CLINICAL LECTURES

DELIVERED IN

THE OUT-PATIENT DEPARTMENT OF THE
HOSPITAL FOR SICK CHILDREN,
GREAT ORMOND STREET.

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III.—MENINGITIS. (*Concluded.*)

HAVING thus laid before you the reasons which satisfied my mind that I had not to deal in this case with any of the three disorders which simulate acute hydrocephalus, I must briefly sum up the positive evidence which identifies the condition as one of the forms of the latter disease itself.

First, the mode of invasion, the constipation, the loaded tongue, the vomiting, the intolerance of movement, the cry, the squinting and convulsions, the dilated and motionless pupils, the subsequent blindness and evidence of optic neuritis, the sequence of the symptoms and the course of the disease up to the time of amendment, form a combination of phenomena which we meet with in acute hydrocephalus, and in no other disease, except perhaps less completely in the meningitis of adult life.

The question, to which form of acute hydrocephalus the present case must be referred, cannot, however, be answered with the same confidence as the preceding inquiries.

The varieties of organic cerebral affection included under the general term acute hydrocephalus are described as three—acute essential hydrocephalus, simple meningitis, and tubercular meningitis. The morbid anatomy of these different forms may be briefly stated thus. In acute essential hydrocephalus there is found effusion of simple serous fluid only in the ventricles and arachnoid cavity with or without softening of brain-substance. There are none of the products of inflammation. In simple meningitis the effusion is fibrinous and corpuscular; there is lymph as well as serum, and softening of the central portions of the cerebral matter. It is an inflammation of the meninges and brain-substance. In tubercular meningitis these same morbid changes are accompanied, and probably excited, by the presence of miliary tubercle. The distinction between these different pathological conditions is not positively betrayed during life by any marked difference in the symptoms; the existence of one or the other can only be inferred from slight and uncertain signs, and from general considerations. The age of the patient throws less light upon the point than it has been assumed to afford. It is stated by some authorities that tubercular meningitis does not occur in very young children, but is replaced by the simple form. Dr. West, however, found that, on an average, five out of forty fatal cases examined by him *post mortem* were infants under a year old; and Bouchut states that, in fifteen fatal cases in children from eight days to thirty months old, ten were tubercular, four simple, and one acute essential hydrocephalus. Trousseau affirms that twenty-nine out of thirty cases of meningitis in children are of a tubercular character, and that tubercular deposit is absent in the meninges in rare cases only. These statistics relate to fatal cases alone; but, considering how rarely recovery takes place from acute hydrocephalus in any form, we may venture to assume that the large majority of all cases are of tubercular origin, and that, as far as has yet been made out, the proportion is much the same in early infancy as in later childhood. The age of the child, then, affords no satisfactory indication, and we must turn to the history and the symptoms.

Acute essential hydrocephalus, or acute dropsy of the ventricles, is described as usually supervening upon scarlatina or nephritis, and allied to the dropsy of other serous cavities and of the connective tissue which occurs as a sequel of the same disease. A similar condition does arise independently, however; and I have seen one fatal case in which all the symptoms during life were those of acute hydrocephalus, which did not supervene upon any previous disease, and where the only morbid changes found after death were extensive effusion of serum into the ventricles, and softening of the septum lucidum. In such cases, however, where there is no discoverable cause for dropsy, it is probable that the process is of an inflammatory nature, differing from the ordinary meningitis just as pleurisy, with simple serous effusion, differs from that accompanied by a plentiful exudation of plastic lymph.

In this form, too, the attack comes on insidiously, and, with the exception that the symptoms are perhaps less pronounced and severe

than in the others, there is nothing in either of them or the history sufficiently characteristic to enable us to distinguish it in actual practice. Simple meningitis differs from the others chiefly in the mode of invasion—the access is, as a rule, sudden; without that long train of prodromata which signalise the approach of the more insidious forms—those slight disturbances of the functions of the nervous centre which betray the deposit of tubercle or the effusion of serum slowly and secretly going on there. In simple meningitis, the cause of the inflammation is obscure; but it seems, at any rate, to be one which usually produces little cerebral disturbance until active inflammation is lighted up. When once this has fairly set in, when once the specific symptoms have commenced, the phenomena in the two forms of meningitis are identical. And then, in some instances of the tubercular disease, the premonitory symptoms are absent or are overlooked, and the previous history affords no clue.

Now, in the case before us, the mode of invasion was that of acute essential hydrocephalus, or tubercular meningitis, while later, the symptoms of excitement were so marked that they indicated acute inflammation rather than simple serous effusion. The active symptoms showed that there was meningitis—the way in which these symptoms had come on, that it was of tubercular origin—and this I never doubted for a moment, until the patient recovered. Now, however, although I can have no doubt that the patient had meningitis, in view of the difficulty of distinguishing between the simple and tubercular forms, and the extreme rarity of recovery from the latter, I cannot express a positive conviction that this case was of that kind. But I may mention that some evidence, with which I was unacquainted at the time, has since come to my knowledge, which greatly strengthened the presumption in favour of the tubercular origin of the disease, and that is the intensity of the tubercular taint existing in the family. I have found that both the parents of the mother died of consumption; that her brother died of the same disease after his discharge from the Brompton Hospital; and that the father's aunt was at the present time an in-patient of that institution for the same complaint. The child, therefore, would probably inherit the tubercular diathesis with great intensity. Leaving, however, the particular origin of the disease undecided, we may, I think, conclude that in their case there was encephalic inflammation; that the progress of this was unusually slow, and the exudation poured forth probably neither very profuse nor rich in young cells. The amount of effusion was not great enough to produce fatal pressure; pus was not developed, and the damage inflicted was not so severe as to cause irreparable softening of brain-substance.

Lastly, there is one lesson which this history teaches us, and that is, that in cases of acute cerebral disease in children, enormous as the mortality is, we are not absolutely to give up all hope—to cease to try and do anything to help the patient. The old practice of a vigorous antiphlogistic treatment is now well-nigh universally abandoned. We no longer try to cut short the inflammation, and terrify and exhaust our patients by bleeding them from the arm, or by a coronet of leeches, or torture them with blisters or antimonial ointment to the scalp. We have learnt that such measures rather hasten than retard the fatal event. The obvious futility of these active measures has led to a belief that nothing can be of any avail, and the doctor is tempted to look on a passive spectator of the terrible calamity he feels powerless to avert. Now, I am altogether unwilling to accept this position. It is, indeed, only too probable that tubercular meningitis will prove completely beyond the control of medical art. But then we can never be absolutely certain that the disease is of the tubercular form; and we do not yet know that even that intractable malady is altogether unalterable, and cannot in any degree be influenced for good. In very rare and exceptional instances, as I told you, recovery has taken place; and it is reasonable to suppose that the event might be determined by the nature of the surrounding conditions. By rendering these conditions as favourable as possible we can, by our art, increase the chance of recovery, as by rendering them adverse we can increase the chance of death.

It is impossible to say how small a matter may turn the scale when the balance swings evenly; and, although in the vast majority of instances the series of pathological changes are so serious as to be necessarily fatal from the first moment of their initiation, and their course cannot be materially modified by any external influences we are able to bring to bear upon them, yet now and again the morbid series may be less extreme, the results produced reparable, and recovery possible. Upon such critical cases our action may be decisive for good or evil.

It is true that we cannot judge with exactitude what the favourable and unfavourable conditions are; but we know, roughly, that violent measures, such as bleeding and hard purging, must hasten death; that their influence on the general condition must be hurtful; for, while we have no evidence that they have the slightest power in modifying the

inflammatory process, we know that they are directly injurious in certain ascertained effects. The loss of blood will increase the tendency to serous effusion and convulsion, which are great sources of danger, while the free purging will eventually favour a similar result by impoverishing the blood through the drain of albumen which it involves. Both processes are exhausting, and inimical to the ready repair of injured tissues.

On the other hand, we know that careful feeding, healthy surroundings, a judicious regulation of symptoms by drugs, the assistance by artificial means of natural functions which are in abeyance, favour recovery from disease generally. These measures we must adopt in acute hydrocephalus as in the rest; and, when symptoms indicative of serous effusion within the cranium become apparent, such as dilatation of the pupil, slowness of pulse, and stupor, we may legitimately attempt to relieve this by a brisk purge or by diuretics. I have seen the most remarkable improvement follow a cathartic dose of calomel; and I believe the reputed efficacy of purgatives in this disease is due to their influence in temporarily lessening the fluid in the cranium. The condition of the patient in such cases is probably utterly hopeless, and the advantage gained transient and futile; yet we must give such relief where we can. It is, however, I think, our duty to do even more.

While we are bound to avoid those rude and violent measures which, we have reason to believe, do positive harm by their general action on the system, there are two powerful agents which we may bring into play, which certainly do not seem to be injurious in their general effect upon children—at any rate at the time—and during the administration of which, if not by their influence, recovery has taken place in certain instances. I allude to mercury and iodide of potassium: they are both well borne by children. You may here see this with regard to the former every day in cases of congenital syphilis, and in certain forms of chronic vomiting and diarrhoea, in which mercury is given in small doses in the form of grey powder for a considerable time, not only without producing the specific effects of the drug, but usually with the most positive and palpable good results.

A few seemingly hopeless cases of acute hydrocephalus have recovered under mercurial treatment; and it is well at the outset to attempt to regulate the torpid bowels and to relieve vomiting by small doses of grey powder twice or thrice a day. That iodide of potassium may be taken in considerable quantity by children with equal impunity is exemplified by the case before us, and by many others of syphilis and chronic hydrocephalus, in which I have administered it continuously for a length of time without any evil result whatever.

Now, many of the cases of recovery from the meningitis of infancy which have been recorded recently, including the two in Niemeyer's experience, and which he judged to be undoubtedly tubercular, have occurred under the free use of iodide of potassium: and modern cases, since diagnosis has become more accurate, give more valuable indications than could be drawn from the looser pathology of former times. Such considerations as these induced me to adopt the full treatment by this drug in the present instance. But whether the favourable event which followed was due in any degree to the influence of the remedy, can only be determined by more extended experiments.

ON AMERICAN MEDICAL INSTITUTIONS.

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HAVING lately returned from a tour in the Northern States of America, undertaken partly for recreation and partly with a view of becoming acquainted with the medical institutions of the country, I think it may not be uninteresting to my professional brethren at home, if I write a brief outline of the several courses of medical study pursued there, together with a few remarks on the chief medical schools; and I am the more emboldened to do this, when I consider the little that has been written or said upon the subject by authors and journalists. With regard to medical affairs on the continent we are well informed; every remarkable case is duly published, each new plan of treatment widely known, and the names of the various professors are to us almost as household words. Students flock to Paris, Vienna, or Berlin, but few indeed find their way across the Atlantic. That this should be the case is a matter for regret; for I can, from personal experience, assure those who have leisure to travel, that they will not only reap much benefit from a visit to America, but will be received in the most cordial manner by the profession there. There is unfortunately a proneness to undervalue everything coming from our sister country, which only more extended personal intercourse will dissipate.

The number of medical faculties and colleges is very great; indeed

it has been said, and with some show of truth, that there are more of such institutions in America than in the whole world besides. Every city of any size or importance possesses one, two, or more; each endeavouring, in too many cases, to outstrip the other in giving facilities for obtaining diplomas. This naturally leads to much competition and corresponding laxity in the course of instruction and final examination. One can hardly be surprised that where the portals are thrown so widely open many rush in. Also, as no previous examination in arts is required in nine-tenths of these institutions; as the time required for attendance on lectures is extremely short; and as candidates are rarely rejected by the examiners, who are usually their own teachers, the ranks of the profession are yearly swelled by those who reflect no credit upon it, but rather tend to lower its status with the public generally.

It must be admitted in extenuation of this, that in so vast a country as America, to which the tide of emigration is constantly flowing, where in a few years, or even months, small settlements spring up into towns, and towns into large and populous cities, the demand for medical men must be great, and the supply great in proportion.

I have in my possession records and prospectuses of a large number of these institutions, most of which I have personally visited; but these are only a tithe of the whole. They are nevertheless amply sufficient as a foundation for the following remarks.

The only professional title given in the States is that of Doctor, there being no institutions analogous in any way to our colleges of physicians and surgeons. This degree, which every legalised medical school has the power to grant, entitles the holder to practise medicine, surgery, and midwifery; and the qualifications necessary for obtaining it, speaking generally, are as follows.

1. The candidate must have attained the age of 21 years, and be of good moral conduct.

2. He must have been for three years, including the time spent at the medical school, the pupil of some respectable medical man.

3. He must have attended two full courses of lectures, with dissections and clinical instruction, at a recognised college, the latter course at the school where he proposes to graduate.

4. He must present at the time of examination a thesis on some medical subject written by himself, and be prepared to defend it if necessary.

5. He must pass the professional examination in a satisfactory manner.

Each course of lectures is of about five months' duration, and extends from the beginning of October until the end of February, being somewhat equivalent in time to our winter session. Each course is complete in itself, and embraces all the subjects necessary for graduation. These are much the same as those taught in our own schools—namely, anatomy, physiology, medicine, surgery, midwifery, chemistry, and materia medica. In most of the schools there is a summer session of three or four months, where auxiliary lectures are given on collateral and special subjects, and practical work is pursued in the laboratory, dissecting-room, and elsewhere. Attendance upon this course, though not necessary for a degree, is very generally recommended to the students, and many avail themselves of its advantages, more especially as in a large number of schools no fee is required. Several have preliminary terms of a few weeks' duration just before the regular winter session, in order that those just entering may be better prepared for the regular routine of professional study. Almost all offer private instruction to those willing to pay for it.

Owing to the short time which students are *compelled* to spend in the prosecution of their studies—not much more than equal in point of time to a year's instruction in a British school—the lectures are much crowded together, and an unusual number are of course obliged to be given daily, allowing little leisure for reading, and less for hospital work. The result which must and does follow, is partly obviated by the better class of students almost invariably taking some hospital appointment immediately after graduation, and thus obtaining that practical acquaintance with disease without which they are totally unfitted to become efficient practitioners.

The lectures are eminently practical, are illustrated, when possible, by drawings, preparations, and specimens, and are usually listened to with very great attention. They are of an hour's duration, and often follow each other in such quick succession that the students are engaged for several hours without leaving their seats.

Of the clinical lectures I can speak in terms of almost unqualified commendation. They are delivered daily either in the theatre of the medical school or in the hospital. Here, at the appointed hour, all the interesting and instructive cases are exhibited, and the various necessary operations performed before the whole class, the steps of each being minutely described, and the remarks illustrated by every possible means. The students are thus brought into direct contact with the patients. Shortly before each lecture, the professor selects from the