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ODONTOMA : AN INCIDENTAL FINDING

KEY WORDS:

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ABSTRACT

Dental tissues give rise to odontomas, which are benign tumours. They are often divided into two types: compound and complex. Odontomas are mostly asymptomatic, but they occasionally show signs and symptoms that are related to them. For the occurrence of odontoma, various theories or etiological variables are mentioned. They typically show no symptoms. They do occasionally show indications and symptoms that point to their presence. Early diagnosis, histological analysis, and tissue removal are the only methods of treatment. Although the aetiology is yet unknown, it has been investigated in relation to infections, genetic abnormalities, odontoblastic hyperactivity, and trauma. Because of a delay in the eruption of permanent teeth, 75% of all instances of these tumours are discovered before the second decade of life because they are asymptomatic. Enucleation is the preferred method of treatment for these tumours in an effort to save the tooth; relapse is extremely rare.

Introduction:-

Odontoma is a benign tumour that develops in the jawbone and odontoma is asymptomatic. It is one of the most common types of odontogenic tumours and it does not cause any pain or discomfort. Odontoma can be identified during routine intra-oral examination and x-rays. According to WHO odontoma is classified as complex and compound odontoma . Most of the compound odontoma seen in mandible and complex odontoma seen in maxilla.While odontoma is typically not deemed a severe ailment, it may still necessitate intervention if it induces distress, hinders typical dental operation, or impairs the expansion and maturation of neighbouring teeth. Possible courses of action could involve extracting the tumour surgically; in certain instances, orthodontic care might also be required to rectify any misplacement or abnormal alignment prompted by its development (6).

Odontomas make up around 22% of all odontogenic cancers of the jaw. Compound odontomas make up about 10% of all odontogenic tumours of the jaws. Compound odontoma prevalence ranges from 9 to 37%, whereas difficult odontoma prevalence is between 5 and 30%. In the second and third decades of life, odontomas are discovered (11).

Odontomas typically manifest in the anterior tooth region of both the maxilla and mandible. As patients typically present with the symptoms of odontoma at an early stage, it is advantageous for the doctor to make a diagnosis of lost teeth. This aids in simplifying treatment planning, preserving aesthetics, lowering the risk of malocclusion, and improving the prognosis for enduring teeth (8).

Aetiology:-

The aetiology behind odontoma remains unknown. It has been related to various pathological conditions, like odontoblastic hyperactivity, inflammatory and or infectious, Gardener's syndrome, developed ameloblasts, local injuries, dental lamina remnants, Hermanns syndrome, alterations in the genetic component responsible for controlling dental development (1). Odontoma occurs due to a mutagen, possibly postnatal, with the genetic control of tooth development.The most prevalent variety of odontogenic tumours, also known as hamartomas, which histologically consists of a complex image of differentiated epithelial, mesenchymal cells that may be produced from ameloblasts. Since an odontoma is not a real neoplasm, it's a benign mixed tumour (7).

Classification:-

Odontoma can be classified into two types that is histological and clinical . Histological classification is further divided into compound and complex . And clinically it is further divided into intra-osseous , extraosseous and erupted (2).

Compound odontoma :-

The most common type of odontoma is compound odontoma; it is commonly viewed in the maxillary region . Morphology of the compound odontoma resembles tooth-like structure . Odontoma also can be identified in radiographs which shows radiopaque structure which resembles rudimentary teeth which are rounded by a radiolucent structure with cortical border which is thin (15). Histologically, compound odontomas consist of the contents of dental hard tissue which was arranged in a regular pattern ,showing a small tooth-like form with some pulpal tissue in the middle (6).

Complex odontoma :-

Complex odontoma usually arises in the mandibular posterior region . These types of lesions may or may not be associated with any other lesion . Like compound odontoma , Complex odontoma is also identified radiographically. It resembles a thick irregular amorphous mass with a narrow corticated border and a radiolucent rim around it (13). The tooth hard tissue components enamel, dentin, and cementum are grouped in an ad hoc manner histologically. Intraosseous odontomas may arise into the oral cavity over time, the extraosseous odontomas are not common and they break inside the oral cavity (6).

Management:-

Odontoma has a limited capacity for development, but it needs to be removed since it contains tooth formulations that can increase the risk of cystic transformation, obstruct the eruption of permanent teeth, and seriously deteriorate bone. Due to the low recurrence rate, surgical excision of the lesion is the preferred therapy. Because it is an encapsulated tumour, its removal is a straightforward surgical operation, but great care must be given to ensure that it is completely removed, to prevent recurrence, which is especially important in young complicated odontomas (6).

Prior to the surgical procedure we have to explain the procedure to the patient and sedation and local anaesthesia should be administered prior to surgical procedure.A thin layer of bone that covered the odontoma was removed by raising a full thickness flap from the left lateral incisor to the

mesial aspect of the first molar. The lesion was thoroughly removed from the maxilla using curette and chisels, and it was recommended that the erupting tooth be preserved. After achieving hemostasis, the flap was closed, and the biopsy sent for histological analysis. The exposed impacted tooth should be bonded and followed by orthodontic traction. For anterior tooth region facial esthetics and smile corrections should be improved (4).

Discussion:-

The odontoma's aetiology is not known . most authors shows the possible association with local injuries in the deciduous dentition, hyper activity of odontoblast cells , infectious or inflammatory process.Most of the odontoma formed in second decade of life.odontoma can be identified in the oral cavity at the age of (14 - 19) years (14). Philipsen et al report that complex odontomas are identified at the average age of 19.9 years. And also he gave a report that compound odontomas are identified at the age of 17.2 years (3).

Gender ;

According to philipsen complex odontoma's male/ female ratio varies from 1.6:1 to 1:0.8 and for compound odontoma the ratio differs from 1.2:1 to 1:1 (3).

Site :

complex odontomas usually arise in the posterior mandibular region and compound odontomas usually arise in the maxillary anterior region. In recent studies, the site of both compound and complex odontomas showed much the same pattern. Complex odontomas usually arise in the mandible at the second and first molar regions. Although the compound type is distributed equally between the genders.[4]

Appearance :

Compound odontoma -Bizarre peg-shaped teeth have anatomical similarities to conventional teeth.Complex odontoma - irregular shape (6).

Histopathology :

For compound odontoma -Tooth-like structures having internal pulp tissue cores wrapped in dentin shells and enamel covers it partially, encircled by a fibrous capsule similar to the follicle enclosing a typical tooth.

For complex odontoma - These are random aggregates of enamel, enamel matrix, pulp tissue and cementum under the microscope (6).

The etiology of an odontoma is not completely understood but has been attributed to various pathological conditions such as Herman syndrome, Gardner's syndrome and trauma, infection and hereditary anomalies Clinically, there are three forms of odontoma: erupted , extraosseous , intraosseous.

Odontomas were categorised by Goldman and thoma as follows:

1. Compound composite odontoma—composed of primitive teeth.
2.Geminated composite odontoma are made up of two or more well-developed teeth fused together.
3. Complex composite odontoma—calcified structures that have little in common with the usual anatomical allignment of dental tissues.
4. Cystic odontoma—an odontoma that is generally surrounded by fibrous connective tissue in a cyst.
5. Dilated odontoma—significant expansion of the crown or root of the tooth(4).

Complex odontomas seldom result in bone growth, while Complex odontomas frequently induce minor to significant bone enlargement, however, in our instance, we detected buccal cortical plate expansion. Surgical removal of the odontoma(12), as well as the removal of the mechanical impediment, is often the preferred therapy and spontaneous eruption can be expected (4).

Conclusion:-

A survey of the literature showed that there are many different ways to describe odontoma. One of the most prevalent odontogenic tumours is odontoma, which is typically discovered in people in their second decade of life and is identified during routine radiography evaluation . Odontomas do not frequently occur in clinical practice and the fact that they are frequently linked to permanent tooth impaction. Early detection and early care lead to better diagnosis, which raises the likelihood that impacted teeth will be preserved. Two intriguing findings that were different from earlier investigations were revealed by the current study. These are the lower incidence rate of odontomas within the group of odontogenic tumours and the higher incidence of complex odontomas over compound odontomas.

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