Removal of Steel from the Vitreous

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ELECTRO-MAGNET.

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An eye that has sustained an injury by the penetration of a foreign body into its interior presents an interesting problem for the surgeon who is consulted to consider. The surgeon's responsibility is the same whether sight is immediately affected or a wound has been produced that tends to that end and sympathetic inflammation. He must decide from his own experience, or that of others, what shall be his treatment of each individual case, and, as there seems to be a difference of opinion as to the best method to pursue in such cases, it is certainly our duty as members of this Society to report our experience. With this end in view, the three following cases, which have occurred in my private practice during the past year, are added to the six reported by me to this Society in 1891:

CASE 1. O. A. W. (8689), aged 34, while chiseling out a set-screw, a piece of steel struck his right eye about ten hours before he presented himself at my office. Examination showed a wound in the cornea, near the junction of the middle and lower third of its vertical diameter, of about two millimeters in diameter. There was a notch in the iris of about the size of the wound in the cornea, and the missile had passed obliquely through the lens, fracturing it in such a manner that no view of the interior of the eye could be obtained. The seriousness of the wound to the eye was stated to the patient. The possibility of the steel becoming encapsulated or setting up sympathetic inflammation, and finally, the chance of removing it by the electro-magnet, was made as clear as possible to him. He decided to have it removed by the electro-magnet, with the understanding that if the attempt was not successful the eye would be removed before he recovered from the influence of the ether. With the assistance of Dr. Bowers and Mr. Clough he was placed under the influence of ether. The conjunctiva was dissected off between the external and inferior recti muscles back to the equator of the eyeball, and an incision eight or ten millimeters long was made near the equator of the eyeball horizontal to its antero-posterior diameter. As the knife passed into the vitreous it came in

contact with the steel, and its easy removal was anticipated. There was not much hemorrhage and no escape of vitreous. The long straight point of Bradford's magnet was introduced, but no steel was touched or came out on its point. This was repeated for the fifth time before the steel was secured. It was one and a half millimeters long, and its width and thickness were less than a millimeter. The sclerotic wound was cleaned and approximated and the external conjunctival wound was united by one suture. Both eyes were covered with cotton, which was held in place with silk isinglass plaster. The patient was advised to rest in the recumbent position as enjoined upon persons after cataract operations. There was no pain, and the patient made an uninterrupted recovery. The lens became absorbed, and with a cataract glass he had good vision. The field of vision was good and he was enabled to estimate distances correctly with the other eye. This enabled him to resume his occupation, which was that of machinist. This accident occurred the first part of last August, nearly a year ago, and he has had no trouble since he began work.

CASE 2. W. K., aged 23 (9571). While placing a block upon the platform around a circular saw revolving twelve hundred revolutions a minute, the hook by which he held the block struck the saw and a piece of the steel flew and struck his left eye. There was a wound in the upper nasal quadrant of the cornea midway between its vertical and horizontal diameters, its upper end just crossing the sclero-corneal margin. A corresponding opening existed in the iris, and the missile had passed obliquely through the lens, fracturing it so that no view of the fundus could be obtained. The case was stated to him and his friends as in case No. 1. They elected to have the steel removed by the electro-magnet if possible. Failing in that, it was understood that the eye should be removed. He was placed under the influence of ether with the assistance of Mr. Clough. The conjunctiva was dissected off between the external and inferior recti back to the equator of the eyeball. An incision was made in the sclerotic near the equator, below its horizontal diameter and obliquely to it. As the Graefe knife passed into the vitreous it came in contact with the steel. Upon withdrawing it and inserting the long straight point of Bradford's magnet the steel was found on its end when it was withdrawn. The sclerotic wound was cleaned and the external wound was united with one suture. The eyes were dressed and the patient put to bed, as described in the pre-

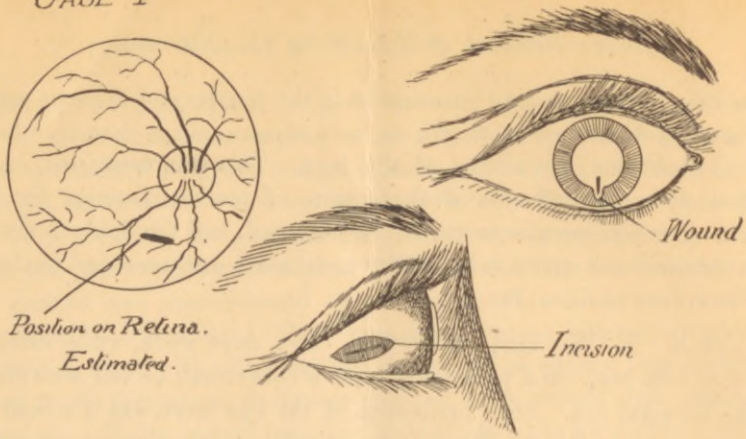
vious case. There was no interruption in the recovery of the case until the seventh day, when he began to have severe pain in the eye, which was no doubt due to swelling of the lens. This pain continued, more or less severe, for about a week, in spite of active treatment for its relief. The lens became more or less absorbed, and the field of vision thus obtained was useful in his ability to estimate distances, and enabled him to return to his work.

CASE 3. H. W., aged 16 (9806). Two days since, while driving down an iron hoop on a pork barrel with a cold-chisel, he felt something strike his right eye. On examination of the eye there was a wound in the cornea about three millimeters long, crossing its horizontal diameter on the nasal side near the sclerol-corneal margin. There was a horizontal quadrangular opening in the iris opposite the wound in the cornea, which at first glance looked like a foreign body on the iris. The steel passed through the edge of the lens, but its center remained clear so that the optic disc could be seen. Search was made with the ophthalmoscope for the foreign body, but it could not be located on account of the opacities of the media due to the injury. There was a small amount of pus in the anterior chamber, and after stating the case to him as clearly as possible and advising him that the easiest way out of the accident was to have the eye removed, he still insisted upon having the steel removed by the electro-magnet, but consented to have the eye removed after it should be found that the steel could not be removed by the electro-magnet. He was placed under the influence of ether by the assistance of Mr. Clough. After dissecting down between the external and inferior recti muscles a small incision was made near the equator of the eye. As the Graefe knife passed into the vitreous it came in contact with the steel. Passing in the long straight point of Bradford's magnet I was gratified to find the steel upon its point upon withdrawing it the first time. The sclerotic wound was cleaned and the conjunctival wound united with one catgut suture. The next morning the hypopyon had disappeared, and at the end of a week the eye was clear. This was, on account of the suppurative inflammation present, the most unpromising one of this series, but it made the most rapid recovery, without pain and with good vision, equal to two tenths.

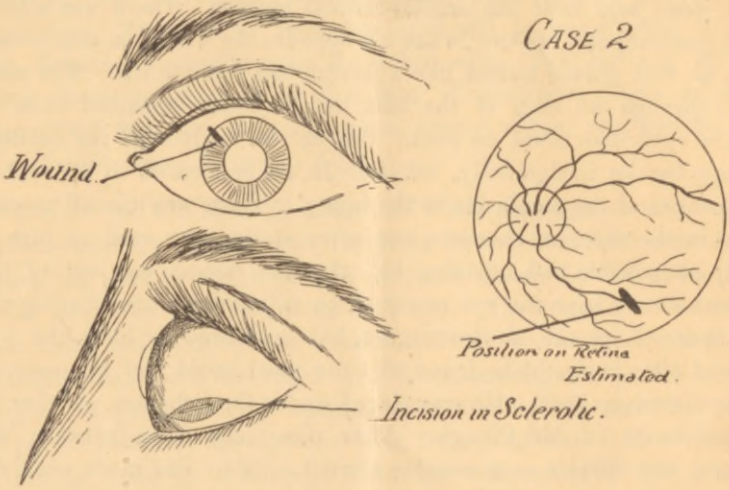
Since these three cases were reported I have operated upon two more similar cases successfully.

PORTLAND, MAINE, January, 1894.

CASE 1



CASE 2



CASE 3.