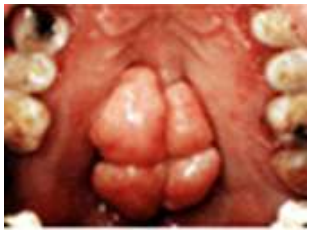
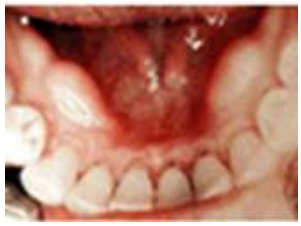
Torus and Exostosis

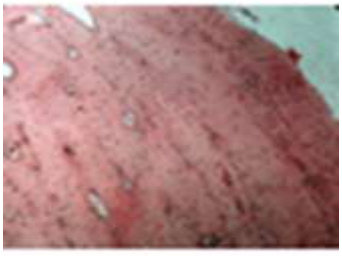
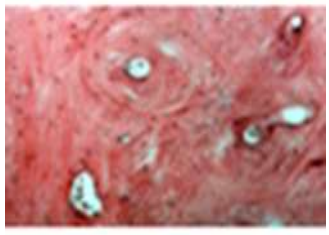
1- Torus : rounded, smooth surfaced, non-neoplastic growth of nodular dense bone found in the midline of the palate & lingual surfaces of the mandible. In the palate called Torus palatinus, & on the lingual surface of the mand. In the cuspid / premolar region, termed Torus mandibularis.

2- Exostosis: An exophytic nodular growth of dense cortical bone commonly located on maxilla or mandible. Usually in bicuspid-molar area.

Histopathology

Each of the lesions is composed of dense cortical bone with a lamellar pattern. The cortical bone is sclerotic & relatively avascular, & the medullary bone is denser than normal with reduced marrow spaces.

Treatment:

Lesions are only treated if the patient encounters problems or a prosthetic appliance is necessary. The treatment is done by surgery

Bone Neoplasm

Primary tumors of bone are uncommon lesions in the jaws. They may arise from any of the number of different cells and tissues present in bone including cells (osteoblasts), cartilage, marrow, vascular and fibrous tissues.

Tumor origin	Benign	Malignant
1- Primary bone tumors		
a- Of bone origin	Osteoma Osteoid osteoma	Osteosarcoma
b- Of chondroid origin	Chondroma	Chondrosarcoma
c- Of marrow origin		Ewings sarcoma Lymphoma Multiple myeloma Leukemia
d- Of fibrous tissue origin	Desmoblastic fibroma	
e- Of Vascular origin	Haemangioma	
2- Metastatic tumors		Lung, adenocarcinoma, ovary, prostate and renal

Osteoma

Osteomas are benign tumors composed of mature compact or cancellous bone. They are essentially restricted to the craniofacial skeleton and rarely if ever, are diagnosed in other bones. The lesion is benign and probably not a true neoplasm. Some cases may represent end stage of other conditions, e.g. fibrous dysplasia or related fibro-osseous lesions. The common palatal and mandibular tori are not considered to represent osteomas, although they are histopathologically identical.

Clinical and Radiographic features

Are most frequently diagnosed in 2nd to 4th decades of life, being uncommon in the 1st decade. Average patient age is from 25 to 35 years. The lesion may arise on the surface of the bone, as a polypoid or sessile mass "periosteal osteoma", or may be located in the medullary bone "endosteal osteoma". The majority of cases are seen in young adults. It is generally asymptomatic, solitary lesions, or it could be an incidental finding in radiographic evaluation of the jaw for other problems.

In the head and neck region, the most common sites of origin are the paranasal sinuses, inner and outer tables of the cranial bones and the jaw bones. Extra skeletal osteoma occur in the buccal mucosa, tongue and nasal cavity; however, these are not true neoplasms and are termed "choristomas"

In the gnathic region, the most common locations are the body of mandible and the condyle. When it located in the body, it occurs mostly to the premolars on the lingual surface.

An osteoma involving mandibular condyle may cause a slowly progressing shift in the patient's occlusion, with deviation of the midline of the chin toward

the unaffected side. Other signs and symptoms include facial swelling, pain, and limited mouth opening.

Radiographically, osteoma typically appears as a dense, opaque, sharply demarcated mass that is usually ranges from 1 to 8.5 cm in diameter.

Histopathology:

Most osteomas are composed of hard, dense, compact lamellar bone, similar to cortical bone, in which haversian systems are present. Osteomas may also be composed predominately of mature lamellar trabecular bone between which fat and marrow elements are found.

Treatment and Prognosis

Lesions are only treated if the patient encounters problems or a prosthetic appliance is necessary. The treatment is done by surgery. Recurrence is quite unusual.

*Gardner Syndrome

Is a rare disorder that is inherited as an autosomal dominant trait. The condition represents spectrum of diseases characterized by adenomatous polyps of the large bowel associated with multiple osteomas of the skull and mandible, multiple keratinous cysts of the skin and soft tissue neoplasms specially fibromatosis. Most of the fibromatoses are intra-abdominal and develop following surgical intervention. In this association, the osteomas ten to be multiple and most frequently arise in the mandible. Osteomas may be the 1st manifestation of these syndromes and occur up to 10 years prior to the discovery of the intestinal polyps that ultimately transform into adenocarcinoma.

Osteoid Osteoma and Osteoblastoma

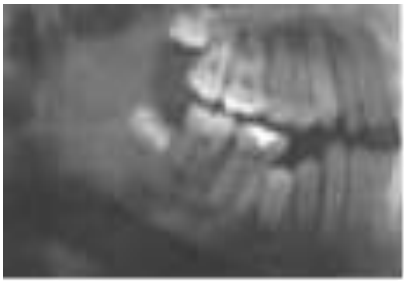
Osteoid osteoma is a benign bone neoplasm that is found more frequently in

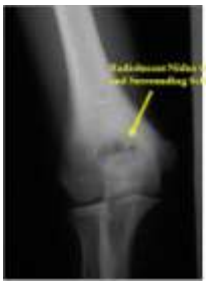
patients between 10 and 30 years of age, and exhibit 2:1 male female ratio. Intense pain is the most prominent symptom, this is often sharply localized and accompanied by clinical or Lab. evidence of infection.

Osteoid osteoma has been reported in every bone but occurs more frequently in femur, tibia, humerus, bones of the hands and feet, vertebrae, and fibula. The tumor is very rare in jaw bone. In the head and neck area, the cervical spine is the most common site.

Radiographically

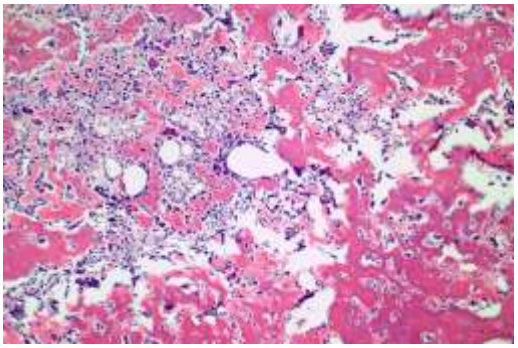
The typical finding is a radiolucent central nidus that is seldom larger than 1.5 cm and that may, or may not, contain a dense center. This nidus is surrounded by a peripheral sclerotic reaction that may extend for several centimeters.





Microscopically

The sharply delineated central nidus is composed of more or less calcified osteoid lined by plump osteoblast and growing within highly vascularized connective tissue, without evidence of inflammation. Surrounding the nidus, there is a variable thick layer of dense bone.



Treatment

The pain associated with this tumor is characteristically more intense at night, relived by nonsteroidal anti-inflammatory drugs such as aspirin, and eliminated by excision of the lesion.

Osteoblastoma (Giant Osteoid Osteoma)

Is a tumor closely related to osteoid osteoma both microscopically and ultrastructurally. It is distinguished from the osteoid osteoma by the larger size of the nidus, the absence or inconspicuousness of a surrounding area of reactive bone formation. Most cases arise in the medulla of the spine or major bone of the lower extremity, although cortical and subperiosteal forms also occur.

Because of significant similarities between osteoblastoma and cementoblastoma some consider them to be identical, with one primary difference, which is fusion of the lesion to a tooth or not.

Clinically:

Rarely affect the jaw bone, with slight mandibular predilection, mostly in the posterior regions. A slight male predominance is noted, and about 85% occur before age 30. Most of the lesions are between 2 to 4 cm but may be larger as

10 cm. Pain is a common presenting feature. Unlike osteoid osteoma, the pain is not relived with aspirin.

Treatment

Complete en block resection is curative if not possible marginal resection, or curettage must be used with 10-20% recurrence rate. Prognosis is good. The lesion rarely recurs or transform into osteosarcoma.

Desmoplastic Fibroma

Is a benign, locally aggressive lesion of bone that can be considered the bony counterpart of fibromatosis. The tumor appears usually in long bones and the pelvis but may occasionally affects the jaws. The cause of desmoplastic fibroma is unknown. The lesion usually exhibits locally aggressive clinical behavior, suggesting a neoplastic process.

Clinically

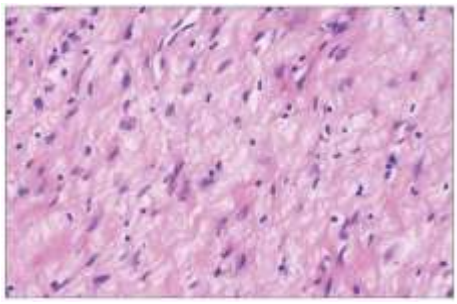
Most cases of desmoplastic fibroma of the jaws have occurred in patients under the age of 30 years, with a mean age of 14 years. The mandible, usually the body ramus region, is affected more often than the maxilla. The lesions are slowly progressive and asymptomatic, eventually causing swelling of the jaw.

Radiographically

May be unilocular or multilocular. The radiographic margins may be either well demarcated or poorly defined. Cortical perforation and root resorption may be seen.

Histopathology

The lesion consists of interlacing bundles and whorled aggregates of densely collagenous tissue that contains uniform spindled and elongated fibroblasts. Some areas may exhibit hypercellularity with plumper fibroblast nuclei. However, cytological atypia and mitotic figures are not found. Bone is not produced by lesional tissue.



Differential Diagnosis

Differential radiographic diagnostic considerations include odontogenic cysts, odontogenic tumors, and nonodontogenic lesions that typically occur in this age group. The presence of aggressive features, such as cortical perforation, or local symptoms might suggest the possibility of a malignancy. In some cases histopathologic distinction between dismoplastic fibroma and well differentiated fibrosarcoma may be difficult. The latter will exhibit grater cellularity, mitotic figures, and nuclear pleomorphism. Some similarities are noted histologically with central odontogenic fibroma, a nonaggressive lesion that contains odontogenic rests.

Treatment

Surgical resection of the lesion is generally reported as the treatment of choice. Curettage alone has been associated with a significant recurrence rate.

Hemangioma of bone

Are rare intraosseous vascular malformations that, when seen in the jaws, can mimic both odontogenic and nonodontogenic lesions. Difficult to control hemorrhage is a notable complication of surgical intervention.

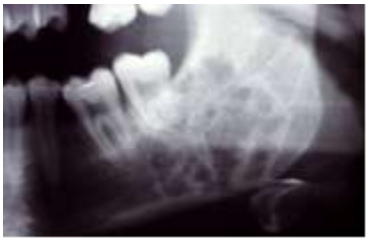
Clinical features

More than half of the central hemangiomas of the jaws occur in the mandible, especially the posterior region. The lesion occurs approximately twice as often in female as in male. The peak age of discovery is the second decade of life.

A firm, slow growing, asymmetric expansion of the mandible or maxilla is the most common patient complaint, spontaneous gingival bleeding around teeth in the area of the hemangioma may also is noted. Paresthesia or pain, as well as vertical mobility of involved teeth, is occasionally evident. Bruits or pulsation of large lesions may be detected with careful auscultation or palpation of the thinned cortical plates.

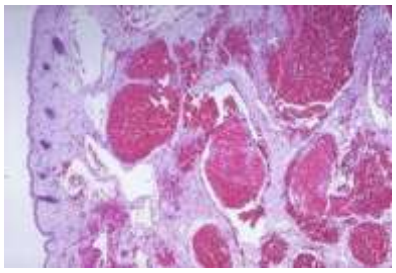
Radiographic findings

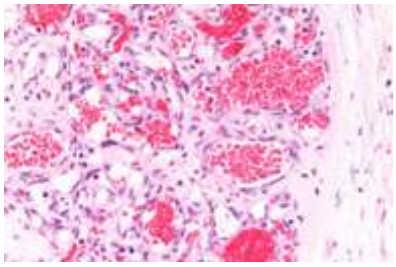
More than half of jaw hemangiomas occur as multilocular radiolucencies that have a characteristic soap bubble appearance. Less commonly, hemangiomas appear as cyst-like radiolucencies. The lesions may produce resorption of the roots of teeth in the area.



Histopathology

Hemangiomas of bone represent proliferation of blood vessels. Most intrabony hemangiomas are of the cavernous type (large-caliber vessels); fewer are of the capillary type (small-caliber vessels).





Differential diagnosis

The differential diagnosis of multilocular hemangiomas of bone includes ameloblastoma, odontogenic myxoma, keratocystic odontogenic tumor, CGCG, and aneurysmal bone cyst. A unilocular lesion may be easily confused with other cystic processes that occur within the jaws. Angiography often provides useful information in establishing the diagnosis of hemangioma.

Treatment and Prognosis

The most significant feature of hemangiomas of bone is that these lesions may prove life threatening if improperly managed. Extraction of teeth in an area involved by a central vascular lesion may result in potentially fatal bleeding.

Methods used in the treatment of hemangioma of bone include surgery, radiation therapy, scleroting agents, cryotherapy, and presurgical emobilization techniques.

Central giant cell granuloma (CGCG)

An intraosseous destructive lesion of the anterior mand. & max., cause movement of the teeth, & produce root resorption; composed of multinucleated giant cell in a background of mononuclear fibrohistocytic cells & RBC.

Clinically:

Mostly occurs between 10-30 years of age. It occurs in the anterior mand. & max, but 75% in the mand. & crossing the midline. Expansion of the buccal & lingual cortical plates is common, & sometime the lesion perforates the cortex & resorption of the root apices.

Radiographically:

Is not specific, but show diffuse radiolucency (relatively large), with resorption of tooth roots

Histopathology:

The lesion is composed of giant cells, usually containing 5-10 nuclei, in a background of mononuclear cells & fibrous tissue.

Treatment:

are successfully treated by curettage, but sometime will recur & require one or more retreatments. Block resection is done in large lesions.