rounded (3%). Triangular type was more prevalent in males (72.2%) than females (51.1%), whereas hook shape was more prevalent in females (44.9%) than males (25.2%) and rounded coronoid process was more prevalent in females (4.1%) than males (2.6%). Study was statistically significant with a 'p' value of <0.1. (Refer table 1)

Table 1: Variations in shapes of coronoid process

	Triangular	Hook shaped	Rounded
Male	109 (72.2%)	38 (25.2%)	4 (2.6%)
Female	25 (51%)	22 (44.9%)	2 (4.1%)
Total	134 (67%)	60 (30%)	6 (3%)

Discussion

Among the various morphological observation, shape of coronoid process depicts sexual dimorphism. Coronoid process was triangular in shape in 67% of male mandibles. This is almost similar to findings of study3. The variations in the shapes of the coronoid process in the adult human mandible were studied. According to the study the shape of the coronoid processes of both sides of 157 dry adult human mandibles, 100 males and 57 females of Indian origin, were studied in order to classify the variations. Three types were evident: 1. hook shaped, 2. triangular and rounded. Hook shaped coronoid processes were found in 86 (27.4%) sides, triangular in 154 (49%) and rounded in 74 (23.6%) sides. Hook shaped coronoid processes were found bilaterally in 35, triangular in 64 and rounded in 26 mandibles. Of the remaining 32 mandibles, the appearances were different on both the sides. The incidence of the rounded type was almost equal in male and female mandibles; in the triangular type it was slightly more in the female

mandibles while the hook shaped type was slightly more in male mandibles3. This could be considered as a more convincing male sex feature of mandible besides the other minor established differences

Conclusion:

In the present study differences was observed in the morphology of the mandible. Male mandibles showed triangular coronoid process and female mandibles in contrast less triangular coronoid process. The above findings are of immense forensic value in differentiating the sex of mandibles and in per serve as use full land mark for clinicians.

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