

CARABELLI'S CUSP IN MIXED DENTITION PHASES AND PERMANENT DENTITION EARLY PHASE

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ABSTRACT : Carabelli's cusp is one of the non-metric dental traits that most commonly investigated. The highest frequency of this trait was Caucasian or Western Eurasia, but the frequency of this trait at the people who fall into the Sunda Pacific was not low. Identification was usually performed in adults and appeared to have not been done in children, whereas the database of dental traits at an early age was also required. To know the present of Carabelli's cusp on Javanese at mixed dentition phases until the early phase of the permanent dentition. The sample was a model of the upper jaw, consists of 31 models of the Javanese boys in Surabaya aged 8, 10, and 12 years. The 93 models was observed 3 times by intra-observer to see Carabelli's cusp on the mesiopalatal region of the permanent upper first molar. Then Carabelli's cusp was divided into pronounced, weak, and none. In the group of children aged eight years, pronounced Carabelli's cusp was 16.13%, weak Carabelli's cusp was 25.8%, and no Carabelli's cusp was 58.07%. In children aged ten years, pronounced Carabelli's cusp was 12.9%, weak Carabelli's cusp was 19.36%, and no Carabelli's cusp was 67.74%. Whereas in children aged 12 years, pronounced Carabelli's cusp was 22.58%, weak Carabelli's cusp was 45.16%, and no Carabelli's cusp was 32.26%. Carabelli's cusp in the early phase of the permanent dentition is easier to observe.

Key words : Carabelli's cusp, Javanese, mixed dentition phase, permanent dentition early phase, human health.

INTRODUCTION

Carabelli's cup is one of the dental traits in the form of additional bulges in the mesiopalatal area of the maxillary permanent first molar that was first discovered by George Carabelli in 1842 (Khan *et al*, 2011; Mavrodisz *et al*, 2007). These bulges can be in the form of pits, grooves, smooth protrusions without free ends to cusp-like formations (Dissayanake *et al*, 2004), but they can also be unilateral or bilateral. Genetic factors are thought to play a role in influencing the size and shape of Carabelli's bulges. The shape of the cusp appears very clearly in the homozygote state, whereas the groove or pit shape is usually found in a heterozygote state (Khan *et al*, 2011).

The highest frequency of the presence of Carabelli's cusp is found in the Caucasoid population, whereas in the Mongoloid population the frequency is low (Hsu *et al*, 1999; Khan *et al*, 2011). Population division based on the state of the teeth proposed by Scott and Turner (2000), states that the Caucasoid population is included in the Western Eurasian group, while the Mongoloid population is divided into Sino America (proto Mongoloid) and Sunda Pacific (southern Mongoloid). Indonesian

regions like other Southeast Asian regions are classified in the Sunda Pacific. According to Scott and Turner (2000) cited by Artaria (2010), Sunda Pacific does not have the highest frequency of dental traits that can be used to differentiate from other population groups. Even the frequency of the Carabelli's cusp in the Sunda Pacific group is almost the same as Western Eurasia. The shifting phase is a transition from the primary gear phase to the permanent dentition phase (Setijanto *et al*, 2019). This phase is marked by the eruption of the first permanent tooth, which generally begins with the eruption of the first permanent molar (Marjianto *et al*, 2019). The first molar erupts permanently at around five to six years (Sofyanti *et al*, 2018). The tooth replacement phase ends when the date of the last deciduous tooth (Rahardjo, 2009). Ulfa (2009) states that the phase of transitional teeth or also called mixed teeth is the phase when deciduous and permanent teeth are together in the oral cavity (Achmad *et al*, 2019; Yunus *et al*, 2018). This phase is divided into two levels, namely the first phase before the eruption of the permanent first molar between the ages of 6-7 years and the second phase between the ages of 9-11 years when there is a change in canine teeth, the first molar,