A CASE OF TUMOR OF CAROTID BODY

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Tumors of the carotid body are of sufficient rarity to make it seem worth while to report their occurrence. Shipley and

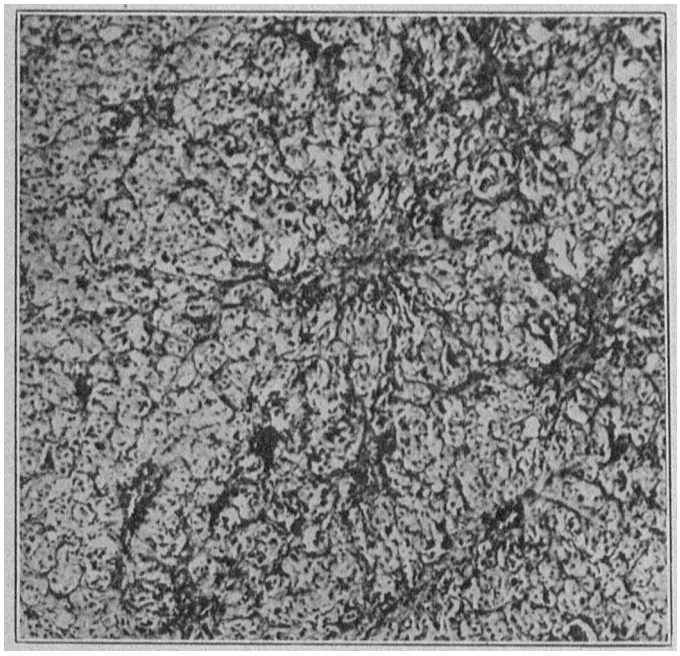

Fig. 1.—Low power photomicrograph showing the general structure of the growth; × 65.

Lynn,[1] in May, 1916, tabulated all the reported cases up to that time, numbering sixty-five, and added their case to those previously reported. The growths and their pathology was thoroughly discussed by Callison and MacKenty[2] in 1911. We wish to add another case to this group of rather interesting tumors:

History.—A. M., Jewess, aged 51, born in Russia, was admitted to the Post-Graduate Hospital, Dec. 6, 1915, with the diagnosis of fibromyoma of the uterus and tumor of the right side of the neck. She stated that she had had a mass in the right side of her neck for at least eight years, and that up to a year ago it had not changed in size, but that since then it had enlarged slowly. It caused her no pain, no difficulty in deglutition, and except for the presence of the mass, no signs or symptoms.

The patient was a stout, healthy-looking woman, with a firm, deep-seated mass on the right side of her neck, at about the level of the hyoid bone, and presenting just anterior to the border of the sternomastoid muscle. It felt lobulated, and was not movable to any degree. There were no signs of any involvement of the adjacent nerves. A definite diagnosis was not made.

Dec. 7, 1916, hysterectomy and appendectomy were done by Dr. Herman J. Boldt, and immediately following, at his request, the tumor of the neck was removed by Dr. Cahill. A curved collar incision was made in one of the wrinkles of the neck, for the woman was quite stout, and the tumor was exposed. It was found to be very vascular, reddish like thyroid, and quite firmly attached to the deeper structures. An attempt was made to deliver the tumor, but this was found impossible. On careful dissection, it was found that the internal jugular vein ran into the mass and seemed to be incorporated with it. The jugular vein was ligated above and below the tumor. It was then possible to dissect the tumor free from the common carotid. It was located between the external and internal carotids, extending down into the bifurcation crotch, where it received a large arterial branch. After the ligation of this branch, the tumor was removed. Just below the tumor was a small round mass resembling a lymph node, which was also removed. On account of the close relation of the tumor to the hypoglossal nerve, the nerve was considerably stretched in the removal. The oozing of blood, until the tumor was removed, was very free. The wound was closed with a small tissue drain.

The patient was in fair condition and made a rapid recovery. Immediately following the operation, she had unilateral paralysis of the tongue and some difficulty in swallowing, but this proved to be only temporary. She was discharged from the hospital, December 24, the wound having completely healed. Unfortunately the patient was lost track of, and all attempts to locate her have failed, so that no subsequent history is available. The specimen was sent to Dr. Richard M. Taylor, who reported as follows:

Pathologist's Report.—The specimen consists of two pieces. First: A lobulated, light red, roughly rounded mass, measuring 4 cm. in diameter and weighing 30 gm. The surface is fairly smooth and it appears to be completely encapsulated. The consistency is moderately firm. On section, it is uniformly light pink throughout, except for a few small dark red areas scattered here and there. The cut surface is smooth and regular, but on close inspection it is observed to be divided into numerous irregular lobules by fine trabeculae. The capsule is very delicate, but intact. Second: A small dark red almond-shaped mass, measuring 3.5 by 1.5 cm. by 1.5 cm., and having the usual appearance of a lymph node.

Microscopic: The growth is surrounded by a thin but complete fibrous capsule, from which delicate interlacing trabeculae extend inward. These fibrous trabeculae serve the double purpose of carrying the blood vessels and acting as a support to the tumor cells. The primary blood vessels are quite large, and the walls are well formed by both connective and smooth muscle tissue. The large vessels soon branch and finally break up into a fine capillary network. The principal cell of the growth is a rather large cuboidal

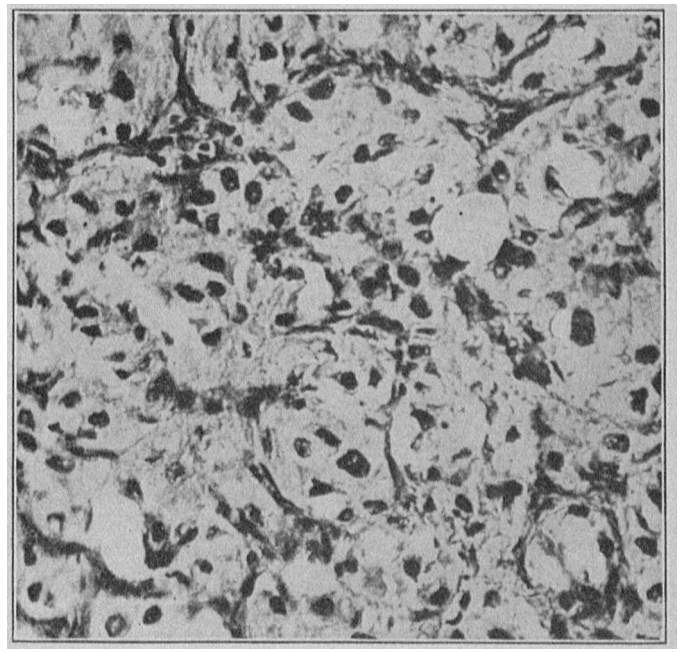

Fig. 2.—A higher power magnification of a selected field showing more intimately the character of the cells; × 300 diameters.

or polyhedral cell with a relatively small and deeply staining, centrally located nucleus, in which a nucleolus can usually be recognized. The cytoplasm is relatively abundant, stains rather indifferently with eosin, and has a homogeneous or finely granular structure, but frequently contains small vacuoles. In some instances, one sytoplastic mass seems to contain several nuclei. This may be only an apparent fusion,

1. Shipley, A. M., and Lynn, F. S.: Carotid Tumor and Aneurysm of the Internal Carotid, THE JOURNAL A. M. A., May 20, 1916, p. 1602.
2. Callison, J. C., and MacKenty, J. E.: Ann. Surg., 1911, **58**, 721.

but it is quite suggestive of a giant-cell formation. The cells are regularly disposed on a fine interlacing honeycomb-like stroma, which also contains the capillaries. The cells, therefore, come into intimate contact with the blood stream, and are well and systematically supplied with nourishment. This very intimate relation and frequently poor differentiation between the cells of the blood vessel walls and the tumor cells is suggestive of an endothelial origin, but the general appearance of the growth is certainly quite different from the usual forms of endotheliomas. While there is a marked departure from normal, there is a distinct resemblance of the growth to the normal structure of a carotid body, and its origin from this organ seems to us quite certain. The growth probably bears a closer resemblance to some of the thyroid carcinomas than to any other form of tumor, but in some respects there is also an analogy to the suprarenal tumors, both in the character of the cells and in the arrangement. The suprarenal tumors, however, have a greater tendency to form solid tubules or cords of cells, while in this tumor the cells are arranged more in small lobules or at least very irregular columns. No mitotic dividing forms were recognized, and, judging from the general arrangement of the cells and their relation to the stroma and the intact capsule, it would be inferred that the proliferation is slow and that the tumor is relatively benign and not prone to give rise to metastasis. The examination of the neighboring and somewhat enlarged lymph node reveals only a mild chronic inflammatory process.

Diagnosis: Tumor of carotid body.

ADENOCARCINOMA OF THE BREAST OCCURRING IN A BOY OF THIRTEEN

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Carcinoma of the breast in the male child is extremely rare. Some assert that it never occurs,[1] while others merely mention it as "possibly occurring, but very rarely." In light of the report of the case of carcinoma in the breast of a boy by Blodgett,[2] it would seem unwarranted to affirm its non-occurrence. Blodgett's patient was a boy, aged 12, and is the only case which I have been able to find in the literature in which a carcinoma occurred in the male breast at an earlier age than in the case which I am reporting.

REPORT OF CASE

History.—John S., aged 13, American, height 5 feet 5 inches, weight 127 pounds, well built, healthy and strong, had never had any serious illness, and was considered very hearty. His father and mother were both living and in good health. The grandfather on the father's side died of tuberculosis at the age of 40; the grandmother on the father's side was living and in good health. Both the grandparents on the mother's side were living and in good health. There had been no history of malignant disease in any of the grandparents. One sister of the father of the patient died at the age of 35 with an adenocarcinoma of the uterus. All other relatives were well and strong, and give no history of malignant disease.

About one year ago the patient was struck in the right breast with a baseball bat. The blow was light, and caused no immediate soreness. Soon after this violence the patient noticed after exertion a burning and stinging sensation in that breast. Five months before the patient was seen by the surgeon, swelling became noticeable and there was some tenderness. When seen by the surgeon, Jan. 25, 1917, the tumor was quite noticeable. At this time a tentative diagnosis of chronic mastitis was made, and the patient prepared for operation the following day.

Operation and Result.—Dr. J. F. Mackey, Odessa, Mo., performed a radical operation, removing the entire gland with the surrounding fatty tissue. The diseased tissue was approximately 8 cm. across and about 1.5 cm. thick in the center; toward the margins the tumor was thin. The axillary glands showed no enlargement.

The healing process was rapid. Three weeks after the operation, the union was perfect and the scar firm. At this time no abnormality could be detected by inspection or by palpation. There was no enlargement of the axillary glands on the side on which the operation had been performed. The left breast was examined, Feb. 25, 1917, one month after the operation. It showed some enlargement both to inspection and to palpation. The axillary glands on that side were not enlarged. The examining surgeon believed a tumor present in this breast, but since the parents of the patient did not consent to an operation, no diagnosis as to the nature of the tumor could be made with certainty.

Pathologic Report.—Microscopically there was a marked proliferation of the gland elements throughout the sections. The newly formed glands were very irregular in shape, and the epithelium was arranged in many layers. Some showed definite lumina, while in others the proliferation was so great that the lumen was entirely filled up with cancer cells. Many of the glandular structures showed an ingrowth of

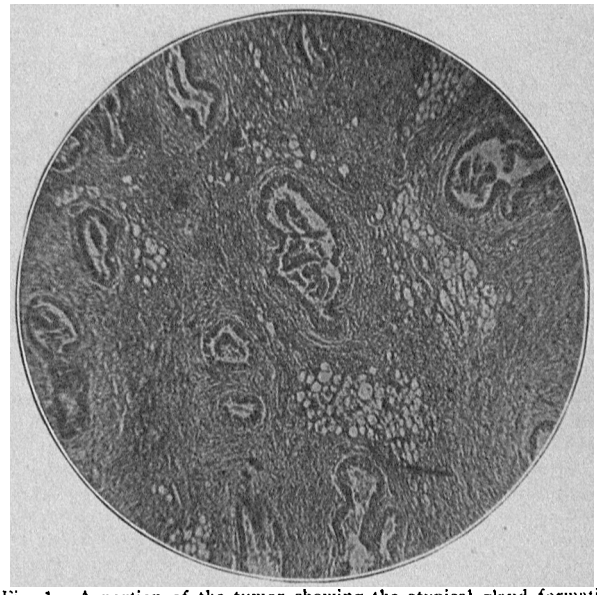

Fig. 1.—A portion of the tumor showing the atypical gland formation. There is a new formation of cancer acini within the preexisting gland acini. Low power magnification.

stroma dividing it up into many smaller divisions. There was a tendency toward the formation of grapelike clusters of these atypical glands. The ducts showed some reduplication in the layers of epithelium. The stroma was abundant but not highly cellular. The adipose tissue appeared normal except for some areas in which the cancer had grown into it. There was a tendency to degeneration of the cells which lay centrally in the atypical acini, but this had not progressed to a marked degree.

The pathologic diagnosis was: adenocarcinoma of the breast, of the medullary type.

COMMENT

As stated, this case is largely of interest because of the infrequency of cancer in the breast of boys. Cancer of the male breast comprises only from 1 to 2 per cent. of all mammary neoplasms. Rodman[3] and Bryan[4] each put the figure at 1 per cent., Deaver and McFarland[5] at 1.5 per cent., and Schuchardt[4] places it at 2 per cent. While these figures indicate the relative infrequency of carcinoma in the male

1. "The first four quinquennia of life are completely exempt from malignant epithelial tumors of the mamma; at least I know of no well-authenticated case that can be cited as having occurred within this period." (Williams, W. R.: The Natural History of Cancer, New York, William Wood & Co., 1908, p. 329).
2. Blodgett, A. N.: Cancer of the Breast in a Child, Boston Med. and Surg. Jour., 1897, **136**, 611.
3. Rodman, W. L.: Diseases of the Breast, Philadelphia, P. Blakiston's Son & Co., 1908.
4. Cited by Deaver and McFarland (Footnote 5).
5. Deaver and McFarland: The Breast: Its Anomalies, Diseases and Treatment, Philadelphia, P. Blakiston's Son & Co., 1917.