ARTICLES SCIENTIFIQUES

Impacted central incisors: diagnosis and management: A case report

Incisives centrales incluses : diagnostic et prise en charge : à propos d'un cas

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Abstract

Supernumerary teeth are defined as those in excess or addition to the natural series. They can be found anywhere in dental arches but often located in maxillary anterior region. Many complications can be associated with supernumeraries like impaction, delayed or ectopic eruption of adjacent teeth, which may further lead to midline diastema, crowding and eruption into the floor of the nasal cavity. Therefore, to avoid these consequences a proper management of the supernumerary teeth is of utmost importance.
The aim of this work was to present the diagnostic elements and the management of supernumerary teeth in anterior area through a case report.

Key words
supernumerary teeth-impaction-surgical removal-delayed eruption-dental anomaly- pediatric dentistry

Abstract

Les dents surnuméraires sont définies comme celles qui sont en excès à la série naturelle. Elles peuvent survenir dans n'importe quelle région du maxillaire ou de la mandibule, mais souvent situées dans le maxillaire antérieur.
De nombreuses complications peuvent y être associées comme l'inclusion, retard ou éruption ectopique des dents adjacentes, formation de diastème ainsi que l'encombrement et l'éruption dentaire dans une fosse nasale. Pour éviter ces conséquences une bonne gestion des dents surnuméraires s'avère primordial.
L'objectif de ce travail était d'identifier les facteurs de diagnostic et la prise en charge des dents surnuméraires dans la région maxillaire antérieure à travers un cas clinique.

Mots clés
La dent surnuméraire - anomalies de nombre – retard d'éruption-inclusion dentaire-extraction chirurgicale

INTRODUCTION

Supernumerary teeth in the anterior maxillary area are the main reason for impaction of a permanent central incisor (1). Delayed tooth eruption refers to a failure of a tooth to emerge into the oral cavity at the expected time to be observed (2), usually due to either space deficiencies or the presence of an entity blocking its path of eruption.
Their early diagnosis through clinical and radiographic examinations is important to avoid complications associated with supernumerary teeth such as tooth dilaceration, dentigerous cyst formation, tooth ankyloses and root resorption of the adjacent tooth (3)(4)(5).

A multidisciplinary treatment approach was planned (6), with extraction of retained deciduous maxillary incisors, surgical removal of the impacted supernumerary teeth in relation to maxillary central incisors, orthodontic traction and alignment of unerupted permanent maxillary central incisors.

The aim of this work was to present the diagnostic elements and the management of supernumerary teeth in anterior area through a case report.

CASE PRESENTATION

An 11-year-old boy presented to the Department of Pediatric and Preventive Dentistry, at the Faculty of Dental Medicine of Monastir (Tunisia) complaining of a delayed eruption of the upper permanent central incisors and the persistence of the deciduous teeth. Aesthetic was the only primary concern of the patient.

Medical and family histories were non-contributory. Intraoral examination revealed permanent dentition stage; retained upper primary central incisors while the other permanent incisors in both arches erupted without any complications (fig1).

Figure 1 Intraoral view showing the missing permanent central incisors

Radiographic examination which was done by Cone-beam computed tomography (CBCT) showed two supernumerary teeth apical to the retained primary central incisors, and the impacted permanent central incisors were located apical to the supernumerary teeth (Fig2).

The treatment plan was the surgical removal of the supernumerary teeth under local anesthesia. Then, the patient and his parents were asked to attend recall visits to observe if the permanent incisors would erupt spontaneously, or else, further action could be needed.

Both retained primary teeth were removed at first. Then, a full palatal flap was raised from maxillary right canine to the maxillary left canine regions using a mucoperiosteal elevator (Fig3: A). After primary tooth extraction, the crown of the right impacted supernumerary tooth was exposed first, luxated out of its socket (Fig3: B) and removed then the left mesiodens was extracted after an adequate bone removal (Fig 4). Hemostasis was achieved (Fig 5) and the flap was replaced back then sutures were placed (Fig 6). Postsurgical instructions were explained to the patient and he was kept on analgesic and antibiotic coverage. Patient was instructed to maintain a good oral hygiene. The recall visits were scheduled for 1 week for suture removal and evaluation of healing followed by a 6 monthly recall pattern for continued observation.

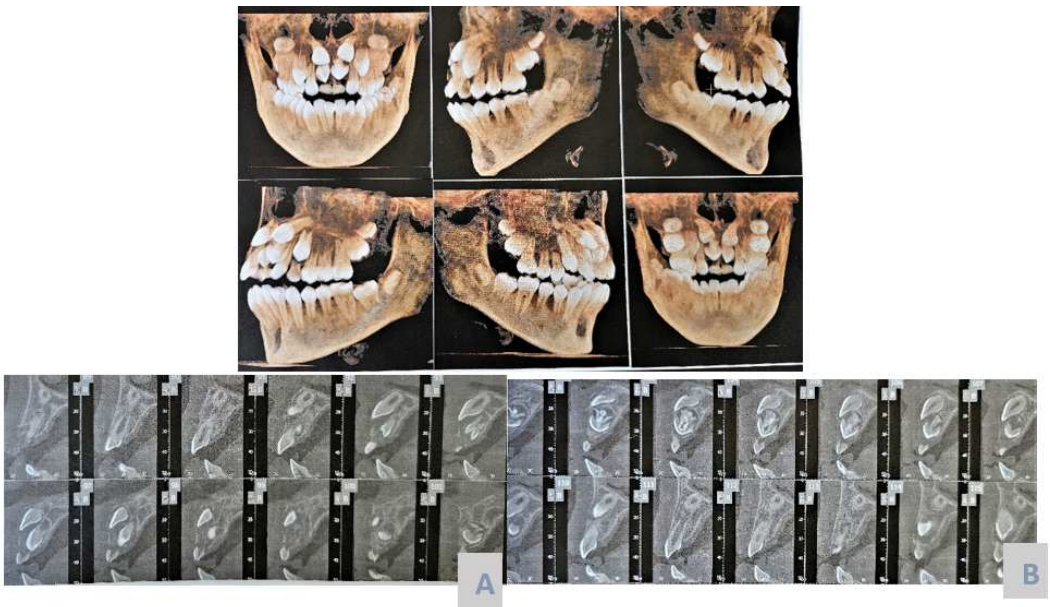
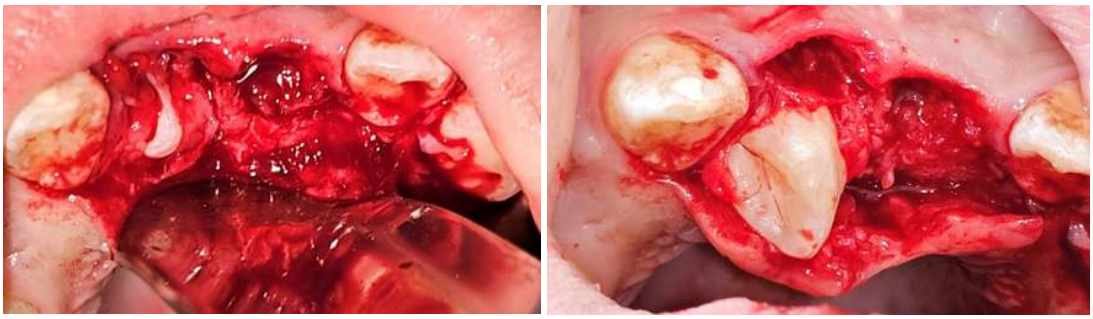


Figure 2 Initial CBCT showing the position of supernumerary teeth (palatally) in relation to the succeeding teeth; (A) (Right view); (B) (Left view)



A :Flap raised B :Supernumerary tooth exposed

Figure 3 Photograph shows the impacted supernumerary tooth after raising the buccal and palatal flap

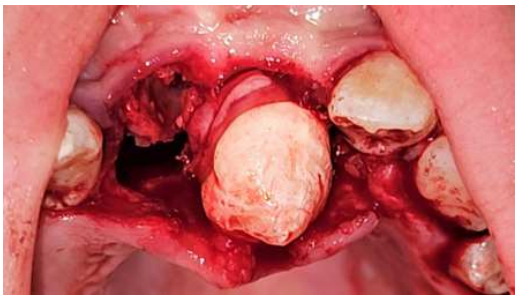


Figure 4 Left mesiodens luxated out of its socket

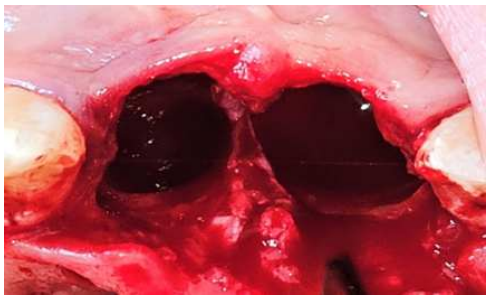


Figure 5 Surgical site after extraction of supernumerary teeth

Figure 6 Sutures in place

Figure 7 Extracted primary and supernumerary teeth

Figure 8 Space maintainer :removable prosthetic device for aesthetic and functional purposes to replace elements 21 and 11

DISCUSSION

A supernumerary tooth is a frequent odontogenic disorder and is defined as tooth exceeding the usual number when compared to the normal dental set(7)(8).

The etiology of these excess teeth is still unclear (10)(14). Various theories are suggested (7)(9). Hyperactivity of the dental lamina is the widely accepted theory (8)(3)(4).

It can occur in almost any region of the dental arch, but with a particularly strong predilection of about 90% towards the premaxilla area (10).

Radiographs played an important role to diagnose the presence of impacted supernumerary teeth or other associated anomalies and to planify an optimal management (3).

The CBCT is the most accurate to diagnose the presence and location (10) of impacted supernumerary teeth compared to conventional radiographs (2). Furthermore, for optimal surgical planning, computed tomography is important for the selection of the appropriate surgical approach.

The most commonly manifestation of supernumerary teeth is impacted maxillary central incisors (11) with multiple clinical complications which include the displacement or rotation of adjacent teeth, inhibition or delay of the eruption of normal adjacent teeth, malocclusion, crowding, dilaceration, delayed or abnormal permanent root development, nasal cavity eruption and cyst formation (1)(5)(12) (13)(7).

The recent guidelines recommended the basics for the management of unerupted maxillary incisors is the earlier surgical removal of the obstruction before the maturity of adjacent incisor which increases the opportunity of spontaneous eruption (12), (2). Furthermore, the eruptive potential of the incisor may be lost if intervention is delayed (14)(2).

In the present case, one of the extracted supernumerary teeth was diagnosed as supplemental central incisor because it showed similarity to incisor tooth, whereas the other supernumerary one revealed unusual morphological variation in both the crown and the root with appearance such as tuberculate supernumerary (Fig7). The next visit, the patient was beneficed of a space maintainer for aesthetic demand and to avoid loss space (Fig8).

it was decided to allow the permanent incisors to erupt without any other intervention, as there was an adequate space. The patient was kept under continuous evaluation over 6 months to assess any need for an orthodontic intervention, further orthodontic treatment will be then planned and conducted.

CONCLUSION

Early diagnosis of delayed eruption of permanent central incisors and accurate diagnosis supported by clinical and radiological examination such cone beam computed tomography (CBCT) is crucial to avoid dental complications and to evaluate the predictive eruption factors. The management of impacted supernumerary teeth should be designed by a multidisciplinary team decision.

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