NOTES ON CATARACT EXTRACTION FROM
BERLIN, WIESBADEN, AND UTRECHT :
WITH A BRIEF ACCOUNT OF THE AUTHOR'S IMPROVED
METHOD OF OPERATING.*

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As I have recently studied on the Continent the practice of various eminent ophthalmic surgeons, more especially with reference to the treatment of cataract, I have thought that a brief *resumé* of the most interesting facts which have come under my notice, in connection with this important subject, might not be unacceptable to many of the members of our Association.

As Von Græfe's modified linear extraction is the operation now in almost universal favour, and as the Professor has recently introduced a number of modifications in the details of that operation, at which I have frequently had an opportunity of assisting, I conceive this remark will more especially apply to his method of extraction, which I shall now describe.

The patient reclines upon a couch, and the Professor, who always uses his right hand to make the incision, sits facing the subject if the left eye is to be operated on, or stands behind the head of the bed if the right is the one affected. Having separated the lids with a speculum, of which he employs two patterns, one for the right eye, the other for the left, he directs the patient to look upwards, and fixes the globe with a pair of catch-forceps, such as I show you, in the position indicated in the diagram. When he has thus obtained control of the eye-ball, it is depressed with the operator's left hand, and turned slightly inwards, until in a position convenient for the insertion of the knife. This (which you will perceive is of considerably reduced dimensions as compared with the original pattern) is then entered in the sclerotic, a line or rather more from its junction with the cornea, and half a line below the plane of its vertex, and pushed obliquely downwards into the anterior chamber. As soon as the point appears within the area of the previously dilated pupil, it is elevated, passed quickly across the chamber, and made to emerge at a point exactly opposite, in a straight line, and corresponding to the site of insertion. Immediately before the eye-ball is thus transfixed with the knife, the aqueous humour escapes from the anterior chamber, and, being imprisoned by the conjunctiva, distends that membrane, as though it were inflated with air. The knife is now pushed on in a horizontal direction towards the great angle, until it has entirely cut through the corneo-sclerotic junction, when it is turned edge forwards (a proceeding much facilitated by its reduced dimensions), and made to divide the wall of conjunctiva still before it. It not unfrequently happens that considerable bleeding attends the division of the conjunctiva, and the blood, especially in certain conditions of the eyeball, is apt to be sucked into the chamber, and, coagulating, to some extent impedes the subsequent steps of the extraction. When this is the case, it is well to delay the operation a few minutes, making rather firm pressure on the eye-ball with an iced sponge, until the bleeding is arrested. Owing to the position of the incision, a small flap of conjunctiva is left attached to the edge of the cornea, and the next step of the operation consists in carefully laying this flap with very fine forceps, such as I show you, over the edge of the cornea; the wound is thus completely exposed, and the bulging iris most favourably situated for excision.

At this point Dr. Waldau, who always assists Von Græfe, passes his hand under the operator's, seizes the fixing forceps, and thus assumes control of the eyeball, while the Professor excises a portion of iris. For this purpose, he uses one or other of these sharp pointed scissors, the straight for the right eye and the bent for the left. In the excision of the iris, I noticed the most important of the modifications which Von Græfe has recently introduced. He simply takes hold of the iris, merely steadying it, never on any account drawing it forth, and excises only the small portion contained in the grasp of his fine forceps, by a single cut. He considers it of great consequence that no portion of the iris should be put on the stretch, and by this gentle manipulation endeavours to avert subsequent inflammatory complications.

I need scarcely remind you, that this procedure contrasts strongly with the methods hitherto recommended for the performance of iridectomy in this country, by which we are directed to withdraw the iris, excising it at one angle, separating it from its ciliary border, and, by a second cut, dividing the remaining attachment. I think the Professor's pre-

sent method is more likely to be followed by prolapse than the one which he formerly adopted, unless great care be taken to replace any bulging portion before closing the eye. Von Græfe, however, is always very solicitous on this point, being specially careful to see that the sphincter is free in the anterior chamber. If this is done, little black specks, mainly dependent on uvea, which are not uncommonly found in the angles of the wound after the operation, may be safely neglected. Having completed the iridectomy, and resumed his control of the eyeball by taking the fixing forceps from his assistant, the professor clears the pupil of effused blood by pressure on the cornea with his caoutchouc spoon, and proceeds to lacerate the capsule with a bent cystitome, of which he employs two patterns, one for the right, the other for the left eye. He is always very careful to open the capsule freely, and, to insure this, assists his own vision with a pair of ten-inch convex glasses. He insinuates the cutting edge under the lower margin of the iris, penetrates the capsule, and incises a semicircle to the right; passes the cystitome back again, and opens the membrane in a similar direction, and to the same extent to the left. The two are then connected at the summit by a straight incision, on a level with the equator of the lens. The cataract is now slightly dislocated upwards, by a sweeping pressure of the caoutchouc spoon at the lower margin of the eyeball; and, as it gives, is followed and extruded by careful manipulation on the external surface of the cornea, while its exit is assisted by gentle depression with the fixing forceps, and the patient's involuntary efforts. Von Græfe then frees the catch of the forceps with his right hand, and expeditiously removes the speculum. If the operator have been standing behind the patient, he now comes in front, seats himself on the couch, and, by repeated pressure with the finger and spoon, and occasional opening of the lids, gradually forces out any remnant of cortical matter that may be left behind.

Vision is now carefully tested; and, if the patient be able to distinguish the number of fingers elevated, and to recognise the thumb, little finger, and other like objects, the operation is considered as so far successful. The patient is then directed to close the eyes as if asleep, and Dr. Swansie, one of the clinical assistants, comes forward and proceeds to pad and bandage the eyeball. This is done with great precision, in the following manner. A piece of fine muslin is placed over the globe and small discs of scraped lint are superimposed at the external and internal angles of the orbit, the centre being left free. The object is less to make pressure on the eyeball, than to restrain its involuntary movements; and this end is certainly best attained by the method of padding which I have described. The whole is secured *in situ* by a flannel bandage an inch in width, and four yards long. One extremity is laid on the cheek, passed over the eye, and round the head under the corresponding ear, over the eye with slight pressure, and so on, alternately. Three folds embrace the eyelid, and the bandage is retained in position and secured by a pin. In the evening it is removed, the eye examined, and the dressings replaced. This is repeated twice daily. The eye is opened for the purpose of examination on the evening of the operation, and the wound is fully exposed on the following day, and it is afterwards carefully examined once or twice daily until the patient is convalescent. This early exposure of the eyeball is so opposed to the teaching of English ophthalmologists that I watched the results with considerable curiosity, and must say that I never saw any ill effects, and have not since hesitated thus to satisfy myself of the progress of cases in my own practice. If the slight pain which the patient naturally experiences after an operation of this nature, be not abated in four hours, Von Græfe is not completely satisfied; and if it should be sustained much longer, he injects a solution of morphia in the neighbourhood of the lid. If the pain last sufficiently long to keep the patient awake, for instance, during the night, the assistant is called, and, if he find the charpie soaked with water from profuse secretion of tears; if there be a tendency to swelling of the lids, or other slight evidence of mischief—such as we should be quite to content to watch or treat expectantly in this country—he bleeds from the arm at once (a very feeble old woman, for instance, would lose four ounces, others more), and a powder is administered, containing five grains of calomel and ten of rhubarb. The eye is examined without hesitation; and if, in spite of this treatment (which is said generally to check mischief), the edges of the wound become opaque, sodden, and show a disposition to become coated with mucous or purulent matter, then the eye is fomented for an hour with a warm camomile fomentation; after which, the bandage is applied firmly so as to exercise a certain amount of compression. This process is repeated every three or four hours, and, as I saw in some cases, with the best results. If iritis threaten a day or two after the operation, atropine (four grains to the ounce) is applied to the lower lids, and sometimes as often as twelve times a day. Local bleeding is scarcely ever adopted; and mercury, otherwise than as a purgative, is seldom administered. The patients usually get up on the third or fourth day, moderate use

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of the eye is permitted in a week, and, if all be well, they are discharged after the further lapse of eight or ten days.

A great point in Professor von Græfe's favour is the remarkably good behaviour of his patients. In twenty-five cases which I noted, I never saw the conjunctiva torn with the forceps from straining and rolling of the eyeball on the part of the patient, an accident which is specially liable to happen with this form of instrument, and which occurred to myself the very first time I demonstrated the operation *pur et simple* on my return. This extraordinary equanimity on the part of the patients almost precludes the necessity for chloroform; and, in consequence, it is very seldom administered. When given at all, the operation is commenced after one or two whiffs, when the patient is perfectly sensible. As there is very little time for administering chloroform in this crowded *clinique*, I took the opportunity of calling the Professor's attention to the bichloride of methylene as a rapid anæsthetic, and administered it for him in several cases with excellent results. As its power in this way is not generally known, I trust you will pardon a slight digression in calling your attention to it. It is given with an inhaler, from which air is almost entirely excluded; insensibility is induced in half a minute, and the patient is usually able to walk away in two or three. I was indebted to Dr. Bader, the Ophthalmic Surgeon of Guy's Hospital, for my knowledge of its properties, which are quite equal to those of nitrous oxide for slight operations, such as tooth-extraction; and I am told that it has long been used for this purpose by a dentist in Brighton.

I was gratified to find, on visiting Wiesbaden, that Professor Pagenstecher had adopted the modification of his method of extracting with the capsule entire, which I proposed in a paper read before the Midland Branch Meeting of our Association upwards of a year ago. Instead of the large linear flap, and ugly inferior iridectomy, which I then deprecated, he now adopts a superior incision and upper iridectomy, exactly the same as Von Græfe's. The peculiarity of Professor Pagenstecher's operation is, as you are doubtless aware, that, whenever possible he removes the lens with the capsule entire. Having completed the incision, and performed iridectomy exactly as in Von Græfe's method, he makes rather firm pressure with the caoutchouc-spoon on the external surface of the cornea. If the lens yield, and show a disposition to come forward, from the coexistence of a strong capsule and weak suspensory ligament, he usually succeeds in removing it without introducing any instrument into the eye. Should this manoeuvre fail, however, he must either introduce the spoon, or be content to open the capsule. In over-mature cataracts, he would adopt the former alternative; but, in all others, he would avoid the risk of rupturing the capsule, and so leaving cortical matter, which could not subsequently be removed, by opening the capsule and extracting in the ordinary way.

I saw Dr. Pagenstecher operate several times, and with excellent results. In two hundred cases in which the capsule was extracted entire, he had twenty with full acuteness of vision. Professor Madler of Bonn, the celebrated astronomer, was one of these fortunate individuals, being not only able to resume his astronomical labours, but also to read and write the finest manuscripts. With regard to after-treatment, Pagenstecher deprecates sanguineous depletion, and trusts entirely to fomentation and compress. This he adopts after the subcutaneous injection of morphia, on the day following the operation, should any unfavourable symptoms arise.

Dr. Snellen of Utrecht, the well-known author of an admirable set of test-types, after a careful study and practice of Von Græfe's operation, has latterly, in many cases, preferred to adopt the old flap method. I saw several successful cases thus treated, remarkable for that highest indication of success, the central and moveable pupil. When pain, lachrymation, and swollen lids, threaten suppuration after extraction, Dr. Snellen resorts to the warm fomentations, with compress bandage; administers quinine, and turns his patients out of doors even on the second or third day. This treatment, it is stated, has been followed by signal success, and by the salvation of eyes which Professor Donders—Dr. Snellen's colleague—considered hopelessly lost.

Dr. Warlomont, the well-known editor of the *Annales d'Oculistique*, and translator of Mackenzie, showed me, in his clinique at Brussels, some cases in which he had operated by a modification of Kukler's method, making the incision in the upper third of the cornea, and extracting through a wound, which is a straight line in Kukler's operation, directly in front of the pupil; in Warlomont's modification, above it, and out of the range of vision. Liebreich, Wecker, and Meyer of Paris, I found practising Von Græfe's operation; and Desmarres still faithful to the old flap method, for the dexterous performance of which he has acquired a wide-spread reputation. The patient is seated in a chair facing the operator, who is also seated. Whilst the patient is looking towards the ground, he rapidly fixes the eyeball with the pique de Pamar, and enters a moderate sized Beer's knife in the

cornea, about the middle of the eyeball. This is passed rapidly across the chamber, and emerges at a counter puncture similarly placed. He completes the flap, all but a small bridge of cornea, which is not divided until the capsule is opened. To lacerate the capsule, he uses a secondary knife, which is armed at the point with a pricker, so that the lens is liberated and the incision completed at the same time, and with the same instrument.

I may mention that, when abroad, I on several occasions demonstrated my own method of operating, and have reason to believe that it will be extensively adopted. It appears to me to possess all the advantages of Von Græfe's method, with others peculiar to itself, that I have not seen combined in any other. I first made experiments on this subject about the close of 1864, and adopted it in practice as a compromise between Schuff's and the flap extraction early in 1865, before any mention of Von Græfe's efforts in the same direction had, so far as I am aware, reached this country. What I have seen abroad has only confirmed my estimation of its advantages, both as to facility of performance and proportion of successful results; and if you will permit me to this extent to claim your indulgence, I will, in conclusion, briefly describe it.

The instruments that I employ are a pair of sharp forceps that pierce the sclerotic; a very light speculum, with a certain amount of leverage, so as to avoid pressure on the eyeball; and two knives a line in width, and bent at an angle similar to the ordinary iridectomy knife—one with a sharp point, the other with a blunt or bulbous extremity. As the danger, even if vomiting occur, is very slight with the form of incision which I am about to describe, I usually prefer to have the patient narcotised; and, as a rule, push the chloroform to full anæsthesia. The lids should then be kept apart by the speculum, and the globe gently depressed with a pair of ordinary forceps in the operator's right hand. The eye having been brought into a favourable position, it should be fixed by the sharp forceps at about the junction of the upper with the middle third of the cornea. The pointed knife is then entered in the corneo-sclerotic junction, about a line from the forceps, at the summit of the cornea, pushed well into the anterior chamber, and, with a gentle sawing motion (the eye being steadied with the left hand), carried along the summit a distance of five or six lines, or sometimes more.

The aqueous humour escapes before the incision is completed; and, if the condition of the globe before and after incision, as regards tension, be such that we have reason to fear excessive bleeding from excision of a portion of iris, it is well at this stage to open the capsule carefully in its central and lower segments. The iris-forceps should now be introduced into the wound, and a portion of iris excised, the lens extruded by pressure, and cortical fragments removed. If the cataract be over-mature, and I have reason to believe in the coexistence of a tough capsule, with a relatively weak suspensory ligament, I make tentative pressure on the cornea before lacerating the capsule, and sometimes thus succeed in extracting the lens with that membrane entire. If, however, the lens be fixed by adhesions, or if, during this manoeuvre, from any accident the vitreous humour should bulge, or the hyaloid membrane be ruptured, I immediately dip out the cataract with my wire-loop spoon*—an instrument which effectually assists the exit of the lens without adding to its bulk. If the wound should evidently be too small for the ready extrusion of the lens, I enlarge it at either or both extremities with the blunt-pointed knife or scissors. If there be certain elements of doubt about the case, which may be cleared up during the progress of the operation, I limit the first incision to an extent of three lines, excise a portion of iris, and enlarge the wound, extracting the lens if all goes well. Otherwise, I limit the operation at this stage to a preliminary iridectomy, and utilise the experience thus gained of the condition of the eyeball, and the patient's peculiarities and behaviour under chloroform, when extracting six weeks later. In many patients it is hardly worth while to run the increased risk which must always attend the attempt to save a portion of the iris. Their facial conformation and usual position of their upper lids is such as to completely conceal a coloboma made directly upwards; and it is in these cases neither a cosmetic defect or disability, so far as vision is concerned. In some, too—about one in three—the danger of inflammatory mischief is so great, that the bruising occasioned by the exit of the lens will almost necessarily end in adhesions, and consequent greater mischief and deformity than would be occasioned by a simple iridectomy directly upwards. When, however, this inflammatory or other contraindication does not exist, and the patients have prominent globes, I have endeavoured to modify my operation, so as to extract the lens without excising any portion of the iris, and find that this may be effected by entering the knife at the central summit of the cornea, and carrying the wound in the corneo-scler-

* Made by Coxeter.

otic junction to within a line or two of the point exactly opposite the central point on its inferior surface. A side flap is thus formed, comprising nearly one-half of the cornea, most conveniently placed for examination or subsequent necessary manipulation, and not liable to reflections by involuntary motions of the upper lid. I believe that we may thus, in many cases, secure that highest indicator of success—a central and moveable pupil, with but few of the risks which inevitably attend extraction by the old flap method.

Since adopting the methods which I have described, I have operated on one hundred and eighteen cases, with the total loss of four eyes only by suppuration of the flap.

CLINICAL MEMORANDA.

IMMUNITY FROM SEPTIC INFLUENCE OF MALIGNANT SCARLET FEVER DURING THE PARTURIENT STATE.

By W. BOYD MUSHET, M.B.

MRS. F. was delivered of her fourteenth child on February 2nd. One of her children was at the time lying dead in another room from malignant scarlet fever; another, two and a half years old, suffering from the disease, I found the day after labour in bed with the mother; and another, four and a half years old, lying at the end of her bed in a cot, on the following day had a convulsion, succeeded by rash, and the disease in a malignant form. The mother—a very self-willed woman, got up against all remonstrance on the fifth day, and refused to allow the children to be removed, with the invariable reply that Providence would support her, and that it was her duty. The two children died—one on the sixth, the other on the eleventh, day after the parturition of the mother, who passed intact through the contagion, and is now well.

OBSTETRIC MEMORANDA.

TWO CASES OF PUERPERAL CONVULSIONS.

By J. DOUGLAS LAWRIE, M.R.C.S., Bradford.

CASE I.—Mrs. G., aged 23, primipara, at the full period of gestation, commenced to have pains at 5 A.M.; at 10 A.M., convulsions commenced, the os uteri being of the size of a shilling, and the pains frequent, but weak. There was slight general oedema, and for several weeks there had been scanty micturition; the urine contained albumen. At 11 A.M., the convulsions were almost constant, the breathing very oppressed, and deglutition at all times impossible. During the deep inspirations following the eclamptic seizures, chloroform was freely administered, until complete coma supervened. An enema of 1½ grain of elaterium, suspended in an ounce of mucilage, was given; and for two hours the chloroform was readministered, as the premonitory twitchings indicated an approaching “fit.” In the meanwhile, profuse watery purging commenced, and this continued for several hours. At 2.30 P.M., the os uteri being sufficiently dilated, the forceps was used, and a living child born. Until 4 P.M., the convulsions occasionally showed symptoms of return, but were rendered abortive by the chloroform. For two months the patient suffered much from the nervous shock, but made a very good permanent recovery.

CASE II.—Mrs. B., primipara, seven months advanced in pregnancy, commenced to have convulsions at 4 A.M. It was 11 A.M. before I first saw her; and, as she lived in the country, it was 1 P.M. before any treatment (except a purgative, which she could not swallow) was used; she had, therefore, been nine hours in convulsions, and had been once left by her nurse as dead. The same treatment was adopted as in the previous case, the patient being eight hours under chloroform. The purging and diuresis were extreme; there were oedema and albuminous urine. This patient was out in ten days, and really quite well. I delivered her of a dead child at the end of the eighth month.

The following suggestions may, I think, be legitimately derived from the history of these cases, when taken in conjunction with the known pathology of the disease itself. 1. Elimination is the essential treatment. 2. Purgation, carried to extremity, is a most efficient eliminative, and at once safer and more curative than bleeding. 3. As, in all cases of violent eclampsia, the administration of remedies by the mouth is unsatisfactory, a purgative enema or subcutaneous injection is advisable. 4. For the preservation of life, until treatment can be carried out, the free administration of an anæsthetic is indispensable.

REPORTS

OF

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS OF GREAT BRITAIN.

THE MARGATE SEA-BATHING INFIRMARY.

[BY THE EDITOR.]

THE Margate Royal Sea-Bathing Infirmary is chiefly a hospital for scrofula, but in part also a convalescent institution. It is one of the oldest and largest of its kind in the kingdom. It receives patients from London and from the southern countries, a very large number being sent from the metropolitan hospitals, and many of them being those in whom operations, such as excisions of joints or of bones, have been performed. Its rules allow long residence when needful; and there are now some patients in its wards who have been there more than a year. It is open winter and summer, but has a hundred additional beds available during the best months of the year. It is admirably situated, close on the sea-coast, out of the town, and with the easiest possible access to the sands. In its erection and its management the most careful economy has been observed. It is an exceedingly plain building both inside and out, and some of its arrangements strike the visitor as being meagre. We believe, however, that in all essentials, diet, bed-comforts, nursing, cleanliness, and the like, there is no complaint to be made. It would be unjust indeed to reflect on those who have supported such an excellent institution because they have preferred extensive utility to show; yet in saying this we cannot help a suspicion that more liberal expenditure might very probably have proved good policy. It is right both for the patients and the subscribers to cultivate to some extent an attractive exterior and fair æsthetic arrangements within.

At the time of our visit, February 6th, there were 135 inmates, all of whom, under the courteous guidance of Mr. Clouting, the resident medical officer, we saw. As might be expected in a scrofula hospital, a large proportion of the patients were young, and there were, indeed, none who had passed the earlier periods of middle life. Diseases of joints, of the spine, necrosis of bones, lupus, ulcers of the cornea, and glandular struma, were the chief maladies illustrated; and for the study of one and all of these the medical officers certainly have a splendid field. In addition to diseases of the kinds mentioned, many other examples of rare maladies of chronic form find their way to Margate after having exhausted the patience of medical attendants elsewhere. Thus, during the last year, there was a splendid case of Addison's keloid, with some unique features, and another of an extraordinary form of inflammatory hypertrophy of the ends of the fingers and toes, associated with slow but destructive iritis. Neither of these were in any strict sense scrofulous, but both were cases in which it was quite fair to try what sea-air could do. It may be remarked, in passing, that cases of necrosis of long bones, which constitute a large section of those admitted, and furnish, perhaps, a majority of the operative cases, are not really scrofulous. There is probably no good reason for associating acute periostitis (the parent of necrosis) with any special form of cachexia.

We believe that it is contemplated to enlarge or rebuild this hospital before long; and certainly there are good reasons for desiring such a measure. The wards are uncheerful, not to say gloomy, and many of them do not enjoy the advantage of out-look to the sea. The arrangements for ventilation and warming are imperfect; and it appears impracticable to keep the air sweet without exposing the patients to cold and draught. At the time of our visit, we were much struck with the chilly appearance of almost all the male patients, and by the coldness of the wards which they occupied. In all, many windows were open, and many of the boys were almost blue with cold. It was a February day, but warm for the time of year. Mr. Clouting assured us that it was not possible to keep the wards sweet without having the windows always open. Now, inasmuch as external warmth is one of the most valuable means of treatment in most forms of scrofula, we cannot but regard this as a very serious defect. The women's wards were warm and comfortable, but then in these all, or almost all, the windows were shut.

The present hospital appears to us to be so defective that it would be bad policy to patch it or add to it. Rather, we would suggest, that for such a noble object an extra effort should be made, and a more liberal scale of architecture adopted. In a convalescent hospital it is especially desirable that attention should be given to the cheerfulness and airiness of the wards. The building ought not to be huddled up into as small a space as possible, but rather spread out so as to give as large a sea and south frontage (one or both) as possible. Some of the patients