Images in Medicine

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Double Walker of an Infected Dental Follicle

Dentistry Section

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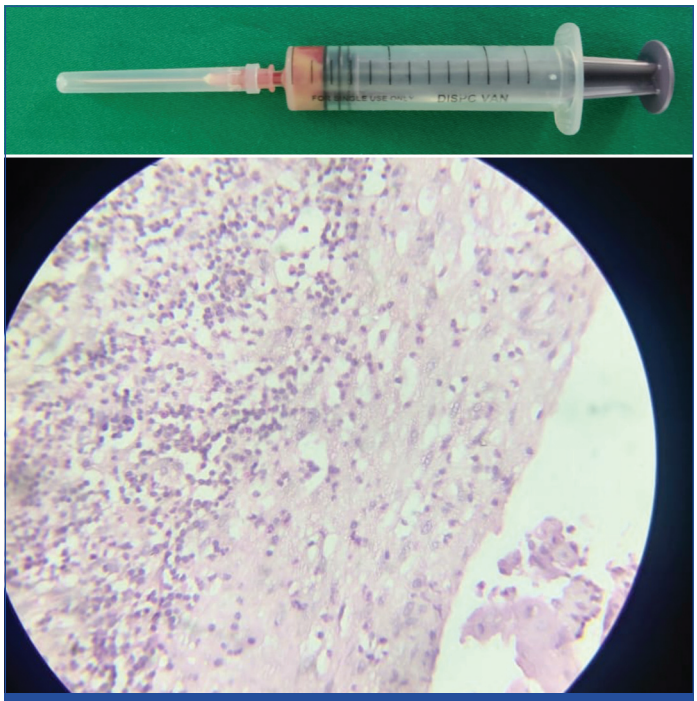
A 14-year-old female patient reported to the Department of Oral Medicine with a primary complaint of presence of a swelling in lower right side of the face since two months with no associated pain. The swelling gradually increased in size causing mild facial asymmetry. There was no relevant medical and dental history provided by the patient. On extraoral examination, the swelling was present 5 cm anterior the external lobe of the ear pinna to 3 cm away from the angle of the mouth and measured nearly 4×3 cm with mild facial asymmetry. On palpation, the swelling was firm in consistency which was not mobile or tender, with no discomfort and no subsequent alterations to the underlying tissues.

On intraoral examination, swelling measuring about 2×3 cm was evident in the 46 tooth region, where there was absence of tooth with no history of extraction in the region [Table/Fig-1]. The surface was slightly inflamed with bluish hue and indentations of 16 tooth cusp on the occlusal aspect, as well as obliteration of the buccal vestibule. On palpation, the swelling was mildly tender. On considering the cumulative findings, a provisional diagnosis of primordial cyst was given since the 46 tooth was clinically missing and there were no foci of infections in adjacent teeth or mucosa. A clinical differential diagnosis of odontoma, ameloblastoma and dentigerous cyst was also considered. An Orthopantomagram (OPG) was taken and revealed the presence of an impacted 46 tooth with homogenous unilocular radiolucency roughly measuring about 2×3 cm covering the entire crown and pushing the tooth inferiorly towards the lower border of mandible with the epicentre being on the 46 tooth. There was a discontinuity of lamina dura in the middle 3rd root of the of 45 teeth in distal aspect. On correlating, both the clinical and radiographic findings, a diagnosis of infected dentigerous cyst of central variant type associated with 46 was given.

[Table/Fig-1]: Extraoral and intraoral pictures and OPG image showing the 46 tooth region.

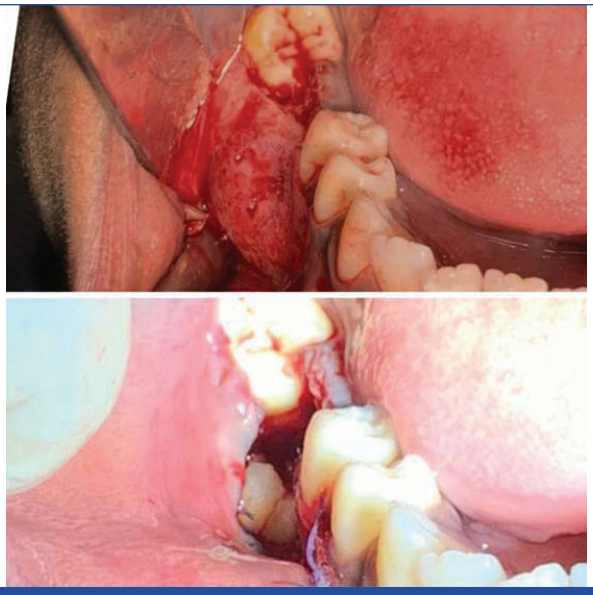
The lesion was initially aspirated, resulting in a little amount of purulent material that was yellowish white in colour and marsupialisation was planned in order to save the involved teeth due to the age bar of the patient. The excised tissue was given for histopathological analysis and the report revealed spicules of vital bone, inflamed fibrovascular connective tissue with islands of odontogenic epithelium and localised aggregation of chronic inflammatory cell infiltration, as well as giant cells and basophilic material suggestive of foreign material with no evidence of epithelium [Table/Fig-2], and a histopathological diagnosis of follicular tissue was given.



[Table/Fig-2]: Showing the aspirated content and H&E stained, 10x magnification photomicrograph.

The marsupialised area was packed with Bismuth iodoform paraffin paste and patient was prescribed with antibiotics and pain killers [Table/Fig-3]. Patient was reviewed after one week and healing was satisfactory. The patient was followed-up for three months. The postoperative period was uneventful and the minimal extrusion was evident [Table/Fig-4].

According to Lucas RB and Cawson RA, the tooth follicle contributes to the production of periodontal ligament before eruption and after crown formation. However, residual follicle can be seen on radiographs as a well-defined radiolucent zone around the crown. The diminished enamel epithelium and surviving epithelial remnants created by the dental lamina are present in the residual odontogenic mesenchyme, which often creates odontogenic cysts, notably



[Table/Fig-3]: Showing marsupialised area of 46 tooth.

[Table/Fig-4]: Three month follow-up picture showing erupting 46 tooth.

follicular cysts associated with unerupted teeth [1]. In the present case, the initial clinical findings led us to the diagnosis of cystic origins due to the presence of swelling and unerupted teeth in the uncommon mandibular 1st molar region [1].

On correlating, the clinical and radiographic findings, an infected dentigerous cyst was considered due to its radiological findings and possible hypothesis for the formation of the same [2]. The developmental dentigerous cyst has two mechanisms: one may originate from a dental follicle and become secondary inflammatory, with the source of inflammation being a non vital tooth. Secondly, the creation of a radicular cyst at the apex of a non vital deciduous tooth, followed by eruption of the permanent successor into the radicular cyst, resulting in a dentigerous cyst of extrafollicular origin [2]. In the present case, neither was there a foci of infection nor did the 1st permanent molar have any successor. Furthermore, odontogenic tissues surrounding long-term unerupted teeth have the potential to grow into a variety of cysts and tumours, comparable to impacted third molars is present in the literature [3,4].

A large acute and chronic inflammatory infiltrate was also identified, particularly where the hyperplastic epithelium was observed according to a study conducted by Huang G et al., [5]. Histopathology of dentigerous cysts consists of epithelium fused with hyperplastic non keratinised stratified squamous epithelium of varied thickness, occasionally with anastomosing rete ridges [6]. In the present case, there was absence of non keratinised epithelial lining indicating that it was not a true dentigerous cyst [6]. It was an infected dental follicular tissue which had a cystic lining in the form of reduced enamel epithelium without basement membrane. Which could also be due to the partial root formation [1]. Thus, the present case is a case of unusual entity of a uncommon missing teeth along with infected follicle. Since the surgical treatment of either marsupialisation or enucleation is same for both infected follicles and dentigerous cysts, the diagnostic dilemma was for the academical discussion only.

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