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Mini Review

Prosthetic management of maxillary lateral incisor agenesis in adolescents with a cantilevered resin bonded bridge

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Abstract
Lateral incisor genesis is a common problem in adolescent population. The aesthetic rehabilitation of this anterior tooth represents a major clinical challenge. Beyond functional, esthetic, and psychological considerations, the choice of the convenient prosthetic strategy is of critical importance, since it will guarantee the longevity of the restoration [1].
The one parameter to particularly consider in this young population, is the incomplete tissue growth. Therefore, the prosthetic decision should not interfere with the ongoing tissue growth, and offer a stable long-term result.
The aim of this mini review is to emphasize the importance of the cantilevered resin bonded bridge, compared to other prosthetic options, as a treatment option for young patients.

Keywords: *resin bridge, esthetics, restoration, prosthetics, incisor agenesis.*

Introduction:
Lateral incisor genesis among teenagers is a relatively common clinical situation [1,2]. The Treatment is particularly challenging because the solution should restore both function and esthetics. An important psychosocial parameter is also to consider and can make this clinical situation even more challenging. The chosen prosthetic treatment must take into account the patient's ongoing facial and skeletal growth, which continues into early adulthood. As a result, permanent options like dental implants are often not recommended at this age [3,4].

Different prosthetic options to treat a maxillary anterior tooth loss :
Different treatment options can be considered :

Conventional Fixed Partial Denture :
It is contraindicated at this age for two main reasons : the relatively large pulp chamber in young patients and the immature periodontal support structures.

Removable partial dentures (RPDs) :
While effective in space maintenance and esthetic restoration, are not ideally suited for adolescents. They often lack stability, leading to discomfort. Additionally, the mobility of the prosthesis may cause muscular imbalance between the lingual and perioral muscles, increasing the risk of mesial tipping of adjacent teeth. A further concern is that an RPD replacing a single anterior tooth is often small and carries a significant risk of accidental aspiration or swallowing.

Implant placement:

The implant placement in growing patients remains a controversial issue. It is now well established that the transition into adulthood does not mark the end of craniofacial growth. Around the age of 20, growth potential is reduced but not fully completed [2].

Recent researches in regenerative dental medicine suggests that growth potential may persist until approximately the age of 30, which is why implant placement is often delayed until this age [3].

Therefore, an implant placement in very young patients is associated with inevitable complications.

Although implants are considered as the most conservative option for managing single-tooth edentulism, their use in the anterior zone is complex and delicate, requiring special attention and substantial clinical experience [4, -6].

Following implant placement, clinical signs such as bleeding on probing, suppuration, bone loss greater than 3 mm, and pocket depths ≥ 6 mm may indicate peri-implantitis, which is relatively common among young patients [4,7].

Implants behave like ankylosed teeth, rigidly anchored in bone and unable to follow the natural growth of surrounding structures. Even if the short-term esthetic result is acceptable, continuous eruption of adjacent natural teeth often leads to unesthetic discrepancies in the medium to long term [2,4,8].

The average vertical discrepancy between natural teeth and implant-supported crowns ranges from 0.12 to 1.86 mm in both young and older patients (ages 15–55) after four years of clinical follow-up.

In addition to patient age, other risk factors may influence the rate of infraocclusion. Some patients show rapid and pronounced changes, while others experience less alterations. Female patients are more predisposed to this complication. Similarly, patients with a “long face syndrome” associated with posterior mandibular rotation have a higher risk of esthetic failure [9].

In cases of symmetrical anterior edentulism, bilateral implant placement may offer a viable solution, even in the presence of residual growth, as symmetrical displacement of incisal edges and gingival margins mitigates the esthetic compromise [8].

Cantilevered resin bonded bridge:

Among the various prosthetic approaches—such as removable partial dentures, traditional fixed bridges, and implants—the cantilevered resin-bonded bridge (RBB) has emerged as a reliable and conservative option for adolescents. This type of restorations offers several advantages: it is fixed rather than removable, it involves minimal or no tooth preparation, and it is reversible, allowing for future treatment changes if needed [5].

Recent evidence highlights the long-term success and predictability of cantilevered RBBs, especially when combined with modern bonding materials and ceramic materials [6,7].

Resin-bonded cantilever bridges (RBCBs) are the treatment of choice in this context and are well indicated in adolescents for several reasons:

- As fixed prostheses, they offer superior stability compared to removable options.
- They are minimally invasive and reversible, allowing for delayed definitive treatment at a more appropriate age.
- They preserve the edentulous space effectively [10].
- High patient satisfaction is consistently reported [11].

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