



## VARIANT BONES AT THE LAMBDA: A CASE REPORT WITH EMPHASIS ON THEIR DEVELOPMENT

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**ABSTRACT** Lambda is an anatomical point where sagittal suture intersects with the lambdoid suture. It is the meeting point of occipital and parietal bones. Sutural bones of the cranial vault are formations associated with insufficient rate of suture closure, and regarded asepigentic and hypostatic traits. These bones rest along sutures and / or fill fontanelles of the neonatal skull. Sutural bones at pterion are more common but at lambda it is unusual. There are very few study worked on lambdoid sutural bone. The present study aim is to find out the incidence of lambdoid sutural bones.

**KEYWORDS :** ossification, lambda, occipital bone, interparietal bones.

### INTRODUCTION

It was reported that the faulty ossification of the occipital bone leads to various types of anomalous bones, particularly in the region of the squamous part and in the vicinity of the lambdoid suture (SINGH et al., 1979). The development of ossification centres in the squamous part of occipital bone is described on the basis of variations observed in the dried skulls (SRIVASTAVA HC, 1977). The ossification of the interparietal bone and the morphology of the pre-interparietal bone have been reported earlier by Pal et al. (1984). The interparietal portion of the squamous occipital bone may remain partially separated from the supra-occipital portion by a suture and that separate bone is called as the interparietal or inca bone. Sometimes, the additional centres occurring in front of the interparietal bone may fail to fuse and are called pre-interparietal bones (FRAZER, 1965).

### CASE REPORT

During teaching the neuroanatomy for MBBS students, we observed that one of the skull had some variant bones near the lambda. The skull was having 4 accessory bones (Fig. 1), 3 of them were in a single row and 1 was anterior to it.

### DISCUSSION

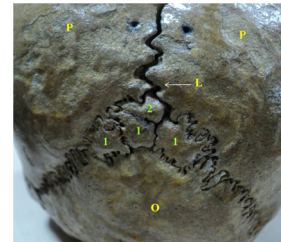
The squamous part of the occipital bone above the highest nuchal line develops in membrane and it ossifies from 2 pairs of ossification centres, with an occasional 3rd pair for the upper central part. Nonunion of the parts developed from these ossification centres result in the formation of anomalous ossicles (GOPINATHAN K, 1992). These separate single or multiple bones developed from the first 2 pairs of centres of ossification have been named as interparietal or inca bones and those developed from the occasional 3rd pair of centres have been termed preinterparietal bones (SRIVASTAVA, 1977; PAL et al., 1984). The occurrences of these bones are very rare and are considered as variants. These unusual bones may confuse the radiologists and clinicians as fractures in the skull. They may end up in complications during neurosurgical interventions like burr hole surgeries and their extensions may lead to continuation of fracture lines (MARATHE et al., 2010).

The presence of sutural bones in the lambda may be misleading and it was reported that the differentiation of pre-interparietal bones from the sutural bones and from other variations of interparietal region is of importance because of the increased use of these bones in classification of non-metric cranial variants for separation of populations (PAL et al., 1986).

### CONCLUSION

Lambda sutural bones shows the possibility of discrete diversification of the ossification centers, as well as the relative stability of the structural skull matrix in response to discrete changes. Knowledge of this variation is very important for anthropologists, radiologists, orthopedic and neurosurgeons. These bones are very rare in occurrence compared to the sutural bones. The study has provided additional information on the squamous part of occipital bone, the interparietal and preinterparietal bones, their incidence, sexual dimorphism and

morphology. The knowledge of these variants is of importance to the neurosurgeons, radiologists and morphologists.



**Fig. 1 Photograph showing the variant bones (1 – interparietal or inca bones; 2 – preinterparietal bone) at the lambda. (P: parietal bone, O: occipital bone, L: lambdoid suture).**

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