

is the requirement of the perfect isolation of the infected from the uninfected. Additional importance is also given to a rigid inspection of milk and meat.

We seem, indeed, to be on the eve of great discoveries in the etiology and pathology of disease, which, without doubt, must greatly increase our practical knowledge and improve our treatment of many important maladies. As medical practitioners, if we cannot individually help to hasten the anticipated result, we can help to swell the multitude who anxiously wait for it; but as medico-legal sanitarians, impatiently waiting for newly and firmly established truth, on which to build improved hygienic and sanitary methods, we, metaphorically, hold our breath.

**REPORT OF A CASE OF GASTRO-ELYTROTOMY, IN THE SECTION ON OBSTETRICS AND DISEASES OF WOMEN OF THE AMERICAN MEDICAL ASSOCIATION.**

BY WILLIAM H. TAYLOR, M.D., CINCINNATI, OHIO.

On the 17th of May, 1883, I was requested by J. C. Mackenzie, M.D., to see a case of protracted labor with him. From the doctor, who kindly furnished the notes for my report, I obtained the following history:

Mrs. M., American, 32 years old, primipara, apparently healthy, 4 ft. 7 inches high, good family history, with exception of considerable pain in abdomen for past six weeks has been healthy during her pregnancy.

On the 13th inst., began to have premonitory labor pains, which have continued to increase to present, except as temporarily relieved by the use of chloral and morphia. The membranes ruptured about 9 P.M., 14th inst., the os then admitting one finger. The head was felt presenting. These general phenomena continued until when first seen by me on the 17th. The conditions were: No appetite; had a care-worn expression; very prominent abdomen, which was not tender on pressure; pulse 120, temperature  $101\frac{1}{2}^{\circ}$ ; pains severe, and violently expulsive; the os uteri about the size of a silver dollar; the head presenting, but so covered by a large caput succedaneum that I could not determine the position; but little change was produced in the position of the head by uterine action.

It was determined to apply forceps. Ether was administered, and after considerable difficulty because of the close contraction of the os around the head and the diminished diameters at the inferior strait, Elliot's forceps were adjusted. Traction was made at intervals for about an hour with no good effect, the head remaining movable above the brim. Laying aside the forceps, I endeavored to introduce my hand, with view to version, but was unable to pass the whole hand because of the contraction of the outlet. I was, however, able to reach the promontory with the index finger, leading to an estimate of the antero-posterior diameter of the superior strait as less than three inches.

Dr. G. Brühl was now called, as we believed craniotomy alone would suffice to accomplish the delivery. Dr. B. desired to make further effort with forceps,

and after much effort introduced the Busch blades, but with no avail. I now perforated the head and adjusted the Braun-Simpson cranioclast repeatedly, with no better result after powerful effort than each time to bring away the fragment of bone caught in the instrument.

Dr. Brühl desired to attempt version, but although a leg was caught no effort availed to change the position of the child.

Some six hours had now elapsed since I first saw the woman; her pulse was becoming weak and more frequent, and the os and vagina were so œdematous that we could no longer touch the head; we therefore summoned N. P. Dandridge, M.D., with a view to abdominal section. Upon his arrival the question of operation was discussed. Cæsarean section was considered because of the rapidity with which it could be executed, but after deliberation it was determined to attempt "Thomas" operation as the less severe, and, therefore, less likely to prove fatal from shock in the enfeebled condition of the woman. Porro's operation was not suggested.

The patient was much exhausted with a very rapid, feeble, pulse, and elevated temperature; the fundus uteri was well to the right and the child's head could be felt in the left iliac fossa. Owing to this obliquity, the left side was selected for the incision instead of the right as usual, for it was thought the os uteri would be more accessible from the left. The preparations for the operation were soon made. The room was lighted by a single lamp, so to secure sufficient light, several candles were tied together and two torches thus made, the limited number of assistants made it necessary to entrust the lights to two women friends, who held the candles with their heads averted for fear of seeing the blood during the operation, and more than once we were embarrassed from the lights being improperly held. The woman was etherized and then placed on a kitchen table. Dr. Dandridge, as Surgeon, standing on the left of the woman and I just to his right, Dr. Brühl using sponges on the right of the woman and Dr. Mackenzie caring for the anæsthesia. The incision was commenced above and just outside of the spine of the pubis, and was extended parallel with and about three fourths of an inch above Poupart's ligament to a point somewhat beyond the anterior superior spine of the ilium, the subcutaneous fat which was quite thick, was divided and the aponeurosis of the external oblique and the underlying layers of muscular fibers carefully incised on a director, the full length of the external wound. The transversalis fascia was then carefully divided on a grooved director, the deep epigastric artery was cut and at once secured with hæmostatic forceps and then ligated, so that the amount of hæmorrhage during this part of the operation was small. Dr. Dandridge carefully stripped the peritonæum from the iliac fossa with his finger, when I placed both hands in the wound, gently pressing back the peritonæum and retaining the subjacent bowel.

Dr. Dandridge passed his left index finger into the vagina and forced the vaginal wall into contact with the right hand in the external wound. It was thus

possible to determine the thickness of the vaginal wall and make sure that the bladder was not intervening. A small opening was then made in the vaginal wall with scissors cutting on to the finger in the vagina; this opening was enlarged by a slightly curved blunt-pointed knife. While the knife was still in position I passed my finger along its back into the vagina and hooked it securely into the os; the vaginal wound was then enlarged, principally by tearing, Dr. Dandridge's hand passed through the wound, readily seized the leg, which had been caught in the effort at version, and drew it into the wound, expecting to complete the delivery easily; but owing to the firm contraction of the uterus around the child, this effort failed. Dr. Brühl sought the other leg, but was also unsuccessful in effecting version, but with the Braun-Simpson cranioclast the head was secured and extracted, the placenta followed at once; the uterus contracting well, the wound was washed out with a carbolic solution; a large drainage tube was passed through the wound into the vagina and projecting from the vulva, and the edges of the external wound closed by sutures. During the operation and at its termination a half ounce of whisky was injected into the rectum, the woman was placed in bed with hot bottles about her, morphia sulph. gr.  $\frac{1}{4}$  and atropia sulph. gr.  $\frac{1}{60}$  were given hypodermically, with directions to give morphia sulph. gr.  $\frac{1}{6}$  and half an ounce of whisky every two hours. A bandage was placed around the body. The child probably weighed six pounds. The operation was complete about 9 P.M.

The shock of the operation, considering the state of the patient, was certainly less than was to be expected, and not to be compared to that which would have followed Cæsarean section. I believe if the latter had been undertaken the woman would have died on the table. Five hours after, her pulse was better than before the operation, and twelve hours after the operation the temperature had fallen and the pulse was stronger and a little less frequent; but this slight promise of recovery was not verified, and she died forty-four hours after delivery, having in the meantime received the most approved treatment for such cases, viz.: stimulants, anodynes, the use of the "ice cap," "Kibbee cot," etc.; her urine was freely secreted and drawn several times by catheter; her bowels were moved by enemata.

*Autopsy.*—Sixteen hours after death the weather was warm, and there were some evidences of decomposition about the body; slight cadaveric rigidity; nutrition apparently good; abdomen greatly distended and tympanitic; a wound in the abdominal wall  $4\frac{3}{4}$  inches long, situated upon the left side above and parallel to Poupart's ligament, extending from the anterior superior spine of the ilium to the spine of the pubis; the edges of the wound were united by sutures, and when these were removed it was discovered that no union had taken place, but that the wound was occupied by a small quantity of dark coagulated blood. When the peritoneal cavity was opened a small amount of gas escaped, probably from decomposition, as no other source for it was found; and some emphysema of the tissues existed. The greater part of the abdominal distension was

due to gas contained in the stomach and large intestine. There were not the slightest indications of inflammation of the peritonæum; no adhesion existed, and no inflammatory products could be detected, although carefully looked for. The bladder was intact; there was a transverse incision in the left side of the vagina about an inch below its attachment to the cervix, and extending from this upward to the uterus, but not involving it, was a longitudinal tear. The cervix uteri was extensively lacerated, and there was also a laceration in the posterior wall of the vagina, about on a level with the margin of the pouch of Douglass, but not involving the peritonæum. There were two transverse tears in the posterior wall of the uterus, one an inch in length, an inch and a half above the os uteri; the second two inches in length, an inch and a half above the first; these did not extend deep into the muscular tissue.

The diameters of the straits of the pelvis were carefully measured, after all the soft parts were removed, the periosteum only remaining.

## SUPERIOR STRAIT.

|                            |                |         |
|----------------------------|----------------|---------|
| Antero-posterior diameter, | $3\frac{3}{8}$ | inches. |
| Transverse                 | $3\frac{7}{8}$ | "       |
| Right oblique              | $3\frac{7}{8}$ | "       |
| Left                       | $3\frac{3}{4}$ | "       |

## INFERIOR STRAIT.

|                               |                |         |
|-------------------------------|----------------|---------|
| Extremity of sacrum to pubis, | $3\frac{5}{8}$ | inches. |
| Transverse                    | $2\frac{7}{8}$ | "       |

At the brim of the pelvis corresponding to the symphysis pubis there was a projection backward of the bone, to the extent of  $\frac{3}{8}$  of an inch, diminishing the conjugate diameter to that extent.

The other organs were not examined.

*Remarks.*—The subject of gastro-elytrotomy has been so thoroughly considered by H. G. Garrigues, M.D.<sup>1</sup>, in his exhaustive monograph, that no historical or theoretical review at my hands would be justified, but the operation has been so seldom performed that every practical point which can in any wise add to our knowledge and just appreciation of its value is entitled to careful study. The case which I have had the honor to lay before you, while unhappily it can not be credited with success, still it offers favorable answer to some theoretical objections. The earlier operators (except Baudelocque) believed that the operation was not feasible on the left side, because of the presence of the rectum, and Garrigues urges the attempt when opportunity should offer. Such opportunity presented in Hime's case and again in ours, because of the right obliquity of the uterus. The incision was accordingly made on the left side, affording ample space for the removal of the child, and as unfortunately we had occasion to see without injury to either bladder or rectum. Upon this point Dr. Dandridge, says: "The danger of making the incision on the left side, namely—wounding the rectum, is, I believe, entirely theoretical, on the contrary, from the experience of this single case I believe that the left side possesses decided advantages

<sup>1</sup> N. Y. Med. Journal, xxii., Am. J. Obstet., Jan. 1883.

over the right. The operator is enabled to insert his left hand into the vagina, and thus have the right free to use the knife or scissors in opening the vagina—a critical point; the use of the finger in this manner, is, I am sure, much safer than a plug of wood as has been suggested, and renders the use of an instrument in the bladder superfluous, as you can easily determine whether or not the bladder is intervening by the thickness of the tissues between the fingers. Again the sense of touch may enable you to feel and avoid an artery in the wall of the vagina, as was done by Skene.”

Objection has been made to the operation because of injury to the peritonæum in raising it from the iliac fossa. In the case narrated, no difficulty whatever was experienced in lifting the peritonæum. The statement of Hime<sup>1</sup> upon this point may be cited as our own: “The peritonæum being much more ample than in non-pregnant women, and hanging in folds at the bottom of the wound.” Prof. Kinkead,<sup>2</sup> in addition to objecting to operating on the left side, expresses the opinion that the peril from hæmorrhage would be greater in gastro-elytrotomy than in Cæsarean section. Theoretically, I cannot agree with such apprehension, and our practical study positively controverts it. We expected some hæmorrhage, and were prepared for it. The deep epigastric artery was cut, but its divided ends were seized with hæmostatic forceps, and but slight bleeding occurred.

The introduction of the finger into the vagina, instead of a wooden plug, as at first proposed, is, as suggested by Skene, of great advantage in aiding the selection of the proper place for cutting its wall. The clipping of the wall at the point made prominent by the finger is a very easy and safe method of opening the vagina. After the opening was made, the fingers were chiefly used for its enlargement to a degree sufficient for the passage of the child. This part of the operation, which is considered the most dangerous because of the liability of hæmorrhage, was almost without bleeding, so that I believe I am entirely truthful in saying that not more than two ounces of blood were lost during the whole operation, in this respect fully verifying the recently expressed opinion of Prof. W. M. Polk, that the operation “involved little or no danger to the ureter, blood-vessels or tissues.”<sup>3</sup>

Having had opportunity some years since to perform the operation on the body of a woman far advanced in pregnancy, I was impressed with the great difficulty of delivering the child through the incision, but I now believe that such difficulty largely results from post-mortem rigidity, which is usually present when such operations are made on the cadaver. In our case, no difficulty was experienced in verting the uterus by pressure on the fundus, the finger alone sufficed to bring the expanded os uteri to the opening in the groin. I was surprised at the facility with which the dilated os, the vaginal wound, and the external incision were brought into close relation and direct line, so that a straight instrument, *e. g.*, the bone forceps, could be passed into the uterine cavity. To ex-

plain this abnormal facility, I recall to you a well-known result of such protracted labors, which I believe has not been referred to in this connection. Lusk, speaking of labor where the contraction of the pelvis is such as to keep the head at the brim, says: “The uterus retracts up over the head of the child; if the head does not descend, the vagina is drawn upward.”<sup>1</sup> Now, in this process, peculiar to the cases which are especially adapted to this operation, we have developed the conditions of vagina materially facilitating delivery through the wall, also, by this extension, the danger of injury to the ureter is greatly diminished.

Prof. Kinkead,<sup>2</sup> in commenting on the cases reported up to 1880, says: “It is worthy of note that in none of the recorded cases did the patient suffer from the distressing vomiting so common after the Cæsarean section,” and our case adds one more of this favorable condition after operation, and also another (the fifth) in which the bladder was not injured.

The honored projector of this operation, Prof. T. G. Thomas, when he made his first report upon it, said, “All that I am striving to prove is that it *probably* has fewer and less grave dangers attendant upon it than the Cæsarean section has,”<sup>3</sup> and allow me to add my humble testimony to that of others, that experience *does* prove it.

#### APPENDIX.

CASES OF GASTRO-ELYTROTOMY PREVIOUSLY PERFORMED.—*Case 1.* (*American Journal of Obstetrics*, May, 1870.) Prof. T. G. Thomas. Woman, multipara, sick ten days with pneumonia. Child turned, born alive. Mother and child died in an hour.

*Case 2.* *American Journal of Obstetrics*, April, 1878. Prof. A. J. C. Skene. Primipara. Contracted pelvis. Version attempted, craniotomy performed; abandoned because of œdema of parts and narrowness of pelvis, forty-eight hours after commencement of labor. Prof. Skene operated; death in seven hours;

*Case 3.* *American Journal of Obstetrics*, February, 1876. Prof. A. J. C. Skene. Multipara rachitic; child previously by craniotomy, another at seventh month, another by induced labor in ninth month, with version; child lived for several months.

October 29, 1875, at full time; early in labor membrane unruptured. Gastro-elytrotomy. Mother and child saved.

*Case 4.* *Am. J. Obstet.*, October, 1877. Prof. A. J. C. Skene. Primipara, æt. 37; great deformities. Operation four days after labor began; artificial dilatation of os uteri; great difficulty in operation because of deformity of woman. Mother and child saved.

*Case 5.* *Am. J. Obstet.*, April, 1878. Prof. T. G. Thomas. Primipara, æt. 20; “very small and undeveloped; labor far advanced;” operation December 3, 1877. Mother and child saved.

*Case 6.* *London Lancet*, 1878, vol. II, 656. Thos. Whiteside Hime, Sheffield, Eng. Ninth pregnancy; æt. 37; cancer of recto-vaginal septum obstructing vagina; had been confined to bed eleven

<sup>1</sup> *London Lancet*, II, 656, 1878.

<sup>2</sup> *Dublin Med. Jour.*, May, 1880.

<sup>3</sup> *N. Y. Med. Journ.*, May 19, 1883.

<sup>1</sup> *Am. Gyn. Trans.*, iv, 368.

<sup>2</sup> *L. c.*

<sup>3</sup> *Am. Jour. Obstet.*, May, 1870.

weeks, and for 48 hours had been vomiting incessantly; has had diarrhœa several days.

Operation July 14, 1878. Incision made on left side. Child saved; mother died in two hours.

*Case 7. Brit. Med. Jour.*, November 30, 1878. A. W. Edis, London, Eng. Primipara; medium stature; pelvis small, undeveloped, conjugate not exceeding  $2\frac{1}{2}$  inches. Forceps tried twice; sudden development of large thrombus in right labium.

Gastro-elytrotomy about 18 hours after labor commenced; live child delivered. Mother died from collapse 40 hours after operation.

*Case 8. Am. Jour. Obst.*, January, 1880. W. R. Gillette, M.D. Primipara, æt. 23; rachitic; 4 ft. 4 in, high, antero-posterior diameter  $1\frac{1}{2}$  inches; child dead before operation.

Gastro-elytrotomy eighteen hours after rupture of membranes. Much difficulty in dilating os uteri, which was finally incised with scissors. Great difficulty in delivery of child; forceps, version and craniotomy failed; cephalotripsy and cranioclast succeeded. Mother recovered.

*Case 9. Am. Jour. Obstet.*, October, 1879. J. T. Everett, M.D., Sterling, Ill. Removal of calcified fibroid of uterus. Woman recovered.

#### DISCUSSION.

N. P. Dandridge remarked, in regard to Dr. Taylor's paper, as follows:

I have but little to add to the details that Dr. Taylor has already given of the case he has reported. I desire, however, to emphasize what he has said of the facility with which the operation was accomplished. The conditions by which we were surrounded were certainly not such as were favorable for the performance of an unusual and difficult operation. The absence of sufficient light was at times especially embarrassing. This was particularly felt during the first steps of the operation when the abdominal muscles were being incised and there was danger of wounding the peritoneum.

This membrane once recognized and pushed back, the subsequent procedures were guided more by the sense of touch than by sight. The number of assistants present was too limited, and this was also an embarrassment. These facts are especially dwelt upon to show that the operation may confidently be undertaken without special preparation of any kind, and with such means as are ordinarily at command for the performance of any surgical procedure.

In most of the cases of laparo-elytrotomy which have thus far been reported, the conditions requiring the operation have been recognized either before or early in labor, and thus the operator has had time for full consideration of all the necessary steps of the operation, and to prepare himself for the complications which are likely to arise. In the case reported it was only after prolonged efforts had been made that the impossibility of delivering through the natural passages was determined, so that the woman was in such a condition of exhaustion that it was absolutely necessary to at once determine the course we should pursue. For my part, I was summoned without any knowledge of the previous or existing conditions,

and was influenced in urging the performance of laparo-elytrotomy rather than Cæsarean section, which at first sight seemed certainly easier of execution, by the exhaustion of the woman, which was such that it seemed scarcely possible that she could survive so severe a shock.

I was, I confess, both surprised and delighted with the facility and rapidity with which the operation was concluded—an operation I had always regarded as necessarily intricate and requiring considerable time. The hæmorrhage we encountered was trifling; the epigastric artery was readily secured, and there was really no appreciable bleeding from the wound in the vaginal wall. The experience of this case, contrary to what has been said heretofore, leads me to think that the left side possesses decided advantages over the right, for when the first steps have been completed and the peritoneum stripped back, the left hand inserted into the vagina enables you to appreciate between your fingers the thickness of the intervening tissue, and thus determine whether you are free of the bladder or not, and it is certainly much safer to cut directly upon the sensitive finger rather than a plug of wood, as has been suggested. In all these manipulations the operator has his right hand free for the use of instruments, which to most is an advantage if not a necessity.

I was a student in the College of Physicians and Surgeons when Dr. Thomas reported his first case before the class, and I well remember the impression the recital made upon me at the time. Once I have had an opportunity of assisting at the operation upon the cadaver—the case referred to by Dr. Taylor, and in our recent experience was much impressed with the greater facility with which it could be executed upon the living.

#### THE SURGICAL TREATMENT OF INTESTINAL OBSTRUCTIONS.

BY H. O. MARCY, M. D., BOSTON, MASS.

[Presented to the Section on Surgery and Anatomy, Cleveland, June, 1883.]

It may be accepted as an undisputed fact that our operative art has won its greatest triumphs during the last decade in the field of abdominal surgery. The peritonæal cavity is no longer the "terra incognita" of the surgeon, and its invasion is not attended with the fears or dangers of even a very recent period.

The removal of ovarian tumors is not invested with serious dangers. Hysterectomy is considered a justifiable operation in quite a variety of diseases. Kidneys are extirpated, with a fair showing of success. Biliary calculi are not exempt from surgical interference.

Gun-shot wounds of the abdomen and intestines are no longer treated with opium, and death awaited as almost certain, but the injured portions are, so far as possible, restored in their continuity or resected; and the removal of malignant growths involving the digestive organs is even advocated by some, whose opinions are worthy of the greatest respect.

Crowned with such laurels, is it surprising that the surgeon demands a revision of the entire question of