LITTLE SMILES, BIG OUTCOMES: ZIRCONIA CROWNS IN PEDIATRIC DENTISTRY

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I. INTRODUCTION

Dental rehabilitation using crowns in Pediatric Dentistry plays a fundamental role not only in the restoration of teeth affected by caries or trauma, but also in the promotion of oral health and in the psychological well-being of the child (1).

II. AIM

Evaluate the clinical applicability, advantages, and limitations of zirconia crowns in Pediatric Dentistry.

III. REVIEW

Zirconia crowns, introduced in 2008 as an innovative restorative alternative to traditional stainless steel crowns, have expanded the therapeutic possibilities available in Pediatric Dentistry (2).

This treatment is indicated for primary teeth presenting with extensive caries, dental trauma or developmental enamel defects, and has demonstrated superior clinical performance compared to conventional metallic crowns. Among their key advantages, zirconia crowns offer excellent biocompatibility, high mechanical strength, and long-term durability, making them a preferred option for rehabilitating primary teeth with substantial structural loss, especially when both functional and aesthetic excellence are required (3-6). Furthermore, they are associated with better gingival health parameters and reduced bacterial plaque accumulation compared with other restorative materials, owing to their highly polished and smooth surface, which limits biofilm adhesion (7-9).

Nevertheless, despite these notable advantages, zirconia crowns present certain clinical limitations, including the need for increased tooth preparation and their higher treatment cost, factors that may restrict their applicability in some clinical scenarios (4, 10).

IV. CASE DESCRIPTION

A 3-year-old female patient, with no reported allergies or systemic diseases, presented for dental consultation with the chief complaint of fractured anterior teeth. Her dental history revealed inadequate oral hygiene, consisting of brushing only at night, as well as persistent nocturnal milk-feeding habits.

Fig. 1 - Initial Clinical Presentation

Fig. 2 - Pulp treatment and coronal reconstruction

Fig. 3 - Final outcome after cementation of zirconia crowns

Fig. 4 - Re-evaluation after 2 weeks

V. CONCLUSIONS

In summary, zirconia crowns represent a promising alternative to other restorative materials in pediatric dentistry, offering superior aesthetics, strength, and high parental satisfaction (6,11).

REFERENCES