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ARTICLE I.

LAPAROTOMY IN A CASE OF EXTRA-UTERINE FŒTATION; OPERATION FOR REMOVAL OF DEAD BODY OF CHILD; RECOVERY OF THE WOMAN. By WALTER F. ATLEE, M.D., of Philadelphia. WITH SUPPLEMENTARY REMARKS UPON THE IMPORTANCE OF OPERATING EARLY; AND DANGERS OF THE OLD SYSTEM OF WAITING FOR NATURE. By ROBERT P. HARRIS, M.D., of Philadelphia.

I WAS consulted on September 5, 1877, by Mrs. M. O., of Germantown, on account of the irritable condition of her stomach. She was a native of Ireland, came to this country when she was nine years of age, was then thirty-five, and had been married sixteen years. She had always been perfectly regular in her menstrual discharge until the previous April, since when she said she had been irregular. On the 24th of May there was considerable hemorrhage, and after that she had seen nothing. After examination I told her I thought her to be pregnant. I advised the use of effervescing salt of pepsin, bismuth, and strychnia for sickness of stomach.

On the 13th of April following, she came to my office. From her condition and history I then believed her to be carrying in the abdominal cavity, outside of the womb, a child that had come to full term in January, when the child had died. The body was in the lower part of the belly, placed transversely, the back forwards, and the head on the left side. I advised her to wait until symptoms of blood-poisoning should come, when this body should be removed; otherwise that nature was not to be interfered with at all, until a channel was indicated through which she was endeavouring to get rid of this body, and then the patient was to be helped. An operation then would shorten the duration and the suffering of the eliminative process; it was one of but little danger, and a source of great advantage.

The patient came to see me one month afterwards, and in the mean while I had become convinced that this advice was not good, but that the body should be removed without delay. When this was told her, and an

immediate operation proposed, she eagerly gave her consent. Her pulse was then 109°, but there were no decided symptoms of purulent infection.

On the 16th of May the patient came to this city to the room prepared for her in the St. Joseph Hospital; after this no food was allowed to be taken except barley water; on the 17th in the evening a dose of oil was administered; on the morning of the 18th 10 drops of McMunn's elixir of opium were given; an injection thoroughly emptied the lower bowel, and at 11 o'clock, after taking a drink of two ounces of whiskey, the patient was placed on the operating table and chloroformed. An incision six inches in length, beginning one inch above the navel, was made in the *linea alba*; the peritoneum was found thickened and vascular, but not with large bloodvessels; it reminded me of inflamed dura mater, though not quite so thick. This opened, a liquid like pea soup, about one and a half pints in quantity, came out, and the child's body showed itself, and was pulled out with little trouble breech foremost. The cavity in which it was contained was cleaned out by sponging; at the bottom a knuckle of intestine showed itself, about two inches in length, and less than one inch in breadth. With this exception the dead body of the child, which weighed four pounds and two ounces, appeared to have been cut off from the rest of the contents of the abdomen by a continuous membrane of greater or less thickness. No further investigation was made of the state of things. The umbilical cord was cut so that about four inches hung out of the lower part of the wound; alongside of it a drainage tube of India rubber was placed, the wound was sewed up, and the usual dressings applied. After removal to bed a quarter grain of morphia in Magendie's solution was injected under the skin of the arm.

After the operation, with the exception of the injection just mentioned, opium was given only three times, and then by enema in the form of McMunn's elixir, together with bromide of potassium, for the purpose of producing sleep, on the 19th, the 21st, and the 25th. She was allowed to pass her urine as she wished, in the bed-pan; after the 31st, she was allowed to get out of bed for this purpose. On the 24th she had her bowels moved for the first time; using the bed-pan. For the second time on the 31st. For the first four days, on account of sickness of stomach, which lasted two days, and hiccough that lasted four, she was nourished by injections of beef-essence—two ounces being given every four hours. After that time she used, in the usual way, mutton soup and milk; on the 24th ate some bread, on the 26th beefsteak, and by degrees was allowed her ordinary food.

The pulse after the operation was generally about 105; the temperature was never noticed above the normal standard. The drainage-tube was removed two days after the operation. The discharge for some two days had particles of caseous matter in it, afterwards it became a healthy creamy pus. The cord dropped on the 24th. On the 28th while seated in bed, about a teacupful of healthy pus suddenly came from the vagina. By the touch I could find no orifice whence this came. This vaginal discharge, though very small in quantity, continued for five days. On the 3d of June and for five days afterwards, shreds of stuff resembling a breaking down membrane were discharged, and as they did so, a body about the size of a small fist, in the left iliac fossa, gradually disappeared.

On the 13th the patient went to her home in Germantown in very good health, a few drops of pus still coming from the wound, but the discharge diminishing daily.

W. F. A.

Of the three varieties of puerpero-abdominal surgery, viz., the Cæsarean section, the abdominal section after uterine rupture, and the same in extra-uterine pregnancy, the third has been the most rarely performed, and has only quite recently begun to attract attention; especially as an operation to be resorted to early, and as an elective procedure. There is some confusion in the classification of cases and operations; but I do not propose to alter it here. The abdominal pregnancy is called *primary*, when developed originally in the cavity of the abdomen; and *secondary*, when the ovum or fœtus has escaped from the original cyst and become subsequently developed as a ventral fœtation. The operation is also *primary*, if performed during the life of the fœtus, and *secondary*, if after its death, no matter whether recent or remote. We have, therefore, a case and operation both termed *secondary*; but the latter, *early* and *elective*.

In view of the happy termination of the operation, it is a satisfaction to me to reflect upon the fact that I recommended its performance both to surgeon and patient, and advised as early a resort to the knife as practicable, confirming my opinion by reference to several of the cases which are referred to in this paper. The patient readily assented, although she had been advised against an early operation, and knew that she ran much risk of her life; but she also knew that it was unsafe to remain as she was. As her days were unhappy and nights often miserable, by reason of suspense and suffering, she was anxious to be operated upon.

Progressive surgery has, within a few years, overcome in a measure many of the deep-seated prejudices of the profession against the several forms of operative interference, considered for a long period to be of themselves almost necessarily fatal; and in no one form is this more apparent than in that which involves the once much-dreaded incision into the abdominal cavity. The progress made in ovariectomy, and its unforeseen success in saving life, has led, and is gradually leading to greater boldness with confidence, in other abdominal operations. What would have been considered recklessness a few years ago, is coming, by reason of accumulated successes, to be regarded not only as legitimate but advisable; and the chief obstacle at the present time appears to lie, not so much in the danger of peritonitis, or septic infection, as in the difficulties of making an unquestionable diagnosis. Could tubal pregnancy be *positively* recognized at the time of rupture in the early months, we believe it would not be long before some bold operator would venture, and possibly with success, to open the abdomen of a woman, secure the bleeding vessels, or clamp the entire cyst, and evacuate the lost blood. This has never been done, and has but recently been condemned at a discussion on the part of high authorities in London; but it may yet be accomplished if the diagnosis can be satisfactorily determined and in time for the operation. Women have lived a number of hours, and, in some instances, several days after the bursting of a tubal cyst, when of so small a size that the operation

might have succeeded. I once reported the case of a lady who died in twenty-one hours after the cyst burst, in whom the operation might have been easily performed. The symptoms, clearly to my mind, although they did not to others present, indicated rupture, which I located in the right Fallopian tube, and proved by autopsy to be correct; but this diagnosis was only inferential, and therefore not sufficiently reliable to warrant an operation, even if it had been thought of, which it was not, as the case occurred in 1857. What was then in a measure conjectural, although based upon well-known evidences, may, under improved methods of diagnosis, in time become reliable. So many mistakes have been made by men of great fame, in their hurry of business, that it becomes necessary in avoiding their errors, to secure a clear clinical history of any given case, and then examine it with all the most approved and reliable methods known to science. What is known as hypogastric or pelvic colic, accompanied by vomiting, and possibly fainting, with symptoms of collapse, followed by recovery, should make an attending physician suspect a tubal pregnancy, and put him upon his guard for a more severe attack ending in rupture, or prepare him for dealing with a misplaced pregnancy at an advanced period, and keep him from falling into the error of believing that he has in hand an ovarian, or possibly a malignant tumour. Palpation and the sound are very important in determining the nature of abdominal tumours suspected of having a pelvic origin; but they have led wise men into error, when the patient's history had not been properly taken or regarded. It may be well to ignore the statements of a stupid woman as to her own case; but there are patients whose accounts of their past symptoms are remarkably clear, connected, and valuable, as in the clinical history, now to be given, of Dr. Walter F. Atlee's case.

Mrs. O., married at 20, and although regular, did not conceive for fifteen years, when her menses ceased, and she presumed herself pregnant, their last appearance dating April 15th, 1877. At the end of the sixth week she was attacked with a profuse hemorrhage, lasting seven days, and thought she had miscarried, as she passed a membranous substance which she said "looked like a piece of skin," such as she had never discharged on any former occasion, which was no doubt the *decidua*.

Soon the usual signs of pregnancy made their appearance, and her mammæ commenced to develop and become painful. Pains in the abdomen were now experienced, and one morning, in the act of rising from bed, she had a very severe attack of pain, followed by vomiting, and remained sick for four or five days, but without medical advice. This pain was low down in the left side within the hip-bone, and evidently in the pelvis.

On June 30th, 1877, when presumed to be ten weeks pregnant, she was seized with vomiting, followed immediately by a very severe pain in the same locality as before, accompanied by a sensation of tearing, as if something had given way, and followed by another feeling, indicating that a body had fallen and was in some way pressing upon the bladder, creating a desire to urinate, and, at the same time, interfering with the ready pas-

sage of the fluid. This attack, which was no doubt one of rupture of an extra-uterine fœtal cyst, and, in all probability, in some part of the left Fallopian tube, in which such early accidents are most apt to occur, was followed by symptoms of collapse, ending in violent peritonitis, the abdomen being much distended, painful to touch, and sensitive throughout, while the uterus was too tender to admit of the vaginal touch. After being considered in much danger for several days, she began to improve, and, at the end of a week, was well enough to be removed upon her bed to a farm at a short distance from her residence, where she soon in a measure recovered.

Here, in two weeks more, she had a third attack of pain but differently located, associated with vomiting and fainting turns, which continued for three days, during which she was treated with hypodermic injections of morphia and food enemata. After this, she had sick turns, difficulty in urination, and flying pains, lasting through the summer and down to September 5th, when she first felt the movement of the fœtus. She was also affected with lameness in the left hip-joint, which had a sore feeling, as if inflamed.

When quickening took place, she was about $4\frac{1}{2}$ months advanced in her pregnancy; but the sensation was entirely abnormal in location, as she found by consulting some of her friends who had borne children naturally. The motion of the fœtus was felt low down in the left side of the pelvis near the rectum, and sometimes further forward, near the bladder; or, as she expressed it, "the baby seemed to be right in the seat, sometimes back, near the backbone, and sometimes in front."

As gestation advanced, the movements of the fœtus became more and more decided, and the location higher and higher, until, when she turned in bed, she could distinguish the sensation of a body moving from side to side within her abdomen. At last the fœtal motions became so vigorous as sometimes to wake her out of sleep; her breasts enlarged until milk was secreted in them; her abdomen became very large and pendulous, so as to strike upon her thighs in walking, and her lower extremities œdematous, pitting decidedly on pressure. The child at this time rested partly on the thighs when she stood erect, and she could frequently feel the fœtal movements impressed on their anterior face, both in walking and sitting, but particularly the latter. Gradually, her urinary difficulty decreased as pregnancy advanced, the secretion becoming more abundant, and at last passing readily.

Motion ceased in the fœtus on January 10th, 1878, when it must have been within a week or two of its full maturity. Mrs. O. now began to diminish in size and improve in health, getting a better appetite and a good digestion. Her menses made their appearance about the first of February, and were preceded by intermittent pains like those of true labour, deceiving her medical attendant into a belief that she would shortly be delivered. The flow continued six weeks, and was at times very abundant, since which she has been regular, the last period closing on May 15th, three days before the operation.

This is certainly a remarkably connected record, especially shown in its symptomatic succession; and had we not made the examination of the patient personally, we might have supposed that she had in some degree been prompted to frame her statement of sensations; but such was not the case. A remarkably good memory, closeness of observation, and a

delicate sense of localization in pain and sensations, with good common sense, have enabled her to relate and explain her own feelings intelligibly.

Condition before the Operation.—Mrs. O. is of medium height, rather stout, weighing ordinarily 136 pounds, has a good colour, a healthy look, and a clean tongue, but, at the same time, an anxious expression of countenance, and a pulse of 105. She has at times sudden attacks of vomiting, almost without warning, and says that her condition is a constant source of disquietude, night and day. Her abdomen is full and still somewhat pendulous, but much less than formerly, and measures, when erect, 35 inches in circumference. Percussion and palpation show that but little of the fluid which once so largely distended the abdomen remains, the excess having been removed by absorption.

The fœtus can be readily distinguished, lying on its right side, with its occiput presenting to the left groin, its spine to the pubes, and nates to the right of the linea alba; in fact, it rests outside of the pelvis, across the abdomen, and is sustained by the abdominal parietes.

When upon her back, the abdomen has a high narrow convexity, depressed at the umbilicus, the centre of the protuberance being composed of an adipose cake, about an inch and a half thick and ten inches across, under the lower segment of which lies concealed the dead fœtus. There is no pain or sensitiveness in the abdomen, and the patient, when erect, can readily lift the fœtus, by placing her left hand under its head, and right, beneath the breech.

We should have been glad to know positively that this fœtus was encysted, and still more, that the cyst had adhered to the abdominal walls; but we are not aware of any method by which either can be safely and conclusively determined. The history of the case indicated that we should in all probability find a partial or complete sac, the product, in a measure, of inflammatory action, and the development of the fœtus made it probable that this cyst was not adherent in front. But this was only conjectural, although it proved to be correct. I know that Dr. Theodore Keller, of Strasbourg, in his thesis, *Des Grossesses Extra-uterines*, published in 1872, recommends that delay should, if possible, be made until adhesions shall have been formed between the cyst and the abdominal walls; but he fails to show how we are to know that there is either a cyst or adhesions.

The fact is, that each case must stand upon its own peculiarities, and the prognosis be made accordingly. The diagnosis being established, much will depend upon the health of the woman, and the variety of extra-uterine pregnancy to be operated upon. In the case before us we had reasons for feeling hopeful from the first, and it will be seen by the result that the prognosis was well founded.

It might be thought questionable whether a rupture of a Fallopian foetal cyst could take place without death from hemorrhage as early as the tenth week, but for the autopsy made in a similar case by Prof. K. von Braun, of Vienna, in December, 1871.

The woman in question had no severe attack of pain at any time. She had a slight pain in the third month, followed by emaciation and failing health, but was always able to keep about, although much in hospitals as a patient. When Dr.

Braun saw her in November, 1871, her pregnancy had nearly reached maturity, and he proposed removing the fœtus; but pain and fever set in, and she died after a sickness of three days. In five minutes after her death, laparotomy was performed, and a living fœtus, weighing eight pounds, removed, which died in ten minutes. An autopsy showed distinctly that the pregnancy had been originally tubal, for in the right Fallopian conduit was the cyst, still containing the placenta, attached to the severed cord, and bearing evidence of the fact that rupture had taken place through a thin portion of the cyst-wall, where it would be attended with but little hemorrhage. There was no secondary cyst formed, the place of it being partly supplied by pseudomembranous deposits around the position of the fœtus. There had never been any marked evidence of either rupture or acute peritonitis, as in the case of Mrs. O. The right ovary in Dr. Braun's case was about one-half the size of the left, probably from its blood-supply being diverted to the cyst and placenta.¹

The first suspicious circumstance in Mrs. O.'s pregnancy was the fact that she had remained unfruitful so long after marriage, a condition not uncommon in women having a primiparous extra-uterine conception. Although primiparæ have in some instances died of Fallopian pregnancy within a few months after marriage, such immediate conceptions are rare, as it is also in multiparæ, to have a misplaced pregnancy, without a longer than usual interval having elapsed since the immediately preceding birth. This is accounted for by the fact that an abnormal arrangement of the tube in the primipara, and an inflammatory derangement of it in the multipara, are often discovered in women who have been the subjects of extra-uterine pregnancies, and are believed to have acted as the producing cause.

The origin of pelvic or tubal colic has never been unquestionably determined, although it has been thought to arise from the giving way of some of the fibres of the distending cyst, especially as it generally follows some muscular motion by which abdominal pressure is increased.² It is an important feature in the clinical history of a case, especially when connected with signs of pregnancy, and particularly where the feeling of fœtal motion is claimed. The clinical history of a case should always be taken from the patient before any physical exploration has been made, or we may be led into error, when it would otherwise have been almost impossible. We are not to stimulate a fertile imagination, or guide the patient into making erroneous statements by leading questions; but to let her tell her own story, keeping her to the order in which events have occurred. In one instance in this city, a prominent surgeon was misled into believing that a patient had a malignant tumour, until an abscess opened, through the orifice of which he felt bone in probing, and thus discovered his mistake. He then found, by questioning the woman, that she had had a train of

¹ London Med. Times, Sept. 1874, p. 347, from Wiener Med. Woch., Aug. 8, 1874.

² In a report of a case read before the King's County Medical Society, N. Y., by Dr. C. H. Giberson, on May 21, 1878, he attributes the paroxysms to hemorrhage beneath the outer investing layer of the cyst, and claims to have established the fact by the post-mortem appearances.—*Proceedings Med. Soc. County of Kings*, June, 1878, p. 129.

symptoms clearly indicative of extra-uterine pregnancy. Laparotomy confirmed her statement, and restored her to health.

The most critical period in the life of a woman who has escaped death by rupture of an extra-uterine cyst until the fœtus has neared maturity, is that of maturity itself; when a species of false labour sets in, often ending fatally in a variety of ways. If this period has been passed in safety, the woman may escape death a number of years, but her life and health are never secure while the fœtus remains in the abdomen, and for this reason there is a growing disposition on the part of accoucheurs to advise their early removal; a procedure that recent experience teaches us is less hazardous than delay. The very large proportion of women saved by laparotomy, after the formation and bursting of an abscess, generally near the umbilicus, has been used as a very specious argument in favour of delay; but we are learning wisdom by experience, and find that too many fall victims to their condition before an abscess forms, or points; or it points into the rectum, colon, bladder, or some inaccessible place, and results fatally.

Had Mrs. O. presented herself in the first week of January, it would have been possible to have saved her child by the *primary* operation, so strongly advocated by Keller, of Strasbourg, before quoted, who claims in his thesis, that the operation saved four women and seven children, out of nine cases; but the increased risk to the former would have made it of more questionable expediency than the *secondary*. The bold and successful operation of Mr. Jessop of Leeds,¹ England, in 1875, on a woman whose health was failing, and life in danger, will no doubt lead others to make the same attempt; and it is possible that under improved surgical management, future statistics may show a more inviting record than the past; but at present, this operation, according to history, appears to promise much more for the fœtus than the mother. Parry² reports nine operations where the child was viable, with a saving of two women and eight living children.

In view of the condition of Mrs. O. in January, it is very questionable whether we would have advised an operation, as we did unhesitatingly in May. She was then very much distended with fluid, her lower extremities were œdematous, and her general health by no means as good as it was four months later. There was great risk to be run during the false labour that was soon to take place, but this could hardly be equalled to the still greater one, to be incurred by a primary operation. It is therefore not to be regretted, that the question of operating was not presented at the time specified, but came up at a more favourable period, perhaps the most so that could have been chosen.

The changes that take place in the placenta, and its vascular connec-

¹ Trans. Obstet. Soc. London, 1876, p. 261.

² Extra-Uterine Pregnancy, 1876, pp. 229-30.

tions, and the greatly diminished vascularity of the cyst, especially when not adherent to contiguous viscera and the abdominal walls, are no doubt the chief reasons why the operation is less dangerous after the death of the fœtus. There being no sac in the Jessop case made it more favourable in respect to danger from hemorrhage; but a well-formed cyst, adherent to the abdominal parietes, is of great advantage in preventing peritonitis, as the paritoneal cavity is not opened.

It has long been, and is still to some degree, an unsettled question, whether a fœtus developed in the abdominal cavity should be removed during its life, within a limited period after death, or not until there are indications that an abscess is about to point, or has formed an opening, through the abdomen, vagina, or rectum. *The old method of procedure* was based entirely upon the efforts of nature to discharge the fœtus; and the operator simply opened the abscess, or perhaps enlarged an already formed fistula, so that the fœtus might be removed and the placenta subsequently discharged, if it could not be distinguished at the time.

The first operation of the second type mentioned, performed in this country, appears, as far as I have been able to ascertain, to have been that of Dr. Charles McKnight, of New York, which was reported after his death, to Dr. J. C. Lettsom, of London, in 1795, by the late Dr. James Mease of Philadelphia. As Dr. Mease graduated in 1792, was present at the operation, and reported the case after the death of Dr. McKnight, the woman must have been operated upon at some time between 1792 and 1795, the date not having been given. As the case of Dr. McKnight is one of much historical interest, I will give the prominent features of it.

The woman became pregnant twenty-two months before the operation, and presented the common symptoms of this condition during gestation. Labour set in at the end of nine months, but no child presented, and in time the pain ceased, but *there was no diminution in the patient's size.*¹ Her health was good but mind uneasy, and she went to New York for advice. The physicians consulted, agreed as to her condition,² "but differed respecting the treatment, whether the operation should be immediately performed; or as the woman enjoyed good health, and as it was impossible to ascertain the parts to which the placenta adhered, or which it might be necessary to injure, in the complete extirpation of the fœtus, that the operation should be deferred until something like an external imposthumation should appear, that nature should thus point out the place and manner in which extraction should be performed."

Dr. McKnight, who was evidently a believer in surgical progress, advised an immediate operation, "before the woman's health should become injured, and the contiguous parts suffer from compression and putrefaction." Dr. Mease remarks: "the event has proved that he was right; and I confess, from the observation I made during the operation, that this reasoning and practice will always be found so."

The abdominal tumour lay chiefly to the left side; the fœtal head could be felt in the left groin, and what was presumed to be a knee, above and to the right of the umbilicus. Dr. McKnight commenced his incision "on the left side, somewhat above the navel, and a little beyond the junction of the rectus and oblique

¹ This is very questionable, in view of the fact that the fœtal head and knee could be felt, and that shrinkage is generally regarded as universal in these cases.

² *Memoirs of Med. Soc. London*, vol. iv. 1795, p. 343.

muscles, which he continued to the pubes." The fœtus proved to be of large size, and the bones of the head were removed to lessen its bulk; it was then extracted, but slipped and fell, so as to rupture the cord. This accident proved all-important to the woman, as the operator failed to find the placenta after a diligent search, and it had to remain intact. The fœtus, according to Dr. Mease, was contained in a closely adherent cyst, and the peritoneal cavity was therefore not opened. The discharge from the wound was abundant and offensive, and greatly reduced the strength of the patient; but she ultimately made a good recovery.

*What to do with the placenta,*¹ was for years the crucial question in this operation. Mr. William Turnbull² was probably the first to recommend that it should remain intact, as we learn by reading his report of an autopsy of a lady, who died from the effects of a ventral pregnancy; which was presented to the Medical Society of London, January 10th, 1791. He says: "*My firm opinion is, that the separation and expulsion of the placenta should always be left to nature, for the extraction will be generally fatal from the hemorrhagy following it.*"³ Dr. Mease, in his letter to Dr. Lettsom, contends for the same non-interference, but with more practical weight, because his opinion was backed by the successful issue of an actual trial of the method proposed; while that of Mr. Turnbull was simply based upon the danger of removal, without any evidence that the plan would not be fatal to the patient. Unfortunately for the benefit of humanity, these views were for a long period lost sight of, and we find in after years, strong objections made to the operation, on the ground of the supposed necessity that existed for removing the placenta, and the danger of hemorrhage and death from so doing. Thus we find in Blundell's work on Obstetrics, in 1840, page 480, "*On the whole, however, considering the danger of the incisions, and the risk of a fatal bleeding internally, when the extra-uterine placenta is taken away, abdominal incision seems to promise very little success.*"

M. Chailly, 1844, also speaks of the extraction of the placenta as very difficult and dangerous, and recommends that the operation should be performed only where the woman is in imminent danger, or her life rendered a burden by suffering. (*Midwifery*, page 79.) Cazeau expressed the same opinion.

Prof. Behier, Paris, 1873, says, "I would not venture to propose it (laparotomy) notwithstanding the presence of the products of abnormal gestation, for a healthy looking woman who has *probably* before her, ten, fifteen, thirty, and even fifty years of *tolerable* existence."—(*Gaz. Hebdom.* 36, 1873.)

I could multiply opinions for and against the operation, both in the *primary* and *secondary* conditions of abdominal pregnancy, *i. e.*, where the fœtus is living, or has died, but will refer the curious to the work of Dr. John S. Parry, on *Extra-uterine Pregnancy*; what we have to deal

¹ See discussion in *Trans. Obstet. Soc. London*, Nov. 6th, 1872, vol. xiv. p. 318, 1873.

² *Memoirs Med. Soc. London*, vol. iii. p. 211.

³ *Op. cit.*, vol. iv., 1795, p. 342.

with, being not so much the imperfect records of cases operated on, as the histories of those, who either declined the operation, or in whom it was postponed, that suppuration and pointing might take place. It is very well to compare the relative mortality of cases operated upon, (1) during the life of the fœtus ; (2) after it has been dead a short time, and before the health of the woman has become impaired ; (3) at a later period when constitutional disturbance makes it imperative ; (4) and still more remote, when an abscess has formed and pointed ; but what interests us is, to know how these postponed cases compare in results with those that have been operated upon before the health of the woman has failed. We read of spontaneous cures ; of operations performed years after the death of the fœtus, when it has become decomposed and an abscess formed ; but what is said of the number who wait patiently for relief from the operations of nature, and never reach the condition in which, according to the opinion of many, the operation is the most safe ?

We read of women carrying extra-uterine children for more than fifty years, and dying of old age ; but little is said of those who died before it was thought prudent to operate upon them, falling victims to rupture, convulsions, fever, diarrhœa, peritonitis, exhaustion, and septic poisoning.

The life of a woman carrying an extra-uterine fœtus is never safe from rupture, *sudden* disease and death ; and this is particularly the case at, or soon after the death of the child, where the same is of mature growth, and developed in the abdominal cavity. When the fœtus is small, has ceased to grow, and is contained in its original cyst, in the Fallopian tube or ovary, it may be preserved for years without perceptibly impairing the health of the woman. It may remain almost unchanged ; become shrivelled like a mummy ; be converted into a species of adipocere ; or undergo a process of calcification. In rare instances, even large encysted children have been found well preserved after some years. But in cases of secondary abdominal pregnancy, where there is no sac, or the same is incomplete, as in Mrs. O., the fœtus when dead may at any time decompose in immediate contact with the intestines, and peritonitis or septicæmia result.

The diagnosis of extra-uterine pregnancy being in some cases very difficult, the plan of tapping the cyst by aspiration and testing the fluid, or of drawing off a large quantity until the fœtus can be defined by palpation, has been adopted ; but not with very favourable results to the patient in many cases ; as this mode of procedure appears capable of precipitating a fatal termination, sometimes in a few days. We think that these tests should be only used in cases ready for and willing to submit to an operation, and that it ought at once to follow, if liquor amnii should be found.

The injection of antiseptic washes after an operation should be very cautiously employed, as, in the absence of a cyst, violent and rapidly fatal peritonitis may be at once lighted up. Where there is a cyst, there is generally much less danger. I know that the use of dilute Condy's fluid

and weak solutions of carbolic and salicylic acids is generally commended, and that they are frequently employed with apparent benefit; but it is well to bear in mind that they are sometimes as dangerous as the septicæmia against which they are made use of; and especially is this the case with the permanganate of potash.

A few years ago, Prof. D. H. Agnew, of Philadelphia, removed a mature fœtus, computed to have weighed ten pounds, from the vagina of a patient of Dr. Ellwood Wilson, by the post-uterine incision. There was no cyst, or a very imperfect one, the placenta separated without hemorrhage, and the woman did well for eight days, when it was proposed by a consulting accoucheur, to inject a weak solution of permanganate of potash into the pelvis, through the wound. This was done, causing at once a violent pain, followed by peritonitis, and death in twenty-four hours. But for this, there is every reason to believe that the case would have made a good recovery, and in an unusually short time, as there was no placenta to be removed by decomposition. It was a very unfortunate experiment, and should teach a lesson of caution in the future to obstetric surgeons. Non-encysted post-uterine pregnancies may be operated upon with success, even to saving the fœtus; but the parts are so susceptible to peritonitis, that the less they are interfered with in the after-treatment the better. I believe that whenever possible, the abdominal section should be preferred to the vaginal, and in this I am sustained by some of our most prominent surgeons.

As there are still many in our profession who oppose such operations as the one reported, and adhere to the ancient *waiting for imposthumation*, I will introduce a few cases to show what becomes of some of those who are not operated upon.

CASE 1.—Dr. Ramsbotham mentioned, in his *Midwifery*, the case of a woman who declined being operated upon for the removal of a mature fœtus, and died in a year, worn out with diarrhœa and low fever. The diagnosis was verified by autopsy.

CASE 2.—Dr. W. C. Perkins, of Philadelphia, reports a case in the *Am. Journ. of Obstetrics* for May, 1872, in which Drs. Goodell and Parry were called as consultants. A quantity of fluid drawn off in exploration proved to be amniotic, and the fœtus could be distinguished by abdominal palpation. Fœtal death was thought to have taken place on Nov. 29th, 1871, and the per-vaginam puncturing was performed on Jan. 15th, 1872. It was proposed to remove the fœtus by the post-uterine section, but the woman and her friends declined. She was apparently better at the next visit after the puncture; but pain and fever soon set in, and she died of exhaustion in six days after the examination. The fœtus was dead 53 days, and beginning to decompose; and the enveloping cyst was not adherent. The case was thought a reasonably fair one for the operation.

CASE 3.—Dr. Frederick P. Henry, of Philadelphia, has kindly furnished the notes of a case from which I extract the following:—

Mrs. D., a native of U. S., 24 years old, third pregnancy, first and second having been premature; troubled after first with some uterine malady, the principal symptom being constant leucorrhœa, for which she had undergone medical treatment. Called in Dr. Henry on July 29th, 1876, supposing herself to be in labour at full term. She had menstruated regularly until November, 1875; felt

the sensation of quickening in March, 1876; and had well-marked and frequent pains when examined, but the doctor found the os high up, undilated and rigid, although there was some show of blood. After several hours the pains ceased, and did not return until August 21st, when they were found strong and frequent, and the woman very restless and excitable. An examination revealed the same condition of uterus as before, except that the os was slightly opened; no presenting part could be felt. After waiting several hours with no advance, the hand was introduced under ether, and two fingers into the os, when a soft body was felt, giving the sensation of a placenta, but on more complete exploration proved not to be, as the fingers could be carried to the fundus without encountering any ovum. This condition was confirmed by Drs. Elliott Richardson, and Nichols, who were present; and again three days later by Dr. Goodell. The patient at this time was very weak; free from labour-pains; had much abdominal tenderness, and presented signs of peritonitis. "It was decided not to operate, on the grounds of the woman's feebleness, the fact that the fœtus was dead, and the existence of peritonitis. It was thought more prudent to wait."

Two hours after Dr. Goodell's examination, and this decision in consultation, the patient had a violent chill, followed by high fever, and a pulse of 140; after which she had at times frequent chills; profuse sweats; a very irritable stomach; and was exceedingly prostrated; pulse and temperature running up to 137 and 103 $\frac{7}{10}$ °. She died on August 30th, the ninth day after the severe labour-pains set in; from "*septicæmia due to absorption of putrid matter from the decomposing fœtus.*" The fœtus was a female, full size, and computed to weigh more than six pounds. As it was thought to have died on August 21st, it was only dead nine days when the death of the mother took place; exploration by puncture had no doubt hastened the decomposition of the fœtus.

CASE 4.—Dr. Edward L. Duer, of Philadelphia, has also been kind enough to send the records of an unpublished case, of which the following is a condensed abstract:—

Mrs. F., 37, native of Massachusetts, mother of three children, and anticipating the birth of a fourth in Oct. 1875. She stated that in about the third month she had had quite a sharp attack of peritonitis, and was under the care of Dr. Washington L. Atlee, but no suspicion of the case was then entertained. It soon passed off, and her size increased without any unusual symptoms. On Sept. 18th Dr. Duer saw her in consequence of an attack of uterine pain which lasted but a short time, and was accompanied by a slight show of blood; found os uteri high up, and of remarkably small size; relieved attack by anodyne suppositories. Oct. 4th had another attack, relieved temporarily in same way. Oct. 15th severe continuous pain, with more decided hemorrhage. Having a disabled hand, called in Dr. Goodell to conduct the labor. Uterus found "much enlarged, dragged out of the pelvis, and pushed forcibly over to the left side, whilst the enlarged os and cervix were presenting behind the pubes, and correspondingly difficult to reach." Abdomen enlarged obliquely upward from the left iliac region to the lower border of the right lobe of the liver. At a point a little above and to the right of the umbilicus there was an elevation about three inches in diameter, where the presumed fœtal cyst seemed about to point, the interposing tissue appearing to be not more than half an inch in thickness. The limbs of the child could be here felt, and the head was thought to lie in the left iliac fossa.

After a few hours of rest, Prof. Ellerslie Wallace was added to the consultation; feeble motion was felt in the fœtus by the patient, and the heart sounds could still be distinguished, but both soon disappeared. "The general conviction of the consultants, nevertheless, was in favour of delay, with the view of securing a better condition for operative interference."

The patient took a fair quantity of liquid food; slept well under anodynes; had no marked peritonitis, or great rise of temperature, but all the time a high pulse. "The temptation to operate, not in the canonical way, but by incision into the cyst-like prominence at the side of the umbilicus, was constant and great; but in accordance with what then seemed a better judgment, the temptation was

put aside just too long." Consultations were held daily for sixteen days, but at no time could all agree to take the responsibility of operating.

On the evening of the last day of the consultation, after having appeared much better than usual, Mrs. F. was suddenly seized with agonizing pains, followed at once by a state of collapse, and died in thirty minutes. No autopsy was allowed. Dr. Duer says: "My own reflection on this case is the regret of non-operating; in the light of present knowledge, of enhanced chances by so doing, and the danger of delay in operating, in the hope that adhesions may form and an abscess point, so that the fœtus may be cut down upon and removed with less risk of peritonitis, I believe our treatment would have been far different, and possibly have furnished us a different result."

As Dr. Duer says of his case, the delay was fatal. In all probability death resulted from rupture of the cyst-wall, an accident not uncommon at the maturity of an abdominal pregnancy. It is to be regretted that the patient was not examined post mortem, but in similar cases that have been the cyst was found to have given way. More progress has been made during the last ten years, and especially the last six, in enlightening the profession upon the treatment of these cases, than in any former period. We are beginning to learn that the cautions of the past were in many instances founded in error, and that there is more promise often in a bold and prompt use of the knife. Every failure by delay, and every success by an operation, has an influence in converting those in interest to the new method of treatment. My extensive researches in American Cæsarean cases convinced me that theoretically there ought not to be a very high rate of mortality in laparotomy for the removal of an extra-uterine fœtus after death, at or near maturity; and a more direct investigation proves that I was correct. It having been satisfactorily settled that *the placenta is not to be touched, that the cyst is to be stitched to the abdominal parietes, and that the lower part of the wound is to be kept open*, there is much less risk to be apprehended than formerly from the operation, provided the condition of the woman is reasonably good at the time of its performance. There is less danger of peritonitis and septicæmia than where the uterus has been incised after a long labour, and there ought to be as many recoveries as in Cæsarean cases early operated upon, or three saved to one lost. But even this may not be the limit of success, as Dr. Thomas saved all of his cases in New York, a much better result than has followed his laparo-elytrotomy.

I could multiply cases to prove the same point, but the four given are enough to show that to wait is often to lose the patient. As there is evidently much danger at the maturity of the fœtus, it becomes a serious question whether it would not be safer to operate in the eighth month than to wait until after the false labor is over and fœtus dead. So many women have lost their lives in the ninth month, or soon afterward, that it would appear as if the risk in operating should be less than in postponing; but this has yet to be tested in the future. One obstacle is the great difficulty in diagnosis, and the want of agreement in consultants. A woman may cease to menstruate (*from diseased ovaries*); become enlarged during

nine months (*from a benign uterine tumour*); feel confident that she has quickened (*when there is no fœtus*); have her breasts affected sympathetically (*when not pregnant*); and present many of the sympathetic evidences of this condition, thus misleading her physician, who fears to try the uterine sound. False labour may even set in at the end of nine months; but there is no uterine hemorrhage as in extra-uterine pregnancy;¹ and the abdomen does not diminish in size afterward, by absorption of the liquor amnii, as it almost invariably does where there is a fœtal cyst. The two important tests, of labour-pains with hemorrhage and subsequent diminution of abdominal development, cannot be obtained in time to make them of any value in a *primary* operation, and we are forced to make a diagnosis from other evidences. The fœtal heart may be heard distinctly in a normal location; the os uteri may feel as in a uterine fœtation; the uterus may be lifted behind the pubes; and the enlargement in Douglas's cul-de-sac be mistaken for the reflexed body of the organ; and the sound may be arrested in the uterus at a normal depth when but half introduced, and yet the fœtus be in the abdominal cavity.

The facts and errors enumerated have all been taken from actual cases, many of them in the hands of celebrated men; and even an exploratory incision has not revealed the true condition, as subsequently proved by autopsy. We are therefore to exercise the greatest possible precaution before proceeding to remove an extra-uterine fœtus during its viable period.

The experience of Dr. T. Gaillard Thomas, of New York, in extra-uterine cases, is very encouraging to any one who desires to be upheld in a decision to operate, rather than delay, and goes to show that laparotomy, under careful management, may prove less dangerous than any other plan of treatment. He has had fourteen cases of extra-uterine pregnancy, all within the last ten years. Nos. 1, 2, 5, and 13 were all early tubal cases, seen in consultation after the cyst had ruptured; and all died. In No. 13 the Doctor was very anxious to open the abdomen, and arrest the bleeding by ligation; but his diagnosis was not concurred in, or his plan acquiesced in. The lady died in sixty hours, and an autopsy revealed the fact, that the sac-wall was slightly broken, by which a small artery had given way,

¹ Even the test of hemorrhage during gestation, or the false labour, would appear not to be infallible. In a case observed by Dr. William R. King (*Richmond and Louisville Med. Journ.*, Sept. 1868), there was no uterine discharge, from the cessation of the menses, until their natural return, as after a normal labour. Shrinkage occurred and continued for two years, when the cyst was of the size of a uterus at five and a half months, and occupied the left side of the abdomen, where the tumor was first discovered. At the time of the false labour the movement of the fœtus was strongly marked. The woman was in good health six years afterward. From some peculiarity there could either have been no decidua, or it was thrown off at the regular menstrual period immediately following impregnation, as I once observed in a tubal case, and was overlooked, this menstrual act being counted as the last before conception.

causing death by a slow hemorrhage. In Dr. Thomas's opinion, this hemorrhage could have certainly been arrested; and it is much to be regretted that the operation was not tested in so promising a case.

Nos. 3 and 4 were early cases which he treated by puncture with a small trocar; the first was followed by pain in twelve hours, and death resulted with symptoms of rupture. The second was in the third month, and gave great relief; septicæmia developed on tenth day, and death resulted.

Nos. 6, 7, and 8 were all early, and left to nature; No. 6 passed the fœtus by the rectum, as did also No. 8, and both recovered. No. 7 died of septicæmia; one of the three, in consultation, opposing interference.

No. 9 was a left tubal pregnancy of three months, operated on by the post-uterine incision, with a galvano-cautery knife. The lady recovered.

No. 10 was an abdominal pregnancy of thirteen months' duration, with a full-grown fœtus. Operated upon by laparotomy; recovered.

No. 11, the same; twenty-two months' duration; fœtus eight pounds; the same operation and result.

No. 12, the same; seventeen months' duration; fœtus eight pounds; same operation and result.

No. 14 was a left tubal pregnancy of three months; galvanic battery twice applied. Labour-pains severe after second application, and fœtus expelled into uterus and out by the os. Patient recovered. Sound measurement before treatment $3\frac{1}{2}$ inches. Uterus found normal in shape after recovery. Case reported by Dr. Charles McBurney in *N. Y. Med. Journ.*, March, 1878, p. 273.

Thus we have four operations for removal of fœtus, all successful. Two punctures, both fatal; three left to nature, with one fatal, all pointing into rectum; four early tubal ruptures, all fatal; and one tubal, discharging by the uterine cavity, with recovery. It certainly looks as if it was safer to remove the child by the abdominal section than to try any other plan of management.¹

When the Dieulafoy aspirateur was first introduced to the profession, it was thought that tapping the cyst with it, so as to destroy the fœtus if in the early months, or lessen the danger of rupture by tension, if already dead, might be a valuable method of treatment; but aspiration has been found very unsafe, even when performed with a very small tube. It has been proposed to inject solution of morphia, to poison the fœtus; and to prevent septic poisoning, after removing the fluid, by injecting antiseptics into the cyst. The first of these experiments is claimed to have succeeded in the hands of Prof. Friedrich (*Virchow's Archiv*, xxix. 3, 4), who made four injections, and claims to have allayed the pain, and arrested

¹ I have purposely given a very condensed record of Dr. Thomas's cases, as he has promised to present them in full, as the basis of an article to be shortly published; some have already appeared, as 9, 10, and 14.

the growth of the fœtus. He also says that the fœtus was absorbed, which I hardly believe possible on physiological grounds.

In performing the operation upon Mrs. O., Dr. Atlee had but one object in view, the best interest of the patient; to which he made all matters of personal ambition or scientific inquiry subservient. He first became convinced that it was safer to operate, under the circumstances, than postpone; and then entered upon the operation with very sanguine hopes of success, to accomplish which he determined to try no experiments, and to avoid everything in the way of handling that might endanger the case. He was, therefore, in no hurry in cutting into the abdomen; did not sponge out the cyst, but simply absorbed the fluid as it escaped, and did not introduce his hand into the abdomen, either in removing the fœtus, or to ascertain the attachments of the placenta. The opening of the cyst required $5\frac{1}{2}$ minutes; removing fluid and fœtus, $12\frac{1}{2}$; and dressing the wound, 15 minutes; in all, 33 minutes from commencement to putting the woman in bed. When I cut the funis it resisted the scissors like a sprout of asparagus, and the cut surface presented no trace of vascular structure. The cord was of a dead-green colour, and had undergone a species of carnification, which had, probably, also affected the placenta. The incision in the linea alba started but three arterioles not larger than bristles, and the blood lost was unusually trifling.

Soon after the operation I counted her pulse at 98; and it is said to have been as low as 84 in the afternoon; but I have never found it as slow at any time since. The day before the post-placental abscess burst into the vagina I counted it 118, which, I believe, was the highest point reached. On the thirty-eighth day I found it 96; and on the fifty-first day still as high as 90. She had at this date (July 8) no pain on defecation or urination, no abdominal tenderness under pressure, and her tongue was perfectly natural. There was still a small opening in the abdominal wound, through which there was discharged daily about a tablespoonful of thin, sero-purulent fluid; but no tissue-shreds had passed for more than two weeks. She menstruated naturally, as to duration and amount, on July 1, *et seq.*; and said that she felt well, and had regained the flesh lost by the operation and sickness. There was nothing to indicate any trouble in the future, and the changed character of the discharge gave hope of an early closure of the fistula.

There has been a growing disposition on the part of several leading accoucheurs in this city, manifested for a few years past, to depart from the conservative method in the management of abdominal pregnancies, and recommend the early removal of the fœtus by incision through the vagina or abdomen; reasoning from analogy that this should not be so fatal a method of relief as has generally been believed. In two instances the fœtus was removed by vaginal incision, but both women died; one case being that of Dr. Wilson, already mentioned, and the other an opera-

tion by Dr. Albert H. Smith, with Paquelin's thermo-cautery knife, in which he encountered the placenta in the line of incision. The operation by Dr. Atlee, as far as I have been able to ascertain, is the first one of its kind that has been performed in Philadelphia. The dead fœtus has been removed after the pointing of an abscess, but in no instance before suppuration had commenced, as in his case. The fatal cases reported within a few years that it is now thought might have been saved by opening the abdomen promptly, will no doubt bear fruit in the future in the form of a more decided disposition to operate, and a greater hopefulness in the result to the women. The successes of Drs. Thomas, Jessop, and Atlee should certainly encourage others to follow their example.

713 LOCUST STREET, July 30, 1878.