Before being called upon to give evidence the expert witness should express his opinion on the facts before him in a written report, and it is well that the reasons for the opinion should be concisely stated in the report. The opinions expressed in the report should be the unalterable views on which the expert has no doubt whatever. Any expressions of opinion on which there is any possibility of doubt should be omitted from the report.

In giving evidence the witness should remember that it is his duty to help the court by answering questions put to him in a clear, concise, fearless, and audible manner. In giving evidence in chief the answers should be brief and to the point. In cross-examination the answers should be as concise and clear as possible. Long explanations and evasions of a direct answer are likely to create a bad impression. A direct negative or affirmative should be given where possible; if this is not possible the reasons for the inability to give a direct answer should be clearly and courteously stated. Lengthy explanations and attempts to give lectures in the witness-box are apt to weaken the evidence and to raise points of which the cross-examining counsel will not fail to take advantage.

The duty of a witness, whether he is an expert or ordinary witness, is to answer questions put to him by those entitled to do so. He should avoid making any statements which are not answers to questions put. The expert witness should avoid giving any answers which are not absolutely free from ambiguity. Thus, for instance, if a question is a double or triple one, the witness should ask for the compound question to be suitably divided so that separate answers may be given to each. If statements from books or reports are put to him the expert witness will be wise to ask to see the work in question and to give his explanation of the bearing which any written statement has on the inquiry.

In conclusion, from a very lengthy experience as a forensic witness, I should like to express my very great appreciation of the courtesy and consideration which is invariably extended by members of the legal profession. It is the duty and privilege of the expert witness to assist justice by his experience and advice. It is his duty to ensure that his views are clearly put before the court and that not one jot or tittle should be withheld or left in doubt.

CONCLUSIONS.

The relationship between chemical research and medicine is so close that advances in each occur *pari passu*. With the development of bacteriology fifty years ago, and the impetus derived from its application to medicine, chemistry became somewhat overshadowed.

There have been clear signs of a great revival in the study of biochemistry during the last ten years, and at present medicine is looking towards chemistry and its applied branches for great and immediate advances.

Physical chemistry opens the gates to advances in an untrodden field of medicine and therapeutics. Already colloidal chemistry is supplying a host of new remedies possessing special attributes owing to their physical state.

In the solution by chemical methods of problems relating to disease or poisoning in the body, observations and analyses are often perforce conducted on very small quantities of material. It is for this reason that microchemical and colorimetric methods are frequently employed.

In chemistry as in medicine specialization of work has become necessary, since the fields of each are so vast. The interest taken by the various chemical societies in this country in biochemical problems, the rapid growth and influence of the Biochemical Society, and the attention given to biochemical problems by the various physiological and pathological societies, are all evidence of the intimate co-operation existing between chemistry and medicine.

Pure chemistry has as its religion absolute and scientific accuracy of work. It is necessary that this spirit of scientific accuracy should be the foundation of all those branches of chemistry applied to medicine. The close co-operation between pure chemistry and those branches applied to medical research is the best safeguard against any dangers from over-specialization. Biochemistry will be best advanced by the application of the principles of pure chemistry in its work.

It is to be hoped that biochemistry will more and more attract to its ranks men like Pasteur, who have ingrained in them the principles and methods of pure chemical science, and who will approach the biological problems in that spirit of critical judgement and of experimental investigation which is so essential for great work.

CHRONIC PELVIC PAIN IN RELATION TO NEURASTHENIA.*

BY

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CHRONIC pelvic pain in relation to neurasthenia is, I think, a subject of very great importance; this is due to the fact that large numbers of unnecessary operations have been and are being performed for this condition, owing to the operator not recognizing the general condition of the patient and ascribing all the various symptoms that she complains of to some little pelvic abnormality, which could not in any way, even with the most vivid imagination, be rightfully attributed as the cause of her general condition. In other words, operations are being performed from an entirely wrong diagnosis. These operations are not altogether devoid of danger, as the statistics show; they subject the patients to the risk of serious complications later on, and even at the very best they accentuate the patient's sufferings and often drive her to seek medical advice elsewhere.

Of course, when cases of chronic pelvic pain are associated with definite physical signs, such as in pyosalpinx, there is generally no trouble in associating the pain with the physical signs, but such cases only form a small percentage of our patients. The largest percentage of patients who come to us complaining of chronic pelvic pain have generally nothing abnormal in the pelvis at all, or perhaps some minor condition, such as a mobile backward displacement of the uterus, which is frequently wrongly regarded as a cause of the pain.

The subject of neurasthenia is only gradually coming to be understood. About twenty years ago the diagnosis of neurasthenia was generally considered as tantamount to no diagnosis at all. Probably the best article that has been written on this subject, and one of the earliest articles, was written by Herman. He differentiated between the two extreme types of neurasthenia and described them with great accuracy: one type might be called the maniacal type, and the other the melancholic type. I am going to deal with the former type, because it is invariably associated with chronic pelvic pain. I hope, however, to be able to deal with the melancholic type at a future date, and to show how the vast majority of cases of descent of the pelvic floor are associated with it.

There have been many previous ideas as to the causation of pelvic pain in the absence of definite abnormal physical signs. It used very commonly to be ascribed to ovarian neuralgia, to prolapse of the ovary, to supposed adhesions, to supposed appendicitis, to mobile displacements of the uterus, and to varicocele of the pampiniform plexus; but all of these ideas are gradually becoming recognized to be erroneous, and some of them, especially ovarian neuralgia, are seldom if ever mentioned at the present day.

The previous methods of treatment of this condition depended on whether the case came under the view of a physician or a surgeon. The physician treated such cases by poultices, plasters, opiates, sedatives, hot vaginal douching, vaginal tampons, and numerous pessaries, all of which only aggravated the general condition, and the patient often became so bad that she had to be subjected to what used to be known as the Weir Mitchell treatment. This, in many instances, only made the patient a chronic confirmed invalid, and aggravated the condition by giving her ample time for her uneasy mind to dwell upon her numerous aches and pains. When it became evident to the physician that her mind was dwelling too much on her aches and pains, he prescribed asafoetida and valerian, for the purpose of distracting her attention to the smell of the medicine. Even at the present day crowds of such patients can be seen at a certain fashionable watering place, drinking water saturated with sulphuretted hydrogen in the hope that it may alleviate or cure their troubles.

* A paper read before the Edinburgh Obstetrical Society, Wednesday, December 10th, 1924.

If, however, the patient came under the care of a surgeon, he, not recognizing the neurasthenic condition, performed all sorts of operations, which also only aggravated her mental and nervous condition, and in not a few instances her days were ended in an asylum.

Perhaps some will remember how common the removal of the ovaries was twenty-five years ago for ovarian neuralgia, until Herman spoke most strongly against it, and from that time the operation gradually commenced to die out. I think we are all now agreed that the removal of the ovaries in those cases was most highly detrimental to the patient's welfare. I have seen numerous chronic invalids who have stated that since their ovaries were removed they have not had a single day's health. Only last week I saw such a case, who appeared to me to be on the verge of insanity—a truly pathetic picture.

Immediately following that there came a great boom in operations for appendicitis, and if any patient happened to have a pain in the region of the right iliac fossa the diagnosis of appendicitis was usually made, and in many instances as the operation was being performed the appendix was found perfectly healthy. Then came such operations as ventral and vaginal fixation, but, on account of complications arising in subsequent pregnancies, vaginal fixation was soon abandoned, and ventral fixation or hysteropexy was not looked on altogether with undiluted favour. Then came various forms of suspension, and the Alexander-Adams operation, Gilliam's operation, and the Baldy-Webster operation; but all of these operations are fast being consigned to obscurity. Take a perfectly parallel case with reference to movable kidney. We all remember, some years ago, how frequently nephropexy was performed in women suffering from pain slightly to the right of the umbilicus, or pain in the back, with all the same concomitant symptoms, such as dragging of the leg, headaches, etc., as are associated with the cases that I am at present describing, and the general surgeon can be heartily congratulated on the fact of having realized that nephropexy not only did not benefit them, but actually made them much worse; consequently, so far as I know, this operation is now practically abandoned.

How frequently one comes across a patient, who has had one of these operations, and who says that she is worse than ever, that the operation had only aggravated her condition, and that she wishes she had never submitted to it. With regard to ventral fixation or hysteropexy, an additional trouble is added in case of a future gestation. I have seen several cases where parturition was complicated by it, and at least two deaths in labour as the indirect result of this unnecessary operation. With regard to the Alexander-Adams operation, Herman spoke strongly against it, and I think his views have been confirmed by many observers since his time. Gilliam's operation and the Baldy-Webster operation are in a similar category. To think that a mobile displacement of the normal uterus could cause any trouble necessitating any of these operations is a pure delusion.

In 1923 I paid a visit to America, and had a long conversation with Dr. Hall of St. Louis, the leading gynaecologist in that great city, and head of the St. Louis Maternity Hospital; he entirely concurred with these views. Such views are also held by the leading gynaecologists in Sweden and by many first-class teachers in London, and I would refer you to the valuable paper read before the North of England Obstetrical and Gynaecological Society by Dr. Archibald Donald on the treatment of mobile backward displacement of the uterus (BRITISH MEDICAL JOURNAL, December 13th, 1924, p. 1087). At the Annual Meeting of the British Medical Association in 1921 I expressed similar views at the Obstetrical and Gynaecological Section, and I had practically the unanimous support of the meeting.

I now wish to describe briefly the position of this question at the present day, and for my purpose will roughly classify pelvic pains generally into three classes:

- (a) Cases due to inflammatory tumours or neoplasms.
- (b) Cases due to urinary troubles.
- (c) Cases associated with chronic dilatation or neuralgia of the great intestine or caecum.

It is with the last class that I wish particularly to deal, and it is this class that is so invariably associated more or less with the symptoms of maniacal neurasthenia. In such cases the patient complains of pain in the right iliac fossa over the caecum, or in the left side of the lower abdomen over the descending colon. In rare instances the pain will follow the line of the transverse colon, or may perhaps be found a little to the right of the umbilicus.

In nearly all these cases the characteristics of the pain are more or less similar. The patient describes it as a dull gnawing or aching pain in the right or left side, which often passes round to the back or down the thighs, causing numbness or dragging of the leg on the affected side. Bimanual examination will reveal nothing abnormal, or perhaps in a few cases a mobile displacement of the uterus, which I regard as in no way associated with this condition, but merely as an accidental position of the uterus which causes no symptoms. If the patient is asked whether she suffers from headaches, sleeplessness, "weak turns," palpitation, and all the general symptoms of neurasthenia, they will, as a rule, all be present. Not only that, but in most cases there will be no difficulty in observing certain facial characteristics, which are also a very good guide to the diagnosis. These characteristics are a want of the normal expression of the face, the angles of the mouth drawn slightly backwards or downwards, and a marked dilatation of the pupils.

As to the cause of the condition, we all know that probably the most common trouble amongst all women is constipation, intestinal stasis, or some intestinal irregularity; if the patient's general nervous system is normal the constipation is seldom associated with pain, but when for any reason her nervous system becomes irritable, or her nervous resistance to pain falls below normal, she is bound to feel pain first in whatever part of her body is most liable to irritation, and that part of her body is the great intestine and caecum. Then her mind is fixed on the situation of this pain, and a vicious circle is formed. The patient commences to worry about the pain, her nervous resistance is still further lowered, the pain becomes gradually worse, and before very long she goes to someone to obtain medical advice.

If by chance such a patient happens to have a mobile backward displacement of the uterus, and an operation is suggested and performed with a view to placing the uterus in a position of anteversion, it is quite possible that the mental satisfaction to the patient of having something radical done, and the three weeks' rest in bed, together with a complete change of atmosphere, will ensure temporary benefit; but it would be a great mistake to think that the actual details of the operation or the placing of the uterus in an anteverted position could do her any good.

In reading the accounts of the results of these operations I have noted the unanimity of the operators in claiming success for them from the fact that the uterus remains in an anteverted position even after a subsequent gestation, and not one single word as to whether the patient's symptoms are alleviated or cured, which, I think, is of primary importance. What difference can it make to the patient whether the uterus is anteverted or retroverted so long as her headaches, her pains, and her numerous symptoms remain still unrelieved?

In many cases a careful examination of the pelvis, and an assurance that she has got no pelvic disease and that the condition is merely due to worry or nervousness or constipation, will make her feel quite well. In other cases a mixture of potassium bromide and magnesium sulphate, together with fresh air and outdoor exercise, telling her not to tire or fatigue herself in any way and to stop worrying, will generally be sufficient treatment.

I have specially considered this subject for many years, and am fully convinced that the old methods of treatment I have spoken of are not only detrimental to the general condition but detrimental to the patient. I have also been greatly impressed on innumerable occasions by the ease with which a mere assurance to the patient that she has got no pelvic disease will not only settle her mind, but will make her quite well again.