

## **Emergencies in ophthalmic practice / by A. Maitland Ramsay.**

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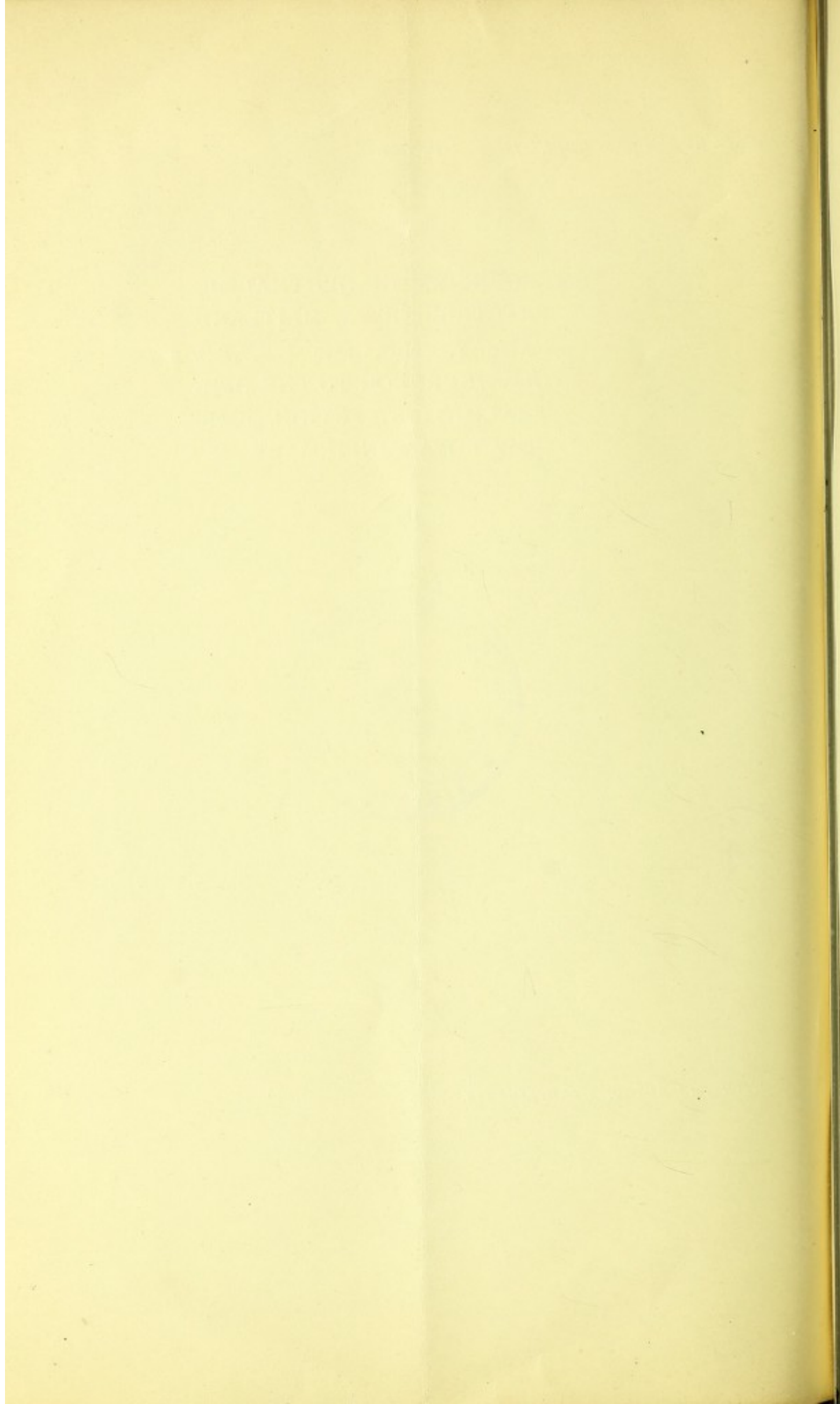
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WITH THE AUTHOR'S COMPLIMENTS





## EMERGENCIES IN OPHTHALMIC PRACTICE<sup>1</sup>

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GENTLEMEN,—The necessity for acting with promptness and decision in a case of emergency affords the best opportunity to test the power and resourcefulness of any man, and what is true of all is specially true of a medical man. At any hour of the night or day he may be summoned unexpectedly to attend an urgent case. Everyone in practice must remember with what trepidation he used to respond to such calls and how anxiously he wondered what the illness might be and what he would be able to do for the patient. After a time the exigencies of general practice make the medical man accustomed to such sudden demands upon his powers. He learns to wait and to see and in all circumstances he trusts to his experience for guidance; but even an experienced practitioner may feel anxious when he is called in haste to attend to some critical condition in connexion with the eye. When he arrives at the house the patient may be in great agony and both he and his relatives all much excited lest blindness or impaired vision is to be the result of the accident. Unless the medical man keep cool and collected, know well what he is about, and is possessed of a fair measure of common sense, he is prone to become infected by the atmosphere of nervousness around and to err in

<sup>1</sup> A Clinical Lecture delivered at the Glasgow Ophthalmic Institution on November 29th, 1904.

being either too optimistic or too pessimistic. In the former case, knowing nothing of the conditions, he may assure the patient that all will be right in a day or two and may thereby arouse hopes that can never be fulfilled. On the other hand, by being too pessimistic, he may, with equal ignorance of the case but perhaps more regard for his own reputation, occasion much needless suffering by giving a grave prognosis when, with fuller knowledge, he might have been able to do much to relieve the patient's sufferings and to quiet the alarm of all concerned.

Unguarded expressions of medical opinion are always to be deprecated and can be avoided only when a case is approached with full professional knowledge and with the care that comes of deliberate consideration, for it must be admitted that want of care is just as common a cause of mistakes in practice as is want of knowledge. If a general practitioner does not feel confident in his own ability to make a thorough diagnosis he ought to have no hesitation in expressing a wish for aid by consultation; and when he is in doubt he ought never to accept the responsibility of advising the patient to wait for a few days on the chance that the difficulty will pass over. An opinion begotten of hope rather than based on experience is always baneful, for it lulls a patient into a false sense of security and does irremediable harm by allowing time to be wasted which fuller knowledge and larger experience might have used to effect a cure.

As it is to the family medical adviser that patients as a rule appeal in the first instance for aid, and as the fate of a damaged eye depends in most instances on the treatment first adopted, I propose in this lecture to try to offer some guidance as to the best methods of dealing with the commoner emergencies in ophthalmic practice. It is, of course, impossible to refer to every form of accident that may occur, for to do so would require a complete course of lectures on diseases and injuries of the eye. Personal experience, however, even though it be limited, is always of value and so I shall try to present in a connected form notes of some cases of emergency that have occurred in my own practice. Before I do so, however, let me urge one important



point. In the country emergencies are much more difficult to cope with than in towns because it is often impossible immediately to obtain many things that are absolutely necessary. Every country practitioner should, therefore, for the instant demands of ophthalmic cases, always carry with him an emergency supply and for this purpose a pocket set of ophthalmic discs will be found convenient.

When a wound implicates the margin of the eyelid the surgeon must be very careful to bring the edges accurately together with a suture, for if he neglects to do so it is likely that one or more cilia may become inverted and, scratching the cornea with every movement of the lids, prove a constant source of discomfort. If the injury be situated at the inner canthus there is a grave risk that the tear passages will be wounded and unless the condition be at once recognised and a road for the escape of the tears opened up complete obstruction will take place in the process of cicatrisation and the patient will suffer from persistent watery eye. These precautions appear obvious but they are often neglected, and what might have been a very trivial injury becomes through inefficient treatment at the outset a cause of great trouble and annoyance. Some time ago, for instance, I was consulted by a gentleman whose carriage had come into collision with an electric car and who had in consequence received from a piece of broken glass a slight wound at the inner canthus of the right eye. He was at once attended to by a medical man who applied a dressing to the injured part and in a couple of days healing was complete. The patient then, however, began to complain of watery eye, and more careful examination showed that the cut, tiny though it was, had severed the lower canaliculus and that the cicatrix had blocked the duct. There was a complete stricture and only after much difficulty was this overcome and the patency of the tear passages restored. Had the true nature of the condition been recognised at the time of the accident and the canaliculus slit up to the lacrymal sac the damage might have been repaired with the greatest ease.

It is a very common thing for the eyelids to be extensively lacerated by the fragments of a burst bottle or by the

violence used in the course of an assault, and in all such injuries the surgeon ought to make it his first care to be sure that the globe itself is not implicated, for unless this be done the really serious part of the accident may be overlooked. That actually happened in the case of a man whom I saw in consultation some time ago. He was about to pull the cork from a bottle of soda-water when the bottle burst and the broken glass cut the left upper and lower eyelids very severely. He was at once attended by the family medical adviser and by another medical man who was called in the emergency. The wounds in the lids were carefully sutured and it was not discovered until a week later that there was a cut in the globe at its outer aspect behind the ciliary region. As the eyeball had by this time become infected all attempts to save it were unsuccessful; but had a thorough diagnosis been made at the time of the accident and had the medical men treated the ocular wound as skilfully as they did those of the lids the probability is that the eye would have been saved. In such circumstances it is often very difficult, on account of the extensive laceration, the swelling, the hæmorrhage, and the pain, to make a satisfactory and sufficient examination, and consequently if the surgeon has any doubt regarding the state of the eyeball he ought to administer an anæsthetic and not rest satisfied until he has obtained a complete view of the globe.

It often happens that, owing to the extreme sensitiveness of the structures implicated, an accident to the eye seems much more serious than it really is. Indeed, the pain and symptoms of distress are often in inverse proportion to the gravity of the injury. Here, again, it is very difficult to make a satisfactory examination, for the pain and intolerance of light set up blepharospasm so intense that it is almost impossible to separate the lids. The accident often occurs in the simplest manner possible. A lady while dressing her hair strikes the cornea with the brush or the curling tongs, a gentleman is lighting a cigar when a spark flies from the head of the match and enters the conjunctival sac, or a nurse is playing with an infant and receives a scratch on the eye from the baby's finger nail. These are



only a few examples from many that might be cited. In nearly every case the patient believes that serious damage has been done. He speaks of the pain as agony and is quite unable to open the eyelids. As a rule, however, a few applications of a 2 per cent. solution of cocaine overcome the surface irritability and permit the surgeon to separate the lids and to examine the cornea. A small abrasion is usually detected and if this be treated by an antiseptic lotion, an ointment containing cocaine, and a compress and bandage, healing takes place rapidly. If, however, the breach of surface becomes infected by micro-organisms from the conjunctival sac, the edges of the lids, or the lacrymal passages, suppuration ensues, and what was, to begin with, a very insignificant injury becomes serious and a grave menace to sight. It must never be forgotten that no injury to the eye is so trivial that it can with safety be neglected or so insignificant as not to require the most skilful treatment.

Of all injuries to the conjunctiva none is more disastrous in its results than a burn, especially one due to the action of any chemical irritant, such as quicklime or sulphuric acid. In all cases of this kind the prognosis must be very guarded as the action of the chemical extends far beyond its point of application, and what seems at first sight only to have caused a greyish haze over a part of the surface of the cornea will probably by the end of a fortnight have brought about the total destruction of that membrane. It may be noted, however, that very severe causes do not always produce proportionately severe results. When molten metal, for instance, gets into the eye it might be expected to cause, and very often does cause, serious structural damage; and yet, on the other hand, there are cases in which the injury is remarkably slight. The explanation is that on the first entrance of the metal the great heat makes the moisture in the eye pass into what physicists call its "spheroidal state" and the spheroids of water, acting as a non-conductor, protect the eye from injury. In all severe burns both ocular and palpebral mucous membranes are



destroyed and as the raw surfaces adhere to each other in the process of healing the eyelid becomes firmly fixed to the eyeball. This condition, which is known as symblepharon, will, no matter how much care is taken to prevent it, certainly occur in every case where the retro-tarsal fold of conjunctiva has been destroyed. If it be extensive, it not only interferes with vision but also causes intolerable discomfort from the sense of dragging which it produces. After an eye has been burned the conjunctival sac ought thoroughly to be irrigated with any bland fluid, and afterwards a few drops of cocaine dissolved in castor oil instilled, or preferably a 5 per cent. solution of chloretone in olive oil. An iced compress should be laid over the closed eyelids and the patient put to bed. In order to combat the inflammatory reaction which is sure to follow, the ice-cold compress should be continued for at least 12 hours and saline purgatives administered, while the pain must be subdued by the application of leeches and by the hypodermic injection of morphine in the temple. The use of anodynes has the additional advantage of inducing sleep and soothing the nervous system generally.

After a blow from a cork suddenly expelled from an aerated-water or champagne bottle there are always subconjunctival hæmorrhage and, if the contusion has been severe, more or less dimness of vision. The pupil is, at first, somewhat contracted and does not readily yield to the action of atropine, which may have to be instilled several times before full dilatation is produced. The pupil often expands irregularly, assuming an oval shape before becoming round. Unless the eyeball has received some structural damage the dimness of sight, which is supposed to be due to shock sustained by the retina at the time of the accident, is always transitory and often of very short duration. Intra-ocular hæmorrhage is of frequent occurrence after contusions of the eyeball, even in cases where there is no evidence of rupture of any portion of the uveal tract. The effused blood may appear in either the aqueous or the vitreous chamber; it always interferes with sight and produces a peculiar discolouration of the iris and sometimes patients complain

that when they look at a light it seems to be red in colour. The delicate and sensitive tissues of the eye are very intolerant of sharp sudden blows and many eyes have been lost after such an apparently simple injury as that caused by the rebound of a twig of a tree, the flapping of a sail, or a stroke from a whip-lash. Such injuries may be followed by rapid loss of sight and by inflammation so severe and persistent as to terminate in atrophy of the eyeball. It is wise, therefore, always to adopt antiphlogistic treatment from the outset and after instilling atropine to apply leeches to the outer canthus and iced cloths to the closed eyelids, to administer a sharp purge, and to confine the patient to bed. An ophthalmoscopic examination should be made as soon as possible, because structural damage—hæmorrhage from the retinal and choroidal vessels, detachment of the retina, rupture of the iris or choroid, or dislocation of the lens—is not infrequent, and in view of possible legal proceedings in connexion with claims for compensation it is well to know of its existence without unnecessary delay.

Subconjunctival hæmorrhage may sometimes take place spontaneously and as the effused blood is readily seen the state of matters appears much worse than it actually is and always excites much alarm. In children it is not infrequent during an attack of whooping-cough and in adults it occasionally follows coughing, vomiting, or any violent exertion. As a rule, it is of very little significance and disappears completely in about a fortnight. It is always wise, however, before offering any definite opinion, to make an ophthalmoscopic examination, and, in the elderly especially, to take the additional precaution of examining the urine. It occasionally happens that after an accident a patient discovers, for the first time, that the sight of one eye is defective. He naturally attributes this to the injury, although it may be the result of congenital deficiency and may have been present all his life; consequently, the medical attendant must always be fully alive, not only to this possibility, but also to the fact that for the purpose of pecuniary gain the patient may be either exaggerating his symptoms or actually malingering.



When the injury has been so severe as to produce fracture of the bones at the inner side of the orbit, communication is opened up with the frontal and ethmoidal sinuses and air is thereby allowed to escape into the surrounding cellular tissue. This is known as emphysema of the eyelids. It is usually accompanied by epistaxis and the soft swelling is readily distinguished by crackling to the touch and increasing rapidly in size when the patient blows his nose. Here a firmly applied bandage is an essential part of the treatment. Again the bones of the orbit may be fractured without implication of the air sinuses and although externally there may be nothing visible except what is usually called a "black eye," yet the patient may not be able to distinguish light from darkness. In these circumstances it is likely that the optic nerve has been injured and although ophthalmoscopic examination shows at first little abnormal, yet sooner or later it will reveal all the signs of complete atrophy of the optic disc. After such an accident, therefore, the prognosis must always be guarded until sufficient time has elapsed to permit the case to declare itself fully.

The practitioner may, however, be called to attend a case of sudden blindness in which there is no history of injury. Here is an example. A girl, 17 years of age, came home from work apparently in her usual health and without pain or forewarning of any kind, while she was cutting bread for supper, she experienced a sensation as if a cloud had passed before her right eye and on looking up and closing the left she found that the eye affected was so blind that she was quite unable to distinguish light. A condition like this is in all probability permanent and the result of embolism of the central artery of the retina, so that the medical man must be on his guard not to misinterpret its significance and to confuse it with the transitory blindness which occasionally precedes sick headache or the dim vision which may be premonitory of glaucoma. He ought always to investigate the history of the case carefully, and roughly with his hand to map out the field of vision so as to determine whether the retina is wholly or only partially involved. In that way he may be able to arrive at some notion as to the probable cause

of the defective sight—intra-ocular hæmorrhage, retrobulbar neuritis, detachment of the retina, &c.—but before committing himself to any definite opinion he should make a careful study of the results of ophthalmoscopic examination and if he be unable to use the ophthalmoscope himself he ought never to delay in obtaining the assistance of an expert.

In all those cases of sudden blindness to which I have just referred the patient, as a rule, never complains of pain, nor is there any sign of inflammation in the eyes themselves. It is, however, quite otherwise with the condition which I am now about to describe. Here also the onset of the failure of sight is sudden—often alarmingly so—but it is accompanied by agonising pain and intense inflammation. The onset of the symptoms frequently occurs during the night and is accompanied by bilious vomiting and perhaps purging. The danger is that the pronounced symptoms so common as accompaniments of an ordinary bilious attack may deceive the practitioner and draw away his attention from the real seat of trouble—the eyes. The patient himself may add to the misapprehension, for he naturally connects the pain in the head with the vomiting and attributes the failure of sight to the biliousness. In such a case one point is worthy of special notice, as it is always most helpful in the diagnosis. If the patient be questioned and should describe the eyeballs as feeling swollen almost to bursting and too large for the sockets, it is well to consider at once whether or not the case is one of acute glaucoma. The medical man should therefore take immediate warning and palpate the globes to ascertain the state of the intra-ocular tension. Almost invariably the eyes will be found of stony hardness. There will be extreme congestion and œdema of the ocular conjunctiva, the pupil will be dilated, and the anterior chamber shallow. Let him be on his guard also not to misinterpret the significance of this form of ocular inflammation, for to do so is fatal. The dilated pupil and shallow anterior chamber, associated with the stony hardness of the eyeballs, are unmistakeably characteristic and ought to prevent glaucoma from ever being mis-



taken for iritis. Unfortunately, however, while that is so, such a mistake is far too common, and as the treatment for the one is exactly the opposite of that for the other the error is a very serious one. Atropine is instilled with the result that the symptoms are aggravated and the patient's chances of recovering sight are materially lessened. Whenever the practitioner satisfies himself that the case is one of glaucoma he ought at once to instil eserine, to put leeches to the temples, and to apply fomentations to the eyes. If in a few hours the pain has not subsided means must be taken to reduce intra-ocular tension by opening the eyeball so as to relieve the strangulation at the corneo-iridic angle. If the practitioner cannot obtain assistance he ought not to wait but should at once puncture the sclerotic with a narrow knife and allow some of the vitreous to escape. If he observes strict antiseptic precautions this can be done without danger and will give relief till the services of a specialist can be obtained. If the increased tension be not lowered impaired sight or even blindness will almost inevitably result but the hopelessness of the condition is at once removed by the performance of iridectomy. The all-important thing is that the case be taken in time.

In every instance that I have cited the ability to make an early and accurate diagnosis is a matter of the first importance. Delay is always dangerous and the patient's chances of a favourable result depend upon prompt and skilful treatment. It is true that an error in diagnosis may sometimes be rectified in time to prevent the patient suffering any serious damage but in acute glaucoma, if sight is to be preserved, surgical interference must take place as soon as possible after the disease has declared itself. Here the damage done by delay is irretrievable and all regrets are vain.