CASE NOTES

SUBCONJUNCTIVAL LYMPHOMA*

BY

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A LYMPHOMATOUS tumour, originating from primitive mesenchymal stem cells may be localized at one site or many, anywhere in the body, even in the bloodstream. It may arise from any existing lymphoid site in the body, nodal or extranodal, and also from areas where no known lymphoid tissue exists (Reese, 1951).

Lymphomatous tumours often occur in the eyelids, lacrimal gland, orbit, and conjunctiva, but rarely in the iris, ciliary body, or choroid. In the conjunctiva a lymphoma may be malignant in the form of a lymphosarcoma (Duke-Elder, 1937). Simple lymphomata represent an extensive hyperplasia of the lymphoid tissue (Duke-Elder, 1937), and some authors believed that they were always associated with haemopoietic disease (Axenfeld, 1891; Meller, 1906), while other authorities thought that they could occur independently of constitutional disease (Coats, 1915).

Lymphoma of the conjunctiva often occurs with no evidence of constitutional disease in middle-aged adults; it is frequently bilateral and often symmetrical. Clinically, the tumours form a raised salmon-pink mass with a smooth overlying conjunctiva and a rather sharply demarcated border (Reese, 1951).

Case Report

A Hindu male, aged 50 years, was admitted to the eye department of the Institute of Post-Graduate Medical Education and Research, Calcutta, February 13, 1958. About 3 years before, an insect accidentally fell into his left eye and severe inflammation was followed by complete loss of sight. For the last 2½ years, he had noticed a gradual swelling of the left eyeball, and ultimately a big globular mass was occupying the orbit, but without pain or tenderness associated with the mass.

Examination.—The left orbit contained a very large irregular globular mass protruding forwards under the considerably stretched upper eyelid (Fig. 1). The lower lid was not stretched but was slightly everted and pushed downwards. The cornea was replaced by anterior staphyloma, the eyeball being proptosed and pushed downwards. The bulbar conjunctiva and upper lid were pink with prominent blood vessels. The sclera was not visible but a salmon-coloured mass of new tissue was covering

FIG. 1.—
Patient on admission.

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the slightly proptosed eyeball under the bulbar conjunctiva. The mass extended upwards beyond the superior orbital margin, and backwards into the orbit, being tightly wedged into the orbital opening.

There was no ulceration or conjunctival discharge. There was no movement of the eyeball and the mass did not pulsate.

On palpation the mass was soft and resilient without any tenderness, and the orbital rim could be palpated all round, and both lids were free and not adherent to the new-formed mass.

In the right eye the visual acuity was 6/6 with a normal fundus, but there was also a small almond-shaped pinkish growth situated over the upper temporal quadrant of the eyeball, under the bulbar conjunctiva, and completely covered by the upper lid. There was no proptosis or limitation of eye movements and the patient was completely unaware of the presence of this second mass.

Laboratory Investigations

A skiagram of the left orbit showed sclerosis of the frontal and sphenoidal bones forming the roof of the orbit.

The Wassermann reaction was positive, but the Kahn test was doubtful. The Wassermann reaction became negative after the injection of 10 million units crystalline penicillin daily for 10 days.

FIG. 2.—Low-power view of biopsy, showing lymphomatous new growth beneath the conjunctival epithelium. 10 × 8.

BLOOD PICTURE:—Haemoglobin 13 g. per cent.; plasma cell volume 41 ml. per cent.; total leucocytes—7,200 per c.mm. (neutrophils 59 per cent., eosinophils 3 per cent., lymphocytes 34 per cent., monocytes 4 per cent.).

Sternal puncture showed that the marrow was hypercellular: (blast cells 2 per cent., promyelocytes 4 per cent., myelocytes 10 per cent., metamyelocytes 15 per cent., neutrophils 15 per cent., eosinophils 5 per cent., lymphocytes 9 per cent., plasma cells 1 per cent., proerythroblasts 1 per cent., early normoblasts 4 per cent., intermediate normoblasts 15 per cent., late normoblasts 19 per cent.).

General examination revealed no other abnormal condition, and the growth in the left orbit was diagnosed as a benign neoplasm. Considering the colour and consistency of the new mass and the similar subconjunctival formation in the other eye, the neoplasm was provisionally diagnosed as a lymphoma. A biopsy was taken from the left eye and the histological report was a lymphoma (Fig. 2).

As the left eye was already blind, an enteration operation of the left orbit was done on February 28, 1958 and the whole mass of growth with the eyeball was sent for

pathological examination. As the lids were free from tumour they were retained. The wound in the orbit healed uneventfully and the patient was advised to have deep x-ray therapy.

PATHOLOGICAL REPORT: Macroscopic examination showed the tumour to consist of an irregular oval mass, soft and resilient in consistency. The section showed that the mass encircled the eyeball almost completely except the cornea. The cut surface was pinkish in colour, with homogeneous areas divided into irregular lobulated masses by fibrous septa. There were densely-packed masses of small mononuclear cells similar to adult lymphocytes traversed by bands of fibrous tissue. The cells were distributed indiscriminately, infiltrating the muscles and the orbital fat (Fig. 3), but not the eyeball (Fig. 4) or the optic nerve (Fig. 5). There was no tendency to the formation of lymph follicles, but mitotic figures were present.

FIG. 3.—High-power view of new growth infiltrating extra-ocular muscles. (45×8).

FIG. 4.—Low-power view of sclero-corneal junction, showing masses of lymphocytes on the left. The wall of the eyeball is not invaded. (10×8).

FIG. 5.—Low-power view of the optic nerve and nerve sheath. The new growth on the left has not infiltrated the sheath. (10×8).

Diagnosis.—Malignant lymphoid tissue tumour infiltrating the orbit (Fig. 6).

FIG. 6.—Oil immersion view of new growth. (100 × 8).

Discussion

Although no biopsy was taken from the small subconjunctival growth on the right side, it was undoubtedly a lymphoma arising from the bulbar conjunctiva. On the left side the main mass of the tumour was underneath the bulbar conjunctiva so that proptosis was not marked. Evidently the origin of this tumour was also subconjunctival, but the question arose whether a lymphoma originating in the orbit could assume a similar appearance. Orbital lymphomata, first noted by Arnold and Becker (1872), are rather rare and the proptosis is usually marked, the eyeball protruding as much as 10–30 mm. (Arnold and Becker, 1872; Ahlström, 1904; Seeligsohn, 1906; and others).

Stout (1942) classified lymphoid tissue tumours into three histological types:—

(i) *Lymphocytic Cell Type*—The cells are small and round, the cytoplasm is scanty, and the nuclei take up a dark stain with haematoxylin.

(ii) *Reticulum Cell Type*—The cells are large and pale and irregular in shape and have vesicular nuclei.

(iii) *Giant Follicular Type*—This is characterized by the formation of large follicles.

Histological examination showed that the tumour was a tumour of the lymphocytic cell type, without generalized involvement and apparently a simple lymphoma. As pointed out by Warthin (1931), Ginsburg (1934), Herbut, Miller, and Erf (1945), and Willis (1953), these different types are related variants of one disease process originating from primitive mesenchymal stem cells. According to Willis (1953), these lymphoid tissue tumours

are all malignant mesenchymal tumours, the only difference between them being the degree of differentiation attained by their cells. Heath (1948) stated that 5 per cent. of simple lymphomata showed a generalized recurrence, even after early removal. Considering the rate of growth, the nature of the invasion, and the presence of mitotic figures, the reported tumour, although localized, should be classified as a locally malignant tumour and the prognosis should be guarded.

Summary

(1) A large subconjunctival lymphoma infiltrating all the tissues of the orbit except the eyeball and optic nerve and a similar small growth in the other eye are reported.

(2) Although the cellular structure of the tumour mainly comprised mature lymphoid cells, and although the tumour localized, its invasive nature showed its inherent malignant tendency.

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