

Chisolm (J. J.)

WITH COMPLIMENTS OF THE AUTHOR.

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Eye lost through an Accident?

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*Presented  
by the Author*

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## WHAT COURSE SHOULD BE PURSUED WITH AN EYE LOST THROUGH AN ACCIDENT?

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Having had occasion in the last two weeks to remove ten eyes lost through accident, all of which were giving trouble, both in the lost eye and in the good one—some of them after a few weeks, others after many years loss—I have thought that the views elicited by ophthalmic study would be conducive of good to the profession at large. So seldom is an injured and lost eye carried through life without sooner or later giving trouble, that one of the most important axioms established by modern ophthalmic surgery is to regard every such lost eye as a thorn, which will at some time cause irritation, both in the eye lost, and, through sympathy, in the good eye, and will eventually destroy the good eye also, through repeated attacks of inflammation. These inflammatory processes prove rebellious to every kind of medication, and will surely recur and run their destructive race, unless the only controlling means be used, viz: the extirpation of the lost and injured eye from which the danger to the good eye comes.

This axiom, "*that every lost eye from injury should be taken out,*" has no qualification, and is absolute. By this I mean to say, that no surgeon will ever do wrong who removes an eye lost through injury, whether at the time of operation the eye gives trouble or not. Whenever it is taken out a lurking, dangerous enemy is surely gotten rid of.

A lost eye from accident is usually a deformed one, marred in its fair proportions by shrinkage, or made conspicuous by the whiteness of its opaque lens, or exhibits a scarred surface and discolored iris, indicating the character of the injury which had destroyed the sight. Such unsightly eyes, from which the perception of light has forever departed, often flush up under the slightest exposure, and remain both a deformity and an ever-threatening source of trouble.

The period at which inflammation makes its appearance in a lost eye is by no means fixed. The accident is always the immediate cause of a certain degree of inflammation, with more or less impairment of vision; often there is complete destruction of sight from the very reception of the injury. After some weeks the pain and redness may altogether pass away, leaving the eye with defective or with lost vision, and with more or less disfigurement, but otherwise giving no discomfort. This quiescent stage may be of very variable duration. In the course of time—possibly in a few weeks after the accident, or it may be a few months, or, in rare cases, after many years—the lost eye becomes sensitive and the sympathetic trouble in the good eye begins. Recently I have had occasion to remove a lost eye which had become painful and was threatening the good one after thirty years' of latency.

When this pain comes on, the patient imagines that he has caught a cold in the lost eye. A few days later the good eye is complained of as being weak; strong light annoys, and reading for even a few minutes causes fatigue. The so-called cold in the eye may pass away, releasing the good eye from sympathetic irritation. The lost eye, however, remains sensitive to the touch, with a lingering blush of congestion. This redness, from the tardiness of its withdrawal, seems disposed to make a more or less protracted stay.

After an interval of very variable length another cold is caught in the lost eye, followed by the same peculiar sympathetic irritation in the good one, but with more pain and redness than on the previous occasion; also with some dimness of vision. Relief may be again experienced, and all inflammatory troubles subside both from the lost eye and from the good one. The sight in the good eye is, however, not so sharp as formerly, and a careful inspection will reveal an irregularly contracted pupil. This shows that the sympathetic inflammation has invaded the tissues of the iris, and the glutinous inflammatory deposits have stuck the iris to the capsule of the lens. Sooner or later another attack comes on. This time the good eye sympathizes to a greater degree, the pain and inflammation extending beyond the iris to the choroidal structure—a serious complication for vision. When the inflammation now subsides, as it had so often done before, it leaves the former good eye a nearly useless organ. This eye that ought still to be good retains only a perception of light, but is bereft of all useful vision. The end of the trouble is not even yet reached, for with loss of sight there is no immunity from suffering. On the contrary, attacks of inflammation, in greater or less severity, continue to harass the patient, until he begs to have both eyes taken out, the only means of relief from suffering. One of the most grateful patients that I have ever had was one to whom I gave immunity from frightful torture by taking out both eyes. His relief was prompt and permanent, and he has never ceased to express the greatest gratitude.

If, in cases of loss of an eye by accident, the inflammatory attacks would restrict themselves to the lost organ, the useless and painful eye might be soothed by treatment, and, barring the temporary distress, would not require to be operated upon. It is on account of the intimate sympathetic connections between the two eyes that the inflammatory irritation in the one is so surely transmitted to the other, to its injury or its complete destruction, depending upon the readiness with which the trouble is detected and the promptness with which the remedy is applied, the only safe one that we have, viz: the removal of

the injured eyeball. Any other treatment is temporizing, and will prove itself ineffectual in establishing any permanent good.

The peculiar kind of irritation which excites these metastatic destructive processes seems to reside in the ciliary nerves. In all cases when the lost eye is removed, and cut into, the chief inflammatory changes are found centred in the ciliary region. In acute and recent cases extensive lymph deposits cover the ciliary processes, and both aqueous and vitreous chambers may contain more or less pus. In the very old cases, where the eye is shrunken, bony plates are found in and without the choroid. These hard structures, by pressure upon the ciliary nerves as they pass forwards from the back of the eyeball, may be among the immediate cause of sympathetic irritation.

All wounds of the eyeball are not equally dangerous in causing sympathetic inflammation. Wounds strictly within the limits of the cornea may let out all of the aqueous humor; and if the lips of the wound gape, may even permit a portion of the iris to protrude through the cut, forming a large iritic hernia. Should this protrusion remain, nature will in time remove it or convert the protruding iritic substance into cicatricial tissue. The inner portions of the iris stick firmly to the inner face of the cornea, shutting up the pupil and shutting out vision. Patients suffering from such an accident are not likely to have sympathetic inflammations, although the eye has temporarily lost its usefulness. The operation for artificial pupil will restore sight and enable the individual to regain a useful organ. When the entire protruding portion of the iris is trimmed off with scissors, at the time of the accident, and an atropia solution is dropped into the injured eye, a good, although an irregular pupil, is preserved. Strictly corneal wounds are, therefore, not the most dangerous wounds to the eye; otherwise our many cases of cataract extraction, where the opaque lens is removed through an extensive cut in the cornea, would necessarily be followed by sympathetic troubles in the eye not operated upon, which is not the case.

*The very dangerous eye-wounds are lacerations through the*

*ciliary region.* The extent of such a wound divides the cornea and the sclerotic tissues, extending across the junction of these and injuring the deeper parts which lie in this locality. From such a wound an eye seldom escapes permanent injury and future trouble. When a wound is received through this peculiarly sensitive portion of the eye—especially if the sight be seriously impaired from the moment of the accident—the tediousness of the inflammation which follows, the great suffering, and the nearly certainty of sympathetic trouble in the course of time, warrants the prompt removal of the injured eye as the proper course of treatment.

*It is always best to remove the lost eye before the good one has become in any way affected.* Should an active sympathetic irritation be excited before this precaution has been taken, there is no surety that the good eye will not be more or less permanently injured by the inflammatory process. Sometimes the attack in the good eye does not yield at the moment the injured eye is removed, and in some rare cases the destructive process, once commenced, will go on in the good eye, notwithstanding the extirpation of the lost one.

I have often seen patients with dangerous wounds of the eye experience such protracted suffering as to incapacitate them from all work for many months after the accident. In such cases, if the eyeball be extirpated, relief comes so promptly and decidedly that the patient is ready to resume his regular employment in a few days. To the laboring man, a correct diagnosis and a speedily executed operation, based upon the fore-knowledge of what is to be expected should an antiphlogistic course be alone pursued, will save the mechanic many weeks of suffering, and possibly protect his family from want. Should a foreign body inflict the injury and remain imbedded in the eyeball, the necessity for immediate removal of the eye becomes even more imperative, as the presence of the foreign body (usually a piece of metal) makes the future suffering more certain.

*When an injured and lost eye has been removed, the operation gives perfect protection to the good eye, which has not yet experienced any serious inflammatory attacks. Until the injured and*

*lost eye has been enucleated there is no positive safety for the remaining one.*

To the uninitiated the extirpation of an eye seems but one step removed from the sacrifice of life. The operation is looked upon not only with horror, but is considered a most fearful one. To those familiar with the facility with which an eyeball can be removed, the little blood lost (not a teaspoonful), *the absence of danger, and the immediate relief which it brings*, the operation is justly considered the most successful, as well as one of the most brilliant, in surgery.

The present method of extirpating an eye consists in first cutting the conjunctiva all around the very edge of the cornea. Through this circular incision a blunt hook is introduced, upon which the tendons of the recti muscles are hooked up. Each of these muscles are cut through at their line of attachment to the sclerotic coat. As some of these muscles are much more developed than others, it is more convenient to divide them in the following order: first, the internal rectus; then the upper; then the external; and lastly, the lower one. It is well to leave a small ledge of tendon from the internal rectus attached to the sclerotic, for convenience of holding and rotating the eye, so as to facilitate the more ready exposure of the optic nerve. When all of these muscles have been carefully divided, the remnant of the internal rectus tendon is seized with a forceps, and the eyeball rotated forcibly outward, which brings the optic nerve entrance into the sclerotic, near the surface, at the inner corner of the eye. A curved scissors is introduced into the conjunctival incision from this inner canthus, and pushing it backwards it glides behind the eyeball, catching the optic nerve between the blades. The nerve is severed, and the scissors, used as a lever, lifts the eyeball out from between the lids, all the structures having been divided which had kept it firmly held in the socket. Now clip the tendons of the two oblique muscles at their points of attachment to the back of the eyeball, and the eye comes away in the sclerotic coat alone. In the socket remain for future use all of the muscles tied together by stout connective tissue, and also the entire conjunctiva. The

elasticity of the conjunctiva effaces nearly the entire wound in a few hours, leaving only a very small central exposed raw surface of about one-fourth of the size of a finger nail to heal by cicatrization. As this wound is too small to enable us to see the divided vessels for ligation or torsion, a sponge thrust into the socket between the lids and firmly bandaged in position for the space of an hour will prevent any oozing of blood. When the surface has lost its soreness, an artificial eye can be easily adjusted, which the retained muscles will move in similar directions to the good eye by acting upon the cicatrix in the conjunctiva. By this means the natural expression of the face is perfectly restored.

*By extirpating a deformed, lost and painful eye, not only is perfect protection against future trouble secured, but good looks are also regained, and one escapes many annoying expressions of sympathy.*

The operation for the removal of an eye should always be performed under the full influence of an anæsthetic, so that the patient experiences no pain whatever. I have used chloroform since its discovery (now twenty-five years). I administer it certainly once every week, and often several times a day. During these twenty-five years' experience as a surgeon I have never had an accident from its use. As to the dangers of removing an eye lost from accident; I would state that I extirpate, on an average, about one for every week of the year, and I have never had any trouble from the operation. As to the speedy relief which follows; within twelve hours, the nauseating effects of the anæsthetic having altogether passed off, the patient, freed from pain, is ready to leave his room and take outdoor exercise, often starting upon a long journey the day after the operation.

The following, one of the ten cases referred to as having been extirpated in the last fortnight, will give a good insight into the progress of a case of enucleation of an eye:

F. G., aged 62, came to the Baltimore Eye and Ear Institute from his country home, two hundred miles distant. He had lost his eye three years since. For the past six weeks he has been suffering intense pain in the lost eye, which has kept him from

working, and which has recently made the good eye weak and dim. I found the lost eye in a state of acute inflammation, with the cornea in a sloughy state, and the anterior chamber apparently full of pus. He was anxious for immediate relief, and walked the room restlessly on account of his severe suffering. Chloroform was administered, prefaced, as I invariably do, with a drink of whiskey. The patient quietly went to sleep after inhaling chloroform for only a few minutes. The eye was enucleated in accordance with the method already described, and the patient put to bed. Four hours after the operation, I found the patient free of all pain, and feeling so well that he desired to accompany a friend who had some business in a distant portion of the city. He had experienced no nausea from the anæsthetic. Eight hours after the operation, he was enjoying such perfect relief that he took cars to return to his distant home.

The rule laid down for the treatment of eyes lost by accident is equally applicable to eyes lost by acute diseases—especially from extensive corneal ulcerations, followed by projecting staphylomas; also from the disastrous results of internal inflammations attacking the choroid and iritic tissues. In fact, the rule is a good one, even when generalized, so as to cover every lost eye that has been marred in its appearance by the destroying cause, whatever that cause be. In every such case the safest course to pursue is to remove the lost eye.

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