

Study of Incidence of Metopism in Adult South Indian Skulls

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Abstract: The metopism is described as persistence of suture from the nasion to the bregma. It can be complete or partial. At birth the frontal bone has a metopic suture which closes approximately by 18-24 months. Cases have been reported where the metopic suture remains patent to the seventh year. 367 skulls were observed. In some cases it may persist as a complete suture extending from the nasion to the bregma. Presence of metopism may mimic or can be misdiagnosed as a traumatic fracture.

Keywords: Bregma, Fracture, Metopism, Nasion, Suture, Traumatic

1. Introduction

The metopism is described as persistence of suture from the nasion to the bregma. It can be complete or partial. The frontal bone develops from two primary centers which start from the frontal eminence and extends outwards. So at birth the frontal bone has a metopic suture which closes approximately by 18-24 months. Cases have been reported where the metopic suture remains patent to the eighth year¹. In some cases it may persist throughout life extending from the nasion to the bregma either completely or partially. The persistence has been reported in frequencies of upto 10% of the skulls². Presence of metopism may mimic or can be misdiagnosed as a traumatic fracture³. In the present study the incidence of presence of metopic suture in the South Indian adult skulls is observed.

2. Materials and Methods

367 skulls were observed. 60 skulls were observed in the Department of Anatomy, DM-WIMS, Meppadi, Kerala; 120 skulls were observed in JSS Medical College Mysore; 100 skulls were observed in KIMS, Bangalore; 87 skulls were observed in K S Hegde medical Academy, Mangalore.

3. Observation and Report

Total Skulls	367
Complete metopism	06
Incomplete metopism	02
Incidence of complete metopism	1.63%
Incidence of incomplete metopism	0.54%
Total incidence	2.18%

In the present study of the 367 skulls studied, 1.63% of the skulls presented complete metopism and 0.54% incompletemetopism. The total incidence of metopism was found in 2.18%.



Image 1: Showing a complete metopic suture.

4. Discussion

When the study is compared to other studies the following differences and similarities were observed.

Investigators	Race	Percentage
Agarwal (1979) ⁴	Indians	2.66
Das (1972) ⁵	Indian-UP	3.31
Jit & Shah (1948) ⁶	Indian- Punjab	5
Bryce (1915) ⁷	European	8.7
Bryce (1915) ⁷	Mongolian	5.1
Bryce (1915) ⁷	Negro	1.2
Bryce (1915) ⁷	Australian	1
Bryce (1915) ⁷	Scottish	9.5
Keith (1948) ⁸	Subject to race	3-8
HussainSaheb (2010) ⁹	South Indian	29.6
Present Study (2014)	South Indian	2.18

The metopic suture has always aroused curiosity of anatomists, anthropologists and radiologists. Most important application of the knowledge of frequency of metopic suture is misdiagnosis of a fracture. The incidence of presence of metopic suture in different races is useful in anthropological studies.

5. Conclusion

The current study provides the incidence of metopic suture in south Indian population. The study is of regional significance. The knowledge is useful for clinicians especially radiologists. The future of the study lies in the field of anthropology, its incidence in different population and to try to find the underlying cause of such variations in different populations.

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Author Profile



Dr. C. Sheshgiri has a teaching experience in the Department Of Anatomy for more than 30 years. He has served as a professor in the Department of Anatomy, M.S.Ramaiah Medical College, Bangalore. He has served both as a UG and a PG teacher.

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