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Quiescent Foreign Bodies Within the Eyeball,
with Report of Cases.

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presented by the author

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QUIESCENT FOREIGN BODIES WITHIN THE
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When the eyeball has been penetrated by any extraneous material the resulting injury and probable subsequent irritation and inflammation is always regarded with the utmost concern by the surgeon in attendance. Even if the particle comprising the foreign body is very minute, if the impact has been sufficient to cause it to penetrate the walls of the eyeball and it has passed within the globe, it is a grave and serious condition. The prognosis is nearly always unfavorable, as it may immediately become a source of severe suppurative inflammation resulting in destruction of the eye, necessitating its enucleation, or if allowed to remain may eventually result in disease of the injured eye, or possible sympathetic irritation and inflammation of the fellow eye. Should a foreign body have entered the globe and only a moderate inflammation result, the question of its possibly becoming encysted and remaining quiescent, presents itself for consideration, and unless the location of the injury and the position of the foreign body should preclude the possibility of strenuous efforts resulting in a successful termination, or delay should endanger the fellow eye, all eyes should be given an opportunity to become quiet.

The eye should be treated in all cases of foreign body with antiphlogistic medicines and applications, and general medications should be administered, when indicated; the object to be attained being the preservation of the eyeball even though it is almost certain that the eye will be sightless. Should the possibility exist of sufficient sight being retained to render the eye of any service to the patient, the



efforts to quiet it should be continued as long as there is any probability of the inflammation subsiding; for, a natural eyeball, if not unsightly or a constant menace to the fellow eye is infinitely preferable to an artificial eye which is always a source of discomfort, and even if most carefully matched and constructed, somewhat unsightly, in addition to being a constant expense to the wearer.

The question of the possible after effects of a present foreign body is of importance and the many cases reported in which even very small particles of steel have, after years of quiescence, become a source of such severe irritation that the fellow eye has become diseased, or an enucleation of the eye rendered necessary, have had a tendency towards preventing protracted efforts to save eyes which seem to be too severely injured to undergo a satisfactory reparative process. If a patient carrying an encysted foreign body can not at any future time be easily reached, or may pass entirely from proper observation in case of subsequent irritation, as, under such circumstances there is a decided objection to the continued presence of a foreign body in the eyeball, the desirability of efforts at its removal by operation or even, if necessary, the enucleation of the eyeball itself should be carefully considered. The operation for removal of foreign bodies by the magnet has been performed in a large number of cases; it is, however, only moderately successful. It is an extremely dangerous operation and so serious a procedure that it frequently induces severe suppurative inflammation and subsequent loss of an eyeball which might under more conservative treatment have been saved.

The time required for an inflammation resulting from the presence of a foreign body in the eye to subside is frequently a matter of great importance, especially to a patient who has himself and others dependent upon his daily labor for their support. In such a case where the time would be too long, extending over a period of weeks and perhaps

months before the eyeball would quiet, and if the eye were so severely injured that it would be sightless and there were some danger to the fellow eye, immediate enucleation would be a perfectly justifiable procedure. The cases reported are presented for the purpose of illustrating the manner in which foreign bodies may enter the eyeball and become encysted in different localities, remaining perfectly quiescent and apparently no menace to the integrity of the globe, the sight of the fellow eye, and even in some cases the sight of the injured eye itself:

Case 1.—D. F., age 30; Irish, machinist; July 12, while working at his trade was struck in the right eye by a piece of flying steel. When first examined he had a severe iritic inflammation and a scar on the cornea, temporal side, near the limbus. The iritis responded readily to treatment by atropin and a leech. The eye quieted and was perfectly comfortable. There was no idea of a present foreign body and the patient was confident that there was nothing in the eye. He had no discomfort; his vision was normal.

September 1.—Again applies for treatment stating that one week ago his right eye became red and painful and had a feeling of scratching as if something was in it, with blurring of the sight and severe headaches. These symptoms had gradually increased until present time. On examination severe inflammation with sub-conjunctival infection, and a small black speck on the globe in the temporal region were observed; the foreign body, a small piece of steel, presenting near the limbus cornea in the supra-temporal quadrant was removed with some difficulty as it seemed to be tightly imbedded in the ocular tissues. It was one-eighth of an inch in length and very thin and sharp pointed. The irritation readily subsided under cold bathing and atropin, the eye became perfectly normal and the vision equally as good as that of the other eye.

Case 2.—J. R., 44; foreign body encysted in iris May 5, 1893; while working at his trade, machinist, a small piece of steel flew from the hammer and entered eyeball lodging in iris. First saw patient Tuesday, May 9. At that time the eye was congested and there was a small white fleck on the iris below. Had some pain; he could see well; ordered atropin; the pupil responded readily and the iritis gradually disappeared. May 15. Has no pain and very little redness; his eye feels well; ordered him to remove bandage and wear shade glasses. Atropin was discontinued and on May 22 there is no redness. The pupil is coming down and the foreign body is evidently encysted being covered with

a white exudate. There is a very slight indentation on the edge of the pupil above the body; the vision is normal.

Case 3.—P. W.; steel in eyeball; one week before he applied for treatment while working at his trade, a machinist, a piece of steel flew and entered the right eyeball passing through the cornea and iris just below the pupillary margin and through or into the lens. The steel can not be seen either by direct illumination or with the ophthalmoscope. The lens is somewhat opaque and presents a glistening reflex. The pupil is slightly dilated, the tension of the eyeball very slightly increased, has had slight pain, but there is no discomfort at present and no inflammatory symptoms. The vision was 1-10 three weeks after the injury and on last advice had remained practically the same since time of injury until his death three months ago, never having caused him any discomfort, either in the injured or the fellow eye.

Case 4.—F. G., applied for treatment of an iritis, which he stated he thought might be the result of a foreign body which entered the eyeball twenty years before this time; he complained that he had on several occasions had attacks similar to the present inflammation; the pupil dilated considerably under atropin but was irregular. On the temporal side there was an iridodialysis which could be readily illuminated, and directly behind the opening there was upon the fundus a large, white plaque about the size of a pea. The vision in the eye was impaired being about 1-20. The iritis responded to treatment and the patient passed from observation still carrying the foreign body.

Case 5.—J. F., age 47. Seventeen years ago received an injury from flying steel in the right eye; the steel passed into the globe in the ciliary region on the temporal side of the eye. The sight was immediately lost and never returned. There was no opacity of the lens and no spot or plaque could be seen on the fundus to indicate situation of the foreign body. He has had occasional attacks of neuralgia in the right eye but never any inflammation. He was myopic before the injury, but the sight of the left eye has never been affected as a result of the injury. On Thursday three days ago he had a severe attack of neuralgia in the left eye which was the first he ever had in that eye. On examination there was no apparent disease of that eye. R. V. O. L. V. = 20-100 with - 1-15 = 20-20.

Case 6.—W. P., age 30; machinist. One month before presenting himself for treatment and while engaged in turning on a power lathe, a spicula of steel flew from the tool striking him in the right eye, and as he thought falling to the floor. He had no pain, redness or swelling and did not notice any feeling of discomfort at any time until the third day after the injury, when he thought that his sight in the right eye was diminishing slightly; from that time until

date of first visit one month after the injury there has been absolutely no symptoms present, except a continued falling off of the vision in the injured eye. R. V. = 2-7. No improvement with glasses. L. V. = 20-20. By ophthalmoscopic examination and direct illumination a small piece of steel about the size of a pin head is observed situated in the lens above and towards its supra-temporal border; directly in front and somewhat below this point a corneal scar indicates its point of entrance; the loss of vision is due to opacities of the lens. September 15, 1884. The eye has given him no discomfort but the vision has steadily diminished until present visit when he only had perception of light. The lens is entirely cataractous and milkwhite in color. June, 1893, on examination: R. V. = 20-15 with +1.3 1-2. The lens is entirely absorbed; the fundus on ophthalmoscopic examination is seen with perfectness with +1.4. The foreign body can not be discovered it probably having sunken down close behind the iris. He never has had any discomfort of any kind and reports the eyesight in his injured eye of great service in discerning objects appearing on that side.

Case 7.—C. A., age 44. While hunting on Oct. 29, 1882, and one hour before presenting himself for treatment he received a wound in the right eye, scattering shot from the gun of a companion having struck him. The shot used was bird shot No. 6. It grazed the upper lid and entered the eyeball just at the limbus of the cornea leaving a small crescent shaped cut upon the globe. There was a considerable hemorrhage into the anterior chamber. There is but little swelling or irritation. Ordered atropin and cold water bathing. R. V. = perception of light. October 30 on the day following the injury, R. V. = ability to count fingers at 6 degrees. A new sub-conjunctival hemorrhage has occurred near the wound. The hemorrhage in the anterior chamber and also the sub-conjunctival hemorrhage were gradually absorbed; the slight inflammation subsided and the vision improved, the patient remaining under treatment for two weeks. When an ophthalmoscopic examination could be made no foreign body was located; there was a small plaque on the fundus in a direct line with the wound in the globe anterior and the possibility of the shot having passed entirely through the eye presented itself for consideration. The vision was still impaired when the patient ceased his visits.

July 24, 1891. Eleven years after the injury the patient was sent for and examined with the following result: he was unable to say which eye was injured and stated that he could see as well with one eye as the other. R. V. = 20-30 + 1-36 = 20-20. L. V. = 20-40 + 1-36 = 20-20. He has never had any discomfort since the original inflammation subsided. The vision in the injured eye is better than the other eye

when not using glasses. The location of the foreign body is questionable, it probably having passed through the globe into the orbit behind the eyeball.

Case 8.—E. Q., July 10, 1889, while celebrating the Fourth of July, was struck in the right eye with some powder grains, a cannon having prematurely exploded. The grains of powder passed through the cornea and iris and into lens causing a traumatic cataract. The eye was still inflamed on July 10 when first seen; it quieted nicely under treatment and by August 2 was perfectly comfortable, although the corneal wound was still open at times and there was an occasional escape of aqueous. The lens remained cataractous, the wound of cornea closed and the vision was only perception of light. There has been no subsequent discomfort. May, 1892, when last seen the eye remains sightless.

Case 9.—J. McD., Oct. 24, 1887, was struck while working as a laborer in blasting rock, by a piece of steel from a drill; the steel passed through the cornea and sclerotic at the limbus; a well marked inflammation developed with suppurative choroiditis. Enucleation was advised, but the patient declined to have the eye removed; after remaining in the hospital five weeks the pain and inflammation had entirely disappeared. There was tension of the eyeball and apparently an oncoming phthisis bulbi; there was only perception of light. On ophthalmoscopic examination the field presented a semi-organized exudation filling nearly the entire half of the vitreous, evidently the seat of the foreign body; the exudate on last examination still had a reddish tinge resulting from the blood coloring matter not yet absorbed; the eyeball is quiet and comfortable and there is no irritability of the fellow eye. The steel can not be seen, being probably concealed in the exudate mentioned above.

Case 10.—July, 1888, W. M., was engaged in firing a cannon on the Fourth of July; the concussion of the ramrod exploded the charge of powder prematurely; he was standing in front of the cannon and the charge shot into his face, filling both eyes with powder and pieces of grass and weeds which he was using as wadding; both eyes were injured and there were dozens of particles of powder and stubs of grass and weeds removed from them. The orbital cavity was literally full of such particles, which were lodged in the conjunctiva. His left eyeball was severely lacerated, and the right cornea had perforating wounds through which cannon powder had passed. The resulting inflammation was so severe that the enucleation of the right ball seemed absolutely necessary; the possibility of saving the left eyeball seemed very slight. Under active antiphlogistic treatment the inflammation gradually subsided; there was no sight in either eye at first, but ten days after the injury he

was able to count fingers with the left eye. No sight in right eye which was diminished in tension. Present condition, June 1, 1893, phthisis bulbi of the right eye which is considerably sunken and has cicatricial contractions. He never had any pain since the original inflammation subsided. The left eye has a large symblepharon on the temporal side and is discolored by powder stains; the cornea is clear showing two scars where grains of powder, which are lodged in the iris entered; the pupil is mobile; there are some opacities on the anterior capsule of the lens. There is a long narrow choroidal plaque extending from the temporal side of the optic nerve to the extreme limit of the field, undoubtedly due to rupture of the choroid from the force of the blow. R. V.—O L. V.—20-200; no improvement with glasses. He has a sensation of light in the left eye which constantly flitters before the eye either night or day, seen even when the eyes are closed. He describes the light as a black center surrounded by moving light, no doubt due to the blind spot in the field of vision caused by the plaque at the seat of the choroidal rupture. He was at first troubled with rainbow light flashes, which would circle around and then burst, but as time passed he sees less of these; he thinks his eye is stronger than it was. He has no dizziness such as he constantly had for two years after the injury. No intolerance of light except in the early morning after working all night; he is employed as a night watchman and has been since the time of the injury.

Case 11.—July, 1889, W. V. S., while celebrating the Fourth of July was shot in the eye, the powder passing into the eyeball, penetrating the lens and causing a traumatic cataract; he had a severe iritic inflammation which finally subsided and the eye became comfortable but remained sightless for six weeks after the operation, when he ceased his visits. He never, as requested, came back for future examination.

Case 12.—July, 1892, P. H., while celebrating the Fourth of July was shot in the face, a small cannon loaded with blasting powder having prematurely discharged; two grains entered the eyeball and lodged in the lens passing through the cornea and iris. The eyeball was excessively inflamed and the pupil contracted, the lens cataractous and a considerable deposit of plastic material in the field of the pupil. The inflammation subsided after six weeks of treatment and he was discharged with a fairly comfortable eye; his vision was only perception of light. He passed from under observation never returning for examination.

Case 13.—W. C., while celebrating the Fourth of July a cannon loaded with blasting powder was discharged by a companion and the powder entered the left side of face and eyeball, passing into the chamber of the vitreous. At first there was but slight irritation and the vision was 2-5;

the grains of powder which could be seen on ophthalmoscopic examination gradually assumed a yellowish cast and increased in size until as large as a mustard seed; they presented a peculiar fuzzy appearance on either direct or oblique illumination. The vision was reduced to fingers at eight feet, the inflammation finally subsided, and one month after the injury the vision was $\frac{1}{2}$. There was no further pain or irritation.

Case 14.—I. E., while at work in shop was struck in the eye with a flying piece of steel which entered the eyeball and lodged in the fundus causing a number of hemorrhages, forming a large stellate hemorrhagic spot on the retina. He could see one week after the operation to count fingers at twenty feet. He was under observation for three weeks; his eye having quieted, he was discharged. His vision was $\frac{1}{4}$. He never returned to report the subsequent condition of the eyeball.

Case 15.—C. B., a machinist; while striking a chisel a piece of steel flew from the head of his hammer and penetrated the eyeball, passing through the cornea, iris and lens, and lodging in the fundus at a point directly opposite its point of entrance. There was considerable resulting hemorrhage into the vitreous and some hemorrhagic spots on the choroid to indicate the point of impact of the foreign body, which could not be positively demonstrated by ophthalmoscopic examination. There were no opacities of the lens, although the foreign body had passed directly through it. On examination on the day of the injury there was considerable loss of vision; the point of entrance and the course of the body could be demonstrated; the eye pained but little, was slightly red and the pupil did not respond readily to light; the blood in the vitreous somewhat obscured the point of lodgment in the fundus. The pupil dilated readily; the inflammation quieted and there was very little discomfort during the two weeks which he remained in the hospital. June 2, 1893, one year after the injury, he had some neuralgic pain in the injured eye, which has gradually grown blind, and he can not on this date see anything but shadows. The ophthalmoscopic examination shows the pupil slightly dilated and regular. An extensive retinal detachment around the point where the foreign body had lodged; a line of opacity through lens indicating the course of the foreign body. The pain in the eye and the complete loss of vision has occurred during the last three weeks, the eye having been comfortable previous to this date. In this case enucleation was advised and subsequently performed. The vision in the left eye is 20-15, but he states that he has difficulty in locating objects and thinks he can not see as well as he could with the left eye before three weeks ago when the pain and loss of vision occurred in the injured eye.

