THE BRITISH JOURNAL
OF
OPHTHALMOLOGY
DECEMBER, 1936

COMMUNICATIONS

POST-OPERATIVE DISTRESS IN CASES OF
SENILE CATARACT*

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THE subject of my address is:—"The causes and treatment of post-operative distress following operation for cataract, other than that due to surgical complications."

The pre- and post-operative management of senile cataract was discussed at the meeting of The Ophthalmological Society at Edinburgh in 1932, but most of the speakers confined themselves to discussion of surgical complications, and only a few referred briefly to the problems I propose to discuss at some length this evening.

Probably we have all been told by patients after convalescence that the actual operation was not nearly such an unpleasant experience as they expected, but that the few days following it were extremely trying. Many have had such a bad time during this period, that dread of a repetition of the experience makes them most unwilling to undergo a second operation if such becomes advisable. This post-operative distress is partly physical and partly mental, and physical and mental factors react on upon the other.

* Presidential Address, Section of Ophthalmology, Royal Society of Medicine, October 9, 1936

Physical distress.—Apart from pain in the eye, which in the absence of surgical complications is usually only slight and of short duration, the physical symptoms which cause the most frequent and severe distress are, (1) pain in the back, and (2) abdominal discomfort, usually associated with flatulence.

Pain in the back, often very severe, occurs in nearly all patients who are kept for long lying motionless on the back with a low pillow. For most people this is an unaccustomed position and probably subjects various structures in the back to unusual stresses, especially if the bed is fitted with a chain spring mattress covered with a rather unyielding hair or composition overlay. The sagging of a slack chain mattress into a hammock-like shape increases discomfort by causing hyperextension of the knees. Prolonged immobility in any position, especially if enforced, proves irksome, and is liable to cause sensations of cramp in body or limbs. It is probable, therefore, that the perfect stillness commonly enjoined aggravates the effects of unaccustomed stresses. It may be, too, that many patients, trying to keep quite still in an uncomfortable position, do not relax completely, and unconscious contraction of some of the muscles of the back, leading to fatigue and cramp, may be a further factor causing pain. The use of a good spiral spring mattress, with an overlay of the type containing numerous small spiral springs, a cushion beneath the small of the back, and a pillow beneath the knees may delay the onset and lessen the severity of the pain, but I have found it impossible to prevent or relieve it in many cases so long as the patient is kept flat on the back.

Next to pain in the back the commonest form of post-operative physical distress is abdominal pain associated with flatulence. It is not altogether easy to explain why our patients suffer in this way. Indeed, surprisingly little seems to be known about the causes of flatulence. The subject was discussed at some length by **Victor Bonney** nearly two years ago in his Bradshaw Lecture on "Functional Derangements of the Intestine that follow Abdominal Operations." He was, of course, discussing degrees of flatulence much more severe than we see in our cases, but I have to thank him for a very valuable summary of the facts known with regard to the origin and disposal of gases in the digestive tract. At Oxford last July the Section of Medicine of the British Medical Association discussed the subject of Epigastric Discomfort and Flatulence. I attended that meeting and learned several further facts which help, I think, to throw light on our problems.

As regards the origin of the gases in the digestive tract it appears that they are derived from three sources, swallowed air, gases diffused from the blood, and gases formed by chemical

changes in the contents of the stomach and intestines. A considerable quantity of air is normally taken into the stomach during the swallowing of food. Bonney mentioned experiments made by Douglas MacLeod and Kremer, which showed that the quantity of air taken into the stomach during the swallowing of food was not only very definite, but was greatest with the individual lying down, an observation of considerable interest from our point of view. T. C. Hunt at Oxford also demonstrated that some air was normally swallowed with every mouthful of food. He showed an X-ray photograph in which a fairly large bubble of air could be seen in the oesophagus accompanying a bolus of opaque material. Ryle and others mentioned that aerophagy often occurred in states of anxiety or emotional disturbance, quite apart from hysteria. This statement is also significant to us, for our patients are often in a state of great anxiety and emotional tension after operation. Hurst said that a patient with epigastric discomfort, in attempting to relieve himself by bringing up the wind, often, in fact, swallowed air. As some indigestion, frequently perhaps a form of nervous dyspepsia, is by no means rare in our cases, it may be that they sometimes increase their flatulence in this way. The contribution made by diffusion of gases from the blood through the mucous membrane into the stomach and intestine consists chiefly of CO_2 , and it is probable that no excess from this source occurs in our patients. The contribution normally made by chemical action is not known. The neutralisation in the intestine of the acid contents of the stomach must furnish a very definite quota. Gases like CH_4 and H_2S , when present, must result from chemical action, but they are occasional only. Hurst referred to distension of the colon resulting from decomposition of undigested starch. It is possible, therefore, that a diet containing much starch given to a patient whose digestive powers are not functioning well, may help to cause painful distension.

Under normal conditions the introduction of gas into the digestive tract and its formation therein are balanced by absorption into the blood and by onward passage effected by peristalsis. Peristalsis assists removal of the gases in two ways. It moves them on, so bringing them in contact with a larger absorbing area of mucous membrane, and eventually it leads to their passage to the exterior. Peristalsis is much diminished when a person is lying still in bed. I have been told by a medical colleague that the lessening of peristalsis is so considerable that when making X-ray examinations after an opaque meal, it is necessary to allow patients to get up and walk about in order to obviate misleading results.

The relaxation of the abdominal muscles when lying in bed by lessening the external pressure on the bowel may perhaps favour the accumulation of gas in the lumen.

Ballantyne at Edinburgh suggested that flatulence might sometimes be due to starvation, and certainly the absence of the stimulus to peristalsis excited by taking food, would be expected to favour accumulation of gas.

It seems to me probable that the chief causes of flatulence in our patients may be increased swallowing of air due to feeding while lying flat, aerophagy due to anxiety, and diminished peristalsis due to prolonged immobility in the supine position. Although distress from this cause may be mitigated by careful dieting and the use of various carminatives, practical experience proves that no measure is so effective in preventing and relieving it as allowing the patient to be propped up in bed at an early stage, and to be turned on his side and to draw up his knees.

Mental distress.—The post-operative period must inevitably be a time of very great anxiety for any but the most phlegmatic patient. We may be able to assure him that all goes well, but some time must elapse, even in the most favourable case, before we can state positively that he will see well again. The degree of post-operative mental distress depends in no small degree upon the pre-operative handling of the patient. Ballantyne discussed this briefly in his opening to the discussion at Edinburgh and I very strongly support practically everything he said. I cannot do better than quote the words in which he summarised his views. "In the waiting period before operation it should be our endeavour to keep the patient as active as possible, to preserve his normal interests and social contacts, and to keep him in good spirits. We can assure him that he has nothing to fear in the operation, that it will be painless, that the only suffering will be the irksomeness of a few days quiet rest in bed, and that we shall do all that is possible to mitigate the discomforts of that period."

When the time for operation arrives everything possible should be done to minimise the mental strain suffered by the patient. He should be in the home just long enough before the operation to become acquainted with his surroundings and the nurses. A mild hypnotic or sedative the night before operation does good by ensuring a good night's sleep, but I prefer not to have a sedative given on the day of operation, as I think patients behave better if they are mentally alert at the time of operation. The patient having been brought to the theatre in as confident and optimistic a mood as possible, the operation should be completed without haste, but as quickly as is consistent with safety. For this reason I deprecate any elaboration of technique which cannot be shown to be certainly advantageous. I like to be able to complete the operation while the patient thinks one is still engaged only with preliminary details, and then to tell him it is over and that all has gone well. I am sure that the less these old people are fussed and bothered the better they settle down afterwards.

Apart from the inevitable anxiety during the first few days after operation, the two chief causes of mental distress are the immobility commonly insisted upon, and the binocular bandage.

There can be no doubt that the mental strain of the first few days is considerably aggravated by insistence on immobility. The patient often worries lest he should inadvertently make some slight movement which will imperil his chances of recovery. I have sometimes found one in the depths of gloom because he had moved a little during the night, and feared he had thus ruined his eye.

In the past, absolute immobility was generally supposed to be so important that severe forms of physical restraint were employed, such as fixation of the head and limbs by sand bags. I thought this practice was quite obsolete, but found it recommended in a handbook of ophthalmic nursing published in this country as recently as 1933. To my mind it is little better than a method of slow torture, only justifiable by incontestable proof of its necessity, and certain to cause severe mental and physical distress.

Less drastic methods of physical restraint can be employed in some cases without causing any distress, such as tying the wrists by long loops of bandage passed beneath the bed-clothes to the foot of the bed, and adjusted so that the hands cannot be brought up above the level of the chest, but can be moved freely below that level. The object of this is, of course, merely to prevent the patient rubbing his eye, and it is probably sufficient to tie only the hand on the same side as the eye operated upon. But the mildest form of restraint worries some people extremely, and is unnecessary if the eye is well shielded and a watchful nurse is in charge.

The binocular bandage may cause great distress. Many patients do not mind it. Others seem to dread it more than anything else in connection with the operation, and it is certainly a factor in causing the mental derangement that occasionally follows cataract extraction.

It seems, therefore, that the chief causes completely under our control of both physical and mental post-operative distress, are the maintainance of prolonged immobility in the supine position and the binocular bandage. We must, then, consider whether these measures are necessary, and, if so, to what extent.

What are the post-operative risks that can be influenced by the system of nursing? These are, I suggest:—

- (a) Direct injury to, or pressure upon the eye forcing open the wound or interfering with exact co-aptation of its margins;

(b) Increase of intra-ocular pressure, tending to force open the wound; and,

(c) Intra-ocular haemorrhage.

(a) Direct injury to the eye. This is most often caused by the patient getting his finger beneath the dressing and rubbing the eye. This risk is not minimised by keeping the patient on his back unless his hands are tied. A well fitting shield is a great protection, but some patients will get a finger beneath almost any shield, and a restless one may get the shield shifted so as to press on the eye. By far the best safeguard is a watchful nurse by the bed-side. If a patient gets out of bed he may stumble or fall and strike the eye against some hard object. Watchful nursing is again the only sure safeguard.

(b) Increase of intra-ocular pressure. I believe that apart from external pressure on the globe the only causes of increased intra-ocular pressure, which are in any degree under our control, are a rise of pressure in the intra-ocular blood vessels and haemorrhage into the eyeball.

(c) Intra-ocular haemorrhage. The cause of this is often obscure, but apart from direct injury I can think of no cause that can be influenced by the system of nursing other than a rise of pressure in the intra-ocular blood vessels, especially in the veins and capillaries.

There can be no question, then, of the importance of preventing increase of intra-ocular blood pressure, especially sudden increase. Leonard Hill, in 1912, showed members of this Section how easily intra-ocular haemorrhage was caused in a cat's eye, after allowing the aqueous to escape, by pressure on the abdomen. It is obvious, therefore, that strong contraction of the abdominal muscles is to be avoided, as in coughing, sneezing, vomiting, straining at stool, or sitting up unaided. The importance of this has, of course, been long recognised, but I do not think that in the past sufficient consideration has been given to the question of keeping down the pressure within the blood-vessels of the eye throughout the first few days of convalescence. Some time ago I asked a cardiologist, T. F. Cotton, in what position he considered a patient should be placed with a view to keeping the intra-ocular blood pressure as low as possible. He advised a semi-recumbent posture, such as is adopted in the treatment of cases of head injury. I also asked if he thought appreciable changes of pressure were likely to be caused by allowing a patient to move his limbs or even to turn on his side in bed. He considered that only negligible changes would be so produced, changes far smaller than those that might result from emotional disturbance or anxiety, which might indeed be of serious degree.

It seems, then, that there is no theoretical reason to insist upon

a more or less prolonged period of immobility on the back after cataract extraction, but that a semi-recumbent position should be preferable and that gentle movement of the body and limbs should cause no harm.

To turn next from theoretical considerations to the teachings of practical experience. For many years a few ophthalmic surgeons have questioned the value of the traditional system of nursing, and some have even gone so far as not to keep their patients in bed at all. In this country, for instance, Johnson Taylor of Norwich used to operate for cataract in his consulting room, and allow his patients to walk home afterwards: and his results were said to be very good. More than 30 years ago William Lang told me that he had allowed his private patients to sit up in an arm-chair the day after operation. When I was a house surgeon at the Royal Westminster Ophthalmic Hospital, 35 years ago, nearly all the patients walked back to the wards from the theatre, and half of them had to negotiate a long double flight of stairs to reach the next floor. I never saw any ill effects from this. But once back in bed they had to submit to the usual routine of immobility.

The use of a less severe régime appears to be gaining ground slowly both at home and abroad. At Edinburgh two speakers, Ballantyne and Doyne, expressed a preference for a reclining or semi-recumbent position, and enquiries among colleagues indicate a general tendency to adopt less rigorous measures. But judging from statements in textbooks, and still more from the practice of nurses trained in various eye hospitals, it seems that a decidedly strict régime is still generally enforced. I find that all nurses trained in ophthalmic work, unless given definite instructions to the contrary, consider it their duty to keep the patient absolutely still on his back with only a low pillow for two or three days after the operation, and that they try to impress upon the patient the great importance of strict immobility.

In order to ascertain the methods in use to-day in other countries, I have consulted several foreign textbooks and also addressed personal enquiries to ophthalmic surgeons practising in different parts of the world, Austria, France, Germany, Holland, Sweden, Switzerland, Canada and the United States. I found that considerable differences prevailed in the practice of different surgeons, but that on the whole the methods employed were less severe than in this country. The régime adopted by Löhlein of Berlin, approximates most closely to that usual in Great Britain.

He keeps his patients on the back for one or two days, according to the danger of hypostatic pneumonia, after which he allows them to be propped up in bed. On the second or third day he permits them to get out of bed with careful help, to use the night stool at

the side of the bed, and also on the second or third day allows them to be turned on the side opposite to the eye operated upon.

The least exacting régime of which I received an account is that which Dr. Fischer, one of Prof. Meller's assistants, tells me is employed at Vienna. There the patient is propped up in bed immediately after operation, and the next day is allowed to turn his head on to the unoperated side and even to get out of bed. Nordensen's practice is only slightly more strict. Others adopt régimes of degrees of severity intermediate between the extremes quoted.

For many years I have in private practice adopted a routine less severe than that commonly taught in this country, and for the last few years I have allowed hospital patients, also, an easier time. Immediately after operation I like a patient to rest in a thoroughly comfortable position, preferably semi-recumbent; but if he feels he would rather lie flat I allow him to do so, but with not too low a pillow. I do not insist on his keeping perfectly still, but tell him he must not attempt to sit up, or turn on his side, without the help of a nurse. I believe it does no harm whatever to allow him, as soon as he begins to feel the dorsal position irksome, to be turned by the nurse on to the side opposite to the eye operated upon and to draw up his knees. A Fowler bedstead, making slight changes of position very easy without effort on the part of the patient is in many ways very convenient and comfortable, but we found at the Royal Westminster Ophthalmic Hospital that this type of bed was not popular with the nursing staff. They said that with it bed-making was more troublesome, and that it was not quite so easy to get at the patient's eyes for dressing.

The ordinary bed rest is not satisfactory, and we are now using a form of canvas sling to support the back first used for eye cases by Mayou several years ago at the Central London Ophthalmic Hospital. This sling keeps the patient supported most comfortably. Slipping down into the bed can be prevented, if necessary, by a pillow under the thighs, preferably placed beneath the mattress. We are now trying a bedstead with a mechanical arrangement for lifting the knees, while the back is supported by the sling. This seems likely to prove very satisfactory. The use of these slings and the general relaxation of the rigidity of the régime has almost completely eliminated complaints of backache, while abdominal discomfort and flatulence have become much less common. If the patient is comfortable and free from pulmonary symptoms, I prefer to keep him in bed for two or three days, but if he has any cough, or appears liable to develop chest trouble, or even if he finds bed very irksome, I let him be assisted into an arm-chair, making very little effort himself, on the day after the operation. If retention of urine occurs I allow him to be lifted into a

Bedstead with adjustable support for knees, and canvas sling for back.

sitting position on the edge of the bed, which may enable him to pass water, and obviate the necessity for catheterisation. After 48 hours I think it safe to allow the use of the night stool rather than the bed-pan, provided the patient is helped out of bed by a competent nurse.

With regard to the binocular bandage: as it sometimes causes much distress we must carefully consider whether its use is advisable, and if so, for how long. There are considerable differences of opinion among ophthalmic surgeons. Some have advocated so-called open treatment, using either no covering at all, or merely a thin layer of gauze resting lightly over the eye, or simply a shield without any dressing. They claim that the period of convalescence is thus rendered shorter and more comfortable, and that post-operative risks are not increased, but even in some respects diminished. My enquiries at home and abroad have shown, however, that in most clinics a binocular dressing is applied for a period of from one to four days. Personally I have never had the courage to try the open method of treatment. I feel that an eye ought to be kept completely at rest for a few days after operation and protected from the risk of direct injury. An eye cannot be kept at rest without closing both eyes, so I apply a binocular dressing for at least two or three days, unless the patient finds it very trying, or shows signs of mental derangement, or

develops conjunctivitis. If, however, he objects strongly to a binocular dressing I bandage only the eye operated upon and cover the other with a loose flap of lint or gauze, which he can lift up when he wants to see anything. He is told, however, to keep the eye closed except when he feels he must look around him, and the feeling that he can use the eye if he wishes is enough as a rule to set his mind at rest, and he will in fact rarely open it.

If mental derangement occurs one eye must, of course, be uncovered at once. And if conjunctivitis develops double flaps are used instead of pads.

It is customary to apply a monocular dressing for several days after the binocular dressing is discontinued. I am becoming more and more doubtful as to the advisability of this. A monocular dressing does not keep the eye at rest, and movement of the eye under even light pressure of a pad may be irritating. I suggest that after the first few days it is best for the patient to wear well fitted dark goggles during the day and a protective shield at night. The difficulty is to get goggles which are comfortable to wear and yet give adequate protection. For patients who can afford them it is best to have goggles made to fit before the operation. The stock sizes supplied to hospital patients seldom fit satisfactorily. I had hoped that a modification of the Kirkpatrick post-operative mask, made of tinted material, would prove satisfactory, as it gives the most complete protection to the eyes: but most patients find it hot and uncomfortable. I think, however, that it may be possible to modify it so as to overcome its disadvantages.

I have tried in this address to analyse the causes, both physical and mental, of post-operative distress, and have suggested that both theoretical consideration and practical experience show that such distress can be very largely prevented by adoption of a nursing régime less rigorous than that commonly enforced, and that the risk of complications is not thereby increased. Indeed, I believe the chances of a good result are materially improved by keeping a patient as far as possible comfortable and free from worry. It may be that I have been preaching to many already converted, but I hope that any who have not tried a considerable relaxation of the traditional régime will make the experiment, for by doing so I am sure they will prevent a great deal of very real suffering.

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