INCIDENCE OF METOPISM IN NORTH INDIA REGION

INTRODUCTION:-
The study of fusion of cranial sutures for age estimation is an important parameter for anthropologist and forensic experts from past time. Various sutures were examined macroscopically for age estimation such as Metopic, Cranial, Saggital and Lambdoid suture etc. The metopic suture is present between two halves of frontal bones in midline going from Nasion to Bregma during infancy. Usually this suture is not appreciable in adult skulls. Metopism is the presence of complete metopic suture from Nasion to Bregma in adult skull.

AIM: The present study is done to find out the incidence of Metopism and its medicolegal significance.

Material and Method: The total of 149 skulls was examined macroscopically during routine autopsy procedure with regard to the presence (metopism: M).

RESULTS: It was observed that Metopism was present in 9 skulls (6.04%) of the skull examined, of which (5/92) were male and (4/57) were female.

KEYWORDS
Autopsy, Metopic Suture, Metopism, Nasion, Bregma, Crania.

ABSTRACT

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The genetic influence is the most currently accepted factor among the scientific community [12]. It was reported that the impaired closure of the metopic suture is common in Aper's Syndrome.

Medico-Legal Importance:-
In children and young adults, with head injury, the inter frontal line of weakness, left by the earlier fusion of metopic suture can reopen under mechanical stress [4]. The persistence of the metopic suture has been related to frontal sinus aplasia or hypoplasia [13]. It is also useful in medico-legal cases in the department of forensic medicine and in the departments like neurosurgery for the treatment purposes (delayed closure of the metopic suture may be erroneously treated like a vertical fracture. plain X-ray is enough to diagnose this anatomical variation, it may be strongly misdiagnosed with vertical fractures in the emergency setting. The suture is not visible in the roentgenogram if the inner table is closed and if there is no sclerosis along the suture [14]. While reading the X-ray/CT & MRI films the possibility of metopic suture should always be evaluated in the list of differential diagnosis [15]

Discussion and Conclusion:
The incidence of metopism in the present study is 6.04% in north India. The persistence of metopic suture can be associated with regional and racial factors. Table 2 shows the comparison of the present study with previous studies. While comparison, we found that the minimum incidence was reported in Egyptian population to the tune of 2.20% [22] and Maximum in Indian (Kanpur) region population [17] and range being 2.20% to 18.04%. Our Result is in concurrence with the result already reported. This new study can help us understand the incidence of the metopism in north India, along with its medicolegal issues like interpreting the complete or partial metopic suture as fracture and thus reporting the medicolegal cases accordingly or misdiagnosis of fracture in the frontal bones in young adults as persistent partial or complete metopic suture and thus missed the diagnosis of fracture in golden hour of treatment of head injury by assault or accident in emergency setting. Thus, the knowledge of complete and partial metopic suture and incidence of metopism for all the medical officers dealing in emergency trauma or assault cases with respects like medicolegal as well as treating doctors. Since the incidence ranges between 2.20% to 18.04% in various studies, it was concluded that Metopism is not so uncommon which can be ignored. So such doctors should be sensitized with respect to presence of Metopic suture and incidence of Metopism.

Table 2: Comparison Of Incidence Of Complete Metopic Suture With Respect To Population Groups Among Present Study With Previous Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Population group</th>
<th>Occurrence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baaten PJ et al. 16</td>
<td>2003</td>
<td>Lebanese</td>
<td>1.75</td>
</tr>
<tr>
<td>Anjoo et al. 15</td>
<td>2010</td>
<td>Indian (Kanpur)</td>
<td>18.04</td>
</tr>
<tr>
<td>Khamanarog K 15</td>
<td>2015</td>
<td>Thai</td>
<td>7.51</td>
</tr>
<tr>
<td>Nikolova et al. 17</td>
<td>2016</td>
<td>Bulgarian</td>
<td>6.85</td>
</tr>
<tr>
<td>Hemalatha et al10</td>
<td>2016</td>
<td>Indian (Andhra Pradesh)</td>
<td>6.66</td>
</tr>
<tr>
<td>Bernardes FM et al. 16</td>
<td>2016</td>
<td>Brazilian</td>
<td>4.76</td>
</tr>
<tr>
<td>Halagatti MS et al. 18</td>
<td>2017</td>
<td>Indian (Karnataka)</td>
<td>6.02</td>
</tr>
<tr>
<td>Sangeetha V et al. 21</td>
<td>2018</td>
<td>Indian (Tamil Nadu)</td>
<td>5.71</td>
</tr>
<tr>
<td>Dhillon et al. 21</td>
<td>2019</td>
<td>East Asian</td>
<td>8.06</td>
</tr>
<tr>
<td>Present Study</td>
<td>2019</td>
<td>North Indian</td>
<td>6.04</td>
</tr>
</tbody>
</table>

Conflict of Interest
None

REFERENCES: