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A Case of Supernumerary Tooth Extraction in a Patient with Type 1 Glutaric Academia

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The echidna incubates the egg for ten days in the pouch after it has developed in the uterus. The fetuses acquire an egg tooth and caruncle during this time to aid in hatching. Micro-CT, histology, and immunoþuorescence were used to evaluate the development of the egg tooth and caruncle by utilizing rare and unprecedented access to limited echidna pre- and post-hatching tissues. The echidna t Ī s j Ê ṅ h ɜ s.
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Ke d : Tooth; Monotreme; Caruncle; Disease of the gums; Dementia; Disease of the Alzhiemer; Oral wellness

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When the impacted canine mimics the natural eruption of the permanent tooth and penetrates the gingiva near the center of the alveolar ridge, with su cient gingival tissues covering the lingual and buccal tooth surfaces, orthodontic surgical treatment of impacted canines is considered successful [1].

e absence of the attached gingiva, gingival recession, or the development of dehiscence or fenestration in the cortical bone may be associated with an impacted tooth erupting more buccally or lingually than the normal eruption position [2]. As a result, a number of authors have suggested selecting a force eruption technique that can mimic the natural eruption of the tooth.

e depth of the impaction, the location, and the anatomical structure of the so tissue that covers the impacted canine determine which surgical exposure method is chosen, open or closed. Because it replicates the physiological tooth eruption, some authors have suggested that the closed eruption method improved periodontal outcomes, particularly in cases of deep alveolar bone impaction.

In order to compare the periodontal outcomes of the two primary surgical exposure methods, a number of studies have concluded that the s ot
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Dalia and co. concluded that the open technique with free eruption produced comparable results when compared to the closed surgical method in terms of the periodontal status of palatally impacted canines and adjacent teeth. Periodontal conditions did not di er signi cantly between open and closed eruption methods, according to the ndings of a recent systematic review. e systematic review revealed that the values of probing depth around the tracked canines were deeper than those of the canines on the opposite side with spontaneous eruption. e study's ndings regarding the width of the keratinized tissue were inconsistent. However, there was no signi cant di erence in the indices of plaque, bleeding, or gingival recession between treated and untreated canines.

e e ectiveness of the minimally invasive corticomy-assisted orthodontic movement acceleration in a variety of malocclusion management procedures, such as the retraction of maxillary incisors and the alignment of maxillary crowded teeth, has been the subject of a number of studies. According to these studies, the application of this acceleration technique had little e ect on the periodontal tissues and did not signi cantly alter the condition of the teeth or gums [3]. A systematic review also found that the use of minimally invasive surgical techniques to accelerate orthodontic tooth movement did not have any negative e ects on gingival indices. Lastly, a systematic review revealed contradictory results regarding the periodontal outcomes of using the PAOO (periodontally accelerated osteogenic orthodontics) technique to speed up orthodontic tooth movement.

Few studies on the acceleration of the impacted canine traction movement were found in the available medical literature. When comparing the intervention group to the conventional closed traction group, there were no signi cant di erences in keratinized gingival width or gingival recession between the two groups in the study that used the vitamin C injection technique to accelerate the traction movement of impacted canines. However, despite the fact that the invasive surgical acceleration method used may have had a signi cant impact on the periodontal structures, they did not assess the canine and adjacent teeth's post-treatment periodontal status.

In Fischer's preliminary acceleration study, which is the only one to use assisted corticotomy to accelerate the traction movement of palatally impacted canines with a split-mouth design, some periodontal variables were evaluated. ere were no tremendous contrasts in the periodontal examining and alveolar bone levels between the corticotomy-helped withdrawal of a ected canines and their contralateral teeth lined up with the customary strategies. However, due to the small sample size (only six patients), this study did not evaluate the periodontal status

of the adjacent teeth or other signi cant periodontal variables like the degree of gingival recession and the width of the keratinized tissue.

erefore, the purpose of the current study was to compare the periodontal pockets, gingival recession, and width of keratinized tissue in the periodontal pockets of palatally impacted canines (PICs) and adjacent teeth when using conventional versus minimally invasive corticotomy-assisted canine traction [4]. e embryo transforms into a fetus during incubation, and the young hatches from the egg in just 10–10.5 days. e leathery, porous monotreme eggshell is made of loosely wound keratinous bers. To escape from their egg, monotremes, in particular, develop both an egg tooth and a caruncle.

Reptiles and birds have either a caruncle or an egg tooth. A caruncle, a thickened, keratinized epithelium positioned above the nasal cartilages, is present in turtles, Rhynchocephalia, and crocodiles. Squamates, on the other hand, have a real tooth that can be single or paired. Indeed, even viviparous reptiles have an egg tooth, despite the fact that it is more modest and secret under a layer of connective tissue. e majority of birds also hatch from their eggs using an egg tooth. Be that as it may, the avian egg tooth is basically the same as the caruncle of turtles and crocodiles, comprising of a sharp, keratinized 'horn-like projection' instead of being a real tooth. It is interesting to note that, in contrast to birds and reptiles, the caruncle of monotremes is supported by an os caruncle, a bony protrusion. e question of whether the os caruncle is simply an extension of the premaxilla or an independent ossi cation that fused with the premaxilla has been debated regarding the relationship between the two structures.

During embryonic development, ligand-receptor interactions between the oral epithelium and mesenchyme kick o tooth development in therian mammals [5]. e actual tooth structures in various stages called the bud, cap, and ringer stages. Cytodi erentiation occurs during the bell stage, and odontoblasts and ameloblasts, which respectively produce dentine and enamel, are formed here.

Columnar cells known as odontoblasts surround the dental pulp cavity in a uniform layer. ey are distinct from odontoblastic secretions from the dentine layer and the dental pulp. e majority of dentine is formed in layers laid down by odontoblasts. On the other hand, osteodentine, which gets its name from its resemblance to bone, is seen when dentine grows quickly and catches odontoblasts and other nearby cells. Ameloblasts mature on the outer surface of the dentine a er the development of the dentine layer and secrete proteins like amelogenin, resulting in enamel formation between the ameloblasts and the dentine layer. e enamel that covers the tooth crown is the body's hardest substance.

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Ce a a d e h c

Periodontal ligament tissue was manually extracted from extracted human wisdom teeth because it meets the minimum requirements for

Germany) and dried overnight in an oven at 40 °C following the micro-CT scan. A er de-waxing and rehydrating each third slide through a

Extrinsically Conductive Nanomaterials for Cardiac Tissue Engineering Applications. Micromachines (Basel) 12: 914.

8. Zhang X, Chen X, Hong H, Hu R, Liu J, et al. (2021) Decellularized extracellular matrix sca olds: Recent trends and emerging strategies in tissue engineering. Bioact Mater 10: 15-31.

9. Whitehead KM, Hendricks HKL, Cakir SN, Brás LEDC, et al. (2022) ECM roles and biomechanics in cardiac tissue decellularization. Am J Physiol Heart Circ Physiol 323: H585-H596.

10. Zhang W, Yelick PC (2021) Tooth Repair and Regeneration: potential of Dental Stem Cells. Trends Mol Med 27: 501-511.

11. Nazir MA (2017) Prevalence of periodontal disease, its association with systemic diseases and prevention. Int J Health Sci 11: 72-80.

12. Lacruz RS, Habelitz S, Wright JT, Paine ML (2017) Dental enamel formation and implications for oral health and disease Physiol Rev 97: 939-993.

13. Tompkins K (2006) Molecular mechanisms of cytodi erentiation in mammalian tooth development. Connect Tissue Res 47: 111-118.

14. Goldberg M, Kulkarni AB, Young M, Boskey A (2011) Dentin: structure, composition and mineralization. Front Biosci (Elite edition) 3: 71Z.C0T