

Anhang: Veröffentlichtes Poster EOS 2016

Treatment outcomes of maxillary lateral incisor agenesis by space opening or space closure

Bär, Marincola, Gedrange, Botzenhart

Universitätsklinikum
Carl Gustav Carus
DIE DRESDNER.



Introduction

Hypodontia is the most common dental anomaly reported in humans with a prevalence ranging between 3.4-10.1% in the permanent dentition. The upper lateral incisors are the third most frequently missing teeth after the wisdom teeth and second premolars in the lower jaw with a prevalence of 1-2%. Bilaterally cases are more common. Unilateral agenesis is often associated with a hypoplastic tooth on the corresponding contralateral side. The absence of a maxillary lateral incisor represents not only a clinical problem impairing dental aesthetics as well as a functional problem from a very young age. Clinically the persistence of a primary lateral incisor in the arch beyond the expected time of eruption of its successor often suggests the agenesis. The definitive diagnosis requires a mandatory X-ray examination. After clinical and radiological proof, a decision regarding the treatment options must be made, whether it should be treated by orthodontic space closure or by space opening and implantation. Individual evaluation of the treatment choices requires a multidisciplinary approach to achieve the best possible result for the patient. The treatment depends on a number of factors such as facial, occlusal, functional and periodontal features, as well as individual long-term stability. Each of the available means of rehabilitation has its own advantages, disadvantages, indications and limitations. MLIA (Maxillary Lateral Incisors Agenesis) must be observed individually to determine whether the gap should be treated by orthodontic space closure or space opening, regarding aesthetics and function of the individual optimum, which would satisfy the needs of the patient as best as possible.

Material & Method

For this investigation only nonsyndromic post growth MLIA patients with sufficient documentation details who were treated either with orthodontic space closure by fixed appliance (n=10; group 1), or orthodontic space opening (n=10; group B) followed by Bicon-short-Implant placement were included. For both groups the esthetic results were judged based on the gingival alignment and an evaluation of the survival-rate was conducted by measuring the bone-level before and after implantation.

Orthodontic Space Closure	Orthodontic Space Opening followed by Bicon Implants
<ul style="list-style-type: none"> without age limitation (treatment can start early from 9 years) short treatment time of 2-3 years only natural teeth without use of prosthetics 	<ul style="list-style-type: none"> the number of teeth can be completed ->superior aesthetics the patient's canine guidance remains preserved a neutral occlusion can be adjusted the risk of midline shift, which can occur in unilateral MLIA, can be prevented.
<ul style="list-style-type: none"> aesthetic inferior results if canine color, size and position is not advantageous loss of canine guidance loss of neutral occlusion 	<ul style="list-style-type: none"> age limited, only after skeletal growth is finished additional costs

Fig 1- Fig 6: show a patient with congenitally missing 12 and hypoplastic 22, after the extraction of 22 the gaps were closed by fixed appliance and an aesthetic and functional result could be achieved

Fig 7- Fig 12: show a patient with unilateral congenitally missing 22, the gap was opened orthodontically and afterward a bicon implant was placed, canine guidance was maintained as well as a neutral occlusion

Results

Even though patients treated with space closure via fixed appliance showed irregularities in their gingival alignment, those patients were still as satisfied with the result of their therapy as patients treated with space closure by implantation, - thus the **esthetic results** can be judged as **equally satisfactory from a patient's point of view for both treatment-options**.

In cases of space opening, canine guidance is maintained and even in cases of reduced gap width and length (<6mm) it was possible to provide patients with Bicon-Short-Implants. **No significant changes concerning the bone-level** were discovered. The **5 year implant survival-rate** added up to **100%**.

Conclusion

Although canine-guidance was lost if treatment by space closure is chosen, and the gingival alignment was not optimal, it cannot be argued that the **survival-rate of natural teeth is usually the highest**. In cases in which space opening is indicated due to occlusion or skeletal pattern, **Bicon-Implants** can be utilized successfully even **in reduced gap width and length**, if the right insertion-position and ideal implant-design is used. In these cases, Bicon-Implants produced **great esthetic long-term results**, which have yet to be confirmed by further studies with a wider timeframe.