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RING SARCOMA OF THE IRIS*

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A tractor-driver aged 44 presented with a history of a "shadow" over the left vision for the previous 5 or 6 months. For the last 2 weeks there had been some pain round the left eye. His general health was good and his weight steady.

Ophthalmic examination showed the visual acuity to be 6/5 in the right eye and 6/9 in the left. The right eye was normal. The left eye was not injected and the cornea was clear. Examination with the slit-lamp microscope revealed slight epithelial oedema of the cornea with a very slight aqueous flare and a few floating bodies in the aqueous and some debris and cells on the posterior corneal surface. Two small nodules deep to the conjunctiva were noticed, one at 2 o'clock and one at 7 o'clock, some 5 to 7 mm. from the limbus.

The iris presented a remarkable picture (Fig. 1).

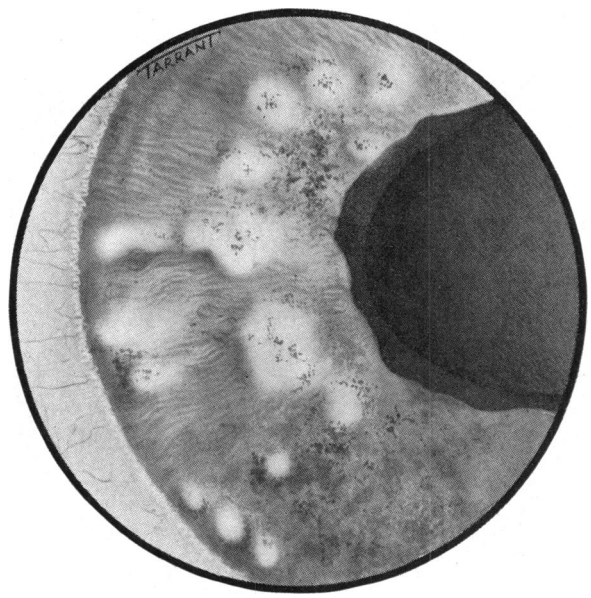

FIG. 1.—Appearance of iris, showing nodules.

Numerous small nodules were scattered over the whole surface; these were approximately 1–2 mm. in diameter and the stroma of the iris was atrophic with many new vessels. There was ectropion of the pigment epithelium at the pupillary margin.

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The lens and vitreous were clear, and the disc showed slight cupping but no pallor. The ocular tension was 18 mm. Hg (Schiötz) in the right eye and 59 mm. Hg in the left. Gonioscopy revealed numerous nodules at the root of the iris lying on the trabeculae. The visual fields were full.

General medical examination was negative. *X*-ray examination of the chest and hands showed no evidence of sarcoidosis. The urine was normal and the Wassermann reaction negative. The Mantoux reaction was negative, as were tests for toxoplasmosis and brucellosis. The erythrocyte sedimentation rate was 3 mm. in one hour. The blood count showed no abnormality and the albumin-globulin ratio was normal.

The differential diagnosis was considered to lie between a nodular iritis (possibly sarcoidosis) and a neoplasm.

A ^{32}P test, done by Dr. F. Janus of the Manchester Royal Eye Hospital, showed an increased uptake on the left eye. Aqueous puncture produced a clear fluid and smears from the centrifuged deposit showed scanty granular debris. No cells were found.

An iridencleisis was then performed to relieve the raised intra-ocular pressure and a small piece of iris was removed for examination. Prof. Norman Ashton, Director of the Department of Pathology, Institute of Ophthalmology, reported on the biopsy as follows:

> The whole of the iris biopsy is infiltrated with hyperchromatic spindle cells, many of which contain pigment, and they are also aggregated upon and immediately beneath the surface of the iris into small seedling tumours. This appears to be an extension into the iris tissue rather than the primary tumour, which I think we can be fairly certain remains behind, possibly in the ciliary region. Sections specially stained showed no evidence of myoglial fibres of smooth muscle so that this must be categorized as a malignant melanoma of the uvea.

The eye was then enucleated and sent to Prof. Ashton, who reported:

> "Sections of the whole eye show a 'ring sarcoma' of the iris which is spindle cell in type, lightly pigmented, and devoid of reticulin (Fig. 2). The filtration angles on both sides are blocked by a solid mass of growth, and malignant cells extend into the trabecular meshwork, Schlemm's canal, and the collector channels to form small deposits beneath the conjunctiva. Growth is also present in the ciliary body on both sides of the section, and on one side it is particularly dense, suggesting a possible site of origin.

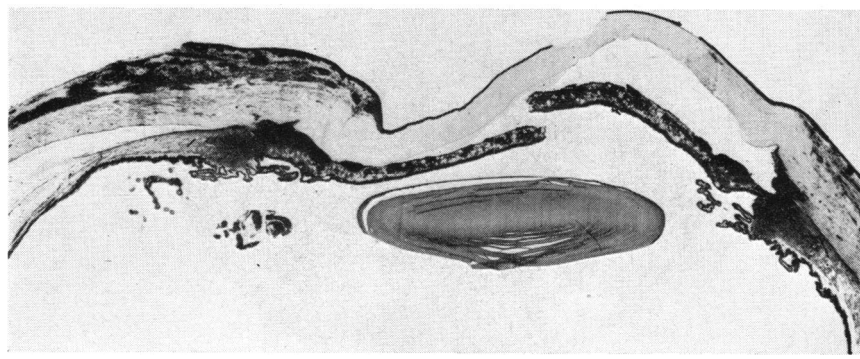

FIG. 2.—Section of eye, showing ring sarcoma. ×9.

The most remarkable feature of the neoplastic distribution is the presence of numerous seedling tumours of varying size throughout the iris stroma and upon its surface, where small nodular tumours have formed (Fig. 3, opposite).

In some sections the iridencleisis operation is evident and iris tissue containing islands of malignant growth can be seen folded within the limbal tissue. From this incarcerated iris fold malignant cells have extended into the episclera. In one section a small deposit is present in

the outer third of the cornea and there is an overlying subepithelial haemorrhage. The remainder of the eye shows no significant histological abnormality."

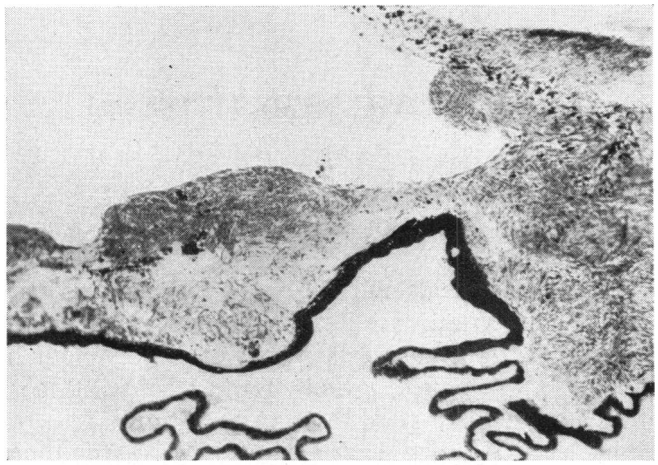

FIG. 3.—Iris nodule. ×45.

Comment

Melanomata of the iris are uncommon and non-pigmented tumours even rarer. Duke-Elder and Stallard (1930), in reporting a case, were able to find 25 cases of leucosarcoma in the literature. Although it is clear from the pathological report that the lesion in this case started as a ring sarcoma, there was no clinical evidence of the usual tyre-shaped bulge and the picture was dominated by the numerous seedling tumours on the surface of the iris. The extension of the tumour into the collector channels accounts for the two nodules noticed beneath the conjunctiva.

The ^{32}P test showed an increased uptake in some quadrants of the left eye but, as the detailed counts showed large variations in the normal eye, the result was doubtful and the overall increase in count on the affected eye could have been due to the vascularity of the iris.

Summary

A case of "ring sarcoma" of the iris is reported; the clinical appearance was of nodular, non-pigmented lesions on the surface and in the stroma of the iris with secondary glaucoma.

We are most grateful to Prof. Norman Ashton and Dr. C. M. H. Pedler of the Department of Pathology, Institute of Ophthalmology, for supplying the pathological reports and photomicrographs, and to the Medical Illustration Department for the drawing of the iris.

REFERENCE

DUKE-ELDER, S., and STALLARD, H. B. (1930). *Brit. J. Ophthal.*, **14**, 158–61.