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## THREE CASES OF CRANIOTOMY.

[Read before the Boston Society for Medical Observation, and communicated for the Boston Medical and Surgical Journal.]

BY HENRY L. SHAW, M.D.

CASE I.—Ellen C., aged 35; Irish; fourth child; below the ordinary stature, and of delicate build. This patient did not go to the full term of pregnancy. From the data she gave me, which appeared to be correct, she was nearly eight months advanced. While carrying this child she has worked harder than usual; she attributed her premature sickness to a hard day's washing. Her previous labors have been natural, and the children healthy. Labor commenced Dec. 1st, at 8, P.M. The membranes ruptured at 11½, P.M., as I learned from the midwife in attendance. There was but a small quantity of liquor amnii. Since the rupture of the membranes, the patient had been upon the floor, where the nurse had been trying to deliver by the arm, which was presenting. My first visit was Dec. 2d, at 2, A.M. She was then much fatigued from the severe pains, together with the violent efforts which had been made by the midwife to force a delivery. The os was large enough to admit the hand, not very soft; the head was presenting above the brim, the face towards the right side. The left arm, quite cold, was also protruding into the vagina. Whether this was the presentation, or attempts had been made to draw the hand down, could not be ascertained. The vagina was extremely hot. On examination over the abdomen, no signs of foetal life could be detected. The woman, herself, had not perceived motion for several days. Her pulse was high, and she complained of headache. The pains, from the commencement, had been regular and powerful.

After having examined into the condition of the bladder and bowels, the woman was placed in position preparatory to turning, on the left side across the bed, the knees supported by an assistant. Whilst the right hand was used to support the uterus, the left was free for manipulation. The hand was carried through the vagina

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and into the os with ease; but before a foot could be grasped, pains of the most violent kind came on in rapid succession, during an interval of which a foot was seized, and several efforts made to turn. By this time, which occupied several minutes, the hand was so completely paralyzed as to render it useless, and it was withdrawn. The pains in this case, as has been frequently noticed in turning, came on with renewed intensity as soon as the hand passed through the os, and seemed to abate almost immediately on its withdrawal. During this time I ascertained that the placenta was entirely detached. After a short respite, a second trial was made; the child could be rotated, but all efforts at version were fruitless.

As a long time had elapsed since the rupture of the membranes, the obstacle to turning was attributed to the severe pains, which had materially reduced the size of the uterus. A more careful examination was now made, and the cause of the delay easily accounted for: the head proved to be much enlarged; the sutures were not separated, as is usual in hydrocephalus. The anterior fontanelle was full, and fluctuated on touch. There was also a marked bulging of the frontal eminences. As the diagnosis was now certain, craniotomy was, of course, the only expedient. Dr. Damon was called, and preparations made for the operation. After an hour's unavoidable delay, the woman was etherized and placed in the usual position. A pair of straight scissors were carried up to the head (the fingers of the left hand acting as a sheath), and the parietal bone opened. As soon as the instrument had penetrated the dura mater, it was followed by a copious gush of water, estimated at about a pint. The scissors were carried to the base and the brain well cut up, when they were withdrawn, accompanied with a marked collapse of the head. Short forceps (being the only ones at hand) were applied, but as they slipped upon every effort at traction, the child was turned and delivered. The placenta, which was perfectly bloodless, was also removed. As the pains were now feeble, although there was less than the usual amount of hæmorrhage, hardly enough to soil the hands, ergot and stimulants were administered. The uterus continued large and uncontracted (despite the usual remedies, which were assiduously persevered in) for more than two hours, when it had decreased enough to render it safe to leave her.

2d.—Passed a good night. Pulse 75; tongue looks well; uterus continues unusually large; abdomen tympanitic. Complains of after-pains. Has had beef-tea and gruel.

3d.—A good night. Uterine tumor decreasing; abdomen still tympanitic. Complains of headache; breasts active; lochia moderate; pulse 80. Ordered ol. ricini and ol. terebinth.

4th.—Found her reclining in bed. Pulse 72.

5th.—Four days after delivery, around the house.

6th.—From this date nothing unusual occurred. The child, a male,

was larger than the average, and had an atrophied appearance. The circumference of the head, when collapsed, was seventeen inches. The bones were but partially ossified. The frontal eminences were very prominent. The anterior fontanelle was large; the posterior could not be detected. The sutures, as before stated, were no wider than usual.

CASE II.—Mrs. W., Irish; aged 23; domestic; primipara; very short, and of a stout build. Was first called to her on the evening of Jan. 26th. Slight labor pains had come on a few hours previous. On vaginal examination, the os was found to be about two thirds of an inch in diameter, soft and elastic, the head high above the brim, scarcely within reach of the finger. As she was evidently in the commencing stage of labor, I left, with directions to be sent for when the pains were more urgent.

Jan. 27th.—Was called very early in the morning, and went immediately for a student, with whom the case was left in charge. In the evening was called again. The pains had continued somewhat irregularly throughout the day; the os had increased a little in size. The exact position of the head was not made out. The vagina was moist; bowels had been freely moved from oil taken in the morning; urine had been voided. Pulse good. As everything appeared favorable, I left, telling the student to call me if he thought it necessary.

I heard nothing more of the case until the 29th, at 4, P.M., when the gentleman said he would like to be relieved. From him I learned that the pains had been irregular the day before, until 5, P.M., when the membranes ruptured. From that time they had been regular and expulsive. On vaginal examination, the os was found about double the size of a Mexican dollar, very soft and elastic, and but loosely enveloping the head, which still remained, as previously described, above the brim. The head was very hard and unyielding, and was soon recognized as the cause of the delay. The vagina was hot and dry; bladder much distended. The catheter was used, and about a pint of urine drawn off. After this, the pains, which had all day been good, seemed to assume, if possible, renewed intensity.

9, P.M.—Uterus still acts well. No progress has been made, and the woman shows signs of exhaustion. Headache; abdomen tympanitic; pulse 100. I began to think of the forceps, and although the condition of the head rendered their use of doubtful propriety, it was thought best to make a trial, and if found impracticable they were of course to be abandoned. Dr. Coolidge was sent for, and after an examination we concluded to apply them immediately. The woman having been placed in the usual position, many ineffectual efforts were made. They were introduced easily, but all attempts at locking them were of no avail, and after an unusually long trial they were given up. As the patient showed no urgent signs for ac-

tion, we waited. At 12 o'clock the pulse was a little over 100; the whole surface covered with profuse perspiration; vagina becoming hotter. On examination over abdomen, no signs of fœtal life could be detected. At 3, A.M., administered a full dose of opium, and left her.

6, A.M.—During absence has slept considerable, the uterus acting but feebly until now; the pains were nearly gone. The forceps not being applicable, two methods of procedure remained—turning, and embryotomy; the former of very doubtful propriety, as the membranes had been ruptured thirty-six hours, and provided version could be performed, it would be unsafe to force so unyielding a head through the vagina. Craniotomy was therefore decided upon.

7, A.M.—Pains very feeble; vagina intensely hot and dry; pulse 114. A full dose of eth. tr. ergot having been given, the woman was placed in the usual position. This accomplished, the scissors were carried up to the parietal bone. Great force was used before it could be perforated, and then not until they were applied in several different places; they were finally carried to the base, and the brain well cut up. The head showing no tendency to collapse, a second puncture was made, with no better result. A trephine was now used, and a disk of bone, of considerable size, removed. By the aid of one blade of a pair of bone forceps, the opening was enlarged until both could be inserted, and the rent increased by separating them. Fragments were brought away until the opening was large enough to admit the finger, when much of the brain was removed, but unattended with any diminution in the size of the head. An hour or more was thus spent in bringing away such pieces as could be grasped by bone forceps. The greater part of the frontal and one parietal bone having been removed, the edges of the remaining bones were covered with the scalp. Not succeeding with traction, the hand was introduced, the fingers made to embrace the neck, and after a long effort the child was delivered. The placenta, which for some time had been detached, was immediately withdrawn. The delivery was attended with only the usual amount of hæmorrhage. On examination of the os, a tear of about half an inch in length, and several smaller ones, could be distinctly felt.

11, A.M.—Has rallied well; after-pains are good. A full dose of opium was given, when she was left comfortable.

31st.—Passed a good night; slept well. Pulse 80; vagina very hot; external genitals much inflamed and swollen. Nymphæ show a few patches of commencing ulceration. Abdomen full and tympanitic. Unable to void urine; passed catheter; ordered hop fomentations to bowels; beef-tea and gruel *ad libitum*; perfect rest; laudanum at night, if necessary.

Feb. 1st.—Had a good night's rest. Did not take opiate. Says she feels well; no headache; abdomen continues very tympanitic.

nitic; slight tenderness on deep pressure over uterus. Has voided urine. Skin warm and moist; lochia abundant; pulse 76.

2d.—Another good night. Skin moist; breasts active; lochia foetid; pulse 100, accelerated from excitement, there having been a disturbance in the room. Ordered a vaginal injection of warm water; broth and toast.

3d.—Had a good night, but some headache on waking, which soon passed off. Pulse 90. No dejection since delivery. Ordered ol. ricini and ol. terebinth.

4th.—A good night. Has had a free dejection. Abdomen less tympanitic; pulse 86.

5th.—Pulse 84; improving generally. 6, P.M.—Called in haste; has been in great pain for several hours, caused by inability to void urine. Drew off nearly a quart.

6th.—Pulse 76; improving fast.

7th.—Eighth day after delivery. Has had steak and toast. About the house. Pulse 68. Complains of pain in the lumbar region.

I have seen her several times since; she appears quite well. The child, a male, weighed about ten pounds. The bones were unusually firm, and the skull completely ossified.

CASE III.—Julia G., aged 25; Irish; rather a delicate-looking woman; second child. Her previous labor was tedious, and forceps were used. The present labor commenced Feb. 23d, at 11, A.M. A midwife had been in attendance until I was called on the 24th, at 6, A.M. The pains had been good for the last ten hours. The membranes were said to have ruptured at 9 the evening previous. Pulse 95, weak; tongue dry and covered with a thin, brown coat; surface warm and moist; pains fair; feels exhausted. On vaginal examination, the head, with the face looking posteriorly, was found impacted high up in the vagina. The os could not be felt. The vagina was hot and dry; external genitals swollen; rectum empty, and bladder distended. On abdominal examination, no signs of foetal life could be detected. Has had copious bilious vomiting for several hours. Drew off about two thirds of a pint of urine, and administered whiskey.

9½, A.M.—Pulse 98. The head remaining the same, it was deemed proper to apply the forceps. The woman was placed upon the floor, as they had no bed. The application of the forceps was very difficult; the head was so firmly impacted as to hardly admit both blades; they were at last placed over the ears, as was ascertained afterwards. All justifiable force was used in trying to deliver, but without avail. The head was perhaps slightly advanced, but could not be made to traverse the vagina without causing serious injury to the soft parts.

Convinced of the impossibility of delivering, except by craniotomy, it was assented to, after a long pleading, if, after the expiration of an hour, no progress was made. As the child was probably

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dead, the safety of the mother required that she should be delivered in the manner least likely to render convalescence tedious. Ergot having been given, the woman was placed in the usual position. The parietal bone was perforated, followed by a marked collapse of the head. The crotchet was then introduced, and the child delivered. The placenta was easily withdrawn. The child weighed about ten pounds. The head was larger than the average, the bones firm and unyielding. Over the posterior part of the sagittal suture, there was a tumor as large as a good-sized hen's-egg.

11½, A.M.—Pains very feeble, but the uterus well contracted. Feels very much exhausted. Ordered whiskey. 6, P.M.—Pulse 88, weak. Had several hours' good sleep; has taken gruel and whiskey.

26th.—9, A.M.—A restless night. Abdomen much swollen and tympanitic; considerable tenderness on deep pressure over uterus; lochia scanty; external genitals much swollen; pulse 84.

27th.—A good night. Breasts full; abdomen as yesterday. Complains of after-pains. No dejection since delivery. Pulse 80. Ordered castor oil and turpentine.

28th.—A good night. Pulse 72. Had a free dejection. From this date my attendance discontinued.

## RESULTS OF THE OPERATIONS FOR THE RADICAL CURE OF CONGENITAL HERNIA, REPORTED IN THIS JOURNAL JUNE 4, 1863.

BY DAVID W. CHEEVER, M.D.

[Communicated for the Boston Medical and Surgical Journal.]

At the last meeting of the Society for Medical Improvement (Sept. 28th), Dr. Cheever exhibited to the members a boy, 12 years of age, who was operated on for congenital hernia by Wood's method, last April, and who was, to all appearance, cured. It may be remembered that of the three cases reported in the JOURNAL, one failed at the outset from ulceration of the sutures on the fifth day; the other two were progressing favorably two months after the operation. Dr. C. gave a brief abstract of their continued improvement since that time. The first case, operated on by Gerdy's method, was left, with the skin of the scrotum firmly invaginated, the testicle a little enlarged, and the inguinal canal filled with a dense deposit; there was no bulging at the internal ring. The boy had constantly played about since that time, and had *never worn any truss since the operation*. At the end of six months he was every way as well; there was not the slightest bubonocoele, and it seemed very improbable that the great thickening in the inguinal canal would ever give way again.

The second case, operated on by Wood's method, was allowed to sit up three weeks after the operation. The hernia remained up,