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An Infected Sac in the Mandible – A Case Report.

Harshada Ragunathan[1], Sankar Narayanan R[2], Nalini Aswath[3]

[1]Senior Lecturer, Department of Oral Medicine and Radiology, Thaimoogambigai Dental College and Hospital,Dr. M.G.R. Educational and Research Institute, Chennai, Tamil Nadu, India, [2]Reader, Department of Oral Medicine and Radiology, SreeBalaji Dental College and Hospital, Bharath Institute of Higher Education and Research, Chennai, Tamil Nadu, India, [3]HOD and Professor,Department of Oral Medicine and Radiology, SreeBalaji Dental College and Hospital, Bharath Institute of Higher Education and Research, Chennai, Tamil Nadu, India

Abstarct

Dentigerous cyst is the second most common cyst. It is usually associated with the impacted third molars, canines and premolars. Clinically they present with asymptomatic swelling, bony expansion and radiographically they are well defined and the larger cyst leads to destruction of bone later leading to pathological fracture. They are chances where this cyst can be misdiagnosed when seen only clinically withan infected tooth. Radiographic investigation is the gold standard in diagnosing the lesion and its extent for treatment planning. The protein content of the cyst fluid also helps in the diagnosis. Here is a case where the patient complained of a decayed tooth along with swelling in the left side of face and how the diagnosis changed after proper history and radiographic investigation.

Keywords: *Dentigerous cyst, Impacted, Radiographic Investigation.*

Introduction

Dentigerous cyst also called as Follicular cyst is the second most common odontogenic cyst. It is usually associated with maxillary and mandibular impacted tooth. Mandibular third molars, maxillary canines and mandibular premolars are involved most frequently. Rarely, a dentigerous cyst is associated with odontome, deciduous teeth and supernumerary teeth[1].These affectmalesthan females at the ratio of 1.6:1[2].Clinically, it is often asymptomatic; it is discovered as an incidental radiographic finding or when acute inflammation, infection or swelling developswhere it appears as a well circumscribed, unilocular, usually symmetric radiolucency around the crown of an impacted tooth[3]. As normal follicular space is 3-4 mm, a dentigerous cyst can be suspected when the space is more than 5 mm[4]. These cysts may also convert into ameloblastomas, mucoepidermoid carcinoma and squamous cell carcinoma [5].Dentigerous cyst can classified into 3 types based on the radiographic finding,here we report a case of one of its type.

Case Report

A 28 years old male, came to the hospital with the chief complaint of decayed tooth with swelling in the left side of his face for past 2 month which gradual progressed in size to attain the present size. There was no history of pain for past 1 and half month and slowly he experienced dull pain in associated region. He also gave no history of trauma or discharge from the associated region.

Corresponding Author:
Dr. HarshadaRagunathan
Senior Lecturer, Department of Oral Medicine and Radiology, ThaimoogambigaiDental College and Hospital, Dr. M.G.R. Educational and Research Institute, Chennai, Tamil Nadu, India.
E-mail: harshada.sragu@gmail.com

Image 1:

Swelling seen in left side of face.

Extra oral examination revealed a diffuse swelling in the left side of faceof size 5x4 cm approximately, extending from left side commissure of the lip anteriorly totragus of left ear posteriorly and superiorly 3 cm below the left lower eyelid to inferior border of the mandible. The swelling had a smooth surface and the skin over the swelling appears to be normal. On palpation it was firm, non-tender. There was local rise in temperature and the skin over the swelling was pinchable.A single solitary left Submandibular lymph node was palpable measuring approximately 0.5 x 05 cm in size, which was mobile, non tender and firm in consistency.

Intraoral examination also revealed dental caries in relation to 36 which was tender on percussion alongwith a solitary swelling in the attached gingiva which was 1x1 cm in size. The swelling has a well defined margins and the surrounding area appears to be normal. On palpation it was soft in consistency, tender with no discharge. 38 was partially impacted.

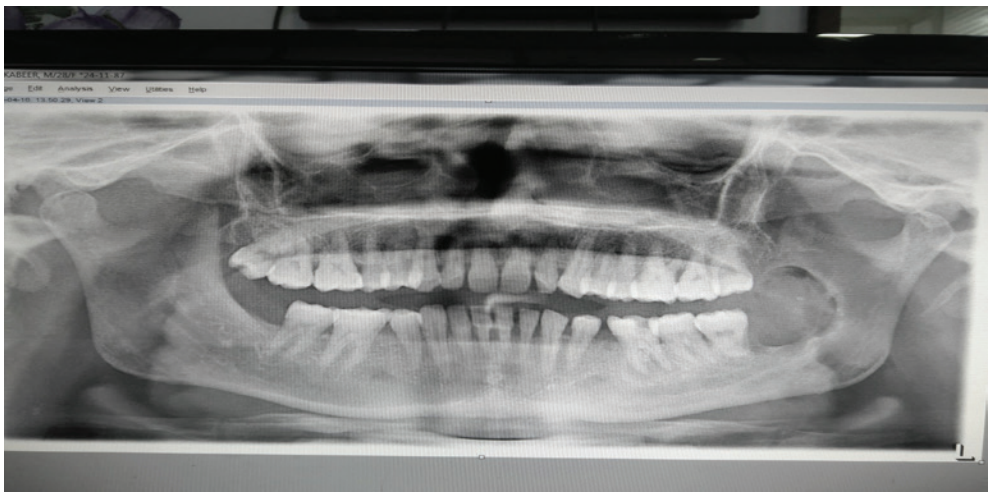
Image 2:

Intraoral examination showing small solitary swelling in relation to 36.

Correlatingwith the chief complaint,intraoral and extraoral examination,a provisional diagnosis of ***Dentoalveolar abscess in relation to 36*** was given with a differential diagnosis of odontogenic cyst or tumour and fibro osseous lesion.

Patient was advised for routine blood and radiographic investigation and biopsy. Hematologicalinvestigations revealed normal values.Orthopantomogram showed a well - defined arc shaped bone loss observed in left ramus of mandible which approximately 5x 4.5 cm in size extending from distal side of 38 cementoenamel junction to the coronoid process posteriorly with hallowing of the ramus. The periphery of the lesion was well-defined corticated with a curved outline which was smooth and also a radiolucency involving enamel, dentin, pulp and at the periapical region of 36.

Image 3:



OPG showing a well defined arc shaped bone loss extending from distal side of 38 Cemento Enamel Junction to the coronoid process.

DIFFERENTIAL DIAGNOSIS:

On the basis of clinical and radiological presentation differential diagnosis of Cystic ameloblastoma, Odontogenic keratocyst, dentigerous cyst,Fibro-osseous lesion and Central giant cell granuloma was given and patient was advised for Computer Tomograph.

Image 4.a)

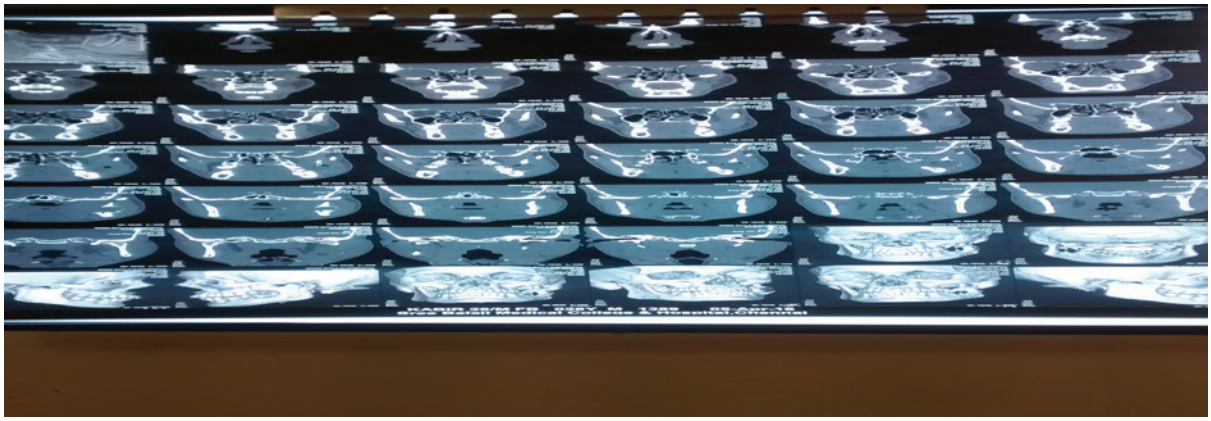
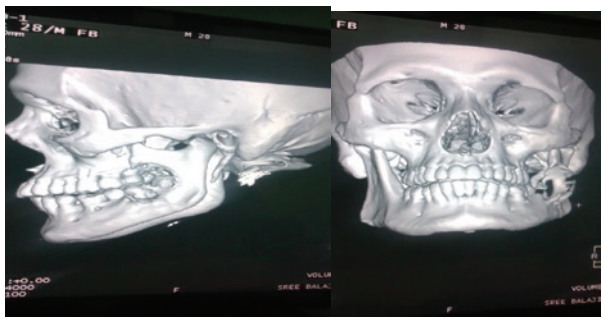


Image 4.b)



CT showing large expansile lytic lesion in left retro molar region and anterior aspect on left ramus

A large expansile lytic lesion noted in left retro molar region and anterior aspect on left hemimandibular ramus measuring 3x2.5cm. Wall of the lytic lesion appears deficient on the anterior, medial and lateral aspect of the lesion. Posterior margin of the lesion is lobulated. Air foci noted within the lesion. CT value ranges from -5 to +25 HU. Periosteal reaction noted along the inferior and posterior border of the lesion. The lytic lesion also involves the lateral cortex with adjoining minimal soft tissue swelling.

Suggestive of odontogenic keratocyst.

HISTOPATHOLOGICAL INVESTIGATION:

Incisional biopsy was done and the specimen was given for histopathological analysis.

The hematoxylin and eosin stained histopathological sections showed cystic lining epithelium and connective tissue capsule. The epithelium is 2-3 cell layer thickness non keratinized type. The fibrous connective tissue is moderately colonized with mild cellularity. The connective tissue shows diffuse dense chronic inflammatory cell infiltrate. Numerous endothelial lined blood vessels are noticed. Colonies of microbial organisms are seen. Deeper layer of connective tissue shows normal appearing bony trabeculae.Suggestive of

Infected Dentigerous Cyst.

The clinical presentation and further investigation lead to the final diagnosis of ***Infected Dentigerous Cyst*** in relation to 38.

Patient was advised for extraction of 38 and 36 along with complete enucleation of the cyst. Patient was recalled for review after 6 months.

Image 5 :

Post operativeOrthopantomogram showing healing lesion.

Discussion

About 20% and 24% in all the jaw cysts are dentigerous cysts[6].Dentigerous cyst is the most common developmental cyst and the pathogenesis of it is unclear till now. There are various theories given for explaining the aetiology of dentigerous cyst. An Intra follicular theory in the development of dentigerous cyst, given by Shear suggests that the development of dentigerous cyst begins with the accumulation of fluid between the reduced enamel epithelium and the enamel, or between the layers of reduced enamel epithelium and enamel[7]. The dentigerous cyst is a type of development cyst originating from the reduced enamel epithelium with clinical feature of asymptomatic swelling and bony expansion.A small dentigerous cyst may be, clinically, asymptomatic and may be discovered on routine examination. Symptoms are seen when there is an increase to potential size by expansion of bone and, rarely, bone destruction [8]. Here in our case patient experienced dull pain in last few days this may be because of the bone destruction. Radiographically this cyst are classified into three types as: Central type, when radiolucency encircles the crown of unerupted tooth; lateral type, which develops laterally along the tooth; and circumferential type, where cyst completely encircles the crown and root of the tooth [9]and our case resembles lateral type.The cyst's lining may contain areas of ortho-keratinization, ciliated cells, or mucin secreting cells. Because of this inherent ability for metaplastic change, some dentigerous cyst appear to progress to more aggressive lesions such as an odontogenic keratocyst, ameloblastoma, mucoepidermoid carcinoma or squamous cell carcinoma [10].

There are many investigation for cyst which includes radiographic investiagetion like OPG, CT, ultrasonography, Aspiration, Biopsy, Serological Test. Although Radiographic investigation is the gold standard the content of the fluid also helps in diagnosis of the cyst.The odontogenic cyst fluid can be studied for their color, consistency, presence of cholesterol crystals, keratin flecks, and different protein fractions such as albumin, alpha and beta globulin, total protein content, and inorganic phosphates.The protein content of radicular cyst is highest which ranges between 5 to 11

g/dl, dentigerous cyst is between 5 to 8 g/dl and for OKC is <5 g/dl[11].

The treatment for the cyst differs based on its size and extent. Enucleation is the standard treatment for a dentigerous cyst along with extraction of the associated tooth[12]. Marsupialisation is recommended for a large cyst when a single draining may not be effective and complete removal of the surrounding structure is not desirable[13]. Scolozzi *et al* recommended in his article that enucleation is better followed by an immediate bone grafting procedure for large cyst[14].

Conclusion

Swelling in the face has many reasons. Cyst is one of among it. Dentigerous cyst is the prevalent cyst in the jaw that occurs in second to third decades of life. Dentigerous cysts may present with complications like pathologic fractures, transformation into true neoplasm[5]. So early diagnosis and proper investigations are necessary for increasing the success rate without any recurrence.

Ethical Clearance – Not required since it is a case report

Source of Funding – Nil

Conflict of Interest – Nil

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