THE BRITISH JOURNAL OF OPHTHALMOLOGY

AUGUST, 1936

COMMUNICATIONS

A CASE OF SCLEROSING KERATITIS PROFUNDA

BY

A. VISWALINGAM

KUALA LUMPUR, FEDERATED MALAY STATES

IN October, 1931, A.L.J., an Anglo-Indian engineer, aged 59 years presented himself for examination on account of sore eyes and photophobia. The visual actuity was R.V. 6/12 with +0.75 sph.=6/6. L.V. 6/18 with +1 sph.=6/6. The pupils at that time were active to light and accommodation, the anterior chamber was slightly shallow and the tension not raised. The filtration angle was "crowded."

He had suffered from "gravel" in the urine and had passed a calculus on one occasion some years' ago, otherwise his general health was good. The Wassermann reaction was negative and there was no clinical evidence of focal sepsis, tuberculous infection, or leprosy. He had never suffered from a virus disease and the blood culture was negative. The urine contained calcium oxalate crystals.

The bulbar conjunctiva in the palpebral fissure showed vascular congestion extending from the limbus posteriorly towards the equator for 10 mm. At first the temporal side was involved and then the nasal. These areas of vascular congestion became more numerous and coalesced all round the limbus which on June 30th, 1933, showed a tiny ring of pale yellow discolouration just internal to it and exactly opposite and confined to the area of peri-limbal

congestion, but unlike arcus senilis in that there was no clear ring of cornea between it and the limbus.

As time went on with each exacerbation of the limbal congestion there was an increase of the pale yellow area in the cornea, whose

FIG. 1.

Left eye showing vascular congestion of bulbar conjunctiva in the inter-palpebral zone

FIG. 2.

Corneal opacities beginning at the limbus on the nasal and temporal sides

appearance seen through a corneal loupe was similar to what one sees in a cloudbank in the sky. The increase was not only in extent but also in thickness.

From October, 1931 to November 1935 the condition progressed in the left eye in the manner indicated in the Figs. 1—6.

FIG. 3.

FIG. 4.

FIG. 5.

FIG. 6.

This was a type of congestion quite unlike that seen in iritis, iridocyclitis or glaucoma, and there was nothing about the appearance of the eye to suggest any inflammatory mischief. The congestion would last 24 to 48 hours and would then disappear, but recurrences were common, and my observations made me believe this was in some way connected with some metabolic disorder and particularly with renal function.

In view of the history of renal calculi I thought that what was likely to disturb the glomeruli in the kidneys was equally liable

to disturb the fine capillaries at the filtration angle of the eye, and so I put the patient on a diet free from calcium oxalate on the lines recommended by Sir John Thomson-Walker. I found that whenever there was an exacerbation of the congestion in the eyes calcium oxalate crystals were found in the urine. The change in the appearance of the cornea from the filtration angle towards the pupil

FIG. 7.

steadily increased and eventually involved the entire cornea (see Fig. 6). Fig. 7 shows the extent to which the right eye is affected. The trouble was symmetrical, a point in favour of my surmise that it was a metabolic disorder, but more extensive and severe in the left eye. He has received a number of local remedies prescribed by those whom he consulted elsewhere but without good effect. During the exacerbations I prescribed weak pilocarpine drops, and insisted further on the strict observation of the calcium oxalate free diet.

The attacks of secondary glaucoma occurred at least once a week associated with an attack of gout affecting the metatarsophalangeal joints in his feet. It was remarkable that these exacerbations occurred at the week-end and for some time the symptoms due to increased intra-ocular pressure were relieved by a single application of pilocarpine.

In November 1935 the left eye became blind and so painful that excision was necessary.

During the enucleation of the globe the bulbar conjunctiva and sub-conjunctival tissues were found extremely adherent to the sclera to about 0.5 to 0.75 in. from the limbus.

Pathological report by Mr. H. B. Stallard.—Globe divided horizontally. Fixed in formalin. Embedded in celloidin. Sections stained with haematoxylin and eosin, and van Gieson.

Macroscopic. (see Fig. 8). The cornea is greatly increased in thickness particularly in the centre. The anterior chamber is almost obliterated. Peripheral, anterior and posterior synechiae are present on the temporal side. The optic disc shows shallow cupping and the retina is thrown into some shallow folds in the region of the macula.

Microscopic. In the region of the limbus on the temporal side there are hyaline deposits in the subepithelial tissue and these extend forward into Bowman's membrane for 1 mm. or so at the periphery of the cornea. A single layer of flattened endothelial cells is present between Bowman's membrane and the corneal epithelium for 1 mm. from the limbus. In the subepithelial connective tissue at the limbus on the temporal side there are widely dilated vessels, hyaline deposits, granular cell debris, irregular shaped specks of brown pigment, clumps of lymphocytes, endothelial cells and fibroblasts, and hyaline degeneration of connective tissue extending posteriorly into Tenon's capsule. The corneal epithelium is normal but the substantia propria is much thickened being 2.5 mm. in the centre of the cornea and 1.25 mm. at the periphery. Oedema fluid is present in the inter-lamellar spaces of superficial layers of the substantia propria, the central and deeper layers of which are infiltrated and deranged by chronic inflammatory cells, newly formed blood vessels, fibroblasts and fibrous tissue formation. Except for one tear (probably an artefact) Descemet's membrane is intact, the endothelium on its posterior surface is adherent to the iris on the temporal side, the cells disappearing at points of close adhesion where it is flush with the anterior endothelial layer of the iris. On the nasal side the endothelial cells on the posterior surface of Descemet's membrane contain uveal pigment or have pigment deposits on them. On the nasal side the meshes of the ligamentum pectinatum have granules of pigment between them and on the temporal side the fibres and mesh-work are much compressed. The canal of Schlemm is patent on both sides.

The iris stroma is rich in chromatophores and a few lymphocytes are present. Anterior and peripheral synechiae are evident on the temporal side and posterior synechiae on both sides of the specimen.

On the anterior capsule of the lens there are deposits of pigment from the pars iridica retinae, a line of cleavage having occurred between these cells and the remainder of the iris at the site of a posterior synechia where the iris has become torn away from the lens capsule. The cortex and nucleus of the lens show irregularly shaped clefts representing punctate opacities.

FIG. 8.

FIG. 6.

FIG. 10.
Micro-photograph of deeper layers of cornea infiltrated
by chronic inflammatory cells (X300)
a. Descemet's membrane.
b. Endothelium.
c. Anterior chamber.
d. Iris.

The retina shows atrophic changes in the ganglion cell and nerve fibre layers, and there is cystic degeneration at the ora serrata and periphery of the retina. The lamina cribrosa is displaced backwards.

Diagnosis.—Sclerosing keratitis profunda. Secondary glaucoma.

Commentary.—Pathologically the corneal lesion has predominant chronic inflammatory characters, such degenerative changes as are present are probably secondary to this.

GRANULOMA OF THE BULBAR SUBCONJUNCTIVAL TISSUE ARISING FROM AN IMBEDDED CILIUM

BY

F. W. G. SMITH

LONDON

WHILE reports on the presence of cilia in the interior of the eye are comparatively common a study of recent literature does not appear to disclose a case of the type described in this note.

History. The patient, a lady aged 66 years, complained of a localised swelling on the right eyeball which had been present for about six weeks and was gradually increasing in size. She volunteered the information that the swelling appeared to be quite hard on palpation through the lid and at times it was slightly tender. She had been under treatment for episcleritis for some weeks but the condition was showing no tendency to improve. The eye had been quite normal previous to the present complaint. Her own history and that of her family was quite satisfactory, she had one child. She had been engaged in the teaching profession for forty-five years.

I enquired very carefully into the history of the eye trouble but there was no suggestion of trauma (of this the patient was quite definite) nor of contact with caterpillars; one of the infective or possibly malignant conditions giving rise to what is shown in the painting was suspected to be the cause of her complaint.

The vision was 6/6 and J.1 in each eye. Glasses were worn for reading only. The fundi appeared to be normal and there were no corneal precipitates or signs of iritis present.

An unpigmented mass of about 4 mm. by 1.5 mm. in height was present under the bulbar conjunctiva; it was situated about 4 mm. from the limbus on the outer side. There were five large vessels radiating from the growth, which appeared to be adherent to both the conjunctiva and the sclera and it was of a firm