Original observations founded upon a series of cases of extirpation of the globe / by George Crichett.

A SERIES OF CASES

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ORIGINAL OBSERVATIONS

FOUNDED UPON

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OF

EXTIRPATION OF THE GLOBE.

BY

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EXTIRPATION OF THE GLOBE.

On a former occasion, about two years ago, I brought a case before the notice of this Society and of the profession in the *Lancet*, in which I had removed a globe from a child, under the impression that there was malignant disease, which, however, when subjected to microscopic examination, proved to be strumous deposit. My object was twofold; first, to show the close physical resemblance between these two forms of disease; and, secondly, to describe my method of extirpating the globe, an operation I first performed at the Ophthalmic Hospital, in October, 1851, and one that I was the first to perform and to describe in this country. I have since learnt that it was first suggested by O'Ferrall, in 1841, in the *Dublin Journal;* and by Bonnet, in 1842, in *Annales d'Oculistique;* but of this I was unaware at the time of my operation, as was Bonnet probably of O'Ferrall's priority when he wrote upon the subject a year subsequently.

Since that time, this operation has been frequently performed by myself, by Mr. Bowman, by Dr. Prichard of Bristol, and others, and with various curative objects, which appear to me to involve some valuable practical considerations worthy the attention of the profession. Further experience in regard to the mode of performing this operation has induced no important alteration. I am more careful than formerly to preserve as much as possible of the conjunctival membrane. I, therefore, now commence by dividing it as close as possible round the margin of the cornea. I then cut through the external rectus muscle, close to the sclerotic; then the superior and inferior rectus, and the obliqui; then draw the globe forwards and divide the optic nerve, turn the globe out of the orbit, and complete the operation by dividing the internal rectus. If rapidity of execution, absence of hæmorrhage, freedom from constitutional or local disturbance, and a speedy cure, form the elements of a mild operation, then I do not hesitate to rank this procedure, formerly deemed so severe, amongst the simplest and safest operations of surgery. I have now operated in this way about twenty times, and in no instance have I met with an exception to this statement.

I will proceed, in the next place, to consider the cases for which I have performed this operation, and for which it seems applicable. I may mention that

up to the present time it has been limited to malignant disease of the globe, and to tumours within the orbit. I propose to bring before your notice some suggestions founded upon cases in which this limit has been exceeded.

I have recently performed this operation in cases that I would group as follows: 1st. Extensive staphyloma of the globe, with and without recent inflammatory disease. 2nd. Cases where there is reason to suspect the presence of a foreign body within the globe. 3rdly. Cases of severe synblepharon or adhesion of the globe to the eyelid, causing pain, irritation, and deformity, and for which no other operation is of any avail. 4thly. Acute inflammation and pain in the globe, with loss of vision, occasioning great distress, and preventing the use of the other eye, and showing a constant tendency to severe relapses. 5thly. Deep-seated disease of the globe, the result either of accident or of idiopathic inflammation, with disorganization of all the structures, in which the other eye exhibits symptoms of sympathetic affection, threatening gradual failure of sight. I am anxious, in this paper, to explain and to illustrate each of these groups, and to show my reasons for performing this operation.

1st. In some of the more severe cases of staphyloma, where the entire globe is enlarged, the sclerotic thin, and the deep-seated vessels, both in the choroid and

retina much dilated, it is found that the ordinary operation of opening the globe is liable to certain rather serious inconveniences. When the humours have escaped, the vessels, deprived of the support to which they have been accustomed, give way, and rather profuse and protracted hæmorrhage often takes place, which first painfully distends the globe, and then escapes through the lids. This is usually followed by severe inflammation and suppuration of the globe, which continues many weeks, is attended with very severe pain, and often leaves a considerable enlargement, which is prone, from time to time, to take on inflammatory action. In such cases, I am of opinion that the removal of the globe is a far milder operation than opening it in the usual way for the operation for staphyloma. The only objection to the plan is, that no structure but conjunctiva remains upon which an artificial eye can be adapted; but the conjunctiva falls together, unites, and, still retaining its connexion with the muscles, forms a moveable curtain, upon which the artificial eye may rest, and by means of which some movement is attained.* It can be very readily removed and replaced, and excites less irritation than where the globe remains.

I have operated in this way upon several persons,

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* We are in the habit of employing Mr. Gray, of No. 7, Goswell-street-road, to adapt these artificial eyes, at our Ophthalmic Hospital.

both children and adults, with a uniformly satisfactory result, but only two or three of these cases present any peculiar features requiring comment.

A little girl, aged seven years, was sent up to me, from the neighbourhood of Stony-Stratford, with an enormous staphyloma, both of the sclerotic and cornea, in the right eye, and a dense central opacity, with partial adhesion of the iris to it, and a very small, elliptical pupil behind the corneal cicatrix. Under the influence of chloroform, I removed the right globe, and enlarged the pupil in the left. The part rapidly healed, and the little patient left the hospital in a week, quite cured, and with very useful vision, and though so young, wears an artificial eye. Had I pursued the more usual plan, the result would have been far less rapid and satisfactory. I have not met with a single exception, as yet, to this rapid union and recovery.

Two cases of staphyloma have recently occurred, one under the care of my friend Mr. Bowman, and one to myself, in which the staphylomatous globes were the seat of severe and protracted inflammation, which was not only in itself a source of constant distress, but prevented all use of the other eye, causing extreme weakness and intolerance of light. The relief in both cases was rapid, marked, and permanent, far more so than if the diseased globes had been merely opened.

I have now to consider those cases in which the

presence of a foreign body is suspected in the globe, and is out of sight and out of reach, but produces pain, and sympathetically affects the other eye. In such cases I believe the removal of the globe is the best proceeding. I will briefly describe two instances of this kind that have come under my notice. The first was a young man named Smithers, who applied to me at the Ophthalmic Hospital last March. It appeared that, in June of the previous year, (1854,) when at work, the left eye was wounded by a piece of sharp steel, causing traumatic capsular cataract, with some adhesion of the pupil to the capsule. As the other eye was perfectly good, nothing was done for its removal. About six weeks previous to his coming to me, and about eight months after his first accident, the right eye was struck by a piece of metal, which was supposed to have entered the globe. On examination, I found the cicatrix of a wound of the cornea and sclerotic iris and lens; there was constant and rather severe pain in the globe and over the brow, together with considerable lachrymation and congestion of vessels; and all vision, even the faintest perception of light, was lost in that eye. There was also evidence of sympathetic weakness in the other eye. For all practical purposes the poor fellow was blind. Before attempting any operation upon the left eye for the removal of the traumatic cataract, I extirpated the right globe. On laying it open, I found a piece of iron

of considerable size deep within the globe, behind the iris, and partly adherent to the sclerotic, and surrounded with dense fibrine. Even if I had known its exact location, its removal would have been attended with considerable difficulty, and the result would have been less satisfactory. I then applied myself to the other eye, the management of which was attended with considerable difficulty, in consequence of the length of time that elapsed since the accident, and the tough, elastic, and adherent condition of a large piece of opaque capsule. By means of two needles, after two efforts I contrived to tear it through; but a narrow band still ran across the very centre of the pupil. This I, after some difficulty, succeeded in breaking by working two needles in such a way as to wind it round one by means of the other until it broke through. For a long time a fine thread floated by one loose end in the anterior chamber. A clear, round pupil was now obtained, and, by means of a suitable lens, he sees very well to do his work, and to recognise even rather minute objects.

The other case was under the care of Mr. Bowman. A fine young man, a gamekeeper, was admitted into the Ophthalmic Hospital, having been shot in the eye some months previously. There was a traumatic cataract, an adherent pupil, a discoloured iris, and other evidence of a disorganized globe; there was no perception of light. He was subject to severe attacks of

inflammation and pain of an intermittent character, but the most serious feature in the case was the gradual impairment in the sight of the other eye. The cornea was rather dull; the pupil sluggish; and there was a gauzy indistinctness about the vision. This had appeared about a month, and was gradually increasing. Mr. Bowman removed the globe; and in the interior a shot was found lodged. The man made a rapid recovery, not only as regards the part operated upon, but the other eye, that was the cause of much anxiety, perfectly recovered its healthy condition and normal sight.

The effect of the operation in these two cases, and in all of the same type, is to free the part and the system of a constant source of irritation by the only available means.

I have performed this operation in two cases of extensive adhesion between the globe and the lids. The first was a middle-aged female, who had suffered from severe purulent ophthalmia, which had caused sloughing of the cornea, and extensive adhesion of the upper lid to the globe, tying down the upper lid so as to occasion considerable irritation and deformity; in the other eye, the pupil was closed and adherent behind a dense central leucoma. I first made an artificial pupil; and then finding the lens was opaque, I extracted it through the artificial pupil. The patient made a rapid recovery from both operations, and ob-

tained some useful vision, and was able to wear an artificial eye.

The other case was a girl aged fourteen, whose eye had been extensively burnt with lime. The lower lid was completely adherent to the globe, and the upper lid was partially adherent; the entire rows of lashes of both eyes were turned in upon the globe, causing constant severe distress, and preventing the use of the other eye. The operation perfectly relieved all the symptoms and deformity, and was, I believe, the only effectual means that offered. Extensive separation of the globe from the lids had been previously tried, and had quite failed.

I have now to consider, in the last place, those cases of deep-seated disease of the globe, the result either of accident or of idiopathic inflammation, with disorganization of all the structures, in which the companion eye exhibits symptoms of sympathetic affection, threatening gradual failure of sight. The idea upon which this operation is founded, and which I am free to admit requires for its confirmation a large mass of evidence, larger in fact than I am at present in a position to offer, takes its origin in the well-known sympathy that exists between the two eyes; in the symmetry of disease in these organs; in the frequent observation that when one eye has been destroyed, either by accident or disease, the other sooner or later becomes seriously compromised. The important problem to

solve is how far the one is the result of the other. In those cases that result from accident there can be little doubt of the close connexion between the two; in those resulting from disease this is not perhaps quite so clear. A dim trace of this idea has existed for years in the minds of ophthalmic surgeons. The operation for staphyloma has been sometimes performed principally with a view of getting rid of a source of irritation, and strengthening the other eye; a chalky lens has been often removed with a similar object; dislocated lenses and other foreign bodies have been extracted with a like view; and very recently Dr. Prichard, of Bristol, has brought forward several traumatic cases, in which the other eye is suffering, and in which he operated for the relief of the sympathizing organ. Even admitting that the failure of one eye is a consequence of the disorganization of the other, it by no means follows that the removal of the one will arrest the progress of disease in the other; *à priori* reasoning may suggest such a result: experience alone can establish it. With a view to clear up in some measure these points, I am induced to quote the following cases:—

Early in January 1855, a housekeeper at a wholesale establishment, aged forty-one, in good health, applied to me at the Ophthalmic Hospital. It appeared that about eight years ago she injured the right eye with a pair of scissors; the result was entire loss of

vision in that eye, and the gradual occurrence of a circumscribed staphylomatous enlargement of the sclerotic coat. During the last twelvemonth the globe had been frequently the seat of severe pain, and the enlargement had considerably increased; but the chief source of alarm to the poor woman, and that which induced her to apply to me, was the occurrence of muscæ, with feebleness and indistinctness of vision in the other eye, the pupil of which was rather sluggish, and which was increasing from week to week, and seriously interfered with reading and working. I removed the diseased globe in my usual way. The parts healed in about ten days. Six weeks after this her report was that the muscæ had disappeared, and her sight was quite restored. She wore an artificial eye with very good effect. In my notes taken at the time I find the following entry:—"My chief reason for removing this globe was in the hope of saving the other eye."

On the 26th of March I again performed this operation on a young man, who applied to me at the Ophthalmic Hospital. The right eye was slightly staphylomatous; the surface of the cornea was covered with a yellow deposit and some flakes of earthy matter. The sight of that eye had been entirely lost for above ten years; it was constantly inflaming, and was seldom free from pain. The sight of the other eye was beginning to fail, and, for all practical pur-

poses, was nearly useless to him, though there was no evidence of disease in that eye; and it must be admitted that in this case it was difficult to say how far the feeble condition of the left eye was due to inability to look and to use the eye, and how far to actual impairment of sight. He made a rapid recovery, and his sight, or at any rate the use of his eye, was perfectly restored.

The next case seems to me to be full of interest, and is perhaps the most conclusive that I have met with:—

Matilda M——, aged fifty-three, was sent to me by my friend Mr. Collambell, of Lambeth, about two years ago. In the left eye there was a small pupil adherent to a dense white opaque capsule; the iris was discoloured and convex; the anterior chamber very small; globe soft; no perception of light; frequent pain. In the right eye the surface of the iris was raised and velvety, the pupil small and sluggish, and sight was slightly impaired. In spite of the usual treatment, matters became gradually worse; and in the spring of this year there was rather a rapid retrograde movement, all power of making out even very large print was lost, and even large objects could not be clearly distinguished. Seeing that every week this condition was increasing, as a *dernier ressort*, and with very faint hopes of even arresting the disease in its present state, I proposed extirpation of the globe. She consented; and at her

request the operation was performed without chloroform, and did not seem to be very painful. The recovery was rapid. It was performed on the 17th of April; and ever since that time the sight has been gradually improving. She sees objects clearly, and reads large print. This is upon the whole the strongest and most satisfactory case I have had. The history, both before and after the operation, is well defined. The physical signs of disease were very obvious, and the physical change since the operation has been unmistakeable.

I have performed this operation in four other cases, presenting somewhat similar features, and not of sufficient individual interest to merit a separate description. In one only have I failed to trace any advantage from the plan; and, in that instance, the result was, as I believe, modified by pregnancy.

I have been anxious to bring these cases before the notice of the profession, because they seem to suggest views, and a method of treatment, of a very novel and interesting character. Like all innovations, it is likely to give rise to considerable opposition from the public, and even from some part of the profession, and is very liable to be misunderstood and misrepresented to the damage of the proposer. The removal of the globe has been until a recent period regarded as a very severe and repulsive operation; and such a remedy may be considered by some as somewhat

heroic, and hardly justifiable except in very extreme cases. If, however, we divest the inquiry of all preconceived prejudice, and carefully examine the naked facts of the case, how does it stand? Even suppose, for the sake of argument, that there is no truth in the idea that incipient disease in one eye may be so far dependent upon and connected with a disorganized condition in the other, that the removal of one suspends the disease in the other, still the operation may be useful. It is proposed to remove a part that is only termed by courtesy an eye, for it has forfeited every claim to that appellation: it is a mere bag distended with water, and containing, perhaps, some fibrinous and chalky *débris*, without any remains of that delicate nervous membrane to which the optical machine is subservient, and without a vestige of that function for which the eye was created: it is the seat of a slow inflammatory action, and forms a nidus for the sudden lighting up at any moment of acute disease, and is in itself a constant source of trouble. Surely it is no very cruel or unjustifiable act towards a patient to remove, by a safe and speedy operation, an organ that has lost its characteristic appearance, has ceased to perform its functions, and is a constant source of suffering, when its place may be artificially supplied so as to produce a much more satisfactory appearance than the diseased globe presented. If, however, we superadd to these considerations the possibility of

removing incipient disease in the other eye, or even of arresting it at the point where we find it, the arguments in favour of the operation obtain immense accession of strength, and a new element is introduced into the pathology and treatment of certain forms of eye disease.

Let us consider the various premises upon which this idea rests. It must be admitted that the intimate nervous connexion between the two eyes, their close functional association, their proneness to take on the same diseases, either simultaneously or in rapid succession, and in exactly the same form—as, for example, cataract and various forms of ophthalmia—all suggest the probability that disease of one globe may impair the function of the other.

Again, it has been for years a matter of frequent observation, on the part of ophthalmic surgeons, that any serious injury to one eye, destroying its function, is followed by gradual decay in the sight of the other. This will often occur in persons in other respects perfectly healthy, proving that no constitutional influence has been at work. I could quote numerous very painful cases of this kind that have come under my observation. Dr. Prichard, of Bristol, has published numerous cases of this description in the *Provincial Medical Journal*, some months ago, in which he proves statistically this important point. It is a very short step from this well ascertained fact to the probable

existence of the same sympathy in cases of idiopathic disease of the globe. If the cause of failure of sight in the second eye be altogether due to the local influence of the diseased globe, and not to constitutional causes, it seems quite in accordance with analogy that the removal of the peccant organ should act favourably upon the other eye. If I add to this the cases I have already alluded to, in which considerable improvement of sight has followed this operation, I venture to hope that I have made out a strong case in its favour, and I venture to prophesy that it will take rank amongst the most valuable and useful operations in surgery. I am quite ready to admit that the subject is in its infancy, and requires further investigation, but it opens out a most interesting inquiry, pregnant with important results. My friend Mr. Bowman and myself are following out the subject. I anticipate much additional information from the labours of this gentleman, and I trust on a future occasion to lay before the profession the results of our inquiries in that wide field which our Ophthalmic Hospital presents.

Since writing the above, it has occurred to me that it may be objected to the views that I have endeavoured to set forth, that there are a large mass of cases constantly coming before our notice, in which one eye has been lost, either from injury or disease, without the other sustaining any kind of damage.

This circumstance does not, of course, invalidate the equally well-observed fact, that in many cases the second eye does suffer; but it seems, at first sight, to stand in curious antagonism to it, and requires some explanation. It has often engaged my careful attention, and after much observation, I am inclined to think that it will be found, that in those cases in which the second eye remains sound and healthy, no disease is going on in the lost eye; it is in a perfectly quiescent state. On the other hand, wherever the second eye is becoming involved, the disorganized globe, whether from traumatic or idiopathic causes, is in a smouldering state, and breaking out from time to time into active disease.

It may also be objected to the views I have been endeavouring to set forth, that there seems no reason why the removal of a diseased globe should be followed not only by arrest of disease in the other, but also by perfect recovery of its function. After all, the chief court of appeal must be to experience and to well-observed facts, which are at present necessarily scanty, from the short time that has elapsed since the operation was first suggested. At the same time, it appears to be in accordance with analogy, that the removal of a serious source of irritation may not only produce an arrest in the progress of mischief in the other eye, but by leaving the curative efforts of Nature in full force, undisturbed and undiverted by

the presence of contiguous and incurable disease, may contribute towards perfect recovery.

Finally, I have to apologize for the length and tediousness of these remarks; but I trust I may be excused, in consideration of the novelty of the idea involved, and the momentous character of the interests at stake, being no less than the rescue of the sight of one eye that is threatened with failure, at a time when the other is hopelessly lost—a state of things deserving our most anxious consideration, and for which any really valuable suggestion must ever excite the deep interest of our profession.

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