CLINICAL ASPECTS

RESTORING THE PHYSIOGNOMIC FUNCTION OF A PATIENT WITH AN IMPACTED CANINE TOOTH

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Abstract: This paper presents the clinical case of an adult patient with an impacted right maxillary canine and a primary canine still present on the dental arch. One of the most important functions of the dental-maxillary system is the physiognomic one; a function which is impaired due to these anomalies. This case must be addressed interdisciplinary, being done both surgically through the removal of the primary tooth, of the overlying odontoma and the impacted canine, and with the help of prosthetics through metal-ceramic coronal prosthetic restorations.

INTRODUCTION

The impacted canine is a dental-maxillary anomaly that is most often diagnosed in adulthood because the upper canines are the last teeth to erupt from the permanent series [2]. This anomaly may be unilateral or bilateral and is driven by a number of factors such as:

- this tooth erupts after the neighboring teeth, i.e. the lateral incisor and premolar have already erupted and the gap which the canine should occupy is smaller than its size [1];
- the permanent canine bud is near the apex of the primary canine and any pathology that can occur at this level favors the end of the eruption and thus the occurrence of the impaction [3];
- there is a lack of development of the upper jaw which is offset during the eruption of the teeth but is reflected in the lack of space for the last tooth to erupt [4].

The impacted canine has different intraosseous positions; it can be vertical, horizontal or have different inclination axis in the palatal vault, in the sinus, in the orbital wall or nasal pits. Most frequently, it is horizontally impacted in the palatal vault and in rare cases - as the one we are about to introduce - the impaction is vertical, parallel to the roots of the other teeth.

CASE PRESENTATION

The 25 years old patient arrives in our specialized care unit to restore his physiognomy function while accusing pain and the mobility of one tooth.

The endo-oral examination revealed:

- deposits of mucous-bacterial plaque and dental calculus
- superficial carious processes at the level of the upper right side group
- the primary right upper canine still present on the dental arch with mobility towards the vestibular-oral side
- at the level of the upper frontal group one can observe:

- superficial carious processes at the level of the upper right side group
- the primary right upper canine still present on the dental arch
- the presence of an odontoma above the apex of the primary canine, between the latter and the tip of the impacted canine
- the presence of a coronal-radicular device at the level of the left upper lateral incisor.

Based on these examinations, we have established the diagnosis of impacted canine and we decided together with the patient the surgical removal of the impacted canine, of the carious processes on the vestibular side at the corner’s level but also on the interproximal sides, the left lateral incisor coronary restored with an acrylic micro-prosthesis marginally ill-fitted (Fig. 2):

- a deep caries at the level of the second upper molar involving the pulp chamber - the reason for the patient's pain complaints
- the almost complete mandibular arch with the absence of the first molar from the left side and a gap - which coincides with the patient’s reports on the performance of a tooth extraction in childhood in this area
- on the teeth of the lower arch we observe the presence of superficial carious processes both on the occlusal sides and on some vestibular sides as seen in Figure 3.
- from the analysis of the inter-maxillary relations we observe the covered deep occlusion.

In order to have a complete and complex case study [1], to establish a diagnosis in terms of the primary tooth’s presence on the arch and then to analyze the treatment solutions to meet the aesthetic requirements of the patient, we asked for a panoramic X-ray.

The examination of the panoramic X-ray revealed (Fig. 1):

- the impaction of the right maxillary canine in an almost vertical position between the maxillary sinus and the nasal pits
- the presence on the arch of the primary right canine
- the presence of an odontoma above the apex of the primary canine, between the latter and the tip of the impacted canine
- the presence of a coronal-radicular device at the level of the left upper lateral incisor.

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odontoama but also of the primary tooth in a specialized ambulatory after the oral cavity cleaning through scaling and professional brushing.

**Figure no. 1:** Initial radiographic appearance of: a) the impacted canine b) odontoama and c) the presence on the arch of the primary canine

After the completion of surgery the patient is still dissatisfied with the unaesthetic appearance of his smile, with the gap remaining after the extraction of the primary canine and the color of the teeth.

After applying professional whitening gel on the vestibular sides of the teeth we obtained a much lighter shade of the enamel, a color that now matches the patient's desire and suggests the type and color of the subsequently used restorative materials.

The lack of a canine involves the abolition of the masticatory function; therefore, in order to obtain a pleasant physiognomic aspect but also to treat the carious processes, we established and applied a prosthetic and oral rehabilitation treatment plan consisting of:

- the micro-prosthesis ablation on the left lateral incisor
- the coronal restoration with composite fillings of the teeth from the lateral maxillary area
- building a metal-ceramic bridge in the frontal-maxillary area, endodontic and restorative coronal treatment through a metal-ceramic micro-prosthetic at the level of the second upper left molar.
- the crown restoration through composite fillings of the teeth from the mandibular arch

In this case, the physiognomic aspect is restored mainly by restoring the frontal-maxillary area and also by the teeth whitening treatment. The metal-ceramic maxillary bridge has the following pillar teeth: the first premolar, the central and left lateral incisor, the central incisor, the coronal-radicular device of the lateral incisor and right canine, the body of the bridge being represented by an element that replaces morphologically and functionally the right canine. The teeth were prepared by grinding and root canal treatments as seen in Figure 5.

**Figure no. 5:** The appearance of the stumps prepared for impression

La finalul tratamentului, pacientul se declară deosebit de mulțumit, funcțiile aparatului dento-maxilar sunt restabilite, iar albuirea dinților a schimbat aspectul tuturor unităților masticatorii din punct de vedere estetic așa cum se observă în figurile 6 și 7.

**Figure no. 6:** The metal-ceramic bridge after cementation

The patient returns in our specialized ambulatory care unit every six months for checkup and professional cleaning. Following these examinations we noticed the absence of carious processes or other pathological dental - periodontal modifications, the preservation of the enamel’s color following the teeth whitening treatment performed two years ago, but also the preoccupation of the patient for the oral health and hygiene which maintains the results of our treatments.
CONCLUSIONS
- dental-maxillary anomalies such as the canine impaction seriously affect the functions of the dental-maxillary system and often go unnoticed in a routine endo-oral examination, most patients being diagnosed in adulthood.
- the concern of young patients regarding the aesthetic and physiognomy appearance is higher and sometimes overrides the pain caused by the big carious processes of the lateral areas
- after the oral rehabilitation the patients become more careful in terms of maintaining the oral health through proper hygiene and regular checkups

BIBLIOGRAPHY