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Surgical management of an odontoma associated with the version of the central incisor: a case report

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ABSTRACT :
An odontoma, also known as an odontome, is a benign tumour linked to tooth development.It includes both odontogenic hard and soft tissues.
An odontoma grows out of the dental epithelium and Hertwig's sheath. Its hard tissues are independent of the original tooth.
Evagination and proliferation of the outer epithelial layer can form a supernumerary dental organ. Thus is formed either a supernumerary tooth, or a group of supernumerary teeth,
In the majority of cases, an odontoma prevents the eruption of the normal tooth (canine, incisor, premolar) or causes an ectopic displacemenTor teeth version
An odontoma can be simple (a single tooth), compound (more than one tooth) or complex (several tooth substances without organization (undifferentiated).
A simple odontoma is the equivalent of a generally malformed supernumerary tooth that grows close to a permanent tooth.
We describe the surgical procedure to remove a simple odontoma localized in the maxilla of a girl child associated with central incisor version, Cone-beam computed tomography (CBCT) was performed for precise threedimensional localization of each structure and assessment of their spatial relationship with the associated structures before surgery, the treatment protocol involved surgical enucleation of the simplodontoma, the patient had uneventful healing and proceeded with the orthodontic treatment plan.
Key words :pediatric surgery, simpl odontoma, supernumerary tooth,Computed tomography

I. INTRODUCTION

Odontoma is defined as a benign odontogenic tumor containing enamel, dentin and cementum .The 4th edition of the World Health Organization´s Classification (WHO classification) of odontogenic tumors published in January of 2017 divides these tumors into complex and compound odontoma.A supernumerary tooth is considered a simple odontoma.(1)

Pathogenesis of odontoma is still unclear, although some etiologic factors have been suggested such as trauma during primary dentition, genetic factors, and chronic inflammation . They are usually small, asymptomatic and discovered through radiographic examination.

A multidisciplinary treatment approach is often required, since odontomas may cause impaction, anomalous eruption, tooth retention or other various anomalies in tooth eruption (delayed, deflection, transposition) or malformation and resorption of neighboring teeth(2)

After initial detection of odontomas by panoramic radiographs, Cone Beam Computed Tomography (CBCT) is the method of choice for the diagnosis and planning of surgical and orthodontic treatment , especially to avoid damage to the neighbouring teeth and anatomic structures(3)

We present a case of a supernumerary tooth in in the anterior maxilla, where we utilized cone-beam computed tomography (CBCT) to locate each structure precisely prior to surgical treatment.

II. CASE REPORT

A 8-year-old girl in apparent good health with painless presented to the dental medicine unit at the Habib Bougatef university hospital Bizerte

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Tunisia, for the version of the maxillary central incisor as reason of consultation.

Intra oral examination revealed no gingival swelling and no symptoms in the affected area. A bump on the vestibular alveolar table next to the two central incisors, and rotation of 45 degrees of the central incisor 21.

On radiographic examination, the panoramic radiography a risiforme tooth located between the roots of the two cetral incisors (Figure 1) , the crown upwards and the root downwards.

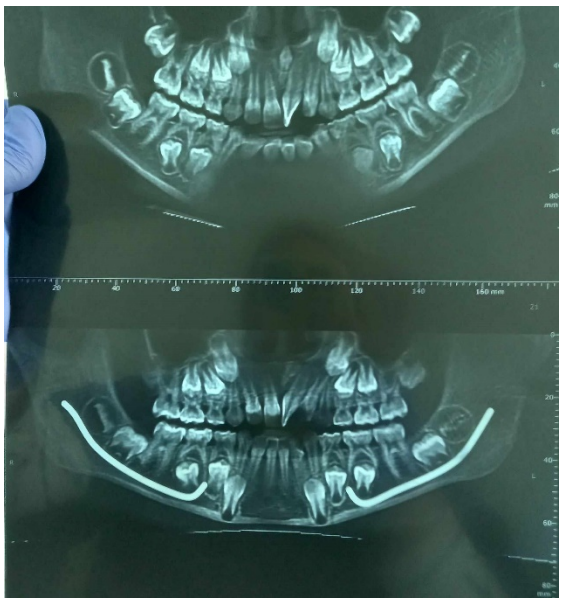

figure 1: preoperative panoramic radiograph

For further radiographic examination, cone-beam computed tomography (CBCT) was requested.

In sagittal sections(figure 2), the supernumerary tooth is entirely in the bone, no communication with the nasal cavities or noble nerve sructureswas detected, CBCT showed that supernumerary tooth was impacted between teeth #11 and #21.

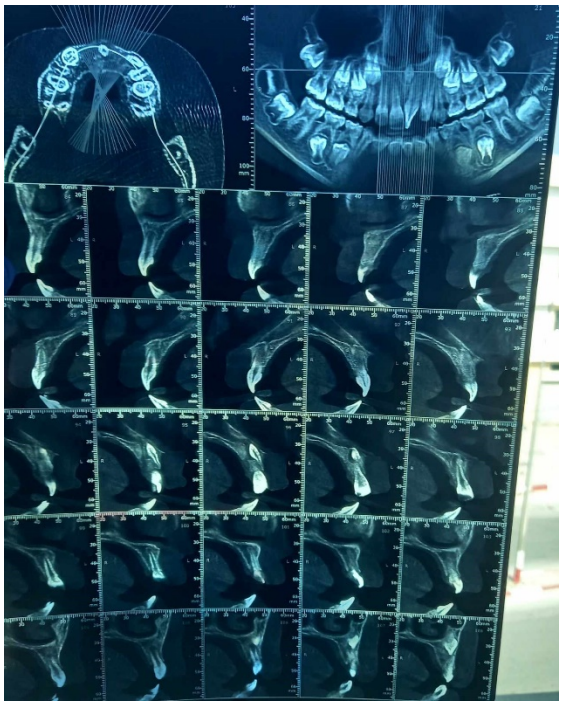

figure 2: Sagittal CBCT scan showing supernumerary tooth

Considering the clinical and radiographic presentation, a radiographic diagnosis of simpl odontoma or supernumerary tooth was determined.

Intraoral surgery was planned under local anesthesia, we tried to undertook a minimally invasive surgical removal, for that A full-thickness mucoperiosteal flap was raised to expose the bone(figure 3) , after that an osteotomy was made utilizing rotary instruments accompanied by normal saline irrigation to minimize heat generation(figure 4), finally, after bone eviction we were able to materialize our simpl odontoma.

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Figure3: Labial approach to expose simpl odontoma

Figure 4:Exposing the supernumerary tooth

Supernumerary was extracted and follicular tissue was removed(figure 6), then the whole area was irrigated using physiological serum(Figure 5)

Sutures were made, the soft tissu was stitched back to its original position (Figure 7)

Figure 5: extracting the impacted tooth

Figure 6: supernumerary tooth and follicular tissue

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Figure 7: intra oral photograph after surgery

Antibiotics and analgesic were prescribed and the patient was instructed to use alcohol-free antiseptic mouthwash solution as mouth rinse. Patient was symptoms free and had uneventful recover

A clinical control after two weeks has been established.

Informed consent: after talking to the mother of the child, we were able to convince her to let us publish the case of her daughter.

III. DISCUSSION

A supernumerary tooth is always considered as simple odontoma, simpl odontoma is usually located in the anterior region of the maxilla, over the crown of erupting tooth or between the roots of erupted teeth. In about 80% of cases, they are associated with impacted or unerupted teeth(4)

In general, the clinical indicators of odontoma may include eruption disturbance (noneruption of permanent teeth, retention of deciduous teeth), expansion of the cortical bone, teeth malposition and pain. In this case, the presence of odontoma prevented the physiological eruption of permanent maxilla central incisor.

The exact etiology of the supernumerary teeth has not yet completely understood. Several theories have been suggested for their occurrence, such as the phylogenetic theory,[5] the dichotomy theory,[6] occurrence due to hyperactive dental laminaand due to a combination of genetic and environmental factors.[7] Generally, multiple supernumerary teeth are associated with diseases or syndromes.[8]

Exploration with the cone beam is essential before any surgical procedure to indicate the most appropriate surgical technique(9)

IV. CONCLUSION

Simpl odontoma or Supernumerary tooth can present in any region of oral cavity. These may erupt or remain impacted and may lead to various complications, early diagnosis and a surgical removal treatment can prevent eruption disturbances.

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