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METASTATIC CARCINOMA OF THE IRIS. CLINICALLY SIMULATING GUMMA

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"Things that seem are not the same."

Old Wives' Tale. Peele.

THE case described below is an example of the uncertainty of diagnosis even when based upon apparently very substantial clinical facts and signs. The clinical features which this patient showed were those of an inflammatory ocular lesion. The buff coloured nodule in the iris and ciliary body, the pupil of the other eye inactive to light but reacting to accommodation, the past history of syphilis and the positive Wassermann reaction were sufficient at first to lead, I think, any clinician to diagnose a gumma.

In the weeks subsequent to the onset of the ocular lesion there appeared evidence of a neoplasm in the right lung and ultimately secondary metastatic deposits in the brain and viscera. The ocular diagnosis in the light of these facts was revised to metastatic carcinoma with inflammatory features and this was confirmed by pathological examination after death.

Metastatic carcinoma of the uveal tract, in particular the iris, is rare. It is probable that some patients in the last stages of

malignant cachexia die without the ocular lesion being recognised. Lagleyze states that in his experience it occurs in 1 in 100,000 patients. During my tenure of the post of pathologist to the Moorfields Eye Hospital there were two patients out of the hospital attendance of 276,000 in whom a secondary metastatic deposit occurred in the uveal tract.

The site of the primary growth is in the breast in 65 per cent., and next in the lung in 10 per cent., in other organs such as the stomach, intestines, prostate, bladder, uterus and ovaries about 1 per cent.

A feature of the metastatic deposits from a primary neoplasm in a lung is that the ocular symptoms and signs often appear before those from the pulmonary lesion, and the latter in these cases is relatively so small that at first it escapes clinical detection. Some weeks after the eye symptoms appear, cough, haemoptysis and pain in the chest become evident and radiography and bronchoscopy confirm the diagnosis.

Ocular metastasis of carcinoma is commoner in the choroid between the optic disc and equator and generally in the lower temporal part of the globe but the columns of cells infiltrating the choroidal lymphatics extend to the nasal side and the upper half of the globe. The carcinoma cells are washed into the eye through the posterior ciliary vessels, become plugged in the choroidal capillaries and growing in a retrograde manner may be seen occluding the lumen of one or more ciliary vessels outside the globe. Other channels of extension are forwards in the choroidal lymphatics, back through the sclera along the perivascular lymphatics of the venae vorticosae, along the sheaths of ciliary nerves and through the lamina cribrosa into the optic nerve.

A flat shallow retinal detachment with a yellowish grey opaque appearance occurs over the site of such a choroidal metastasis. This increases and so does the volume of growth inside the eye. Secondary glaucoma and resultant pain have justified removal of the eye in some cases. Penman and Jameson Evans have applied radon seeds over the site of the growth and considered this justifiable. It is, however, rare for most patients with ocular metastases of carcinoma to live longer than 7 months after the onset of the eye symptoms.

A carcinoma metastasis in the iris and ciliary body is rarer than in the choroid. Only 8 cases of a deposit in the iris have been reported and Asbury and Vail claim that theirs is the only complete case record in which the diagnosis of the primary growth and the metastasis in the iris has been confirmed histologically. The left eye is said to be more commonly affected than the right on account of the more direct course of blood from the aorta into

the left common carotid artery. My impression is that both eyes are about equally affected. Sometimes near the end of life metastases may occur in both eyes.

The arrangement of carcinoma cells in the choroid shows an attempt to revert to the normal anatomical and physiological characters of the cells from which the primary neoplasm arose. For instance when the primary is in the mammary gland the cells assume an acinous arrangement and may form colloid material. There is less inflammatory reaction in the choroidal metastasis than in the primary neoplasm, relatively few lymphocytes being present at its advancing edge. In the case of carcinoma metastasis in the iris pleomorphism is evident. When the primary growth is in the lung the cells may have an adeno-papilliferous arrangement, some resemble short cubicle cells and are supported by a fine connective tissue stroma with branching trabeculae. Other cells are in irregular clumps, there are areas of cell degeneration, mitotic figures are present, and the chromatophores are distorted, their processes lost and their pigment arranged in clumps and spherules.

Inflammatory features are more evident in metastatic carcinoma of the iris than in the case of the choroid. One case recorded in the literature was for some time incorrectly diagnosed as a tuberculoma of the iris on account of the associated inflammatory signs.

Case Report.—E. A., a male, aged 57 years, attended the Moorfields Eye Hospital complaining of inflammation of the left eye for 3 weeks. He had observed a yellowish white swelling in the iris.

Fig. 1 shows the following physical signs. There was circumcorneal vascular injection. A pink buff-coloured hemispherical swelling projected into the anterior chamber between 9 and 10.45 o'clock at the filtration angle and it came forwards from the root and the anterior surface of the iris. On its summit were some dilated vessels and there hung down into the anterior chamber from 10 to 8 o'clock a vertical trail of greyish-white exudate. There was also an aqueous flare and with the slit-lamp and corneal microscope leucocytes were seen in the anterior chamber. Punctate deposits (k.p.) were present and in the 4.30 o'clock meridian there was a broad posterior synechia involving the whole thickness of the pupil margin, a feature often associated with syphilitic iritis. In the 1 o'clock meridian there was ectropion uveae at the pupil margin. The pupil was small, irregular and did not dilate fully under a mydriatic. Elsewhere the iris showed the physical signs of mild inflammation. The anterior capsule of the lens was dusted with fine pigment granules, particularly so in the region of the posterior synechia and in the 12 o'clock meridian at the pupil margin.

FIG. 1.

The left vision was 6/12 with correction. The right pupil was smaller than normal for a man of 57 years, did not react to light but responded to accommodation. There was a past history of syphilis 20 years ago and the Wassermann reaction was positive.

Diagnosis of the eye condition.—Gumma and syphilitic iritis. Left eye.

General condition.—The patient was pale and sparely built. He had a cough and complained of malaise. Physical examination showed some weakness of the left side of the face and left upper extremity.

Progress.—Four weeks later a swelling appeared in the right supra-clavicular fossa. It was nodular, of firm elastic consistence, attached to the deep cervical fascia but not to the overlying skin. It was neither tender nor painful. This mass had the physical signs of a neoplasm.

X-ray of the chest revealed a shadow in the right bronchus about 5 c.m. below the bifurcation of the trachea. Dyspnoea became evident, his sputum was streaked with blood, he was losing weight and two weeks later the left leg became weak.

A blood examination showed haemoglobin 83 per cent., white blood count 11,200. The urine contained many red blood corpuscles and granular casts.

A diagnosis of primary carcinoma of the right bronchus with cerebral metastases was then made.

A flaccid paralysis of the left upper and lower extremities developed and three months after the onset of ocular symptoms the patient went into coma and died.

Post-mortem examination.—A primary carcinoma was found in the right bronchus 5 c.m. below the bifurcation of the trachea. This had extended along the bronchi into the right lower lobe, which showed "carnification" and recent pleural adhesions over its posterior aspect. Tenacious blood-stained mucus was present in the bronchi and trachea, the mucosa of which was congested. The remainder of the right lung and the left lung were congested and oedematous. The tracheo-bronchial and posterior mediastinal lymph nodes were massively infiltrated by growth which extended downwards to the pre-aortic abdominal lymph nodes and thence to the coeliac and superior mesenteric lymph nodes. The portal fissure was infiltrated.

The mass in the right posterior triangle was postero-lateral to the carotid sheath, 6 c.m. in diameter, situated on Sibson's fascia, adherent to the right brachial plexus, and traversed by the right subclavian vessels. There was a small deposit in the left posterior triangle.

Small metastatic deposits were present in both frontal lobes and in the right temporal lobe. The right cerebral peduncle was replaced by an autolytic deposit 1.25×1.5 c.m. and two large haemorrhagic masses were in the right lobe of the cerebellum and in the vermis respectively. The features of the nodule in the left iris have been stated above in the clinical description.

The peritoneum showed recent adhesions above and below the liver and 20 ozs. of blood-stained fluid was present in the peritoneal cavity. The liver contained multiple metastases about 1 c.m. in diameter, the small amount of liver function remaining showed fatty degeneration.

The spleen had three metastatic deposits 1 c.m. in diameter anterior to the hilum. These were also present in the suprarenals, the left being almost entirely replaced by a large autolytic growth.

A blood culture yielded streptococcus pyogenes. Many of the small renal vessels showed masses of bacteria and a necrotic neoplastic deposit in the brain contained large numbers of streptococci.

Histology.—Sections of the growth in the bronchus and of the metastatic deposits in the tracheo-bronchial lymph nodes, the liver,

FIG. 2.

Microphotograph. High power, $\times 500$. It shows carcinoma cells, in some of which are mitotic figures, and lymphocytes.

spleen, suprarenals and brain showed it to be an oat-celled carcinoma (see Fig. 2).

Pleomorphism is not uncommon in bronchial carcinoma and the metastatic deposit in the iris of the left eye was an adenocarcinoma. The growth in the right lung was very necrotic; the liver showed multilobular cirrhosis; the spleen moderate fibrosis; the kidneys were congested, and the pancreas had evidence of autolysis.

[I regret that the sections of the metastatic deposit in the iris have been lost in the haste of evacuating the pathological department at St. Bartholomew's Hospital at the outbreak of war.]

Summary.—A case of metastatic carcinoma of the iris in the left eye is described. The clinical features resembled gumma. Subsequently a primary carcinoma of the right bronchus was found. Death followed multiple metastases in the brain and viscera.

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TRACHOMA

(Some experimental data with a clinical interest from the records of a combined aetiological investigation by various members of the Government Ophthalmic Hospital, and the King Institute of Preventive Medicine, Madras, 1935, 1936, 1937)

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IN the issues of the *Brit. Jl. of Ophthalm.*, of June, 1935, and April, 1937, I discussed some of the difficulties in connection with investigations into the aetiology of trachoma, referred to an attempt to find a solution by cultural methods using the Woodruff Goodpasteur technique, recorded an apparent initial success with egg inoculation, and finally intimated that the results of our cultural work were inconclusive.

Details of the earlier work were recorded by C. G. Pandit, Wright, Sanjiva Rao and Satyanathan (1935).

Shortt questioned the nature of the growths we obtained on the chorio-allantoic membrane with unfiltered trachoma material. They were not as satisfactorily uniform in their behaviour and characters as might have been expected with specific virus implantations when carried on in sub passage.