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ART. XII.—*On Hydrocephalus, which occurs at a particular Period of Life.* By HENRY KENNEDY, A. B., M. B., T. C. D., L. R. C. S. I. ; one of the Medical Officers of St. Thomas's Dispensary.

[Read before the Obstetrical Society, May 4th, 1843.]

THE time of the meeting will be taken up for a brief period, while I endeavour to lay before it the description of a form of hydrocephalus, which, as far as I can ascertain, has scarcely, if at all, been noticed by authors. Two or three cases of the form of disease I allude to are given by Abercrombie in his masterly work ; but though he has spoken of varieties of hydrocephalus, I find no mention made of this one, and to myself it appears to call for particular notice. Though I thus speak of it, as a particular form of hydrocephalus, I wish it to be distinctly understood, as not differing so much by its symptoms from the more ordinary forms of the disease, as that it occurs at a particular time of life. In fact the disease to which attention is about to be drawn, is not the hydrocephalus of childhood, but of more advanced life ; and this may probably be the reason why it has

not been recognized as connected with this disease, and yet it is sufficiently marked in its characters to entitle it to be placed under this head. Within the last nine years upwards of thirty cases of the disease have come under my notice. It is one of a very insidious nature, running a marked course, and unfortunately too often proving fatal.

The period of life at which it is met, ranges between 12 and 25 years: about 15 is a very common time to see it. In my experience it has been much more common among females than males, in the proportion of two to one. Cheyne has observed that when hydrocephalus is seen in persons above ten years' old, it is most common in females.

It usually commences with the ordinary symptoms of fever, but in a very mild form; there is some quickness of pulse, heat of skin, furred tongue, and headach. I say it usually commences in this way, for it may begin by the patient making a distinct complaint of the head for four, five, or more days, before there is any other symptom, the patient all this while going about, and attracting no notice. The complaint in such cases is of giddiness, or weight in the head, and at times pain; and I have known females at a boarding school more than once under these circumstances, and previous to the attack, express a wish to have their hair cut. One instance I saw, where a lady, aged 20, came down to breakfast not so neatly dressed as usual; the following day symptoms of this disease showed themselves, and then it was recollected that she had been complaining of her head for some days previously. I have known other instances where the disease commenced in this way while they were still going about, and where it was the friends who were struck with something strange in their appearance, and not that any complaint was made by the patients themselves.

The most common way, however, for the disease to show itself is, as has been already stated, by symptoms of a mild fever appearing. The remedies employed answer all the expectations, and every thing appears to go on most favourably for ten, twelve,

or fourteen days. I have even known the patient to get so well to all appearance, as to be out of bed and pronounced convalescent, and yet in a day or two take to it again, and be attacked with the disease. In the great majority of cases, however, the patient has not left the bed before symptoms of a different kind from what had been previously present make their appearance, and the disease then pursues its usual course. In fact, many of these cases convey strongly the impression, that the case was one of simple fever up to the twelfth or fourteenth day, but that then some new disease was superadded to it. This may be so, and it would be a point of very considerable importance to ascertain accurately: for reasons, however, to be stated farther on, I have always thought that there existed but one disease from the first.

It has been already stated that at the onset, and often for an entire fortnight, the symptoms are very mild, so much so, that the tongue will be scarcely furred, the patient will even ask for food, and will enjoy sleep at night. There may be some complaint of headach, which local bleeding is sure to remove, and even this in many cases is so slight, that it is only by the closest questioning the patient will admit they have any at all. If, however, the disease I wish to bring under notice is about to supervene, these symptoms gradually change, or more correctly, perhaps, begin to be slightly aggravated, so slightly, however, as to render it difficult to say what day this commences. The tongue becomes more furred; the skin gets something of a feverish heat; and the pulse, which most probably had been down to between 80 and 90, rises to nearer 100. The patients may now too complain of the head, but as a general rule they always make light of this; in only four instances have I seen it to such a degree as at once to draw attention to it. I have sometimes been led to perceive the serious nature of the case by the nurse casually stating, that on the previous night the patient had not slept so well as usual; their rest had been broken by talking in their sleep, or they had awakened with a scream. This was an order of symptoms which ever appeared to me to call for at-

tention, for they have frequently gone on for three, four, and five nights, and yet the patient appeared so well in the day-time as to lead any one to think that those night symptoms were of no consequence. At other times again the first symptom which caught my attention was *vomiting*. It might occur only once, or it might be repeated, but it never took the prominent place that it does in the hydrocephalus of childhood, and in several cases it was entirely absent. I think it occurred more frequently in the morning than at any other period of the day, and I have seen it attributed to the patient eating breakfast before he was thought fit for it.

In the state described, and without any appreciable change whatever, the patient would remain four or five days, more or less, according to circumstances, and then other symptoms made their appearance. The patient would be reported to have rambled a little while awake, and very commonly towards evening; it was momentary, however, and the patient became quite himself when spoken to. At this time too, and sometimes, indeed, earlier, the countenance might be observed to be heavy; when addressed, the patient was perfectly conscious, and the face would brighten up, but when left to himself it would again assume the heavy expression, as if he were inclined to doze.* During the period I am now speaking of, that is, from the twelfth to the sixteenth day from the very commencement of the illness, the pulse generally kept in or about 100, very seldom did it reach 120; the tongue, however, was now a good deal furred, and I may observe, that this sign is a very constant one. The head also was now more apt to be complained of, more particularly if the patients were asked had they pain any where; sometimes they stated that pain did exist, but only when they happened to cough. As a general rule the pain was referred to the forehead just over the eyes, but I met some cases where the pa-

* Cheyne and other authors have spoken particularly of this expression of countenance in the hydrocephalus of childhood.

tient ran the hand over the entire head, apparently at a loss to localize it. If leeches were applied even at this period, they were sure to give relief for at least thirty-six or forty-eight hours. This state of affairs continued two, three, or four days when at last it was but too evident that some serious mischief was going on. Sometimes this was shown by the dejections being passed involuntarily ; at other times squinting made its appearance, but in so slight a degree that I have seen the point disputed : the truth is, that in the first instance at least I have never seen this symptom that it was not intermittent, it was present one moment, and absent the next ; or else it might be observed when the patients were left to themselves, but disappeared the moment they were spoken to. When it exists to but a slight degree, it is, I think, better seen at a distance from the patient ; it at times affected one eye, and again both. On more than one occasion this trifling degree of strabismus was the first symptom to attract my notice. Connected with it I have observed instances where one eyeball was in a great degree fixed ; it is very easy to overlook this sign at first, but when once one's attention is drawn to it, it cannot be mistaken. It gives, as may be easily supposed, a very remarkable expression to the countenance. The only point I have observed about the pupils at this stage of the disease is, that one has been somewhat larger than the other ; not that either was dilated, but that they differed in size, the light remaining the same. The globe of the eye itself has been but little injected in the cases which have come under my notice, but it seems to be very general that the eyelids themselves should be only half opened, as it were, with a tendency to droop : I have seen this ptosis very marked in only one eye. On the whole, the appearances presented by this organ *are the most important, and most constant of any of the symptoms of the disease*. The next sign likely to attract notice is very generally the pulse. It has been already stated, that at the commencement of these head symptoms, it had risen a little, possibly from 90 to 108, and that this had gone hand in hand

with other symptoms, showing some increase of fever: to this, however, another stage succeeded, and then in the course of twenty-four hours it was found to have suddenly fallen very remarkably. I have notes of several cases where a pulse above 100 fell in one day to 60, 55, and in one instance to 48, and so remained for a period of two days. This is a symptom which of course, as every one knows, is very constantly observed in the hydrocephalus of childhood; it is, if anything, however, more marked in the form of disease under consideration. Once the pulse had reached this stage the disease progressed much more rapidly and progressively than heretofore; the pulse, after having remained in this way about forty-eight hours, again began to rise, and continued to do so steadily till death, often getting up to 130, 140. The intellect became much more obtuse, it being now difficult to rouse the patient, and finally impossible to do so, coma having supervened. During the time the pulse was so slow, I have seen convulsions attack one side of the body, and if this did not happen, and, indeed, whether it did or not, a spastic state of the upper extremities was very commonly observed the last two or three days of life. Constipation did not attract my notice at all. Symptoms of effusion into the air tubes finally took place under which the patient appeared to sink. Except in being fixed, the pupil towards the last exhibited no remarkable change. The entire duration of the disease is commonly about three weeks. The position of the patient in the bed is very constantly, indeed, on one side, and often with the limbs drawn up, and this till within a day or two of death. This point is worthy of notice, for it is capable of throwing the practitioner off his guard; it is also very common to find a hand of the patient applied to the head, and to see the brows strongly knit even in sleep. Two cases came under my notice where the patients sang nearly the entire night and to the same tune; there was no recurrence of this symptom. I have also seen cases where the patients ground their teeth with a degree of violence almost insupportable. The accounts which the

public papers gave of the last illness of the celebrated Malibran induce me to think she died of this disease.

The appearances found after death are very constant, more so, indeed, than it has ever been my lot to find in any other affection of the brain. On more than one occasion I have written down the appearances that would be found on dissection, which proved to be correct, and this is more than could be said, I believe for any other affection of the kind. This is not, of course, said by way of boast, for any one might do the same.

The morbid changes affect in a great measure the arachnoid at the base of the brain. This membrane will here be found opaque, having a large quantity of gelatinous lymph effused under it, varying in colour between white and yellow, and always particularly well marked on the optic commissure and in the fissure of Sylvius: next to these parts may be mentioned the pons varolii as being the most common seat of the effusion. I have also sometimes, though rarely, found a distinct coating of lymph on the arachnoid, and in three instances this lymph had put on a granulated appearance like very minute tubercles, such as I have often had occasion to observe in the brains of children that had died of hydrocephalus.* The upper surface of the brain was often quite healthy, though at other times it was found more or less congested, while serous fluid in small quantity existed under the arachnoid. There was very constantly effusion into the ventricles varying from half an ounce to two ounces. My opportunities for examining the other cavities have not been so numerous as those of the head. One point, however, connected both with the chest and abdomen has struck me as worthy of notice, though possibly to others it may appear of little consequence. Any morbid appearance found in either of these cavities has been always of the same character, that is the strumous. In the lungs I have found traces of tubercle once, as if they had

* Dr. Hennis Greene has lately drawn particular attention to this tubercular form of the disease.

been long since deposited, being of a chalky character ; but again in two instances they were more recent, but still few in number, and in the crude state. In the abdomen any appearance of this sort was entirely confined to the peritoneum, and here I have twice met small portions of this membrane covered with a distinct coating of tubercular matter, like what every one must have seen affecting the serous membranes. Taken as a whole, however, it was not common to meet any morbid changes in either chest or abdomen, a point in which the disease under consideration differs most materially from the more ordinary form of hydrocephalus.

Such then are the appearances found in this disease. The part of the brain affected is a point worthy of notice ; there can I think be very little doubt that it is owing to this that the disease is of so insidious a nature, as I believe it is generally admitted, that disease of this part affects the intellect much less than when other parts of the brain are engaged, more particularly the upper surface. The optic nerves too being so much engaged is a reason why the appearances about the eye should be so marked during life. As to the effusion into the ventricles and the congestion of the upper surface, which are sometimes found, I look upon them as quite secondary in point of time, and, indeed, of importance to the morbid changes at the base of the brain.

Anything of morbid changes found in the thorax or abdomen, I have stated already appeared to me of importance, for though they have been seldom present, and to a very trifling degree, yet, I think they go some way to point out the true nature of the disease of the brain, which I myself consider to be of the strumous character. It may of course be thought by some that the existence of tubercles elsewhere was a mere coincidence, the more so as they were so seldom found, and this view of the question may be sustained. I may mention, however, in answer to this, that I have known two grown up individuals both carried off by this disease ; they were brother

and sister, and the former I saw during the course of his illness. And again, I have known a grown up person carried off by it, in a family where two or three of the children had died previously of hydrocephalus. In other words this disease is apt to run in families precisely as common hydrocephalus; hence, it would appear at least to have something specific about it, and different from common inflammation. But probably the point which bears most directly on this question is the treatment which will be alluded to farther on.

The diagnosis of this affection is by no means easy. The diseases with which it is most easy to confound it, are in the first instance simple fever, and in the second hysteria. With the former of these I have known it repeatedly confounded, nor indeed do I know any marked distinction between them, at least at first. The only point is that at a time when the patients would tell you they are better day after day, there exists a something about them which contradicts their assertion. Thus when they would tell you they are getting well, the tongue may be observed to be getting more loaded; this I have seen more than once; and again, when the patient is absolutely asking for food, you may be informed that they have passed a restless night. Circumstances like these should ever put a man on his guard, the more so if they be found at a period of life at which the disease is apt to be met with. One rule I may state as being useful in these cases, which is, that if at the age of fifteen a case of mild fever begin to show untoward symptoms, it is in all probability owing to the affection of the brain I have been endeavouring to describe coming on. I myself have met no exception to this remark, while I have found it particularly useful to keep it in mind. Connected with the diagnosis of those cases where the disease may or may not be simple fever, I have observed, that of the males attacked, three-fourths of them have been persons of a very heavy aspect, any thing in fact but intellectual, the face being too large for the size of the head, and the lips also large, with a coarse skin. The females

have been generally persons of a well marked sanguineous temperament.

Between this affection of the brain and hysteria it is often exceedingly difficult to distinguish. I am free to confess that on two occasions I have mistaken the one for the other ; that is two cases of hysteria were so exceeding like the other disease, that I mistook them for it. It may, however, be observed that this is the safest side to commit an error on ; many a mistake has I fear happened on the other side of the question, that is mistaking the affection of the brain for hysteria. I need scarcely observe, that it is only in females a mistake of this kind can occur. There are two great points of distinction in hysteria, which will in general, though not always, serve as a means of diagnosis ; the one is the state of the renal secretion, and the other, that, though the patient appears to be insensible, she is in reality not so, but can be influenced by external objects.

Little need be said about the prognosis of this form of head affection, except that it is in the highest degree unfavourable. With very few exceptions, indeed, it has, in my experience, ended fatally. I have seen no recovery after the pulse had once fallen. Whether this great fatality be owing to the specific nature of the disease, I shall not take on me to determine, but this part of the subject will be best considered under the head of treatment.

At first view, and taking into consideration the morbid changes found in the brain, one would be inclined to suppose that a treatment holding out at least a reasonable hope of success could be adopted. I can assure any one who may not have seen such treatment tried, that this is far from being the case. I have known treatment carried on from the earliest appearance of the head symptoms, and in other respects also to all appearance of the most judicious kind, and yet the disease has run on to a fatal termination. Mercury, bleeding, iodine, blisters, purgatives, diuretics, and James's powder have all in turn failed. Sometimes the system has remained quite un-

affected by the mercury ; at other times full salivation has been induced a week before the fatal termination, and yet it did not appear to even modify the course of the disease. This has occurred within my own observation, and I know it has happened to others, and I am quite at a loss, how to explain it, except by supposing the inflammation to be specific. It will be recollected that the treatment is far from being ineffectual for the time, on the contrary, I have seen bleeding very seldom used that it did not afford the most marked relief, and the patients have over and over again expressed themselves as feeling wonderfully well, but then forty-eight hours was quite enough to dispel the illusion. The disease in truth had been checked but not put a stop to. Reasons have been already given, why I consider this affection to partake of the strumous character. If this should turn out to be correct, an explanation of the great obstinacy of the disease would be afforded. The state of parts found in the brain do not seem to point to any very acute inflammation ; on the contrary, I believe they would be set down as more chronic in their nature, and hence it appears to me as in the highest degree probable that the mischief has been going on at least from the period at which the patient had first taken to bed with the symptoms of common fever. But I may be asked, has no recovery taken place within my observation ? To this I answer, that I have seen cases do well, which I believe would ultimately have ended in this affection, but then the head symptoms were of a more prominent character, making their appearance earlier, and of course combated as soon as observed. When once ten days had passed without any appearances but those of simple fever, and then that the patient began to exhibit a new train of symptoms, the case, as far as I have yet seen, might be considered hopeless.

The treatment which I believe was rather a means of averting, than curing the form of disease under consideration, consisted in local bleedings repeated according to circumstances, together with the free use of mercury and blisters, and the other treatment which every one's experience would suggest.

In the next case which comes before me as a well marked example of the disease, I shall certainly, besides other means, give a trial to opium. Besides having been recommended in common hydrocephalus, there are I think grounds enough for supposing that certain inflammations are best treated by this drug, and this may turn out to be one of them.

I shall conclude this paper by throwing into a set of propositions the different points to which attention has been already drawn.

1. That an affection of the brain of the hydrocephalic character is not at all unfrequently met with between the ages of 12 and 25 years.

2. That it is more common in females than males, in the proportion of two to one.

3. That in the majority of cases it commences with symptoms of mild fever, which goes on without change for ten, twelve, and fourteen days.

4. That it sometimes begins by a distinct complaint of the head for some days, the patient still being able to go about.

5. That when the disease commences by fever, the first signs of anything going wrong take place very commonly at night.

6. That a marked increase in the degree of fever may then be observed.

7. That during the progress of the disease the pulse exhibits the characters of hydrocephalus, and to a marked degree.

8. That alterations about the eye are often among the earliest symptoms pointing out that mischief is coming.

9. That the pathology of the affection is confined in great part to the arachnoid at the base of the brain, with more or less effusion into the ventricles.

10. That there are some grounds for supposing the inflammation to be of a specific character, probably strumous.

11. That once the affection has fully declared itself, the treatment has yet to be determined.

12. That local bleedings with mercury and blisters hold out the best prospect of success.