

## TRIUMPH OF INCISOR: A CASE OF MARSUPIALIZATION IN A 10-YEAR-OLD CHILD

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### Abstract

Cyst resulting from the inflammatory pulpal response in deciduous dentition results into local tissue destruction and deformities. This report archives an instance of radicular cyst in a 10-year-old boy that results into displacement of permanent teeth. The treatment consists of marsupialization followed by conservation of the permanent tooth bud. Conservative approach is the means to maintain the dentition and its psychological effects on child and parents. Recognition of the sequelae of an untreated pathology is important for prevention of adverse effects to the underlying permanent successor.

**Key Words:** Delayed Eruption, Enucleation, Marsupialization.

### INTRODUCTION

Long standing inflamed and necrotic pulp results into cystic lesion often named as radicular or periapical cyst.<sup>1</sup> It is more common in permanent dentition but seldom in deciduous dentition.<sup>2</sup> In children, cyst formation can give rise to certain consequences such as expansion and resorption of the surrounding bone, malposed or defective enamel and impede eruption of the permanent teeth.<sup>3,4</sup> One of the most suitable treatment methods available for these case extractions of associated deciduous teeth and restoration of the permanent tooth bud. Marsupialization (cystostomy, Partsch I) is a technique that is focused on the incomplete removal of the cyst, the upside of the procedure is minimal intervention and preservation of the vitality of the tooth. however, this procedure requires considerable support from patient in caring and cleaning the cavity until the lesion resolve.<sup>5</sup> The incidence of radicular cyst is most common in the second decade of life.<sup>3</sup> Permanent teeth have 52–68% incidence and less common on deciduous teeth which account for 0.5–3.3% of all cysts.<sup>3</sup>

### CASE REPORT

A 10-year-old patient visited to the clinic with the chief complaint of unerupted permanent teeth in upper front tooth region. On general physical examination patient was healthy. On clinical examination grossly decayed incisors were present in upper left anterior tooth region and caries in lower back tooth region (Figure -1).

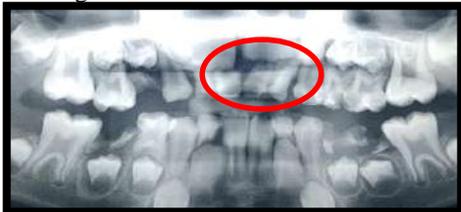


Figure- 1 Previous panoramic radiograph i.e 6 months Old

Patient did not come for the treatment because of some personal problems. patient revisited after 6 months. Patient was advised for Orthopantomogram, IOPAR and routine blood examination (Figure-2). A circular radiolucent unilocular lesion with smooth and well-defined boundaries, extending 1.5 cm \*1.2 cm present in the periapical region of the maxillary left deciduous central incisor. (Figure- 2).



Figure -2 Panoramic radiograph showing the radiolucent area

In contrast with the 6 months back OPG available with the patient which revealed expansion of the lesion had shifted the permanent central incisor (Figure-2). Provisional diagnosis of the lesion on the basis of clinical and radiographic assessment was made as radicular cyst. Marsupialization was selected as treatment of choice. Patient parents were explained about the treatment procedure, duration, and consent was obtained.

### Treatment:

In the current case, treatment plan included extraction of the left deciduous incisors and marsupialization along with decompression of the cystic lesion in order to preserve the permanent left central incisor. After the extraction of deciduous left incisors under local anesthesia, the cystic cavity was identified and the cystic content was removed along with extracted central and lateral incisor.

The wound was packed with iodoform gauze for a week (Figure 3).



**Figure 3 Intra- operative view of packed cystic cavity.**

The gauze was changed weekly for 3month. Patient was kept on antibiotic and analgesics for 1 week.

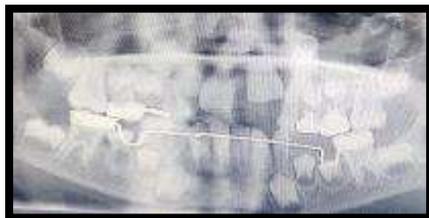
The child was reviewed several times after the procedure to renew the locks and monitor his oral hygiene (Figure 4). OPG revealed healing of the lesion.



**Figure 4 Panoramic radiograph after 1 month**

**Follow up**

Postoperative Instructions were given to maintain oral hygiene and follow up was scheduled after every 15days for 3 months and later on after every month. At recalled visit, treatment outcome was found to be excellent and no further new lesion was noticed in intraoral radiograph (Figure 5).



**Figure- 5 Intraoperative radiograph after 1 month**

After 8 month of the treatment 21 has erupted (Figure 6)



**Figure-6 Frontal photograph of erupting central incisor**

**DISCUSSION**

Cystic lesion, mostly the radicular cyst is believed to develop in PDL from the epithelial cell rests of malassez and are thought to permeate as a result of the inflammatory change produced by the infections in the root canal.<sup>6</sup> Radicular cysts are mostly asymptomatic and are found on the routine examination of non-vital tooth.

Radiolucency in the periapical are of deciduous tooth are sometime misconstrued as periapical granuloma or dentigerous cyst.<sup>7</sup> Expansion of the buccal cortical plate, well defined radiolucent area, thin reactive cortex resulting into deflection of the permanent tooth bud from the path of eruption .<sup>4</sup>As in this case report central incisor has been shifted from the normal eruption.

Mostly the development of radicular cyst is very slow and do not get very large. Patients didn't feel any discomfort or pain until there is an acute inflammatory exacerbation. If the cyst grows large, signs of swelling, displacement of the tooth, mobility in respected tooth may be present. An intra-cystic pressure stimulates the release of epithelial inflammatory cytokines such as il-1 $\alpha$  and could initiate bone resorption by stimulating and activating the osteoclasts.<sup>8</sup> Complete enucleation of the cyst along with extraction of the associated primary teeth and restoring the vitality of the permanent teeth is the most comprehensive treatment modalities available to the clinician.<sup>9</sup>

This procedure was preferred as it was more stringent approach in comparison to the enucleation of the cystic lesion. It doesn't harm permanent tooth/tooth bud thus, is more reliable option for patient and parents. Irrespective of the lesion size, this approach is productive and does not require any further assistance.

**CONCLUSION**

In treatment plan of pediatric cystic lesion some factors are taken into consideration such as anatomical location of the lesion in

growing facial skeleton, permanent teeth buds, prompt bone regeneration, and child's cooperation.

The disadvantages may be the long treatment period, and patient's responsibility for careful postoperative care. In this patients' cystic lesions healed only with marsupialization, but the long treatment duration necessitates strict patient cooperation

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