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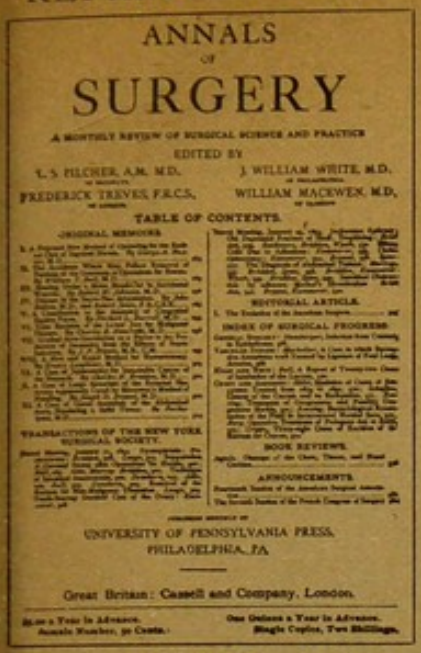

ANNALS
OF
SURGERY

A MONTHLY REVIEW OF SURGICAL SCIENCE AND PRACTICE

EDITED BY

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BRANCHIAL CARCINOMA.

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In the autumn of 1891 the following case[1] came under my observation. A lady of forty-eight years presented herself with a hard, rather diffuse swelling at the right side of the neck. The mass had been growing slowly for something over a year, was about the size of a pigeon's egg, irregular, deeply seated beneath the angle of the jaw, and stretching backward to and beneath the sterno-mastoid muscle. The tumor was partially fixed, was not painful, and but slightly tender. The skin over it was not involved. Careful examination of the ear, nose, mouth, pharynx, and œsophagus revealed nothing abnormal.

Operation.—By an incision of appropriate length the tumor was reached. It was found to be without a capsule and to be adherent to the surrounding structures. It was dissected out, and with it was removed a liberal area from the adjacent tissues. Neither of the important vessels or nerves was wounded. Closure of wound; prompt healing.

The tumor was solid; its cut surface was grayish and firm; it presented the gross appearance of a malignant growth. It was sent to Dr. F. Ferguson, pathologist to the New York Hospital, who pronounced it carcinoma.

A year later an enlarged gland, the size of a hazel-nut, was removed from the region of the scar. It also was pronounced carcinoma by the pathologist. The patient has been seen at frequent intervals since, but no further enlargement has been discovered. At this time, six years after the primary operation and five years after the removal of the recurrent lump, she is apparently free from relapse and may be reported as probably cured. The original growth may be looked upon as a branchiogenous carcinoma.

[1] From the practice of Dr. William T. Bull, New York City, who kindly permits this publication.

Our first knowledge of these tumors was furnished by Richard von Volkmann in 1882 (Das tiefe branchiogene Hals Karcinom, *Centralblatt für Chirurgie*, Band ix, S. 49), who had observed three cases of neck carcinoma, in which there was no original growth in the skin or in the mucous membrane of the nose, mouth, pharynx, larynx, œsophagus, or ear, and which did not originate in the lymphatic glands. The patients were men between forty and fifty years of age. The tumors varied in size from a plum to a child's fist. In two of these cases the consistency was hard; in the third instance there was a mucoid degeneration. In the latter case the tumor was of large size. In each instance the tumor, together with the surrounding structures, was removed and found to be carcinoma. Von Volkmann says that these undoubtedly originated from epithelium left behind in the closure of the branchial clefts, and he therefore terms them "branchiogenic carcinomata."

Other instances of these tumors, which, with the kind assistance of Dr. George R. White, of New York, I have been able to gather from literature, are as follows:

Case I.—Santer[1] removed, in June, 1886, a malignant cystadenoma from above the clavicle of a man. In November of the same year there was local recurrence, and one month later the patient died of a large tumor involving the ileum and its mesentery. Santer believed the original growth to have been of branchial origin.

Case II.—R. Treves.[2] The author removed from a man of fifty-three years a tumor of the neck two inches below the left ear. The growth had been present two months. The patient died of exhaustion three months later. Microscopic examination showed a typical carcinoma.

Case III.—In 1885, Treves[3] removed from the right side of the neck of a woman, of fifty-two years, a large tumor which was cystic in one-third of its extent, the remainder being solid. The microscopic evidences corresponded to those in the preceding case.

Case IV.—Regnault.[4] Operation by Langenbeck. Tumor of nine months' growth, in the neck of a patient of sixty-five

years. Jugular and carotid involved. Thorough extirpation; death from exhaustion at end of forty-eight hours. "Carcinoma branchiogenic."

CASE V [5].—Operation by Czerny. Tumor of three months' growth, at division of carotid artery on the right side of the neck. The tumor was scraped out. "It presented the characteristics of a branchiogenic carcinoma of Volkmann."

CASE VI.—Silcock.[6] A man of thirty-six years presented a tumor of three months' growth under the lower third of the left sterno-mastoid muscle. Operation by Owen. Death. Microscopic examination showed a large cyst with papillary granulations consisting of epithelial cells, which formed nests and long columns.

CASE VII [7].—Cystic tumor on the right side of the neck of a man of fifty-six years. The tumor was incised by Mr. Pepper. The macroscopic and microscopic evidences were the same as in the preceding case.

CASE VIII.—Richard.[8] Man of fifty-seven years. Tumor of one year's growth under the right angle of the jaw; this had broken down several weeks previously. Complete extirpation was impossible. Microscopic examination showed the mass to be a typical carcinoma. (This case and the following two are from the clinic of Professor Bruns, in Tübingen.)

CASE IX [9].—Man of sixty-two years. Rapidly growing tumor of five months' duration near angle of jaw on right side of neck. Extirpation. The growth was partly cystic and partly solid, and was found to be a carcinoma on microscopic examination.

CASE X [10].—A patient of forty-three years had suffered with a cyst of the neck since childhood. Two years previous this cyst had been incised, but the incision had never healed. Nine months before operation the tissue about the sinus had begun to grow, and had formed a hard tumor the size of a fist. The sinus had not healed, the skin and mucous membrane were not affected. Extirpation. Recovery. Microscopic examination showed carcinoma resembling skin-cancer, with numerous cell-nests.

CASE XI.—Gussenbauer.[11] Male, aged sixty years. During the past nine months the patient had noticed a hard tumor at the edge of the sterno-mastoid, at the junction of its upper and

middle thirds. The mass was movable on the deep structures of the neck. Nothing abnormal was found in the throat or on the skin. Extirpation. Death from recurrence ten weeks later. Microscopic examination showed a flat-celled carcinoma with many large columns of cells (zellensträngen) and cell-nests. The adjacent lymphatic glands showed the same structure.

Case XII[12].—Male, aged forty-four years. Eight months previous to being seen the patient had noticed in the right side of the neck a lump the size of a nut. This had grown to the size of an egg. It was attached to the sterno-mastoid, but movable on the deeper structures. Extirpation. "Epithelial carcinoma."

Case XIII[13].—Male, aged fifty years. Tumor of three months' growth, the size of an apple, hard and irregular, projecting into the pharynx, but not involving the mucous membrane. Extirpation. Death from œdema of the lungs two days later. "Branchiogenous carcinoma."

Case XIV[14].—Male, aged forty-seven years. In this instance a tumor beneath the angle of the jaw on the left side of the neck grew in four months to the size of a child's head. Hard and fixed. Extirpation of the growth, including six centimetres of the vagus nerve, the latter procedure being attended by no symptoms. "Carcinoma."

Case XV[15].—Male, aged sixty-five years. Tumor in neck, the size of a goose-egg. Extirpated, together with ten centimetres of vagus. No symptoms following nerve resection. "Carcinoma."

Case XVI[16].—Male, aged forty-eight years. Tumor in left submaxillary region. Extirpation. "Flat-celled epithelial carcinoma."

Case XVII[17].—Male, aged fifty-three years. Tumor size of a fist under the angle of the jaw. Extirpation. "Fibrous, flat-celled carcinoma."

Case XVIII.—Reverdin and Mayor.[18] A patient of sixty years presented a large tumor of rapid growth in the right side of the neck. Hard at the periphery but fluctuating in the centre. Firmly attached to the deeper structures. Operation, death from recurrence at the end of three months. "Flat-celled epithelioma."

Case XIX.—Hektoen.[19] Male, aged forty years. Tumor under left sterno-mastoid; movable; the skin and mucous mem-

brane normal. Partial extirpation. "Squamous-celled carcinoma."

CASE XX.—Eigenbrodt.[20] Male, aged sixty-two years. Tumor of neck. Extirpation. "Branchial carcinoma." No recurrence at end of two years. In this operation a portion of the vagus was resected, and for some time after this there was a quickening and irregularity of the pulse, together with paralysis of one vocal cord. Pressure over a certain portion of the scar excited an irresistible attack of coughing.

When we study the origin and growth of these tumors we find the task a simple one. They are to be classed with the teratomata; their origin is from the inclusion epithelium left during the imperfect closure of a branchial cleft. This epithelium may be from the skin or from the mucous membrane of the pharynx. So, from this non-closure of one of the clefts we may have a branchial fistula, or from a proliferation of the contents a branchial cyst, while the epithelial growth may invade the tissues and result in an epithelioma of ordinary histological structure. The tumor-matrix is congenitally displaced epithelial tissue, and this epithelium may proliferate just as may epithelium elsewhere. The cells of the growth are of the flat variety.

It is not probable that accurate diagnosis can be arrived at in many of these tumors before they are removed and histologically examined. The diagnosis must rest on this: that an epithelioma of the neck which does not involve the skin or mucous membrane, and in which no original focus can be found in these structures, is to be looked upon as a branchiogenic carcinoma, and in our clinical examination of deep cervical tumors it is well for us to bear in mind the possibility of their being of this nature. At the meeting of the French Surgical Congress, in October, 1897, Berger (*Gazette Médicale de Paris*, October 23, 1897) called attention to the fact that outlying accessory thyroid glands may take on a malignant growth, and that these are to be differentiated histologically from the branchial tumors of von Volkmann.

Analysis of the reported cases is not of especial interest.

We may note, however, that of twenty of the cases in which the sex is noted eighteen were in men and but two in women. One of the patients was thirty-six years of age, all of the others in which the age was reported were over forty. Three of the patients died as a direct result of the operation, four died of recurrence from one to four months afterwards. The fate of the others is unknown, with the exception of Eigenbrodt's patient, who was free from recurrence two years after operation, and the case reported by me, which is well six years after the removal of the original growth.

In the consideration of any form of malignancy cases in which the end result is unknown are robbed of much that is of interest. In forming provisional prognosis in the class of tumors under consideration we are to take cognizance of their deep situation, the glandular nature of the region, and the difficulties attending thorough extirpation. It is probable that only those attacked early can be cured, and the rapidity of growth in many of the cases cited in the foregoing pages renders this of especial importance. It is needless to say that the management must rest upon early and thorough extirpation, and careful observation of the patient during the remainder of life.

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