

Nursing of Diseases of the Eye.

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THE ANATOMY OF THE EYE.

The eye is an approximately spherical body lodged in a bony cavity, the orbit, the intervening space being padded up by fat.

It consists of a hard case, the cornea and sclera, containing transparent masses, which form an image of the surrounding objects on the percipient elements, the retina.

Some of the refractive media, the aqueous and vitreous humours, take their form from the external case. The posterior, larger, portion of this skeleton, the sclera, or sclerotic, is a dense, opaque, fibrous material, about one mm. thick, having an almost spherical outline, and is about an inch in diameter. The anterior, smaller, part of the fibrous wall, is much modified to form the cornea. If the whole capsule were opaque clearly no light could reach the contained media and the percipient elements. If, on the other hand, all the capsule were transparent, there would be great irregularity of the passage of rays through the lateral parts of the media, owing to spherical aberration.

The anterior region, only, then of the capsule has become transparent to form the cornea. This is roughly about $\frac{1}{2}$ in. (11 or 12 mm.) in diameter, and is sharply defined from the sclerotic at two sides, but above and below the edge is rather less clear, and it is therefore a more difficult matter to give the exact vertical dimensions of the membrane. It is, however, approximately circular in outline. The thickness remains nearly constant at 1 mm. throughout, but the curvature is more abrupt than that of the sclerotic. The radius of the sclerotic is almost half an inch (12 mm.) and the resulting sphere is about an inch in diameter. The radius of the cornea is only 7 or 8 millimetres (less than $\frac{1}{3}$ of an inch) and the resulting sphere of which it is a segment would have a diameter of about 15 mm.

To compare with every day objects, if we place a threepenny piece on a halfpenny so that the edge of the former projects about 2 mm. beyond the latter, we shall represent an antero-posterior section through the eyeball with fair accuracy.

Covering the visible part of the sclerotic is the thin, delicate, transparent conjunctiva, which is very freely movable over the subjacent tissues, except where it approaches the cornea. Here, close to the corneal margin, it becomes quite firmly adherent, and undergoes a change in its formation. Over the cornea the conjunctiva is

simply a series of layers of cells, and forms an intimate part of this membrane.

The reasons of this are obvious. To allow movement of the eye it is necessary that the conjunctiva should be lax, and the folds, where it passes from the globe and the lids, free.

This necessitates that the greater part of the conjunctiva should have, underlying it, very loose connective tissue tying it to the subjacent parts.

Over the cornea, however, seeing that accurate refraction depends on the accuracy of curvature, it is impossible to have a loosely connected membrane, whose exactness would be at the mercy of small injuries setting up inflammation and cedema, and here all subconjunctival tissue is lost.

It follows from this anatomical construction that though diseases affecting the conjunctiva may be fundamentally the same, whether the corneal or ocular part be affected, yet clinically we observe many differences.

The posterior surface of the cornea is lined by a layer of cubical cells forming "Descemet's membrane."



Section of Eyeball.

The sclerotic, which, as we have seen, forms the greater part of the globe-capsule, overlaps the cornea at its edges so that the transparent corneal tissue extends for some little distance behind the opaque sclera. Hence, as is clear from the diagrammatic section of the eye, the base of the iris cannot be seen through the cornea.

It is a dense white fibrous membrane, which is perforated in a considerable number of places. Near the posterior pole is a thin "sievelike" area, where the tissue is much reduced, through which the optic nerve passes into the eye; close around this are the entrances of a number of small arteries; in the coronal equator are the apertures of exit for the veins.

Within the outer case of the eye is found the vascular coat or uveal tract. This is divided into three parts. The posterior region, or choroid, consists almost entirely of vessels, the ciliary arteries, which enter the eye close to the optic nerve, the vorticosse veins, which make exit through the sclera about the equator and the intervening capillaries. This passes on to a region a little external to the corneal limbus or edge, where it

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