THE QUESTION OF DOSE IN THE TREATMENT OF CERTAIN FORMS OF NERVOUS DISORDER.

By WALTER TYRRELL, M.R.C.S., L.S.A.

I wish to bring before the profession, as briefly as possible, a practical point in the treatment of those nervous disorders which arise from exhaustion of the nervous system.

It will be found that these disorders, even when not hereditary, very commonly owe their existence to causes which have come very gradually and slowly into action, and that their chief and characteristic symptom is irritability; for there is a natural law that exhaustion of brain manifests itself sooner or later in irritability.

Now both these facts seem to me to indicate treatment by a slow restorative process and by the use of small nourishing doses of nerve tonic, in contradistinction to large stimulating ones. You can only give back slowly that which has been lost during a long period of time.

It has always seemed to me that the present system of treatment of these irritable forms of nervous disorder by bromides has been founded on the failure to procure satisfactory results by tonics; and this simply because the doses used have been far too large. By the action of bromides we obtain an immediate result; the hypersensitive brain is numbed as it were into quiescence, but the relief lasts only as long as the effect of the medicine. If, on the other hand, instead of treating the symptoms, we are content to await a slower but more perfect recovery by gradually building up and restoring the lost vitality of the nervous system, perfect results may be obtained. If we renourish the brain the irritability, which is but the symptom of exhaustion, must cease.

We may divide the nervous disorders which arise from exhaustion roughly into two classes: (1) Those in which loss of control and irritable action are the main symptoms; such diseases are more often found prior to mid-life, and include hysteria, epilepsy, chorea, among others. (2) A second, which attends chiefly on the decline of life, and is marked more by depression and loss of functional power, would include all the forms of nervous depression which arise from failure of organic function, more especially of the digestive and eliminative apparatus.

Now, in both these forms of nervous failure good results are to be obtained, provided that we can nourish the brain without stimulating it. In order to effect this object the doses used must be extremely small, and a full allowance of time must be given. There is evidence of the truth of this statement in the fact that the remedies found most useful in the treatment of the more irritable forms of these disorders, especially in children, are those unstimulating, nourishing drugs, such as cod-liver oil, the various preparations of phosphates, and small doses of arsenic or iron.

But it is with regard to the more direct form of nerve tonic that I wish to deal. Take one drug, for example, one which I have always found most useful in the treatment of all forms of nervous disorder arising from exhausted states of the nervous system—I mean nuxvomica. If we consult the *Pharmacopœia* we shall find the ordinary doses of this drug to be from a quarter to half a grain, or even one grain. Now, if in either of the two forms of disorder which I have mentioned we attempt to treat our patients with these doses, we shall find that, in a large majority of cases, we simply increase the intensity of the symptoms; but if we are content to use doses as low as the hundredth, or even the two-hundredth of a grain, continuing the use for months instead of days, the result will be a complete, though gradual, recovery.

What I have said here in regard to the one drug applies equally to all the more direct forms of nerve tonic—strychnine, quinine, arsenic—to obtain anything like a permanent, curative effect the dose must be small and long continued.

One of the first favourable results to be noticed from the action of a nourishing dose is the general return of functional activity. The liver begins to secrete bile, the skin excretes acids with increased energy, and in consequence the blood, which has been loaded with effete matters, becomes purer and more nutritious, thus affording renewed vitality to the brain. In all cases it is wise to begin with a dose which is

sure to be below the point of stimulation, it is easy to increase.

The space allotted to me does not permit of my doing more than point out the general principle of treatment. That a fair trial of this therapeutic point, revolutionary as it is, so far as dose is concerned, will prove as successful in the hands of others as in my own, I am confident.

A CASE OF CASTRATION FOR PROSTATIC HYPERTROPHY.¹

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J. P., aged 77, first started catheter life eight years ago. He had severe pain before and after micturition, causing him to lie down for some time afterwards, sometimes as long as two hours. He had pain and tenderness on pressure in each loin. He occasionally passed large quantities of almost pure blood, which was stopped by rest in bed, the administration of ergot, and the application of hot flannels to the loin and above the pubes. He had to pass a catheter every half-hour or twenty minutes. On manual examination there was pain on pressure above the pubes. There was no history of gonorrhœa or syphilis. The tongue was furred, the appetite bad, and the bowels costive. The patient was getting thinner, and suffering from want of sleep. His sexual life had ceased five years ago. The urine neutral or alkaline in reaction, always contained blood and a large quantity of phosphates, but never any pus. The residual urine measured one or two ounces. The urine was sometimes ammoniacal. On examination by the rectum the prostate was found to be enlarged to the size of a large tangerine orange. By washing the bladder out with boracic lotion and injecting iodoform emulsion the cystitis was subdued, and for a time he was relieved to the extent that the pain became tolerable, only in a week or two to have the same thing over again. The frequency with which it was necessary to pass the catheter did not diminish. In this way he continued for six months, sometimes being able to get about and at others not being able to leave his bed.

At the end of June Dr. Evans, of Shaftesbury, kindly met me in consultation. We suggested castration to him as the one means other than the more serious measure of perineal drainage or suprapubic prostatectomy of averting the steady and increasingly painful progress from bad to worse during a much shortened life.

After he had considered the matter and got a little worse, he decided to have the operation performed. This was done on July 15th. The testicles were removed in the usual way, by incisions extending downwards from each inguinal ring, Dr. Evans doing one and myself the other. The cords were secured by a double ligature through the cord on a blunt needle, both sections being then tied separately, and then the whole *en masse*. On one side the vas deferens was included, and on the other excluded from the ligature. After the operation he complained of slight pain on the side on which the vas was included. Chloroform was used, which the patient took well. The wounds were stitched up with horsehair, without any drainage, and dressed with iodoform gauze and sal alembroth wool, iodoform being previously dusted in. At 7 P.M. the same evening the temperature was 98.6 and the pulse 76. At 9.15 catheter was passed.

On July 16th, at noon, the pulse was 76 and the temperature 98.6°. At 7 P.M. the pulse was 80, and the temperature 100°. A soft catheter was put in, but not tied, and left in till July 25th.

On July 17th, at 11 A.M., the pulse was 80, and the temperature 99°. At 7 P.M. the pulse was 76, and the temperature was 98.6°.

On July 18th, at 3 P.M., the pulse was 76, and the temperature 98.6°.

On July 22nd, at 11 A.M., the pulse was 76, and the temperature 98.6°. The wounds were dressed. They had healed on both sides by first intention.

On July 25th the patient complained of pain and tenderness over the pubes, and passed some ropy mucus, notably

¹ Read at a Meeting of the Dorset and West Hants Branch of the British Medical Association.

two club-shaped pieces about 3 inches long covered with phosphates, accompanied with a good deal of pain before and during the passage. The bladder was washed out and the catheter removed.

On July 26th the wound was dressed. The patient had had no occasion to have the catheter passed.

On July 31st the stitches were removed and the dressings left off. There was no suppuration in either wound, and the catheter was never passed from July 25th, ten days after the operation, to the present date (October 18th, 1895).

One of the testicles was sent to the Clinical Research Association. The following is their report: "On tearing out the seminal tubules a few spermatozoa are seen. Owing to immersion in spirit they are much shrunken. There is no naked-eye evidence of disease in the portion of testis sent." A section showed characters of the senile testicle.

After the operation for about ten days the old gentleman's mind was somewhat peculiar. He did not believe himself at home, and did not know his relatives who were nursing him, trying at times to be violent, and I almost thought I was going to see one of those cases we hear so much about, namely, insanity following this operation. He fancied strange people were in the room, and heard strange voices talking to him. Happily this speedily passed away and has given him no further trouble.

His present state is as follows: Since ten days after the operation no catheter has been used at all. He can now go four or five hours at a stretch without passing water, which comes in a good stream and "beautifully clear" as he calls it. He has, he says, put on a stone in weight; is ashamed of the amount he eats, and his bowels are regular; and he says "his life is a pleasure to him" and is able to drive about and attend to various little duties. The only pain he feels is just before he passes water, and that is slight.

The prostate, when examined on October 15th, was about a half or perhaps a third of the size it was before operation, and the urine is plentiful, specific gravity 1020, acid, no albumen.

CONGENITAL ABSENCE OF OVARIES WITH RUDIMENTARY UTERUS.

By JOHN RAMAGE, M.D.,

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Mrs. B., aged 29, and married for eight months, consulted me about the absence of menstruation. She has never menstruated, but when about 13 years of age she had a violent "stomachache," and her elder sister, thinking the pain premonitory to menstruation, gave her a heroic dose of penny royal, but without the desired effect. Since then she has never had any of the symptoms usually present at or about the menstrual period. She has no desire for sexual intercourse, and little, if any, feeling of pleasure during its performance.

The breasts are moderately well developed, and though slim, her figure is fairly well proportioned. Her general health is good. She has never suffered from typhoid or other fever, or from any acute disease, with the exception of a slight attack of influenza about four years ago, and she has never had an accident of any kind. Her father died, aged 50, of a chest affection which lasted for twelve months, and resulted from the bursting of a blood vessel while lifting a heavy piano case. Her mother is alive and healthy, and has had seventeen children, the last two being twins. Five children died young of infantile complaints. The survivors are all healthy. The eldest sister is married and has had one child, and expects another shortly; her menstruation since puberty has been normal. The two younger sisters, aged 15 and 13 respectively, have neither as yet menstruated.

I found the external genitals natural as regards size and consistence. The vagina, cervix, etc., to digital examination, and, as viewed with the speculum, were apparently normal; but bimanual palpation failed to map out the uterus. I introduced a uterine sound through the cervix for $1\frac{1}{4}$ inch, but it would go no further, the direction it followed being that usually assumed in cases of anteverted uterus. Thinking the obstruction might be due to an acute antelexion

which I had been unable to distinguish by manual examination, I introduced a No. 6 gum-elastic bougie after heating and oiling it, in the hope that it might pass any obstruction from this cause, but it also only passed for $1\frac{1}{4}$ inch. Examination *per vaginam* showed no trace of ovary on either side, and a careful examination *per rectum* yielded the same negative result.

I expressed to the patient my opinion that she had no ovaries, and only a rudimentary womb; that she would never menstruate, and that she could not possibly conceive; and proposed that she should see Dr. R. T. Smith at Soho Hospital to get a corroborative or other opinion. She went, and he arrived at the same opinion as expressed by me; only, he thought, though he failed to make them out, that the ovaries might be present, but in a rudimentary state as a result of arrested development.

I would, in every case in which menstruation is unduly delayed, strongly recommend that a most careful examination should be made, and would strongly deprecate a routine habit of prescribing medicine prior to examination in the vain hope that good will result, as had been done in this case, to the disappointment and dissatisfaction of both doctor and patient.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

COCAINE POISONING.

IN reference to the case of cocaine poisoning described in the BRITISH MEDICAL JOURNAL of November 9th, 1895, p. 1162, the following case, not hitherto published, may be of interest in view of the large use of this drug as a local anæsthetic.

A medical man aged about 30, gave himself a hypodermic injection of cocaine to relieve local rectal pain. This not proving effectual he repeated the injection about five minutes afterwards, each time filling the syringe completely, the total amount given measuring $\text{m} \times \text{l}$. Immediately after the last injection he noticed that the solution used was a 35 per cent. solution, instead of being, as he had imagined, a 1 per cent. solution. He had by him solutions of the different strengths in bottles of the same size and shape, hence the mistake. The total amount of cocaine hydrochlorate injected hypodermically was therefore about 14 grains. Feeling weak he lay down, and I saw him about eight minutes after the second injection. He was then perfectly conscious, with a moist skin, and almost pulseless at the wrist. An injection of $\text{m} \times \text{v}$ of ether was given hypodermically, together with some brandy and hot tea by the mouth. The effect of the ether was to cause the radial pulse to revive, but at the end of seven minutes it again became imperceptible. These ether injections were therefore repeated again and again every seven to ten minutes for nearly two and a half hours, being resumed as soon as the pulse became thready. Meantime the patient complained of thirst, drank copious draughts of hot weak tea, perspired very profusely, and passed large quantities of almost colourless urine. He was in a feeble apathetic state, but quite conscious, and there were no convulsions. The ether injections caused scarcely any sensation to pain, although sensibility to touch was apparently unimpaired. At the end of rather more than an hour the heart's action became intermittent, every third beat being missed. A change of posture was suggested, and this symptom passed off after a time. In all 2 drachms of ether were given hypodermically, and 2 ounces of brandy by the mouth, and 80 ounces of urine were passed in the course of five hours, the patient taking about the same amount of liquid by the mouth. At the end of three hours it was found possible to leave off the injection of ether, and at the end of five hours the pulse had to a large extent regained its tone, while the weakness was less marked.

Next day the patient stayed at home, and seemed fairly well except that he was dull and had little appetite. On the second day he walked out for about a quarter of an mile, and then became very faint. Otherwise his recovery was uninterrupted, and there were no after ill-effects. The extreme