The case material herein presented constitutes the second in a set of Tumor Loan collections prepared and distributed by the Department of Pathology and Oncology of the University of Kansas Medical School aided by a Cancer Control Grant (CS-9209) from the National Cancer Institute of the National Institutes of Health, United States Department of Health, Education and Welfare.
Case 1

Contributed by: Angelo Lapi, M.D.
St. Mary's Hospital
Kansas City, Missouri

This 50 year old white male first saw his doctor in December 1947 at which time he complained of a stopped-up nose, difficulty in breathing through his nose, soreness of the facial bones, chronic post-nasal drainage and headaches. He was examined and found to have bilateral nasal polyps. General physical examination was negative and there was no history of allergy. Routine laboratory studies showed no abnormalities. X-ray report of the skull and sinuses stated that the frontal and sphenoid cells seemed larger than usually observed. There was marked thickening of the lining membrane of both antral sinuses and of the mucosa of the nares. In the floor of the left antrum there was a large polyp or mucocele. The ethmoid, frontal and sphenoid cells were of usual dimension. He was advised to have surgery at that time but refused.

He returned in March of 1954 complaining of the same symptoms and examination at that time revealed both nasal passages to be filled with polyps. He entered the hospital and on March 21, 1954 a submucous resection, bilateral radical antrotomy, bilateral intra-nasal ethmoidectomy, and bilateral removal of nasal polyps were performed. The latter were found throughout the nasal sinuses as well as the nasal passages. He had some postoperative bleeding requiring packing but his subsequent course has been uneventful.

The specimen consisted of numerous fragments of bone, mucous membrane and irregular somewhat papillary ridged and arborescent polypoid masses of soft, rubbery, gray-pink tissue. The latter measured up to 1.5 cm. in greatest diameter and showed smooth intact surfaces covered by thick mucous membrane. Their cut and excision surfaces were relatively homogeneous and fleshy.
Case 2

Contributed by: V. Murgolo, M.D.
Washington, D.C.

White female, age 34 years, who for about eight years had been suffering from an increasingly severe blocking of the right side of the nose. During the summer of 1954 a simple right maxillary antrotomy was performed. No polyp or tumor was found in the sinuses. She had suffered headaches from the sinusitis. She had scarlatina at age 14. There was no history of allergies. Peripheral blood showed 3% eosinophils, white blood count 5,900.

The right nasal passage was packed with tumor, and the middle turbinate was removed with a polypoid mass that was somewhat firmer than the usual nasal polyp.
Case 3

Contributed by: Dr. Gretchen B. Squire
Pensacola, Florida

White male, age 75 years.

In June, 1950 there was a soft rubbery mass measuring 5 x 3 x 3 cm. removed from the right nasal cavity and diagnosed benign mucous secreting nasal polyp. The present specimen was removed in August, 1954. X-rays at this time showed destruction of the bone into the right maxillary sinus, of the orbital floor and of a portion of the zygoma. Patient refused the radical treatment advised and was suffering from marked local symptoms. He was given a total 2550 R, which apparently has not arrested the progress.

Submitting diagnosis of this material was mixed tumor of the nose.
A 77 year old white female reported to her local medical doctor for the first time in March, 1951, complaining of a "cold" and of coughing up small amounts of bright, red blood. She considered her general health excellent and there had been no weight loss. A systemic review was negative. Physical examination revealed no abnormalities except for evidences of mild arteriosclerotic cardiovascular disease, arthritis and varicosities of the legs. Mild hearing loss was discovered in the left ear and a small, sessile, mulberry-like mass was found in the left nasopharynx obscuring the left Eustachian orifice which was thought to be blocked by the lesion. The tumor was removed by a snare in April, 1951, and no complications accompanied the procedure.

The gross specimen consisted of a gray-pink tumor nodule measuring 18x13x10 mm., in greatest diameter. Large amounts of mucus were adherent. The specimen was sectioned with soft resistance disclosing hemorrhagic mucoid cut surfaces on which there were several small homogeneous areas of gray cellular tissue.

Follow-up: The patient suffered no untoward symptoms as a result of surgery. She has remained in good general condition with due allowance for the infirmities of age. There have been several recurrences of her nasopharyngeal lesion, however, each in the region of the left fossa of Rosenmuller. Snare removal of these growths was accomplished in December 1952, April 1953 and January 1955. The gross and microscopic features in each instance were identical to those described at the time of the first operation.
A 58 year old, married, white male with a chief complaint of hoarseness of 3 months' duration.

History of present illness: Three months before admission to the hospital the patient developed an upper respiratory infection complicated by hoarseness. The latter symptom increased in severity until he completely lost his voice. About 2 months before admission to the hospital he noted the onset of weakness ascribed to difficulty in swallowing and inability to eat solid foods in adequate amounts. Two months before admission the patient noted throbbing in the right ear and some swelling, pain and soreness in the right side of his neck. At about this time he began coughing fairly large quantities of thick mucoid material and became too weak to perform his usual farm labor. Shortly before admission to the hospital the patient for the first time coughed up bloody sputum. Focal therapy of an unknown nature accompanied by penicillin administered by his local medical doctor resulted in slight improvement in some of the symptoms, particularly the throbbing in the ear and pain in the right side of the neck. This, however, was quite transitory.

Physical examination upon admission to the hospital was not remarkable except for the following findings: 1. obvious loss of weight, stated by the patient to be in the vicinity of 40 pounds; 2. enlarged, tender submandibular and anterior cervical lymph nodes on the right side of the neck. The larynx was injected and edematous in appearance. Ulcerations were present superior to the cord.

Laboratory examination was essentially normal. Skin tests for tuberculosis, blastomyosisis, and coccidioidomycosis were negative. Skin tests for histoplasmosis were positive. Bronchoscopy and laryngoscopy were performed.
A fungating tumor mass was noted in the hypopharynx which apparently arose from and obscured the epiglottis. The lesion was polypoid and attached by a broad sessile base. It was highly friable but did not bleed excessively. Several fragments were removed without immediate complication. The larynx appeared inflamed and edematous. On biopsy it showed only acute and chronic laryngitis with ulceration.

The specimen obtained from the epiglottis consisted of several fragments of tissue, the largest measuring 3.5 x 2.5 x 1.5 cm. The surfaces were lobular and covered with intact epithelium. The material was sectioned with fibrous resistance disclosing grey soft cellular cut surfaces.

Following the bronchoscopy the patient developed laryngeal edema and a tracheostomy was performed. Seven days after the biopsy the patient was discharged and given x-ray therapy as an outpatient. Seven months later the patient expired of unknown causes. Necropsy was not performed.
Case 6

Contributed by: University of Kansas Medical Center
Kansas City, Kansas

A 37 year old white female was admitted to the hospital with a chief complaint of a mass over the left temporomandibular joint of 7 years' duration.

The patient first noted the insidious onset of swelling in the region of her left temporomandibular joint approximately seven years prior to admission and shortly following extraction of her upper teeth. She assumed it to be a result of the surgical procedure and paid no further notice. Approximately 5 or 6 years before admission she noticed the mass was increasing in size very slowly. It was completely symptomless until 6 or 7 months before admission when it became tender on slight pressure. Because of continued slight distress caused by the lesion she ultimately sought hospital care.

Physical examination at the time of admission revealed an essentially normal female except for a 2 x 3 x 1 cm. mass over the left temporomandibular joint. It was movable and slightly tender. No lymph nodes were felt in the preauricular or anterior cervical region. No significant abnormalities were discovered by routine laboratory tests. No x-rays were taken.

At surgery the mass was seen to be in the anterior projection of the left parotid along the duct. It was underneath the zygoma and was not fixed. The facial nerve was not generally involved, however, small branches of the nerve to the lower eye lid were encompassed by the tumor mass. The tumor was also seen to be adherent to the muscle fascia. The parotid gland bearing the tumor except for the retromandibular portion, was dissected from the 7th nerve. It was felt that small atrophic fragments of parotid gland were left, but that the entire tumor was removed.

The specimen consisted of several pieces of tissue. The tumor bearing portion was roughly triangular and measured 4 x 2.5 x .8 cm. A portion of Stenson's duct was present. The tissue was composed of small yellow lobules of
firm tissue, and within this was a firm white, homogenous partially encapsulated nodule measuring 1.7 x 1 x .5 cm. It was cut with fibrous resistance and was gritty.

Postoperatively the patient noted sagging of the left side of the face as was predicted by the surgeon. This had not improved upon discharge, 4 days after surgery. The patient was followed for one year during which no recurrence was noted. She was then lost from observation.
This 50-year-old colored female was admitted to the hospital complaining of "something like a boil" in her palate for approximately one year.

About one year prior to admission the patient noted the insidious onset of a slightly painful nodule on her soft palate which slowly grew in size. She frequently expressed bloody material from the lesion. At one time she was told by a dentist that it was a continuation of her gum. Approximately one month before her admission to the hospital the lesion spontaneously drained a fairly large amount of blood. Following this she noted some stuffiness in the left ear. She had remained well otherwise.

Physical examination at the time of admission was normal except for an 8x6 cm. red, hemorrhagic lesion on the right side of the soft palate. Laboratory studies including \textsuperscript{131}I uptake were within normal limits. X-rays of the skull including stereograms in Water's position, laterals and a chest plate were normal.

At surgery an encapsulated tumor was found. This was relatively discrete, easily shelled out and apparently did not invade the surrounding soft tissues.

The specimens received weighed 3.5 grams. One fragment was flat, irregular and measured 2.3x1x.2 cm. It contained a number of pale, round nodules in the center surrounded by a darker purple material. The other fragment was ovoid, purple and felt cystic. A number of tiny nodules are visible on its cut surface.

This patient is currently being seen in the medical clinic for mild hypertension. One year following surgery there was complete local healing with no evidence of local recurrence or distant metastases.
A 63 year old white female developed an irregular tumor in the soft tissues of the hard palate just to one side of the median line. At operation this proved to be a racemose lesion about 3 cm. long about 1 cm. broad. The tumor elements were of fairly firm fibrous character, but pale colored and lobulated. The lobules had formed pockets in the bony portion of the palate. Sometime after the first operation a somewhat similar tumor developed on the other side of the median line. This was also removed and the site was treated with Xradiation but the patient died within a year from metastases in the neck and mediastinum.
Case 9

Contributed by: Harry Kaplan, M.D.
Washington, D.C.

A 40 year old white female developed pain in the anterior mandible and the four lower incisors were extracted. Some material was scraped from the sockets by a dentist but was not submitted for examination. The patient continued to have pain and a lump developed on the lingual gum. About five months after the extraction the submitting surgeon removed this tumor and curetted the mandible. She was then given an intensive x-ray treatment to the mandible after the remaining teeth in the lower jaw had been extracted. Treatment was completed in August 1951 and a year later there was no evidence of tumor, the soft tissues had recovered from irradiation effect and she was fitted for a denture. There has been no recurrence since.

The specimen consisted of irregular fragments of generally friable tissue with several more fibrous strands included. There was no gross evidence of bone.
This 37 year old white male sought medical treatment for a nodule on the roof of his mouth for the first time in March of 1951. He had noted a painless swelling in this region for the previous 18 months but it had caused him no concern until approximately 2 months before when it began to enlarge progressively. The lesion did not interfere with mastication or swallowing and he had noted no discharge or hemorrhage from it. Examination revealed a well developed, well nourished, young white male. Systematic examination revealed no abnormalities. A round, sessile, dome-shaped lesion was observed on the mid-apical region of the hard palate. The overlying mucosa was intact but appeared thin and blanched. Routine laboratory studies including serologic tests for syphilis were negative. No x-ray examinations were conducted. There was no surrounding erythema. The lesion was removed without difficulty under local anesthesia. No attachment to the underlying periosteum or involvement of bone was found.

The gross specimen was a firm, discoid, dome-shaped mass of tissue measuring 6x5x1 mm. in greatest diameter. One broad surface was covered with smooth, intact epithelium. The excisional aspect was dark red and fibrous. The tissue was rubbery to palpation and was sectioned with fibrous resistance. The cut surfaces were pink-gray and fleshy.

Follow-up: The wound healed relatively promptly by granulation and without complication. After four years the patient remains in excellent health and there have been no recurrences. A basal cell carcinoma was removed from the patient's face approximately one year ago.
Case 11

Contributed by: Ernest Stark, M.D.
Burlington, Vermont

A white female, age 73 years, who during an estimated three to four months had developed a bulky mass in the right nasal cavity that apparently arose from the ethmoid sinus. The orifice of the latter was somewhat eroded and enlarged. The tumor was freely movable and apparently had not invaded the nasal walls. The mass was resected through the nares early in 1954. The tumor promptly recurred and a more radical removal was done through an external opening through the maxillary sinus. The tumor had extended into the antrum and filled the nasal cavity and the ethmoid sinuses. The patient died postoperatively due to intracranial hemorrhage. At autopsy there was no evidence of penetration into the cranial cavity by the tumor, and the nasal sinuses appeared free of tumor. There was, however, considerable tumor in the nasopharynx. There were no metastases.

Grossly, the tumor was more meaty than the usual nasal polyp.
Case 12

Contributed by: J.H. Hill, M.D.
Trinity Lutheran Hospital
Kansas City, Missouri

This white infant weighing 2500 grams was born of a 20 year old primigravida following an uneventful pregnancy and labor. Physical examination at birth was entirely negative except for a tumor-like swelling on the left side of the bridge of the nose. The latter was not widened. The mass was 12 mm. across its base, dome-shaped and covered by intact skin. It did not increase in size but on the sixth day of life it was removed by sharp dissection under local anesthesia. The base of the lesion overlay the periosteum but the underlying bone was free of defects.

The specimen measured 16x6 mm. in greatest diameter, was dome-shaped and covered in part by unaltered epidermis. It was sectioned without increased resistance disclosing light gray gelatinous cut surfaces in the center of which there was a light brown area of softening.

Follow-up: The wound healed normally but one year later a small nodule of growing tissue was discovered on the lateral side of the operative scar. Within six weeks this grew to a size of 1.5x2 cm. It was irregular in contour, soft, non-tender and spongy. General physical examination was negative and there were no abnormalities of the head or eyes. Roentgenograms revealed no defects in the nasal or orbital bones or in the cribiform plate. The lesion was excised and was found to extend through the wall of the nose down to the mucous membrane. Its gross and histologic features were identical to those noted at the first operation. The wound healed by primary intent and there has been no known recurrence.
Case 13

Contributed by: Suburban Hospital
Bethesda, Maryland

A 54 year old colored female who began having pain in her nose about 3 years ago and for the last several months the nose began to enlarge. She spent much of the three years in bed because it was the only way she could get relief from the pain. She finally applied for medical attention after she began having hemorrhage from the nose. The nose was greatly distorted by a fleshy firm mass, tender on deep pressure. There was an area of ulceration and bleeding at the tip of the nose. The external nose was removed in one mass and it was found that the nasal bones were entirely eroded but that the tumor did not invade the paranasal sinuses. The septum was eroded about half way back to the pharynx. The surgeon was not sure whether the cribiform plate was involved or not. There has been no recurrence in the intervening 2-1/2 years.
An 83 year old white male was admitted to the hospital complaining of a growth in the left ear for approximately one year.

History of present illness: Approximately one year ago (on July 4, 1952) the patient was struck on the upper portion of the left ear by a fragment from an exploding fireworks (cherry bomb). Immediately following this there was free bleeding from the left ear and a small laceration in the ear was noted. The bleeding stopped but healing did not occur. About one week later a nodule appeared. This nodule has continued to grow and has formed a large mass at the top of the left ear. The growth bleeds easily and is painful when touched.

Physical examination disclosed a well developed, well nourished, vigorous, white male in no distress. Systematic physical examination negative. No unusual laboratory findings. Serologic test for syphilis negative. An approximately 3 cm., hemorrhagic, polypoid mass involved the posterosuperior aspect of the helix of the left ear. The mass bled readily and there were numerous superficial ulcerations. The lesion with the surrounding skin and substance of the ear, including cartilage, were excised on June 6, 1953. The wound healed well by primary closure and the patient was discharged from the hospital one week after excision of the mass.

The external appearance of the specimen was as described above. It was sectioned with soft resistance disclosing mottled yellow-brown cut surfaces. The lesion penetrated down to the cartilage on either side of the helix but did not destroy it.

Follow-up: The patient was seen on February 18, 1955 (one year and 6 months after excision). He is in good health. There is no evidence of local recurrence. The operative wound is well healed. Cervical lymph nodes are not enlarged. X-ray of the lungs is negative for metastatic neoplasm.
This 55 year old white housewife was admitted to the hospital complaining of hearing loss, tinnitus and chronic purulent discharge from her left ear of 10 years duration.

The onset of the above complaints had been insidious and they had not been attended by vertigo. She had consulted several physicians regarding her condition and had received many and varied local treatments to her left ear. Several months prior to admission her left parotid gland became enlarged and, at approximately the same time, she noted the onset of hoarseness.

Physical examination disclosed a well developed, well nourished white female in no distress. B. P. 150/100. There was almost complete hearing loss on the left side. A polypoid mass was seen to protrude into the left auditory canal through an inferior marginal perforation of the tympanic membrane. This was excised and proved to be granulation tissue on histologic study. A bulging red purple lobulated mass approximately 1 cm. in diameter was found in the left tonsillar fossa apparently emanating from the orifice of the left Eustachian canal. The lesion was not ulcerated and no exudate was observed. Abductor paralysis of the left vocal cord was discovered but no local lesions were seen on laryngoscopy. The left parotid gland was diffusely enlarged but nontender. The thyroid gland was enlarged and nodular. The remainder of the physical examination was negative.

Routine laboratory studies were negative. A skull x-ray (not available) is said to have shown only osteosclerosis of the left mastoid bone. Shortly after admission a biopsy of the lesion in the left tonsillar fossa was obtained with some difficulty due to extensive hemorrhage.
Case 15—Page 2

Grossly the material consisted of 3 small pieces of tissue not exceeding 7 x 5 x 4 mm. They were irregular and papillary in outline and of gray-pink color. All were sectioned with soft resistance disclosing red spongy cut surfaces which appeared slightly lobular.

Follow-up: The patient was given 3000 R X radiation in divided doses directed into the left tonsillar area and the middle ear. Her symptoms and physical findings changed but little although a mass of polypoid material reappeared through the perforated drum head in the left auditory canal. Two months after initial admission a radical left mastoidectomy uncovered a tumor in the middle ear which infiltrated into the external auditory canal and throughout the mastoid cells and extended into the Eustachian canal. No invasion of bone was found although considerable thinning and erosion was discovered. The gross and microscopic features of this lesion were identical to those of the biopsy from the tonsillar fossa. Some of the slide sets contain material from this second operation. Following surgery there was some improvement in the patient's hoarseness. She is convalescing uneventfully at the present time.
Case 16

Contributed by: J.H. Hill, M.D.
Trinity Lutheran Hospital
Kansas City, Missouri

This 24 year old married white male was seen by a physician 5 days prior to hospital admission because of difficulty in swallowing, obstruction of breathing and pain in the left side of his throat. There was a history of a recent sore throat with subsequent severe obstructive signs. Examination revealed a large hemorrhagic mass filling the left hypopharynx. The mass was explored with a gloved finger and by pressure was opened with bloody purulent drainage transmitting a foul odor to the dressings. The obstructive tumor persisted and the patient was brought to the hospital where a portion of tumor was removed. The date of admission was April 5, 1949 and he was dismissed from the hospital on April 7, 1949.

Pre-operative diagnosis: Tumor of the left pyriform sinus.

Postoperative diagnosis: Same.

Through a laryngoscope under local anesthesia a large blood filled tumor mass was removed piece meal from the left pyriform sinus area. Growth bled freely and caused obstruction to swallowing and breathing.

X-ray film of the chest had the following reports: No pulmonary disease or evidence of primary or metastatic or neoplastic changes.

Material consists of 7 ragged fragments of friable tissue the exterior covered in part by pale, grayish, granular zone, the raw surfaces having a dark red hemorrhagic appearance. Gross sectioning reveals the material cutting easily, the cut surface being hemorrhagic with irregular areas of light grayish mottling. In some of the pieces of tissue the tissue is quite cellular in appearance. The largest portion of tissue is 2.5x2x1.5 cm. in size.
Laboratory: Wassermann and Kahn were negative. Blood count 4.96 million red cells, 97% hemoglobin, 9,500 white cells, 80% polys, 17% lymphocytes, 2% eosinophils, 1% basophils. Clotting time 2 minutes, bleeding time 1 minute and 33 seconds.

Follow-up: The patient returned to his home in South Carolina but failed to improve. Little is known of his subsequent clinical course except that he died of his disease two years later.

Addendum

Information, received belatedly, from the Veterans Administration Hospital, Atlanta, Georgia indicated that the patient had been under observation there from 1949 till his death. A total of 7500 R Xradiation in divided doses directed to the right and left neck yielded an excellent response. Approximately 17 months later in November, 1950, however, a recurrent mass appeared in the left thyroid region and extrinsic to the larynx. X-ray therapy was ineffective and tracheotomy and gastrostomy were required. A radical excision was attempted in July 1951 but the lesion could not be removed. The patient expired in August 1951 from a massive hemorrhage from the left carotid. Whether or not there were distant metastases is not stated. No information concerning an autopsy is available.
Case 17

Contributed by: Dr. S. S. Hall
Clarksburg, W. Va.

A 72 year old white male who had had nasal obstruction for several months. He had nasal polyps (?) removed one year before but at the time he was seen by Dr. Hall the obstruction was principally on the left side and there was x-ray evidence of involvement of both maxillary sinuses. The tumor was removed, but it recurred, involving the floor of the nose during the following two years. Again more tumor was removed by Caldwell-Luc operation when it was found to involve the left sinus. Two years following this last operation he was reported as alive and well.
A 12 year old white male was admitted to the hospital because of swelling of his face and recurrent epistaxis.

Approximately 8 months before admission to the hospital the patient, while playing baseball, received a number of blows on the face. Shortly thereafter while in a "clod" fight he received additional similar injury. Following these two episodes the right side of his face was slightly swollen. Approximately 7 months before admission slight swelling of the right jaw at about the level of the mouth was seen. Five months before admission the patient had 3 or 4 rather severe spontaneous episodes of bleeding from the nose. Four months before admission the child was seen by a physician who discovered a tumor in the right nasal cavity continuous with swelling of the face. Three months before admission this tumor was removed and x-ray therapy was administered twice a week for about 2 months. The lesion recurred and continued to grow in spite of irradiation.

Physical examination showed the presence of a firm mass in the right cheek not attached to the skin. It measured approximately 3x4 cm. and was adherent to the right maxillary bone. The right nasal passage was obstructed by a mass extending across to the nasal septum in the region of the middle turbinate. The remainder of the physical examination was negative and routine laboratory findings were within normal limits. X-ray examination was interpreted as a "pathological process involving the right antrum producing marked opacity. The antral wall is still intact. Frontal cells and ethmoids on both sides are clouded."
Case 18--Page 2

Approximately one week after admission under general anesthesia the right zygoma was exposed. A firm massive neoplasm of irregular outline was found beneath the zygoma extending into the maxillary sinus, filling the right nasal cavity and extending upward to involve the sphenoid and ethmoid sinuses on this side. An extensive resection of the lesion and all involved structures was conducted. Severe hemorrhage was encountered throughout the procedure. The patient developed shock and died on the operating table. Permission for autopsy was not granted.

The specimen consisted of numerous fragments of lobulated tumor tissue measuring up to 6 x 3 x 12 cm. in diameter. These were gray in color and the consistency varied from soft to moderately firm. Enmeshed within the tumor were numerous fragments of bone and teeth.
Case 19

Contributed by: University of Kansas Medical Center
Kansas City, Kansas

A 49 year old colored housewife was admitted to the hospital complaining of a "growth" about the mouth of one year's duration. She first noted a swelling on the roof of her mouth approximately one year before. It had not enlarged but was intermittently tender and occasionally discharged pus especially during the early phases of its development. For the six months prior to admission it was asymptomatic.

Past history is negative except for hypertension of 2 years duration.

The physical examination was negative except for the hypertension and for an irregular mass 1 cm. in diameter located on the right midlateral aspect of the hard palate extending to involve the maxilla in the region of the tuberosity in the cuspid area. The mass was covered by smooth intact mucous membrane. Routine laboratory studies were negative. An x-ray suggested a lobulated cystic degenerative process measuring approximately 3 x ½ cm. involving the right maxilla extending from the molar to the incisor area. Calcification was noted in the center of one of the lobulations.

Under pentothal anesthesia the alveolar ridge of the right maxilla was exposed. The bone was resected and access gained to a cystic cavity. This was enucleated and portions of necrotic membrane stripped from the jaw.

Grossly the specimen consists of a semifixed mass, a number of irregular pieces of fibrous tissue and bone. The largest measured 2 cm. in greatest dimension. On cut section some of the fragments appeared white, cellular and somewhat soft. Cut section of other fragments reveal them to be fibrous in character and cellular. Postoperatively the patient did quite well and was discharged.
Four years after removal of this tumor the patient was admitted to the hospital and died. An autopsy revealed thrombosis of the left posterior cerebral artery with infarct of the left occipital pole of the inferior surface of the temporal lobe of the brain. Examination of the site of previous surgery showed no recurrence of the tumor. No distant metastases of the tumor was noted at autopsy.
Case 20

Contributed by: Dr. Monks
Washington, D.C.

A 24 year old white female who for several years had had a gradually increasing swelling of the anterior portion of the maxilla and when seen in April, 1954 the labial plate between the two upper cuspid teeth was markedly bulged, greatly deforming the face. The incisors were reduced to stubs. X-rays showed a large radiolucence of this portion of the maxilla. At operation a large thick-walled cyst was removed. The face has resumed its normal contour and there has been no recurrence since.
Case 21

Contributed by: Dr. Monks
Washington, D.C.

A 1½ year old boy developed a tumor between the upper right lateral incisor and cuspid tooth and in the course of several months it grew to be cherry size. It was not particularly painful but interfered with mastication, and there was occasional slight bleeding. X-ray examination showed no involvement of the alveolar bone.
A 21 year old colored female developed a growth in the buccal surface of the upper right molar area of the gums and in three months it had reached the size where it was interfering with mastication. It became ulcerated and bled considerably. At operation it was found that the tumor was pedunculated rather than diffuse and that the pedicle was situated between the upper right second and third molars. Her RBC's were 3,550,000; hemoglobin 11 grams, 71%; WBC's 10,600, 59 segs, 10 stabs, 2 eos. and 29 lymphs. A day or so following the operation it was noted that the upper right second and third molar were quite loose and they were to be extracted at a later date.
Case 23

Contributed by: St. Thomas Hospital
Nashville, Tenn.

White female, age 50 years, of Irish extraction and has lived in this country all her life. Over a period of years there was gradually increasing difficulty in breathing because of nasal obstruction due to an extensive thickening of the mucosa. Portions of the lesion had been removed on several occasions but it finally spread to the pharyngeal wall and a large mass of moderately firm hemorrhagic gray tissue weighing 16 grams was removed. It filled the entire nasopharynx. Blood serology was negative. On examination 7 years later the nasal passages were again completely obstructed and the maxillary sinuses were also involved. A radical removal of the tissue was performed. Present status is not known.
TUMORS OF THE NOSE, MOUTH, PHARYNX
AND ALLIED STRUCTURES

Moderator's Diagnoses

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TUMORS OF THE NOSE, MOUTH, PHARYNX AND ALLIED STRUCTURES

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Please mail one copy of your diagnoses to:

Dr. Frank A. Mantz, Jr.
Department of Pathology and Oncology
Kansas University Medical Center
Kansas City 12, Kansas
DIAGNOSES AND ABSTRACT OF DISCUSSION

SEMINAR ON TUMORS OF THE NOSE, MOUTH, PHARYNX AND ALLIED STRUCTURES

UNIVERSITY OF KANSAS MEDICAL CENTER

KANSAS CITY, KANSAS

March 26, 1955

Sponsored by

The South Central Region

College of American Pathologists

and

The Kansas Society of Pathologists

The Missouri Society of Pathologists

Host Organization

The Kansas City Pathological Society

Aided by

The Missouri Division of the American Cancer Society

The Kansas Division of the American Cancer Society

The case material herein presented constitutes the second in a set of Tumor Loan collections prepared and distributed by the Department of Pathology and Oncology of the University of Kansas Medical School aided by a Cancer Control Grant (CS-9209) from the National Cancer Institute of the National Institutes of Health, United States Department of Health, Education and Welfare.
Case 1
Moderator's Diagnosis: - Allergic Nasal Polyp with squamous metaplasia.

The obviously polypoid nature of the lesion is readily evident in the microscopic section. Noteworthy is a mild degree of squamous metaplasia which does not necessarily denote malignant potential. The hyaline thickening basement membrane and edema of the stroma are outstanding and the inclusion of many eosinophiles in the chronic inflammatory exudate permits classification of the lesion as allergic in Colonel Ash's opinion.

Case 2
Moderator's Diagnosis: - Adenomatous Inflammatory Nasal Polyp.

In contradistinction to case 1, this polypoid lesion displays a marked increase in glandularity in addition to thickening of the basement membrane and stromal edema. The blood vessel walls in the deep erectile tissue are thickened. The inflammatory reaction is composed predominantly of lymphocytes and plasma cells. A few secondary lymphoid nodules are seen. Very few polys are encountered. It is this type of hypertrophic polypoid lesion of the nasal mucosa which most commonly accompanies chronic nasopharyngitis and sinusitis.
Case 3

Moderator's Diagnosis:—Squamous Cell Carcinoma of Nose Arising in Epithelial Papilloma.

This lesion represents a truly neoplastic papillary or polypoid tumor of the nasopharynx in contrast to cases 1 and 2. Photomicrographs of two biopsies obtained four and two years previously disclosed the lesion, initially to be covered with transitional and acanthotic squamous epithelium. The subsequent biopsy displayed similar changes plus severe dyskeratosis of a type frequently designated as carcinoma-in-situ. It should be stated that the moderator disdains this diagnosis and prefers the designation of dyskeratotic nasal polyp. Slide #3 is representative of the final specimen and reveals frankly invasive squamous cell carcinoma of characteristic morphology.

Epithelial papillomas always are difficult to evaluate. Both Drs. Fred Stewart and R.A. Willis consider such lesions as uniformly malignant. Colonel Ash, however, sighted 2 or 3 instances of this tumor followed for as long as 10 years during which there were several recurrences without the development of invasive tendencies. These tumors can be distinguished histologically from the ordinary mucous polyp by the excessive thickness of the epithelium which forms a solid convoluted layer on the surface. They may be of either squamous or pseudostratified columnar (transitional cell) type reflecting their Schneiderian membrane origin. They are usually found in the anterior inferior portions of the nasal passages, rarely in the accessory sinuses.
Case 4

Moderator’s Diagnosis:— Papillary Adenocarcinoma of Nasopharynx.

This polypoid mucous secreting lesion shows a typical histologic picture of papillary fronds containing a central wisp of connective tissue and capillaries covered with a layer of well differentiated tall columnar secretory type epithelium. It is one of a group of neoplasms which may develop from the Schneiderian membrane. This lesion is unusual in its position since such tumors are usually found within the nares proper, anterior to the choanae. It will be recalled, however, that a narrow strip of Schneiderian mucosa extends downward on either side of the pharynx toward the fossa of Rosenmuller. The Schneiderian mucosa is a specialized and modified ectodermal derivative with pseudostratified, tall columnar, secretory and ciliated characteristics. It is not surprising therefore that epithelial tumors of the nasal mucosa may be of squamous, glandular or cylindrical (transitional) cell type. This is in contrast to the mucosal neoplasms derived from the pharynx posterior to the choanae which is lined by modified entodermal epithelium of stratified squamous variety and rich in lymphoid tissue. It is from this posterior region that the more anaplastic squamous cell carcinomas and lympho-epithelioma type tumors are derived. With the exception of squamous cell carcinomas of the maxillary sinus, nasal carcinomas metastasize rather late in their course in contrast to the pharyngeal lesions which oft times make themselves known first by their local lymph node metastases and extension into the cranial vault. The tumor seen in this case is exceptionally well differentiated and it is somewhat questionable whether or not it is truly malignant and capable of metastasizing.
Case 5

Moderator's Diagnosis: Poorly Differentiated Squamous Cell Carcinoma of Epiglottis or Hypopharynx.

The specimen is that of a highly anaplastic growth composed of columns and cords of squamous type cells frequently palisading at their periphery. Keratinization is not common but is quite distinct in some areas with abortive attempts at pearl formation. The tumor has invaded to and partially destroyed the epiglottic cartilage.

The diagnostic possibilities here include basaloid carcinoma, mucoepidermoid carcinoma and anaplastic squamous cell carcinoma. The palisading at the periphery of cell clusters is somewhat suggestive of the basaloid pattern but the bizarre appearance of the majority of the cells and their ability to keratinize would place the lesion in the category of a squamous cell growth. The absence of mucous production and gland formation in the lesion fairly well excludes a mucoepidermoid tumor. As in this case, carcinomas of the epiglottis tend to be highly superficial, spread locally and metastasize late in their course. Squamous cell carcinomas are the most common type seen in this region.
Case 6

Moderator's Diagnosis: - Basaloid adenocystic type Mixed Tumor of Parotid Gland. CYLINDROMA

In this case we see an infiltrating epithelial neoplasm composed of small fairly uniform, cuboidal, hyperchromatic cells, resembling basal epithelium of the epidermis, and arranged in rather characteristic rounded and ovoid clusters. Many such clusters contain gland like or cyst like spaces, often containing mucus, and creating an appearance almost identical with the adenocystic type basal cell carcinoma of skin. The moderator feels these lesions belong in the category of mixed tumors but are often erroneously classified as cylindromas. The latter tumor is far more malignant in its characteristics, tending to infiltrate widely in tooth paste-like masses along tissue spaces and to metastasize early. Unlike the adenocystic basal cell carcinomas of skin, such tumors in the salivary glands may metastasize although this frequently occurs late in their course. Local invasion, however, is very frequent, accounting for a high incidence of recurrences at the operative site. Perineural infiltration frequently is an outstanding feature.
Case 7  ACINIC CELl CARCINOMA

Moderator's Diagnosis: - Mixed Tumor of Palatine Salivary Gland.

Here again we see a basaloid adenocystic neoplasm of salivary gland origin. In this instance actual osteoid formation is in progress within the stroma showing the relationship of such lesions to the ordinary mixed tumor. Pseudocysts containing mucoid material are likewise apparent. Ordinarily in the basaloid type tumors the reaction in mesenchymal ground substance is poor in comparison to that seen in more classical mixed tumors. Hyaline material may be found in some but actual cartilagenous or osteoid metaplasia is rare. Salivary gland tumors occurring on the palate are usually found lateral to the midline and show a far greater tendency toward malignant behavior with metastases than those observed elsewhere.
Case 8

Moderator's Diagnosis: - Metastatic Reticulum Cell Sarcoma of Palate.

In this case we find a neoplasm of rather characteristic morphology. It is composed of rounded ovoid and fusiform cells in monotonous arrangement and infiltrating widely the connective tissue stroma. An occasional mucous gland duct is incorporated within the lesion. The cell nuclei are large, hyperchromatic and frequently contain prominent nucleoli. Reniform and rounded forms are seen and there is conspicuous distortion of the cytoplasmic nuclear ratio. The morphology is typical of a reticulum cell sarcoma. Reticulum stains and even the H & E preparations suggest rich reticulum formation and many of the cells appear to hang from reticulum fibers in "aspen leaf" arrangement.

The moderator included this case to emphasize the fact that the mouth is a fairly frequent site of tumor metastases; a fact which the oral surgeon and pathologist should be aware of constantly. The tumor in this case was not primary to the palate and ample clinical confirmation existed in the form of lymphadenopathy and splenomegaly. The jaws are particularly prone to be the site of metastatic tumors and the finding of a loose tooth without history of trauma or physiological cause should always excite suspicion. Leukemias show a pronounced predisposition toward oral leukemic proliferation.
Case 9

Moderator's Diagnosis: - Inflammatory Osteoid Pseudotumor of Mandible.

The lesion consists of irregular masses of fusiform and spindle shaped cells totally lacking in organoid arrangement. Although there is moderate hyperchromatism and scant mitotic activity, the process is lacking in significant cellular variation and atypia. There is excessive vascularity with islands of collagen deposition and osteoid formation. Although the moderator originally considered this lesion to be malignant and of reticulum cell type, the subsequent course has proven it to be benign. It is highly unlikely that the treatment rendered would have yielded such a complete cure had malignancy been present.

The process here may well have been initiated by dental infection with the establishment of a periostitis. The new bone formation in this lesion presumably reflects periosteal involvement. The inflammatory process apparently was of low grade and manifest chiefly by its proliferative response. Such lesions are known to present intra-orally more frequently than beneath the skin. The chronic forms are very difficult to differentiate clinically from neoplasms. It must be presumed here that the irradiation was sterilizing as far as the infecting agent is concerned as well as inhibitory to the further proliferation of fibroblasts. The necessity for tooth extraction prior to extensive irradiation of the jaw in order to minimize irradiation osteitis was emphasized by the moderator.
Moderator's Diagnosis: - Neurilemmoma of Palate.

The sections show moderate acanthosis of the surface epithelium. Immediately beneath there is a neoplasm composed, for the most part of fibroblasts like cells in whorled arrangement and in discrete nodules. The tumor cells are large, elongate and wavey having prominent ovoid nuclei. The latter are found frequently in palisade arrangement and often surround masses of collagen to form structures resembling Wagner-Meisner corpuscles. These are often designated as Verocay bodies. The tumor has the distinctive wavy and whorled pattern suggestive of neural origin. The areas of marked palisading with Verocay body formation is referred to as Antoni type A tissue whereas the more loose and less organoid pattern observed elsewhere is often designated Antoni type B tissue.

Tumors of this classical type are thought to be of nerve sheath (Schwann cell) origin based largely on the observations of Masson (1) and the tissue culture studies of Murray, Stout and Bradley (2). The moderator has some reservations concerning the ability of the histologist to differentiate so sharply between Schwann cells and fibroblasts derived from nerve sheaths.

Case 11

Moderator's Diagnosis: - Peripheral Ganglioneuroma (neurilemmoma), intranasal.

In this lesion we again find a tumor composed of fairly uniform fusiform and spindle shaped cells with large ovoid nuclei. The arrangement is fairly organoid and in the pattern of interlacing bundles. The neoplasm likewise is considered of neural origin and is composed for the most part of so called Antoni type B tissue. The pattern is that of a peripheral ganglioneuroma as described by Kuhlenbeck and Haymaker(1) who believe such lesions are derived from undifferentiated cells of neural crest origin and its derivatives. These tumors are capable of differentiating into ganglion cells, capsule cells, Schwann cells and chromaffin cells. In this instance the differentiation has apparently followed the capsule and Schwannian cell pattern since no neuronal elements are seen. The moderator apparently interprets all neurilemmomas as of this neuroectodermal derivation, the neurofibromas being of mesodermal origin. This lesion is far more active than the preceding, containing scattered mitotic figures. The moderator, however, does not consider it malignant in the sense of metastatic capabilities.

Case 12

Moderator's Diagnosis: - Congenital Extrusion of Cerebral Tissue of Glabella.
(Nasal Glioma.)

We deal in this case with a lesion which borders between heterotopia and true neoplasia. The section shows an irregular, non encapsulated, tumor like lesion immediately beneath the epidermis and liberally intermingled with connective tissue of the corium. It is composed exclusively of glial tissue, with astrocytes by far the predominating elements. Ganglion cells and neurites could not be found although such are described frequently in lesions of this type. Despite resemblance to astrocytomas within the central nervous system, nasal gliomas in general are benign.

These tumors most usually are noted at birth or shortly thereafter. They apparently represent foci of extruded or heterotopic brain tissue which some workers think is derived from olfactory bulb. They are located subcutaneously, chiefly in the region of the glabella, where they produce a characteristic deformity of the bridge of the nose and widening of the interocular space. They may occur intranasally beneath the mucosa of the dome of the nasal cavity. For the most part such tumors are entirely isolated from the intracranial cavity although rare cases of communication predisposing to meningitis are described. Despite their clinical resemblance to meningo-encephaloceles, no meningeal tissue is found within them. Nasal gliomas are usually cured by wide excision although recurrences such as in this case, are well recognized.
Case 13

Moderator's Diagnosis: - Subcutaneous Meningiocyctoma of nose from congenitally ectopic nidus.

This tumor, closely related to case 12, is composed of large, ovoid, fusiform and hydropic cells arranged in the classical whorled pattern of a meningioma. Although infiltrative in its growth, this tumor shows no histologic characteristics of malignancy.

Like the nasal glioma, the meningioma appears to be an extrusion or heterotopia of intracranial tissue presumably representing a developmental defect. In the sphere of the rhinologist they may be found extracranially in the external nares or beneath the mucosa covering the cribiform plate. Recurrences are unusual following adequate excision.

The moderator offered the following classification which he has found useful in the diagnosis of neural tumors of the nasopharynx and upper respiratory tract.

1. Peripheral.
   a. Neurofibroma: - Diffuse nonencapsulated tumors which often are multiple.
   b. Neurilemmoma (the gangliioneuroma of Kuhlenbeck and Haymaker). Usually encapsulated tumors showing variable degrees of palisading and containing Antoni types A and B tissue in variable amounts.

2. Central.
   b. Olfactory esthesioneuroepitheliomas: - Composed of an admixture of ganglion cell elements of variable maturity. Located predominantly in apex of nasal vault and nasopharynx. Closely resemble neuroblastomas of adrenal. May be,
locally invasive or widely metastatic. Thought to be derived from neural rests in olfactory placode or possibly remnants of Jacobsen's organ. The sphenopalative ganglion has been mentioned as well as a possible source of this lesion.

c. Congenital extrusions of brain tissue:– May be composed of glia cells, ganglion cells, meningotheelium or admixtures thereof.


2. Intranasally–usually in region of cribriform plate.
Moderator's Diagnosis: "Cherry Bomb Mesenchymoma".

This is a highly undifferentiated malignant neoplasm exceedingly difficult to classify. The pleomorphic fibrous mesenchymal background suggests a differential diagnosis which includes rhabdomyosarcoma, liposarcoma and melanoma. It is significant that melanomas, particularly of the bulbar conjunctiva (70-80%), frequently appear to follow trauma. The total absence of pigment here and its apparent dissociation from epidermis renders melanoma somewhat less likely. A liposarcoma can be eliminated fairly well by the absence of the finely divided fatty cytoplasmic globules in appropriate stains so characteristic of this tumor. The absence of striations with phosphotungstic acid hematoxylin stain, prevents the diagnosis of rhabdomyosarcoma although this possibility was most appealing to the moderator. He would consider anaplastic undifferentiated sarcoma as a good conservative classification and has chosen the term "mesenchymoma" to denote this reversion to primitive tissue.

The moderator pointed out the histological similarity of this lesion to certain bizarre adenomas derived from apocrine glands. These lesions, found commonly in cats and dogs, are uniformly benign despite their histologic appearance. They do occur in the ear where they are derived from the ceruminous glands. In such instances they are almost uniformly confined to the external auditory canals. The position of the tumor in this case would exclude an apocrine adenoma.
Case 15

Moderator's Diagnosis: Tumor of the Glomus Jugulare of the Temporal Bone (non-chromaffin paraganglioma).

In this neoplasm we find a striking organoid pattern of large rounded to fusiform cells arranged in irregular rounded and ovoid clusters. These have a relative abundance of clear or finely granular eosinophilic cytoplasm with large central vesicular nuclei. Mitotic activity is un conspicuous. The cell clusters are closely arranged and frequently are separated only by tiny capillaries. Although in occasional fields tumor cells almost appear to line capillary spaces, this is artifactual since a single layer of endothelium uniformly separates tumor from vascular lumens. In areas a relatively dense stromal reaction has been induced and rarely smooth muscle cells can be found within the lesion. Bodian stains have shown tiny nerve filaments within the growth.

This tumor is histologically identical to those derived from the cutaneous glomera, the carotid and aortic bodies. It is derived from a paraganglion of the glossopharyngeal nerve located in the jugular bulb and usually presents as an expanding neoplasm in the middle ear or ear canal. The clinical manifestations are characteristically those of deafness, a sensation of pulsation and consciousness of a swishing sound in the ear synchronous with the heart beat. Although rarely yielding metastases, these neoplasms frequently result in death because of their propensity to erode into the cranial vault and their marked predisposition to hemorrhage. The latter renders their surgical removal exceedingly difficult.

Although the function of the glomus jugulare is unknown, its anatomical similarity to the carotid and aortic bodies has led most investigators to believe it to be a chemoreceptor organ. These structures contain no chromaffin tissue and do not secrete adrenaline. Their tumors are frequently referred to as non-chromaffin paragangliomas. Stout has shown the principle tumor cell to be identical to the pericyte of Zimmerman, a specialized contractile endothelial cell of capillary walls.
Case 16

Moderator's Diagnosis:—Synovioma (with some reservation) of hypopharynx.

This obviously malignant tumor presents most of the morphologic features of a synovioma. It consists predominantly of spindle shaped fibroblast-like cells growing in broad sheets and masses. There are numerous cleft-like spaces and papillations, lined or covered by cuboidal or columnar epithelial-like cells. No secretion is apparent and it is unfortunate that no mucicarmine stains were performed.

This tumor is similar if not identical to lesions described in the head and neck and classified as synoviomas. The moderator, however, was reluctant to accept without reservations, the diagnosis of such a neoplasm in this area where synovial tissue is not ordinarily thought to exist. The epithelial cells may represent invaded esophageal mucosa and glands. The possibility of a carcinosarcoma was suggested.

Case 17

Moderator's Diagnosis: Extramedullary Plasmocytoma of Nares.

This tumor is composed of irregular masses and cords of ovoid cells having all the characteristics of plasma cells. A scant delicate reticulum is seen within the cell aggregates but a moderately dense stromal reaction can be found in the intervening tissue. Although slightly anaplastic, the eccentric nucleus and clumping of chromatin is typical of plasma cells. A few binucleate and trimucleate cells are noted.

This is a true neoplasm, seen more frequently in male adults, which sometimes is distinguished with difficulty from chronic inflammatory lesions in which plasma cells predominate. Median focal nasal gangrene, a chronic progressive, inflammatory disease similar to noma, is one in which differentiation may be extremely difficult.

Primary plasmocytomas of soft tissues are found almost exclusively in the upper respiratory tract and alimentary passages. They are to be distinguished from plasma cell myeloma of bone which may metastasize to these regions. There are those who feel that a relationship exists between the two lesions. Plasmocytomas frequently present as polypoid submucosal masses which may be completely benign in their course, may infiltrate widely and destroy broad areas of tissue or, rarely, may be frankly malignant with multiple metastases to lymph nodes and bone. It is difficult to evaluate the subsequent course of such a lesion on the basis of its histologic appearance.
Case 18

Moderator's Diagnosis: Juvenile Fibroma of nasopharynx. Angiofibroma of Nasopharynx. Sclerosing hemangioma.

In this tumor we see a massive overgrowth of relatively cellular fibrous tissue which is highly vascular throughout. It contains numerous venous sinuses, capillary spaces, arterioles and veins to create the characteristic appearance of a juvenile fibroma or angiofibroma of the nasopharynx. The surface epithelium has undergone moderate squamous metaplasia. As might be anticipated, there is evidence of remote hemorrhage in the form of hemosiderin deposits.

These lesions are found predominantly in prepubertal males and some authorities hesitate to ever make the diagnosis in females. They arise usually from the posterior nasopharyngeal roof as an enlarging polypoid mass which often fills the airway and may protrude through one or the other naris or extend into the oropharynx. Local infiltration likewise is not uncommon with involvement of the paranasal sinuses and often deformity of the face. Because of their great vascularity, these tumors are the source of frequent hemorrhage rendering surgical extirpation hazardous. They tend to regress and disappear during early adult life although this is not invariable. Juvenile fibromas almost always remain localized to the nasopharynx although rare instances of metastases are recorded. The predominance of incidence in males has suggested an hormonal factor in their pathogenesis.
Case 19

Moderator's Diagnosis:—Mixed tumor of Accessory Maxillary Salivary Gland.

The lesion illustrated by this case is that of a relatively cellular mixed tumor of salivary gland origin and serves to indicate that the accessory salivary glands occurring in the tongue, gums, palate, and pharynx can give rise to neoplasms identical to those seen commonly in the submaxillary, parotid and sublingual glands. The tumor here is moderately cellular in most areas and is composed of polyhedral, spindle shaped and stellate elements. These occur in irregular loosely arranged masses sometimes separated by loose reticular or dense hyaline stroma. The latter incorporates occasional gland like or tubular structures. The reticular stroma in areas suggests that seen in ameloblastomas, a lesion which must be considered in the differential diagnosis of the case. No squamoid changes columnar or basaloid epithelial differentiation is seen however upon which such a diagnosis can be made. Osteoid metaplasia is present in some areas to suggest the possibility of an ossifying fibroma. The presence of frank epithelium in the lesion, of course, excludes this possibility as does the age of the patient and the absence of the typical fish hook bone spicules.
Case 20

Moderator's Diagnosis: - Radicular Cyst of Maxilla.

This lesion had an exceedingly dense capsule inclosing a cyst which was lined in part with swollen squamous epithelium and in part with granulation tissue. An abundant chronic inflammatory infiltrate within which plasma cells are conspicuous is noted within the wall. The histologic appearance is that of a radicular cyst, a non-neoplastic lesion closely related to dental infection. These cysts frequently have as their precursor dental caries, pulpitis and the formation of apical abscesses and dental granulomas. The latter frequently incorporate fragments of the debris of Malassez, the epithelial remnant of the primordial dental invagination. Epithelial stimulation and proliferation follows, resulting in epithelialization of the inflammatory process and ultimate cyst formation. It should be remembered that the debris of Malassez frequently remains in situ following dental extraction so that radicular cysts may still form although no tooth remains.

The moderator presented the following working classification of dental cysts using the term in the sense of the radiolucent lesions as seen by X-ray.

I. Odontogenic cysts: - Derived from primordial dental epithelium or its remnants.
   a. Follicular: - Cysts developing from the primordial follicle (tooth germ) or remnants thereof.

   1. Simple Follicular or Primordial cyst: - The tooth is unerupted or fails to form. The primordial enamel organ undergoes proliferation with cyst formation.

   2. Central Dentigerous Cysts: - Occur by cystic degeneration within the enamel organ overlying the crown of the developing tooth usually preventing its eruption. The enamel of the crown is usually formed normally from the basal layer of the enamel organ Masmyth's membrane.

3. Lateral Dentigerous Cyst: - Occurs by similar cystic change within the enamel organ after the central portion (occlusial aspect) has (over)
become atrophied. The cyst is located just lateral to the crown
and frequently results in maleruption.

b. Radicular Cyst— as described above.

c. Ameloblastoma, a radiolucent and frequently cystic neoplasm derived from
enamel forming epithelium characterized by masses of columnar, basaloid
and squamatoid cells in a typical stellate reticular stroma. May dev-
velop from remnants of the debris of Malassez or in dentigerous cysts.
This lesion should not be confused with the radiopaque solid odonto-
genic tumors of mesenchymal origin, the odontomas, or the mixed amelo-
blastic odontogenic tumors, the compound odontomas.

II. Congenital:— Result from enclavement of epithelial rests at sites of fusion
of various embryonic processes of the jaws. They are sometimes called
fissural cysts. The teeth are not involved.

a. Maxillary

1. Median or midline Maxillary cysts.

a. Anterior Palatine cysts:— Form at site of fusion of lateral palatine
processes of the maxilla. Have thick wall of collagen with squamous
epithelial lining.

b. Incisive Canal Cysts:— Located in incisive canals, paired structures,
which form just off the midline at the point of fusion of the med-
ian and lateral palatine processes of the maxilla. Lined with
epithelium during embryonic life which latter involutes. Persis-
tence may yield cysts lined with squamous or glandular epithelium
depending on derivation from nasal or oral side of the palate.

c. Papillo palatina Cysts:— Forms from the epithelial contents of the
incisive foramen on the oral surface of the incisive canals and
therefore is extra osseous and lined with squamous epithelium.

(continued)
2. Lateral Maxillary Cysts.

a. Globulo maxillary Cysts: Forms at the junction between the maxillary and globular processes of the maxillary bones in the alveolar bone between the lateral incisor and canine teeth which may diverge. Grows superiorly and posteriorly and may extend into the palate. Consists of a thick collagenous wall with squamous epithelial lining.

b. Mandibular: The only congenital cyst of the mandible is found in the midline and is of squamous inclusion variety.
Case 21

Moderator's Diagnosis: - Giant cell Epulis. - Peripheral Giant Cell Tumor of Maxilla.

We see here a lesion of rather classic histology showing marked acanthosis of the surface epithelium in areas achieving the status of pseudoepitheliomatous hyperplasia. Immediately beneath there is a proliferative process bearing close microscopic resemblance to giant cell tumors of bone and tendon sheath. It is composed predominantly of highly vascular fibroblastic tissue throughout which are scattered numerous giant cells containing up to forty nuclei. The latter resemble closely the nuclei of the fibroblast type cells and suggest that the larger elements may represent syncytial aggregates of the smaller cells. A relatively rich chronic inflammatory reaction is observed in many fields and small hemosiderin deposits suggest remote hemorrhage.

The lesion is classified as a peripheral epulis, a generic term denoting a lesion "on the gum". It is a term which fortunately is falling into disuse in favor of more descriptive terminology which in this case might better be stated as a gingival granuloma. The giant cell epulis is in no way a neoplasm but represents a purely non-specific chronic inflammatory reaction in which the periosteum of the alveolar process and the periodontal membrane participates. The latter structures may contribute considerably to the lesion resulting in a predominance of fibrous, calcified, osteoid or cementum tissue deposition within the lesion rendering its gross and microscopic appearance somewhat variable.

Peripheral epulis is a lesion usually associated with poor oral hygiene and tends to occur most frequently in younger individuals, particularly males. In contrast to the central epulis or true endosteal giant cell tumor of the dental alveolus, the peripheral lesion does not recur following removal and correction of the oral conditions predisposing to its development.
Case 22

Moderator's Diagnosis: Gingivitis Gravidarum; Pregnancy Tumor of the Gum.

Here we have a lesion of unusual vascularity. The surface epithelium has undergone a considerable degree of pseudoepithiomatous hyperplasia. The loose fibroblastic stroma has an unusual degree of vascularity with myriads of tiny vessels in superficial distribution and many large vessels located in the base. A particularly intense chronic inflammatory infiltrate is confined to the superficial portions. This lesion is distinguished with difficulty from the ordinary pyogenic granuloma. The epithelial hyperplasia is quite constant, however, and discussion brought forth the fact that small vessels frequently extend into the epithelial layer where they become surrounded by an epithelial collarette.

Pregnancy tumor occurs in approximately 2 to 3% of all gravid females after the second or third month of gestation. It usually regresses following delivery but may persist for many months. Little is known concerning the hormonal aspects which must contribute considerably to its pathogenesis. In rare instances of pregnancy it may be associated with the development of a hemangiomatous lesion of the nasal septum.
Case 23

Moderator's Diagnosis: Rhinoscleroma of Nose.

The lesion depicted in this case is one of chronic granulomatous inflammation of some specificity. It is characterized by the presence of innumerable large histiocytic cells with an abundance of finely granular eosinophilic or clear foamy cytoplasm (Mikulicz cells). Associated with these is a rich infiltrate of plasma cells and plasmacytoid or Russell bodies may be very numerous. Older lesions may be associated with a considerable degree of dense sclerosing fibrosis explaining in part the tough fibrous nature of some lesions and the sclerotic obliteration of the airway. Although strongly suggestive, the histologic morphology is not absolutely diagnostic. The Mikulicz cells are practically indistinguishable from the foam cells of leprosy. Ultimate diagnosis depends upon the demonstration of the Frisch bacillus (Klebsiella rhinoscleromatis) within the histiocytes best accomplished by silver stains. This organism is strikingly similar to the Donovan like bodies of granuloma inquinale. Its relationship to the lesion as an etiologic agent is not established.

Rhinoscleroma is endemic throughout the world but is seen most commonly in Egypt. It usually begins in childhood as a small firm smooth nodule on the nasal septum. This enlarges gradually and may completely fill the nasal cavity protruding through the nares. Extension of the lesion over the palate through the pharynx and into the larynx frequently ensues in untreated cases. Death due to respiratory obstruction may occur.