



# Prevalence of Cusp of Carabelli in a Section of North Indian Population

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## ABSTRACT:

This research paper is about The cusp of Carabelli, an accessory cusp on the mesopalatal surface of maxillary molars, remains a subject of interest due to its enigmatic origin and potential ethnic associations. This study explores the prevalence of the cusp of Carabelli in a North Indian population, aiming to contribute to the existing understanding of its distribution. A cross-sectional study involving 406 patients at Manav Rachna Dental College was conducted to assess the prevalence of the cusp of Carabelli. This research provides valuable insights into the prevalence of the cusp of Carabelli in a North Indian population. While non-significant gender differences were noted, the study contributes to the broader understanding of dental traits in diverse populations

## I. INTRODUCTION

The presence of accessory cusps like the cusp of Carabelli, talonis cusp, photostylid has

## II. METHODOLOGY

A cross-sectioned study was carried out from where a thorough Intraoral examination was carried out. A total of 406 patients were screened at Manav Rachna Dental College and photographs in taken. To prevent bias, only one examiner took

always been a mystery in terms of origin and use. The cusp of Carabelli is one such accessory cusp seen on the mesopalatal surface of the permanent 1st maxillary molars. It was initially described by Carabelli in 1842 and was classified by Dabberg in 1963. There have been studies done to associate in India [2, 3]

There has been a relation between the prevalence of the cusp of carabelli to ethnic association. It is shown that racial classification of Lacosoid, Negroid, and Mongoloid can be done through skull shape, the cusp of Carabelli shovel changed in suo, and this method is still used by forensic scientists based on previous studies of Carabelli trait on a racial basis, it is proud that Mongoloids had a low prevalence of Carabellian trait whereas Caucasians have a high prevalence [2] the current survey aims to relate the result of the studies done to the prevalence of cusp of Carabelli in the section of North Indian population.

photographs, and the data collected was statistically tabulated.

The patients were discarded. If the tooth was extensively damaged if 1st permanent molars were unilaterally missing or even if small vertical ridges or minor grooves were present at the mesopalatal area of 1st permanent molar. A chi-square test was used for statistical analysis and the results were tabulated.



### III. OBSERVATIONS

**Table 1: Distribution of study population according to gender**

Gender	Number (N)	Percentage (%)
Males	220	54.2
Females	186	45.8
Total	406	100.0

**Table 2: Distribution of Cusp of Carabelli amount the study population**

Gender	Present		Absent		Chi Square	p-value
	N	%	N	%		
Males	60	27.3	160	72.7	0.930	0.510
Females	50	26.9	136	73.1		
Total	110	27.1	296	72.9		

**Table 3: Unilateral/ Bilateral presence of Cusp of Carabelli among the study population**

Gender	Unilateral		Bilateral		Absent		Chi Square	p-value
	N	%	N	%	N	%		
Males	13	5.9	47	21.4	160	72.7	3.623	0.163
Females	18	9.7	32	17.2	136	73.1		
Total	31	7.6	79	19.5	296	72.9		

### IV. RESULTS

Of the 406 patients examined out of which, 220 were males and 186 were females, 60 males (27.3%) and 50 females (26.9%) were present with the cusp of carabelli and a total of 110 out of 406 had it.

In total 79 (19.5%) People had bilateral presence and 31 (7.6%) had unilateral presence of cusp of carabelli.

### V. DISCUSSION

The P value for the presence of the cusp of Carabelli was (P.O 5103) which is not statistically significant and the results and in concurrence with the articles [II, III]

The current studies showed no difference between the presence of the cusp of carabelli in males and females but there is a higher frequency of presence of cusp of carabelli bilaterally in both

### VI. CONCLUSION

The cusp of Carabelli may be more than just an accessory cusp present on the mesopalatal surface of the 1st permanent maxillary molars. It has been shown that there is a high prevalence of it in the caucasian race than in Mongoloid race [6] so this cusp is used for forensic identification of ethnic classification.

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traits in males and females than unilaterally. India is a diverse nation in terms of ethnic ancestry although all Indians are classified as a mixture of two genetically divergent populations (V).

The Indian population is a mixture of Negritos (majority in Andaman Island.), the Proto-Australoids [Central and Southern India] Mongoloid [East-India], Mediterranean [Central India], Pravidians [Southern India and Nordics/ Aryans [North India]

The Aryans are those who make up a large section of the population in Northern India States like Haryana and Punjab. The studies done previously [II, III] in India had shown a prevalence of 30-40% to the presence of the cusp of carabelli, and the results of the current survey are in concurrence with the data.

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