Paediatric case of maxillary odontogenic myxoma

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Abstract

Background Odontogenic tumors in children are relatively rare, and among these, intraosseous odontogenic myxoma is particularly uncommon, making up a small proportion of paediatric odontogenic tumors, with a reported incidence ranging from 8,5% to 11,6% of all cases [Forte et al., 2025]. The histopathological confirmation for a definitive diagnosis is required in all cases.
Case report A paediatric case of maxillary odontogenic myxoma is documented. This report highlights the clinical features, diagnostic challenges, therapeutic approach and follow-up protocol chosen for patient's treatment.
Conclusions To provide insights into the clinical management of OM, focusing on multidisciplinary approach and timely intervention.

KEYWORDS odontogenic myxoma, oral surgery, paediatric odontogenic tumour.

Introduction

According to the World Health Organization (WHO) classification, odontogenic myxoma is benign intraosseous neoplasm originating from odontogenic mesenchymal or ectomesenchymal tissue [Vered and Wright, 2022]. It's characterised by slow growth pattern but locally invasive behavior, that can radiographically and clinically simulate malignant lesion [Harokopakis-Hajishengallis and Tiwana, 2007]. Its incidence is higher among adolescents and young adults, with a tendency to affect females and the posterior mandible. This tumor typically develops in close proximity to the root of an erupted tooth or the crown of an unerupted tooth. In its early stages, odontogenic myxoma is often clinically silent. As the lesion progresses, it can cause expansion of the surrounding cortical bone, resulting in visible intraoral tumefaction. In some cases, teeth adjacent to the lesion may become mobile or undergo displacement. No cases of metastasis are reported, while malignant transformations are exceedingly rare [Wankhedkar et al., 2019]. OM can exhibit various radiographic features. It may appear as a unilocular or multilocular radiolucent lesion, with a "honeycomb" appearance in cases of multiple separate cavities [Oliveira et al., 2018; Abdel Razek, 2019]. Additionally, some myxoma can exhibit a mixed radiographic appearance, with radiopaque areas (more dense) interspersed with radiolucent zones. The treatment of choice is surgical excision. Due to its local aggressiveness and potential clinical characteristics, such as soft consistency and lack of well-defined capsule, wide surgical margins are required for excision, inevitably resulting in a more invasive procedure. An overly conservative surgical approach is associated with a recurrence rate of ranging from approximately 10% to 30%. Therefore, experts tend to prefer a more radical surgical technique, particularly in cases of extensive, multilocular lesions that infiltrate deep tissues planes, where ensuring adequate margins is crucial to minimise the risk of recurrence.

Case report

G., a 13-year-old female patient, presents for the first time in April 2022. Intraoral clinical examination reveals a late mixed dentition in the second phase of transition. The patient has a Class I skeletal pattern, normodivergent with eugnatic growth prognosis. Molar relationships are Class I on the right and Class II on the left. MIH affects patient's permanent first molars (2.6, 3.6 and 4.6). Panoramic radiography shows a deviated eruptive path of tooth 1.3. Early extraction of teeth 5.3 and 5.4 is performed, allowing tooth 1.3 to erupt spontaneously into the arch within 6 months. G. undergoes regular six-month follow-up appointments until the complete eruption of the permanent dentition, after which alignment, leveling and coordination of the dental arches will be performed (Fig. 1).

The patient presents for a routine check-up in September 2024 with swelling in the right posterior region of the maxilla. The mass is overlain by apparently normal oral mucosa and soft tissue of regular appearance. It's slightly painful on deep palpation and exhibited tenderness to compression (Fig. 2, 3).

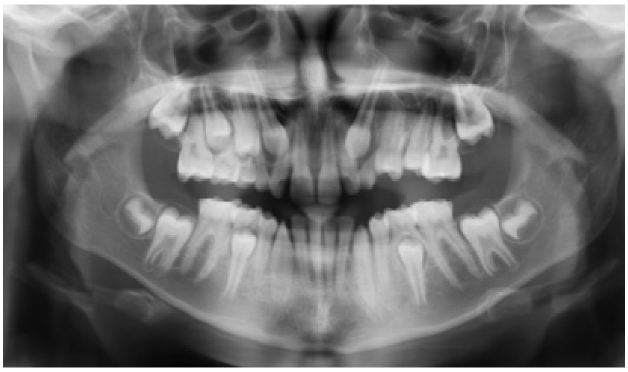

FIG. 1 Orthopanoramic x-ray in 2022.

FIG. 2 Extraoral profile view.

FIG. 3 Extraoral frontal view.

FIG. 4 Orthopanoramic x-ray in 2024.

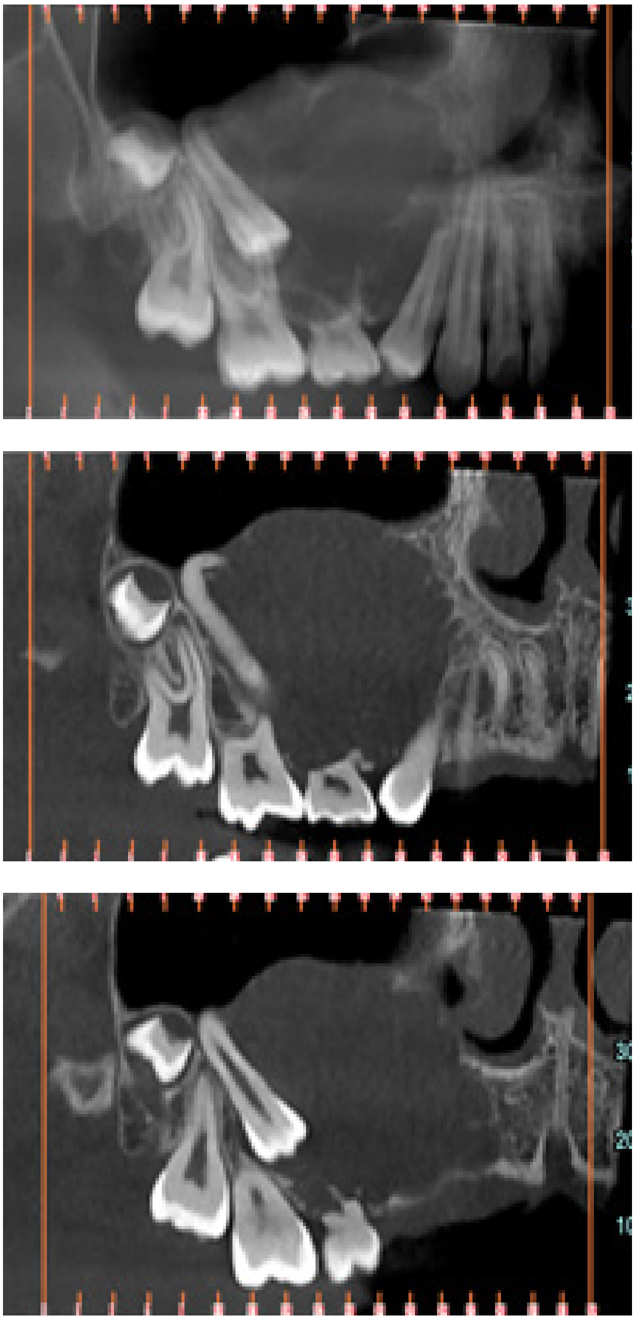

FIG. 5A-5C Second level X-ray.

A new panoramic x-ray indicates an anomalous displacement of tooth 1.5 and a failure of resorption of the corresponding primary tooth 5.5 (Fig. 4). A CBCT scan is performed to further evaluate the anomaly. The second-level examination shows hypodense lesion with distinct borders apically to teeth 1.4, 5.5 and 1.6. Notably, tooth 1.5 is found to be enveloped within the lesion and displaced in a disto-apical direction (Fig. 5). The patient undergoes general anesthesia for surgical excision of the lesion, along with extraction of tooth 5.5 and 1.5, which is embedded within the lesion (Fig. 6-8). Histopathological analysis of the lesion documents hypocellular, myxoid mesenchymal tumor, with morphological finding that are highly suggestive of odontogenic myxoma. One month later, G. receives a space maintainer with a band on tooth 1.6 to maintain the distal space adjacent to tooth 1.4. Tooth 1.7 is also erupting. The patient is now on a rigorous follow-up schedule (Fig. 9, 10).

Discussion

The diagnosis of odontogenic myxoma can be suspected

FIG. 6 Intraoperative view of lesion excision.

FIG. 7 Intraoperative view of lesion excision.

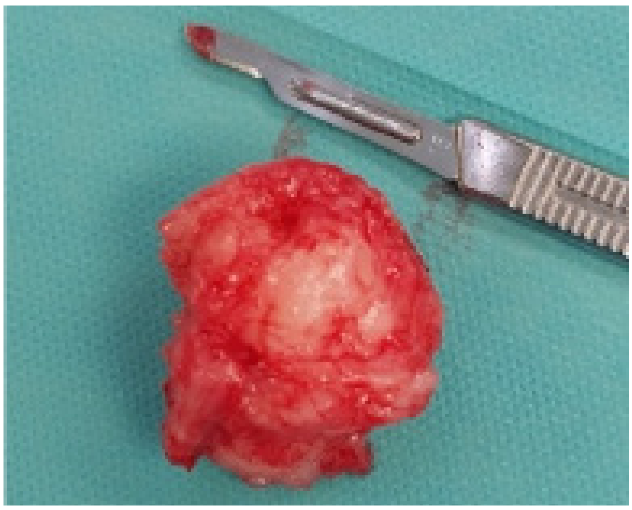

FIG. 8 Lesion post extraction.

through panoramic radiography in the presence of multilocular radiolucent lesions. In particular, lesions with a characteristic "honeycomb" appearance are suggestive of this condition. CBCT imaging offers high-resolution assessment of lesion dimensions and cortical involvement facilitating accurate preoperative planning. Also, magnetic resonance imaging is an essential examination for evaluating soft tissue involvement and for making an accurate differential diagnosis, thanks to its high sensitivity and specificity in visualising soft tissues [Ngham et al., 2022]. At the radiological level, odontogenic myxoma enters into differential diagnosis with several odontogenic lesions, including ameloblastoma, odontogenic cysts and fibroma, as well as, with non-odontogenic lesions, such as benign bone lesions (e.g. fibrous dysplasia). Given the lesion's confinement within the bone structure and the absence of root resorption in adjacent teeth, a conservative approach is adopted, consisting of enucleation followed by structured radiological and clinical follow-up protocol.

FIG. 9 Upper arch after surgery.

FIG. 10 Orthopanoramic x-ray two months post-operative.

Conclusion

Odontogenic myxoma requires a multidisciplinary treatment approach based on close collaboration between maxillofacial surgeons, orthodontists, radiologists and pathologists to ensure early and accurate diagnosis and adequate treatment that prevents recurrences and complications. Treatment planning must take into account the characteristics of tumor, its location and the patient's needs.

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