CASE
OF
HERNIA OF THE DURA MATER
CONNECTED WITH
HYDROCEPHALUS INTERNUS.

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ON the 11th of February, 1812, I was requested to see the infant daughter of Mr. W. on account of a large transparent globular tumor, at the back of the head, which had existed from birth. She had been born eight days, during which time it gradually increased; and was at this period about the size of a small billiard ball. It was situated a little above, and to the right of the superior transverse ridge of the occipital bone, immediately opposite to the posterior lobe of the right hemisphere of the brain. On examining it attentively, it appeared to be in its nature similar to the disease termed spina bifida, and to consist of an expansion of dura mater containing serum, in consequence of a deficiency of bony matter, or other support at this part. The

head was not unusually large, nor in any other respect malformed. The pupils were sensible to the impression of light, there was no strabismus, no loss of power in the limbs, nor any one symptom of pressure on the brain, with the exception of a constipated state of bowels, requiring the daily exhibition of purgative medicine. In consultation with Mr. Astley Cooper, Mr. Croft, and Mr. Woods, it was determined to adopt the radical cure as proposed by the former gentleman in cases of spina bifida; in a paper published in the second volume of these Transactions. The tumor was accordingly punctured with a common needle, on which a small quantity of limpid serum oozed out; it came away so slowly that two more small punctures were made, and about 3iij were let out. A common fillet was then passed round the head to make a slight degree of pressure. On the 13th, I visited the child again; the punctures made by the needle had not healed, and there had been a constant oozing of serum. The tumor had quickly regained its former size after the operation, and was very tense; on gently compressing it about 3iij came away, and the sac appeared about half empty. The openings were covered with lint, and a graduated compress placed on the tumor, and confined with a fillet as before. On the 15th, the sac was again full, and the openings made with the needle were healed. I now punctured it with a very fine trochar-made needle, pointed for the purpose. About an ounce of serum was drawn off

through the canula, and the sac evacuated. When in this loose collapsed state, a considerable opening of a lozenge shape was distinctly felt in the occiput. A compress of lint was applied opposite to this vacancy, and confined by means of a bandage made on the same principle as the hair-lip bandage, very narrow ribbon being substituted for thread. Notwithstanding the steady and equal pressure which was thus kept up, the sac rapidly filled again, and, on the 17th, was to all appearance the same as when I first saw it.

The same operation was resorted to on the 19th, 21st, and 23rd, with exactly the same result. The child did not appear to suffer at all from the frequent repetition of the punctures, nor from the subsequent pressure. On the 23rd the fluid was not so transparent, and had a yellowish tint; the sac was now evidently thickened and less diaphanous.

On the 25th, it was again punctured and completely emptied, when the increased density and opacity of the sac was more evident, and a ridge of lymph was felt round the opening in the occiput. On the 28th, very little fluid had collected, since it was last punctured; the sac was nearly collapsed and much thickened, the curative process appeared to be going on very favourably. Since this change had taken place, the bowels acted without the oleum ricini, which had been administered daily

until the 25th. A steady and regular pressure was constantly persevered in, and there was no fresh accumulation from this time until the 14th of March. During all this period the child continued to grow, and improved much in strength and appearance.

The sac was now rather inflamed, the cuticle came away in large patches, and the whole surface discharged a thin ichor, which irritated the surrounding integuments. It was necessary, in consequence of this, to relax the bandage, and a lotion consisting of equal parts of liquor ammoniæ acetatis and water, was directed to be applied constantly. This had the desired effect of abating the inflammation, but a fresh accumulation took place, and, on the 17th, the sac was nearly of its original size, but quite opaque and very vascular.

It was now punctured with a common bleeding lancet introduced obliquely, and the whole of its contents evacuated, which did not amount to 3iv; evidently proving how much the parietes were thickened, as the sac was incapable of containing one half its former quantity. The opening made with the lancet bled freely, and healed by the first intention; when the inflammation had entirely subsided, pressure was again made as before. Nothing particular occurred from this time until the 3rd of April, when the sac again began to fill without any apparent cause. On the 5th, it was

so much distended, that I thought it right to puncture it with a lancet, after which the opening healed as before.

Notwithstanding considerable pressure was made, fluid continued to collect very gradually until the 15th, when it was again necessary to evacuate it.

The child had been for some days very unwell, and voided much green offensive matter from its bowels. She was very irritable and querulous when moved. On the 17th, an eruption appeared over her body, and the surface of the tumor became inflamed; pressure was omitted, and a bread and water poultice substituted. On the 18th, she continued much disordered in her bowels; some oleum ricini with two drops of tinctura opii were given, which quieted her a little. The flap of the last orifice now began to ulcerate, and the whole tumor was much inflamed. On the 20th, the ulceration had extended itself, and communicated by a small opening with the cavity of the sac, through which there was a continued oozing of serum. She continued much deranged in her bowels, until the 23rd, when she was so much exhausted as to refuse the breast; at ten the same night, she expired without being at all convulsed, or exhibiting any one decided symptom of inflammation or effusion on the brain.

Appearances on dissection of the brain.

On turning down the scalp from the occiput, as low as the tumor, a slight effusion of bloody serum was apparent to some extent round the opening in the bone. When the cranium and dura mater were removed, the arachnoid membrane appeared rather opaque, and was raised by the subjacent fluid, which was contained in the cellular texture of the pia mater. Immediately round the opening in the occiput, a small quantity of puriform matter was deposited; the membranes and substance of the brain were particularly void of red vessels. The medullary structure was so remarkably soft, although the body was examined only a few hours after death, that it was wholly impossible to make an accurate dissection of its different parts. The lateral ventricles were enlarged, and contained about four ounces of fluid. On inflating the sac with a blow-pipe, no impression was made on the water in the ventricles, but a probe passed readily into the iter a tertio ad quartum ventriculum. The air not passing, may be attributed to the soft state of the brain, which collapsed on removing the dura mater. The pia mater appeared to terminate at the opening in the occiput, into which a very small portion of medullary matter had insinuated itself.

On cutting into the sac, it appeared to be lined

with layers of coagulable lymph, and with shreds of lymph hanging irregularly into its cavity, which was nearly obliterated. The opening which communicated with the ventricles was just large enough to admit a probe, round which organized lymph was thickly deposited, and would probably in a short time have completely closed the aperture. Permission was not obtained to examine the body further.

From a careful review of the circumstances of this case, there can be no doubt that the hydrocephalus internus existed from birth. I rest this opinion on the quantity of fluid which was drawn off during the earlier stages of the treatment, exceeding what the sac alone could contain ; on the great rapidity with which it was replenished, sometimes in the space of a few hours after it had been emptied ; and on the connexion ascertained after death, to exist between the sac and the ventricles.

Although this case terminated unfavourably, it proves that a radical cure may be attempted with impunity in similar cases, and affords a good illustration of the process by which a cure is to be effected. I consider it interesting, as it shews that the water contained in the ventricles may be partially drawn off, without causing syncope or any apparent disorder in the function of the brain ; this probably depended on the yielding state of the parietes of the head, which readily accommodated

itself to the diminished bulk of its contents ; and on the great caution which was observed not to admit any air at the punctures. In a similar case, which a medical man mistook for an encysted tumor, and which he suddenly removed, death instantly ensued.

As an insulated and unsuccessful case, this does not perhaps merit much attention ; but as a sequel to the important facts recorded by Mr. Cooper, it may not be unworthy of notice. The punctures with the lancet were not resorted to until the sac was too thick for the introduction of the stilet and canula ; no serious consequences followed the two first punctures, and the last healed, but the flap afterwards ulcerated, from being attacked with erysipelatous inflammation. I have delayed giving publicity to this case, in the expectation of being able to repeat the experiment ; but as instances of this form of disease are of rare occurrence, no opportunity has since offered itself in which I could attempt it. I am now induced to submit it to the Society, as the first recorded instance in which an operation has been attempted, even with partial success, and entertain sanguine hopes that it may be repeated with more favourable results.

Since the occurrence of this case, I have met with one similar affection in a girl aged 12 years, in Saint James's workhouse, of whom I learnt the following particulars. She was born with a diaphanous

tumor at the back of the head, nearly in the same situation as in the case above-mentioned. The head itself was very large and evidently hydrocephalic. The cranium and tumor gradually increased in size, until the child was about six years old, when the head began to close at its sutures. At the time of my visiting her, the dimensions of the head were 22 inches in circumference; across the vertex from ear to ear 14 inches and a half; from the superciliary ridge of the os frontis to the commencement of the tumor 15 inches. The circumference of the tumor in one direction was 13 inches, in the other 14, at its base about six. The os frontis did not project so much as is usual in these cases. The eyes were both turned towards the nose, and the pupils were much dilated. The right side of the face was drawn a little awry, which symptom was always increased when she had pain in her head, to which she was very subject. She possessed the use of her upper extremities, and could move her lower, but could not stand. Her health was generally good, and her bowels acted regularly; her intellect was by no means deficient, though she was incapable of speaking, no pains having been taken with her education, nor any attempts made to teach her to write or articulate. She heard distinctly, and understood what was said to her, and possessed a retentive memory of persons and facts, and was capable of combining them. She had two sisters then living, who were both born hydrocephalic.

Mr. Charles Clarke possesses a preparation of this disease which he obligingly showed to me. It was taken from a still-born child; at the back of the head a little above the occipital foramen, there is a large pouch of the size of a full-grown foetal head, consisting of an expansion of dura mater, covered with common integuments. Some time ago, I met with a case in Hildanus, which from the accompanying drawing and the history of the case, must, I conceive, have been of this nature. The tumor existed from birth, and increased to a great size; the child gradually wasted away, as we frequently find to take place in hydrocephalus. Johannes Scretæ, who transmits the account to Hildanus, calls this "carnosam molem," and attributes the child's wasting to all the nourishment going to supply this mass. A further account of this case may be found in *Observ. Chirurg. Fabric. Hildani, centuria sexta, observatio 17.*

June 5, 1816.