CASE NOTES

METASTATIC CARCINOMA OF THE IRIS*

BY

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The first record of this rare condition is that of Proctor and Verhoeff (1907), who made the diagnosis on iris biopsy without histological examination of the whole eye. The unique case of bilateral metastases reported by Toulant (1916) and the second case of Bollack and others (1927) were diagnosed clinically and no histological examination was made. More precise information is available about the first case described by Bollack and others, in which the diagnosis was established by iridectomy during life; the eye was sectioned after death and contained no other malignant deposit. In the case reported by Larsen (1933), the tumour was removed by iridectomy post mortem, but the whole eye was not examined. Hudson and Lister (1934) described a “hypernephroma” confined to the pupillary portion of the iris in a patient from whom a kidney containing a malignant encapsulated growth had been removed 2 years previously. The histology of the ocular tumour strongly suggested its origin from a clear-celled adenocarcinoma of the kidney. The iris tumour in the case reported by Sanders (1938) was histologically demonstrated to be confined to the iris, but no post-mortem examination was possible and the primary growth was not discovered, although either bronchus or breast was thought to be its most likely site. Asbury and Vail (1940) claimed that their case was the first in which both the eye lesion and the primary tumour had been studied and compared. Sautter (1948) described an unusual case in which the primary growth, situated above the epididymis, was composed entirely of epithelial cells some of which showed squamous metaplasia. The origin of the tumour remains in doubt but may have been from the epididymis or vas deferens. Reese (1951) refers to two cases personally observed but presents details of only one, and in this the metastatic focus, from a gastric primary, was apparently confined to the iris. The iris tumours in the cases reported by Paufique and Etienne (1951) and Holm-Pedersen (1952) were treated by irradiation and no histological examination of the eye was made.

The number of cases so far recorded in which it has been histologically verified that the metastatic tumour was confined to the iris alone is six. Among 45 cases of secondary uveal carcinoma recorded in the archives at the Institute of Ophthalmology (1935-54) are five in which the iris was

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involved. In only two cases, which it is the purpose of this paper briefly to describe, was the secondary growth confined to the iris.

Case Reports

Case 1, male, aged 67 years (case of Mr. R. C. Davenport), attended Moorfields Eye Hospital in December, 1949, complaining of a "gritty" feeling in the right eye for 2 days. Examination revealed a fleshy, vascular, translucent tumour of irregular outline, filling the angle at 9 o'clock. There was little evidence of inflammation and no cells were seen in the anterior chamber. General examination failed to reveal a primary growth and x-rays of the chest were normal. The mass in the iris increased rapidly in size and large vessels appeared on its surface, fine keratic precipitates developed, and within a month the eye had to be enucleated for increasing pain. Post-operatively the patient developed an enlarged liver and became deeply jaundiced. He died, at home, one month after enucleation and two months after his initial complaint. No post-mortem examination was made.

Ocular Findings.—The eye was fixed in 10 per cent. formalin, opened horizontally, and embedded in celloidin. Macroscopically, a greyish-white mass was seen to fill the temporal filtration angle and spread over the surface of the iris on that side. The retina was detached. Section (Fig. 1) showed a unencapsulated, cubical-cell adenocarcinoma occupying the outer one half of the temporal iris, encroaching on the anterior aspect of the ciliary body, and infiltrating the tissues of the angle and corneo-scleral meshwork. The malignant cells, which had abundant rose-pink cytoplasm and large well-demarcated leptonuclei, were supported by a delicate fibro-vascular stroma and formed a compact pattern of tubules. Mitotic figures were numerous and large areas of necrosis were evident Beyond a few fine keratic precipitates there was no evidence of inflammation in the eye. The histological structure of the growth gave no indication of its primary source but the lung or thyroid were suspected.

Case 2, male, aged 76 years (case of Mr. Maurice Whiting), developed pneumonia in December, 1952. In February, 1953, his right eye became painful and a small white nodular mass was seen in the nasal periphery of the iris at about 3 o'clock. Examination of the chest revealed a left bronchogenic carcinoma. The iris tumour enlarged and became more vascular but there were no signs of iritis. The patient died in September, 1953, and at post-mortem examination a hard infiltrative tumour was found in the upper zone of the...
right lung, numerous metastases being present in the liver. Unfortunately, no histological examination of the pulmonary tumour was made.

**Ocular Findings.**—The eye was fixed in 10 per cent. formalin, opened horizontally, and embedded in celloidin. Macroscopically, a pinkish-white mass was visible in the periphery of the anterior chamber on the nasal side. Section (Fig. 2) showed that the peripheral iris was replaced by a ragged, partially necrotic, unencapsulated carcinomatous mass extending through the tissue of the angle and into the corneo-scleral meshwork. The growth, which had erupted through the pigment epithelium of the iris so that its posterior surface was in contact with the capsule of the cataractous lens, was composed of polygonal and spindle-shaped cells of moderate size, arranged in irregular sheets without glandular pattern. Mitotic figures were numerous, and the stromal network minimal. Fine keratic precipitates were evident, and a diffuse plasma cell infiltration was present throughout the iris, upon the anterior surface of which a well-marked fibro-vascular membrane had formed. The episcleral tissues over the growth were densely infiltrated with small lymphocytes.

**Fig. 2.**—Metastatic bronchogenic carcinoma in the iris. Haematoxylin and eosin. ×15.

**Summary**

The clinical and pathological findings are recorded of two cases of metastatic carcinoma confined to the iris, one from the lung and the other from an undiscovered primary source. The literature is briefly reviewed.

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**REFERENCES**