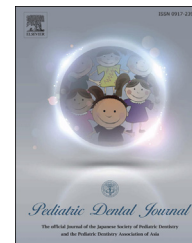




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Case Report

Unilateral open-bite caused by an impacted primary molar with ankylosis: A case report

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ABSTRACT

Management of the developing dentition and occlusion performs early and healthy oral optimization by diagnosing and treating their malocclusion and dysfunction in optimal period. We treated a posterior open-bite triggered by an impacted tooth with ankylosis. Her second primary molar was impacted with ankylosis of the buccal roots. She usually had her tongue thrust against her right posterior teeth. Timely and actively accelerated eruption of her second premolar was produced by extracting her second primary molar with fenestration. Her result shows the importance of improving oral habits and treating the submersion in the optimal period during early growth.

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1. Introduction

Asymmetric craniomandibular morphology during growth causes kinematic disability [1–3]. Subsequent growth can also increase the asymmetric morphology and kinematics, making late treatment difficult [4–6]. Open-bite, defined as a lack of tooth contacts in maximal intercuspal position (MICP) [7], is

often observed clinically. In many cases, the open-bite malocclusion is in the anterior teeth because anterior open-bite is associated with abnormal oral habits, tongue-thrust, respiratory disturbances and posterior discrepancy [8,9]. Takahashi et al. mentioned that an abnormal tongue position at rest, and during daily function, can cause certain types of malocclusion, including anterior open-bite [10]. On the other

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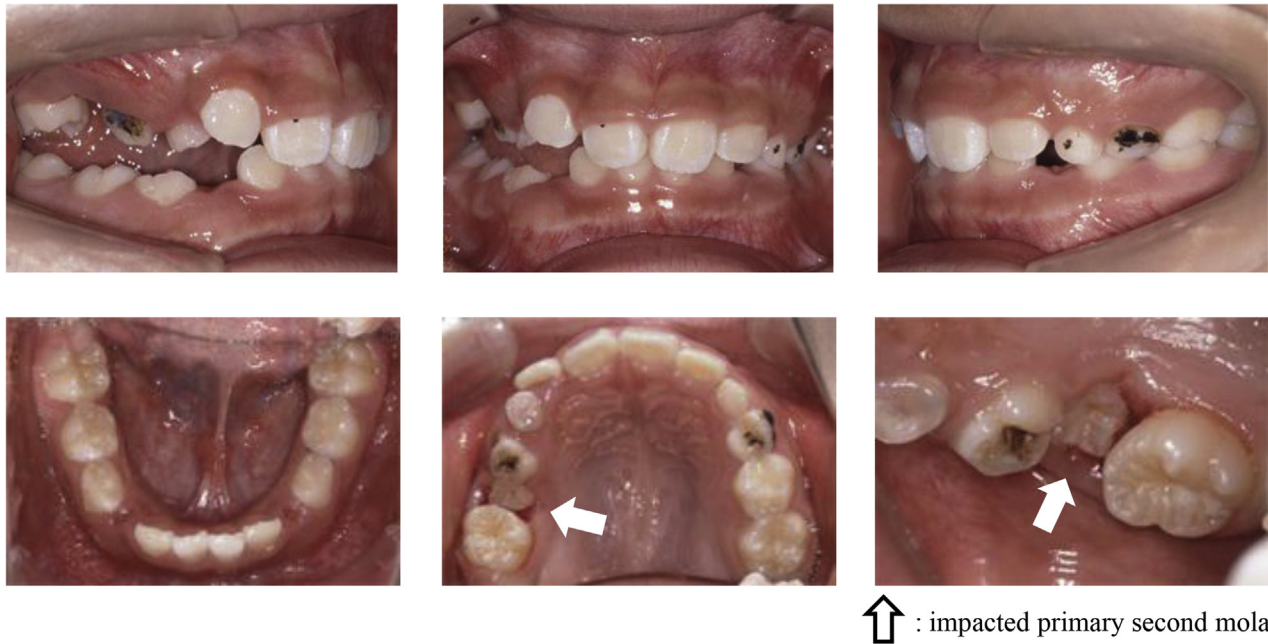


Fig. 1 – Pretreatment intraoral photographs.

hand, posterior open-bite can be caused by impaction or infraocclusion of upper molars, lower molars or both.

The reported prevalence of infraocclusion of primary molars ranges from 1.3% to 38.5% [11,12]. The large differences in reported prevalence may be due to the use of different criteria, i.e. age, species and accessible population. The reported prevalence of ankylosis of primary molars is 2.5% [13], with the majority of submerged teeth involving ankylosis of the root [14]. Brearley et al. reported that 61.3% of ankylosed teeth had a slight infraocclusion, but severe infraocclusion was rare [15]. Despite the relatively-high prevalence of infraocclusion and ankylosis, patients with severe posterior open-bite are rarely clinically examined.

The incidence of submerged or impacted primary teeth is higher than that of permanent teeth [14]. Submerged primary teeth potentially cause many problems during the growing period (e.g., delayed exfoliation, increased difficulty of extraction, progression of submergence, delayed eruption of successor teeth, damage to adjacent teeth, malocclusion, and craniofacial growth) [15,16]. Most submerged primary teeth have ankylosis of the root [17,18]. In this case report, we present the management of the developing dentition and occlusion of a unilateral posterior open-bite in consequences of ankylosis on the clinical treatment.

2. Case summary

A 7-year and 9-month-old girl presented at the Kyushu University Hospital, Pediatric Dentistry with the chief complaint of unilateral (right) posterior open-bite. She had Kawasaki disease (acute febrile mucocutaneous lymphnode syndrome) in her general medical histories from fetal to first visit of our hospital. On initial examination, her right upper and lower teeth (primary canine, first and second primary molars and

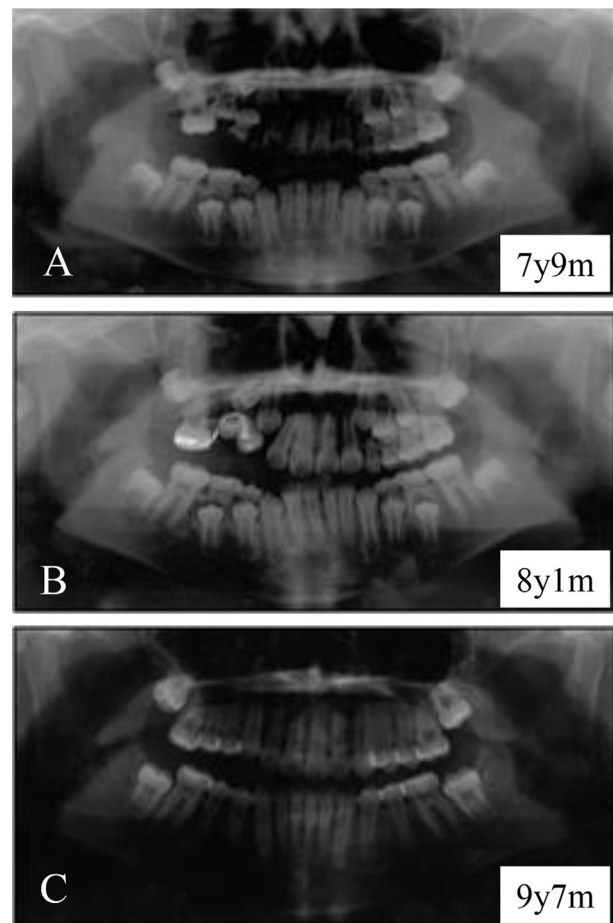


Fig. 2 – Panoramic radiographs: (A) pretreatment (7 y 9 m), (B) uprighted upper right first molar (7 y 11 m), and (C) after initial treatment of the right posterior teeth.

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