The danger of allowing warts and moles to remain lest they become malignant : with twenty-five illustrative cases : read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee, Drs. DeForest Willard, Charles A. Powers and J.E. Moore / W.W. Keen.

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ONE HUNDRED AND THREE DEARBORN AVENUE

1904.

THE DANGER OF ALLOWING WARTS AND MOLES TO REMAIN LEST THEY BECOME MALIGNANT.

WITH TWENTY-FIVE ILLUSTRATIVE CASES.

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PHILADELPHIA.

The title of this paper indicates its purpose. It is chiefly a clinical paper, intended to emphasize the danger of not removing warts and moles, and sometimes nevi, lest they should become malignant, with 25 cases of such malignant degeneration, 12 from my own patients and 13 histories kindly furnished me by friends. Of course, the great majority of such growths never do undergo malignant degeneration, but as one can never tell which will and which will not become malignant, it is of the utmost importance, unless circumstances render it inadvisable, that they should be removed before a malignant change occurs.

Many moles and warts are congenital; others arise later in life, either in childhood or adult life, and still others frequently appear in elderly people. The ordinary warts which are so common on the hands of children, and which, as a rule, disappear as the child grows older, are not considered in this paper. It is those which remain and which involve a permanent possible danger which I shall consider.

All such growths are exposed to traumatism, such as blows, friction of the clothing, scratching on account of the itching, or, in many cases, on account of the presence of a little scab—and who can or does resist the temptation to scratch off these scabs?

In consequence of such injury or repeated and long-

continued irritation—or in other cases without any assignable cause—they begin to increase in size. This sudden activity and increase in size usually does not occur for months or more likely years; it may be thirty, forty or fifty years, or even more after the mole or wart was first noticed. The moment they begin to increase in size they are, I believe, almost invariably already malignant growths, and should be treated as such.

The patient has been lulled into fancied security by the insignificance and apparent harmlessness of such a mole or wart which existed, perhaps, as long as the patient can remember. No apparent reason exists for removing it to-day rather than to-morrow, this year rather than next year. Once, however, that it has begun to grow, he begins to worry, and probably will try to cut it away, or not infrequently, women will twist a string or very often a long hair around it. When imperfectly removed by such methods, especially if they have already begun to grow, the glands soon become involved and in a number of cases a general sarcomatosis follows. The danger of waiting until they have manifestly begun to grow and are, therefore, already malignant, is shown by the fact that ever after amputation of a hand or a foot, they will recur in the glands or in the internal organs.

A number of pathologists, following the views of Unna, first enunciated in 1892, are disposed to maintain that many, if not most, of these are epitheliomata rather than sarcomata. Other pathologists, however, regard them as true sarcomata. Those which arise from warts proper, I believe, are generally epithelial carcinomata. In a number of the cases that I report, however, especially those arising from moles, the microscopic examination showed that they were unquestionably sarcomata. Their clinical course and the macroscopic appearances are also decidedly in favor of their sarcomatous nature. In addition to this, not infrequently their sarcomatous nature is emphasized, as already stated, by a general sarcomatosis, a multiple recurrence which I have not observed in the epithelial carcinomata.

The recent paper of Wilson and Kalteyer,[1] in which one case was reported and 50 others collected from recent literature, very strikingly emphasizes the danger of leav-

1. Amer. Jour. Med. Sci., November, 1903.

ing such growths undisturbed until they grow. Of the 51 cases there reported, 69 per cent. had their origin in a mole or a nevus. Of the 45 cases of melano-sarcoma which had occurred in the London Hospital in twenty years, which Eves[2] collected, 33 occurred in the skin, and of the 33, 26 began in pigmented moles. Both in Wilson's and in Eves' collected cases, the malignant changes seem to have been started in a number of cases by trauma. Even so slight but constantly recurring an injury as combing the hair, by which the growth was frequently irritated and made to bleed, in one, or the rubbing of the collar in another of the cases here reported, seems to have been the cause of the malignant degeneration.

The treatment frequently advised both by surgeons and dermatologists seems to me to lack appreciation of the need for total thorough excision before they begin to grow, for when they begin to grow they are already, as a rule, malignant. Hence I desire to emphasize the need for total excision before malignancy begins, i. e., during the quiescent and apparently harmless stage. Especially bad, I think, is the advice of Crocker,[3] that they should "be shaved down with a scalpel and then have carbolic acid applied to them," instead of recommending absolute excision of the entire growth, including the skin from which they arise. Repeatedly, one finds the advice that "a mole which shows signs of activity in an elderly person should be removed at once." Such moles should be removed prior to the least "sign of activity." Even Wilson and Kalteyer speak of the "importance of early radical surgical interference in which tumors spring from pigmented moles." Instead of this, again I would strongly urge that the pigmented mole should have been removed before any tumor sprung from it.

The family physician is the one on whom the responsibility rests for this early removal, and to him especially is my appeal directed. Often when the surgeon is consulted it is too late, and the patient's life is sacrificed.

The 25 cases which I give are sufficient to emphasize the proper treatment. Only by iteration and reiteration can the bulk of the profession be reached by such warnings. The general practitioner is the one who sees these

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2. Practitioner, February, 1903.
3. Diseases of the Skin, 3d ed., 1903, p. 577.

patients in the pre-malignant stage, when, as a rule, removal would be easy, the resulting scar would be much less of a deformity than the existing wart, mole or nevus, and the danger of malignant degeneration would be entirely eliminated.

The cases reported here have arisen on the wrist, sternum, ankle, scalp, toe, abdomen, scapula, the lumbar and dorsal regions of the back, the nose, vulva, elbow and cheek. Few regions of the body, therefore, are exempt. Many of them exist on parts of the body covered by the clothing, when not even the unsightliness of a scar could be pleaded as a reason for their non-removal; but no matter where they are, and even if a visible scar should be unavoidable, it is the duty of the physician to remove them prior to the onset of any malignant change. The operations for their removal in most cases are so simple that they can be done by the family physician. If, as will rarely be the case, they require a more serious dissection, of if the physician has not at command either the knowledge and skill or the proper facilities for their complete removal, then the aid of a surgeon should be invoked.

In a number of cases reported, the moles or warts were either congenital or had existed as long as the patient could remember (when they probably were congenital); a few of them arose at about 20 years of age; a few later in life. But, as will be seen, malignant degeneration often began after the mole or wart had existed for 30, 40 or even 50 years as a harmless deformity only to become finally a serious menace to life, and in many of the cases they have actually cost the patient his life.[1]

I beg to call attention especially to Case 8 (Fig. 2), which shows that I did not extirpate the entire growth in spite of my desire to do so. Forewarned by my own error in this case, surgeons, I hope, will look more sharply at the tissues in order to be certain that the entire growth was removed. Drs. Ellis and Coplin, it will be observed, also overlooked the error in their ocular examination of the specimen.

CASE 1.—*Birthmark Over the Left Scapula; Extensive Malignant Growth Involving the Scapula and the Axilla; Inter-*

1. In the Brit. Med. Jour. 1904. vol. I, p. 1300, June 4, in an excellent paper on the "Essential Similarity of Innocent and Malignant Tumors," Cathcart reports a number of cases similar to those reported in this paper.

scapulo-thoracic Amputation; Death from Anuria 31 Hours After Operation.

History.—Joseph W., aged 49, Lansdowne, Pa., first consulted me Feb. 12, 1896, at the request of the late Dr. J. M. DaCosta. His father and paternal grandfather died of old age; his mother is still living and healthy. Over the middle of the posterior border of the left scapula he has always had a birthmark. Eighteen months ago it began to grow. Plasters of some kind were applied to it, and it finally "fell out." Soon after that a large tumor began to form over the left scapula.

Examination.—I found a stout, healthy-looking man, weighing 165 pounds. The whole of the spinous portion of the scapula, especially toward the axillary border, was involved in a tumor the size of a large fist. The tissues in the axilla also were involved up to the level of the scapula. I was unable to determine whether the supraclavicular glands were involved. The skin itself did not appear to be involved over any portion of the tumor except at its middle, where it was adherent to the tumor. The skin on his back was studded with 20 or 30 other congenital nevi. I advised amputation of the entire upper extremity as the only possible chance of life.

Operation.—March 19, 1896. After four days of preparation in bed, during which his secretions were regulated, I first removed the middle half of the clavicle, and then, without difficulty ligated the subclavian artery and vein. To facilitate access to the vessels from the first clavicular incision, I made an incision 5 cm. long in the groove between the deltoid and the pectoralis major toward the axilla. Having secured the vessels, I then prolonged the second incision to the anterior border of the axilla and separated the muscles. I then opened the axilla, securing the smaller vessels as they were divided. A number of axillary glands at this point were attached to the vessels, but were all removed later in one mass with the arm. As soon as the scapula was well separated from the trunk, I divided the nerves. This allowed the scapula to fall away from the trunk very widely. My incision was then prolonged down on the arm well toward the elbow, where I made a circular incision around the arm and dissected off the flap from the arm. This gave me a long flap with which to cover the gap caused by removal of the scapula. Dissecting the healthy skin over the scapula backward, I then separated the attachments of the scapula along both its superior and posterior borders, thus severing the entire limb from the trunk. On approximating the flap, I found that I had more than was necessary to close the wound, and cut away some 6 or 7 cm. of the lower portion.

Results.—Until toward the end of the operation he did very well. Then his pulse began to fail and his color became very bad. Drs. T. S. K. Morton and G. G. Davis, who were assisting me, then infused 14 oz. of normal salt solution through the

veins of the other arm. This improved his pulse and his color, but he was still in a very feeble condition at the close of the operation. He died 31 hours later, his kidneys not having secreted any urine after the operation. His temperature for the first 24 hours, up to 12 noon of the day succeeding the operation, had only once been above 100. In the next eight hours, up to the time of his death, it rose rapidly till it reached 108.4.

Microscopic Examination.—Dr. D. Braden Kyle, who made the microscopic examination, reported that it was a round-cell sarcoma.

CASE 2.—*Wart Below the Internal Malleolus from Childhood; Sarcomatous Degeneration at about Sixty Years of Age, with Later Involvement of the Saphenous Glands; Removal of Glands; Amputation of Leg; Recurrence in Groin and Internally, Followed by Death.*

History.—Mrs. F., aged about 60, was first seen in consultation with Dr. Rhoads, Feb. 7, 1894. Ever since she can remember she had a wart on the right ankle, just below the inner malleolus. In 1889, five years ago, this began to enlarge, and some time afterward the late Dr. J. E. Garretson, a dentist, transfixed it with a pin and ligated it. It soon returned, and a year later was again pinned and ligated by her son, who was also a dentist. Recurrence again took place, and in July, 1893, the growth was again transfixed and ligated by Dr. Garretson. Ten months before the last operation the saphenous glands were observed to be enlarged. At the time of the last operation the saphenous tumor had grown to the size of a lady apple. A considerable amount of pigmentation also had appeared in the neighborhood of the original tumor, extending toward the toes.

Examination.—When I first saw her the pigmentation of the skin filled up half the space between the malleolus and the heel and extended toward the toes for a distance of over 6 cm. There were a large number of circular areas of black discoloration, many of which were fused together into irregular masses. On the inside of the right thigh, extending from Poupart's ligament downward, was a mass of glands the size of a fist. On the front of the leg, a little above the ankle, also were two nodules in the skin the size of large peas. The mass in the thigh was discolored, traversed by enlarged veins, and was the source of great pain. In addition to this, she had at times a considerable dyspnea and a great deal of pain in the right chest. A careful examination, however, did not disclose any signs of a tumor in the chest.

In view of the pain, I advised that an attempt should be made to remove the glandular mass at the saphenous opening. If I should be able to dissect this off from the vessels, of which I was by no means sure, then as soon as her general condition would allow I advised that the leg should be amputated just below the tubercle of the tibia.

Operation.—Feb. 13, 1894. I made an elliptical incision over the saphenous glands so as to remove all the diseased portion of the skin. The glands were very adherent to the femoral artery and vein, but with great difficulty I finally was able to remove them without injury to the vessels. The glands extended up to, and, in fact, bulged into the femoral ring. The fascia lata was removed from an area nearly as large as the hand. Prompt recovery followed, the stitches all being out in a week. The pain almost entirely ceased after removal of the glands, and the foot and the chest were no longer sources of irritation.

In view of her bettered general condition, I proceeded to the amputation.

Second Operation.—Amputation, February 23. The leg was amputated by antero-posterior flaps of skin, with a circular flap of the muscles about 3 cm. below the tubercle of the tibia. The patient made a steady recovery from the second operation, with the exception of sleeplessness, which was very marked. For this bromid was given up to 90 grs. a day, but after three or four days this produced undue somnolence and with it considerable mental aberration, both of which ceased on stopping the remedy.

She left the hospital well fifteen days after the operation. I learned that recurrence took place a few months later both in the groin and internally—just where, I did not learn. She died Nov. 16, 1894.

Case 3.—*Wart Above the Left Ear for Many Years; Removal After It Had Attained Considerable Size; Two Recurrences, Followed by Death.*

W. H. B., aged 43, was first seen Jan. 5, 1895, at the Reading Hospital, in consultation with Dr. Samuel L. Kurtz. For many years he had had a little wart above his left ear, which from time to time he irritated by picking. Nearly a year ago it began to enlarge.

Examination.—When I saw him there was a sarcomatous mass, about 7.5 cm., vertically and also transversely, the lower border nearly touching the external ear. No enlarged glands were perceptible.

Operation.—After careful disinfection, I removed the entire mass. The bone underneath was quite free from any involvement. By lifting two large flaps, one extending as far as the border of the hair on the forehead and the other well back on the occipital bone, and by loosening the scalp in front and behind these two flaps and sliding the tissues, I was able to close the entire wound, excepting two small gaps about a finger's breadth, one anteriorly and the other posteriorly. He made an excellent recovery and left the hospital thirteen days after the operation. The gaps were cicatrizing very nicely.

Results.—By a letter from Dr. Kurtz, dated March 3, 1904, I learn that in the latter part of 1895 (nearly a year after the

operation) there was a recurrence of the growth on the left side of the neck, about 5 cm. below the ear. This was removed by Dr. Kurtz on March 30, 1896. Within a year after this, however, there was a second recurrence in the neck. He refused further operation and died during 1897. No microscopic examination of the tumor was obtained, but clinically I should consider it a sarcoma.

CASE 4.—*Wart on Dorsum of Hand for Six Months, Becoming Malignant; Removal of the Growth; Recurrence; Death Five Years Later Without Recurrence.*

History.—Fred H. S., aged 64, New Albany, Pa., was first seen Feb. 20, 1894. His family and personal history were of no importance. Six months ago he first noticed a small wart on the dorsum of the right hand. He irritated this by using a knife in attempting to remove it. Soon afterward it started growing slowly.

Examination.—At present it is about 4.5 cm. in diameter. It is slightly painful at times; not painful on pressure, except around the margins. There is no discharge, but it bleeds very easily. There is no apparent enlargement of the axillary glands. Heart enlarged, sounds rather feeble, apex beat displaced somewhat to the left. The arcus senilis is marked, and he probably has a fatty heart. Urine normal.

Operation.—Feb. 22, 1894. The tumor was removed by an incision a considerable distance beyond the diseased tissue. It was found not to penetrate more deeply than the skin. So much was removed that it was impossible to get the edges together. Skin grafting was done one week later.

A letter from his brother-in-law, dated March 4, 1904, tells me he died in 1899, five years after the operation, and that no recurrence ever took place in the hand, nor did the axillary glands ever enlarge.

CASE 5.—*Congenital Pigmented Mole on the Inner Side of the Left Second Toe; Began Growing After Forty Years; Operation; Recurrence in Situ; Second Operation; Recurrence in the Saphenous and Pelvic Glands; Third Operation; Recovery; Death from General Sarcomatosis.*

History.—Jesse W. P., of Philadelphia, aged 40, first consulted me Sept. 22, 1900, at the request of Dr. E. W. Tulley. As long as he can remember he has had a little discolored mole on the inner side of the left second toe, about the junction of the second and third phalanges. In May or June of 1900, when he was 40 years of age, it began to enlarge, and a month before he saw me it was removed. It is stated that an examination was made which showed that it was a small, round-celled sarcoma.

Examination.—When I first saw him there was a beginning recurrence in the scar. I immediately amputated the entire toe, together with the head of the metatarsal bone. He made a perfectly smooth recovery and went home in a few days. This specimen was given to Professor Coplin and was examined by

him and Dr. R. C. Rosenberger. They reported "that histologic examination shows the specimen to be covered on one surface with stratified squamous epithelial cells, the upper layers of which are distinctly cornified. A large number of what appear to be transverse and longitudinal sections of sweat glands are seen, together with a certain quantity of muscular and adipose tissue. In the subcutaneous connective tissue a small number of lymphoid cells are present. In other areas there is a beginning proliferation of the lower layers of the squamous epithelial cells, but these do not project into the connective tissue.

Diagnosis.—The only change demonstrable in the material at hand is evidently inflammatory in nature."

I saw him again on July 30, 1903, nearly three years after the amputation of the toe. He stated that about a year ago he first noticed a little lump in the scar of my operation of 1900, but that it did not give him any pain until within a few days. On examination, I found a small bluish tumor situated at a point corresponding to the amputated head of the metatarsal bone, which suggested at once a pigmented sarcoma. I, therefore, examined the saphenous glands and found distinct glandular enlargement there, and also, on examination of the abdomen, involvement of the iliac glands. He himself was not aware of the glandular enlargement. Had the glands not been involved, I should have advised an amputation of the leg, but in view of the glandular involvement, this would evidently be of no use. I therefore advised the extirpation of the local tumor in the foot and of the saphenous and iliac glands, although, as I explained to him, it was quite a forlorn hope. He immediately accepted my advice.

Operation.—Aug. 3, 1903. I first removed the tumor, with the remaining portion of the metatarsal bone. I was able, though with some mechanical difficulty, to make a very satisfactory operation, for the tumor seemed to be well encapsulated. Next, through a vertical incision over the saphenous glands, I dissected them out, but with much difficulty. They lay on both sides of the femoral vessels and were quite adherent to them. From the glands downward there were two or three small cords about as thick as thick catgut, presumably lymphatic vessels, which at certain spots showed black oval nodules, producing slight swelling in the cords. This I presumed to be melanotic sarcomatous material. All of these cords were removed as far as any visible disease extended. I then made an incision parallel with Poupart's ligament, and stripped up the peritoneum with ease. This disclosed a number of glands which lay in immediate contact with the external iliac artery, and especially the vein. One was found as high as the common iliac vessels, and another lay in the obturator foramen. The last one was quite as large as a chestnut, and was very difficult of removal. I finally succeeded in removing all of the

glands, which were all dark mottled in color, evidently melanotic sarcoma.

Not long after his recovery from the operation a general sarcomatosis set in, and he died Sept. 25, 1903, with tumors throughout the entire body.

MICROSCOPIC EXAMINATION.

The specimens were examined by Professor Coplin and Dr. Rosenberger. They reported as follows: The tumor from the foot is 2 cm. in diameter; some areas are brownish-black while others are pinkish in color. It is apparently encapsulated by fibrous connective tissue. On histologic examination the tumor from the foot shows a number of nodules made up almost entirely of deeply pigmented cells. In some nodules there is a faint suggestion of an internal alveolar arrangement, while the nodules forming the larger mass are outlined by fusiform cells resembling fibroblasts; at other points cross sections of blood sinuses passing through closely packed masses of cells are recognized; the coats of the blood vessels are infiltrated and in some of them, where the coats are still intact, fragmented cells can be seen in the lumina. The cells are for the most part irregularly round, due no doubt to the influence of reciprocal pressure.

The glands from the groin are of a brownish-black color throughout excepting for a few bands of grayish-white connective tissue. From the saphenous gland there is a thread-like structure, partly black and partly reddish in color. Nearest the gland it is black and suggests an infiltrated lymph channel. Some of the glands still contain more or less unaltered lymphoid tissue. The trabeculæ are infiltrated by foreign cells clearly identical with those seen in the primary neoplasm of the foot. Many of the cells are loaded with pigment and for the most part were mononuclear, though some contain two and others three nuclei. Here and there are small blood vessels, the coats of which are infiltrated by cells identical with those comprising the original neoplasm. Small areas of coagulation necrosis are also distributed throughout the specimen.

Examination of the thread-like structure attached to the saphenous glands shows it to consist mostly of embryonic tissue containing, in some sections, numerous pigmented cells similar to those noticed in the tumor proper. A distinct lumen could not be made out, but in some sections the appearance observed was such as might result from occlusion of a lymph vessel and subsequent cellular infiltration of its wall. Where this appearance is most marked, resembling a section of the vessel, the opening corresponding to a lumen is surrounded or lined by pigmented cells.

Diagnosis.—Alveolar, mixed cell, melanotic sarcoma of the corium or subcutaneous tissue of the foot, with metastasis of the lymph glands.

CASE 6.—*Mole at the Level of the Umbilicus on the Left Side; Removed by Tying a Thread Around It; Enlarged Glands in the Armpit and at the Border of the Left Breast; Operation Declined.*

History.—Mrs. R. H., aged 47, first consulted me Sept. 18, 1893. Her best weight three years ago was 150 pounds, her present weight about 109 pounds. She was married at 18, has had twelve children and one miscarriage. She was born with a mole on the left side of the abdomen, on a level with the umbilicus. A year ago, as it had been enlarging and had reached the size of a walnut and began to bleed, she tied a thread around it. The mole fell off, leaving a scar about 1 cm. in diameter. The application of the thread caused pain in the left breast, armpit and shoulder-blade. A month after it was

detached she noticed a lump in the left armpit, which had grown slowly of late and had become painful. Her appearance would indicate a woman of 60 rather than 47. In the left armpit, at the pectoral border, was a gland as large as a small egg, movable and slightly painful. At the outer border of the left breast also was a second small lump, about 5 mm. in diameter.

She declined operation, and I have lost sight of her.

CASE 7.—*Wart on the Back of Hand Becoming Malignant; Amputation at the Junction of the Middle and Lower Thirds of the Forearm; Malignant Growth in the Armpit; Death from Erysipelas Four Months After a Second Operation.*

History.—Mr. J. P. M., aged 62, Shamokin, Pa., was kindly referred to me Feb. 25, 1896, by Dr. D. S. Hollenbeck. The family history is unimportant. In 1892 a small wart appeared on the back of his right hand without any known cause. It gradually increased in size until it covered nearly the whole dorsum. In May, 1894, the arm was amputated at the junction of the lower and middle thirds of the forearm. In January, 1896, he noticed a tumor in the right armpit. This has continued to grow, but gives him no pain, although the tumor is nearly the size of a fist. Urine normal.

Operation.—Feb. 26, 1896. I cleaned out the entire axilla, not only the enlarged glands noted above, but all the rest. As the tumor lay between the anterior and posterior muscular boundaries of the axilla, I did not remove the muscles. He made an uneventful recovery. On March 15, 1896, he returned to the hospital with a recurrence in the armpit. This tumor was removed by Dr. W. Joseph Hearn, and was again followed by an uneventful recovery. On July 27, 1896, he died of erysipelas.

CASE 8.—*Pigmented Mole on the Back of the Wrist Since Childhood; Malignant Degeneration at 38 Years of Age, with Involvement of the Axillary Glands; Operation; Recurrence at the Wrist and in the Arm.*

History.—Robert X., aged 38, first consulted me Feb. 9, 1904. His father's father died instantly of supposed heart disease at about 70; his father's mother at 83 of paralysis; mother's father, cause of death and age are uncertain; mother's mother died at 60 from an accident. His father is living at 75, in excellent health, and his mother, at 66, in her usual health, though not very strong. His parents are first cousins. One sister died of consumption. As long as he remembers he has had a little mole just above the left wrist on the back of the forearm. It was not raised above the surface, and there were no hairs growing from it. In July, 1903, it began to grow and has steadily increased in size until now it is a pedunculated ulcerated growth, about 3 cm. by 2 cm. It is very black. This may be partially due to some iodin which he recently applied

to it. About the end of November or beginning of December he accidentally observed a lump in the left axilla. This is about the size of an English walnut. Between the tumor at the wrist and the axilla no evidence whatever of any disease

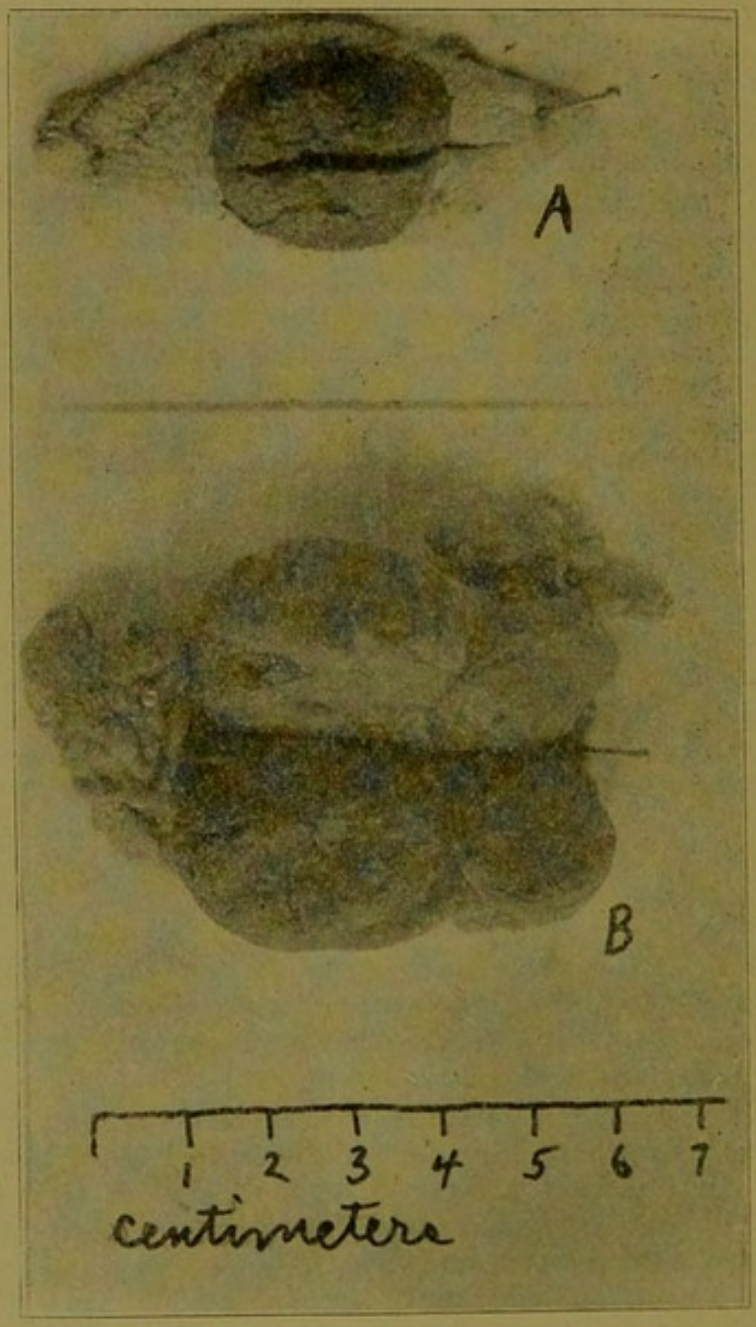

Fig. 1.—A Sarcomatous growth from a long-existing pigmented mole on the wrist. B—Infected and enlarged gland from the corresponding axilla.

exists. The supratrochlear gland could not be discovered. I am not quite sure whether in the supraclavicular space there are any enlarged glands or not. I advised instant removal both of the growth on the arm and also that in the axilla.

Operation.—February 12. I first excised the growth on the wrist (Fig. 1, A). I found, happily, that it did not go through the superficial fascia, but was limited to the skin. I then dissected out two large glands forming the palpable tumor in the axilla (Fig. 1, B) and found a number of smaller glands which were more or less enlarged. I therefore removed the fatty tissue and all the glands in the axilla.

Section of the original tumor on the wrist showed that it was a melanotic sarcoma. Section of the two glands, however, showed no pigmented portion, excepting one spot in each. In one of these it was a rather long, black streak, in the other a small spot. One of the small glands, however, looked very much more suspiciously like a melanotic sarcoma. The full microscopic examination of the tumors by Drs. Ellis and Coplin is appended to demonstrate their sarcomatous character.

It was impossible, of course, to disinfect the growth on the wrist, which he facetiously called his "chocolate caramel," and this wound became infected. In addition to this, a second cause

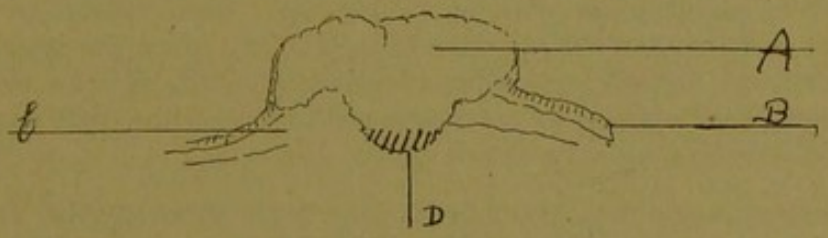

Fig. 2.—Diagrammatic view of tumor in profile showing relation to parts of skin. A—Tumor. B—Epiderm, the thickness of which is somewhat exaggerated for the purpose of making the diagram clear. C—Corium. D—Portion of tumor not removed at operation.

of infection was found in the very great tension of the stitches in the attempt to bring the margins together, which produced a little slough around each stitch. I removed three of the stitches on the second day and two more on the fourth day after operation, which allowed a certain amount of gaping, but prevented any sloughing of the flap other than immediately around the stitch openings. In a week all the stitches were removed and adhesive plaster only was used. Two stitch abscesses formed in the wound in the axilla, though there was scarcely any tension. The infection was entirely limited to the lower part of the wound, where these stitches were; otherwise healing by primary union occurred. He went home twelve days after the operation with the wound almost healed, and a few days later it was entirely cicatrized.

March 12, 1904. Under local anesthesia I removed to-day two small tumors, about the size of peas, which had appeared alongside of the median cephalic vein. The microscopic examination again is appended.

April 14, 1904. He returned to-day with another tumor, about the size of a small cherry, alongside of the median basilic vein. The scar at the wrist where I removed the primary growth is ulcerated and has a considerable area of apparent pigmented granulation tissue. There is no growth perceptible in the axilla. He declined further operation. Since that date he has passed from under my care.

When Professor Coplin and Dr. Ellis examined the mole from the back of the wrist, from which originated the whole trouble, they found that evidently a portion of the base of the tumor had been left behind. Figure 2 shows, in a diagrammatic way, the tumor (a), and the shaded portion (d) the portion which presumably was not removed at operation. I particularly wish to emphasize this, because, so far as I was able to observe by the naked eye at the time of operation every portion of the tumor had been removed. Evidently I did not go deep enough, and my only excuse is that the tissues showed no visible disease, either to my eye or to Drs. Ellis and Coplin. Such a case, however, is a very distinct warning to the operator that he must remove the growth as far beyond the visible evidences of disease as possible. Fortunately, in this case I do not believe that the error did any harm, inasmuch as there was already glandular involvement, and, as seen by the speedy development of melanotic sarcomata in the arm, general infection had already taken place.

MICROSCOPIC EXAMINATION OF THE SPECIMENS FROM THE FIRST OPERATION.

BY DRS. ELLIS AND COPLIN.

Specimen.—A tumor from wrist and two others from the axilla.

The specimen, already fixed in 10 per cent. formalin, consists of three parts.

Part 1 is an elliptical piece of skin 4 cm. long by 2 cm. in maximum width. It bears on the external surface a new growth, nearly circular in outline, that is 2 cm. in diameter and has an elevation of 0.8 cm. This growth is attached to the skin by a pedicle 1 cm. in diameter and so short as to render the overlying mass almost sessile in type. The tumor is dark in color with the exception of certain areas on the margin, where the skin appears to extend for some little distance over its surface; at isolated points the color is entirely black. This is particularly true of one margin which is the site of superficial erosion over an area 0.5 by 1 cm. in size. An incision which has divided the tumor into two nearly equal parts shows the cut surfaces to be alternately gray and brownish-black in color. The tumor appears to extend no deeper than the subcutaneous tissue which forms the inner surface of this part of the specimen.

Part 2 is made up of what appear to be two closely attached axillary lymph nodes and adherent fat, the nodes having been divided by a mesial longitudinal incision. They are 3.5 cm. long by 2 cm. thick. The cut surfaces are slightly lobulated and grayish in color. At one point near the middle of the incised surface is a depressed area 1 mm. wide and 4 mm. long that is black in color.

Part 3 is a very irregular mass of axillary fat and fascia containing numerous hard nodules varying from 0.2 to 0.8 cm. in diameter.

The smaller part of the tumor proper and portions of parts 2 and 3 were prepared for microscopic study. The remainder was fixed in Kaiserling's fluid. The former was properly prepared, embedded in paraffin and sectioned. Sections were stained with hema-

toxylin plus eosin or Van Gieson, toluidin blue, thionin, Mallory's reticulum stain, and Weigert's stain for elastic tissue.

Sections from part 1, cut in such manner as to include skin on either margin of the tumor, show the following: At either end is skin and subcutaneous tissue that presents no evident departure from the normal. These areas of subcutaneous tissue extend toward each other to form the margin of the section corresponding to the internal surface of the gross specimen, but do not quite meet. This leaves a small area formed by the new growth, through which the incision made in removing the tumor appears to have passed. Extending from this point through the section and rising to a considerable distance above the level of the skin surface the new growth makes up by far the greater part of the sections. It is composed largely of cells, but has a certain amount of supporting connective tissue that in some areas is quite prominent. The usual arrangement of the cells is that of variously sized masses separated by connective tissue fibrils, but in some areas this fibrous tissue is present in sufficient amount to form a conspicuous stroma. At a few points are quite large fibrous masses, slightly or not at all infiltrated by tumor cells, which have undergone partial myxomatous transformation. Sections stained by Mallory's reticulum stain show in many of the cell masses a delicate pericellular fibrous reticulum, the fibrils of which are continuous with those of the enclosing stroma.

The cells of the tumor are round or slightly oval in shape and contain single nuclei that react well to nuclear stains. The cellular protoplasm stains indifferently and the external borders are illy defined. The cells vary in size, but on the whole are fairly constant, the vast majority measuring 15 to 20 microns. Many of these cells contain numerous granules of brownish or almost black pigment; this substance is also present between the cells and even in the fibrous stroma. In some areas this pigmentation is a very conspicuous feature of the section. Though the pigment is plentiful in and around areas of old or more recent hemorrhage, it is just as conspicuous in localities where no hemorrhage is found.

Blood vessels are few in number; though situated in the fibrous stroma they are usually thin-walled. The large part of the external surface of the tumor is formed of necrotic tissue densely infiltrated with polynuclear leucocytes, areas of coagulation necrosis being numerous. This part of the section corresponds to the areas of erosion noted in the gross specimen. Near the center of this margin is a small patch of excessively flattended, faintly staining epithelial cells, presumably a remnant of the epidermis carried outward by the advancing tumor. At the junction of the tumor with the skin the latter is seen to extend for some distance over the surface of the growth, gradually becoming thinner until it entirely disappears; at no place is there evidence of proliferative changes in the epithelial layer of the skin thus situated.

Sections from Part 2 present much the same picture as those just described, the principal points of difference being a less distinct alveolar arrangement and a slightly more fusiform type of cell. Pigment-bearing cells are also absent. It is extremely difficult to show conclusively that these sections are from lymph nodes, owing to the fact that they are so largely occupied by the new growth. However, as one margin is a segment of a circle and is formed by a thick band of fibrous tissue containing numerous areas rich in lymphoid cells, it is probably safe to assume that this is the thickened capsule of a lymph node enclosing the new growth.

Sections from Part 3 are from lymph nodes that show hyperplastic changes but no clearly demonstrable new growth.

Diagnosis.—Melanotic alveolar sarcoma of skin with metastasis to axillary lymph nodes.

MICROSCOPIC EXAMINATION OF THE SPECIMEN FROM THE SECOND OPERATION.

BY DRS. ELLIS AND COPLIN.

Specimen.—Tumors from arm.

The specimen consists of two tiny, hard, rounded nodules to which are adhering small masses of adipose tissue. The larger is 0.6 cm. in length and 0.4 cm. in diameter. The smaller is globular in outline and 0.4 cm. in diameter. They are grayish in color. Both were fixed in Heidenhain's solution, dehydrated, cleared and em-

bedded in paraffin. Sections properly stained exhibit the following characteristics:

They consist of oval or circular masses of tissue enclosed by a distinct fibrous capsule; attached to the external surface of the capsule are fragments of fibrous and adipose tissues. Thus far they correspond to the usual appearance of lymph nodes. Further examination shows, however, that the capsule does not enclose lymphadenoid tissue; the entire mass consists of a scanty fibrous stroma and masses of round or fusiform cells ranging from 15 to 20 microns in diameter. In some areas there is a tendency toward alveolar arrangement of the stroma and cells, but this is not a

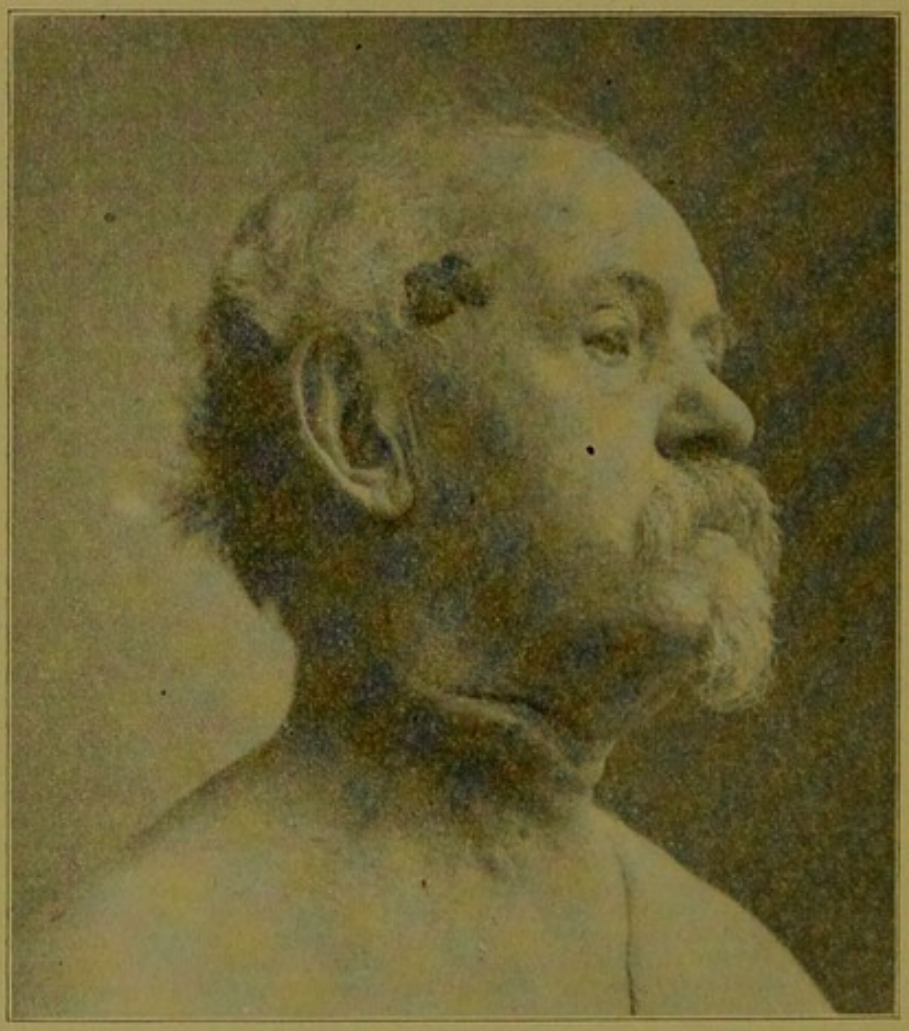

Fig. 3.—Large pigmented mole on right temple. Carcinoma of neck.

conspicuous feature. A few of the cells contain granules of dark brown pigment.

Diagnosis and Remarks.—Melanotic alveolar sarcoma, the same diagnosis as that in a previous specimen from the same patient is given for the reason that the present sections are identical in structure with those from Part 2, the metastatic growth in that case.

CASE 9.—*Pigmented Mole on Right Temple Appearing at 42 Years of Age; Began to Grow Larger and to Become Much More Pigmented at 65 Years of Age; At 69 Years of Age a*

Carcinoma Developed in the Right Neck; Operation; Ligation of Carotid and Internal Jugular; Death in 48 Hours from Hemiplegia.

History.—Mr. J. C., aged 70, was admitted to the Jefferson Hospital Feb. 29, 1904, at the request of Dr. West. His father died suddenly at 68 of an unknown cause; his mother at 49 of pneumonia. He had five brothers and sisters; all but one sister are dead of acute illnesses. He left Scotland in 1854,

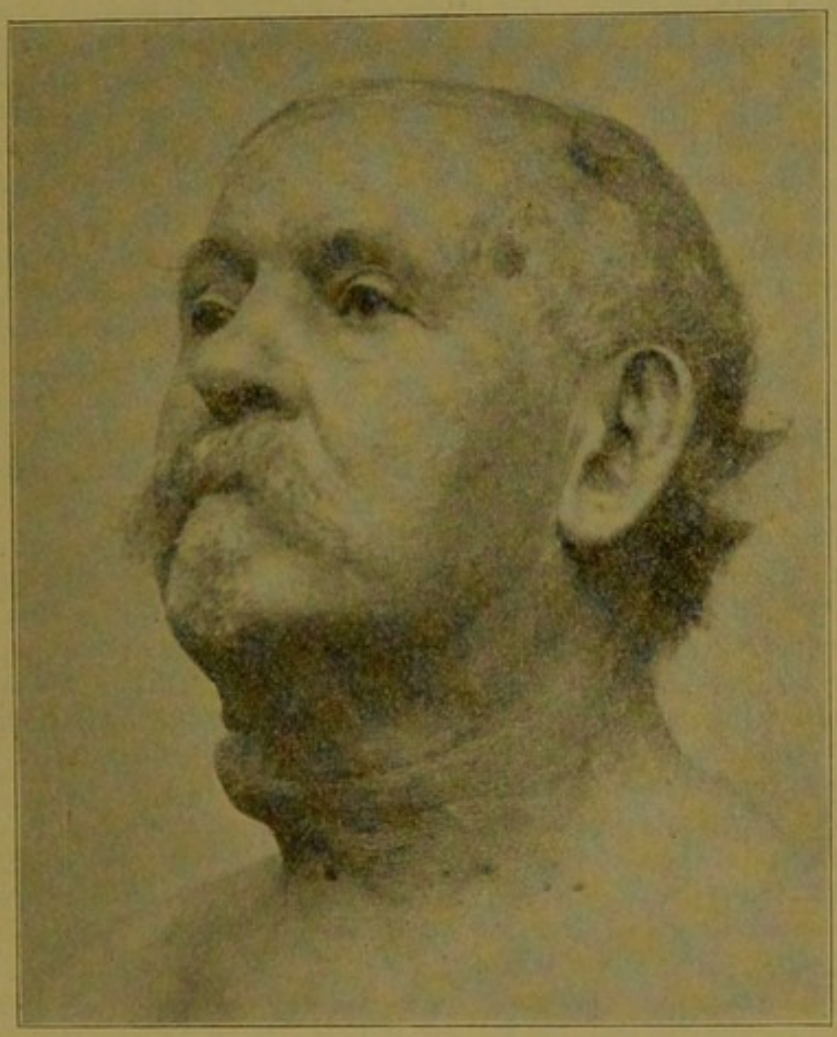

Fig. 4.—Small pigmented moles on left temple. Carcinoma on right side of neck.

since which time he has seen none of his relatives and knows little about them. There is no family history of tuberculosis or malignant disease, but one brother had a large pigmented mole on the calf of his left leg, which, so far as he knows, never caused any trouble.

He had smallpox when a boy and cholera in 1849, but does not know whether he had any of the diseases of childhood. During the last fourteen years he has had six or seven attacks

of gallstone colic, the last attack being ten months ago. In 1876, at the age of 42, he first noticed a brown mole on the right side of his head, nearly 2 cm. in diameter. It did not protrude above the surrounding skin. It very slowly increased in size and became somewhat elevated above the surrounding surface, so that in 1899, about 23 years after he first observed it, it had grown to about its present size (Fig. 3). At that time the growth was removed by the cautery. In two months after this operation the reddish scar began again to turn brown, and finally became black. The growth reappeared distinctly, and at the present time is raised fully 4 mm. above the surrounding skin and is about 3 cm. in diameter. Since the operation four years ago he has noticed two additional moles on the left side of his head (Fig. 4). These are scabby and brown in color, as was the original mole at first. About the end of November, 1903, he first noticed a small lump under the lower jaw on the right side of his neck. This has grown rapidly, so that at the present time there is a tumor on the right side of the neck as large as a moderate-sized fist, which is somewhat movable, but is evidently firmly attached to the deep structures in the neck. The mole never gave him any pain. The tumor has given him but little pain, except when it is handled, saving that during the week before his entrance he noticed at night a rather severe pain. This has never occurred in the day time.

Examination.—His general physical condition is good for a man of his age. In the right temple is a large, hairy pigmented mole of the above diameter, and on the left side the two already alluded to. Over his limbs and body there are a number of small wart-like brown moles. On the right side of the neck is a hard irregular mass, to which the skin is firmly attached, except at the borders. The inner border begins at about the middle line; the outer border reaches almost to the middle line of the neck posteriorly. The horizontal diameter is about 12 cm. and the vertical diameter 6.5 cm. Urine turbid, straw color, 1.016 acid, sugar 2½ grs. to the ounce, urea 0.6 per cent.; amorphous urates and phosphates, squamous and columnar epithelial cells, a few leucocytes.

Operation.—March 2. I first removed the pigmented mole on the right temple and the small brown mole on the left temple. This did not involve anything more than the skin, and their removal was very simple. I then attacked the carcinoma of the neck by making an elliptical incision, beginning a little to the left of the middle line and extending nearly to the middle line posteriorly. After a long and tedious dissection, I finally removed the entire tumor. In doing so, I was obliged to tie the common carotid both above and below the tumor, and the jugular vein in two places likewise, but I was able to dissect out the pneumogastric and the sympathetic nerves, both of which lay posterior to the tumor, but in much less intimate connection with it than were the blood vessels. The phrenic

nerve and also the cervical nerves were exposed by the dissection, but not injured. I was not able to bring together the margins of the wound, though I had made large skin flaps over the upper chest and held the head in right lateral flexion by means of a bandage around the forehead and a strip of bandage extending from this circular bandage down to a band around the chest.

Result.—The oozing from the wound was slight, but by the day after the operation he was distinctly paralyzed on the left side, due, undoubtedly, to the cutting off of the blood supply to his brain. His breathing became stertorous, the right pupil widely dilated, the left contracted, and he died at 1:30 p. m. the next day, about forty-eight hours after the operation. Meantime, his temperature remained normal for the first twenty-four hours; after that it steadily rose till it reached 104.8; his pulse also increased from normal to 120, and his respiration to 32.

PATHOLOGIC REPORT.

BY DRS. COPLIN AND ELLIS.

Sections from the Tumor from the Neck.—These are composed largely of a new growth made up of cell masses and a fibrous stroma. The cells are rounded, polyhedral or fusiform in outline and are so placed as to form the enveloping wall of irregular spaces that are empty or contain a few degenerating cells. These walls are very thick, including dozens or scores of layers of cells that have evidently been derived from the proliferation of the cells originally forming the boundary of the spaces, which are undoubtedly dilated lymph sinuses. The fibrous stroma of the tumor varies in amount and texture. Usually it is quite abundant and in some areas is dense in type; for the most part it is loose and cellular and at certain points shows a tendency toward myxomatous transformation.

Sections that include the artery and vein show the former to be attached to the tumor-bearing mass by fibrous adhesions; its wall is not penetrated by the new growth. The artery is the seat of pronounced atheroma, this lesion involving much more prominently one-half of the circumference of the vessel. The vein wall has been partially destroyed by the tumor which projects into and nearly obliterates the lumen.

Sections from the glandular mass of tissue are from a salivary gland that contains no demonstrable new growth. Perivascular accumulations of small round cells are present and a moderate degree of intralobular fatty infiltration is also a feature.

Sections from the large mole from the right side of the head show that the elevated area is made up mainly of an enormously thickened epidermis, though the papillæ of the corium are also prolonged upward as loose, cellular extensions. At many points the epithelial cells have undergone disintegrative changes with the resulting formation of variously sized cavities. Many of the cells, particularly those in the near vicinity of papillæ, contain a large quantity of dark brown pigment. This material is also present, mainly intercellular in location, in the extremities of the papillæ. There is no evidence whatever of any abnormal extension of epithelium into the underlying tissue or of the presence of malignant growth.

Sections from the small mole from the left side of the head present an appearance very like that of the larger one. The overgrowth of the papillæ is more pronounced and cysts in the epithelium are larger and more numerous.

Diagnosis.—Lymphangio-endothelioma of the neck; pigmented cystic papillomas of the head. We are not inclined to believe that there is any connection between the growths removed from the skin and the tumor from the neck.

I have included this case with the others chiefly because possibly it may be an exception to the rule which seems to exist, that as soon as a mole begins to enlarge it is already malignant. The pigmented mole of the right temple, which made its appearance when he was 42 years of age and began to grow and deepen in color when he was 65, would, probably, have caused a carcinoma or a sarcoma at a later period. The microscopic examination of this mole, however, shows no carcinomatous change. Yet, on the other hand, the patient at 69 years of age, four years after the mole began to grow, did develop apparently a glandular tumor under the lower jaw on the same side of the neck. Whether there was any nexus between these two growths is, of course, an open question. It is at least both curious and significant that after the growth of the mole the carcinoma developed on the same side of the neck. Whether, if this mole had been thoroughly extirpated before it began to enlarge, the carcinoma in the neck would not have appeared, of course one can not definitely determine. One thing, however, is certain, that if the mole had been removed before its growth began, it could not by any possibility have been responsible for the carcinoma in the neck. No other apparent cause for the up-springing of the carcinoma in the neck was discoverable.

CASE 10.—*A Presternal Wart Appearing at 20 Years of Age, Becoming Malignant 36 Years Later; Removal; No Recurrence After 7 Years.*

History.—John Y. E., aged 56, Royersford, Pa., first consulted me April 3, 1897, at the instance of Dr. Brower. When he was 20 years of age he first noticed a small wart in front of the sternum. This underwent no change until a few months ago. It then began to grow, at first slowly, but within the last few weeks quite rapidly. He has suffered no pain until recently. On examination I found a tumor 3x5 cm. in diameter just to the left of the middle line over the sternum, between the level of the second and third ribs. It was a very dark blue or purple color and was ulcerated over a large part of its surface. It was not attached to the sternum and there was no dissemination through the neighboring skin. No enlarged glands were perceptible. I removed it the same day without removing anything but the tumor and the tissues underneath it down to the sternum. He made an uneventful recovery and went home in a few days.

Dr. Kyle, who made the microscopic examination, reported as follows:

MICROSCOPIC EXAMINATION.

On section it was dark and granular in appearance, somewhat resembling an engorged spleen. From the cut surface a dark, thick fluid could be pressed out. Perpendicular sections directly through the center of the tumor showed embryonic connective tissue cells closely packed together, uniformly distributed, and held together by a homogeneous albuminous substance. The blood vessels were

open channels without distinct walls. The cells varied in size and shape, some being round, others spindle-shaped, with here and there areas of pigmentation. Near the borders there was normal connective tissue.

Diagnosis.—Mixed cell sarcoma.

A letter from the patient dated March 15, 1904, reports him in excellent health, without any evidence of recurrence.

CASE 11.—*Callosity at the Ankle, Caused by a Shoe, Becoming Carcinomatous; Excision; No Recurrence After Seven and a Half Years.*

History.—Mrs. B. R. S., aged 23, of Shenandoah, Pa., was first seen Nov. 19, 1896, at the request of Dr. J. B. Davis. Her family history is excellent. She was married a year ago, but has not been pregnant. About a year and a half ago she first noticed a small lump on the front of the ankle, where the shoe produced some pressure, which had caused a callosity of the skin. This began to grow, until at the present time it is as large as a large chestnut. It is sessile. Apparently it has no connection with the parts underneath the skin; it is quite dense to the touch, but is not painful. No glands are perceptible in the groin or in the saphenous region. Urine normal.

Operation.—Nov. 20, 1896. I excised the growth, which I found did not involve any of the tissues below the superficial fascia. The subcutaneous tissues were removed along with the skin down to the tendons, but without opening their sheaths. She made an uneventful recovery and went home in a few days.

The tumor was examined by Dr. D. Braden Kyle, who reported as follows:

MICROSCOPIC EXAMINATION.

Sections perpendicular to the surface of the skin showed an infiltration of epithelial cells downward into the tissue beneath, with distinct nestings of cells loosely adherent to the fibrous stroma. The fibrous stroma contained blood vessels with thickened walls and irregular lumen.

Diagnosis.—Carcinoma.

I was rather surprised at the microscopic diagnosis, for clinically it had none of the external appearances of such a growth. On section it showed a mottled dark brownish yellow.

Her physician, Dr. J. Pearce Roberts, reported, on Dec. 5, 1896, that there was a small nodule the size of a split pea situated at the base of the first metatarsal, which was quite painful to touch. On March 5, 1904, he reports that the little nodule on the dorsum of the foot still remains without any change.

While this case is not strictly one of either wart or mole, yet the character of the growth, as shown by microscopic examination and the absence of recurrence for so long, in spite of the appearance of the little nodule at the base of the first metatarsal, which is entirely independent of the growth which I removed, seems to me to make it worth while to add it to the present list of cases.

CASE 12.—*Congenital Mole of Umbilicus; Sarcomatous De-*

generation After 45 Years; Immediate Excision; Recurrence in the Wall of the Abdomen; General Sarcomatosis.

History.—Mrs. Dr. X., aged about 45, was first seen, with her husband, Dec. 12, 1902. As long as she can remember she has had a little mole just within the depression of the navel. In June, 1902, in consequence of its showing a tendency to grow, it was cauterized with nitrate of silver, and later a doctor attempted to remove it by electrolysis, transfixing it with needles. After rather prolonged treatment with the needles the mass dropped out, but soon recurred. When I saw her it was about the size of a pea, was ulcerated and discharging a small amount of pus. In addition to this, she had a fatty tumor the size of two fists in the left axilla.

Operation.—On Dec. 18, 1902, I removed the fatty tumor and excised widely the entire umbilicus and the surrounding tissues with the wart down to the peritoneum, without opening the abdominal cavity. She recovered in a few days. The umbilical tumor was given to Professor Coplin in the laboratory of the Jefferson. He reported that the little wart "was composed largely of nests of cells enclosed in a scanty fibrous stroma. The cells are chiefly of the small, round variety, though in a few areas they are somewhat spindle-shaped. Infiltration of these cells extends nearly half the length of the section, immediately beneath the skin margin. No distinct vessels are noted in the cell areas described. In other portions of the sections the vessels are practically normal. A small amount of pigment is present. Diagnosis: Alveola sarcoma, showing slight melanosis."

After the operation I saw her repeatedly and there has never been the slightest tendency to recurrence at the navel; but about the end of April, 1904, she noticed a small lump under the skin 5 cm. above and 3 cm. to the left of the former situation of the navel. From the age of 18 she has had some pelvic trouble, for which she has had various kinds of treatment, including a prolonged treatment by Apostoli in Paris. During the first week in May, 1904, her pelvic trouble seemed to be aggravated, and she had much pain in the right iliac fossa, together with some slight fever. For this Dr. James C. Wilson, the famliy physician, was called in. Her temperature rose to about 101, and examination of the blood at intervals of a few days showed a slowly increasing leucocytosis, beginning at 15,000, and on May 23 reached 19,000. There were no symptoms of appendicitis.

I was called in consultation on May 25, and concurred in Dr. Wilson's opinion that there was no evidence of an appendicitis or other suppurative process which we could discover. Examination of the uterus showed it to be enlarged to the level of the umbilicus and very adherent on the right side, and the seat of a number of myomata. She had marked and in-

creasing pain on the outside of the right leg, especially above the external malleolus. No local reason for this could be discovered, and we were inclined to think that it was the result of pressure from the pelvic conditions. Meantime, however, bearing in mind the sarcomatous nature of the former umbilical tumor, we feared greatly a sarcomatous change either in the uterus or possibly in the iliac glands. Beside this, she manifested a distinctly cachectic appearance, which was very painfully evident to me when I saw her on May 25, after an interval of some weeks.

After a conference with her husband and Dr. J. M. Fisher it was decided that an abdominal section should be done, followed by such operation, including, if necessary, total hysterectomy, as the pelvic conditions indicated, and also that the tumor of the abdominal wall should be removed.

Second Operation.—On May 30, 1904, I did a hysterectomy. The uterus had a large number of myomata, with very dense adhesions on the right side. Other than the mechanical difficulty of the hysterectomy, there was nothing worthy of note. The tumor above and to the left of the umbilicus was removed. It was limited to the fatty tissue, which was rather abundant, and was about the size of a cherry. It had no adhesions either to the skin or the muscles. On section, the tumor was clearly a sarcoma.

In view of the fact that no lymphatic gland exists at the point where this tumor arose, and, therefore, that it was not a direct lymphatic infection from the umbilical tumor, it naturally gives rise to great apprehension lest it prove to be the beginning of a general sarcomatosis.[1]

Dr. Charles A. Powers of Denver has kindly furnished me with the following cases to reinforce the lesson of this paper:

CASE 13.—*Mole Over the First Lumbar Vertebra from Earliest Recollection; at 35 Years of Age It Began to Grow; Very Wide Extirpation; Axillary Recurrence After Two Years and a Half; Second Operation; Death Three Months Later from General Sarcomatosis.*

Eight or nine years ago Dr. S. G. Bonney brought to me a man of 35 years, who had a growing lump about the size of a filbert in the mid-line of the back over the first lumbar vertebra. He said that since his earliest recollection there had been a mole at this place; that about two months before a little fluid had gathered in it. He had shown it to a physician in a small New England town, who had simply opened it. When I saw the man the little lump presented the appearance of sarcoma. I removed it in rather wide limits under ether, and a frozen section was made on the spot by Dr. H. C. Crouch, then professor of pathology in the University of Colorado. Dr. Crouch pronounced it melanosarcoma, whereon I removed tissue over an area 6 inches long by 4 inches wide down to the vertebræ. I saw the man frequently for two

1. June 25. She has suffered vague pains in the right leg and foot, right arm, shoulder and back. Within a few days there have developed three nodules on the right back, two on the right shoulder and one in the right great toe—all evidently sarcomata, and the earliest indications of a general sarcomatosis, which will soon terminate her life.

years, during which time nothing happened. He then disappeared for six months, when Dr. Bonney again brought him to me with an axillary mass the size of a small orange. This was removed as widely as possible and found to be melanosarcoma. Three months later the man died of general sarcomatosis. There was no recurrence in or about the original scar.

CASE 14.—*A Mole Over the Last Dorsal Vertebra; Sarcomatous Development; Removal; Recurrence; Second Operation 18 Months Later; Death Soon After.*

About two years ago I saw, in consultation with Dr. J. M. Walker and the late Dr. Clayton Parkhill of Denver, a middle-aged woman who had enormous, rapidly-growing tumors of both axillæ. In examining her, I noticed a small scar over the last dorsal vertebra and was told that a mole had been removed under cocain 18 months before, and that the physician had put it in a bottle of alcohol and given it to her husband. It was found and examined by Dr. J. A. Wilder, professor of pathology in the University of Denver, who reported it to be alveolar sarcoma. Parkhill had removed a sarcomatous mass. The woman died six weeks after I saw her.

CASE 15.—*Mole Over Second Lumbar Vertebra; Sarcomatous Degeneration in Middle Life; Removal; Recurrence in Situ in Three Months; Second Wide Removal; No Recurrence for Three Years.*

About three years ago Col. Henry Lippincott of the United States Army, then chief surgeon of the Department of the Colorado, brought to me a lady in middle life, the wife of an officer, who gave the following history: Three months before the physician at an army post in Arizona had removed a small "growing mole" from over the second lumbar vertebra. He had sent this to Dr. L. A. Conner of the pathological department of the New York Hospital, who had pronounced it myxo-fibro-sarcoma. When I saw the patient there was a return in the scar. The widest excision was made and the tissue sent to Dr. Connor, who pronounced it a "sarcoma." I heard recently from this lady. There is as yet no sign of relapse.

I have seen a number of cases in which epithelioma has followed long-existing warts. I can not give the exact number, but I definitely remember these:

CASE 16.—*Epithelioma of Nose from Wart.*

A year and a half ago I removed (at St. Luke's Hospital) a large epithelioma of the nose which developed from a wart.

CASE 17.—*Epithelioma of the Vulva Developing from Long-Existing Papilloma; No Recurrence After Four Years.*

Some four years ago I removed a fair-sized epithelioma (Dr. J. A. Wilder) of the vulva which developed from a long-existing papilloma. The inguinal glands of both sides were hyperplastic, but not cancerous. The woman was a patient of Dr. B. P. Anderson of Colorado Springs, and remains well.

CASE 18.—*Wart on the Scalp Developing into Epithelioma; Removal.*

While at the New York Cancer Hospital, twelve years ago or more, I removed a very large epithelioma of the scalp following a wart which "often bled when the hair was combed."

CASE 19.—*Wart at the Elbow Developing at the Age of 75 into Epithelioma: Death from Cancer of the Liver Two or Three Years Later.*

Twelve or fourteen years ago I removed, under cocain, a very small epithelioma developing from a wart just above the elbow in an old gentleman of 75 years, the father of my friend, Dr. A. There was no return in the scar, but I think he died of cancer of the liver two or three years later.

Dr. E. Wyllys Andrews also has kindly furnished me with the following cases:

CASE 20.—*Mole on the Cheek from Childhood; Malignant Degeneration at 70 Years of Age; Involvment of Submaxillary Glands.*

A man, aged 72, with hypertrophy of the prostate, sought Dr. Andrews' advice for the prostatic hypertrophy. He had lost weight in the previous few months. A mole on the left cheek, which had existed from childhood, became ulcerated and inflamed two years before Dr. Andrews saw him. A month later the submaxillary lymphatic glands on the same side began to enlarge.

At the time when he consulted Dr. Andrews this tumor was about the size of an egg. On the left cheek where the mole had been there was a ragged ulcer 2 cm. in diameter, covered with a bloody crust; the base of the sore was hard and indurated, and the tumor in the neck was firmly attached to the deep structures, evidently a carcinoma. Suprapubic cystotomy by spinal anesthesia was performed in March, 1903, but the patient declined operation on the carcinoma and left the hospital at the end of March much improved in health. In December, 1903, his health was still much improved. The condition of the epithelioma has not changed.

CASE 21.—*Wart on Temple for Over 30 Years; Eight Months After It Began to Enlarge; Section Showed a Carcinomatous Growth; Cure by X-Rays.*

Mrs. McD., aged 67, had for over 30 years, and possibly much longer, a small warty tumor, the size of a small pea, near the outer angle of the right eye above the zygoma. In December, 1901, it began to enlarge. When seen first by Dr. Andrews, in August, 1902, it was 1.5 cm. in diameter, saucer-shaped, slightly excavated, with an indurated base. A small section showed a typical epithelioma. The diagnosis made was rodent ulcer. The ulcer was entirely cured by 20 or 25 exposures to the *x*-rays for from five to fifteen minutes at a distance of 10 to 30 cm.

CASE 22.—*Pigmented Mole for Many Years in Front of Ear; Carcinomatous Change Coincident with Growth.*

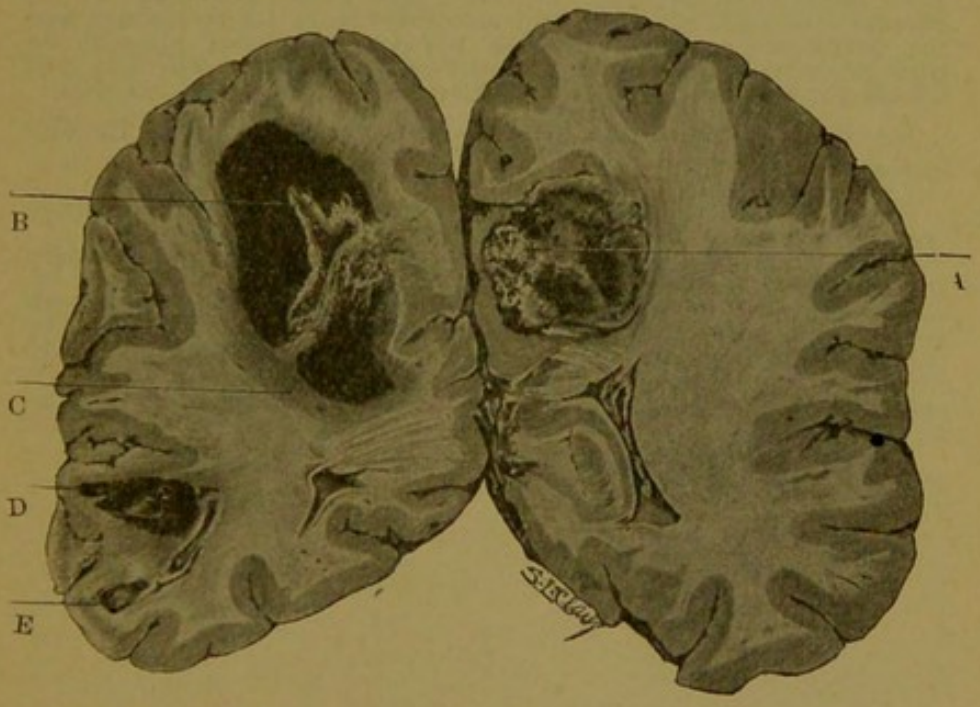

Fig. 5.—Cerebrum, coronal section, anterior aspect; superior parietal lobule and posterior part of temporal lobe. Three-fifths natural size. Jefferson Medical College Hospital laboratories. No. 2538. Melanotic sarcoma of brain, secondary to primary growth in skin of back. A—Secondary nodule showing considerable hemorrhage in the interior of the new growth and a scanty irregularly distributed but narrow band of peripheral hemorrhage. B— Similar mass in opposite hemisphere. The hemorrhage in this area is around the growth which is considerably compressed. C—Blood-stained zone surrounding mass; it will be observed that the peripheral blood-tinging of the white matter is more marked on this side than the other, due to the more abundant hemorrhage and its peripheral distribution. D and E are also areas of hemorrhage containing varying quantities of neoplastic tissue; the latter, which in the absence of extravasated blood, is grayish-brown or nearly black, is further obscured by hemoglobin inhibition.

Man, aged 52, had a brownish mole 5 by 15 mm. in front of the left ear which had been noticed for many years. In the summer of 1903 it enlarged to a size of 2 cm., with an elevation of above 1 cm., with an indurated base and a sanious discharge. The whole growth and the skin from which it grew was removed. Microscopically, the tumor proved to be an epithelioma.

CASE 23.—*Mole on Back of Neck; Irritation by Collar; Development of Carcinoma.*

Man, aged 45, had a mole on the back of his neck, which was irritated by his collar and developed an epithelial cancer, as was verified by a microscopic diagnosis.

Dr. J. Chalmers DaCosta has given me the following brief history of a case of melanotic sarcoma:

CASE 24.—*Pigmented Mole on the Back of the Hand; After a Number of Years Malignant Degeneration and Axillary Involvment; Removal of the Mole and Cleaning Out of the Axilla; Recurrence in a Few Weeks, Followed by General Sarcomatosis; Death in Three Months.*

The patient was a man nearly 50 years of age. For a number of years he had had on the back of his hand a pigmented mole. Some time before I saw him this began to enlarge. When I saw him the glands in the corresponding axilla also were enlarged. The mole was removed and the axilla cleaned out. The glands removed were filled with pigment. A few weeks after the operation the glandular growth recurred, and associated with its recurrence was the development of sarcomatous nodules containing pigment all over the body, and also of flattened pigmented areas. The man died within three months of the operation with general sarcomatosis.

Dr. F. X. Dercum has kindly given me the notes of the following case:

CASE 25.—*Mid-Scapular Mole Undergoing Malignant Degeneration; Death from Sarcoma of the Brain.*

W. B. S., a man, aged 57, for many years had a mole between the scapulæ. He was admitted to the Jefferson Hospital Nov. 25, 1903, with symptoms of a brain tumor. Some time before his admission this mole had begun to grow and was removed by his family physician. In July, 1903, while driving, he was suddenly seized with an epileptic attack. This was followed by a number of others, and he died Nov. 30, 1903, five days after his admission to the hospital.

The postmortem was made by Dr. W. M. L. Coplin, and Fig. 5 shows the sarcoma of the brain.