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THREE CASES OF PERFORATING WOUND OF THE GLOBE OF THE EYE.

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One of the most difficult problems with which the ophthalmic surgeon is confronted is the treatment of perforating wounds of the globe of the eye, with retention of a foreign body therein; and the question whether an eye so injured should be retained or enucleated is perhaps the most momentous he may be called on to decide. It is a well-recognised rule in ophthalmic surgery, that when a foreign body becomes lodged within the eye, it must be removed as soon as possible, owing to the danger of sympathetic ophthalmia being set up in the uninjured eye. If this cannot be done, owing to the situation of the foreign body, without causing serious damage to the eye, then it becomes imperative to enucleate or eviscerate the eye without delay. The one exception to this rule is, where a small particle of metal becomes embedded in the lens, and gives rise later on to a traumatic cataract, so that the foreign body can be removed when an operation is performed for the extraction of the cataract. This is precisely what happened in the first of these cases. In all three cases, the perforation was attended with the lodgment of a foreign body in the shape of a fragment of metal in the eye. The first two accidents occurred in a similar manner, namely, as the result of a ricochet or "splash" from the target, while the patient was engaged as marker on a rifle range. In the first case the particle of lead remained latent in the eye unsuspected by the patient for a year and a half; while in the second, the damage done to the eye was so great as to necessitate the removal of the eyeball a few days after the receipt of the injury.

CASE I.—TRAUMATIC CATARACT WITH SUBLUXATION OF THE LENS.

Bombardier S., Royal Field Artillery, was sent for treatment to the Royal Infirmary, from F——, with the following history:

While employed as marker in the butts on the revolver range at L——, on October 23rd, 1902, he was struck on the right eye with a splinter of a bullet, which "splashed" off the target. He was admitted into hospital and was discharged after ten days with the eye in an apparently normal condition, the vision being good and the media clear. He suffered no inconvenience whatever for about a year, when the sight in the eye began to get gradually dimmer, and he was again admitted to hospital at F——.
He was then found to be suffering from a commencing traumatic cataract in the right eye, and he complained of considerable pain and mistiness in the left, which, however, soon cleared up under treatment, and he was discharged to attend hospital as an out-patient. During the first few days of his attendance he complained of severe pains at the back of the left (uninjured) eye. The sight was now practically lost in the injured eye, being reduced to bare perception of light.

When admitted to the Royal Infirmary in the month of March, 1904, the right lens was found to be cataractous, and partially dislocated backwards into the vitreous chamber. The cataract was not "ripe," there being glistening sectors in the lens and a shadow being thrown on the lens by the iris, which was slightly tremulous. A very faint scar was present on the cornea, a little below and to the left of its centre, and there was a small notch in the corresponding portion of the pupillary margin of the iris. Vision: right eye = P.L., left eye = $\frac{2}{6}$; projection good; no fundus reflex. Tension = +1. A skiagram showed a small particle of metal, about one millimetre in length and half a millimetre in breadth, embedded in an antero-posterior direction, in the substance of the lens.

Though the cataract was immature, it was decided to operate, on account of the increased tension and the fear of glaucoma resulting from the increasing swelling of the lens.

Operation.—A large sclero-corneal incision was made, as, owing to the subluxation of the lens, it was possible that delivery of the cataract might have to be effected with a vectis. Some difficulty was experienced, attributable to the facts that the lens was partially dislocated, and that the cataract was not quite mature, about half the lens being solid, while the remainder was of a diffusent nature. A bead of vitreous escaped after delivery of the lens, although pressure on the globe was carefully avoided. Atropine was instilled, and an antiseptic dressing applied.

A report received eight months after from the medical officer in charge of his battery, stated that the man had been passed fit for service in India. The pupil was clear at the central and upper parts, while some cortical matter still remained at the lower part. With a $+12$ lens he was able to read Snellen $\frac{2}{6}$.

**Case II.—Penetrating Wound of Sclera.**

Lance-Corporal T. was sent to the Royal Infirmary, Dublin, from N——, with a severe injury of the right eye, the result of an accident which occurred on the previous day while he was marking in the butts on the rifle range in that station.

A fragment of a Morris tube bullet entered the globe of the eye about one quarter inch below the lower margin of the cornea in the middle line, and lodged in the vitreous body. The lower portion of the iris for about one fifth of its circumference was torn, and together with the ciliary
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body and choroid was prolapsed through the wound in the sclerotic and conjunctiva, the pupil presenting a key-hole appearance. The cornea was quite clear, but the vitreous cavity was filled with blood and the fundus invisible, vision being completely lost in the injured eye. The tension was — 3, a considerable quantity of vitreous humour having escaped through the entrance wound at the time of injury.

A skiagram taken soon after admission revealed a fragment of lead, about 4 mm. in diameter, embedded, apparently, in the centre of the vitreous chamber. The sight in the eye being quite lost, and sympathetic inflammation in the sound eye being inevitable, if the damaged eye were retained, it was decided to enucleate. The operation was performed on the following day, the margins of the conjunctiva being brought together by a continuous catgut suture, after enucleation, and a good stump resulted. The patient was discharged three weeks afterwards with an artificial eye.

Case III.—Perforating Wound of Cornea.

While Private D., 6th Dragoons, was shoeing a horse at Marlborough Barracks, Dublin, on the morning of June 16th, 1905, a piece of steel from the shoe penetrated the cornea of the left eye, and lodged firmly in the iris, projecting into the posterior chamber. On admission to hospital the eye was very painful, the conjunctiva injected, the iris muddy-looking, and bound down by adhesions to the anterior surface of the lens. A small slit-like wound was noticeable in the cornea, and a fragment of steel measuring 6 mm. in length by 3 mm. in breadth, and about 1 mm. thick, was seen, as was thought at first, lying on the iris, but which subsequent investigation showed to be embedded in its substance.

Operation.—Under cocaine, an incision with a triangular bent keratome was made in the sclero-corneal margin, below and external to the situation of the foreign body, and an attempt was made to extract it, first with a magnet and afterwards with fine forceps, but the piece of metal was so tightly wedged in the iris that it could not be removed by either of these methods. An incision, as for a cataract extraction, was then made with a Graefe’s knife at the sclero-corneal junction, immediately below the corneal wound, an iridectomy was performed, and the splinter extracted with a cystitome. The eye was irrigated with 1 in 5,000 perchloride of mercury lotion, and a pad of sterilised gauze applied. The dressings were removed after forty-eight hours, when the wound was found to be healed, but the iris somewhat inflamed. The attack of iritis lasted about a fortnight, and the patient was discharged with normal vision on July 16th, 1905.

An interesting point in this case was the rapidity with which iritis set in, the pupil being fixed and the iris adherent to the lens within a few hours of the receipt of the injury. There is little doubt but that an
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attack of acute glaucoma, with probable disorganisation of the globe, would have supervened, if the foreign body had not been immediately removed.

A CASE OF FRACTURE OF THE LEFT PATELLA.

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GUNNER J., No. 3 Mountain Battery, R.G.A., was admitted to my ward in the Station Hospital, Quetta, on May 26th, 1905.

He was suffering, on admission, from a transverse fracture of the left patella. He states that the accident occurred playing football, and that, while running with the ball, he was tripped from behind, which caused him to fall heavily on his left knee. At the time he felt something "go" and was unable to stand up on his left leg; he had to be carried from the field to the hospital.

On examination of the knee, it was found to be greatly swollen and distended with fluid; the patella was found to be transversely fractured, and there was considerable separation of the fragments. The patient was put to bed and the knee joint was kept at rest by means of a back splint, the fragments having been previously brought together with a bandage as close as possible. An ice bag was applied over the joint and the limb was steadied by sand bags on either side. On June 14th, 1905, I decided to operate. I might have done so before without risk to the patient, only I was somewhat chary of freely opening up a knee joint, never having done so before. The previous week I had removed a foreign body from the knee joint of a patient and opened into the joint. Having gained confidence from the success of this operation I thought I might attempt to wire Gunner J.'s patella. With the assistance of Lieutenant-Colonel Donnet, R.A.M.C., I opened into the joint by means of a horseshoe-shaped flap, exposing the anterior surfaces of the broken fragments of the patella. All blood clot was removed and the fractured surfaces were cleared of all clot and fibrous shreds, which were rather firmly adherent to the ends of the bone. The fractured ends were freely scraped, and a track for the wire suture was made with an awl extending through the centre of the fractured pieces of bone, clear of the articular cartilage behind. A sterilised silver wire suture was passed through the bone and the fragments were brought into good apposition, the ends of the wire were twisted into a knot and hammered into the anterior surface of the patella. Before suturing the bone the interior of the joint was freely douchèd out with formalin solution. Previous to closing the wound a few stitches were introduced into the ligaments and fibrous tissue around the joint. The flap was then returned and the wound closed by interrupted sutures. Iodoform and boric powder were dusted on the skin.