LECTURE DELIVERED AT THE BRITISH COLLEGE OF NURSES.

Recently a Lantern Lecture on "Detachment of the Retina," delivered by E. F. King, Esq., M.B., Ch.B., F.R.C.S., D.O.M.S., at the British College of Nurses, was received with the greatest interest by those present.

In thanking the Lecturer for the Lecture, Miss G. Le Geyt, F.B.C.N., who was in the Chair, expressed warm gratitude for the valuable instruction Dr. King had imparted, and thought that the scientific skill of modern methods by which sight is restored, and which he so admirably explained, was an epoch-making triumph for the relief of suffering humanity.

DETACHMENT OF THE RETINA.

A Lecture Delivered at The British College of Nurses by E. F. King, Esq., M.B., Ch.B., F.R.C.S., D.O.M.S.

Before we can consider the pathological condition of detachment of the retina I want to remind you of the normal structure of the eye, such as is seen when the organ is opened by dividing it into two halves. It consists essentially of three coats, an outer, a middle, and an inner, the lens of the eye, and the vitreous. The outer coat is of two parts, in front the cornea, which is normally transparent to allow light to pass into the eye, and behind and directly continuous with it the sclera, a tough fibrous tissue shell, which maintains the shape of the eye and is commonly called the "white of the eye"; it is pierced near its most posterior part by the optic nerve, to which we shall refer in a moment.

The middle coat, which is called the uveal tract, is divided into three parts, posteriorly the choroid, further forward this becomes the ciliary body and still further forward the iris, this last may be of any shade from gray to dark brown and is, when viewed through the cornea, the structure which gives to the eye its characteristic colour. It is important to remember that these three parts of the middle coat are all one structure and that they have a common purpose, viz., to carry blood vessels; in other words, the uveal tract is the nutrient coat of the eye.

Within the uveal tract is the innermost and last coat of the eye. Posteriorly this consists of the retina, which traced forward is represented by two layers of cells lying on the inner surface of the ciliary body and the posterior surface of the iris.

The lens is in the front part of the eye and in shape and function is very similar to the lens of any camera. The space behind the lens and in front of the retina is filled by vitreous, a clear substance which is normally of jelly-like consistency.

To return now to the retina, which we must consider in further detail. Within it are highly specialised cells known as rods and cones; when light falls on these certain stimuli are aroused which pass up the optic nerve to the brain where they are interpreted as vision. You will appreciate that these are the only cells in the eye, or of course anywhere in the body, where the sensation of vision can be aroused, and if they are dead or diseased the patient will be more or less blind.

The structure of the retina will be better understood if we turn for a moment to its development in fœtal life.

The eyes are developed as two outgrowths, known as primary optic vesicles, from the sides of the front of the primitive brain, the front of the vesical becomes indented and folded back to form the retina, and the stalk, connecting it with the brain, becomes the optic nerve.

It will thus be seen that the retina consists of two layers, which normally remain in close apposition, though not attached, throughout life, and that it, and the optic nerve, are in fact specialised outgrowths of the brain.

The blood supply of the retina is peculiar, for it is derived from two separate and entirely independent sources. The retina lies directly on the choroid, which is a membrane containing a large number of vessels, and from it derives part of its nourishment.

There is also, however, a specialised artery, which pierces the optic nerve behind the globe, and passes into the eye within it and is there distributed to the retina. This central artery forms the second source of nourishment to the retina and is entirely separate and independent of that derived from the vessels in the choroid.

I now want to show you a picture of the normal fundus, that is to say, the back of the eye, as viewed by an ophthalmoscope. The principle of this instrument being to shine light into the patient's eye from a mirror which is held to the surgeon's eye; this light is again reflected out of the patient's eye and is viewed by the surgeon through a hole in his mirror. The most striking feature of the normal fundus is the optic nerve, which appears as a round white disc in the centre of which is the central artery of the retina, which you will remember has entered the nerve behind the globe. This artery is seen breaking up into a number of branches. The retina itself when normal and not detached is invisible and transparent, but through it is seen a diffuse red glow which is due to the numberless blood vessels in the choroid beneath.

I think we are now in a position to consider detachment of the retina. When dealing with its development you will recall we noted that the retina is derived from two layers which normally lie in close apposition, these never become united and by detachment we mean that the inner layer again comes away from the outer layer and, in a sense, reverts to the position which it held in fœtal life.

Now detachment of the retina is disastrous from two points of view. Firstly, the retina becomes isolated from the choroid which is responsible for part of its blood supply; death of the essential cells of the retina eventually follows, but not for some weeks or even months, for enough nourishment is supplied by the central artery of the retina to maintain its life temporarily. Secondly, the whole eye is so adjusted that light from outside is brought to a sharp focus on the retina, in exactly the way that a plate or film in a camera is placed so that objects appear on it in focus. When the retina is detached it is as if the plate in a camera were moved forward, which naturally results in a loss of definition of the object viewed.

Now what are the causes of retinal detachment? One may think of it as being pulled off, pushed off, or as floating off.

(*a*) Firstly.—The retina pulled off.

In certain conditions strands of fibrous tissue are seen running through the vitreous and attached to the retina at both ends. It is a property of fibrous tissue in the course of time to contract, and when this happens the retina is necessarily pulled off the choroid *i.e.*, it becomes detached. Nothing can be done to cure this type of retinal detachment.

(*b*) Secondly.—The retina is pushed off, either by fluid or a solid growth.

In certain medical conditions, *viz.*, nephritis and toxæmias of pregnancy, serous fluids exude from the vessels, and the retina becomes, so to speak, water-logged. This fluid is liable to collect between the layers of the retina, to sink below by gravity, and there produce detachment of the retina. In addition to the fluid, hæmorrhages and white exudates are also seen in the fundus in this condition. Treatment, of course, is directed to the general disease and not to the eye. The commonest growth in the eye is a type of sarcoma, which arises in the choroid and is highly malignant. This growth grows rapidly, and it will be readily understood that the retina must be pushed

previous page next page