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ON RUPTURE OF THE UTERUS, WITH A CASE IN WHICH GASTROTOMY WAS RESORTED TO AS THE MODE OF DELIVERY.

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The fatality of this dreadful accident to the parturient female demands our sympathy, and calls for our utmost exertions to devise some means of relief, if any can be found, under circumstances presenting an almost hopeless condition of our patient; for an escape from this terrible disaster may be considered almost miraculous. The uniformly fatal termination in a very short space of time, of every case of rupture of the uterus that had come to my knowledge in the practice of my friends, or of my own, induced me seriously to reflect what could be done, or what might be rationally attempted, in these deplorable cases. Having many years ago been instructed in a school* whose teachers repudiated the uncharitable doctrine of non-interference, once held by Drs. W. Hunter and Denman on this subject, and although the experience I have had since may not give encouragement to act otherwise, yet the recorded cases of successful attempts to rescue the subjects of these unhappy cases from death, have influenced me to adopt prompt and energetic measures of relief in every example requiring my interference. I regret to learn, however, that cases in which the fœtus had escaped into the peritoneal cavity, are very generally abandoned to their fate. Under the impression which past experience had had upon my mind, and from a calculation of the relative results of different modes of practice adopted in these cases, I determined, when a fair opportunity should occur, to resort to gastrotomy, as the most rational practice, especially in those cases of escape combined with a diminished capacity of the pelvis. This practice was resorted to in the following case:—

Sarah Booth, aged 26, a stout healthy female, married seven years, and is the mother of three children. Her former labours had been severe and protracted, but she had done well under the management of the midwife, who had been in attendance in the present instance, till the supervention of the accident.

She first felt the pains about five o'clock a.m., of November 19th, 1842. The labour proceeded very slowly, arising, there was reason to apprehend, from a

disproportion between the head of the fœtus and the pelvis, the latter being slightly contracted, and the former unusually large. The midwife stated, that after severe suffering through the day, the head had advanced considerably in the pelvis, when about four p.m., during the continuance of a severe pain, there was a sense of something suddenly giving way, after which the head receded, and a considerable hæmorrhage followed. The patient became faint, and sickness supervened, but no actual vomiting followed. She continued faint, pallid, and restless, with ineffectual efforts to vomit; but no further uterine action followed, although she complained of distressing sensations in the abdomen. The parties becoming alarmed, sent for the late Mr. Clarke, surgeon, of this town, who from a careful examination, ascertained that a rupture of the uterus had occurred, and he lost no time in obtaining a consultation, for which purpose he requested my advice. We visited the patient about five o'clock, and made an examination. No presentation could be felt; the vagina was filled with coagulated blood, and the fœtus could be felt through the abdominal parietes, having escaped into the peritoneal cavity. The poor woman's state was alarming; pulse rapid and feeble; pallor of the countenance; slight efforts to vomit; great restlessness and anxiety characterised her present condition. There could be no doubt, from our enquiries, that the whole of the fœtus, and probably the placenta, had at once escaped into the cavity of the abdomen. A question arose in what way the child was to be removed. We considered that to introduce the hand into the uterus, now considerably contracted, and drag the child again through the lacerated wound of that organ, and afterwards to have occasion to resort to great force in effecting the delivery of the fœtal head through the pelvis, would be likely to inflict additional injury upon the parts, and to exhaust the feeble powers of life yet remaining. It appeared to me that gastrotomy offered the best chance for our patient's life. In this opinion the gentlemen, (Messrs. Clarke and Gillett,) who assisted me in this case, concurred.

A clear and candid statement of the circumstances of the case and its prospects, every way considered, having been given to the poor sufferer and her husband, they willingly consented to the adoption of any measures which we judged advisable. As a necessarily preliminary step, the urine was drawn off, and the patient was placed in a convenient position, on her back on the bed. The integuments of the abdomen being kept on the stretch by an assistant, an incision about six or seven inches was made with a scalpel, extending from two inches

* Dublin Lying-in Hospital.

above the pelvis, to a short distance of the umbilicus. The peritoneum having been laid bare, an opening was made, and that membrane divided co-extensively with the external wound. The omentum now protruded, which being carefully held on one side, a tense bag containing a yellow fluid presented itself, being in fact the ordinary membranous envelope of the fœtus in utero. The contents, consisting of the liquor amnii, together with a large quantity of coagulated blood, were evacuated by a puncture, and the head of the child presented itself. The fœtus was extracted by the feet, and it was found that the external wound was barely sufficient to allow of the passage of its head. The placenta had been expelled from the uterine cavity, and was lying amongst the intestines, together with a considerable quantity of fluid and coagulated blood, all of which was removed. The time occupied in the performance of this operation was not more than a few minutes, and during its continuance, the patient, although perfectly conscious, remained quite tranquil. The omentum and intestines protruded from the wound, but were easily replaced, whilst the edges of the wound were brought together by sutures, strips of adhesive plaster, and a firm bandage completed the dressing; after which our patient was placed in a favourable position. The poor woman bore the operation with great fortitude, and expressed herself as being very much relieved, and considered that she had terminated her labour with much less suffering than she had experienced on former occasions. The pulse almost immediately rallied, and the appearances of extreme exhaustion subsided. The child—a female—was considerably above the middle size, weighing eleven pounds and a quarter, and had no doubt ceased to exist at the period of the accident. Wine and a full opiate were given, and we left her in a composed state at nine o'clock, under the charge of an experienced nurse, who had instructions to administer nutritious fluids, and if needful, more wine.

20th. 9 A.M. Had slept a considerable part of the night, but had passed no urine. The pulse, which was compressible, ranged about 130 to 135; the tongue was slightly furred and pale, and general abdominal soreness was complained of; slight lochial discharge, and the abdomen somewhat tumid. This morning she first complained of slight after-pains. Slight reaction was gradually manifesting itself, and altogether her general appearance was as favourable as we could reasonably have anticipated. The catheter was used and a pint of urine drawn off. Nutritious fluids were ordered to be continued, and pills, containing each one grain of opium and two of calomel, directed to be given every four or six hours.

At two p.m., she continued tranquil; pulse 125. At our evening visit we found our patient in the following condition:—Pulse 135; respiration varying, sometimes when at rest being nearly natural, again under slight excitement more frequently hurried; tongue exhibiting a white thin fur; there was slight cough with mucous expectoration, but the condition of the abdomen restrained the effort to dislodge it but in a small quantity, and there was no perceptible uneasiness on this account. The urine was drawn off to the amount of a pint or more, of a natural colour. An injection was administered with effect. No nausea

nor vomiting had been complained of during the day, and had the pulse not ranged so high, we should have regarded our patient as proceeding favourably. It is true we looked upon the slight bronchial affection with suspicion, but were gratified to notice a tolerably free lochial discharge, and the supervention of regular after-pains. There appeared, in fact, several favourable points to balance fewer of an unfavourable kind, and to advance or recede one step, would raise our hopes or excite our fears as to the result. The pills were ordered to be continued as before; the urine was drawn off and an enema administered.

21st. 9 A.M. Had passed a good night, having been tolerably free from pain, and had slept for several hours. The evacuation, which followed the enema, was mixed with blood, the source of which could not be precisely ascertained—whether from the vagina or rectum. The nurse reported that some urine had been passed. The pulse was less frequent; tongue pale, slightly furred in the centre, but clean around the edges. The abdominal tenderness was by no means so great as we expected to find it; nor was there as much tumefaction as before. Some portion of the bandage was carefully removed by dividing it anteriorly, but considerable uneasiness was complained of when the support which it afforded was removed. The adhesive process appeared to be proceeding favourably, and without disturbing our patient the dressing was readjusted. The lochial discharge continued in a diminished degree. Thirst was very urgent, and slight nausea was occasionally present. The pills were directed to be given when pain or restlessness were urgent, and effervescing draughts occasionally.

9 P.M. Pain in the situation of the uterus increased; pulse 135, and sharp; tenderness; and slight efforts to vomit, with much thirst. There had been no evacuation either by the rectum or bladder. Catheter introduced, and an injection administered. Calomel and opium, (the latter in larger quantity,) persisted in. The effervescing draughts continued.

22nd. 8 A.M. We were gratified to find our patient had passed a tolerably tranquil night. Less pain; slept a few hours; pulse 135, but not so hard as at our last visit, and there had been no evacuation. She could turn in bed to either side without much complaint of pain or tenderness. It was now quite clear, that the constitution was making a great effort to remedy the effects of two terrific injuries—rupture of the uterus and the external wound. It appeared now to be the business of the judicious practitioner to steer his course with great circumspection; to do enough, but not too much; to support the powers when they appeared to be flagging; or, to diminish any excitement likely to carry our patient beyond the safe point of healthy reaction. It appeared that the large quantity of blood lost tended to give the case, in its general features, the character of diminished or exhausted power. This unquestionably embraces the nicest point of practice in these tremendous injuries. Some of the most experienced practitioners of Dublin, recommend very large doses of opium frequently repeated, a practice, the advantage of which I most readily admit. With the addition of chicken broth, and milk gruel, the same dietetic measures were continued as before; the calomel and opium administered conditionally in reference to pain, uneasiness, or restlessness. The

urine drawn off was natural in colour, and amounted to about one pint.

10 P.M. Report nearly as before. Complaints of extreme debility; can turn by her own efforts in bed; slight nausea when she takes fluids, except water; pulse 135; tongue as before; had passed about eight ounces of urine; slight occasional delirium, caused, probably, by the opium. A cathartic injection. Other measures directed as before.

23rd. 10 A.M. Had passed a somewhat restless night; pulse 135, soft and weak; general feeling of exhaustion; pallid countenance; neither pain nor tenderness severe; passed an evacuation, consisting of fæces, slightly mixed with blood, (query,—from rectum or vagina?) urine, as before, drawn-off, colour and general appearance natural. It now became evident that the powers were nearly at their lowest ebb. Port wine was ordered to be given in the quantity of half an ounce every two hours whilst the exhaustion remained so great, and I soon visited her again to notice its effects. She then assured me how much the wine had improved her feelings without having occasioned heat, thirst, or pain, and begged it might be continued, to which, under the former restrictions, I acceded, and in addition, ordered some very nutritious beef tea to be given occasionally. The calomel and opium were suspended, except the latter, on the condition of restlessness or pain supervening. The effervescing draughts continued.

8 P.M. Had passed two copious fluid evacuations of a tolerably natural appearance, and expressed herself as relieved by the discharge, at the same time requesting the wine to be continued, which we gladly acceded to, especially as its administration produced no increased heat or fever, but had, as she said, done her much good. The catheter was used, and the wine and beef soup recommended to be continued under the former restrictions.

24th—sixth day. 10 A.M. Had passed a rather restless night, the exhaustion having again acquired the ascendancy, notwithstanding the administration of opium, wine, and nutritious diet; pulse 140, weak; speaks in a whisper; pain in hypogastric region at intervals; offensive discharge from vagina. She had slept at intervals, but occasionally wandered and started. The bandage was wholly removed from the abdomen, together with several strips of adhesive plaster, and the wound appeared to have united generally, except a small part at its lower end, from which issued some healthy pus. The wound was dressed and a tolerably firm support afforded by the bandage, after which the patient expressed herself easier, especially as regarded the additional support afforded to the part.

8 P.M. General appearance more unfavourable; pulse 140; beats communicating the feeling of an almost continual stream—very low, almost approaching insensibility. It appeared from inquiry, that milk had been slightly secreted in the breasts for a day or two. There had been no evacuation; the urine was drawn off.

Our patient continued through the following day, and finally sank on the eighth day after the delivery. It is probable, that the calomel had slightly affected the mouth about the fifth or sixth day.

AUTOPSY.

November 28th. The abdomen was considerably distended, apparently with gas. The length of the

wound in the abdominal parietes now measured four inches, and had united generally by the adhesive process, excepting at some points whence there issued a slight purulent discharge. The divided abdominal peritoneum had become adherent along the wound to the subjacent parts. On breaking down the adhesions, and separating the edges of the wound, a little purulent matter was found. The convolutions of the intestines and the omentum were, in several places, slightly adherent by lymphatic effusion, and this condition prevailed in several places between the contiguous surfaces of the serous membrane. The general peritoneal surface exhibited a slight state of vascularity, and this condition was more conspicuous in the neighbourhood of the uterus, which viscus was slightly adherent to the bladder. Four ounces of a darkish-brown fluid were effused into the cavity of the peritoneum, but not at all intermixed with pus. The omentum presented throughout its extent a brown colour; but there was no gangrenous appearance in this or any other part. The stomach was healthy, and very slight vascularity was observed on its outer coat. The uterus had contracted to the size to which it is usually reduced about the seventh day after delivery. It presented a perfectly normal appearance, excepting a slightly increased vascularity, and felt firm in its general structure. Its outer covering, as before stated, was slightly adherent to the contiguous peritoneal surface. Upon raising up this organ towards the pubis, a dark-brown ragged opening was discovered, chiefly seated in the posterior wall of the vagina, and apparently extending through a small portion of the cervix uteri. The length of this opening varied, according as it was enlarged by stretching, or suffered to remain in its original state with the parts *in situ*. The variation of the laceration was thus from three to five inches. Besides this longitudinal laceration, there was a considerable transverse division just at the point where the vagina joins the cervix. There had been no attempt to close this lacerated wound by any reparative process; but the contiguous surfaces of the peritoneum had become so generally adherent as effectually to prevent the secretions or discharges from the uterus or vagina from passing into the abdominal cavity. The edges of the lacerated opening were irregular and jagged, and of a dark brown colour, but free from any gangrenous state. The inner surface of the organ presented nothing unusual in its appearance. The pelvis, although apparently well-formed, was slightly under the natural dimensions in its antero-posterior admeasurement, and considered in connexion with the large size of the fœtus, (eleven and a quarter pounds,) was decidedly disproportioned; the head being firm and unyielding had resisted the violent action of the uterus from five in the morning till four p.m., eleven hours.

REMARKS.

We have now to enter upon the reasons which induced us, in this instance, to resort to the formidable operation of gastrotomy.

The suddenly fatal termination in every case of ruptured uterus, attended by an escape of the fœtus into the peritoneal cavity, which had ever been witnessed by myself or friends, induced me seriously to reflect upon the adoption of some other method of proceeding, with a view to afford the unfortunate sufferer

from this accident a better chance than has resulted from the ordinary mode of delivery. Fortified by the success of continental practitioners, we determined to resort, in this case, to the operation recorded in this paper.

The subject, as regards the particular practice to be adopted, is necessarily divided into those cases in which the contents of the uterus have escaped into the peritoneal cavity, and those in which a part or the whole of the fœtus still remains in the uterine cavity. In the latter class of cases the practice is clear; all are now agreed that immediate delivery is to be effected, either by instrumental or manual assistance in the ordinary way. It is the first about which we have to inquire; and the rule laid down in this country has been to deliver *per vias naturales*, excepting in those examples in which there is much pelvic deformity, or an undilated state of the os uteri.

Now, in the present instance, neither of those conditions existed excepting the former in a slight degree. The reasons which induced us to resort to gastrotomy were:—1st, the extremely exhausted state of the patient; 2nd, the apparently large size of the fœtus, thus constituting a disproportion, even in a pelvis of natural dimensions; 3rd, the long period of time which had elapsed since the occurrence of the accident; and, as regarded the method of delivery generally advocated, 4th, the risk of enlarging the lacerated opening in the uterine parietes; 5th, the violence necessarily involved in the delivery by the natural outlet, first through the laceration, and secondly of the head through the pelvis, presenting to our view a hopeless, heartless proceeding. There appeared to us far less of violence, force, and rashness in the simple incision of the abdominal muscles. A conviction filled our minds, that our patient would inevitably have sunk exhausted from the violence necessarily attendant upon the ordinary mode of delivery. Is it not probable that, in cases in which the rupture is in the substance of the uterus, the organ immediately contracts after the expulsion of its contents; and, if so, in dragging the child through an opening, now considerably diminished in size, severe additional violence would be inflicted?

By gastrotomy we moreover offered to ourselves the advantage of a more rapid mode of delivery, less exhaustion, and a complete removal from the peritoneal cavity of extravasated blood. In every case of *post-mortem* examination which I have made or witnessed, of ruptured uterus, a large amount of fluid and coagulated blood was found in the peritoneal cavity. The immediate result of the operation—a decided revival of the vital powers—more than confirmed our anticipations. As it appears to my view, two distinct advantages, besides those already alluded to, would result from the section of the abdominal muscles in all cases of rupture of the uterus, with escape of the fœtus, especially if the operation were made continuous, as it were, with the accident. The first would be a fair chance of preserving the life of the child; the second, the system would not be subjected to two shocks, with an interval, during which, generally, the vital powers are rapidly sinking or become exhausted. The adoption of the practice now advocated would accord with the principle in surgery, of immediate amputation in compound fractures from gunshot or other injuries.

I am disposed to infer, that lacerated wounds of the vagina, and especially if their direction be transverse, are more difficult to repair, and consequently more fatal in their consequences, than an equal extent of division of the substance of the uterus alone. My reasons for so thinking are derived from the fact,—that in every instance which has come under my own observation, the examination has shewn the rupture to have been in the posterior part of the vagina only, or extending into but a small portion of the cervix uteri. Besides, wounds of lax membranous parts do not readily keep in contact, whereas the walls of the uterus, being firm, the organ, by its contraction, preserves the edges in close apposition, and favours the reunion of the parts.

Now let us endeavour to place in order, the various points of our subject:—

1st. There have been recorded a few, (one or two?) cases of recovery from rupture of the uterus, complicated with escape of the fœtus into the peritoneal cavity, having been left to chance. Whether these were cases of rupture, or of extra-uterine pregnancy, is now extremely doubtful. They may be classed amongst the fabulous.

2nd. There are a few well-authenticated examples of recovery in which the delivery had been effected *per vias naturales*.

3rd. A few recoveries have resulted in cases wherein gastrotomy had been the mode of delivery, and equally entitled to our credit.

In again adverting to British practice, as regards the Cæsarian operation, it will I think, be conceded, that the error has been in procrastination; and perhaps continental practice has overstepped the correct boundary line in its precipitancy; yet it is highly probable more lives have been lost by the adoption of the former than the latter principle. Who would not admit, but that in the two cases detailed by Dr. M'Keever* there would not have been a better chance of recovery from gastrotomy, than by the practice pursued. In the one instance an ineffectual attempt at delivery in the ordinary mode was made; and in the other, the patient lingered some days, and the fœtus was found in the peritoneal cavity after death.

Alluding to cases which would be likely to require the operation of gastrotomy, Dr. Ramsbotham observes—"But if I found the patient sinking—if the powers of life were ebbing fast—and particularly if thirty or forty minutes had elapsed since the rupture, and the movements of the fœtus had quite ceased, I should by no means sanction the incision, because of the *painful nature* of the operation; and because I should presume it would *avail nothing*, and might probably hasten her death." Now some of the reasons which would influence Dr. Ramsbotham not to resort to gastrotomy, were just those which induced me to avail myself of it. Just as the patient was sinking, so should I hasten to remove the cause, or one of the causes—the presence of the child amongst the viscera of the abdomen. Besides, the operation is not comparatively a painful one; certainly not so painful as that of amputation or lithotomy; and its duration, as applied to these cases is very short,—not more than

* Practical Remarks on Lacerations of the Uterus and Vagina, p. 14 and 82.

* Dr. F. H. Ramsbotham *Obstetric Medicine*, 1841, p. 601.

two minutes. Instead of causing increased depression, the patient revives under it, as was the case with our patient, who immediately declared that she had experienced but very little pain, far less as regarded the operation than on the occasions of her former labours.

I can fully bear out the opinion of Dr. M'Keever, in his Essay, that this dreadful accident occurs more frequently amongst the lower ranks than the higher; and I would suggest whether this result does not arise from the greater frequency of deformity of the pelvis as the consequence of rachitis or scrofula in the former class; and hence, it is highly probable that in large towns, where poverty and unhealthy occupations prevail, and especially where children are engaged in cramped or restrained positions, as in cotton factories, &c., we shall find a higher ratio of this kind of difficult and dangerous parturition. Judging from the results of my own practice, during a period of upwards of thirty

years, and from the information I have been enabled to collect from the practitioners in this town, who have had the most extensive opportunities, that rupture of the uterus is exceedingly rare in this district. Four cases have come under my own immediate notice, of which one was in my own practice, and the other three in consultation. In calculating the relative frequency of rupture of the uterus during the last twenty-five years in this district, it would probably be not far from a correct average to fix it at one in five thousand.

It would further appear that Dr. W. Hunter's and Dr. Denman's original opinion and practice, (non-interference,) is still acted upon by several surgeons of the present day, and cases of rupture of the uterus are still left to chance.

The following table will show, at one view, the principal points of interest to which I have alluded:—

Table containing thirteen Cases of Rupture of the Uterus: Practice: Results, &c.

No.		Locality.	Date	Presentation.	Escape into Abdomen.	Survived the accident.	Practice adopted.	Situation of Rupture.	Results.
1	a	Dublin, Lying-in Hospital	1811	Head remaining in pelvis		21 hours	Embryulcia	Vagina & uterus posteriorly	Death.
2	a	Dublin, Lying-in Hospital	1811	Head remaining in pelvis		2 hours	Embryulcia	Ditto	Death.
1	W.	Sheffield	1821		Escape	6 hours	Undelivered	No examination	Death.
1	R.	Sheffield			Escape	1 hour	Undelivered	No post-mortem examination	Death.
1	W.	Sheffield	1820	Head remaining		2 days	Embryulcia		Death.
1	T.	Sheffield	1825	Head remaining		18 hours	Embryulcia		Death.
1	W. J.	Sheffield	1828	Head remaining		2 days.	Embryulcia	Substance of the uterus posteriorly	Death.
1	R.	Sheffield	1829		Escape	only a few minutes	Undelivered	No post-mortem examination	Death.
1	R.	Sheffield	1835		Escape.	3 hours	Undelivered	No post-mortem examination.	Death.
1	W.	Sheffield	1834		Escape	12 hours	Undelivered	Cervix and vagina posteriorly	Death.
1	C. J.	Sheffield	1842		Escape	8 days	Gastrotomy	Vagina and cervix posteriorly	Death.
1b	F.	Sheffield	1844	Superior extremity		36 hours	Delivered by version	Uterus anteriorly, and bladder	Death.
1c	J.	Sheffield	1844	Head remaining		3 days	Embryulcia	Uterus posteriorly	Death.
13					6				13

a a During the period when Drs. Hopkins and Douglas were master and assistant.

b. Case recorded in the *Provincial Journal*, No. 8, Vol. ii., p. 117. The pelvis was contracted. She had had several children before, and had had, on this, as well as on former occasions, premature labour induced. This occurred in the sixth month, and turned out to be an arm presentation. She was delivered by version. Would not the case have done well if left to nature?

c. Case of contracted pelvis; two previous labours, difficult and protracted, but not extraordinary interference required. The mother of the subject of this case had given birth to nineteen children, and this was the second daughter who had died of ruptured uterus.