

A COMPOUND ODONTOMA ASSOCIATED WITH RADICULAR CYST - A RARE CASE REPORT

Dentistry

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ABSTRACT

Radicular cysts rarely impact the primary dentition. Apical infections in primary molar teeth accounted for the majority of cases. However, there is relatively modest data about radicular cysts related to primary incisors and its association with compound odontoma. **Case Report:** An 11-year-old boy presented with a history of trauma to the left upper anterior teeth region. Clinical and radiographic examinations revealed the presence of a compound odontoma associated with a radicular cyst. The cystic lesion appeared to be linked to a previously traumatized tooth. Surgical management involved the removal of the compound odontoma along with enucleation of the radicular cyst under local anaesthesia. **Conclusion:** Since the majority of radicular cysts of primary teeth go undetected and potentially harm the growing succedaneous tooth bud, it is critical that paediatric patients receive the proper diagnosis and treatment for better outcome of succedaneous tooth.

KEYWORDS

INTRODUCTION

The most prevalent inflammatory cysts of the jaw are radicular cysts, which arise as a result of pulpal necrosis brought on by untreated caries or periapical infection brought on by trauma. Radicular cysts make up about 60% of all jaw cysts. However, approximately 0.5–3.3% of all radicular cysts observed are found in the deciduous dentition. [1]

Odontomas are considered a form of odontogenic tumour, originating from the tissues involved in tooth development. It grows slowly, is asymptomatic, and is usually found in patients who have been treated for other oral conditions. It is commonly detected in patients who are 30 years of age and above. However, if not treated adequately, it can result in deformity of the adjacent teeth, fractures, or any other damage to the jaw. It may also cause carcinomatous transformation according to its clinical characteristics. [2]

We report a rare case involving an 11-year-old boy who presented with a compound odontoma associated with a radicular cyst in the left upper anterior region, following a history of dental trauma. Surgical management included removal of the compound odontoma along with enucleation of the radicular cyst under local anaesthesia.

The occurrence of a radicular cyst in association with a compound odontoma is extremely rare, and to date, no such cases have been documented in the existing literature.

Case Report

A 11-year-old boy was reported to the hospital with a chief complaint of swelling in the upper left front teeth. There was a history of trauma in the upper front tooth region at the age of ten resulting in the intrusion of the maxillary left primary canine. The swelling was slowly progressive in nature till present dimension and it was not associated with pain. There was no underlying systemic condition. Intraoral examination showed the presence of all permanent teeth in the left maxillary arch from central incisors till first molar with the exception for the maxillary canine, that had failed to erupt due to the retention of the corresponding primary tooth. Diffuse swelling was noted i.r.t 11-53 region measuring approximately 3cm x 2cm. On palpation swelling is soft in consistency, smooth in texture, non – tender, non- pulsatile, non-fluctuant in nature. (Fig-1)



Fig-1 Clinical Presentation

Radiographic examination was carried out with Orthopantomogram (OPG) and Odontome was incidentally discovered along with a well-defined unilocular radiolucency measuring 1.5cm x 2cm approximately within the odontoma. Superiorly, it extends till the cemento-enamel junction and covering the complete crown of erupting permanent canine. (Fig-2)

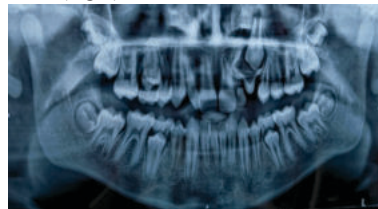


Fig-2 OPG X-Ray

With proper consent, the patient was operated under local anaesthesia. Crevicular incision was given from 21-24 region. Full thickness mucoperiosteal flap was raised (Fig. 3). Compound odontoma was identified and were removed along with complete enucleation of cyst (Fig. 4a and 4b).



Fig-3 Intraoperative

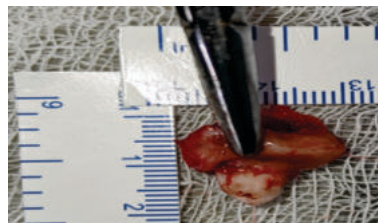


Fig-4a Odontome



Fig-4b. Cystic Lining

On Histopathological examination, hard and soft tissue specimens has been processed separately and it reveals:

Cystic Lining Part of the Sample – showing lumen, cystic lining and inflamed connective tissue stroma with area of bony trabeculae. High magnification shows non keratinized stratified squamous epithelial lining showing arcading pattern with inflamed connective tissue showing chronic inflammatory cell suggestive of Radicular cyst. (Fig.5)

Hard Tissue Part of the Sample – showing areas of dental hard tissue resembling tooth structure. It shows formation of enamel, dentin and pulp like structure. These are surrounded by connective tissue capsule suggestive of Compound odontoma. (Fig. 6)

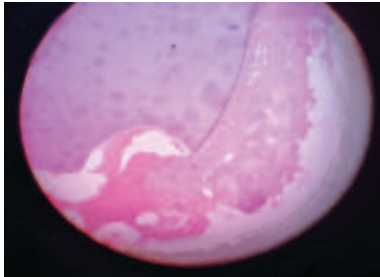


Fig.5. Radicular Cyst

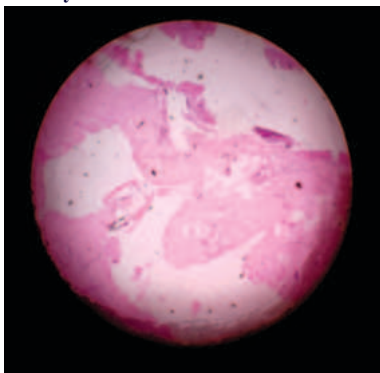


Fig.6. Compound Odontoma

DISCUSSION

Odontomas are typically asymptomatic lesions that are discovered by chance during routine radiologic examinations. It is composed of pulp tissue, cementum, dentin, and enamel. The World Health Organization's most recent classification divides odontomas into two categories. (3) Usually encircled by a thin radiolucent zone on radiography, the compound odontoma is a radiopaque mass made up of several tiny calcified structures that resemble regular teeth anatomically. On the radiograph, the complex odontoma is encircled by a narrow radiolucent rim and consists of a massive mass of calcified material with a radiodensity comparable to teeth. However, it does not anatomically resemble teeth. In this case, a structure resembling a single-rooted tooth was observed on histopathological examination that aided in the diagnosis of compound type odontoma. (4).

A radicular cyst is classified as an inflammatory cyst, typically arising as a consequence of a periapical infection following pulpal necrosis. Radicular cysts represent the most common type of cystic lesions in the jaws. However, their occurrence in association with primary dentition is rare and has been infrequently documented in the literature.

Lustmann and Shear reported that only 0.5% of radicular cysts originate from primary teeth, while Main (1970) recorded an even lower incidence of 0.34%. These findings highlight the uncommon nature of radicular cysts in the context of primary dentition. (5)

If left untreated or undiagnosed, a radicular cyst can pose significant risks to a patient's future dental development. Clinical manifestations may include swelling, tenderness, increased tooth mobility, and a bluish discoloration of the mucosa due to buccal expansion of the cortical plates. (6) In more severe cases, the lesion can lead to displacement of the permanent successor tooth or compromise its vitality. (7)

Any paediatric patient who exhibits clinical signs of delayed permanent tooth eruption, whether or not they have a history of maxillofacial trauma, should have a radiographic examination, according to the literature and clinical experience. An early diagnosis guarantees a better prognosis and permits the adoption of a less complex and expensive treatment. (8)

Patients with odontoma do not usually exhibit symptoms, but odontoma may be found in association with the cyst. (9) While cases of compound odontoma associated with dentigerous cysts have been documented in the literature, there are no known reports to date of compound odontomas occurring in association with radicular cysts.

CONCLUSION

The majority of radicular cysts of primary teeth go undetected and potentially harm the growing succedaneous tooth bud, it is critical that paediatric patients receive the proper diagnosis and treatment of radicular cyst.

REFERENCES

1. Bhosale, A. N., Desai, S., & Jajoo, S. S. (2022). Radicular cyst involving deciduous maxillary incisor along with bilateral supernumerary teeth: A case report. *International Journal of Clinical Pediatric Dentistry*, 15(2), 218–221.
2. Kim, K. S., Lee, H. G., Hwang, J. H., & Lee, S. Y. (2019). Incidentally detected odontoma within a dentigerous cyst. *Archives of Craniofacial Surgery*, 20(1), 62–65. <https://doi.org/10.7181/acfs.2018.02313>
3. da Silva, L. P., de Paiva Macedo, R. A., Serpa, M. S., Sobral, A. P., & de Souza, L. B. (2017). Global frequency of benign and malignant odontogenic tumours according to the 2005 WHO classification. *Journal of Oral Diagnosis*, 2, e20170044.
4. Boffano, P., Zavattero, E., Roccia, F., & Gallezio, C. (2012). Complex and compound odontomas. *Journal of Craniofacial Surgery*, 23, 685–688.
5. John, J. B., John, R. R., Indumathi, P., & Elango, S. (2013). Compound odontoma associated with maxillary primary tooth—A case report. *Journal of Indian Academy of Dental Specialist Researchers*, 2013, 49–51.
6. Takiguchi, M., Fujiwara, T., Sobue, S., et al. (2001). Radicular cyst associated with a primary molar following pulp therapy: A case report. *International Journal of Paediatric Dentistry*, 11(6), 452–455.
7. Lustig, J. P., Schwartz-Arad, D., & Shapira, A. (1999). Odontogenic cysts related to pulpotomized deciduous molars: Clinical features and treatment outcome. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*, 87(4), 499–503.
8. Lustmann, J., & Shear, M. (1985). Radicular cysts arising from deciduous teeth: Review of the literature and report of 23 cases. *International Journal of Oral Surgery*, 14(2), 153–161.
9. Pillai, A., Moghe, S., Gupta, M. K., & Pathak, A. (2013). A complex odontoma of the anterior maxilla associated with an erupting canine. *BMJ Case Reports*, 2013, bcr2013200684.