PREVALENCE OF COMPARATIVE STUDY OF METOPISM IN NORTH AND SOUTH INDIAN HUMAN CRANIA

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ABSTRACT:

1189. Non-Pathological adult crania are studied, out of them 510 Male crania and 251 Female crania are from North India while 285 Male and 143 Female crania are from South India. Prevalence of Metopism in the North Indian Male crania is 12 crania (2.35%) and female crania is 5 Crania (1.99%) while. In South Indian Crania the prevalence of Metopism was in Male 11 Crania (3.85%) in female it was 5 Crania (3.49%). It is observed that, Prevalence was more in South Indian Crania of both sexes as compared to North India. It is also observed that, Prevalence of Metopism is more in Male Crania of North India & South Indian Crania compared to female crania of both North and South India. Previous workers have studied only regional or racial skull but the sexual dimorphism and regional comparison this study appears to be new method.

Study is important for anthropologist, anatomist and medico-legal expert above all to radiologist & Neurosurgeon who confuse in the fracture of crania[1].

Keywords: *Regional, Sexual Dimorphism, Environment, Nutritional*

INTRODUCTION

Metopic suture (Metopan is a Greek word = Forehead) It is the complete structure between the eminence frontal bone, which develops from two intramembranous centers of ossification. Before two years of age the frontal bone is always divided by metopic suture. This usually closes or obliterates with the anterior frantically[2]. It is also observed in lower mammals (i.e. Homoerectus) crania[3].

- It is also observed that persistence of metopism i.e. (Completer metopic suture) is also with so many congenital anamolics[4] apart from environment regional or nutritional differences. As each of us belong to breeding population or pool of potential mates and units in which evolution takes place.
- Incidence of metopism was once believed sign of intelligence became its presence related to growth of frontal lobes of brain as incidence was more in superior races and, rare in inferior races irrelation of cranial capacity[5].

MATERIAL AND METHODS

Total 1189 crania are studied from North India and South India. The study is carried out by multistage sampling status method, (i.e. by lottery method) in which four status are chosen from South India and four college are chosen from each state.

Crania Available	No. of Colleges	Total No. of Crania Studied
U.P	389+75+22+40	526
Rajasthan	031+29+22+14	096
Haryana	021+14+09+08	052
Punjab	030+20+19+18	087
Andrapradesh	036+29+20+18	103
Karnataka	047+39+24+24	134
Kerala	030+21+17+10	078
Tamil Nadu	048+41+17+07	113

Eleven Hundred Eighty Nine Only (1189)

Digital camera is used to take the photographs Z test is applied to compare the crania and percentage of incidence is also noted.

OBSERVATION AND METHOD

Table 1: Percentage of Incidence of Metopism in the Crania of North & South India in both Sexes

	Male Crania			Female Crania		
Name of the Place	**No. of Skull Studied**	**Pressure of Metopic Suture**	**Percentage of Metopism**	**No. of Skull Studied**	**Pressure of Metopic Suture**	**Percentage of Metopism**
North India	510	12	2.35%	251	5	1.99 %
South India	285	11	2.85%	143	5	3.49 %
Pvalue Significant	P > 0.05 Insignificant			P > 0.05 Insignificant		
Sexual Dimorphism	P > 0.05 Insignificant			P > 0.05 Insignificant		

Prevalence Metopism in Male Crania

Name of the Place	No. of Skull Studied	Pressure of Metopic Suture	Percentage of Metopism
North India	285	11	3.85 %
South India	510	12	2.35 %

Metopism Prevalence in Female Crania

Name of the Place	No. of Skull Studied	Pressure of Metopic Suture	Percentage of Metopism
North India	143	5	3.49 %
South India	251	5	1.99 %

a) North Indian 510 Male crania had 12 incidence of metopism (2.35).
b) North Indian 251 Female crania had 5 incidence of metopism (1.99).
c) South Indian 285 Male crania had 11 incidence of metopism (3.85).
d) South Indian 143 Female crania had 5 incidence of metopism (3.49).

But p value >0.05 was insignificant in both regional and sexual dimorphism. However more percentage incidence of metopism observed in male crania of both north and south Indian than female crania.

Table 2: Incidence of Metopism as represented by previous workers of India & observed

Sl. No.	Worker	Year	Crania Studied	Metopism
1	Rao R.K	1934	South Indian	4
2	Inderjit & Shah	1948	Punjab	5
3	W.V.O	1949	Margolis	10
4	Brcathnach	1958	European Yellmuran African	7-10 4-5 1.1
5	Fakruddin & Bhalarao	1967	Maharashtra	2
6	Dixit & Shukla	1968	U.P	2.53
7	Linc & Fleschm	1969	Czeeh	11
8	Dasedal	1973	South India	3.31
9	Agarwal	1979	North India	2.66
10	Ajmani	1983	Nigerian	3.4
11	Bilodi	2004	Nigerian	11.46
12	Present Study	2009	*North India* Male Female *South India* Male Female	 2.35 1.99 3.58 3.49

Present study of incidence of metopism is compared with previous workers. The present findings are more or less in agreement with previous workers but study of sexual dimorphism is not carried out by previous workers. Graphs are shown to simplify the sexes of North and South Indian crania.

DISCUSSION AND SUMMARY

In the present study i.e. (*Table-1*) North Indian Male Crania has 2.35% while Female crania had 1.99% (Fig no-1) and South Indian Male crania had 3.85% and Female crania had 3.49% (Fig no- 2).

It clearly indicates that incidence of metopism is more in Male crania than Females.

- As there is no literature in English to justify this finding but it was observed that absent of estrogen hormone.
- (Similarly in Lebanese population had also more incidence of metopism in male crania than female[6]).
- In Males became estrogen plays vital role in sutural synistosis observed in rats[7].
- Male crania of South Indian had more incidence comparison than Male crania North Indian.

The incidence of metopism of present study is in agreement with the finding 4% metopism of Tamil Nadu[8]. (*Table-2*) In south Indian Female crania has more incidence than North Indian Female crania. (*Table-3 with Graphs*). This variations in the incidence of metopism could be due to correction of growth of body. The date of closure of cranial sutures is progressively delayed in relation to the growth of the body as a whole leading from old world monkey up to man[9] become extract mechanism and factors which determine the synostis of sutures is still obscure moreover persistence of metopic suture was associated with absence of sutural bones and prominence of external occipital protraberence[10]. Hence it confirms that persistence of metopic suture complements the functions of sutural bones which gives of space to the[6] gmthg brain. Apart from that as India is multiracial country and bones structures obviously have high survival value hence they adopt the environment and there is variation in the incidence of metopism at the expense of their genetic make.

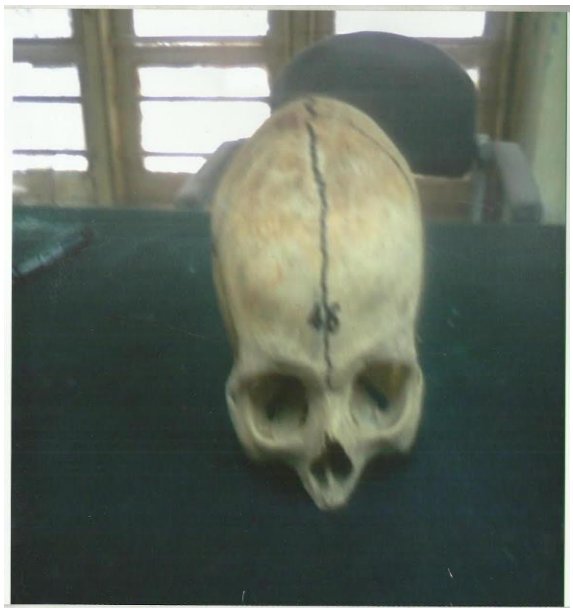

Figure- 1

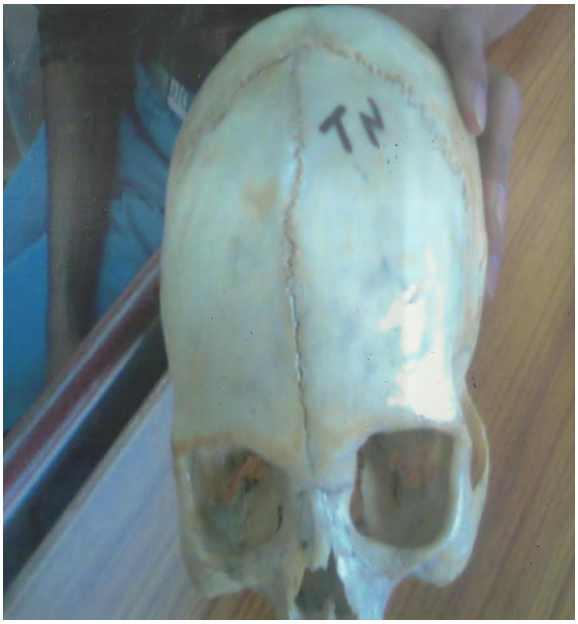

Figure -2

CONCLUSIONS

As compute incidence of metopic suture throughout the frontal bone is referred as metopism. In sexual dimorphism of incidence metopism is more in Male crania than female crania of both North and South India.

In regional comparison South Indian Male crania has more incidence than has more incidence than North Indian Males similarly South Indian Female crania has more incidence of metopism than North Indian Female crania. Although this study has Medico-legal, anthropological and anatomical importance but it require further genetic, histological embryological /anthropological study throw more light upon these subject became metabolic activities of mesoderm is still obscure. Moreover due to rare incidence of metopism least attention is paid in literature.

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