INCIDENTAL FINDING OF PARADENTAL CYST AND ODONTOGENIC KERATOCYST IN THE DENTAL FOLLICLES OF LOWER IMPACTED THIRD MOLARS.-REPORT OF TWO CASES

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Abstract

The purpose of this article is to report on different aspects of two cases involving the dental follicle associated with impacted teeth This paper reports two cases who underwent surgical removal of unerupted lower third molars without clinical evidence of any follicular lesion one a 21-yearold,and another patient aged 30years who were diagnosed with paradental cyst and odontogenic keratocyst respectively in the dental follicles of the lower unerupted third molar.

This case report raises the question as to whether histological examination of all dental follicular tissues removed along with impacted third molars should be mandatory.

Key words: Paradental cyst,odontogenic keratocyst, dental follicle

Introduction

Tooth formation occurs in the development sac, also known as a dental follicle or dental sac that surrounds the dental papilla and enamel organ This follicle is responsible for the formation of the periodontal ligament and cementum(1) We would like to draw your attention to a specific changes that sometimes occur in dental follicles of partially unerupted teeth. They can be inflammatory , neoplastic.or cystic Numerous studies with conflicting results have been conducted with conflicting results on the potential of these pericoronal tissues to undergo pathological alteration.

One such pathological change is formation of paradental cyst or inflammatory jaw cyst, occurring in association with mandibular third molars and thought to arise from pericoronal inflammation,.This lesion was first described by Main(2),who used the term "inflammatory collateral cyst' lesion The pathogenesis of the inflammatory paradental cyst remains unclarified. Inflammation in the superficialpart of the periodontium of an erupting tooth seems to play a major role in stimulating the odontogenic epithelium present in the region to proliferate Histologically, the cysts are indistinguishable from radicular cysts.

Another pathological change seen is a cyst –odontogenic keratocyst Odontogenic keratocyst is a developmental odontogenic cyst of epithelial origin.In newer classifications of odontogenic neoplasms odontogenic keratocyst is considered as a neoplasm than a cyst because of its aggressive clinical behaviour.(3)The pathogenesis of odontogenic keratocyst suggests that it is arises from dental lamina or its remnants and extensions of basal cells from the overlying epithelium(3)

Case Reports

Case 1

A 21-year-old female patient, reported to the Department of Oral Medicine with the complaint of episodes of intermittent dull aching pain associated with a partially erupted left mandibular third molar(38) On clinical examination, a partially erupted third molar with pericoronitis was noticed to be the cause of discomfort.Ipsilateral submandibular lymph nodes were palpable and tender. An OPG was obtained, revealing a sharply delineated radiolucency with sclerotic border, circular in shape and 2cm in diameter,(figure 1).

Case2

A 30 yearold male patient.reported to the Department of Oral Medicine with the complaint of chronic cheek bite and painful occlusion.On examination ,the buccal mucosa showed ulceration and cuspal indentation of partially erupted right mandibular third molar Submandibular lymph nodes were palpable on that side.An OPG was obtained and there was pericoronal radiolucency seen around 1.5mm in size(figure3)

Both the third molars were scheduled for extraction. Medical history of the patients was non contribuitory

The teeth was extracted under local anaesthesia and the socket was curetted. The soft tissue mass attached to the teeth were submitted for histopathological evaluation, to the department of oral pathology.

Results

Case 1

The histopathologic analysis revealed a hyperplastic stratified squamous epithelium with arcading lining a fibrous capsule with dense infiltration of chronic inflammatory cells inflammatory infiltrate, resulting in a final diagnosis of a paradental cyst.(fig.2)

Case2

In this case,odontogenic keratocyst was diagnosed based on the presence of a cyst like lesion lined by parakeratinized stratified squamous epithelium. The basal cell layer showed tomb stone like appearance This odontogenic keratocyst like changes in the follicular epithelium was confirmed by immunohistochemistry KI67- a proliferation

Fig1 Orthopantograph showing follicular width of 2mm in 38

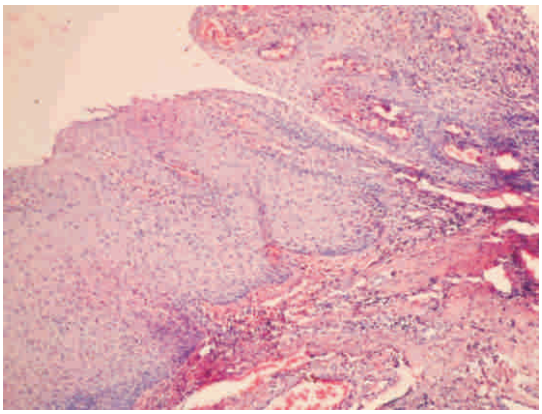

Fig2: Histologic appearance of hyperplastic stratified squamous epithelium with mild chronic inflammation. (H& E; 10X).

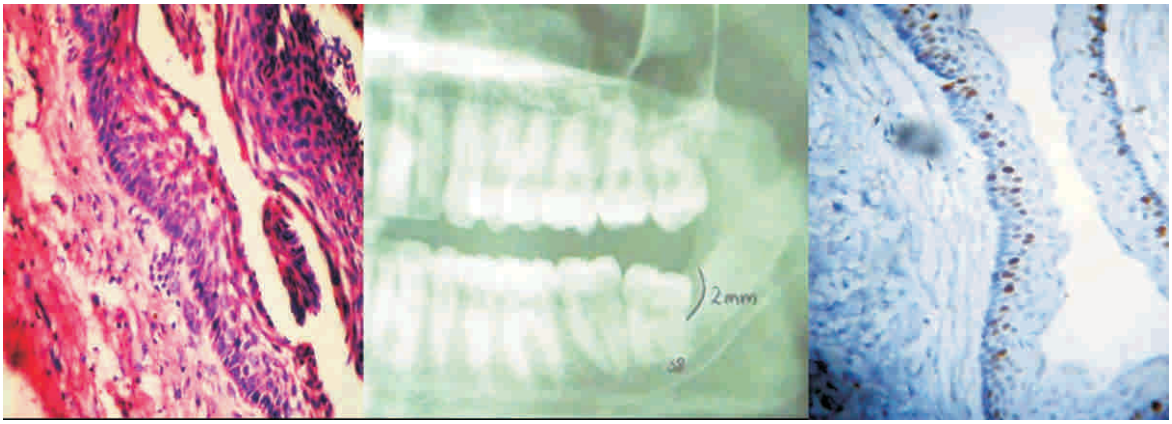

Fig3 left: Histologic appearance of follicle with odontogenic keratocyst-like changes. (H & E; 45X); center: Corresponding orthopantamograph showing follicular width of 2mm in 38; right: Immunohistochemical staining (Ki 67; 45X).

Discussion

Third molar impaction is a major problem in dentistry.The development of impacted third molars normally spans several years and, problems often develop gradually. Nevertheless, these gradual changes can cause sudden and severe pain, discomfort, pericoronitis,headache and swelling. Some type of pathologic changes like dentigerous cyst, internal resorption, caries, periodontal ligament damage, bone loss distal to second molar and pressure resorption of second molar can be expected eventually in approximately 12% of impacted third molar population and 1.82% of the general population over sustained period of time.(4) While not every impacted third molar actually causes clinically significant problem, each has a potential. Most surgeons discard pericoronal tissues after third molar removal and do not submit the soft tissue for histological examination. Rakprasitkul (2001) histologically examined the dental follicles of 104 unerupted third molar teeth which showed no evidence of any follicular lesion.(5) Of the 61 (59%) pathologic changes found, 53 were diagnosed as dentigerous cysts, five as chronic, non-specific inflammatory tissue, two as odontogenic keratocysts and one as an ameloblastoma.. In two other studies, pathological alterations of the dental follicle were found respectively in 42% and34% of 96 and 100 unerupted third molar teeth removed without clinical sign of any follicular lesions(Glosser and Campbell, 1999; Adelsperger et al.,2000)(6,7)) In a study done by Vijayalakshmi S Kotrashetti[1], Alka D Kale(8) Out of Of 41 tissues evaluated, histo pathological reports of 18 follicles were suggestive of dentigerous cyst, two follicles showed odontogenic keratocyst, one follicle each of calcifying epithelial odontogenic cyst, ameloblastoma-like proliferation, odontogenic myxoma and odontogenic fibroma.

In our findings ,we came across a paradental cyst and an odontogenic keratocyst which were incidentally found after the third molars were removed and the dental follicle attached was submitted for histopathological evaluation.

Conclusion

It was concluded that the application of histological and radiographic criteria on dental follicle provides more accurate diagnosis than just relying on clinical diagnosis for partially impacted teeth. This case report raises the question as to whether histological examination of all removed dental follicles should be carried out on a routine basis.

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Source of Support - Nil

Conflict of Interest - None declared