Summary

1. The penetration of sodium sulphacetamide into the ocular tissues has been studied, both in living rabbits and in isolated ocular tissues.

2. Application of the drug with a wetting agent, Duponal ME dry, increases the penetration of sodium sulphacetamide into and through the cornea.

3. Removal of the corneal epithelium causes a great increase in the penetration of the sulphonamide into and through the cornea, *i.e.*, the epithelium acts as a barrier to the passage of the drug.

4. The wetting agent does not increase the passage of the drug into the denuded cornea (*i.e.*, the cornea with the epithelium removed). It may be concluded that the wetting agent acts by overcoming the epithelial barrier.

5. The results suggest that addition of a wetting agent to sodium sulphacetamide would be of most value in infections of the cornea and iris.

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REFERENCES

- BELLOWS, J. G. and CHINN, M. (1939).—*Jl. Amer. Med. Assoc.*, Vol. CXII, p. 2023.
BELLOWS, J. G. and GUTMAN, M. (1943).—*Arch. Ophthalm.*, Vol. XXX, p. 352.
BRATTON, A. C. and MARSHALL, E. K. (1939).—*Jl. Biol. Chem.*, Vol. CXXVIII, p. 537.
DUKE-ELDER, S. (1927).—*Biochem. Jl.*, Vol. XXI, p. 66.
LEOPOLD, I. H. and SCHEIE, M. G. (1943).—*Arch. Ophthalm.*, Vol. XXIX, p. 811.
ROBSON, J. M. (1944).—*Brit. Jl. Ophthalm.*, Vol. XXVIII, p. 15.
ROBSON, J. M. and SCOTT, A. A. B. (1944).—*Brit. Jl. Exp. Path.*, Vol. XXV, p. 81.
ROBSON, J. M. and TEBRICH, W. (1942).—*Brit. Med. Jl.*, i, 687.

A MODIFICATION AND EXTENSION OF THE McREYNOLDS' OPERATION FOR PTERYGIUM*

BY

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THE operation for the removal of pterygium is probably one of the commonest ophthalmic operations performed in South Africa and the Middle East. The condition occurs more commonly in male adults, but is not uncommon in females and it is seen at all ages from puberty to old age.

Two actively growing types are found :—

(1) The fleshy succulent band of conjunctiva advancing into and across the cornea.

(2) The raised gelatinous head in the cornea with a flat body containing dilated blood vessels.

The first type is the one which usually recurs after operation.

The operation for the removal of a pterygium is usually classed as a minor operation, but experience has shown that it can lead to great disappointment cosmetically, recurrence can take place, and complications and unpleasant sequelae result.

A number of soldiers have returned from North Africa with a newly formed pterygium in one or both eyes and it is probable that the condition, which has been uncommon in the British Isles, will be met with more frequently.

After a trial of the majority of old and new operations advised, including that of Stocker (1942), the McReynolds' was found to be the most suitable. Certain features, however, which will be mentioned below, were found to be unsatisfactory, with the result that an extension of the operation has been evolved by the writer and is described in this article.

The McReynolds' operation and its disadvantages :—(1) After removal of the head of the pterygium from the cornea, the conjunctiva along the lower margin of the body is incised and it is undermined above and below the incision, forming a cul-de-sac towards the lower fornix.

(2) The head of the pterygium is excised and a double-armed stitch is inserted into the neck. The needles are carried subconjunctivally and brought out near the lower fornix in such a way that the body of the pterygium now runs almost vertically instead of horizontally. The blood-vessels in the body are stretched firmly over the sclera so that they become obliterated in the course of time and the pterygium is covered by the conjunctiva of the lower cul-de-sac.

(3) The new direction of the pterygium is arranged so that the raw area at the limbus, left by the removal of the head and neck, is covered by conjunctiva.

(4) If the pterygium is implanted into the lower cul-de-sac in such a manner as to fulfil paragraph 3, the upper conjunctiva frequently becomes folded over the upper and nasal limbal margin. This may lead to a permanent, vascularised adhesion between conjunctiva and the raw area of cornea. It may be the starting point of an actual recurrence.

(5) The upper margin of the conjunctival cul-de-sac, even if stitched to the pterygium, hangs loosely for many weeks and sometimes shrivels into an unsightly lump of conjunctiva.

FIG. 1.

FIG. 2.

FIG. 3.

The Modified Operation :—(1) After preliminary cocainization of the conjunctival sac, a few minims of Novocain 2 per cent. c. Adrenalin or some suitable substitute is injected subconjunctivally at the site of the pterygium and into the lower fornix, as it is found that the latter site is not well anaesthetised by surface application.

(2) The head of the pterygium is shaved off the cornea, excised and implanted into a conjunctival cul-de-sac as in the McReynolds' operation. Care is taken that the body is stretched firmly across the sclera to obliterate the vessels. (Fig. 1.)

(3) The new direction in which the pterygium is implanted does not aim at covering the raw area of sclera at the site of the excision at the limbus; it is placed so that there is no overlapping of the conjunctiva along the upper limbus, if necessary an incision can be made in the conjunctiva at "a" (Fig. 1).

(4) The redundant edge of conjunctiva between the incision and the tied silk stitch is incised as shown in Fig. 2, and a flap "x" is formed.

(5) Flap "x" is turned upwards and stitched to cover the raw area of sclera and to lie along the limbus without encroaching on the cornea. A vertical barrier is thus formed to prevent the recurrence of the growth of horizontal vessels on to the cornea.

(6) A small uncovered area appears at "y" (Fig. 3). A stitch from the adjacent conjunctiva biting firmly into flap "x," serves to obliterate this area and at the same time to prevent encroachment of the flap "x" on to the raw corneal area.

This operation has been found easy to perform, the appearance at the end of the operation satisfies one's sense of surgical aestheticism, and up to the time of this report—a period of six months—no recurrence has yet reported back to hospital.

REFERENCE

STOCKER, F. W.—*Arch. Ophthalm.*, Vol. XXVII, May, 1942.

SELF INFLICTED CONJUNCTIVITIS*

An account of cases produced by the
jequirity and castor oil seeds

BY

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AN artificial conjunctivitis produced by the deliberate introduction of an irritant into the eye is seldom seen in civil practice. The condition is so unusual that it is doubtful if most ophthalmologists would readily diagnose it on seeing a case for the first time. With experience, however, the diagnosis can be made with certainty on immediate clinical inspection, as most cases present a very characteristic appearance. Indeed the diagnosis can often be made in spite of a superadded secondary bacterial muco-purulent conjunctivitis complicating the clinical appearance. A recent paper by King (1942) and the subsequent correspondence it involved shows that the condition is not well recognised and prompts me to record an account of a number of cases recently seen by me. These cases seem to be of particular importance in that in two of them a confession was elicited as to the nature of the irritant substance used, and the cases in which a confession was obtained in no way differed from those in which interference was stoutly and persistently denied.

In civil life if a patient is in hospital, he is at a financial disadvantage and in any case he prefers his home conditions to those he meets in the most comfortable and up-to-date hospital. In the army, however, conditions are different. A soldier loses no pay by being in hospital when on active service and the comforts of hospital life are very considerable compared to those of life in

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