area to the heat of the actual cautery, which is approached as close as possible to the surface of the cornea without actually touching it; the cautery should be held in position long enough to excite a mild reaction.

I have only been able to find very scanty descriptions of the disease described by Herbert as occurring in epidemic form in Bombay, but apparently this epidemic is closely allied to it. It differs from the descriptions I have seen in the character of the maculae, and in its intractability as well as in the absence of bacteria.

Since writing the above a patient, who was in the same wards as sufferers from the complaint, has developed the disease in a previously healthy eye. This is the first occasion on which any evidence of contagion has been apparent.

NOTES ON A RARE FORM OF SUBCONJUNCTIVAL GRANULOMA MET WITH IN CENTRAL CHINA

BY

P. L. MCALL, B.A., M.B., Ch.B.,

LONDON MISSION, HANKOW.

THERE are seen from time to time in Central China patients whose eyesight is obstructed, entirely or partly, by the formation of tumour-like masses which grow between the eyeball and the lid. There is no conjunctivitis or other acute inflammation. The growths are painless; they do not ulcerate on the surface or break down in the centre, but remain firm throughout. They gradually involve the eyelids, producing great thickening, which finally causes the mechanical occlusion of the palpebral aperture.

The writer has seen about a dozen cases of this condition. The patients varied in age from 15 to 40 years, the majority being men. One or both eyes may be involved, the duration of the case ranging between one and a half and nine years.

The usual progress of a case is as follows: The growth commences as a rule near the inner canthus (rarely under the outer half of the upper lid), as a firm, fleshy thickening and protrusion of the conjunctiva. The protrusion is reddish in colour and not oedematous, and forms flat or rounded and nodular masses, one-eighth to one-half inch in extent, which interfere with the accurate closure of the lids. The conjunctiva does not move on the surface of the growth, but is closely adherent to it. The growth then spreads around the inner surface of the lids, involving the upper and lower fornices and making a heavy nodular curtain

between the eyeball and the lids (Fig. 1). With a probe one can make out a sulcus between the upper lid and the growth, and another sulcus between the growth and the eyeball (Fig. 2). In the case of the lower lid these sulci are less marked. The movements of the eyeball are still free, so that the cornea and the pupil can be

FIG. 1.

Moderately severe case showing flat or nodular masses between eye and lids.

FIG. 2.

Diagrammatic section through eyeball and lids showing the curtain-like growths.

f—The cornea.

e, e—The tumour masses.

seen moving behind and between the masses of the growth (Fig. 3). Later, the growth involves the ocular conjunctiva, causing some limitation of movement of the eyeball. It does not, however,

FIG. 3.

Same case as Fig. 1. Drawings show how the eyeball could move behind the growths.

FIG. 4.

Drawing of a more advanced case, showing how the tumour masses gradually spread in front of the eyeball.

FIG. 5.

An advanced case involving all the eyelids; duration, left eye 6 years, right eye 7 years. Dark central area in palpebral aperture leads down to cornea.

invade the cornea or become adherent to it (Fig. 4). Still later, the palpebral conjunctiva is involved. The lid becomes greatly thickened, so that, viewed from the side, the palpebral mass bulges

FIG. 6.

Same case as Fig. 5. Sketch of right eye. Eyelashes show where margin of lids formerly was and degree of eversion of conjunctiva.

FIG. 7.

Diagrammatic section through eyeball in a case like Fig 5.

- a, b—Upper and lower lids.
- c, d—Everted conjunctiva.
- f—Cornea.
- e, e—Tumour masses.

forward very markedly. The progress of the case suggests that the tissue beneath the conjunctival fornix hypertrophies and slowly pushes the conjunctiva before it, in the form of a fold between the

globe and the lids, and later obliterates the fornix, causing the conjunctiva to stretch from the edge of the cornea direct on to the inner surface of the margin of the lid (Figs. 5 and 6). The palpebral conjunctiva may become everted to the extent of one-third of an inch near the margin of the lids and show a dry atrophic or eczematous condition. The growth of the tumour mass at the inner and outer canthi, combined with that along each lid, causes the palpebral aperture to be almost concentrically reduced, till, in an

FIG. 8.

Rare type, involving only one eyelid.

extreme case, it is represented by a tunnel about one-eighth of an inch across, leading down to the clear cornea (Fig. 7). This gets easily blocked by secretions or eczematous scales, and vision is lost. Movements of the eyeball are progressively interfered with, so that eventually a strong effort to move the globe results in a slight twitching of the palpebral mass, to which the globe has now become anchored. The skin is not infiltrated by the growth but moves over it. The secretion of tears does not seem to be affected. In some cases only one lid is involved (Fig. 8).

Patients show no sign of syphilis, tubercle, leprosy, or other infection. The Wassermann reaction was not available, but large doses of pot. iod. had no effect. There is no enlargement of the lymphatic glands, and general health is unimpaired.

Some cases were operated on, and it was found that the growth is not encapsuled, but gradually merges into the surrounding tissue. It is intimately blended with the conjunctiva, so that the latter cannot be stripped or dissected off it. The growth often extends backwards by the side of the eyeball into the orbit. In late cases it involves the tissue of the lids. The texture of the tumour tissue is for the most part firm but friable. In the palpebral region it is harder, almost cartilaginous. In no case could one feel reasonably sure of having removed all the diseased tissue. After operation the lids cicatrize, become indurated, and adhere to the globe. Recurrence occurs later, the lid becomes thicker and further infiltrated by the growth. Finally, if the cornea is no longer protected by the lid, it of course becomes dull and lustreless.

Under the microscope, sections of the tumour show that the bulk of the growth is composed of round cells (lymphocytes) which are infiltrating the normal tissues. They involve the deep surface of the conjunctiva; the cells in the centre of the tumour show no sign of breaking down. The periphery of the tumour is rather vascular, while the vessels in the centre of the growth have thickened walls. Up to the present no organisms or parasites have been discovered in the tissue, but one suspects that such may be found ultimately as the cause of these growths, which seem to be a form of local granuloma.

The writer wishes to thank Dr. H. Byles, Dr. J. Cormack, Dr. T. Gillison and Dr. A. Skinner (who kindly allowed him to see cases under their care), and would be glad to hear from others who have seen similar patients.

ANNOTATIONS

General Medical Council

It will be remembered that the General Medical Council rejected the recommendations of the Council of the British Ophthalmologists with regard to the undergraduate curriculum and examinations. Our contemporary, the *Medical Press and Circular* (Dec. 10, 1919), points out that the Council appears now to have "been roused to recognize some part of their duty in the matter.. It is true in their belief that the present regulation in force as to the demand for a certificate in ophthalmology for the qualifying examination sufficiently meets the exigencies of the case; but in this connection the most important fact remains ignored—namely that the examination in eye diseases of a student by a general surgeon cannot be regarded as an examination in ophthalmology. Nevertheless, it is satisfactory to