

**Research Article**

## **A STUDY OF MAXILLARY TORUS IN NORTH INDIAN CRANIA**

**Zaidi SHH, \*Nirala Kamta Prasad and kumar Sarangdhar**

*Department of Anatomy, Rohilkhand Medical College & Hospital, Bareilly, India*

*\*Author for Correspondence*

### **ABSTRACT**

Studies of non metric cranial variants have been a field of considerable interest to research workers especially because of their racial and regional importance. 28 north Indian skulls of U.P. were studied for the Maxillary Torus, a cranial variant in the present study. Findings are discussed and compared with other global studies and are found to be of considerable regional and racial significance.

**Keywords:** *Maxillary Torus, Cranial Variant*

### **INTRODUCTION**

Non-metric cranial variants have been a subject of study by many pioneering workers (Todd and Tracy, 1930). Many such variants have been observed on a racial basis also (Berry and Berry, 1967) and are of considerable ethnic but lesser forensic interest.

Berry (1975) made a special study of non metrical human cranial variants including Maxillary Torus Present study is undertaken to know the incidence of variant of Maxillary Torus and to draw significant conclusion, if any, from this study.

### **MATERIALS AND METHODS**

28 north Indian human crania were studied for these study human crania of museum of Rohilkhand medical college Bareilly and twenty human crania were studied.

Incidence of Maxillary Torus was noted in these crania; attention was also paid to whether this variant was bilaterally present or unilaterally present and if unilateral whether it is more on right side or left side.

### **RESULTS AND DISCUSSION**

#### **Result**

Out of 28 skulls studied double Maxillary Torus was seen only in 5 skulls (in 2 bilaterally & in 3 unilaterally on left side). Thus the incidence of this cranial variant was 12.5%. Out of these; it was bilaterally (figure 1) only in 5% cases. However, unilaterally it was present (figure 2) in 7.5% case.

#### **Discussion**

Cranial variants have aroused the curiosity of anatomists for many decades (Double, 1903). It was Jones (1930) however who first proposed that the differing incidences of these minor variants which occurred in different races might be useful in anthropological studies.

Laughlin & Jorgensen (1956) put this idea in practice and in 1967 Berry & Berry suggested that a wide range of these variants could be used to calculate a distance statistic between population samples.

This paper is concerned with description and racial & regional incidence of Maxillary Torus one of the important cranial variant.

Cranial variants like all other variants have been studied by many workers; most of them are recognized only by mention in anatomical text books, being described in terms such as rare or occasionally found; nevertheless a few of them have been utilized as anthropological markers (Broth, 1963, 1965).

Some variants are consequences of disease or other extrinsic influences ( Moller-christensen & Sandison 1963, Roche 1964 and Dorsey 1897); however most of these variants result from normal developmental processes and are genetically determined ( Berry & Berry -1967 ).

The frequency of any particular variant is more or less constant in a given rare and is somewhat similar in related races.

Chambellan (1883) seems to have been first to suggest the possibility of using such traits as anthropological characters.

**Research Article**

Russel 1900 gathered together data on a number of skull variants in American group and gave the first indication of their use in the comparison of populations. Jones (1930-31, 1933-34) used data on skull variants in a more systemic comparison number of far eastern group.

Berry (1975) made a special study of non metrical human cranial variations including the Maxillary Torus. His findings are given in the table no.1

In our study: It was observed that double Maxillary Torus was present in 12.5% of crania. Out of these in 5% crania it was bilaterally present (figure no. 1) and in 7.5% cases it was unilaterally present (figure no. 2).

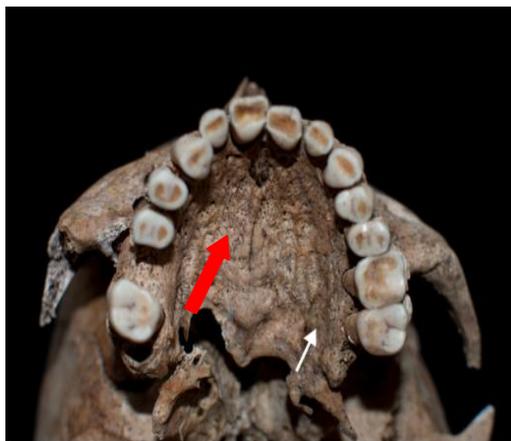
In north India (U.P.) the incidence of this variant was greater (12.5%) than in Nigeria, (11.6%), Palestine, (7%), Palestine modern (8.3%) and Burma (9.8%) and lesser than in Egypt, (16.6%), India (Punjab, (17.9%), North America (24%) and South America (27.4%).

Hence the current study provides valuable data from U.P. the largest state of India, and compares the same with data of different global regions.

The findings are of considerable racial and regional global significance.

**Table 1: Berry-1975 Maxillary Torus**

<b>Egypt (summed)</b>	<b>Nigeria (Ashanti)</b>	<b>Palestine (Lachish)</b>	<b>Palestine (Modern)</b>	<b>India (Punjab)</b>	<b>Burm a</b>	<b>North America (British Columbia)</b>	<b>South America (Peru)</b>	<b>Our study (U.P) North India</b>
<b>250 skulls</b>	<b>56 skulls</b>	<b>54 skulls</b>	<b>18 skulls</b>	<b>53 skulls</b>	<b>51 skulls</b>	<b>50 skulls</b>	<b>53 skulls</b>	<b>28 skulls</b>
16.6%	11.6%	7%	8.3%	17.9%	9.8%	24%	27.4%	12.5%



**Figure 1**



**Figure 2**

**Figure 1 & 2: Photo of adult subject dry skull showing maxillary tarus (arrow head)**

**REFERENCES**

**Berry AC (1975).** Factors affecting the incidence of non-metrical skeletal variants. *Journal of Anatomy* **120** 519-535.  
**Berry AC and Berry RJ (1967).** Epigenetic variation in the human cranium. *Journal of Anatomy* **101** 361-380.  
**Brothwell DR (1963).** *Digging Up Bones: The Excavation, Treatment and Study of Human Skeletal Remains* (London: British museum (Natural History)) 192.

**Research Article**

**Brothewell DR (1965).** Of mice and men, Epigenetic polymorphism in the skeleton. In: *Homenaie a Juan Comas en Su 65 Aniversaria*, edited by Caso A et al., 29-21 Mexico.

**Chambellan M (1883).** Etude Anatomique et Anthropologique sur les Os Wormiens. Thesis, Paris, **Cited by Dorsey, 1897.**

**Dorsey GA (1897).** Wormian bones in artificially deformed Kwakiutl crania. *American Anthropologist* **10** 169-173.

**Laughlin WS and Jorgessen JB (1956).** Isolate variation in Greenlandic Eskimo crania. *Acta Genetica et Statistica Medica* **6** 3-12.

**Le Double AF (1903).** *Variations Des Os Du Crane*, (aris: Vigot) 400.

**Moller-Christensen and Sandison AT (1963).** Usura orbitae (enbra orbitalia) in the collection of crania in the Anatomy department of university of Glasgow. *Pathologia et Microbiologia* **26** 175-183.

**Roche AF (1964).** Aural exotoses in Australian aboriginal skulls. *Annals of Otology, Rhinology & Laryngology* **73** 1-10.

**Todd TW and Tracy B (1930).** Racial features in American Negro cranium. *American Journal of Physical Anthropology* **15** 53-110.

**Williams PL, Bannister LH, Berry MM, Collins P, Dyson M, Dussek JE and Ferguson MWJ (1995).** *Gray's Anatomy*, 38 edition, (Churchill Livingstone ) 584.

**Wood-Jones F (1930-1931).** The non-metrical morphological characters of the skull as Criteria for racial diagnosis. I.II.III. *Journal of Anatomy* **65** 179-195; 368-378; 438-445.

**Wood-Jones F (1933-1934).** The non-metrical morphological characters of the skull as Criteria for racial diagnosis.IV. *Journal of Anatomy* **68** 96-108.