



MORPHOMETRIC ANALYSIS OF HYPOPHYSEAL FOSSA IN SOUTH INDIAN DRY ADULT HUMAN SKULLS

Simon Chouhan*

Department of Anatomy Saveetha Dental College and Hospitals, Saveetha University, Chennai-600077

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ABSTRACT

Aim: To examine the anatomy of hypophyseal fossa, its morphological features and dimensions.

Objective: To measure the dimensions of hypophyseal fossa and to examine it.

Background: It is a depression in the sphenoid lodging the pituitary gland called also pituitary fossa. The pituitary is often called the 'master gland' because it controls the secretion of most of the hormones of the body. The sella turcica is located in the sphenoid bone behind the Chiasmatic groove and tuberculum sellae.

Reason: This study will be helpful for neurosurgeons.

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INTRODUCTION

The sella turcica (Latin for Turkish seat) is a saddle-shaped depression in the body of the sphenoid bone of the human skull and of the skulls of other hominids including chimpanzees, x orangutans, and gorillas. (1). Since the sella turcica forms a bony caudal border for the pituitary gland, a pituitary tumour usually extends upward in the rostral direction into the suprasellar region. This can result in compression of the optic chiasma which lies on top of the pituitary, enveloping the pituitary stalk. Compression of the optic chiasma can lead to bitemporal hemianopsia, and, when there is no relevant trauma, this clinical finding is pathognomonic for a pituitary tumor. Some pituitary adenomas can extend inferiorly, growing downward and invading the sphenoid bone and cavernous sinus. (2). Sella turcica is also usually used as a reference point with nasion to establish the base of the skull in cephalometric analysis. This is commonly done prior to orthodontic treatment. (3). According to classical anatomical texts (for example, [4,5,6]), the hypophyseal fossa is a cavity formed at the upper surface of the body of the sphenoid bone between the tuberculum sellae and the dorsum sella.

MATERIALS AND METHODS

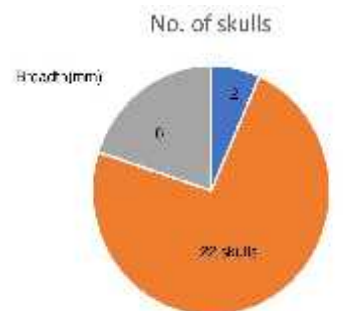
The morphometric analysis was performed on 30 dry adult human skulls. The study was conducted in the department of Anatomy Saveetha Dental College and Hospitals, Chennai, Tamil Nadu.

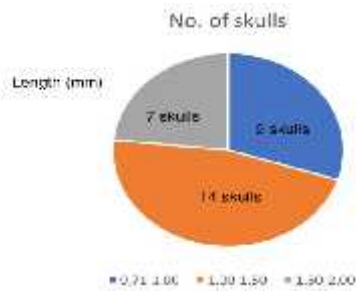
*Corresponding author: Simon Chouhan

Department of Anatomy Saveetha Dental College and Hospitals, Saveetha University, Chennai-600077

The length and breadth was measured using digital vernier callipers (0.01mm). The height was measured using scale. The measurements were taken twice to avoid errors.

RESULTS AND DISCUSSION





The results calculated are as follows. Length was measured. 7 people had length between 1.50-2.00, 9 had between 0.71-1.00 and 14 had between 1.00-1.50. Breadth was measured. 2 had it between 0.50-1.00, 22 had between 1.00-1.50 and 6 had between 1.50-2.00. The height was also measured. 25 had it between 0.5-1.00 and 5 had it between 1.00-1.50. Thus it shows us the following parameters. The dimensions of the sella turcica, namely its length, width, depth and volume, have been measured by many other authors (7, 8,9,10)]. The variability of the reported results is impressive. Thus the length of the sella varies between 5 mm and 16 mm, the width between 9 mm and 18 mm, the depth between 4 mm and 13 mm.

CONCLUSION

The morphometric study of hypophyseal fossa with above mentioned parameters is very useful for neurosurgeons. It is also useful for orthodontists, as when growth changes the orthodontic treatment results are to be evaluated.

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