Tumors, age not stated.

Tumor of lower end of femur.

Only history available is that of ‘bone pain’ in the knee. Decision for a swelling in the lower end of the femur, took X-ray pictures which suggested sarcoma. Tumor extended into the surgical bone and was taken out in pieces.

Following a biopsy, the leg was amputated.

20 year old male, complaining of a tumor in left axilla, of one year’s duration.

This growth has been growing rapidly and causing some pain. He has had two previous operations for a ‘tumor mass’ above his left shoulder, apparently diagnosed as fibrous sarcoma. He weighs 158 lbs. and is consequently elsewhere. Shortly, the tumor removed from the axilla was spherical, 7 cm. in diameter, firm in consistency, it showed a cystic tumor, 0.5 cm. in diameter, with a spongy brown color, superficially by yellow and hemorrhagic areas. X-rays of the lung subsequently showed pulmonary shadow-bulb like masses.

TUMOR SEMINAR COLLECTION

SET XLI

Tumor Seminar, New York, 1951, Arthur Purdy Stout

Submitted by Dr. Maxine Arvan

A 20 year old female who had a normal delivery in 1914 was found to have a large ovarian mass at examination 2 months post-partum. The mass was thought to be the left ovary. On operation in September 1930, an ovarian mass was found deep in the left broad ligament just anterior to the posterior vaginal fornix. ovaries, tubes and uterus were generally normal in inspection. Tumor was well demarcated but poorly encapsulated, its cut surface was glistening-white, granular, and showed a few cystic areas.
CASE 1.

Submitted by Dr. Severance
(P&S 34924)

HISTORY:
A woman, age not stated. Tumor of lower end of femur. Only history available is that of "some pain in the knee." Doctor found a swelling in the lower end of the femur, took x-ray pictures which suggested osteogenic sarcoma. Tumor extended into the cortical bone and out into the soft tissues.

Following a biopsy, the leg was amputated.

CASE 2.

Submitted by Col. Farinacci
(P&S 3526)

HISTORY:
A 24-year-old male, complaining of a tumor in left axilla, of one year's duration. This mass has been growing rapidly and causing some pain. He has had two previous operations for a "tumor mass" above his left shoulder, apparently diagnosed as fibrous xanthoma. No weight loss, nor lymphadenopathy elsewhere. Grossly, the tumor removed from the axilla was spherical, 5 cm. in diameter. On section, it showed a cystic mass, 0.5 cm. in diameter, with a spongy brown content, surrounded by yellow and hemorrhagic areas. X-rays of the lungs taken subsequently showed multiple "snow-ball" like masses.

CASE 3.

Submitted by Dr. Chester Brown
(P&S 34658)

HISTORY:
Ovarian tumor, occurring in a woman about 46 years of age. Menstrual periods had ceased shortly before operation. First operation consisted of removal of a well circumscribed, yellow nodule from one ovary. Second operation was a bilateral salpingo-oophorectomy.

CASE 4.

Submitted by Elbert de Coursey
(P&S 35194)

HISTORY:
A 26-year-old female who had a normal delivery in 1948 was found to have a left adnexal mass at examination 2 months post-partum. The mass was thought to be the left ovary. On operation in September 1950, a spherical mass was found deep in the left broad ligament just anterior to the utero-sacral ligament. Uterus, tubes and ovaries were grossly normal to inspection. Tumor was well demarcated but poorly encapsulated; its cut surface was grayish-white, granular, and showed a few cystic areas.
CASE 5.

**HISTORY:** Patient entered the hospital 28 hours after he noted onset of sharp paraumbilical pain which radiated to both shoulders by the time of admission. Pain was aggravated by lying down. There was nausea and vomiting.

Physical examination revealed marked tenderness in the right half of the abdomen, with muscular spasm in the RUQ. With a preoperative diagnosis of perforated peptic ulcer, the patient was operated on. The peritoneal cavity contained about a liter of fresh blood; there were no abnormalities in the G-I tract except for a Meckel's diverticulium. Because the bleeding seemed to originate around the vasa brevia, a splenectomy was performed. Sections were taken from portions of hemorrhagic tissue removed "from the splenic area". The fixed specimen showed firm, finely lobulated cream colored fragments on the splenic surface.

CASE 6.

**HISTORY:** Elderly patient with a lesion on the dorsum of the foot. "It looks like a Madura foot".

CASE 7.

**HISTORY:** A 44 year old female, who had a tumor removed "from pelvis" elsewhere one year ago. A tumor appeared in the rectum recently, and on biopsy proved to be similar to that removed one year before. Abdomino-perineal resection, and pan-hysterectomy were performed.

Grossly, there was a 4.5 cm. tumor in the rectum, 4 cm. above the pectinate line, consisting of multiple solid pedunculated cream colored nodules. Tumor tissue extended from this mass 6 cm. along the colon, and separate nodules were present in the right parametrium, psoasimal mesocolon, and omentum.

CASE 8.

**HISTORY:** A 50 year old female with a 10-week history of right upper gum pain, and 5 weeks of right proptosis with right sided nasal obstruction and epistaxis. Biopsy from nasal cavity was taken, but tissue was too necrotic to permit exact classification.

X-rays showed involvement of right maxillary sinus and ethmoid cells, no definite evidence of bone destruction. Caldwell-Luc performed, and this tissue obtained.
CASE 9.  

HISTORY:  This 62 year old white male was admitted for the first time on 1/11/51 with a chief complaint of spot in his right lung on x-ray examination.

PRESENT ILLNESS: In August-September of 1950 the patient had an episode of virus pneumonia with febrile onset and prolonged convalescence. X-rays since that time have shown a persistent shadow in the right lung field. The patient has no cough, hemoptysis, change in appetite or weight loss. The patient has noted a fullness of the right breast since the pneumonia and has had occasional discomfort in this region. Also since the pneumonia has subsided, the patient has had a frequent early morning episode of gagging and retching without vomiting.

Physical examination: Non-contributory.

Laboratory workup was essentially negative except for the chest x-ray which disclosed two circumscribed nodules in the right lower lung field, one lying posterior and lateral to the vertebral column and the other lying anterior in the lower portion of the right middle lobe.

On 1/24/51 an exploratory thoracotomy was done and two specimens of lung tissue measuring 7 x 4.5 cm. were removed for diagnostic purposes. Within both of these pieces of lung tissue there was a smooth firm mass that was well circumscribed. It cut with ease and had a yellowish-gray surface with occasional small blood vessels that were filled with blood.

CASE 10.  

HISTORY: 45-year old male, admitted to the hospital because of abdominal pain and nausea, which began about six days previously following an oyster meal. There was no vomiting or diarrhea. The night before admission he took castor oil. There was pain in both epigastric regions and R.L.Q., and marked tenderness and moderate rigidity to the right of the umbilicus. There was rebound tenderness.

WBC: 16,750; stabs 12; segm. 53
lymphos-26, monos-2, eos-7.

Appendectomy was performed.
Abstract of Protocol – for history see below.

**CLINICAL PATHOLOGICAL DIAGNOSIS:** Recurrent neoplasm of neck, carotid body tumor, left with involvement of surrounding structures and regional lymphnodes.

**FINAL DIAGNOSIS:**
1. Tumor of unspecified nature and unspecified behavior involving the neck.
2. Hemorrhage into the respiratory tract, cause undetermined.

**PROTOCOL:** The body is that of a well developed, emaciated young white man. The lymphnodes in the right cervical chain are enlarged and firm; those on the left are enlarged and apparently included in a mass in the region of the left carotid artery. There is no other glandular adenopathy. The mass is adherent to the overlying skin and the underlying structures, including the larynx, thyroid, trachea and muscles of the neck. It is 8x4x3 cm. On the right lymphnodes up to 2 cm in diameter are firm and yellow-grey. The structures within the pleural, pericardial and peritoneal cavities are free of evidence of neoplastic extension. This includes the retroperitoneal structures as well, namely kidney and suprarenal glands.

**MICROSCOPIC EXAMINATION:** Only positive findings are included. About the adventitia of the left common carotid artery, there are masses of neoplastic cells which in places are arranged in delicate strands and other areas form small sheets. The cells vary in size, they have large vesicular nuclei and scanty cytoplasm mitoses are evident. Areas of necrosis are seen in some foci. Invasion of the thyroid gland and wall of the esophagus are evident. The tracheal wall is not invaded. Lymphnodes in the right cervical chain are replaced by neoplastic cells similar to those seen on the opposite side.

The brain shows no evidence either grossly or microscopically of invasion by tumor.

**HISTORY:** This patient entered the hospital in October 1950, complaining of pain in the left ear and neck of approximately one month's duration. A large mass in the left side of the neck.

**PHYSICAL EXAMINATION:** The patient was a poorly nourished, evidently ill young man. The neck mass measured 7 cm in length. A Horner's syndrome was evident on the same side.

On January 5, 1951, the left cervical mass was removed along with the vagus nerve, the sympathetic ganglion, internal jugular vein and lymphnodes on the left side of the neck. It was felt that the sympathetic ganglion was the site of origin of the tumor.

Approximately one year later, on January 8, 1952, the patient returned with two similar masses at the previous site of operation. He was reoperated on January 29, 1952. At that time the reexcision included a part of the carotid artery. The lesion was diagnosed as a ganglioneuroma on first removal. At the second operation it was diagnosed as a carotid body tumor. Several weeks later, lymphnodes appeared in the neck and a small slender mass also appeared in the operative area. This small recurrent mass was excised about a month later with the surrounding muscle tissue. Following this radium needles were implanted into the left side of the neck. He continued to have pain in the left side of the neck then in addition he developed rather severe headaches. Finally a prefrontal lobotomy was done; his course was progressively downhill.
CASE 11.  F&S 35201.  Submitted by Dr. John M. Pearce  
(550-7067)

HISTORY:  This 58 year old white female was admitted to the Medical Service with a chief complaint of coughing spells of 4 weeks' duration and bronchitis of 4 years' duration. No chest pain, fever, night sweats or anorexia. Chest x-ray disclosed tumor mass in the left chest. Angiocardiography disclosed a paracardiac tumor. On chest exploration the lesion extended from the level of the fifth rib down to the level of the eighth rib at the costo-sternal junction into the mid-clavicular line anteriorly. It extended up toward the hilum of the left lung over into the mediastinum. The tumor itself was rather irregular and measured approximately 24 x 21 x 18 cm. It was very hard and on cross section the tumor cut with a gritty sensation imparted to the knife. The tumor weighed 1000 grams.

On gross examination of the specimen it was found to be covered with a thin glistening membrane except at one pole, where there had been a tearing away of the capsule. There were numerous small and large subcapsular hemorrhages. The cut surface was composed of pale pink-tan tissue which was divided into irregularly-sized lobules by thin fibrous tissue septa. Throughout the tissue there were numerous small areas of calcification and several small yellowish areas. At one area there was a small cystic space 1 cm. in diameter.

CASE 12.  P&S 35202.  Submitted by Dr. John P. Heaney  
(#S-4-51)

HISTORY:  27-year old male who first noticed a painful swelling below the left ear and behind the angle of the jaw in September 1950, following an acute tonsillitis. The swelling persisted to the time of its excision on January 4, 1951, varying slightly in size. Two inconclusive biopsies were made during this interval. During this time patient had a moderate anemia, weakness, and occasionally ran a low grade fever. There was a Horner's syndrome.

At the time of excision, the vagus nerve was found to run over the surface of the fusiform tumor, and the cervical sympathetic chain appeared to vanish into it. The large vessels were not involved. The post-operative course was favorable, leading to apparent return to general health.

Gross Description:  The main specimen was a well circumscribed oval firm nodule, 6 x 5 x 3.2 cm. attached to a mass of lymph nodes surrounded by dense brown tissue. Incorporated within the capsule was a nerve (the vagus nerve). At the superior pole was another nerve, identified as the sympathetic chain. Cut surface showed a mottled yellow white tissue, with streaks of red, and opaque yellow areas of necrosis. Cut surface of the adjacent lymph nodes was tan or red-brown.
DIAGNOSIS: Malignant mesenchymoma of femur.

MICROSCOPIC: The sections available to us are from the extension of the tumor outside of the femur. It seems to be very largely a tumor with an extensive matrix made up of densely compacted collagen fibers set in which are polygonal cells of very variable shape, extreme anaplasia and showing bizarre mitoses. While there is nothing which I can recognize as definite osteoid, there are a number of places where the relations of cells and fibrous stroma vaguely suggest it. The tumor has other areas where the dense collagen is replaced by more delicate reticulin fibers; the cells are more closely placed and a good many of them instead of being polygonal are greatly elongated, some of them with multiple nuclei arranged in tandem fashion. Neither in the H & E or trichrome stains have I been able to detect cross striations, nor am I sure I can see any longitudinal intracellular fibrils.

DISCUSSION: I think we could have accepted this case as an example of osteogenic sarcoma of it were not for the elongated spindle and strap shaped cells. Can these be osteoblasts? Certainly they are not ordinary ones, but is it possible for a neoplastic osteoblast to assume this appearance and shape? I am not able to answer this question, but I think if they are able to change their appearance to this extent, it must be a phenomenon of metaplasia, for they imitate the appearance of rhabdomyoblasts. There are two ways in which we can approach the question of naming such a tumor as this. It can be called osteogenic sarcoma with metaplasia or it can be considered a mixed mesodermal tumor or mesenchymoma. I prefer the latter term because it is realistic and does not necessitate hypothesizing how any given tumor came to be mixed. Jaffe has finally adopted the name for a small group of bone tumors which heretofore defied his attempts to classify them and he will in due time publish the group. It has occurred to me that the cases of so-called liposarcoma of bone formerly reported by Fred Stewart but now rejected by Fred himself and others, may possibly belong to this group. This is only a thought because I have never studied the sections of those cases. I might remark that several of the malignant mesenchymomas of the soft tissues have osteoid as one of the component elements, so that it need not surprise one too much to find a primary bone tumor with differing elements in its composition.
CASE 2.
Arthur Purdy Stout Club
Seminar - May 5, 1951

DIAGNOSIS: Undiagnosed tumor of axilla.

MICROSCOPIC: The section available for the seminar shows part of an encapsulated nodule made up of numerous small and larger spaces filled often with what seems to be a fluid containing numerous foam cells and sometimes many red blood cells. The tissue between these spaces is difficult to interpret. The septa are thin and very cellular. Most of the cells look like short plump spindles but others are rounded. In a few septa are cholesterol clefts surrounded by foreign body giant cells. In other sections which I have seen, there are remnants of lymphoid tissue in the nodule which suggests that it is a lymph node.

DISCUSSION: When I first studied the sections of this case I did not know about the x-ray findings in the lungs. I am uncertain whether these make 'the interpretation harder or easier, for frankly I do not know how surely to account for the extraordinary changes. Is this some form of xanthomatosis with involvement of the shoulder region, the axillary lymph nodes and the lungs? I would be willing to accept this if I could feel certain about the nature of the peculiar cells which surround most of the spaces. I am not altogether satisfied that they are phagocytes, fibroblasts and lymphocytes. Can they be malignant tumor cells and could the whole picture be interpreted as an oat cell carcinoma of the lung with metastases to axillary nodes and shoulder? If so, how explain all the xanthomatous elements? Surely they cannot all be due to cell degeneration. I have asked myself if this could be a vascular tumor, either blood or lymphatic? But usually endothelial cells do not line the spaces, and how account for all the foam cells? I cannot believe this is a vascular tumor. Possibly the most plausible explanation is to suppose this is a bizarre form of cholesterosis, but if so it is different from any I have ever seen, and certainly the x-rays look like metastases.
Case 3.

Arthur Purdy Stout Club
Seminar - May 5, 1951

DIAGNOSIS: Arrhenoblastoma of ovary.

MICROSCOPIC: This is a tumor composed largely of tubules lined by short columnar cells which are sharply defined. The lumens are sometimes empty, sometimes contain debris and sometimes a clear jelly something like the colloid of the thyroid. The glandular elements occasionally are continuous with solid groups of cells that are more nearly cuboidal, smaller, and some of them have clear areas in the cytoplasm. Scharlach R and Sudan Black stains show many lipoid droplets in the basal poles of the columnar cells and even more in the cuboidal cells. Mitoses are not seen.

DISCUSSION: This is obviously a special type of ovarian tumor and not one of the common varieties - theca and granulosa cell tumors, Brenner tumor, and dysgerminoma can all be ruled out. It does not appear to have been a hormonally active growth which might incline us to rule out arrhenoblastoma. But these tubules are not unlike the tubules of the male gonad, the distribution of lipoid in the cells is similar to that seen in male gonadal cells and there seems little reason for doubting that this is an arrhenoblastoma.

One of the best papers on arrhenoblastoma and other masculinizing tumors of the ovary is by Lalla Iverson. In this she recalls Robert Meyer's classification of the arrhenoblastomas.

I. Adenoma tubulare testiculare ovarii (Pick)
II. Middle group consisting of typical and atypical tubes and solid elements
III. Atypical tumors

Iverson elaborates on the first group. It consists of "round tubular or gland-like structures of varying size often filled with pink staining homogeneous material. The epithelium may be cuboidal or columnar and there is no marked resemblance to testicular tubules. When spindle-shaped cells and interstitial cells are found interspersed with the tubular structures, some masculinization may occur. The intermediate form contains varying proportions of sarcomatous cells and interstitial cells. This type is invariably associated with masculinization."

Iverson, L., Masculinizing Tumors of the Ovary

From the above it is a little difficult to know whether to classify this tumor in the first or second group. Since there are both solid and tubular elements one would suppose this should be classed with the intermediate group. But against this is the absence of sarcomatous or interstitial elements in the stroma and no evidence of masculinization. Because of the high degree of differentiation and absence of masculinization my inclination is to class this in Group I.

We should speak about malignancy. I gather that some arrhenoblastomas are malignant and metastasize, while others do not, and that there is no sure way of distinguishing between the two. I have not found any analysis of cases from this point of view, but Jones and Everett make the statement that the majority are benign.

Jones, G.S., and Everett, H.S.: Arrhenoblastoma of the Ovary, with a report of two cases.

Case #3, P&S 34658 - No follow-up.
Case 4.

Arthur Purdy Stout Club
Seminar - May 5, 1951

DIAGNOSIS: Granulosa cell tumor of broad ligament.

MICROSCOPIC: The tumor is made up of long anastomosing and intertwining cords composed of rounded or slightly cylindrical cells of relatively small size with scanty very finely granular cytoplasm and sometimes irregular vacuolization. These cell cords are supported by slender strands of fibrous tissue from which they tend to shrink away. No rosettes or pseudorosettes are seen and there is no evidence of gland formation nor secretion of mucoid material. The tumor has a capsule but strands of tumor cells are found growing in the capsule.

DISCUSSION: This appears to be a very characteristic granulosa cell tumor. The most interesting feature in connection with it is its position in the broad ligament - not connected with the ovary. In the Laboratory of Surgical Pathology of Columbia University we have recorded four cases of granulosa cell tumor of the broad ligament. It will be of interest to describe them briefly. The first was sent to me Nov. 9, 1945, by Drs. E. F. Aleston and H. Davenport from the Brooke General Hospital, San Antonio, Texas. It was a 31 year old woman who had amenorrhea 2½ years before operation except for two scanty periods after recent thyroid medication. She had a large tumor palpable through the abdominal wall. It measured 6 x 7 x 6.5 cm., was in the broad ligament with the displaced tube arching over it but not actually involved by it. The ovaries were uninvolved.

The second case was sent to me January 18, 1946, by Dr. Ivan Brown from the Methodist Hospital, Brooklyn, N.Y. The woman was 55. The menopause occurred 5 years before and 2 weeks ago she had one normal period. The tumor lay in the right tube and broad ligament measuring 7 cm. in diameter and the wall of the tube had been destroyed by it. Both ovaries were uninvolved.

The third case came from the French Hospital, New York, and was sent to me by Dr. Cyril Solomon April 30, 1948. A 57 year old woman had her menopause 7 years before and had been spotting for 3 months before operation. There was a 6 cm. sausage-shaped mass continuous with the right tube. The serosal aspect, interstitial and isthmic portion of the tube was continuous with the surface of the tumor. The fimbriated end appeared to be a part of the tumor. The ovaries on both sides appeared normal. The uterine endometrium showed a proliferative phase.

The fourth case came from Dr. John J. Andujar of the Harris Memorial Methodist Hospital, Fort Worth, Texas, Jan. 8, 1949. The 28 year old woman had an elective tubal section to procure sterilization after birth of her 4th child. A tumor 8 cm. in diameter was found clinging to the right cornu of the uterus. It extended out along the serosa of the tube close to the broad ligament but did not grow into the tube or the uterus. It measured 8 x 7 x 6 cm. after removal.

I felt that all of these cases histologically were granulosa cell tumors. The first patient with amenorrhea could be open to suspicion clinically but I could think of no other way to interpret the growth histologically. I find in Willis' text book references to two reports of granulosa cell tumor in the broad ligament, and he mentions one which he himself studied which weighed 800 grams and came from the broad ligament of a 56 year old woman. I think we can accept the present case as a definite example of this variant. It is different from the other four cases seen by me because of its relatively low position in the broad ligament. (Ref: Willis, R.A., Pathology of Tumors, Butterworth & Co., London; the C.V. Mosby Co., St. Louis, 1948 pp 492-493) Arthur Purdy Stout, M.D.
Case 5.

Arthur Purdy Stout Club
Seminar - May 5, 1951

DIAGNOSIS: Malignant mesothelioma of peritoneum.

MICROSCOPIC: The tumor is composed of two elements inextricably intermingled. There are numerous gland-like structures and solid cords made up of rather large columnar cells which apparently secrete a little hyaluronic acid and have no reticulin fibers between or among them. These are separated by spindle-shaped cells surrounded by reticulin fibers which have the aspect of fibrosarcoma. Because of the shape of the cells and the reticulin fibers it is easy to identify the two tissue types. In one section a calcospherite is found and not far from it a much larger complicated structure made up of an agglomeration of irregular layers.

DISCUSSION: The great interest of this case for me lies in its imitation of the appearance of a synovial sarcoma. Shown this section without a history, I would have made that diagnosis without hesitation. Yet there is nothing in the history which would lead one to suppose it could be metastatic from a synovial sarcoma, consequently I am forced to the conclusion it must be a malignant mesothelioma of the peritoneum. As a matter of fact, I have always wondered why the tubular mesotheliomas did not appear microscopically like synovial sarcomas so that although I have never seen a mesothelioma before which assumed this appearance, it makes me very happy to find that peritoneal mesothelium can form a tumor like this because it helps to support my belief in the fibrous mesothelioma. Dr. Murray has shown that synovial sarcomas, although composed apparently of two cell types, will form in vitro only cells resembling normal mesothelial cells and not fibroblasts. I will hazard the guess therefore that this present tumor is probably altogether made up of mesothelial cells including the cells which resemble tumor fibroblasts. I presume this tumor will continue to spread over the surface of the peritoneum and will lead eventually to the death of the patient. Without autopsy or tissue culture, one cannot guarantee the diagnosis but I believe it can be made here with a reasonable degree of assurance.

Arthur Purdy Stout, M.D.

[ipad_bar]
Patient: Chromoblastomycosis of foot.

Diagnosis: The skin on the dorsum of the foot is edematous and tremendously hyperplastic so that it is elevated well above the surrounding level. The epidermis is especially thick with greatly elongated rete pegs. In the epidermis micro-abscesses have formed containing many leukocytes and occasionally clusters or isolated examples of rounded sharply outlined dark brown bodies from 7 to 10 micra in diameter. Their margins are doubled. They look very much like yeast cells. These bodies are also found in the keratinized debris on the surface of the affected epidermis but none is seen in the papillae or corium. In these tissues there is an abundant infiltration of a variety of inflammatory cells and phagocytes including polymorphonuclear leukocytes, plasma cells, lymphocytes, histiocytes and occasionally small giant cells. These various cellular elements are occasionally collected into rounded accumulations resembling atypical tubercles.

Discussion: According to Carrion and Silva, "chromoblastomycosis is a chronic infectious apparently non-contagious skin disease confined most frequently to one of the lower extremities and characterized clinically by the formation of nodular verrucous or cauliflower-like lesions. The infection may be caused by several species of dematiaceous fungi." It is called chromoblastomycosis because the appearance of the organisms in sections resembles blastomycosis colored brown but actually the organisms are fungi and several varieties have been recognized. It was first found in 1911 in Brazil. Since then it has been recognized in other parts of South America, North and Central America, the West Indies, Europe, and all other parts of the world except continental Asia. By 1947, 151 cases had been reported. Only one of these came from the Dominican Republic. Only nine had been found in the United States.

The present lesion is solitary but generally there are multiple areas of involvement on the foot and lower leg. They appear generally first as nodules. The second stage is the tumorous and the present lesion can be considered in that stage. Other forms can resemble verruca vulgaris, flat plaques and sometimes in old lesions the center of the skin lesions may become cicatrized. The lesion usually involves only the skin, rarely the regional nodes. Metastases are extremely rare. There are no systemic symptoms, but edema and elephantian swelling occur. Other parts of the skin can be such as the hands, face or abdomen but this is extremely rare.

It is much more common in males. Generally it occurs in laborers working barefoot in the fields. Surgical excision or electro-coagulation are the most effective forms of treatment.

Arthur Purdy Stout, M.D.

DIAGNOSIS: Hemangiopericytoma of retroperitoneum with extension to rectum and mesocolon and metastasis to omentum.

MICROSCOPIC: Sections of the rectal wall show multiple nodules scattered through it from close to the mucous surface all the way into the extra-rectal tissues. These nodules are composed of a great number of small vessels mostly with empty lumens or with no lumen and only the juxtaposed endothelial lining cells indicating the existence of the vessels. These vessels all have normal appearing endothelial lining cells, a distinct reticulin sheath and outside of this masses of slightly elongated or rounded cells generally surrounded by delicate reticulin fibers. The cells form a continuum between adjacent vessels as a rule, although in some nodules there is a slender fibrous stroma separating vessels with their surrounding cells. This is most easily seen in trichrome stains. Some of the nodules are joined suggesting that the growth does not consist of isolated nodules but more probably represents infiltration in continuity. Mitoses are uncommon. The original tumor has the same morphology.

DISCUSSION: This tumor has all of the characteristics which I require to make the diagnosis of hemangiopericytoma. I want to point out the relatively bland histological appearance of the individual vascular units and the fact that the tumor is behaving in a malignant fashion. This is quite in keeping with past experience - there are no reliable criteria which I have been able to detect which will permit me to predict which tumors can be expected to be benign and which malignant. I thought it would be timely to resurvey our cases of hemangiopericytoma to see what could be learned from doing it. As of April 12, 1951, we have 110 cases recorded, exclusive of this one. These are divided as follows:

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TOTAL: 110 cases recorded, exclusive of this one. Of these, 23 (21%) recur or show aggressive invasion, and 14 (12.7%) show metastasis.
The total number of cases which showed either aggressive growth, metastasis or both, is 32 or approximately 32 per cent. The two regions where most of these malignant cases were concentrated were the lower extremity (and especially the thigh and popliteal space where all 8 metastasizing tumors were situated) and the retroperitoneum where four of the nine cases produced metastasis. This is information worth having, and confirms an impression which is coming to have ever greater importance in my mind, namely that the locus from which a tumor arises plays an important role in determining its relative malignancy.

It is apparently impossible to determine the exact primary site of this present tumor. Because of the maximum involvement in the rectum, retrorectal tissues, and mesocolon, I will hazard a guess it came from the pelvic retroperitoneum.

Arthur Purdy Stout, M.D.

Case #7, F&S 35162 - The patient is without clinical evidence of disease approximately two years after the last operation. (Dr. Robt. C. Horn 4-30-53)
Case 8.  
Arthur Purdy Stout Club  
Seminar - May 5, 1951

DIAGNOSIS: Malignant melanoma (metastatic?) of nasal cavity.

MICROSCOPIC: This section shows a growth composed of rather large, irregularly rounded and polygonal cells showing a considerable number of mitoses which seem to be arranged especially around rather large vessels. Away from the vessels the tumor tissue tends to become necrotic. With high power magnification it is possible to find in some areas a brown granular non-refractile pigment in some of the cells, usually at widely scattered intervals.

DISCUSSION: Until one finds the brown granular pigment one wonders what this tumor may be because of the relationship of the tumor cells to the blood vessels. When the Fontana silver blackens all of the pigment the diagnosis of malignant melanoma seems justified. But there are still a number of peculiar features which need elucidation. While some of the tumor cells are arranged in cords without reticulin fibers around individual cells, Laidlaw silver impregnation shows that such fibers do surround many of the cells which is unusual for a malignant melanoma. Another strange feature is the relationship with the blood vessels. I had thought these might be the veins of erectile tissue but I can see no smooth muscle in their walls so that this seems to be improbable. I cannot understand their presence.

If this is a primary malignant melanoma of the nasal cavity, it must have started in the anterior portion of the naris which is derived from ectoderm. Here the tumor is found in the region of the turbinates and the history does not indicate that the anterior naris was involved. I must suspect, therefore, that this is possibly a metastatic melanoma from an undetected primary source. Primary malignant melanoma of the nasal cavity is very rare - there are only three such cases in our records. We have had no cases of metastatic malignant melanoma in the nasal cavity.

Arthur Purdy Stout, M.D.

Case 8, P&S 35192 - This patient died about 1½ years after the diagnosis with extensive local disease involving the nasal cavity, accessory organs, etc., and a solitary metastasis in the liver.  
(Dr. Robt. C. Horn - 4-30-53)
DIAGNOSIS: Lymphosarcoma (lymphocytic cell type) of lung.

MICROSCOPIC: The lung parenchyma is extensively and solidly filled with small rounded cells which closely approximate the appearance of lymphocytes although the distinct nuclear markings of some suggest they may be lymphoblasts. At the margins of the nodule they extend outward by infiltration in the interstitial framework rather than in the alveoli. Reticulin-silver impregnation shows no fiber formation by the cells and only a moderate degree of interstitial fibrosis in the tumor area. There are relatively few reticulum cells scattered through the masses.

DISCUSSION: Obviously we are dealing with two lymphoid accumulations within parenchyma of the right lung. They are apparently not associated with lymphoid infiltrations or hyperplasias elsewhere in the body but are primary in the lung. Are we to regard this as neoplastic, and if so is it a lymphocytic cell lymphosarcoma? Furthermore, what are the probabilities that there will be a generalized lymphosarcomatosis?

The answers to these questions are not easy; I do not think I have enough knowledge to give them, but I can furnish you with some information. We have never had a case of this lesion operated upon at the Presbyterian Hospital, but in the Laboratory of Surgical Pathology there are records and slides of four other localized lymphoid masses in the lungs. Two of these cases had symptoms and the other two were discovered on routine chest x-rays.

P&S 23096, a symptomless 50 year old male, had the entire left lung removed because of a large soft tumor which filled the entire left upper lobe and part of the lower lobe.

P&S 30287, a symptomless 63 year old male, had a mass in the RLL which was observed for a year without any change in size. The right lower lobe was then removed. The tumor in it was 10 cm. in diameter.

P&S 23300, a 38 year old female, had bloody expectoration. The tumor lay in the right lower lobe and was removed by lobectomy. There was no recurrence after 17 months when she was well. This case has been reported.


P&S 35071, a 25 year old male, had symptoms referable to bronchial obstruction and atelectasis involving the right middle lobe. The obstruction was caused by a lymphoid mass in the mucosa and submucosa projecting out into the main bronchus of the middle lobe. Other smaller similar masses were found in relation to much of the bronchial tree. There were also some lymphoid masses within the lobe away from the bronchi but these were insignificant.

The first three cases resembled the present one; all of them were massive infiltrations of cells which are either lymphocytes or lymphoblasts. The last case differs from the others because of the orientation of the lymphoid cells in respect to the bronchi, and because many follicles have been formed and the masses in the mucosa and submucosa of the bronchi

(continued)
resemble the localized lymphomas of the rectum and sigmoid which are confined to the mucosa and submucosa.

While we do not have adequate follow-up information about these cases, here are five instances of extensive tumor-like lymphoid accumulations in the lung in none of which is there any suggestion of involvement of other parts of the body. While we have tentatively classified four of these cases as lymphocytic cell lymphosarcomas and the fifth case of multiple focal nodular formations in the bronchi as a benign bronchial lymphoma (this case was contributed by Charles Farinacci of the Fitzsimons General Army Hospital in Denver), I cannot escape the suspicion that all of these are relatively benign and that perhaps it is wrong to label them lymphosarcomas. For the present, however, until more clinical data becomes available, I believe it is safer to continue to call them lymphosarcomas.

Arthur Purdy Stout, M.D.

REF:

Case #9, P&S 35245 - This patient has done well following a segmental resection of the right upper and middle lobes on January 1, 1951. He is now back at work and when last seen in January 1953, he showed no evidence either clinically or radiologically of lymphosarcoma of the lung or elsewhere.

(Dr. John Pearce - 5-19-53)

NYH S 41 480 (P & S 35245) - lymphosarcoma of lung.

Since discharge on 2/4/51 the patient was seen in the General Surgical Out-Patient Department several times and found to be "doing well". He was seen in the Surgical Follow-Up Clinic 1/23/54 reports that he is doing well. He is to return one year from this date. He has had no x-ray therapy. The diagnosis of lymphosarcoma does not appear on the New York Hospital Chart.
 DIAGNOSIS: Granular cell myoblastoma of appendix.

MICROSCOPIC: The section is taken longitudinally through a portion of the appendix. On one side the wall shows nothing unusual. On the other, the wall is greatly thickened by a rounded nodule which pushes the mucosa into the lumen and causes a bulge on the mesenteric side. This nodule is composed of clusters of cells with small nuclei and abundant cytoplasm filled with fine acidophile granules. The cells vary in shape from spindle to rounded. Where the tumor lies in the plane of the muscularis it appears somewhat compressed and the granular cells are more spindle shaped than is the case where the cells are in the sub-mucosa and mesenteric fat. The smooth muscle cells of the muscular coat appear pushed aside by tumor growth and there is no direct continuity between muscularis and tumor. There is, however, one vein within the tumor which is cut almost longitudinally, while most of its muscular coat is composed of ordinary smooth muscle, at one end the outer layer of muscle cells is distinctly granular. There is no continuity between these cells and the granular tumor cells. Another interesting observation is the fact that in some areas the tumor cells are gathered together into small rounded masses with capillaries coursing sinuously around and between them.

DISCUSSION: There are a number of interesting features about this tumor. For me it is a granular cell myoblastoma which has developed in a very unusual site. Including this case, the following is the distribution of the 112 granular cell myoblastomas recorded in the Laboratory of Surgical Pathology of Columbia University:

<table>
<thead>
<tr>
<th>Location</th>
<th>Cases</th>
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<tbody>
<tr>
<td>Extremities</td>
<td>28</td>
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<tr>
<td>Trunk</td>
<td>27</td>
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<tr>
<td>Tongue</td>
<td>24</td>
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<td>Head and Neck</td>
<td>7</td>
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<tr>
<td>Mammary Glands</td>
<td>9</td>
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<td>Larynx and Trachea</td>
<td>6</td>
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<tr>
<td>Gums of Newborn</td>
<td>5</td>
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<tr>
<td>Uterus</td>
<td>2</td>
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<tr>
<td>Urinary Bladder</td>
<td>2</td>
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<tr>
<td>Appendix</td>
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and one each in the floor of the mouth, esophagus, stomach, rectum, retroperitoneum and omentum.

Seven cases have metastasized and two others are known to have recurred following excision.

The speculations regarding the nature and origin of these tumors has been extensive. It has been suggested that they are not tumors but a sort of granular myolysis and it has also been hypothesized by Gullino that they are granulomas due to parasites. We can understand the myolysis hypothesis which might be advanced in this case because of the observation that there are granules in some of the smooth muscle cells of a vein within the tumor field. But anyone who has studied a lot of these tumors, I believe, cannot accept either one of them for the whole group, and especial for the malignant growths. In addition, there are the suggestions that these tumors arise from Schwann cells.
(Fust and Custer) which is negated, I believe, by Dr. Margaret Murray's tissue cultures which have never grown Schwann cells; that their cells are histiocytes, of mesenchymal origin; the popular conception that they are myoblasts, and the most recent suggestion of Smetana and Scott that certain of them, that is, the so-called organoid granular cell tumors, are paragangliomas. This suggestion has been made by them because of the remarkable organoid appearance of this group which resembles that of an endocrine type of tumor and which they think is like that of paragangliomas of the carotid body. The basis for this suggestion is dependent not only on this supposed histological resemblance but also on the observation of Lent Johnson that there are paraganglia in Hunter's canal from which such tumors might come. These organoid granular cell tumors are frequently malignant and metastasize, which distinguishes them from the great majority of the granular cell myoblastomas but which also distinguishes them from the accepted paragranulomas of the carotid body type which almost never metastasize.

We have seen these organoid granular cell tumors in the thigh, leg and arm, and Powell has reported one in the tongue. In addition to the thigh, Smetana and Scott report them in the retroperitoneum and neck. Since there are known paraganglia in these regions, I wonder if tumors in those areas are properly included with the organoid granular cell tumors in the extremities where paraganglionic cells are unknown except for Johnson's observation.

The present case in the appendix interested me because, while most of it does not have an organoid appearance, there is one area in the section I studied in which the organoid grouping is vaguely suggested.

There are many other phases of these granular cell tumors which might be discussed, but I think we have devoted enough time to them.

Arthur Purdy Stout, M.D.

Case #10, P&S 34725 - X-ray studies of the G-I tract were all reported as negative. At the present time (May 1953) the patient is well.

(Dr. A.C. Severance, 5-4-53)
DIAGNOSIS: Thymoma of Thymus.

MICROSCOPIC: This tumor is confusing and difficult to describe until one has analyzed its components. In the first place it tends to be lobulated; that is, there are masses of tumor cells separated by rather thick bands of dense fibrous tissue. Separation is incomplete for the masses often anastamose. The tumor tissue is made up of two seemingly different varieties. In one the cells are largely lymphocytes intermingled with rounded and spindle-shaped reticulum cells. In the other lymphocytes are inconspicuous or absent and most of the cells are spindle-shaped, often accompanied by delicate reticulin fibers and sometimes by large numbers of exceedingly thin-walled vascular tubes which are empty. While these two tissue types are generally distinct one from another, one can find places where the two are in contact and intermingle. After considerable study I have come to the conclusion they represent different manifestations of the same tumor tissue.

DISCUSSION: It does not seem possible to me to interpret this tumor in any other way than a thymoma. The anatomical situation is not incompatible and the histological appearance fulfills the requirements of a thymic tumor, namely that it shall be composed of two cell types, one resembling lymphocytes and the other reticulum cells, and that the groups of tumor cells shall be divided roughly into lobules by bands of fibrous tissue. There are a good many variations in this picture because the relative number of the two cell varieties can differ very greatly not only from tumor to tumor but in different parts of the same tumor. In the present tumor, for example, the reticulum cells often approach the appearance of fibroblasts, they are so elongated, but fiber stains show there are not any more fibers scattered among them than one would expect in any reticulum cell proliferation. The presence of vascular tubes in connection with some of the reticulum cell proliferations is undeniably confusing but I have learned not to be upset by such displays of versatility on the part of reticulum cells, especially when the rest of the picture is right. A few years ago we were astounded to have a thymic tumor grow out Schwann cells in vitro but the mystery was explained when sections showed an area in the thymoma of diffuse Schwann cell proliferation. This chanced to be the very area from which the explant was made. I can offer no explanation of this phenomenon.

Not including this tumor, we have records of 35 thymomas, 12 operated upon in the Presbyterian Hospital and 23 coming from other sources. The sex is known in 33; 16 were males and 17 females. The age is known in 31; 24 were over 40 years at diagnosis. The ages of the other 7 ranged from 22 to 35 with five of them in the third decade of life. They can occur in children since there are examples in the Babies Hospital records and at least one of these was malignant. Of the 35, eleven were associated with myasthenia gravis and one with aplastic anemia. This patient was temporarily improved after removal of the thymus. This present tumor is heavier than any previously recorded in the Laboratory, although not by much, for we have one which weighed 960 and another 860 grams.

Seven of the 35 showed some evidence of malignancy. Four of these had metastases; one in the axillary nodes, one in the cervical nodes, one in the lungs and one in the cervical and mediastinal nodes, the lungs and the pleurae. This last case also showed direct invasion of the thyroid, neck muscles, esophagus, trachea, bronchi and pleura. One case showed direct invasion of the heart, one recurred after operation and invaded the lung, and
Since her discharge 11/16/50 the patient was admitted to New York Hospital on 5/29/53 when she had a bone marrow biopsy showing "question of chronic lymphatic leukemia, question of hypoplastic anemia". She was transfused with packed red blood cells several times toward the end of 1953, in the Out-Patient Department. She was admitted to NYH again on 1/17/54 with a diagnosis of carcinoma of the right breast, hypoplastic anemia, congenital lues and cervical erosion. Operation: - right radical mastectomy. Sternal marrow biopsy on 1/25/54 showed marked fat replacement of marrow but no evidence of leukemia or metastatic tumor. Absence of erythroid precursors and general hypoplasia was noted also. Her spleen was enlarged. She was seen in the Hematology Out-Patient Department frequently in 1954. Hepatomegaly, splenomegaly, and ankle edema were noted during this time. A diagnosis of arteriosclerotic heart was made. She was given digitalis and mercurials. She was transfused with packed cells frequently in the Out-Patient Department following this. She was last seen at the Hematology Clinic April 27, 1955. Then she had no symptoms or complaints.
one was so large and adherent as to be considered inoperable. Not one of these malignant tumors was associated with myasthenia gravis. Doro et al point out that metastases are not reported in thymomas associated with myasthenia, only direct invasion of neighboring structures and implants on pleura and lung.

It is sometimes difficult to decide whether one is dealing with a true tumor or simply thymic hyperplasia. If the enlargement is diffuse and the components relatively normal with Hassall's corpuscles we have called it hyperplasia. If the enlargement is a nodule and not diffuse we have called it thymoma, even if well differentiated. Usually it is not a difficult decision. Hassall's corpuscles are seldom detected in thymomas. We have been puzzled in a few thymomas to find inclusions of small tubules lined with cells, which might be epithelial although I am not sure of it. These structures we have not yet been able to identify.

I think it is possible to distinguish involvement of the thymus by Hodgkins disease and lymphosarcoma from thymomas, and none of the above 35 cases could be considered in that category.

Arthur Purdy Stout, M.D.

REF:

Bertelsen, A., Occurrence of myelocytes in normal human thymus and relation of this observation to theories of genesis of blood cells, Hospitalstid, 80:397, 1937.


Case #11, P&S 35201 - When the patient was seen on May 18, 1953, there was no evidence of recurrence of tumor. However, she is said to be anemic and has lost 10 pounds.

(Dr. John M. Pearce, 5-19-53)
Case 12.

Arthur Purdy Stout Club Seminar - May 5, 1951

DIAGNOSIS: Undiagnosed malignant tumor of lateral neck region.

MICROSCOPIC: This tumor is difficult to describe because it is uncertain how much it has been altered by degenerative changes. There is a dense fibrous matrix. Set in this at varying intervals are cords of cells which in general are of moderate size and tend to be rounded. They have dark hyperchromatic nuclei and the cytoplasm is often coarsely and irregularly granular. In some areas these cords are solid. But often the cells are thinned out, evidently by degeneration and then there are irregular spaces in the centers of these cords so that it appears as if the remaining peripheral cells were lining a tube. Mucicarmine shows no evidence of secretional activity, and trichrome no evidence of epidermoid differentiation. Some of the cords of tumor cells are separated by fibrous septa bearing blood vessels but this is not the rule, and we could not say that any special pattern has been produced. A lymph node included with the section shows nothing remarkable.

DISCUSSION: We are faced here with a very real problem in diagnosis and I am not going to be able to solve it. The question of the nature of the tubular structures arises. I have indicated my opinion that they are neither vessels with endothelial proliferation nor glandular structures lined with epithelial cells, but that the appearance is due to degeneration and disappearance of some of the cells. The relationship of the tumor to both the vagus nerve and the sympathetic nerves has been stressed in the gross description. Can this be a tumor of these nerves or ganglia? Certainly it is not a Schwannian tumor nor a differentiated ganglioneuroma. It does not have the pattern of a paraganglioma. Although I would like to believe it is that, I cannot do so. Can it be a neuroepithelioma, medulloblastoma, or sympathicoblastoma? I can only say it does not exactly resemble any of these that I have studied or read about. I do not, however, reject altogether the idea of neuroepithelioma - possibly it might be that. Can we suppose it is some kind of a malignant lymphoma? The growth in cords seems to be against this. It does not seem possible to suppose it has arisen from branchial remnants for it is not certain the tumor cells are epithelial, although I believe this is probable. Its anatomical position seems to exclude the possibility it is a primary salivary gland tumor. Finally, there is the possibility this is a metastatic tumor, possibly from the nasopharynx or tonsil. If so, I cannot recognize its nature.

At the moment, I feel unable to make a diagnosis, other than to say I believe this is a malignant tumor.

Arthur Purdy Stout, M.D.

Case #12, P&S 35202 - No follow-up.