

The Correlation Involving Non-Syndromic Hypodontia of the Maxillary Lateral Incisors and Other Dental Abnormalities

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INTRODUCTION

One of the most frequent developmental anomalies in humans is Tooth Agenesis (TA). TA can manifest as oligodontia, which is the lack of six or more teeth, or as anodontia, which is the absence of all teeth. But hypodontia, or the failure of fewer than six teeth to develop, is the most typical type of TA.

Maxillary Lateral Incisor Agenesis (MLIA), a variant of TA with an incidence of roughly 2.2%, has significant functional, psychological, and aesthetic ramifications for the patients. The congenital loss of one or both maxillary lateral incisors offers an orthodontic and restorative difficulty to practitioners. MLIA is seen more frequently as a bilateral disease, although in all other kinds of hypodontia, unilateral absence of a particular tooth type is more common than a bilateral absence.

Additionally, in every case of hypodontia, the left and right sides are equally affected, with the exception of the maxillary lateral incisor, which is more frequently affected on the right side. In the primary dentition, the missing maxillary lateral has been responsible for about 50% of tooth agenesis in caucasians. The prevalence of missing maxillary lateral incisors in the permanent dentition has been found to range from 0.8% to 4.25% in various populations.

Non-syndromic tooth agenesis has also been linked to other dental malformations, according to a number of studies. Other coronal or radicular abnormalities, delayed or ectopic eruption of other teeth, impacted teeth, or transpositions have all been observed in cases of MLIA. The most common dental anomaly, which typically affects the maxillary lateral incisors, is one that is connected to tooth size (excluding third molars).

DESCRIPTION

The majority of these differences in tooth size are peg laterals. The tooth frequently has a shorter root length as well. The reported prevalence of peg laterals in the general population has

been estimated to be 1.8%, however it might vary between 0.6% and 9.9% depending on the demographic. The left side of the body experiences it more frequently in females. In a 2017 study, Kim et al. discovered that the contralateral maxillary lateral incisor was absent in 19.4% of children who had a unilateral peg lateral incisor.

The most common impacted teeth, besides third molars, in people with MLIA are canines, which may also have peg laterals. The incidence of canine impaction ranges from 0.8% to 2.8%, and it is palatally displaced in 70%-85% of instances. Significant associations of unilateral palatally displaced canines in orthodontic patients with MLIA were observed by sacerdoti and baccetti. Additionally, 12.6% of participants with MLIA were also found to have palatally displaced canines in a research by Al-Nimiri and Bsoul.

The most often transferred teeth are the maxillary canines, which are also frequently impacted. A tooth transposition is the exchange of two nearby teeth's positions. It may also manifest as an uncharacteristic eruption of a healthy tooth that is not nearby. This happens between the maxillary lateral incisors and the maxillary canines or the maxillary canines and the first premolar. The prevalence hovers at 0.33% on average, although in different communities, it can range from 0.09% to 1.4%.

CONCLUSION

Although hypodontia has been widely researched in terms of occurrence and characteristics, MLIA has only just begun to be recognised as a potential subtype of hypodontia. It is crucial to learn more about the aetiology and pathogenesis of this disorder due to the distinctive clinical challenges and potential for further downstream effects of a mutation that can cause MLIA. The frequency of MLIA among patients with non-syndromic tooth agenesis was studied, and its relationship to other dental defects was also assessed.

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