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TWO CASES OF METASTATIC CARCINOMA OF THE CHOROID.

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of Philadelphia.

Although more than a score of cases of carcinoma of the choroid, in most instances metastatic after mammary carcinoma, have been recorded, each new example of this affection possesses certain features of clinical and pathological interest, and, therefore, I add the following to the list already published:

Case I. Miss H., aged 40, born in the United States, teacher, consulted me on the kind recommendation of Dr. J. C. Sheridan of Johnstown, Pa., on the 28th of October, 1897, because the vision of her right eye had begun to fail, this failure of vision having first been noted as a marked symptom three weeks previous to her visit, although for some time before this date she had appreciated that the visual acuity of this eye as compared with that of its fellow was diminishing.

History. — The patient had been remarkably free from physical disabilities and had led the active intellectual life of a school-teacher, holding a most responsible position. In March, 1897, she consulted Dr. Sheridan on account of a tumor of the left breast, which on examination presented the clinical characters of carcinoma. Dr. Sheridan removed the entire breast and cleanly dissected out the axillary glands. There was kind healing except at one point, where, owing to insufficiency of tissue, an uncovered surface was allowed to remain and heal by granulation. As soon as the patient recovered from the effects of the operation she returned to her duties as school-teacher. She experienced no difficulty of any kind until her attention was attracted to the dim vision of the right eye. Dr. Sheridan informs me that the tumor possessed the ordinary characteristics of scirrhus of the mamma.

Examination. — The patient was a slender woman, but in spite of the carcinoma there was no cachexia. Examination of the region of operation showed an oval granulating surface, several nodules of recurrence along the line of the cicatrix, and deep-seated nodules in the axilla beneath the clavicle and in the inferior

triangle of the neck. The functions of the other organs of the body appeared to be normal.

Eyes. — V. of R. E. equaled counting fingers at two feet. The media were clear, the tension normal. The optic disc was a vertical oval of good color, surrounded by a partial choroid ring, thicker upon the temporal side. The veins were a little fuller than normal, the arteries natural in size, and there was faint choroidal disturbance upon the nasal side. Beginning near the edge of the optic disc and covering the macular region and extending for some distance beyond it there was a broad, flat, grayish-yellow elevation, the summit of which was seen with + 6 D, while its periphery gradually merged without a distinct line of separation into the surrounding choroid. The peripheral field of vision was normal, but the center of the visual field was occupied by a triangular scotoma extending toward the nasal side.

V. of L. E., after the correction of one dioptre of hypermetropic astigmatism, was 6/5, accommodation 4.5 D. The disc was a vertical oval of good color, the central vessels normal, and the fundus free from disease of any kind.

The patient was kept under observation for ten days, during which time there was notable increase in the size of the scotoma, but there was no pain nor elevation of intraocular tension. The nature of the disease was explained to her, and after consultation with Dr. William F. Norris, who confirmed the diagnosis of metastatic carcinoma of the choroid, enucleation of the eyeball was suggested and the advice followed.

On the 8th of November, 1897, the eye was enucleated and immediately placed in a 5 per cent. solution of formaldehyde. The patient recovered from the effects of the operation very rapidly, returning home at the end of a week, and almost immediately resumed her vocation as teacher. She continued on duty for a month or six weeks, when her strength began to fail chiefly on account of intense pain which appeared in the lower portion of the spine and followed every moment. Strength continued to fail and the patient died in February, 1898, with the symptoms of intracranial involvement.

The eyeball, after hardening, was divided by the ordinary equatorial section, half of it mounted in formaldehyde, and the other half submitted to microscopic examination. The growth proved to be of oval shape, situated at the posterior pole of the

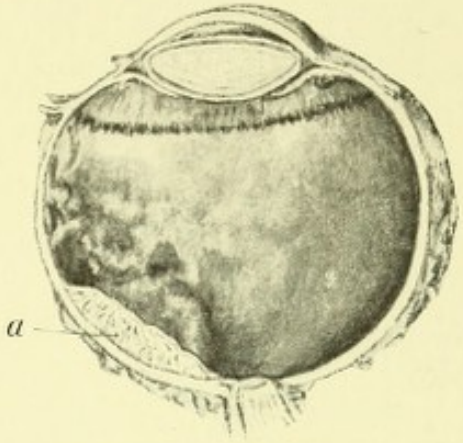

FIG. 1.

Section of Eyeball.
Showing position of metastatic carcinoma of choroid at *a*.

FIG. 2.

Metastatic Carcinoma of Choroid.
a, Retina detached from underlying growth. *b*, Carcinoma, showing slight tendency to form alveoli. *c*, Vessel ascending from sclera into growth partly filled with blood corpuscles, among which, however, cancer cells are not seen. *d*, Focus of small cells, the early stage of a necrotic process to be seen at *f*.

eye, 2½ millimeters in thickness and 12 millimeters in diameter at its broadest part. Its surface was brown, its center grayish-yellow, and, as before stated, it merged gradually at its sides and ends into the surrounding choroid, from which at no point it was sharply separated. (See Fig. 1.)

Serial microscopic sections cut by Dr. J. Dutton Steele from the other half furnish the following histological details:

Serial microscopic sections cut by Dr. J. Dutton Steele from the growth begins and curves quickly upward for six millimeters, and then slopes downward for another six millimeters until it meets the normal choroid on the other side, being bounded above by the lamina vitrea and attached retinal pigment epithelium and below by the sclera. This mass, therefore, occupies the entire width of the choroid. It is composed of epithelial cells, rather spheroidal in shape and with large nuclei, here and there collections of small round cells which are early stages of necrotic foci, some pigment granules and spicules, and a moderate amount of stroma. Toward the bottom of the growth there is a tendency for the carcinoma cells to arrange themselves in long tubules separated by a faint stromal tissue which contains pigment particles. The appearance suggests vessels filled with cancer elements, but is no doubt caused by the cells traveling along the connective tissue septa being deposited in the spaces. A similar appearance is noted by Lagrange. Toward the center of the growth and above the alveolar arrangement is more marked and the individual alveoli larger and broader. In the region of the chorio-capillaris some remnant of the original choroidal structure still remains and vessels plugged with cancer cells are readily distinguished. The necrotic foci, also noted by Mitvalsky, have selected no special portion of the growth for their appearance. In some sections large thin-walled blood vessels, packed with blood corpuscles, pass through the sclera and run through the growth. Cancer cells, however, were not found among the white and red blood corpuscles which plug their caliber, as Schultze did in his specimen. The optic nerve, retina, and remaining parts

of the choroid are normal, and there is no change in the filtration angle. (Figure 2.)

CASE II. Emma Y., aged 43, born in the United States, married, was referred to me by Dr. William Forbes, February 13, 1893, for examination on account of failing vision in the left eye.

History. — The patient had the usual exanthemata in childhood; eleven years ago had malaria, but was not confined to bed; she has had three children, two living and well; the oldest died of diphtheria. Her father and mother died of typhoid fever; the grandparents were healthy on each side; there is no history of hereditary disease in the family. In August, 1890, she first noted a lump in the left breast, which was removed by Dr. Forbes in December, 1891, and proved to be an ordinary carcinoma. There was recurrence in loco, in the axilla of the same side and also in the other breast. Both the recurrent and the new growths were thoroughly removed by Dr. Forbes in January, 1893. On November 27, 1892, she first noted, it is stated after a fright, dimness of vision in the left eye, associated with dull pain and also pain in the forehead, temples, and occiput.

Examination. — The patient is a spare anaemic woman with every evidence of the ravages of the cancerous disease which has reappeared above the left collar bone.

V. of R. E. equaled 20/20. The media were clear, the disc was a vertical oval of normal appearance, the retinal slightly hazy around its margins, but there were no abnormalities in the fundus. The refraction was hypermetropic.

V. of L. E. equaled 10/200. The media were clear, the disc was a vertical oval, of fair color, but its margins somewhat blurred by hazy retina. The macular region was occupied by a somewhat irregular growth, the summit of which was seen with 4 D., gravish in color and dotted over here and there with reddish spots. This elevation shaded gradually into the surrounding choroid without a sharp line of demarcation, being extended downward as far as it could be traced, but upward the extension was less marked. It began close to the edge of the disc apparently, and extended for a considerable distance beyond the macular region laterally. As before stated, however, the merging of the pathological area into the normal choroid was so gradual that it was impossible to discern the line of separation. The visual field was slightly contracted downward and outward and

upward and inward, and its center was occupied by an irregular scotoma characterized in its central area by dull vision, colors being badly appreciated and white appearing grayish. This area of partial scotoma communicated with the peripheral loss of vision which existed upward and inward. The patient declined operation and was not again seen. The history and the clinical signs would seem to establish the diagnosis of metastatic carcinoma of the choroid.

The literature of metastatic carcinoma of the choroid so recently has been the subject of study by C. Devereux Marshall[1] and by Felix La Grange[2], who publish almost identical analyses in tabular form, that it is unnecessary to refer to it in detail. Marshall summarizes twenty-two cases and records two additional ones, while La Grange's tables contain nineteen cases from literature and one of his own. He omits the cases of Kamocki, Wagner, Ward Holden[3], and Noyes[4], which Marshall includes, but has a reference to Samelsohn's case, published in 1891, which apparently has escaped Marshall's attention. If to these lists we add the two examples of this affection which I report, we have in all twenty-seven cases — twenty-one females, five males, and one without clinical history. The mammary gland was the region first attacked in twenty, the lungs and pleura in two, the stomach in three, the thyroid in one, while in one the original seat of the carcinomatous growth is unknown.

[1] Royal London Ophthalmic Hospital Reports, Vol. XIV, Part 3, December, 1897.
[2] Archives d'Ophthalmologie, January, 1898.
[3] La Grange considers the cases of Holden and Wagner as "insufficiently demonstrated" and therefore excludes them. Holden submitted to histological examination an eyeball which contained a carcinoma of the choroid, but the clinical history of the patient from whom the specimen was removed was lost. Wagner's patient had carcinoma of the choroid and died of cancer of the liver and stomach at a time when he was not under observation, and hence there is some doubt whether the ocular growth was primary or secondary.
[4] Dr. Noyes (TRANSACTIONS OF THE AMERICAN OPHTHALMOLOGICAL SOCIETY, 1894–96, Vol. VII, p 538) in his resume of the literature of metastatic choroidal carcinoma includes a case published by myself in conjunction with Dr. Meigs in the American Journal of the Medical Sciences, August, 1894. This is an error, as the tumor was not a metastatic carcinoma but a much rarer growth, a metastatic sarcoma, the metastasis having taken place from a mediastinal sarcoma.