TUMOR SEMINAR

May 6, 1955, 10 A.M.

Hillcrest Medical Center, Tulsa, Oklahoma
Conference Dining Room

Discussor: Arthur Purdy Stout, M.D., Professor of Surgical Pathology, Columbia University, New York

Moderator: Leo Lowbeer, M.D., Pathologist, Hillcrest Medical Center, Tulsa, Oklahoma.

**Case 1. S-343-54. Contributed by Dr. J. Dewar, University Hospitals, Oklahoma City.**

27 months old white female. Admitted January 1954 with large tender mass in right flank below costal margin, observed by the parents for only 10 days. Mass attached to spinal muscles and extra-abdominal. Chest-, kidney- and bone surveys negative. On operation partly cystic retroperitoneal tumor removed, adherent to posterior parietal peritoneum and to abdominal fasciae.

Gross specimen (S-343-54): Lobulated pearly grey and reddish-brown tissue, 6.3 x 6 x 1.5 cm, partly covered by thin capsule; appears to arise from a peduncle. Consistency hard, rubbery.

Follow-up: X-ray therapy with total of 2000 r per field in 20 days. Local recurrence in right flank 7 months after operation. No evidence of pulmonary metastases. No further treatment.

**Case 2. S-1783-52 and S-526-53. Contributed by Dr. J. Dewar, University Hospitals, Oklahoma City.**

55 year old white female. 1948 hysterectomy for leiomyomas. 1950 mass in abdominal incision removed and diagnosed as leiomyosarcoma. Second recurrence in 1951 regressing after radiation (2400 r). 1952 third local recurrence which did not regress after radiation and was surgically removed. Gross specimen (S-1783-52): Lobulated, indurated tumor of yellow-tan color, 6.5 x 5 x 5 cm, lying within rectus sheath and replacing rectus muscle; covered by peritoneum on one side, by skin on other side, 3 months later, still in 1952 fourth recurrence in right retroperitoneal space. Fifth recurrence in spring 1953, right peritoneal space, at the insertion of right diaphragm. Was surgically removed. Gross specimen (S-526-55): Well circumscribed, pseudoencapsulated tan colored tumor, 11 x 8 x 4.5 cm.

Summer 1953 isolated metastasis removed from right liver lobe. Fall 1953 large recurrent tumor masses filling right adnexal region, right abdomen and flank. Exploratory laparotomy revealed large retroperitoneal tumor masses, occupying the entire right abdomen down to the pelvis. No definitive surgery. Patient does not appear ill, is well nourished.
Case 3. S-461-54. Contributed by Dr. J. Dewar, University Hospitals, Oklahoma City.

31 year old white male. Was first seen in 1949 with a 12 year old history of neurofibromatosis, walking difficulties for 12 years, and a one year history of pain in lower back and both thighs of 1 year duration. Myelography revealed multiple tumors in lower cervical region, and after cervical laminectomy 5 neurofibromas were removed from 4th, 5th and 6th cervical segments. Readmitted 5 years later, in 1954, with a one year history of swelling of the left leg which for the past 4 months had also become weaker and uncomfortable. On physical examination multiple neurofibromas found all over body and large firm tumor involving left thigh. This was removed surgically and presented as a large sessile tumor "arising from sciatic nerve".

Gross specimen (S-461-54): Specimen composed of numerous lobules, one to several cm in size, weighing around 1100 gm. In some portions tumor appears to consist of adipose tissue; other areas are pink and hemorrhagic or grayish-white. The lobules are encapsulated and cut with a gritty sensation as if composed of young cartilage; cut surfaces homogenous.

Subsequent x-rays revealed metastatic lesions to lungs, pleura and ribs.

Case 4. S-374-55. Contributed by Dr. J. Dewar, University Hospitals, Oklahoma City.

68 year old white male. Noted small, hard, pink mass on middle third of extensor surface of left arm, in fall 1952. Mass grew steadily reaching golf ball size within a year (fall 1953). Excised by physician and diagnosed as "sarcoma". Wider excision and skin grafting was done, but there was a local recurrence 5 months later, and the arm was amputated in fall, 1954. About 3 months later developed cough, hemoptysis and hemothorax. Admitted in January 1955 with evidence of much fluid in right hemithorax and soft tissue mass over right hilus in anterior mediastinum. Fluid aspirated from right pleura was bloody and contained cells considered malignant. A biopsy of the pleural mass was performed.

Gross specimen (S-374-55): Submitted several small fragments of gray tissue.

Case 5. S-2185-54. Contributed by Dr. T. S. Gafford, Jr., Terrell-Gafford Laboratories, Muskogee.

49 year old white female. Discomfort and pain in arch of right foot for several years, with gradual increase in severity. Weight bearing on outside of foot because of pain. General health excellent. Increased fullness found in plantar surface of the right foot. At surgery poorly circumscribed tumor mass found immediately beneath plantar fascia composed of fibrous-like tissue. Removed as completely as possible, but firm attachment to surrounding structures. Pathologic diagnosis: plantar fibromatosis. Shortly after surgery recurrence, and 3 months later more tissue was resected which was identical with that removed previously: S-2185-54. 1 month later acute cough, fever, pleuritic pain. Chest x-ray shows soft tissue masses, right hilus, and left lower mediastinum extending into left lung field. Histologic sections of the slides were reviewed elsewhere and diagnosed as "neurofibrosarcoma, grade 1"; the chest lesions were considered metastatic.
Case 6. S-1165-54. Contributed by Dr. T. S. Gafford, Jr., V. A. Hospital, Muskogee.

64 year old white male. 8 months before admission noticed small, flat, blue-black lesion on lateral surface, terminal phalanx, third finger, left side. Slow increase in size. 2½ months ago fulgurated, following which it recurred, grew rapidly, ulcerated and bled.

Physical examination: roughly spherical, fungating and ulcerated mass, about 2½ cm. No lymphnode involvement. X-ray chest negative.

Gross specimen (S-1165-54): Cut surface tan and pale gray with areas of reddish-brownish discoloration. External surface shows shallow ulceration; base is granular, pale-brown.

Case 7. S-2288-54. Contributed by Dr. W. F. Keller, Wesley Hospital, Oklahoma City.

12 year old white female. Admitted for irregularly occurring episodes of fever and chest-pain in left antero-lateral region, without hemoptysis or weight loss. Father has neurofibromatosis. Patient shows cafe au lait spots. Chest X-ray shows oval lesion in lingular segment, left upper lobe 3½ x 2½ cm. A tumor from that area was removed (S-2288-54).

Case 8. S-1845- and S-160-55. Contributed by Dr. Leo Lowbeer, Hillcrest Medical Center, Tulsa.

45 year old white male. Admitted April 1954 with tumor of right thigh, rapidly growing for past 2 months. Hard mass palpable in antero-lateral aspect right thigh, extending from knee to mid-thigh. After biopsy, extensive removal of major portion of vastus lateralis and intermedius muscles. Amputation avoided because of left-sided hemiplegia of 5 years duration.

Gross specimen (S-1845-54): Block of muscle tissue 27 x 19 x 9 cm containing a fairly well outlined, firm, whitish, yellowish or hemorrhagic neoplasm, 14 x 7 x 11 cm.

Surgery followed by radiation. 9 months later small hard painless mass in upper part of old excision. General health good. Was reoperated. Gross specimen (S-160-55): Block of muscle tissue 8½ x 7 x 4½ cm, removed with old cutaneous scar. Within scarred muscle tissue well outlined, almost spherical, 2½ cm nodule, with very hard, partly calcified central core, surrounded by soft salmon-colored homogenous stroma. X-rays of femur, chest negative.

Case 9. S-3344-50. Contributed by Dr. Leo Lowbeer, Hillcrest Medical Center, Tulsa.

75 year old white female. Was hospitalized for pain in right flank of 3 weeks duration and large palpable mass in right lumbar area. No urologic complaints, but moderate pyuria, fever and leucocytosis. A huge kidney was found and removed. Gross specimen (S-3344-50): Huge right kidney, weighing 580 gm, entirely symmetrical; no tumor found. Capsule thick, adherent. Diffuse enormous thickening of cortex which is of greyish-putty like color. Many small scattered abscesses, 2-5 mm. Calices, pelvis moderately dilated and inflamed. Culture: E. coli; streptococcus fecalis.
Case 10. B-8532-48. Contributed by Dr. Leo Lewbeer, Hillcrest Medical Center, Tulsa.

60 year old white female. Noticed for 6 weeks painless mass about nipple of right breast. No discharge. Large firm mass palpable in right breast and radical mastectomy performed.

Gross Specimen (B-8532-48): Breast contains 6 cm measuring spherical tumor underneath effaced nipple, composed of many confluent tumor-nodules of fishflesh-like structure and pinkish-greyish color. Within the tumor, 4 cm measuring blood-filled cyst containing a papillary growth of yellow color filling about one third of cyst lumen. Tumor around cyst wall of orange color. Mass is poorly defined and infiltrates surrounding breast tissue. Axillary nodes not enlarged.


40 year old colored female. Noticed breast tumor for a few months, growth of which was rapid. Skin movable over tumor; no tumor attachment to pectoralis muscle, no retraction of nipple.

Gross specimen (S-54-2525): Piece of breast 20 x 15 x 10 cm containing well encapsulated tumor measuring 11 cm in greatest diameter.

Case 12. S-55-508. Contributed by Dr. E. E. Palik, St. John's Hospital, Tulsa.

20 year old white female. Noted enlarged, slightly tender, discrete left cervical lymphnodes for 6 weeks, right cervical lymphnodes for 3 weeks. No other positive symptoms nor physical signs. No fever, no anomalies in blood picture nor urine. X-rays of chest normal.

Gross specimen (S-55-508): consists of enlarged discrete, somewhat indurated lymphnodes.

Case 13. S-52-903 and S-52-3269. Contributed by Dr. Emil E. Palik, St. John's Hospital, Tulsa.

53 year old white male. "Cyst" removed from underneath skin, lower back region, early 1951, not examined. Recurrence 10 months later and reoperated November 1951 in Oklahoma City. Second local recurrence March 1952.

Gross specimen (S-52-903): Piece of skin, 12½ x 5 x 2 cm, containing in midportion a soft purplish subepidermal nodule, with thin capsule, 2½ x 2 x 1.6 cm. Tumor is friable and located in subcutaneous fat tissue. 5 months later, in August 1952, third local recurrence and reoperated.

Gross specimen (S-52-3269): Piece of skin and subcutaneous fat-tissue, 11 x 3½ x 1.6 cm, containing within subcutaneous fat-tissue a sharply demarcated soft, greyish-reddish nodule, 1½ cm in diameter. Since that time repeated local recurrences. At present in Mayo Clinic for other recurrence,
Case 14. S-98-55. Contributed by Dr. W. Snoddy, St. Anthony Hospital, Oklahoma City.


Case 15. 0-662-54. Contributed by Dr. Hugh A. Stout, Mercy Hospital, Oklahoma City.

56 year old white female, para 7, gravida 7. Admitted for painless swelling region of right upper jaw, present for 2 years, more rapidly growing for past year. No systemic complaints. Normal menopause 10 years ago. Large, fairly fixed node palpable in right subauricular region posterior to angle of mandible. Throat, mouth, chest x-ray normal. At surgery well encapsulated tumor removed. Gross specimen (0-662-54): Well encapsulated tumor, measuring 3 x 2½ x 2½ cm. On cross section gelatinous, grayish-white tissue seen.
Tumor Seminar

May 8, 1955, Hillcrest Medical Center, Tulsa, Oklahoma

Conducted by Dr. Arthur Purdy Stout

List of diagnoses

Case 1.

Case 2.

Case 3.

Case 4.

Case 5.

Case 6.

Case 7.

Case 8.

Case 9.

Case 10.

Case 11.

Case 12.

Case 13.

Case 14.

Case 15.

Please list your diagnosis on this form and mail as soon as possible to Dr. Leo Lowbeer, Hillcrest Medical Center, Tulsa, Oklahoma. No signature is necessary. The diagnoses will be tabulated and available at the seminar if received in time.
Case 1 - (P&S 48242)

MICROSCOPIC: Sections of this tumor show that it is composed of densely massed rather small cells, most of which appear rounded on first inspection but on closer observation it can be seen that some are elongated. A good many capillaries are scattered about but make no definite pattern. The H&E stain shows that in some places the cells seem separated to a moderate degree by a fibrillated stroma. The tumor cell cytoplasm in H&E is very hard to distinguish from the stroma since they have the same tint. Where it is possible definitely to distinguish it, the stroma appears sometimes granular, sometimes vacuolated but without definite characteristics. Special stains are illuminating. The Laidlaw silver reticulin stain shows that everywhere between the cells is a fine reticulin mesh work. With the trichrome stain of Masson, the reticulin fibers are all blue. There are no red fibers so that there is nothing to suggest the type of glial formation associated with some neuroblastomas. Of great importance is the fact that the fuschin stains the cell cytoplasm an intense red. One can see the granules more easily. There are no red fibrils within the cells nor any cross striations.

DISCUSSION: When one encounters a tumor of this sort in a child it is pertinent to think of neuroblastoma, reticulum cell sarcoma, and rhabdomyosarcoma. With H&E alone the decision would be difficult. There are areas in this tumor which raise the possibility of neuroblastoma especially where the cells seem to lie in a possibly glial stroma. But the differential stains show definitely that the stroma is composed of reticulin, not glia, and neuroblastoma can be dismissed. The tumor might be a reticulin cell sarcoma of the soft tissues. But there is strong evidence against this. The trichrome stain shows that the tumor cell cytoplasm is intensely red - much more acidophile than seemed to be the case with H&E. This alone strongly suggests that this tumor belongs to the group of infantile rhabdomyosarcomas. That is what I believe it to be.

Children are known to develop two types of rhabdomyosarcoma. One of them is the myxoid botryoid sarcoma best known from its appearance in the genito-urinary tracts of infants. As a rule this type infiltrates insidiously but rarely metastasizes. Often the cells of these tumors form intracellular myofibrils and even cross striations. The other type, more commonly seen in the soft tissues, the orbit, the middle ear, is not myxoid but tends to form rounded cells as has this tumor. Sometimes they make cross striations, if not in the primary growth then in its metastases, for this variety of rhabdomyosarcoma often metastasizes through the blood stream. The more common variety of rhabdomyosarcoma seen in adults hardly ever appears in children, and conversely while sarcoma botryoides can appear in adults this round cell variety is almost unknown among them.

DIAGNOSIS: Rhabdomyosarcoma (infantile type) of retroperitoneum (recurrent)

Arthur Purdy Stout, M.D.
MICROSCOPIC:  2A and 2a.  2a shows a well differentiated smooth muscle tumor with well developed longitudinally arranged intracellular myofibrils in most of the cells.  The cells are arranged in interlacing bundles.  In spite of the good differentiation, the individual cells are somewhat anaplastic; a few giant cells with large nuclei are seen and a moderate number of mitoses.  In 2A differentiation is not so good and there are fewer myofibrils but the cells are still easily recognizable as smooth muscle cells because of their elongated shape, the blunt ended nuclei and, with the Laidlaw stain, the long straight wiry reticulin fibers paralleling the long axis of the cells.  No cross striations or spider web cells are observed.  2B made from the pelvic retroperitoneal tumor mass shows a tumor now less well differentiated than the preceding nodules excised in 1952 but still suggesting a leiomyosarcoma.  Scattered through it in places are groups of bizarre giant cells with strongly acidophilic cytoplasm.  None of these shows cross striations nor peripherally arranged vacuoles characteristic of the spider web cell.

DISCUSSION:  It seems clear that this is a case of leiomyosarcoma of the uterus probably not recognized in 1948 when the uterus was removed but diagnosed so when there was a recurrence or implant in the abdominal scar.  The first sections we have (2a and 2A) seem to me to confirm the diagnosis.  The tumor grows like a leiomyoma but has some anaplastic nuclei, occasional large cells and some mitoses.  The intracellular myofibrils help to identify the tumor as a leiomyosarcoma but mean little in terms of malignancy, - their presence does not mean that the tumor is any the less malignant.  I can detect nothing in these slides that makes me really suspicious of rhabdomyosarcoma.  Slides 2B show much less differentiation, hardly any myofibrils and add the larger bizarre, multinucleate giant cells some of which have strongly acidophilic cytoplasm.  After a fairly careful hunt I have not been able to detect any cross striations in any kind of cell, nor have the giant cells the changes which suggest rhabdomyoblasts; there is none with peripherally arranged vacuoles, none has chondriosomes arranged as in myocytes.

As I see it, the question for decision here is whether or not all of the cell variations seen in this tumor can occur in leiomyosarcoma, and further, does the presence of the giant cells with acidophilic cytoplasm mean rhabdomyosarcoma?  Now I do not wish to deny that a leiomyosarcoma of the uterus can have foci of rhabdomyosarcoma in one or more places.  I have seen this occur and there was no doubt about the rhabdomyosarcoma elements for there were strap cells and giant cells with cross striations.  But have we evidence of that here?  In my opinion we do not, unless someone can show me real cross striations not due to the overuse of the imagination.  I believe this tumor has remained a leiomyosarcoma throughout, so far as the evidence in my slides is concerned.

DIAGNOSIS:  Leiomyosarcoma of uterus with extension to retroperitoneum and abdominal wall.

Arthur Purdy Stout, M.D.
MICROSCOPIC: The large section made from this tumor is hard to describe because it varies so markedly in different areas. It seems to have been made from the periphery of the tumor and not from the region of its attachment to the sciatic nerve. In some places the cells are arranged in bands, they are spindle shaped, elongated and with the Laidlaw stain it can be seen that they are accompanied by long straight wire-like reticulin fibers. Trichrome stain shows no intracellular fibrils. This rather inconspicuous portion quickly acquires bizarre cells and merges with the predominating arrangement of large to giant amorphous cells, many with several nuclei collected into rounded areas and not associated with reticulin fibers. The cell cytoplasm is acidophile, not vacuolated and does not show either intracellular fibrils or cross striations. These cells are not quite right either for lipo- or rhabdomyoblasts. These two differing yet probably associated elements are set in a fibrous stroma which is also extremely variable, being sometimes quite vascular and sometimes not, and containing peculiar cells which sometimes suggest chondroblasts without actually achieving such differentiation. The tumor is circumscribed but does not seem to me to have a true capsule for there are groups of tumor cells in the fibrous tissue surrounding it.

DISCUSSION: How shall we interpret this bizarre and confusing tumor? I am strongly impressed by the fact that the patient has multiple neurofibromatosis, and that this tumor is said to spring from the sciatic nerve. It would be helpful if we could know whether this really has a sciatic nerve origin or is only attached to it. I shall assume that it does have its origin from this nerve. There is some justification for this assumption because of the area of what seems to be a proliferation of recognizable malignant Schwann cells with the accompanying straight wire-like fibers. I felt satisfied these cells are not leiomyo blasts and with these excluded they can be considered Schwann cells. The other bizarre elements in this tumor are harder to interpret. They do not look like any variety of neuroblasts to me, with which I am familiar, not like any glial cells. They have some resemblance to rhabdomyoblasts but it is a very questionable one. I failed to satisfy myself there is any osteoblastic or chondroblastic activity which I could recognize. Failing positive convincing evidence, I have had to fall back on surmise. It is known definitely that malignant Schwannomas are capable of forming various kinds of differentiated mesodermal structures such as bone, cartilage, fat, rhabdomyoblasts etc.; proof that this is a possibility residing in the fact that in lower forms a derivative of the cells of the neural crest called the mesectoderm normally forms such tissues. In humans the mesectoderm is vestigial and does not function in the same way but the potential is present in all derivatives of the neural crest including the Schwann cells.

Therefore, I choose to interpret this tumor as a malignant Schwannoma with metaplasia.

DIAGNOSIS: Malignant Schwannoma (with metaplasia) of sciatic nerve.

Arthur Purdy Stout, M.D.

Case 4 - (F&S L8245)

MICROSCOPIC: The several fragments of tumor tissue show a confused and differing picture. The more solid parts are made up of vague bands of spindle shaped cells running in various directions. They have only a relatively few reticulin fibers among them which show no definite tendencies either to be wrapped about the cells or to run parallel to them. The cytoplasm of these cells is amphophilic and shows no differentiating features. In other areas capillaries predominate; all have definite reticulin sheaths and have tumor cells about them but no evidence of tumor cells inside the reticulin sheaths. Between these two extremes there are intermediate zones where the cells are variable in size and shape with small giant forms but always without differentiating features other than vacuoles. Where the cells have no definite arrangement at all but are haphazard, a number of cells are vacuolated usually with several rather large vacuoles. The vacuoles are empty and rounded.

DISCUSSION: This case is included not because anyone can make an accurate diagnosis of the original tumor type, but chiefly to illustrate the extreme in anaplasia and dedifferentiation of a sarcoma after it has metastasized and is growing without restraint. The original diagnosis of the tissue from the arm was called sarcoma. This may mean that even then the primary tumor tissue was so varied that the pathologist felt unable to recognize the type, but not knowing who the pathologist was or his degree of knowledge, it would be hazardous to make any assumptions. These metastases to the pleura have been called fibrosarcoma. Although the tumor now has little or no resemblance to a fibrosarcoma, it may once have been one and may have attained its present degree of anaplasia and dedifferentiation during growth and metastasis. The more I study this tumor however, the more it seems to me to resemble a liposarcoma with some of the variations of which that tumor is capable. The fibrosarcoma-like area is a common variant; less common is the very vascular area where the many capillaries have thick walls and the tumor cells fill in the gaps between them. This does not look to me like hemangiopericytoma, therefore I assume that it is simply another variant of liposarcoma. I will therefore reject the idea this is a mixed mesodermal tumor (which I call mesenchymoma) and adopt the probability it is metastatic liposarcoma.

DIAGNOSIS: Liposarcoma (?) of pleura following liposarcoma (?) of arm.

Arthur Purdy Stout, M. D.
MICROSCOPIC: The tumor is made up of a fibrous framework set in which are rather short plump spindle shaped cells which have a tendency to run in bundles but even in the bundles the cells are not neatly arranged but point in various directions. The Laidlaw stain shows that while there are many fine reticulin fibers about the outer aspect of the bundles often inside of them there are few or none at all. The cytoplasm of these cells is so sketchy that it is very hard to define it. There are no myofibrils in it. Mitoses are frequent. The tumor reproduces this pattern everywhere.

DISCUSSION: This tumor should not have been called a fibromatosis. That lesion is a well differentiated growth of fibrous tissue which looks a good deal like scar tissue. It may be hard to eradicate because it infiltrates. Because of its anaplasia, the large number of mitoses and the failure to form reticulin among the inner cells in the cords this tumor must be called a malignant neoplasm. Those of you who have examined cases of fibromatosis of the plantar fascia will appreciate the difference, I would never call a tumor such as this a neurofibrosarcoma. That means it is a fibrous tumor derived from the fibrocytes of a peripheral nerve. There does not exist any proof that there is such a thing. There are of course malignant tumors from the Schwann cells of peripheral nerves. Since Schwann cells are derived from ectoderm, it is wrong to call their tumors sarcomas - the problem is solved by calling them after the name of the cell: malignant Schwannoma. I see nothing to suggest this tumor is a malignant Schwannoma. In fact, it is very hard to know what these tumor cells really are. Much as I regret to do so, I can think of no escape from calling this tumor a fibrosarcoma. One has to suppose that there are no reticulin fibers about some of the cells because they have become so dedifferentiated they have lost the power of forming them. This interpretation is unsupported and unverified, but since I can think of no other, I have to offer it to you for what it is worth.

DIAGNOSIS: Fibrosarcoma (malignant) of sole of foot.

Arthur Purdy Stout, M.D.

Ref:
MICROSCOPIC: This lesion is made up of capillary type blood vessels. These are arranged vaguely into lobules with a more dilated stem or feeding vessel and a surrounding group of smaller capillaries. These are lined by somewhat swollen endothelial cells and with ordinary stains it appears as if there were somewhat similar cells in the stroma between the capillaries. When, however, the Laidlaw silver reticulin stain is used, it is found that these cells are not actually outside of the capillary for they lie inside of its reticulin sheath. There are of course some cells outside of the sheath but they are not many and most of these are probably fibroblasts and inflammatory or phagocytic cells. The capillaries show a marked degree of inter-anastomosis. The growth is superficially ulcerated and quite edematous.

DISCUSSION: The history of this case might have fitted a malignant melanoma but it is quite obvious it is not that and that the discoloration was due to blood pigment and not melanin. I think we should pause to deplore the original treatment of fulguration without biopsy. If it had been a malignant melanoma, this would probably have had fatal results. In any event if this lesion was to have been treated without biopsy, the only justifiable procedure would be a curative type of biopsy excision which quite probably would have meant amputation of the finger.

The growth actually is what the dermatologists unhappily have called granuloma pyogenicum. That suggests it is entirely comparable to the exuberant granulation tissue or "proud flesh" which is sometimes associated with chronic supplicative infections. But the granuloma pyogenicum is a growth of capillaries which starts beneath an intact epidermis or surface mucosa and is not associated with infection, irritation or any other known cause. The surface is often secondarily eroded as in this case but that is a secondary and not a primary event. These lesions in my experience always exhibit a kind of organized growth which produces the pseudolobular effect. They do not all, however, show the endothelial proliferation which results in some of the capillaries being lined with two or three tiers of endothelial cells and causing the lesion to be classed with the benign hemangiendotheliomas. Insofar as this endothelial proliferation is concerned, these growths resemble the benign juvenile hemangiendotheliomas which are a specialty of infants and young children. The latter do not have the organoid arrangement of the capillaries above described. Both have the marked tendency to have a rather free inter-anastomosis of capillaries.

Both of these growths are benign. How are they to be distinguished from the malignant hemangiendothelioma? Here one has to fall back upon words which will have a meaning only after personal experience has made them real. The malignant hemangiendothelioma is characterized by cells which are anaplastic whether flattened or rounded, and it is usually deeply situated rather than up in the skin. They are very uncommon so that it is difficult to acquire experience with their appearance and growth habits.

DIAGNOSIS: Capillary hemangioma (benign hemangiendothelioma type, so-called granuloma pyogenicum) of finger.

Arthur Purdy Stout, M.D.

This tumor in the lung is composed of small rounded cells packed together and set in a very finely fibrillated stroma which is only easily visible when the cells tend to thin out and become sparse. Where they are more sparsely scattered, some of them are a little larger but nowhere does differentiation proceed any further. The cell masses are largely found filling and distending the lung alveoli and plugging some of the pulmonary vessels; nowhere have they formed an independent tumor nodule. With the Laidlaw silver reticulin stain only the fibrous framework of the alveoli, bronchi and vessels are demonstrated. There are no reticulin fibers at all in the tumor. The Masson trichrome stain shows that the fine fibrillated mesh of the tumor is stained uniformly pink to red.

DISCUSSION: Only one diagnosis can be entertained for this tumor in the light of the above findings: It must be a sympathicoblastoma and its distribution in the lung indicates that it must be metastatic and not primary. This is the variety of neuroblastoma which some call ganglioneuroblastoma because of the presence of the glial element and the presumption that where the cells are sparsely scattered through it, they have started to differentiate toward ganglion cells. Often in this intermediate tumor group differentiation has proceeded further toward maturity but it never quite reaches it, and I have never found a completely mature ganglion cell in one of these tumors. On the other hand, pseudo- or real rosettes are never found in this variant. They are definitely an indication of cellular immaturity and tumors showing them are almost invariably fatal. Tumors of this partly mature type only metastasize in about one-third of the cases. When one reads of cure of neuroblastoma, it is almost always a tumor of this type. It is of great interest that the first manifestation of this partly differentiated sympathicoblastoma should be a solitary lung metastasis. I have encountered this phenomenon in a lymph node of the neck and in bone, but never in the lung. It will be most interesting to learn where the primary site may be. One should expect it in connection with one or another of the sympathetic ganglia which extend from the base of the skull to the coccyx in parallel formation or in the suprarenal medulla. Sympathicoblastomas which arise elsewhere are few and most of the reported ones are very questionable.

DIAGNOSIS: Sympathicoblastoma (partly differentiated) of lung metastatic from an unknown origin.

Arthur Purdy Stout, M.D.

Ref:
Case 8 - (P&S 482149)

MICROSCOPIC: The slide marked 8A made from the original lesion shows a tumor made up of interlacing bundles of spindle-shaped cells with a very loose texture. These vary in size and some of them are gigantic with bizarre anaplastic nuclei. Some of these cells are vacuolated. Mitoses are relatively frequent and some are bizarre. This part of the tumor is quite vascular. Section 8B is made from the recurrent tumor. This shows quite a different picture; the tumor is now predominantly an osteogenic sarcoma; it is composed of a growth resembling fibrosarcoma which connects directly with the areas of atypical osteoid. Both areas have anaplastic cells with great numbers of mitoses. No areas resembling 8A are found. A slide which was not given you made from the 8A original tumor shows areas of osteogenic sarcoma like those in 8B but less well defined. The tumor therefore in its primary manifestation showed two differing tissue types in the same tumor.

DISCUSSION: This is a malignant tumor which in its original manifestation is composed of two quite different malignant tumor types, namely liposarcoma and osteogenic sarcoma. The recurrence is altogether osteogenic sarcoma. We have a very considerable number of these mixed mesodermal tumors in our files; the majority are malignant and nearly one-third of these contain foci of osteogenic sarcoma. It has been decided arbitrarily that if a malignant tumor is made up of fibrosarcoma and only one other variety of sarcoma, it will not be classified as mixed but named for whatever the portion not fibrosarcomatous may be. The reason is that almost any sarcoma cell can grow as a fibrosarcoma, so that we have felt that such areas are natural phenomena not worthy of record. The term is used only for those mixed mesenchymal tumors which are composed of two or more malignant elements not ordinarily found together. In the present case the two elements are liposarcoma and osteogenic sarcoma. The malignant mesenchymomas are usually deeply placed and very malignant. Metastases to the lungs are frequent and the outcome usually is incurability and death. The greatest variety of tissues recognized in a single tumor is five for the malignant ones, and three for the benign ones. The behavior of this tumor is the expected one.

DIAGNOSIS: Malignant mesenchymoma of vastus lateralis muscle (recurrent)

Arthur Purdy Stout, M.D.

Case 9 - (P&S 48251)

MICROSCOPIC: The sections of this kidney show that the enlargement is due chiefly to the presence of innumerable large distinctly marked cells with eccentrically placed nuclei showing no unusual nuclear markings and a generous amount of cytoplasm which is sometimes foamy but more often not. Many of these cells have phagocyted either red blood cells, leucocytes or else contain other unrecognizable material which has apparently been phagocytosed. In some places the cytoplasm is granular and acidophile, more often it is amphiphilic and without definite characteristics. These cells are arranged in vague cords and masses with exceedingly delicate reticulin fibers among some of the cells in the masses. The kidney parenchyma is partly effaced by this invasion and the remnants are badly damaged. There are areas of infarction and scattered inflammatory cells of various types.

DISCUSSION: It is first necessary to decide whether or not the predominating cell in this kidney represents a neoplasm. In my opinion it is not neoplastic. They are not plasma cells and while they might belong to the class of reticulin cells, I do not believe they are neoplastic. It is obvious that many of them are functioning as phagocytes. This in itself is not enough to prove they are not neoplastic for many neoplastic cells have functioned as phagocytes, - in this case, however, it seems to me the chief function of the cells is phagocytosis. If that is true then they must be histiocytes and the lesion must be comparable to the xanthogranulomas of the kidney and retroperitoneum. Xanthogranulomas of these areas generally have frankly foamy cells loaded with lipids and with cholesterol ester predominating. Obviously that is not the case here. The gross color is described as "grayish-putty-like" and the number of frank foam cells is minimal. Probably therefore the material phagocytosed by these cells is not cholesterol and strictly speaking this is not a xanthogranuloma. One is sometimes faced with this problem in skin tumors. There the term chosen for such growths is histiocytoma. I think it will be necessary to use such a term here. It is not meant to convey the idea that the growth is necessarily a neoplasm, but simply that it is a tumor-like lesion composed largely of histiocytes.

DIAGNOSIS:  
Histiocytoma of kidney  
Suppurative pyelonephritis of kidney

Arthur Purdy Stout, M.D.

MICROSCOPIC: The morphology of this tumor is so confusing that one needs to see sections of different parts in order to comprehend all of it. Most of the sections show a neoplasm that is solidly sarcomatous. Near its periphery some mammary glands and ducts appear but they give the impression of being engulfed by the cutward infiltration of tumor tissue between them rather than forming an integral part of the tumor. However sections of the papillary intracystic tumor found with the cyst in the center of the main tumor show the picture of the cystic form of intracanalicular fibroadenoma. The papillations are covered with a single layer of epithelial duct cells. The stroma is fibrous with varying degrees of cellularity and with the admixture of scattered bizarre giant cells. At its base this papillary portion is continuous with the very cellular main sarcomatous mass. Not far distant are some more independent intracanalicular fibroadenomas with a stroma suggesting fibrosarcoma and liposarcoma. In another slide while most of the sarcomatous tissue infiltrates diffusely usually assuming the guise of liposarcoma with a great many bizarre giant cells having pyknotic nuclei and with many other mononuclear cells having foamy cytoplasm, there are one or two areas of atypical osteoid formation. In some areas many tumor cells have phagocytosed blood pigment. Mitoses are relatively frequent. I cannot detect any definite evidence of rhabdomyosarcoma. Mitoses are frequent and often atypical.

DISCUSSION: This case poses a problem which I have seldom before encountered. Usually one is confronted either by a sarcoma which seems to infiltrate the breast glands at its periphery but shows no evidence of having originated in the stroma of an adenofibroma, or it starts in an adenofibroma greatly enlarging it but remaining apparently confined within it. In this case the tumor involves a group of small intracanalicular fibroadenomas which are cystic and also infiltrates the outside breast tissue. It is composed of predominating liposarcoma, infiltrating at the periphery and microscopic areas of osteogenic sarcoma. The whole complex can be interpreted in either one of two ways: We may suppose the sarcoma started in a small cystosarcoma phylloides and instead of enlarging it in the usual fashion grew right out of it to invade the surrounding breast tissue. Or it can be hypothesized that the tumor started in the parenchyma of the breast and as it invaded, encountered the adenofibromas, invaded their stroma and converted them into cystosarcoma phylloides. Somehow the first suggestion seems more credible to me and it is the one I would adopt. I think we have seen such things happen before. Since the sarcoma is compound of liposarcoma, osteogenic sarcoma and fibrosarcoma, I would classify it as the malignant mesenchymoma variant of cystosarcoma phylloides. Treves and Sunderland have divided their cases of cystosarcoma phylloides into malignant, questionable and benign histological types. Last and I tried to follow their criteria but without much success. Our five cases which metastasized were distributed two in the malignant group, two in the questionable group, and one in the benign group. This present case would be classed in the malignant group, yet after 6½ years she is without evidence of metastasis. Since these tumors almost invariably metastasize only through the blood stream, our recommended treatment is wide excision if they are small and simple mastectomy if they are large.

DIAGNOSIS: Cystosarcoma phylloides (malignant mesenchymoma type) of female mammary gland.

Ref: Arthur Purdy Stout, M.D.
Lester, J., and Stout, A.P.: Cystosarcoma phylloides,
Cancer 7: 335-353, 1954.
Treves, N., and Sunderland, D.A.: Cystosarcoma phylloides of the breast,
MICROSCOPIC: This second breast case in most respects shows the classical clinical and pathological picture of cystosarcoma phyllodes. A middle aged colored woman in the course of a few months grows a well encapsulated breast tumor 11 cm. in diameter. On gross and microscopic section it is an intra-canicular fibroadenoma with a very variable degree of cellularity but no area appearing to be classifiable as more than a well differentiated fibrosarcoma. Fortunately for us one area was sectioned which shows an altogether different picture in the stroma. Here there has been a profuse proliferation of quite large and generally rounded but sometimes polygonal cells which have been moulded by pressure of their neighbors. They are set in a stroma which tends to be homogeneous but is much broken up by degeneration, fibrillation and vacuolization. The cell membranes tend to be sharply defined. Mitoses are quite frequent.

DISCUSSION: When I first saw this area, I thought it meant that a carcinoma had developed in a case of cystosarcoma phyllodes - an event which has never been described to my knowledge. After I got more carefully prepared sections and studied these cells in detail, I became convinced they were not carcinoma cells. For a time I could not guess what they might be. I am still not certain but I believe they must be chondroblasts and I suggest that this must be a cystosarcoma phyllodes with a chondroblastic element in it. Probably the chances of metastasis from such a tumor are just as remote as they are in the whole group of cystosarcoma phyllodes, namely about three per cent.

These two cases of cystosarcoma phyllodes each has a new and hitherto undescribed feature to it so far as I am aware. It only goes to show that there are still many undescribed features of tumors waiting for alert pathologists to identify and record.

DIAGNOSIS: Cystosarcoma phyllodes (chondrosarcoma type) of female mammary gland.

Arthur Purdy Stout, M. D.
MICROSCOPIC: The sections show what I assume to be a lymph node because of a thin rim of lymphoid cells and traces of a marginal sinus. All the rest is replaced by a tumor composed chiefly of epithelial-like cells which are arranged in twisted anastomosing cords. The majority of the cells tend to be rounded but in places are cylindrical where they come into contact with the fibrous framework. These cells generally show no detectable evidence of differentiation, no mucocarinophilic material and no epidermoid differentiation, except in certain foci where groups of paler cells show hints of epidermoid differentiation and suggest immature Hassel's corpuscles. In places intermingled with the epithelial cells are scattered lymphocytes and sometimes polymorphonuclear leucocytes.

DISCUSSION: With the above described histopathology, this tumor must be a thymoma of the sub-variety called by Lowenhaupt carcinoma of adamantinomatous pattern and forming her sixth group. A somewhat similar tumor in the thymus is described and illustrated by Binkley et al. This present tumor is remarkable because it appears in lymph nodes on both sides of the neck and there is no proof of any enlargement in the region of the thymus. There are several different possible explanations for this. There may be a primary tumor in the thymus either too small or so placed that it was not detected by x-ray. There may be ectopic thymic tissue in the neck from which the primary tumor developed. It could be caudal to or in the lower part of the thyroid or it could be more lateral in the neck. It is not so easy to account for lymph node involvement on both sides of the neck if we are to accept Castleman's statement that thymomas do not spread by embolism through the lymphatic and blood vessels but only by direct invasive growth, by implantation on serous surfaces or by aspiration through bronchi. Because of this Castleman does not wish to label any thymoma malignant. One of his arguments against embolic spread through lymphatics lies in the fact that he has never observed thymoma in part of a lymph node - whenever he has seen it, the entire node is replaced by thymoma. One gains a very different conception of tumors of the thymus from reading Castleman and Lowenhaupt. Most of Castleman's experience has been with non-invasive thymomas, a majority of which have been associated with myasthenia gravis. Lowenhaupt's 16 cases are divided by her into two benign and 16 malignant examples. Only one benign tumor was associated with myasthenia gravis. Two cases had distant metastases.

Binkley et al's 21 cases were divided into 16 malignant and five benign. There were 7 autopsies. Extensive local infiltration consistent with direct extension was observed into the neck most frequently and less often there was infiltration below the diaphragm. Rarely axillary extension was observed. Fourteen of the cases in this group of Binkley et al. had been previously reported by Lowenhaupt.

Our experience leads us to believe that in any clinic dealing chiefly with operative material examples of non-invasive thymoma will predominate. Such cases are regularly associated with the presence of a good many lymphocytes while in the invasive tumors lymphocytes are said to be fewer.

DIAGNOSIS: Thymoma (malignant) of cervical lymph nodes (bilateral) following thymoma (malignant).

Ref:
MICROSCOPIC AND DISCUSSION

Slide S-55-722, has been made from the nasopharynx of the twenty year old girl who had bilaterally enlarged lymph nodes in the neck. (Tulsa Seminar, Case 12 - P&S 48253). The presence of this unsuspected tumor in the nasopharynx which has exactly the same characteristics as the tumor in the lymph nodes of course changes the picture completely. It must be the primary source of the lymph node metastases and the tumor cannot be a thymoma, it must be a carcinoma.

I have never seen a carcinoma of the nasopharynx which looked like this. It is not like the lymphoepitheliomas, the transitional cell carcinomas, the epidermoid carcinomas nor the salivary gland type carcinomas which I have seen primary there. I can only call it a carcinoma and wonder from which of the nasopharyngeal tissues it could have arisen.

DIAGNOSIS: Carcinoma of nasopharynx (type?).

/s/ Arthur Purdy Stout

Arthur Purdy Stout, M. D.
May 12, 1955
MICROSCOPIC: When this tumor first recurred in 1951 superficially in low power it looked like an ordinary differentiated fibrosarcoma composed of interlaced bundles of spindle shaped cells and connective tissue fibers. On closer inspection however it could be seen that there were many capillaries scattered throughout the tumor and as usual the Laidlaw silver reticulin stain brought out the fact that there were many more than could be appreciated with other stains. Even so the cells appeared sufficiently like fibroblasts so that I would not have been sure this was anything more than a vascular fibrosarcoma. However, with the subsequent recurrences, the number of capillaries has relatively increased and the surrounding cells although still largely spindle shaped, have come to look less like fibroblasts and more like pericytes. The Laidlaw stain now produces a pattern which is exactly like many other hemangiopericytomas.

DISCUSSION: This case illustrates very well some of the difficulties connected with the diagnosis of hemangiopericytoma. Unfortunately this tumor labors under the handicap of having a lot of richly vascularized tumors with cells gathered about their capillaries imitate it. The very peculiar nature of the pericyte is partly responsible for this. The pericyte in a normal glomus appears to be nicely rounded often with a clear zone in the cytoplasm about the nucleus and it is wrapped about with a reticulin sheath. Actually we know that these cells are not simple spheres but have long tentacles demonstrable only by a difficult silver technique. These tentacles appear when the cells are grown in vitro. It is also known that the tentacles have contractile powers, in this respect behaving like smooth muscle cells although not having any myofibrils. Differing from the organoid glomus tumor, the pericyte of the hemangiopericytoma may be either rounded or elongated. It is generally but not invariably wrapped about with reticulin fibers. The capillaries are always present but as they may have only a potential space instead of a lumen their presence is not always detected although usually indicated by the flattened endothelial cells lining them. Although I have now studied slides of 197 cases which I have believed to be hemangiopericytomas I am still uncertain about all of the guises which this tumor can assume and under which it can masquerade.

It is generally possible to distinguish it from its brother the glomus tumor but it is not always easy to differentiate it from some cases of venous hemangioma which is a first cousin, nor from the juvenile type of benign hemangiendothelioma which is an imitator. In all cases the silver reticulin stain which brings out the reticulin sheath of the capillary and shows the relationship of the cells to it is of very great aid. Other imitators are epithelial endocrine tumors such as the non-chromaffin paraganglioma, some granulosa cell tumors and some thymic tumors. Finally there are a good many tumors of different kinds which are quite vascular and one of the difficult problems of differential diagnosis is not to be deceived by them. One should always search diligently for evidences of differentiation among the tumor cells and refuse to accept any tumor in which the cells show differentiation of some sort. I still believe the tumor is an entity and worthy of study to learn more about its expected behavior.

DIAGNOSIS: Hemangiopericytoma of back (recurrent).

Ref:

Arthur Purdy Stout, M.D.


Microscopic: The section shows what seems to be part of an encapsulated structure which encloses chiefly tumor tissue but with sufficient remnants of lymphoid elements to permit one to believe it is probably a lymph node. The tumor is a surprise for it is composed of large and small spindle shaped cells accompanied by a good deal of collagen and reticulin paralleling the long axes of the cells and often surrounding them. There is a generous scattering of giant cells with one or two more nuclei which are extremely anaplastic and bizarre. Mitoses are quite frequent and many are bizarre. Some of the giant cells have peripherally arranged vacuoles of varying sizes in the cytoplasm. Some of the small cells also appear to have large vacuoles but this is less easy to determine. The tumor cell cytoplasm is very variable, always acidophilic, sometimes granular, sometimes amorphous while in a few spindle shaped cells it seems to have some longitudinally arranged fibrils. No cross striations are detected.

Discussion: In this case we are presented with a very difficult problem. I shall not be able to solve it beyond all doubt but I can offer some suggestions. Although the nature of the lesion in the zygoma region is not confirmed it was evidently assumed that it was a carcinoma and that the nodule in the submaxillary region was a metastasis from it. Can this be a metastasis from a skin carcinoma? Although so called spindle cell carcinoma of epidermis and squamous mucosa have been described, I have never seen or read of any that looked like this tumor so that I am willing to exclude squamous and basal cell carcinoma of the skin. There are such tumors as spindle and giant cell carcinomas of the thyroid gland and they can closely imitate sarcomas. I doubt very much however if this is a metastasis from one of them because nothing was palpable in the thyroid gland and the characteristic of these giant cell carcinomas is that they form large tumors in the gland, invade the tissues outside of it and often cause tracheal obstruction, recurrent laryngeal nerve paralysis and other symptoms of massive invasion of the anterior neck. I have never heard of one that remained an occult tumor in the thyroid and manifested itself first by metastasis. Further, a submaxillary node is not apt to be the first to receive a thyroid metastasis nor is the submaxillary region a place for supernumerary thyroid tissue in the neck. There is one other variety of epithelial malignant tumor which can have giant and spindle-shaped cells namely the malignant melanoma. I think this tumor is unlikely to be a metastasis from a malignant melanoma because in my experience such tumors have their cells arranged in cords separated by fibrous strands but without reticulin fibers among the tumor cells for the melanoblast is unable to form reticulin so far as I know. These tumor cells have reticulin fibers always among them.

Therefore I see no escape from assuming that this tumor is a sarcoma. It has the general make-up which can be assumed by liposarcoma and rhabdomyosarcoma. Perhaps a leiomyosarcoma could conceivably assume this appearance also. I favor the diagnosis of rhabdomyosarcoma because some of the giant cells are tending to produce spider web forms by marginal vacuolization, because the large bizarre nuclei are not pyknotic as is usual with liposarcoma and because there are granules and occasionally longitudinally disposed acidophile cytoplasmic fibrils in some cells and finally because I cannot recognize any lipoblastic activity in any of the cells. There is perhaps one more supporting observation in favor of rhabdomyosarcoma; it is a little more apt to metastasize to lymph nodes than is liposarcoma.

If this is metastatic rhabdomyosarcoma where can the primary be? Since the nature of the lesion in the zygomatic region is unknown to us, it is conceivable it might have been there. Actually we do not know and will have to leave undecided the question of origin.

Diagnosis: Rhabdomyosarcoma (?) of submaxillary lymph node following rhabdomyosarcoma (?) of unknown origin.

Arthur Purdy Stout, M.D.
MICROSCOPIC: This tumor is so varied in different parts that each of them must be described separately although all of them are in continuity usually with quite an abrupt change from one type to the other. Perhaps the dominant type is composed of groups and cords of dark epithelial cancer cells with decidedly granular cytoplasm. A second type consists of massed gland forms lined with anaplastic tumor cells and with dilated lumens containing a material which is pink to red with the mucicarmine stain and blue from the aniline blue of Mazzon's trichrome stain. No cells with epidermoid characteristics are found lining these glands, but there are some flattened cells which somewhat suggest a tendency in that direction. In still another area the granular cells first described are in continuity with cords of spindle shaped cells that look less like cancer cells and more like some areas in mixed tumors. Along one margin is some lymphoid tissue in and around which is a microscopic amount of normal appearing acini and ducts of the parotid.

DISCUSSION: With the above evidence I think we can account for most of the peculiarities of this case. In the first place it is almost certainly of salivary gland origin. There is a little normal salivary gland tissue in the lymphoid tissue along side the tumor. Since the lymphoid tissue does not have the architecture of a lymph node I will assume it is not that but simply present in the salivary gland. It could be however that this is a lymph node with heterotopic parotid elements in it and that the tumor arose from this heterotopia. The tumor is carcinomatous and differentiates in two directions; first, to form an acinar cell carcinoma and second, to form an adenocarcinoma possibly of the mucocarcinomatous type. When malignant salivary gland tumors do this one should strongly suspect that they are derived from a mixed tumor and that the growth can properly be described as a malignant mixed tumor. The evidence that there are elements of mixed tumor persisting in this growth is equivocal; it suggests itself to me but I cannot be certain. Although I have seen a very considerable number of malignant salivary gland tumors it is the first time I have encountered this mixture of malignant types in the same neoplasm.

DIAGNOSIS: Malignant mixed tumor of parotid salivary gland.

Arthur Purdy Stout, M.D.

Ref:

TUMOR SEMINAR

Dr. Leo Lowbeer

Dr. Ackerman's Diagnoses

1. Embryonal sarcoma (exact type undetermined)

2. Leiomysarcoma (Did you ever find suture material in association with the tumor in the abdominal excision? We have seen leiomysarcoma growing slowly in many occasions.)

3. Malignant Schwannoma

4. Sarcoma, metastatic (exact type undetermined). Thought of liposarcoma, extrasosseous osteosarcoma, and even malignant melanoma.

5. Sarcoma, ?fibrosarcoma. I must admit that I considered malignant melanoma here because practically all tumors on the plantar surface of the foot are malignant melanomas.

6. Pyogenic granuloma. Do not believe this is a true tumor.

7. Ganglioneuroblastoma

8. Malignant mesenchymoma. First slide liposarcoma, second slide extrasosseous osteosarcoma.

9. Acute and chronic pyelonephritis, plasma cell granuloma and amyloid in some of the cells.

10. Sarcoma (exact type undetermined). Lymph nodes (axillary) probably negative.

11. Cystosarcoma (sarcomatous elements, ?liposarcoma)


14. Metastatic malignant tumor in lymph node (check thyroid)

15. Horribly prepared slide. Something bad.
Dear Lauren:

As expected you did exceedingly well on the Stout Seminar, as you will find out when you compare your diagnoses with those of Dr. Stout. I am sending herewith enclosed his mimeographed discussion and diagnoses. Here are some remarks about some of these cases.

Case 2 This is a case of the University Hospital in Tulsa, where it was diagnosed as a rhabdomyosarcoma of the abdominal muscles. Dr. Stout diagnosed it as a leiomyosarcoma metastatic to a primary tumor in the uterus, which at the time of the hysterectomy probably was not cut, or wrongly diagnosed as a leiomyoma rather than myosarcoma. The question of suture material did not come up, but it would have been an interesting clue; exactly how this tumor metastatized to or was implanted into the scar, was debated but not made clear.

Case 3 was diagnosed by Stout as malignant Schwannoma (also your diagnosis), but in Oklahoma City the diagnosis was "liposarcoma." There was however a definite relation to a nerve.

Case 4 This in Oklahoma City was diagnosed as a fibrosarcoma.

Case 5 Admittedly fibrosarcoma in the sole of the foot is very rare. Stout in the ASCP Seminar on Soft Tissue Tumors stated that he had heard of only two in the literature. The question came up whether the first incomplete excision could have been responsible for the lung metastases. It was stated however that X-ray evidence of lung metastasis was found - in retrospect - at the time of the first incomplete operation. A consultation elsewhere resulted in a diagnosis of "neurofibrosarcoma grade I." This certainly is a case of underdiagnosis (the first biopsy diagnosis having been "fibromatosis"). Usually cases of fibromatosis are overdiagnosed as fibrosarcoma.

Case 8 I personally thought that the primary tumor had elements of rhabdomyosarcoma also. Stout even saw - in the first specimen - areas of osteogenic sarcoma. Fat-stains were highly positive.

Case 9 This case in 1950 (the time of operation) was sent to the AFIP where the majority made a general diagnosis of an inflammatory lesion; but Saphir made a diagnosis of myxoid carcinoma; Colonel Ash thought of an adenocarcinoma; Putschar made a diagnosis of multiple myeloma - which is somewhat reminiscent of your own statement of plasmacell granuloma. Stout as you notice considers these peculiar cells to be histiocytes. This lady is well 5 years after the nephrectomy.

Case 10 This patient was operated in 1948 and is well 7 years later. The lymph nodes were not involved. You saw the slides in 1948 and tentatively agreed with my tentative diagnosis of rhabdomyosarcoma of the breast. This however was never really proved. A seven year survival rate despite the large number of mitotic figures certainly is remarkable. This should teach us some humility with reference to our prognoses!
There is a heavy element of liposarcoma present (verified by sudan stains). In sections which were not represented in the seminar slides, the tumor is found to originate in the stroma of a large papilliferous cystadenofibroma (cystosarcoma phyllodes). Stout thought it very unusually that the malignant portion of the tumor did not remain confined but invaded the surrounding breast stroma. He could neither deny nor entirely verify a rhabdomyosarcomatous element but considered it first seriously.

Case 12 This at first was diagnosed by Stout as lymphnode metastasis from a malignant thymoma. Dr. Palik, whose case it is, however had at the time of the meeting, a biopsy available from the nasopharynx taken from an area of slight swelling. Stout saw the slide before the meeting, and agreed that this may be the primary neoplasm. He then withdrew his diagnosis of primary thymoma, malignant, and sent me an additional description copy of which I am enclosing. This certainly is a most unusual case in a young woman.

Case 13 This too is a case of Dr. Palik which I saw in its third recurrence when Dr. Palik was on vacation. The diagnosis on two previous excision had been fibrosarcoma. The third recurrence is represented in one of the two seminar slides. I at that time noting the marked vascularity had a reticulum stain and made a diagnosis of hemangiopericytoma which was at that time, and again now verified by Stout.

Thank you very much for sending me your diagnoses and I hope you enjoyed the slides. Stout of course had unstained sections for special stains at his disposal.

Sincerely yours

Leo Lowbeer, M.D.

P.S. Thank you for your comments on the parotid gland tumor of the 18 year old man (our case S-3119-55, your case 55-1777). Epithelial mucin was found in considerable amounts, which is the reason I thought that this tumor belonged to the muco-epidermoid type with predominantly intermediate cells rather than squamous cells.