

## Study of Interparietal Bone

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**Abstract :** It is not unusual to find small separate ossicles of bones between two lambdoid sutures and nuchal lines. Their size, shape, numbers and position are variable. These are interparietal bones. While routine examinations of bones, the authors have found an adult male skull having interparietal bone. The bone was examined thoroughly and conclusions drawn.

**Key-words:** Skull, Interparietal, Membrane, Ossification, Squamous occipital

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**INTRODUCTION:** The squamous portion of the occipital bone in man consists of an interparietal part which lies above the nuchal lines and ossifies in membrane and a supraoccipital part which develops in cartilage, and is situated between the nuchal lines and the posterior margin of foramen magnum. The interparietal may exist as separate symmetrical halves or it may be in three pieces or even four. In which the upper two constitute the pre interparietal bone Brash<sup>1</sup>. Kolte & Mysorker<sup>2</sup> have described a bipartite interparietal bone. Keith<sup>3</sup> stated that a separate single interparietal bone in man is an extremely rare anomaly. Other investigators have reported that two pairs of ossification centers form the interparietal part and have defined the additional pair as a primordial of the pre interparietal bone<sup>1,4,5</sup>. A variety of separate bones have also been reported i.e. Pre interparietal bones and sutural bones.

**MATERIAL AND METHODS:** During the routine study of human skulls in the Department of Anatomy, B.J. Medical college, Ahmedabad the authors noticed an adult male skull which showed a large interparietal bone.

It was extremely well preserved and provided information both on external and internal surfaces. The adult skull was identified on the bases of age criteria. The observations were performed macroscopically but when necessary a magnifying glass was used.

**RESULTS:** On examination, the authors noticed an adult skull in which a large, separate bone was present at the site of lambda. It was a large bone coinciding with that part of the occipital bone, which ossifies in membrane. It was rhomboid in shape articulating on two lateral sides with the parietal bone forming lambdoid suture. The base articulates with the squamous part of occipital bone forming inter parieto-occipital suture. The superior angle articulating with parietal bone forming lambda. The two lateral angles reaching almost up to asterion.

The extent of right lateral angle was 6.9 c.m. and that of left lateral angle 5.8 c. m. from the lambda. The maximum vertical length of the bone was 5.2 c.m. and maximum transverse diameter was 5.7c. m. The external occipital protuberance was situated 2.1 c.m. below the inter parieto occipital suture. The latter was almost touching highest nuchal lines. There were several sutural bones of various size and shape. The external occipital protuberance, superior nuchal line and highest nuchal line on both sides were well defined. Metopic suture was not present. An incomplete squamo- mastoid suture was seen on the lateral surface of temporal bone. The rest of the skull did not show any other abnormal features.

**DISCUSSION:** Usually, what we know, regarding the ossification of the squamous part of the occipital bone is that, above the highest nuchal line, it is ossified in membrane from two centers, one on either side of the mid line. These form the interparietal part, and may remain separate

throughout life. Below the highest nuchal line, the squamous part is ossified in cartilage from two centers, which soon unite to form a single piece. Keith<sup>3</sup> described the part of the occipital bone above the superior nuchal lines as developing by four centers of ossification in membrane. This membranous part constituting the inter parietal bone. Breathnach<sup>4</sup> described the lower squamous part developing from one center but suggested that there is the possibility that this is initially paired. The inter parietal apparently begins from paired centers which rapidly becomes continuous with each other and with the lower squamous ossification.

The interpretation of the evidence presented in this communication is that the interparietal develops from two pair of centers. One pair form lateral plate and the other pair unite to form a central piece. If the pair of centers for central piece fail to unite with each other or with the lateral plates, the inter parietal may develop as two symmetrical halves or as four pieces. Further additional center can be there. An occasional fourth pair is there; at the upper angle of bone<sup>4</sup> as pre inter parietals. Keith<sup>3</sup> has described the interparietal bone developing from four centers (two pair) apparently not including center for pre inter parietal. The suture between inter-parietal and supra- occipital lies about 2 c.m. above the external occipital protuberance and above the highest nuchal line. According to Srivastav H.C.<sup>6</sup>, the inter parietal part develops from three pair of centers in membrane. One for the central piece and the third pair representing the pre inter- parietal. The supra occipital part develops from five centers in cartilage - two centers for each lateral segment and a single center for the central segment.

Pal G.P et al.<sup>7</sup> confirmed that membranous part of the squamous occipital bone above the highest nuchal line develops from two pair of centers and from an occasional third pair, pre inierparietal, which may develop anterior to the interparietal centers.

**CONCLUSION:** Conclusion can be drawn from present study that membranous part of the

squamous occipital bone above the highest nuchal line develops from two pair of centers and from an occasional third pair, pre inierparietal, which may develop anterior to the interparietal centers.

#### REFERENCES:

1. Brash J.G (1951) In Cunningham's Textbook of Anatomy, 9th edition, pp220, London; Oxford University press.
2. Kolte P.T. & Mysorker V.R. (1966) Tri Partite interparietal bone. Journal of Anatomical society of India, 15:, 96
3. Keith (1948); In Human Embryology & Morphology, 6th edition, pp 223- 224, London: Edward Arnold and Co.
4. Breathnach (1965) In Frazer's Anatomy of Human skeleton, 6th edition, pp 190, London; J & A Churchill.
5. Gopinathan (1992): A rare anomaly of 5 ossicles in the pre inter parietal part of the squamous occipital bone in north Indians, Journal of Anatomical society of India, 180; 201 - 202
6. Srivastava H.C. (1977) Development of ossification centers in the squamous portion of the occipital bone in man. Journal of Anatomical society of India, 124, 643-649
7. Pal G.P., lamankar B.P., koutal R.V., Bhagawat S.S. (1984) the ossification of the membranous part of the squamous occipital bone in man, Journal of Anatomical society of India, 138, 259-266