

A CASE REPORT AND LITERATURE REVIEW: HYPERPLASTIC DENTAL FOLLICLE

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Abstract

Hyperplastic dental follicle is an odontogenic hamartomatous lesion associated with delayed or tooth eruption failure. The dental follicle can be recognized as a radiolucent area around an unerupted tooth. Most commonly seen in young patients. The lesion may be single or multiple. The aim of this study was to report a clinical case of an 18 year old male patient with an impacted lower right mandibular second molar. Radiographically cystic lining of 47 was identified and excised lesion referred for histopathological examination. The diagnosis hypothesis of this condition was dentigerous cyst whereas histopathological report confirms a diagnosis of dental follicle.

Key words: odontogenic hamartoma, odontogenic keratocyst, unicystic ameloblastoma, dental follicle

Introduction

Hyperplastic dental follicle is an odontogenic hamartomatous lesion that occurs in pericoronal tissues of unerupted tooth ¹. It can occur any age. The common sites of occurrence in young individuals are permanent first and second molars.

It is radiographically characterized by a radiolucent area around the crown of an unerupted tooth. Delayed eruption or failure of tooth eruption has been associated with this hamartomatous lesion ^{1,2}.

Microscopically hyperplastic dental follicles consist of odontogenic epithelium and a fibrous connective tissue containing multinucleated giant cells and calcification foci ³. Occurrences of multiple calcifying hyperplastic dental follicles are associated with multiple unerupted teeth and mainly affect male patients. This condition is considered as a distinct pathology. Diagnosis of Hyperplastic dental follicles is important to distinguish this condition from odontogenic tumors.

The differential diagnosis of hyperplastic dental follicles includes dentigerous cyst and odontogenic keratocyst.

Case report

An 18-year-old male patient reported to the Department of Oral and Maxillofacial Surgery at Educare Institute of Dental Sciences, Chattiparamba with the chief complaint of discomfort in the lower right back tooth region for 6 months. The patient gave history of pain while chewing food. No relevant medical history was noted. On intra-oral examination missing of mandibular right second and third molar was noted. Radiographic examination revealed an impacted mandibular right 2nd molar with pericoronal radiolucency and well-defined sclerotic borders and absence of calcifications. The cystic space observed was 5mm (Image 1).

No other radiographic abnormalities involving teeth were observed.

Based on the clinical and radiographic evaluation a provisional diagnosis of a dentigerous cyst was

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given. Differential diagnosis included odontogenic keratocyst and unicystic ameloblastoma.

Incisional biopsy of tissue in the pericoronal area of impacted 47 was performed under LA and the specimen was submitted to the Department of Oral Pathology and Microbiology for histopathological examination and confirmative diagnosis. On surgical exploration, no cystic fluid was found.

Single bit of soft tissue specimen, greyish black in color, firm in consistency measuring 1x 0.5 x 0.3 cm was received.

Microscopic examination of the hematoxylin and eosin stained sections exhibited dense collagenous to hyalinised areas of connective tissue with a few fibrocytes and blood vessels.

Inactive odontogenic islands were also identified in the section. Cystic space did not reveal any cystic lining (Image 2).

Based on the clinical, radiographic and histopathological features, a final diagnosis of hyperplastic dental follicle was given.

Discussion

Over the years, literature reviews on clinical case reports show that the characteristics of hyperplastic dental follicles are associated with delayed or tooth eruption failure.³

Radiographic evidence of radiolucency around the crown of an unerupted tooth, which is not more than 5 mm in width is strongly suggestive of hyperplastic dental follicle.

The exact etiology of hyperplastic dental follicles still remains unknown and some articles review that the defect in enamel formation such as enamel dysplasia and amelogenesis imperfect contributes in its pathogenesis.⁴

Though dental follicle can occur at any age, it is more common in young individuals. The patient's age varies from 5 -19 years old. Ulkem et al. in the year 2013, published an article where the presence of multiple calcifying hyperplastic dental follicles confirmed in a 31-year-old patient.⁵

In our case the age of the patient is 18 years and it comes under the average age distribution of the occasional presence of hyperplastic dental follicle. The female to male ratio was 1:1.4 which indicates a higher occurrence of hyperplastic dental follicles in young males. In the year 2022, Chaithanya et al. published a unique case report where a unilocular radiolucency was found in relation to the impacted

canine region with a well-defined sclerotic border.⁶ The adjacent tooth has undergone root resorption as well as mild displacement. In the present case, pericoronal radiolucency is associated with the impacted lower right mandibular second molar; there is no evidence of root resorption and displacement in the adjacent region. The dental follicle presents as a well-circumscribed radiolucent area in the pericoronal region of an impacted tooth.

In 2014, Schmitd et al. revealed evidence of increased dental follicle in lower right mandibular third molar region, for which marsupilization treatment was chosen.⁶ But in our case, follicle causing delayed eruption was incised in the pericoronal area in order to release the teeth from impaction and for routine microscopic examination to differentiate the follicle from other cystic and neoplastic odontogenic tumors.

The diagnosis of hyperplastic dental follicle in young patients can be correlated with clinical evidence of delayed tooth eruption along with a radiographic image of pericoronal radiolucency with distinct microscopic features.

Conclusion

This is a case of hyperplastic dental follicle causing delayed tooth eruption in a young patient, emphasizing the importance of the association between clinical history and radiographic features with microscopic pericoronal tissue examination for diagnosis of this hamartomatous lesion.³



Image 1: Pericoronal radiolucency and a well defined cystic lining w.r.t 47

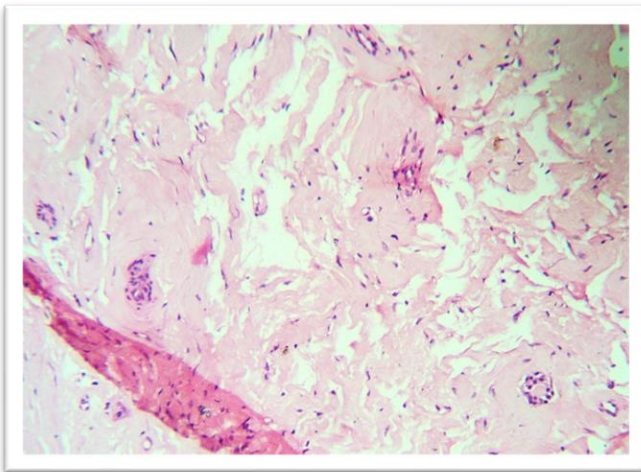


Image 2: Presence of dense collagenous to hyalinised area with few inactive odontogenic islands(10X)

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Conflict of Interest: *None Declared*