

A Case Report on the Aesthetic and Functional Rehabilitation of an Ankylosed Maxillary Canine

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Introduction

The oral cavity is a dynamic and complex environment where aesthetic and functional balance play crucial roles in maintaining oral health and overall well-being. Among the myriad of dental anomalies and conditions that can disrupt this harmony, tooth ankylosis poses significant challenges for clinicians and patients alike. Ankylosis occurs when the periodontal ligament is obliterated, and the tooth root fuses directly with the surrounding alveolar bone. This fusion results in impaired eruption, mobility loss, and potential resorption of the ankylosed tooth. When the affected tooth is a maxillary canine, its aesthetic and functional significance further amplifies the complexity of rehabilitation [1].

The maxillary canine is often referred to as the cornerstone of the dental arch due to its critical role in facial aesthetics, occlusion, and functional guidance during mastication. Its prominence in the smile line and involvement in lateral movements of the jaw make it indispensable for both aesthetic appeal and functional stability. However, ankylosis in a maxillary canine presents a multifaceted challenge that requires a tailored, interdisciplinary approach for successful management. This case report discusses the aesthetic and functional rehabilitation of an ankylosed maxillary canine, outlining the diagnostic process, treatment considerations, and the innovative strategies employed to achieve an optimal outcome [2].

Description

The patient, a 27-year-old female, presented with concerns about the aesthetic appearance of her smile and mild functional discomfort during chewing. A thorough clinical examination revealed an ankylosed maxillary canine on the right side. The tooth displayed a lack of physiological mobility, a dull percussion sound indicative of ankylosis, and a mild infraocclusion due to failure to erupt in harmony with the adjacent teeth. Radiographic evaluation confirmed the diagnosis, showing characteristic obliteration of the periodontal ligament space and direct fusion of the root to the alveolar bone. The infraocclusion had also begun to impact the patient's occlusal harmony and smile aesthetics [3]. Treatment planning for an ankylosed maxillary canine necessitates a comprehensive understanding of the condition and its implications. The primary challenges in this case were the restoration of aesthetic harmony, maintenance of functional occlusion, and preservation of surrounding bone structures. Several treatment options were considered, including surgical removal of the ankylosed tooth, orthodontic repositioning, and prosthetic rehabilitation. Each option had its limitations and potential risks. For instance, surgical extraction risked significant bone loss and required subsequent grafting, while orthodontic repositioning was unlikely to succeed due to the fusion of the tooth to the bone [4].

Given the patient's concerns and the clinical complexity of the case, a multidisciplinary approach was adopted. The treatment plan combined surgical intervention, orthodontic alignment, and prosthetic rehabilitation to address the functional and aesthetic deficits comprehensively. Initially,

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the ankylosed canine was surgically decoronated, preserving the root to maintain alveolar bone volume. This technique is particularly advantageous as it minimizes bone resorption, which is critical for future prosthetic stability. The surgical procedure was followed by a healing period to allow for adequate osseointegration and stabilization of the bone in the affected region. Orthodontic alignment was the next phase of treatment, focusing on creating an optimal space for prosthetic replacement. The adjacent teeth were repositioned to harmonize the dental arch and establish a balanced occlusion [5].

Conclusion

The aesthetic and functional rehabilitation of an ankylosed maxillary canine requires meticulous planning, patient-centered decision-making, and the integration of innovative treatment modalities. While the condition presents significant challenges, advancements in dental technology and interdisciplinary collaboration offer promising solutions. This case serves as a testament to the potential for successful outcomes even in the most complex scenarios, highlighting the transformative impact of tailored dental care. In conclusion, the management of an ankylosed maxillary canine extends beyond addressing a single dental anomaly; it involves restoring the delicate balance of aesthetics, function, and structural integrity in the oral cavity. Through a collaborative, multidisciplinary approach, this case report illustrates the possibility of achieving a harmonious outcome that enhances the patient's quality of life. As dental practitioners, we are reminded of the critical importance of innovation, precision, and patient-centric care in overcoming challenges and delivering exceptional results in dental rehabilitation.

Acknowledgement

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Conflict of Interest

None.

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