SKULL WITH MULTIPLE SUTURAL BONES - A CASE REPORT

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ABSTRACT
The sutural bones are unnamed bones commonly found at the level of lambda and lambdoid suture in a human skull. They vary from person to person in number and shape. It is important to know about these bones because they can mislead the diagnosis of fracture of skull bones. Knowledge of this variation is very important for forensic experts, anthropologists, radiologists, orthopedicians and neurosurgeons. We found one dry skull specimen with multiple skull bones at the level of lambda and lambdoid suture.

Key Words: Skull, Wormian Bone, Lambdoid Suture, Variation

INTRODUCTION
The ‘sutural bones’ or ‘Wormian bones’ are small, irregular bones found at the sutures and fontenellas of the skull. Whenever the wormian bones are present they are either two or three but they are present in large numbers in case of Hydrocephalic skulls (Standring, 2008). The mechanism of formation of the wormian bones is not clearly known. Some say they are due to external influences (Hess, 1946; Bennett, 1965; Finkel, 1971). Other say they are due to normal developmental processes and are genetically determined (Murphy, 1956; El-Najjar and Dawson, 1977; Pal et al., 1986). They are commonly found in relation to the frontal and occipital bones. It is important to know about these bones because they can mislead in the diagnosis of fracture of skull bones in medicolegal cases.

CASES
A dry adult skull with a series of sutural bones in the lambdoid suture (Figure 1) was found in the Department of Anatomy, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar. The largest among them was at the lambda and the size of rest of the bones reduced progressively from lambda to asterion. They were irregular in shape. The sagittal suture was very wavy. There were no other notable abnormalities in the skull.

DISCUSSION
Sutural bones are very commonly found in the skull. Nearly 40% of skulls contain sutural bones in the vicinity of the lambdoid suture (Bergman et al., 1988). The next most common sutural bone is the epiperic bone found near the anterolateral fontanelle. The interparietal bone develops from three pairs of centers in membrane one pair for the lateral plates, one pair for the central piece and the third pair representing the pre-interparietals (Srivastava, 1977). Presence of sutural bones is almost invariably associated with abnormal development of the CNS and may serve as a useful marker for the early identification and treatment of the affected infant or child (Pryles and Khan, 1979). Jeanty et al., (2000) have reported the presence of wormian bones in four fetuses. But in these cases there were no associated anomalies. Tewari et al., (1982) studied 1500 skulls for the presence of sutural bones. They have found the pre-interparietal bone in 6 (0.4%) cases. El-Najjar and Dawson (1977) are of the opinion that the occurrence of the wormian bones is controlled by the genetic factor.

Significant sutural bones as against normal developmental variants were considered to be those more than 10 in number, measuring greater than 6 mm by 4 mm, and arranged in a general mosaic pattern. They were found in all the cases of osteogenesis imperfecta but not in the normal skulls (Cremin et al., 1982; Pal, 1987). Comparison of cranial capacity in skulls with and without sutural bones showed no significant
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difference and this is interpreted as indicating that sutural bones are not formed secondary to stress (Malhotra et al., 1978). It has no morphological importance but it certainly has a morphogenetic bearing (Astley, 1971).

Figure 1: Showing multiple sutural bones at lambda and lambdoid suture

Conclusion

The sutural bones are important from clinical point of view. The presence of series of sutural bones like this may lead to problems in posterior approach to the cranial cavity. These bones might lead to confusions in reading the radiographs in the case of head injuries. The sutural bones may be mistaken for multiple fractures.

REFERENCES


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