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Dr. Brown

DEN 2311

Compound /Complex Odontomas

November 27,2020

**Compound and Complex Odontomas**

Odontomas are the most common benign odontogenic tumors found in the developing teeth. There are two types of odontomas: compound and complex. Both consist of epithelial and mesenchymal tissue, which are differentiated into enamel and pulp. According to the World Health Organization (WHO), a compound odontoma can be considered a malformation in which the dental tissues are arranged in a more orderly pattern than in the complex odontoma, so that the lesion contains multiple small tooth like structure. A complex odontoma is defined as a malformation in which all dental tissues are represented. The individual tissues are well formed and occur in a more or less disorderly pattern.

Compared with the complex odontoma of irregular tooth tissue, the compound odontoma has a regular shape, single or multiple small teeth. The appearance of compound odontoma is peg-shaped teeth, while the appearance of complex odontoma looks like irregular masses.

The etiology of the odontomas is still unknown but it has been related to several pathological conditions such as infections, trauma, odontoblastic hyperactivity, inheritance and genetic mutation. They can occur at any age, but are most common in the first two decades of life, and there is no gender predisposition. Most compound odontoma are located in the anterior maxilla and can occur in the canine and incisors region over the crowns of unerupted teeth or between the roots of erupted teeth. Complex odontoma can be found in the posterior region of the jaws and are common in the mandible frequently over an impacted tooth, and can growth several centimeters in size. Clinically most odontomas will be present as asymptomatic, slow growing tumors, however, sometimes they may increase and result in bone expansion. Most complex odontomas will cause a slight bony expansion . Pain and inflammation can occur from secondary infection. Both lesions can be discovered during routine radiographic examination, however diagnostic techniques such as microradiography can be used. Odontomas can interfere with eruption of permanent teeth and may cause crowding of the adjacent teeth..

Both lesions can be diagnosed during routine radiographic examination, however their identification may be difficult due to lack of calcification. To differentiate and make the diagnosis, the comparison of the degree of morpho differentiation and histodifferentiation of the dental hard tissue will decide the type of tumor. Visual examination itself can not differentiate between complex and compound odontoma because both types are usually in the bone structures and do not show outward signs, such as expansion of the bone. Radiographic examination is the best method of distinction between the two types of odontomas.

In radiographic images, compound odontomas will appear as a collection of several toothlike structures or denticles by well-defined radiolucent cyst like lesions, however sometimes they can be confused with supernumerary teeth. Complex odontomas will appear as irregularly shaped oval radiopacity surrounded by a well-defined thin radiolucent zone.

Both lesions can be discovered during routine radiographic examination, however radiographs cannot always demonstrate the differences between these two types therefore to identify them, sometimes, some other procedure must be, such as the histological examination. There is another useful procedure that can establish a definitive diagnosis called microradiography which makes possible the recognition of histological structures from various radiopacities and radiolucencies. Histologically compound odontomas will appear similar to a normal tooth with mature tubular dentin, enamel matrix, cementum, and pulp tissue, arranged in an organized manner of dental structure and partially surrounded by a connective tissue capsule. Complex odontomas will consist of mixed up collection of dentin, enamel, enamel matrix, cementum and pulp tissue.

Odontomas for the most part do not growth to the normal tooth size, however they should be removed because they contain different tooth formulation that can cause a cyst and therefore interfere with eruption of permanented teeth and can cause destruction of the bone. Odontomas have a very low recurrence therefore, usually, they can be treated with simple surgical enucleation. Special care should be taken to remove it totally to prevent relapses. Sometimes due to extension of the odontomas to the adjacent tooth, the latter can be disturbed while removing the odontomas. Diagnosing odontomas before they can cause damage to the teeth is key to ensuring better outcomes, as treatment is cheaper in earlier stages, prevent relapse and displacement of adjacent teeth. Postoperative clinical and radiographic observation should be continued. The prognosis for this condition is usually very good with minimal to no recurrence.

It is an essential part of a dental hygienists training and responsibilities to recognize dental anomalies. Well maintained patient that come to routine dental exam will not feel any pain, therefore the dental team has to recognize the first signs of the odontomas. Early recognition and referral to the oral surgeon will maintain the patient health.

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Navneet Kaur

Oral Anatomy D212

Homework #2

1. How does this information relate to our course?

-This information relates to our course because many of the injuries Richard III had

occurred in the skull. Richard III had injuries to his cranium, jaw and cheekbones.

2. Did the knowledge you’ve gained so far in DEN1112 help you in

understanding this material?

- Yes, the knowledge I’ve gained so far in DEN1112 has helped me in understanding this

material. It helped me understand the dental, facial and cranial points they referenced to.

When she said an injury in the cheekbone, I know she meant Zygomatic bone. In

‘Richard III – Identifying the Remains’, they extracted teeth from the mandible. As Dr.

Appleby stated, “DNA is protected in the interior of teeth because of its hard outer

coating, and it’s not indirect contact with the outside world.” The dental pulp, which

holds all the blood and vessels of the tooth, is surrounded by dentin and enamel. Enamel

protects the teeth with its “hard outer coating”. The dentin contains DNA, which was an

essential method to discovering that it was King Richard III’s body.

3. What particularly was most interesting to you?

- I found it amazing that after so many years, modern technology has allowed scientists to

determine the last moments of the king and concluded that were 11 injuries in different

parts of the body. I found it extremely interesting how they were able to locate Richard

III’s relatives in the present time through mitochondrial DNA! It must have been a very

intricate process. I wouldn’t possibly have known where to start.

I also noticed that Dr. Turi was speaking to Micheal step by step on what she doing and

why, which we learned to do to patients because they don’t understand intricate dental

terms.

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Oral Anatomy D212

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