

Effectiveness of Twin Block Device as Upper Airway Correction in Pediatric Patients with Class II Malocclusion and Its Relationship with Muscle Contraction: A Systematic Review

Harun Achmad^{1*}, Rini Sitanaya², Hans Lesmana³, Arni Irawaty Djais⁴, Rosdiana Agustin⁵

1. Pediatric Dentistry Department, Faculty of Dentistry, Hasanuddin University, Makassar, Indonesia.
2. Dental Nurse Department Health of Polytechnic, Makassar, Indonesia.
3. Oral biology Department, Faculty of Dentistry, Airlangga University, Surabaya, Indonesia.
4. Department of Periodontology, Faculty of Dentistry Hasanuddin University, Makassar, Indonesia.
5. PPDGS Pediatric Dentistry Student, Faculty of Dentistry, Hasanuddin University, Indonesia.

Abstract

Abnormalities that occur in the upper respiratory tract can result in malocclusion, or otherwise malocclusion that occurs in a child can result in upper airway abnormalities. This abnormality turns out to result in contraction of the muscles involved during jaw movement. In several studies, it is stated that the use of functional equipment can correct malocclusion so that it can reduce muscle contractions that occur and have an impact on increasing upper respiratory tract repair for a child.

To systematically review the benefits of using Twin Block functional equipment in correcting malocclusions with muscle contractions that are caused and are the cause of upper respiratory tract disorders.

Data collection was carried out by searching literature on article search sites, namely PubMed, Cochrane, Wiley, Google Scholar and Science direct which were published from 2010 to 2021, the search was carried out in March - April 2021. Data search is carried out systematically using keywords twin block, upper airway, class II malocclusion, and muscle tension

After eliminating duplicate articles, the title and abstract of each article were analyzed in 164 articles which excluded 142 articles. Article full text the remaining 22 articles were re-analyzed and 12 articles were excluded. The text of journal articles that are complete and meet the eligibility are 10 articles.

The current literature shows that the use of twin block device in patients with Class II malocclusion can correct dental abnormalities and improve the airway and reduce muscle contractions that occur.

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Introduction

Breathing disorders during sleep (RSD) in childhood, ranging from snoring to clinical manifestations of sleep apnea – hypopnea syndrome (SAHS).¹ is a common problem. Although the first clinical features of SAHS date back to in 1892, Guilleminault reported that in children diagnosed with SAHS by polysomnography, which is currently the diagnostic technique of choice, the treatment of

these patients does not always respond satisfactorily to treatment^{2,3}

From a dental perspective, the upper airway (UA) has received increasing attention in pediatric orthodontic treatment. The anatomy and function of the nasopharyngeal airway is directly related to craniofacial development. Because of this close relationship, a reciprocal interaction is expected between pharyngeal structure and dentofacial patterns, validating the growing interest among the orthodontic community^{1,4}.

Indications for treating the cause of the obstruction should be determined by the pediatrician, ENT specialist, allergist, although orthodontics and dentofacial orthopedics can also correct the obstruction. Interdisciplinary coordination is essential. Malocclusion and other dentofacial abnormalities, can also cause

*Corresponding author:

Prof. DR. Harun Achmad
Pediatric Dentistry Department, Faculty of Dentistry,
Hasanuddin University, Makassar, Indonesia
E-mail: harunachmad@gmail.com