TREATMENT OF ATROPHIC RETINAE WITH RETINAL EXTRACT.

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I do not propose to occupy your time for more than a few minutes with my address, but I am glad of this opportunity, which the honour you have done me to-day in electing me the first President of this Branch affords, of making known to the profession the results of some work I have recently been engaged in, which I trust may have valuable and far-reaching effects in relieving to some extent the disabilities of the semi-blind.

My attention was first drawn to cases of retinitis pigmentosa in which the functional activity of the eye is rapidly exhausted by bright light, and I wondered if it would not be possible somehow or other to supply the necessary pabulum for preserving the functional activity of the retina, the blood supply in a case of retinitis pigmentosa being extremely limited, one of the signs being marked contraction of the retinal vessels. Not long ago I had another case of the same disease in which, as well as the peripheral contraction of the field of vision, there was also great loss of central vision. Some time before this patient had crossed to Jersey, and had been most violently sick, with great retching; after a night's rest, however, the vision, which had been for some time previously failing, returned with wonderful clearness, and she could read with the greatest ease, the print looking firm and black. This lasted for some weeks, when it gradually again faded away, the print becoming very pale and difficult to distinguish. Here, then, was something definite to go upon, and I tried to think out some plausible reason for the improvement, and I imagined it was possible that the violent straining caused by the sickness might have forced more blood into the retinal vessels in the same way as into the vessels of the skin of head and neck, as evidenced by the intense congestion observed in such cases. It seemed to me at least plausible that in this way a greater blood supply, and consequently more pabulum, might have been conveyed to what had been a starved retina. I then thought of using amyl nitrite occasionally, keeping the patient lying down as much as possible, and using red glasses, which recent experiments of mine seemed to show are less exhausting to the retina.

Realizing that in retinitis pigmentosa the retina was, as it were, starved by the diminished blood supply through the contracted vessels, I wondered if any good would result by charging the blood more richly with the retinal constituents, and so compensating for the limited supply, and it was with this end in view that I first tried feeding with raw retinae of sheep and oxen. The results have been so striking that they seem to suggest that there may be some active principle present in retinae, and that the results are not due merely to the pabulum supplied by anatomical constituents of a similar tissue. Of course, it is very necessary to be on one's guard against accepting too readily that the results obtained are directly due to the treatment. One recognizes that the indirect effect of any treatment may be the real cause of any apparent improvement; in other words, the concentration of the mind upon any organ may stimulate any latent function that may remain. Such results we often see in the so-called Faith cures and Christian Science.

One thing, however, is perfectly clear, that there is actual improvement in function, and not mere imaginary improvement, the wish being father to the thought. For the patients, without any leading questions, themselves suggest the exact course of physiological improvement that one would expect. For instance, a patient who eventually gained a striking improvement explained early in the course of treatment that though she did not seem to be able to read more or smaller print, yet that it looked much blacker, whereas formerly the ink looked so pale that at times she could hardly distinguish it from the paper. Again, a man who asserted he was sure he was much better, when pressed to explain how he recognized his improvement, said that he could see the red flowers in the gardens quite readily, whereas he had not been able to do so for a considerable time before.

It would not be appropriate for me now to enter into

technical details of the series of cases in which I have tried this remedy; this I hope to do at the meeting of the British Medical Association at Swansea, but I may give you one more fairly conclusive piece of evidence of the value of this treatment.

After I had had several cases, all of which seemed to show very decided improvement, I remarked that, if this treatment was as valuable as it appeared to be, there was one disease that should be markedly benefited—that being tobacco amblyopia, which is very generally considered to be associated with some want of nutrition. Now, tobacco amblyopes whose vision is grossly reduced usually require three to four weeks' treatment before they show any marked improvement. The result of my trying this treatment on four cases was that within fourteen days, though they were not well, they could read small print quite readily. I think that ophthalmic surgeons will recognize this as a fair test of the value of the treatment.

The great difficulty has been securing the needful supply of fresh retinae. I have usually given from six to nine daily to each patient. But retinal tissue degenerates very rapidly, and there is great difficulty, especially in London, in getting them fresh from the slaughterhouse. I have made various experiments in attempting to secure a potent extract, which have been continued by Messrs. Burroughs, Wellcome and Co., and, under the name of "Optocine," they can supply an extract that seems to have all the value of fresh retinae. I should mention that, so far as I have been able to make observations, improvement can only be expected in cases of retinal atrophy in contradistinction to nerve atrophy. It would be well, however, to have a much more extended observation before coming to any definite conclusion on that point.

The cases in which I have had marked improvement have been retinitis pigmentosa, retinal degeneration in high myopia, retinal degeneration in choroiditis, and tobacco amblyopia. Cases of asthenopia from functional exhaustion should undoubtedly be benefited, but I have not as yet used it in such cases for two reasons: first, the difficulty of getting a sufficient supply of retinae; and, secondly, because they, of all cases, would be apt to be the most misleading. If its value can be established in gross cases, it can be given with confidence in minor troubles.

That is all I have to say on this occasion. I hope before long that other ophthalmic surgeons will be able to endorse my experience. I am anxious that this particular treatment of retinae that I am introducing to you should not be discredited by making greater claims than can be substantiated by actual experience.

I shall be glad at any time to communicate with any medical man who wishes for particular information with respect to this treatment.

TWO CASES OF FRACTURE OF THE BASE OF THE SKULL, WHICH RECOVERED AFTER VENESECTION.

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Two cases are not of much value: but the treatment, when a patient with fractured base begins to lose ground, is so nearly hopeless that they may be worth recording. In each of them, so far as I can see, the patient's life was saved by free bleeding, and by that alone. The first of them has already been published in the *BRITISH MEDICAL JOURNAL* (October 5th, 1901), and I give only an abstract of it here.

CASE 1.—A young man, who had fallen from a height, was admitted to hospital on the night of June 8th, 1901. There was a wound an inch long over the occiput; he was unconscious, bleeding from nose and ear; pupils unequal; breathing stertorous; temperature 96°. On June 9th, in the morning, he had recovered consciousness, and complained of severe headache; in the evening he became very restless, irritable, constantly trying to get out of bed; temperature 100°. On June 10th, in the morning, he was again unconscious, and the breathing was of the Cheyne-Stokes type; knee-jerk absent; constant spasmodic movements of lower jaw and of eyelids; temperature 102.4°. In the afternoon the temperature had risen to 104°, the Cheyne-Stokes breathing was intensely marked, the pulse was slow and of high tension; the face was deeply congested. It seemed certain he could not live more than a few hours. He was now bled from the arm to 20 oz.; and during the night he was bled again to 12 oz. On June 11th, at 8 a.m., the temperature was 101.5°; the

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breathing a few hours later became regular. Evening temperature 101.3° . On June 12th the morning temperature was 100.4° , patient sleeping comfortably. In the evening knee-jerk returned; patient could understand what was said to him. On June 13th he could answer questions; complained of severe headache; evening temperature 98° . June 17th. To-day for the first time, nine days after the fracture, there was a discharge of bloodstained cerebro-spinal fluid from the ear. This discharge lasted till July 14th, that is, for four weeks. The patient left the hospital quite well on July 25th.

CASE II.—Dr. Hawkins of Broxbourne kindly lets me publish this case. The patient, a middle-aged man, was thrown out of a trap on March 13th last, and was picked up unconscious, with no visible injury except a trivial cut over the left eyebrow, and a broken wrist. The left pupil was widely dilated and immovable, and there was complete loss of power, but not of reflex movement, in the left arm and leg. For a day or two he remained wholly unconscious; then there came a return toward consciousness, and he could answer questions, and said a word or two now and again; and at nights he was restless, talking wildly.

He remained in this state for a fortnight. On the fourteenth or fifteenth day he took a change for the worse; there was a slight rise of temperature, with quickened pulse and respiration, more complete paralysis, and deeper unconsciousness. I saw him for the first time on April 1st, the nineteenth day; the temperature was normal that day, and we decided to wait. Next day it rose to 102° . On the twenty-first day, with the help of Dr. Hawkins and Dr. Hoskins, I exposed the bone in the left temporal region, and found it fractured but not depressed. The chief line of fracture ran downward to the base of the skull. While I was examining the fracture blood began to well up through it so freely as to hinder the use of the trephine, and I had to use a mastoid chisel and a cutting forceps. The bleeding, which came from a vein of the dura, stopped so soon as it was exposed. The dura was very tense, and did not pulsate; it was incised, and about a drachm of clear fluid was let out; the dura then fell inward over a depression of the brain, and pulsated freely. A strip of gauze was laid over it, and the wound was closed. There was free bleeding into the dressings a few hours after the operation, so that he lost, at and after the operation, about 12 oz.

For the next few days he seemed a little better, and on April 7th the loss of power was less marked, and the temperature was normal, and he was quiet and sensible, and for the first time spoke of his accident, remembering how it had happened. On April 10th, the twenty-ninth day, he relapsed again, and next day he had a rigor, temperature 103° , and signs of pneumonia at the base of the lung. He was now bled by Dr. Hawkins to 12 oz., and that evening his temperature fell to normal, and he was quite sensible.

During the next week, April 12th to 18th, he very slowly gained ground, the pneumonia cleared up, and he became stronger and more responsive, recognizing those round him, and fairly sensible during the day; but at night he was very restless and excitable, trying to get out of bed, and talking and behaving like an insane person. Sensation was almost unimpaired, both in the arm and in the leg, and there was no impairment of vision. On April 19th, for the first time, thirty-two days after his accident, he began to move the arm, and could move the leg more freely; he was still very noisy at night.

On June 13th, Dr. Hawkins writes, "He is recovering slowly; he can walk with a little assistance, and sits up to meals. His head-symptoms are also subsiding."

These two cases have not much in common, except that in each of them recovery seems to have been due to venesection. It may be well to take the second case first. Here the evidence is incomplete, because the occurrence of pneumonia confused the issue; but it seems almost certain that the temporary improvement after the operation was due partly, if not wholly, to the loss of blood at the time, and that the improvement which began on the day of the venesection was due to the venesection, and to that alone.

The other case speaks for itself. Here was a man who, thirty-six hours after fracture of the base of his skull, was profoundly unconscious, with a temperature rising rapidly to 104° , and the intensest degree of Cheyne-Stokes breathing. It was impossible to doubt that he was dying fast; but so soon as he was bled to 20 oz. plus 12 oz. he began to get better, and made a complete recovery. The delay of nine days before the cerebro-spinal fluid began to flow from the ear is hard to understand; probably it was due to the lowering of the blood pressure by the venesection.

If venesection in cases of this kind could restore consciousness more or less for a few hours only it would still be a valuable method. But these two cases seem to show that it may in this or that case, as it were by chance, bring about not mere temporary improvement, but recovery.

SANATORIA FOR CONSUMPTIVES IN MADEIRA.—Prince Frederick Charles of Hohenhohe has asked permission of the Portuguese Government to erect vast sanatoria in Madeira. He has offered by way of payment to the State or to charitable institutions one third of the net profits, in the meantime paying a deposit of £20,000. The Prince is said to be forming a company, with a capital of £2,000,000, which will undertake to open within two years two magnificent sanatoria in Madeira.

THE BURIED UNABSORBABLE LIGATURE AND ITS SEQUELAE.*

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SURGICAL literature for years past has teemed with references to, and with explanations and excuses for, the perverse behaviour of what has been euphemistically termed "the permanently buried unabsorbable ligature."

That a sterile unabsorbable ligature, of which silk may be taken as the type, planted in an aseptic wound ought to remain permanently buried is perfect in theory, but when in practice it is found that such a ligature is shed, its reappearance is accounted for by the statement that the ligature must have been infected at the time of the operation.

The following remarks refer to the soft tissues of the body, more especially the muscles: The rigid tissues, such as bones, come in rather a different category, although even in the case of the bones it is not an infrequent occurrence for a screw or wire, after lying quiet for months, to create a disturbance which necessitates the removal of the offending body.

During the past eleven years I have seen, both in hospital and private practice, frequent examples of this process of ligature shedding from wounds which have healed by first intention and have remained healed for weeks, months, or even years before disgorging the unabsorbable ligatures.

The ligature of an ovariectomy pedicle is frequently a beautiful example of this process. I have seen such a ligature removed four years after its insertion, when it was caught in the act of perforating the bladder. Doran has quoted a case in which such a ligature had to be removed ten years after its insertion.

A recent case which has come under my notice is that of a lady who had a painful loose kidney fixed with sutures by a well-known surgeon. The wound healed *per primam*, and the kidney pain was cured, but a month later the loin became tender, a sinus formed from which, after many weeks of annoyance, appeared the silk ligature, and at the present time, six months after the operation, the persistence of a tender sinus suggests that other ligatures will follow.

In explanation of cases such as these, I am asked to believe that: (1) The ligatures were infected at the time of the operation, but that (2) the infecting bacteria did not prevent sound union by first intention, and (3) these bacteria, after lying dormant for many weeks, months or even years, during which time they neither injured, nor were injured by, the tissue cells among which they lay, have suddenly broken out into activity and have caused the ligatures to be shed.

I am unable to accept such a string of improbabilities. In a patient peppered with shot, the leaden pellets continue to be extruded for years after the apertures of entrance have healed. These shot are not accused of being septic from the time of their insertion to the time of their extrusion. In a patient peppered with silk, the pieces of silk are similarly shed, but are said to have been septic throughout.

I grant that the sinus from which the shot or silk appears is septic and also that the shot or silk at the time of its reappearance is septic, but that is a very different thing from admitting that the foreign body has been septic from the day of its insertion.

I am fully aware that some ligatures are not shed, that is to say, they do not escape from the patient's body, but how many of them can be found in their original situation a year later? Very few, and if they have been placed in muscular tissues which are frequently and actively contracting, search for such ligatures is usually futile.

What has happened is this. A ligature uniting muscles which are constantly changing their relative positions and forms, gradually cuts its way through until it lies loose among the tissues. Then one of two things takes place.

1. If unexposed to muscular action the ligature becomes more or less encapsuled, or (2), what is much more probable, it is propelled by the movements of the muscles which surround it, in the same way as a needle is moved by muscular action, and drifting with the tide, ultimately settles in some backwater, where it can lie in peace undisturbed by muscular contractions. In this haven of rest the foreign body, for such it really is, becomes more or less encapsuled by the action of the surrounding cells. In the first instance the ligature is encapsuled at its original site, in the second it becomes encapsuled at a distance from its first habitat.

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