CHAPTER 12

CYSTS OF THE JAWS

ODONTOGENIC CYSTS

Primordial cyst

Dentigerous cyst (follicular)

Radicular cyst (periodontal, dental, periapical, inflammatory, infected)

Lateral periodontal cyst

Residual cyst

Odontogenic keratocyst

Calcifying odontogenic cyst (Gorlin cyst)

NONODONTOGENIC CYSTS

Fissural cysts:

- Globulomaxillary cyst
- Median mandibular cyst (median alveolar)
- Nasopalatine duct cyst (incisive canal cyst, nasopalatine canal cyst)
- Median palatal cyst
- Nasolabial cyst (nasoalveolar)

Other cysts:

- Traumatic bone cyst (simple bone cyst, hemorrhagic cyst, intraosseous hematoma, idiopathic bone cyst, extravasation bone cyst, solitary bone cyst, solitary bone cavity)
- Aneurysmal bone cyst
- Mucous retention cyst of maxillary sinus (sinus mucocele, mucoid retention cyst of maxillary sinus, antral retention cyst)
- Stafne bone cavity (Stafne bone cyst, lingual cortical defect of the mandible, static bone cavity, latent bone cyst, developmental defect cyst)

A cyst is an epithelium-lined sac containing fluid or semisolid material. In the formation of a cyst, the epithelial cells first proliferate and later undergo degeneration and liquefaction. The liquefied material exerts equal pressure on the walls of the cyst from within. This makes the cyst spherical except when adjoining teeth produce unequal resistance to its growth. Cysts grow by expansion and thus displace the adjacent teeth by pressure. When large, they can produce expansion of the cortical bone. On a radiograph, the radiolucency of a cyst is usually bordered by a radiopaque periphery of dense sclerotic (reactive) bone. The radiolucency may be unilocular or multilocular. Cysts are classified as odontogenic cysts, facial cleft cysts (fissural cysts), and other cysts (nonepitheliated bone cysts, mucous retention cysts and developmental defect cysts).

Odontogenic cysts are those which arise from the epithelium associated with the development of teeth. The source of epithelium is from the enamel organ, the reduced enamel epithelium, the cell rests of Malassez or the remnants of the dental lamina.

Facial cleft or fissural cysts are nonodontogenic cysts that arise from the inclusion of epithelial remnants at the lines of fusion of the various embryonic processes that unite to form the mouth and face. The theory that all the fissural cysts are found at the lines of fissural closure has been found by some authors to be inaccurate. Nevertheless, for convenience these fissural cysts are grouped together in the classification.

Cysts are formed either in bone or in soft tissue. When found in bone, they are called central cysts and when found in soft tissue, they are called peripheral cysts.

PRIMORDIAL CYST

A primordial cyst arises from cystic changes in a developing tooth bud before the formation of enamel and dentin matrix. Since the primordial cyst arises from a tooth bud, the tooth will be missing from the dental arch unless the cyst arose from the tooth bud of a supernumerary tooth. The mandibular third and fourth molar regions are the most common locations for a primordial cyst. It is usually found in children and young adults between 10 and 30 years of age. Radiographically, the primordial cyst is a circular radiolucency with a radiopaque border and found at the site where the tooth failed to develop. Many investigators have reported that most primordial cysts have the same characteristic features as those of odontogenic keratocysts. However, until conclusive proof is established, primordial cysts and odontogenic keratocysts are considered separate entities.

Fig. 12-1 Developing tooth follicle of a supernumerary tooth with calcification occurring in the follicle. If calcification had failed to occur, then it would have formed a primordial cyst.

Fig. 12-2 Primordial cyst arising from the tooth bud of the fourth molar.

Fig. 12-3 Developing tooth follicles of the third molars may be misdiagnosed as primordial cysts.

DENTIGEROUS CYST (Follicular cyst)

A dentigerous or follicular cyst is formed from the accumulation of fluid between the reduced enamel epithelium and the completely formed tooth crown or in the layers of the reduced enamel epithelium. The crown projects into the cystic space. The tooth remains unerupted because of the overlying cyst. A dentigerous cyst almost exclusively occurs in the permanent dentition, especially in association with impacted mandibular third molars and with impacted maxillary canines. Sometimes the cyst may be situated on only one surface of the crown. Radiographically, the well-defined radiolucency has a radiopaque border and surrounds the crown of an impacted or unerupted tooth. The dentigerous cyst is found in children and adolescents; the highest incidence is in the second and third decades.

Whenever a radiographic diagnosis of a dentigerous cyst is made, the possibility of it being a mural ameloblastoma (that is, a neoplastic transformation of the epithelial lining of a dentigerous cyst) should also be considered. Other pericoronal radiolucencies that radiographically resemble dentigerous cysts are stated below in the differential diagnosis for consideration. It is, therefore, imperative that the clinician send the enucleated specimen for microscopic examination.

The differential diagnosis of a pericoronal radiolucency includes dentigerous cyst, mural ameloblastoma, odontogenic adenomatoid tumor, odontogenic keratocyst, ameloblastic fibroma, ameloblastoma, and calcifying odontogenic cyst.

Fig. 12-4 Dentigerous cyst (follicular cyst) encircling the crown of the unerupted molar.

Fig. 12-5 Dentigerous cyst encircling the crown of the unerupted mandibular molar.

Fig. 12-6 Dentigerous cyst attached to the mesial side of the right mandibular third molar.

RADICULAR CYST (Periodontal, dental, periapical cysts, inflammatory and infected cysts)

The radicular cyst is the most common cyst and is frequently classified as an inflammatory cyst. It has its origin from the cell rests of Malassez which are present in periodontal and periapical ligament, and in periapical granulomas. The main cause of the cyst is infection from the crown of a carious tooth producing an inflammatory reaction at the tooth apex and forming a granuloma. The liquefaction of the apical granuloma produces a radicular cyst. The pulp of the involved tooth is degenerated and the tooth is nonvital. In a multirooted tooth where only one root is associated with the pulpo-periapical pathosis, the tooth will frequently give a vital reaction. Initially, the patient may have had pain from the pulpitis and this is followed by a period without symptoms when the cyst is formed. Therefore, when radicular cysts are found they are usually painless but may sometimes exhibit mild pain or sensitivity to percussion.

Radiographically, the radiolucency is well-circumscribed at the apex of a tooth and usually has a radiopaque border. The lamina dura and periodontal ligament space are destroyed in the region where the lesion is attached to the root. Although a radicular cyst may be misdiagnosed for a granuloma or an abscess, the specific diagnosis is not that critical because all three can be treated by endodontic therapy or with curettage and apicoectomy. (See also chapter on "Apical Lesions").

Fig. 12-7 Radicular cyst with a prominent radiopaque border at the apices of the first molar. The first molar is nonvital.

Fig. 12-8 A large radicular cyst at the root apices of the first molar. The lesion has a distinct radiopaque border. An apical inflammatory lesion which is of large size and has well-defined margins is most probably a radicular cyst.

LATERAL PERIODONTAL CYST

The lateral periodontal cyst develops in the periodontal ligament adjacent to the lateral surface of the root of an erupted tooth. It is an uncommon cyst, and when found, is often located in the mandibular premolar region which is an area where supernumerary teeth are frequently found. The lateral periodontal cyst is an asymptomatic cyst. The involved teeth are vital unlike a radicular cyst. On a radiograph, the cyst is seen as a well-defined round or ovoid radiolucency with a radiopaque border. If, on microscopic examination, features of an odontogenic keratocyst are observed then the final diagnosis is that of an odontogenic keratocyst.

Fig. 12-9 Lateral periodontal cyst in its characteristic location in the mandibular premolar region. The teeth are vital.

Fig. 12-10 Lateral periodontal cyst which histologically had a keratin lining, that is, an odontogenic keratocyst developed from the lateral periodontal cyst.

RESIDUAL CYST

When a tooth having a radicular cyst at its apex is extracted, the radicular cyst is left behind in bone and is now called a residual cyst. A residual cyst can also rise from remnants of the epithelial rests after the extraction of a tooth. This cyst occurs in older individuals, the average age is 50 years. The radiographic appearance is that of a circular radiolucency surrounded by a radiopaque border and occurring in an edentulous area. A residual cyst can easily be misdiagnosed as a primordial cyst. The latter arises in lieu of a tooth whereas a residual cyst arises in relation to an extracted tooth.

Fig. 12-11 Residual cyst at the apex of the socket of the extracted tooth.

Fig. 12-12 Residual cyst in the maxillary canine region. In the differential diagnosis, the possibility of the lesion being a globulomaxillary cyst should also be considered.

Fig. 12-13 Residual cyst at the apical site of the extracted first premolar. In the differential diagnosis, other odontogenic cysts (besides a residual cyst) should be considered, such as: (1) a primordial cyst developed from either the first premolar or a supernumerary tooth, (2) lateral periodontal cyst, (3) odontogenic keratocyst. A radicular cyst should not be considered because the associated second premolar is vital and has an intact periodontal space.

ODONTOGENIC KERATOCYST

An odontogenic keratocyst has a keratinized epithelial lining and an extremely high rate of recurrence. It occurs over a wide range of ages: from 5 to 85 years, the peak incidence being the second and third decades. On a radiograph, a keratocyst may assume the appearance of any odontogenic cyst, for example, primordial, dentigerous, radicular, lateral periodontal or residual cyst. It may produce cortical expansion of bone. The most common site of occurrence is the mandibular third molar and ramus areas. The lesion appears as an unilocular or multilocular radiolucency with a thin radiopaque border of reactive bone. Odontogenic keratocyst shows a striking tendency to recur after enucleation.

An odontogenic keratocyst must be differentiated microscopically and radiographically from other cysts and tumors. If it occurs in the inter-radicular region, it must be differentiated from a primordial cyst, lateral periodontal cyst, calcifying odontogenic cyst and residual cyst. If it occurs pericoronally, it must be differentiated from other pericoronal radiolucencies like dentigerous cyst, mural ameloblastoma, adenomatoid odontogenic tumor, ameloblastic fibroma and calcifying odontogenic cyst. If the odontogenic keratocyst occurs as multilocular radiolucencies it must be differentiated from other multilocular lesions like ameloblastoma, aneurysmal bone cyst, central hemangioma, giant cell lesion of hyperparathyroidism, odontogenic myxoma, central giant cell granuloma, fibrous dysplasia and metastatic tumors of the jaws.

Basal cell nevus syndrome: The occurrence of multiple keratocysts is a characteristic finding in basal cell nevus syndrome. The syndrome, also known as, nevoid basal cell carcinoma syndrome, consists of a number of abnormalities, including multiple basal cell

nevi, multiple jaw cysts, bifid ribs, and intracranial calcifications. The nevoid basal cell carcinomas are usually multiple and involve the face, neck, back, and thorax, often in areas not exposed to the sun. Other anomalies have also been reported: calcification of falx cerebri, mild mandibular prognathism, ocular hypertelorism (eyes widely separated), pits on the palms and soles, characteristic frontal and temporoparietal bossing, and various skeletal anomalies. No single patient has all the listed abnormalities. Basal cell nevus syndrome appears early in life, between the ages of 5 and 30 years.

Fig. 12-14 An odontogenic keratocyst having a multilocular appearance. It should be differentiated from other multilocular lesions.

Fig. 12-15 An odontogenic keratocyst in the left body and ramus of the mandible and appearing as a large solitary radiolucency.

Fig. 12-16 An odontogenic keratocyst having a radiographic appearance similar to that of a dentigerous cyst.

Fig. 12-17 Multiple odontogenic keratocysts associated with basal cell nevus syndrome. Basal cell nevus syndrome consists of a number of abnormalities, including multiple nevoid basal cell carcinomas, bifid ribs and multiple jaw cysts.

Fig. 12-18A Intracranial calcifications in basal cell nevus syndrome.

Fig. 12-18B Calcification of falx cerebri in basal cell nevus syndrome. (Courtesy Dr. Jim Weir).

Fig. 12-19 Calcification of falx cerebri in basal cell nevus syndrome.

CALCIFYING ODONTOGENIC CYST (Gorlin cyst, Keratinizing and calcifying odontogenic cyst)

Calcifying (epithelial) odontogenic cyst, also called Gorlin cyst, is a rare, slow-growing, benign, tumor-like cyst. It occupies a position between a cyst and an odontogenic tumor since it has some characteristics of a solid neoplasm (continued growth) and some features of a cyst. It should not be confused with the calcifying epithelial odontogenic tumor (Pindborg tumor). This cyst is found in females before the age of 40 years and in males after the age of 40 years. It is equally distributed in the maxilla and the mandible. Most of the calcifying odontogenic cysts are found anterior to the first mandibular molar. On a radiograph, the calcifying odontogenic cyst assumes the appearance of any odontogenic cyst. The radiolucency may be unilocular or multilocular. It is not unusual to find this cyst as a pericoronal radiolucency to an unerupted tooth. Initially, the calcified material may be visible microscopically only, in which case, it is completely radiolucent. In other cases, the calcified component may be large enough to occupy the whole lesion. The calcifying odontogenic cyst has been associated clinically with odontomas and ameloblastic fibro-odontomas.

Fig. 12-20 Calcifying epithelial odontogenic cyst, also known as Gorlin cyst, showing radiographic evidence of calcified material in the radiolucency.

Fig. 12-21 Occlusal technique projection of a calcifying epithelial odontogenic cyst showing expansion of the buccal cortical plate. Some of the teeth are displaced by the lesion.

Fig. 12-22 Calcifying epithelial odontogenic cyst. This radiolucency does not show any radiographic evidence of calcified material. Microscopically, calcific areas were present in the lesion.

GLOBULOMAXILLARY CYST

The globulomaxillary cyst is a fissural cyst, originating from epithelial inclusions trapped at the line of fusion between the globular portion of the median nasal process and the maxillary process. This cyst is considered by most pathologists to be not of developmental but of odontogenic origin, that is, it is currently considered to be one of the odontogenic cysts. On a radiograph, the globulomaxillary cyst is seen as an unilocular inverted pear-shaped (sometimes circular-shaped) radiolucency located between the roots of the maxillary lateral incisor and canine. It causes divergence of the roots of these teeth. The lateral incisor and canine are vital, and have intact lamina dura and periodontal ligament space. In edentulous cases, the radiolucent lesion is circular in shape instead of the inverted pear shape.

Fig. 12-23 Globulomaxillary cyst showing separation of roots of the maxillary lateral incisor and canine. The adjoining teeth (lateral and canine) are vital. Notice the characteristic inverted pear-shaped appearance.

Fig. 12-24 Globulomaxillary cyst showing the characteristic inverted pear-shaped appearance. The adjoining teeth are vital.

MEDIAN MANDIBULAR CYST (Median alveolar cyst)

Median mandibular cyst is considered to be a very rare cyst. It occurs in the midline of the mandible between the mandibular central incisors from the epithelium trapped in the line of fusion of the paired mandibular processes. Some pathologists believe that it is not of developmental origin but is probably either a primordial cyst from a supernumerary tooth, a lateral periodontal cyst, or a radicular cyst. The cyst is asymptomatic and the associated teeth react normally to pulp vitality tests.

Fig. 12-25 Median mandibular cyst is a very rare cyst. The radiolucency (arrows) between the two central incisors is a median mandibular cyst.

NASOPALATINE DUCT CYST (Incisive canal cyst, Nasopalatine canal cyst)

The nasopalatine duct cyst, also known as incisive canal cyst, is the most common nonodontogenic developmental cyst. It is derived from the embryonic epithelial remnants of the nasopalatine duct which is enclosed within the incisive canal and normally disappears before birth. On a radiograph, the nasopalatine duct cyst is often misdiagnosed for a large incisive foramen. The cyst is located anteriorly in the midline between or above the roots of the maxillary central incisors. The image of the radiopaque anterior nasal spine may in turn be superimposed over the dark cystic cavity, giving it a heart-shaped appearance. Other appearances of the cyst may be round or ovoid. The nasopalatine duct cyst is asymptomatic and usually does not cause any separation or divergence of the roots. The central incisors are vital, and have intact periodontal ligament space and lamina dura. Radiopaque stones or concrements are sometimes formed in the incisive canal. The nasopalatine duct cyst rarely becomes large enough to destroy bone, therefore, no surgical treatment is necessary for an asymptomatic small cyst. If the cyst shows signs of infection or shows progressive enlargement, then surgical intervention may be warranted.

Fig. 12-26 Circular-shaped nasopalatine duct cyst (incisive canal cyst) located in the region of the maxillary central incisors. The central incisors are vital and have intact periodontal ligament space and lamina dura.

Fig. 12-27 Heart-shaped nasopalatine duct cyst. The projection of the anterior nasal spine gives this cyst the characteristic heart-shaped appearance.

Fig. 12-28 Nasopalatine duct cyst having the characteristic heart-shaped appearance.

Fig. 12-29 Circular-shaped nasopalatine duct cyst in an edentulous patient.

MEDIAN PALATAL CYST

Current views hold that a median palatal cyst is not a separate cyst. A growing trend is to report all maxillary midline developmental cysts as nasopalatine duct cysts, thereby encompassing the so-called median palatal cyst. Many clinicians are of the opinion that the median palatal cyst represents a more posterior presentation of the nasopalatine duct cyst rather than the cystic degeneration of epithelial rests at the line of fusion of the palatine processes of the maxilla.

Fig. 12-30 Median palatal cyst. Many believe that the median palatal cyst represents a more posterior extension of the nasopalatine duct cyst, hence there is no separate lesion as a median palatine cyst; in reality it is a nasopalatine duct cyst.

In this patient, the four incisors were treated endodontically in the mistaken diagnosis that the radiolucency was an inflammatory (pulpo-periapical) lesion.

NASOLABIAL CYST (Nasoalveolar cyst)

Nasolabial cyst, also known as nasoalveolar cyst, is a soft tissue fissural cyst that causes a swelling in the mucolabial fold below the ala of the nose superior to the roots of the maxillary lateral incisor and canine. The cyst may produce elevation of the ala of the nose on that side. The origin of the cyst is from the epithelium entrapped at the fusion of the globular, lateral nasal, and maxillary processes. Nasolabial cyst is not visible on a radiograph because it is a soft tissue cyst. If a radiopaque dye is injected into the cyst, it is clearly visible on a radiograph.

Fig. 12-31 Nasolabial (nasoalveolar) cyst is a soft tissue cyst which is made visible on the radiograph by injecting it with a radiopaque dye.

TRAUMATIC BONE CYST (Simple bone cyst, Hemorrhagic cyst, Intraosseous hematoma, Idiopathic bone cyst, Extravasation bone cyst, Solitary bone cyst)

Traumatic bone cyst, also known as simple bone cyst, is not classified as a true cyst because the lesion lacks an epithelial lining. The pathogenesis of this pseudocyst is not known. Many pathologists believe the lesion is a sequela of trauma. Trauma produces hemorrhage within the medullary spaces of bone. In a normal case, the blood clot (hematoma) gets organized to form connective tissue and then new bone. However, if the blood clot for some reason fails to organize, the clot degenerates and forms an empty cavity or a cavity sparsely filled with some serosanguineous fluid and blood clots. It is then called a traumatic bone cyst. Most patients are unable to recall any past history of a traumatic injury to the jaws.

Traumatic bone cyst is a painless lesion having no signs and symptoms, and normally does not produce cortical bone expansion. The lesion shows a strong predilection for adolescents and individuals under 40 years of age. The most frequent site of occurrence is the mandibular posterior region and to a lesser extent the mandibular anterior region. Another relatively frequent site is the humerus and other long bones. The involved teeth are vital. The traumatic bone cyst is usually discovered incidentally on radiographic examination. The lesion appears as a well-delineated radiolucency with a radiopaque border. When the radiolucency is adjacent to the roots of teeth, it has a scalloped appearance extending between the roots. The teeth are not displaced, and the lamina dura and periodontal ligament space appear intact. If the lesion occurs in areas not associated with the roots of teeth, the well-defined radiolucency may be round or ovoid.

A definitive diagnosis of a traumatic bone cyst can be made only after surgical exploration. However, before surgically entering such a defect, aspiration from the cavity is necessary to rule out the possibility of the lesion being a vascular tumor. After the cyst has been surgically entered, manipulation of the walls of the cavity will induce bleeding into the lesion. If the cyst is then closed, the blood clot heals and later forms bone. Since the teeth in the involved area are vital, they should not be sacrificed.

Fig. 12-32 Traumatic bone cyst, also known as simple bone cyst, exhibiting the characteristic scalloping between the roots of the mandibular anterior teeth.

Fig. 12-33 Traumatic bone cyst (simple bone cyst) exhibiting the characteristic scalloping in the mandibular premolar and first molar region. The second mandibular premolar was treated endodontically in the mistaken diagnosis that the large radiolucency was an inflammatory apical lesion.

Fig. 12-34 Traumatic bone cyst exhibiting a well-defined radiopaque border.

ANEURYSMAL BONE CYST

Aneurysmal bone cyst is not classified as a true bony cyst because the lesion does not have an epithelial lining. It can occur in almost any bone of the skeleton but is more frequent in the spinal column and in the long bones. This abnormality occurs in adolescents and young adults. The cause of this pseudocyst is unknown but some clinicians believe it to be associated with trauma; although most patients fail to give such a history of trauma. Current opinion is that it is an exaggerated localized proliferative response of vascular tissue. It is similar to a central giant cell granuloma and contains giant cells which represent an attempt at repair of a hematoma of bone. The lesion consists of fibrous connective tissue stroma containing many cavernous or sinusoidal blood-filled spaces. The rapid growth of the lesion produces expansion of the cortical plates but does not destroy them. The tender painful swelling produces a marked deformity. The swelling is non-pulsatile and on auscultation, no bruit is heard. If the lesion is an aneurysmal bone cyst, blood can be aspirated with a syringe. The lesion may hemorrhage profusely at the time of surgery but may not create any problem because the blood is not under a great degree of pressure. On a radiograph, the lesion appears as a well-circumscribed unilocular or multilocular cystic lesion causing expansion of cortical plates and resulting in a ballooning or "blow-out" appearance. The radiolucency is traversed by thin septa, giving it a soap bubble appearance. The teeth are vital and may sometimes be displaced with or without concomitant external root resorption.

Fig. 12-35 Aneurysmal bone cyst in the anterior region of the mandible exhibiting internal septa.

Fig. 12-36 Aneurysmal bone cyst producing expansion of the cortical plates.

MUCOUS RETENTION CYST OF MAXILLARY SINUS (Sinus mucocele, Mucoid retention cyst of maxillary sinus, Antral retention cyst)

Mucous retention cyst of maxillary sinus is a well-delineated, radiopaque, dome-shaped or hemi-spherical cyst with the antral wall as its base. Most of the mucous retention cysts are located on the floor of the sinus while some are attached to other walls of the maxillary sinus. Although the terms sinus mucous retention cyst and sinus mucocele are sometimes used synonymously, the two lesions are different in etiology and biologic behavior. A sinus retention cyst is a self-limiting nondestructive lesion whereas a sinus mucocele is a destructive lesion which encroaches the adjoining bony structures and landmarks.

The mucous retention cyst represents an accumulation of fluid in the submucosa of the sinus and produces the characteristic radiographic appearance (dome-shaped). Although the cyst arises from soft tissue (sinus mucosa), it is clearly visible on a radiograph because of the radiolucency of the sinus. The lesion may be inflammatory in origin. The fluid appears to be an inflammatory exudate that may on occasion represent extension of adjacent dental infection for which the patient should be evaluated. It has been suggested that allergies and sinusitis probably play a role in their formation since their peak incidence correlates with times of the year when such conditions have a high incidence. Mucous retention cysts are usually asymptomatic but on rare occasions may cause some pain and tenderness in the teeth and face over the sinus. A few of the cysts may persist without change for a long time but a majority disappear spontaneously due to rupture; some may reappear. Those that are of moderate size and asymptomatic can be left untreated. (See also chapter on "Maxillary Sinus")

Fig. 12-37 Mucous retention cyst seen as a dome-shaped soft tissue radiopacity on the floor of the maxillary sinus.

Fig. 12-38 Mucous retention cyst on the floor of the maxillary sinus.

STAFNE BONE CAVITY (Stafne bone cyst, Lingual cortical defect of the mandible, Static bone cyst, Latent bone cyst, Developmental defect cyst)

Stafne bone cavity, also known as static bone cyst, is a developmental defect of the mandible in the form of a lingual depression into which lies an aberrant lobe of the submandibular salivary gland. The developmental defect is entirely asymptomatic and does not change in size, hence the term "static" bone cavity. Usually, this defect is unilateral, although on rare occasions bilateral defects have been reported. Stafne bone cavity cannot be palpated manually; it is discovered incidentally during radiographic examination. On a radiograph, the defect is seen in its characteristic location near the angle of the mandible below the mandibular canal. A similar depression related to the sublingual salivary gland is sometimes found in the anterior region. The Stafne bone cavity appears as a well-defined ovoid or round radiolucency with a wide radiopaque border. To differentiate a Stafne bone cavity from other lesions, sialography of the submandibular gland is performed by injecting a radiopaque dye into the Wharton's duct. If the dye gets carried through the radiolucency, the diagnosis of Stafne bone cavity is confirmed.

Fig. 12-39 Stafne bone cavity is a well-defined cyst-like radiolucency with a radiopaque border. Its characteristic location is near the angle of the mandible, inferior to the mandibular canal.

Fig. 12-40 Stafne bone cavity near the angle of the mandible, inferior to the mandibular canal.

Fig. 12-41 Stafne bone cavity located near the angle of the mandible in an edentulous jaw.

Fig. 12-42 Although rare, Stafne bone cavity may be found in the anterior mandibular region. This depression or cavity is related to the sublingual salivary gland.

NORMAL ANATOMY MISDIAGNOSED AS CYSTS

Fig. 12-43 Osteoporotic bone marrow defect in the edentulous region. It is an area of hematopoietic or fatty marrow and is seen usually in sites of abnormal healing following extraction, trauma or local inflammation.

Fig. 12-44 Maxillary sinus may be misdiagnosed as a cyst. On a radiograph of the maxillary canine region, the maxillary sinus may be misinterpreted as a radicular cyst. The periodontal ligament space is normal and the tooth is vital.

Fig. 12-45 Maxillary sinus may be misdiagnosed as a cyst. The crescent shape of the sinus floor and the two septa give the illusion of a cyst.

Fig. 12-46 Illusion of a cyst. The radiolucency between the radiopaque external and internal oblique lines produces the illusion of a cyst.

DIFFERENTIAL DIAGNOSIS

Fig. 12-47 Differential diagnosis of an odontogenic cyst in the edentulous site distal to the mandibular premolar: 1) a primordial cyst developed from either a permanent or a supernumerary tooth, 2) residual cyst developed after the extraction of the permanent tooth, 3) lateral periodontal cyst, 4) odontogenic keratocyst. The lesion is not a radicular cyst because the associated premolar is vital and has an intact periodontal space.

Fig. 12-48 Differential diagnosis of a pericoronal radiolucency associated with an anterior tooth. The radiolucency around the crown of the mandibular impacted canine may be: 1) dentigerous cyst, 2) mural ameloblastoma, 3) odontogenic adenomatoid tumor, 4) odontogenic keratocyst, 5) ameloblastic fibroma, 6) calcifying epithelial odontogenic cyst (Gorlin cyst).

Fig. 12-49 Differential diagnosis of a pericoronal radiolucency associated with a posterior tooth. The radiolucency around the crown of the displaced mandibular impacted third molar (X) produces an expansion of the cortical bone. The radiolucency may be: 1) dentigerous cyst, 2) mural ameloblastoma, 3) ameloblastoma, 4) odontogenic keratocyst, 5) ameloblastic fibroma, 6) calcifying epithelial odontogenic tumor (Pindborg tumor).

Fig. 12-50 Differential diagnosis of a solitary cyst-like radiolucency between the maxillary lateral incisor and canine: 1) globulomaxillary cyst, 2) radicular cyst, 3) adenomatoid odontogenic tumor, 3) odontogenic keratocyst, 4) palatal cleft.