

A CASE REPORT – DIALATED COMPOUND ODONTOME

WITH - REVIEW OF LITERATURE

A 29 year old male patient reported to the department of oral medicine and radiology, SIBAR INSTITUTE OF DENTAL SCIENCES with a chief complaint of swelling over his gums in upper front teeth region for the past one year, swelling was small initially and grew to the present size , with no history of pain, bleeding, and discomfort during eating or swallowing food or any other oral habits.

The past dental history revealed that his last dental visit was two years ago and His lower left back teeth was taken out with no associated complications.

INTRAORAL EXAMINATION OF THE LESION REVEALED

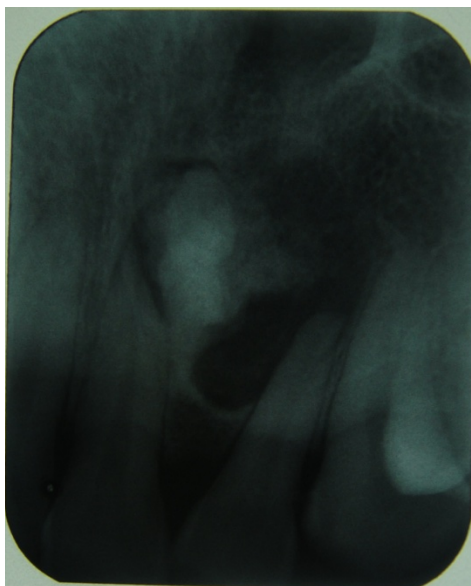
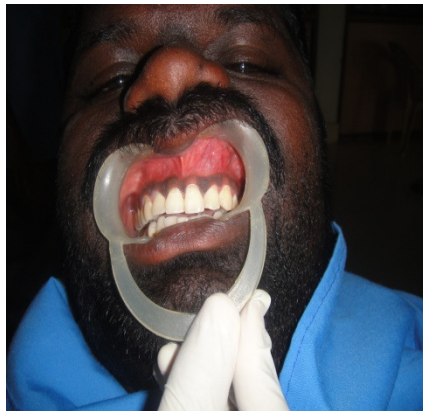
A diffuse swelling over the labial gingiva with respect to 21,22,23,which extends from distal aspect 21 till mesial aspect of 23 which was around 2.5cms x2.0cms oval in shape, swelling appeared to be smooth with normal colour of the gingiva over the swelling , no sinus opening ,no pus discharge or blood were noted over the swelling . On palpation of swelling all inspeactory findings regarding site ,size,shape,extent,were confirmed ,swelling was nontender soft to firm in consistency ,surface was pebbly and with vestibular obliteration with respect to 21,21,23.

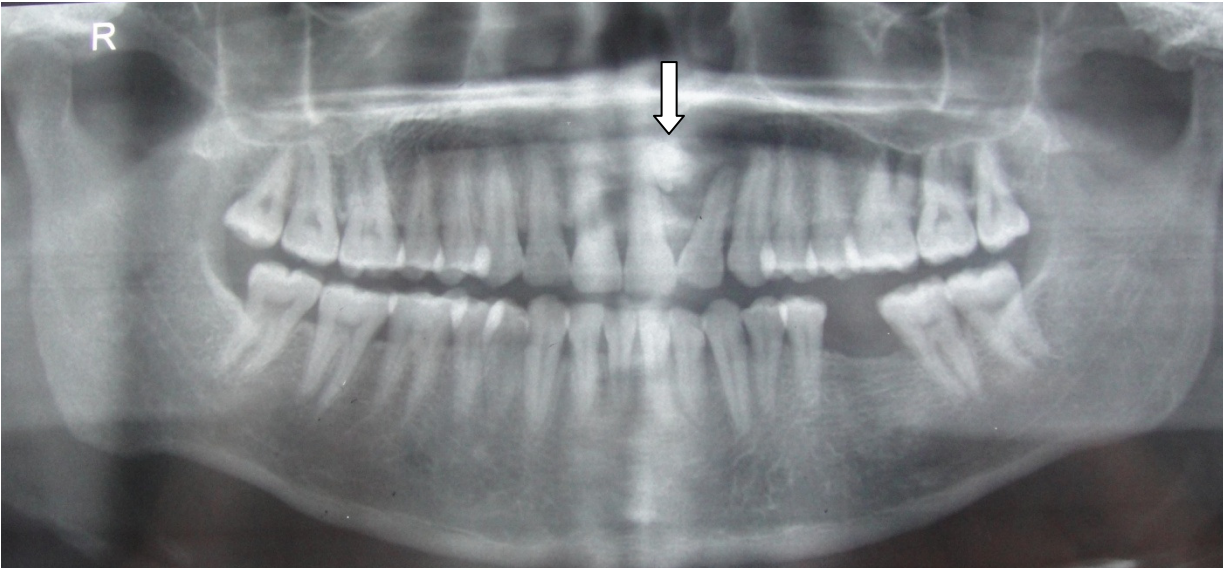
On examination of teeth 21, 22 and 23 were non tender on percussion and pulp vitality testing revealed moderate response of the pulp.

Radiographic investigations were done. IOPA and OPG revealed mixed radio opaque and radiolucent lesion of 1.5x1.2cms at the apex of 21, 22, with radio opaque border surrounding it. Radio opaque tooth like structure was seen in the distal aspect of 21, displacement of 22 and resorption of apical third of root of 21.

Diagnosis: Based on history of swelling for 1year, site of occurrence, palpatory clinical examination and radiological findings diagnosis of dilated compound odontome was given.

PHOTOGRAPHS





Review of the Literature

Prevalence

Odontomas are the most common odontogenic tumors, comprising approximately 70% of all odontogenic tumors. The odontoma is perhaps more aptly defined as a hamartoma than a true neoplasm. Hamartomas are tumor-like lesions composed of an overgrowth of mature cells and tissues normally present in the affected part. The odontoma is most often associated with an unerupted or impacted tooth. The failure of a permanent tooth to erupt is the most common clinical manifestation. Because they are composed of more than one type of tissue, odontomas are considered mixed odontogenic tumors. They are commonly found alone or in association with one of the numerous other mixed tumors or dental abnormalities. Odontomas are usually detected in adolescents and young adults and are divided into two basic types--compound or complex.

Odontogenic tumors in general are relatively rare; however, odontoma is one of the most common of the group. Frequencies in geographic areas vary, but of odontogenic tumors examined in larger American, Canadian, and German populations, odontoma was most frequently reported--73.8%, 56.4%, and 57.8%, respectively. In a study of a Turkish population, 20% of the odontogenic tumors were odontomas. Phillipsen et al. reported the frequency of compound odontomas among odontogenic tumors was 9 to 37%, still citing it as the most common among odontogenic lesions/malformations.

Clinical presentation

Compound odontomas present clinically as small, multiple, immature, or rudimentary teeth on dental radiographs. Complex odontomas do not resemble tooth forms, but appear as indistinguishable radiopaque masses. Both types are composed of enamel, dentin, cementum, and pulp tissues and usually produce no symptoms. Compound odontomas present most often in the maxillary anterior region but can be found in any site. In contrast, complex odontomas are found primarily in the posterior aspect of the mandible and are sometimes larger than the compound type.

Associated abnormalities

Odontomas can be found in association with other dental abnormalities, such as the calcifying odontogenic cyst (COC). The COC is usually a unicystic lesion. About 20% display the features of COC with those of a small complex or compound odontoma. In a case involving a 14-year-old male, Sikes, Ghali, and Troulis reported a complex odontoma found with a COC. Another case involving a 6-year-old male had included COC in the differential diagnosis of a lesion in which the authors reported as frequently being associated with odontomas.

Philipsen, Reichart, and Praetorius discussed in great length the interrelationship between compound/complex odontomas and ameloblastic fibroma, ameloblastic fibro-odontoma, and ameloblastic fibrodentinoma. They report considerable confusion in the literature discussion concerning the interrelationship of the odontomas and other odontogenic tumors. (The ameloblastic fibroma is considered a true mixed tumor with histology of neoplastic odontogenic tissues. There are discrepancies in its diagnosis, and early reports of the lesion may actually have been lesions in the early developing stages of odontoma formation. The ameloblastic fibro-odontoma has the general features of an ameloblastic fibroma but also contains enamel and dentin. Like the ameloblastic fibroma, the fibro-odontoma is thought by some to be a stage in the development of an odontoma and is therefore not always classified as a separate lesion. The ameloblastic fibro-dentinoma is similar to the previous two, except that it contains primarily dentinal tissues as its calcified component and is considered a variant of the ameloblastic fibro-odontoma. All three can be associated with an impacted tooth or dental structures in the form of toothlets or masses of enamel and dentin. Their relation to the odontoma is further supported by a statement in the introduction to the World Health Organization's classification of mixed odontogenic tumors. This statement points out the possibility that some of the lesions presently classified separately are simply chronological stages in the development of a single type of tumor.

Discussion

Radiographic features

A presumptive diagnosis of compound odontoma is usually determined by radiographic appearance alone and is seldom confused with any other lesion. Clumped together, the radiopaque toothlets often exhibit a thin, radiolucent rim around the periphery. They are discovered on radiographs either incidentally or in search of a cause for a missing tooth. .

Complex odontomas, on the other hand, appear radiographically as more or less amorphous, solitary conglomerates, of calcified material. Larger, indistinct radiopacities--rather than tooth like structures--are usually apparent. They exhibit a haphazard arrangement of the dental tissues and are found primarily in the posterior aspect of the mandible. Unlike compound odontomas, complex odontomas are not diagnosed by radiographic appearance alone but require histologic verification. Other lesions included in the differential diagnosis are osteoma, ossifying fibroma, and cementoblastoma.

Histopathology

To establish a definitive diagnosis, suspected odontomas, both compound and complex, must be examined microscopically. Histologically, the compound odontoma will often have normal appearing enamel, dentin, cementum, and pulp. Odontogenic epithelium, odontoblasts, and mesenchymal pulp tissue also may be present. The complex odontomas consist largely of mature tubular dentin. The dentin surrounds circular structures of enamel matrix and is surrounded by a periphery of cementum and a fibrous capsule. The haphazard arrangement of the dental tissues is responsible for its indistinguishable clinical appearance. Occasionally, a dentigerous cyst may arise from the epithelial lining of the fibrous capsule of a complex odontoma.

Conclusions and Recommendations

Treatment for both forms of odontoma is usually surgical excision. Both compound and complex odontomas are well encapsulated and easily enucleated from the surrounding bone. There is general agreement that odontomas should be excised due to the possibility of developing a dentigerous cyst or other neoplasms and the manner in which such tumors influence the growth and development of the bone and dentoalveolus.

The possibility of lesions like the odontoma supports the practice of recommending baseline radiographic surveys for all dental patients. Even in the apparent absence of caries or periodontal

problems, the possibility of discovering lesions such as the odontoma or other abnormalities warrants exposing radiographs beyond a simple set of bitewing films. The dental hygienist should thoroughly evaluate all areas in the survey, beyond bone level and caries, noting changes in trabecular patterns of bone, as well as other abnormal radiolucencies and radiopacities.

References

- (1.) Sapp JP, Eversole LR, & Wysocki GP: Contemporary Oral and Maxillofacial Pathology.
- (2.) Stedman's Concise Medical Dictionary for the Health Professions. 4th ed. Baltimore: Lippincott Williams and Wilkins; 2001. Hamartoma; p. 425.
- (3.) Ibsen OA, Phelan, JA: Oral Pathology for the Dental Hygienist, 3rd ed. Kuhn SA, ed. Philadelphia, WB Saunders Co., 2000, p.268-9.
- (4.) Neville BW, Damm DD, Allen CM, & Bouquot JE: Oral and Maxillofacial Pathology. 2nd ed. Philadelphia, WB Saunders Co., 2002, p. 626-32.
- (5.) Mosqueda-Taylor, A, Ledesma-Montes, C, Caballero-Sandoval, S, Portilla-Robertson, J, Ruiz-Godoy Rivera, LM, & Meneses-Garcia, A: Odontogenic tumors in Mexico. A collaborative retrospective study of 349 cases. Oral Surg, Oral Med, Oral Pathol, Oral Radiol, and Endod 1997; 84(6): 672-75.
- (6.) Lu, Y, Xuan, M, Takata, T, Wang, C, He, Z, Zhou, Z, Mock, D, & Nikai, H: Odontogenic tumors. A demographic study of 759 cases in a Chinese population. Oral Med, Oral Pathol, Oral Radiol, and Endod 1998; 86(6): 707-14.
- (7.) Philipsen, HP, Reichart PA, & Praitorius F: Mixed odontogenic tumours and odontomas. Considerations on interrelationship. Review of the literature and presentation of 134 new cases of odontomas. Oral Oncology 1997; 33(2):86-99.