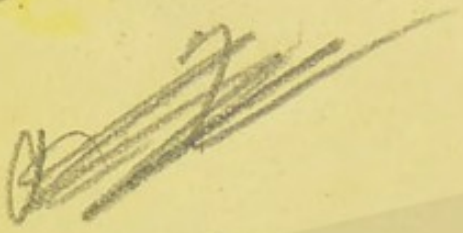
Cases of laceration of the uterus : with remarks read May 2nd, 1866 / by Thomas Radford.

RADFORD
ON THE
LACERATION OF THE UTERUS.



CASES

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LACERATION OF THE UTERUS,

WITH REMARKS.

BY

THOMAS RADFORD, M.D., &c. &c.,

HON. CONSULTING PHYSICIAN TO ST MARY'S HOSPITAL, MANCHESTER.

Read May 2nd, 1866.

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CASES OF LACERATION OF THE UTERUS, WITH REMARKS.

By Thomas Radford, M.D., &c., &c.

HON. CONSULTING PHYSICIAN TO ST. MARY'S HOSPITAL, MANCHESTER.

Laceration of the uterus is one of the most dangerous accidents which happen to women during labour, and is amongst the most appalling to the obstetrician. Most of our best practical writers were of opinion as to the great fatality of this injury; and until a certain period it was considered by physicians to be the safest and wisest course which could be pursued to leave the case to the efforts of nature—amongst whom we may enumerate the late Dr. Hunter, Dr. Denman, and others. Dr. Douglass first ventured to differ from the opinions then generally entertained, and the successful termination of his (Mrs. Manning's) case produced a wonderful revolution in the views then entertained as to the practice to be adopted in these dreadful accidents.

The great fatality of this accident induced Dr. Denman to change his opinions, in his 'Observations on Rupture of the Uterus,' published 1810, from those he had expressed in his 'Introduction to the Practice of Midwifery,' fourth edition, 1805.

This writer states that "every instance of the kind which has come within my knowledge, and the number has not been inconsiderable, have perished" (*i. e.* mother and child). 'Observations,' &c., p. 17.

As the opinions of Dr. Denman (who is deservedly esteemed an authority of the highest rank) are so contradictory in themselves on a subject of such great importance as the treatment to be adopted in cases of the rupture of the uterus, it is desirable to accumulate all the evidence upon the subject which can possibly be obtained. The relation, therefore, of fatal cases, and particularly where the bodies have been examined after death, by extending our

knowledge of the circumstances attending rupture, may lead to inferences equally important with those deduced from cases of successful termination.

Before the publication of the observations of Dr. Douglass, 1785, comparatively few cases were recorded; since that period a number of cases have been published. But yet it is to be feared the great bulk of the cases which have happened have not been brought to light. Every person candidly inquiring after truth must acknowledge that it is too much the practice to relate successful cases and to withhold those of a contrary termination. But in order to possess the means of averting this dreadful accident, it behoves every member of our profession to come forward and detail all the cases, whether successful or unsuccessful, which have or may occur to him; thus, ultimately, facts sufficiently numerous would be furnished, whence deductions might be made, and rules of practice formed.

Case 1.—*Laceration of the uterus; arm and shoulder presentation; fatal.*

In June, 1820, I was requested by one of the hospital midwives to visit a poor woman residing in Back Bridgewater Street, who was in a very dangerous state. Upon my arrival I soon ascertained that this poor creature was in a very hopeless condition. Her countenance had assumed the Hippocratic aspect; her respiration was laborious, and sonorous from a heavy mucous rattle; her pulse could scarcely be felt, and was intermittent; her skin was bedewed with a cold sweat; her extremities were cold, and there was great abdominal tenderness. Upon a vaginal examination, I found that the infant was transversely placed; the arm protruded from the os externum, and the shoulder was very firmly wedged in the pelvis; the membranes had been ruptured for more than thirty-six hours, and the pains had been very violent during the whole of this time until four hours before my arrival, when they suddenly ceased. With these deathlike symptoms existing, I doubted the propriety of delivery, and therefore sent for Mr. W. Wood, my highly

valued partner and relative, to give me his opinion. He recommended me not to attempt delivery, and said he was convinced she would sink under the operation. He thought it imprudent to bring discredit upon any operation when there was no chance of saving the infant. She died before we left the house.

Remarks.—There are no comments to be made upon this case, except to urge the necessity of timely delivery in all those preternatural labours in which the infant must be turned. The neglect of the midwife cannot be too strongly condemned; but, in justice to our hospital, I must say that fatal cases from protracted labour are now comparatively rare.

Case 2.—*Laceration of the cervix; fatal.*

Mrs. D—, æt. 40; very stout and of low stature; now pregnant of her eighth child. February 16th, 1823, at seven o'clock a.m., she began to experience slight labour-pains, which continued until eight o'clock, when my attendance was requested. I found her in every respect as well as possible. The pains were regular but short, and the membranes had ruptured about an hour before my visit; the os uteri was dilated to about the size of a dollar, and was thin and soft; the head of the infant was lying over the brim of the pelvis in a natural position. Up to twelve o'clock occasional examinations were made, from each of which I was assured that labour was gradually and naturally proceeding. The os uteri had gradually become developed, and about this hour its dilatation was completely effected. The head of the infant now descended rather rapidly, and in an hour afterwards was expelled. The pains during this time were energetic, and, indeed, were powerfully expulsatory. No sooner, however, had the head emerged than there was a complete suspension of uterine action—the pains entirely ceased. Friction was applied to the abdomen, but to no avail; the uterus was passively obedient to all the efforts which I made to rouse it into activity. As the infant was dead, I attempted its removal by placing a napkin round the neck; but although I was able to use powerful traction, I failed to make the

slightest advance. I felt unable to account for this delay, as there were no symptoms which indicated any unfavorable organic change in the condition of the mother; there was no evidence of any lesion in the uterus, &c. Her countenance was natural; her pulse good; her skin warm; and there was no vomiting. Mr. Wood being absent from home, I requested the attendance of my friend Mr. Jordan, who with great kindness came to my assistance. He considered the case extraordinary, and recommended further and persevering attempts to be made to deliver her. At length Mr. Wood, along with Mr. Tomlinson, a very experienced obstetrician, came, and, after a very careful investigation of the attendant circumstances, they were equally at a loss to account for the cause of the protraction. Powerful traction by means of the napkin round the infant's neck, and by the blunt hook placed in the axilla, was made for a long time before we succeeded in extracting the child, which proved to be immensely large. By an abdominal examination, the uterus was found regularly contracted; and by a vaginal examination I found the edge of the placenta. There was at this time no discharge, and in about a quarter of an hour the placenta was expelled. I again repeated my abdominal and vaginal examinations, which fully assured me that all the changes which could be ascertained were those which exist after the most natural labour. A bandage was now applied round the body, and an opiate was administered. At my evening visit I found she had slept, and all my inquiries were most satisfactorily answered.

On the 17th, a.m., I found her very comfortable. She had slept; her pulse was 80; she had passed urine; her skin was cool, and her tongue was clean; her bowels were constipated; the lochial discharge was natural. Ordered Decoct. Aloe. Co., and a common enema. At evening I found the bowels had been opened, and in all other respects she appeared to be going on well.

Early in the morning of the 18th (being the day but one after her delivery), I was much surprised to find her so much

changed. During the night she had a very severe shivering, which was so violent as to shake the bed, and which continued a very long time, when it gradually subsided. It was succeeded by excessive heat, and shortly afterwards she was attacked by a violent pain in the abdomen, which was greatly aggravated by the pressure of the hand. The pulse was 130, and hard; her tongue was white and furred; she had great thirst; there was tumefaction as well as pain in the abdomen; she had passed urine, and her bowels had not been again moved. These symptoms forcibly indicated the serious character of the disease which had supervened, and which unmistakably required a decided antiphlogistic plan of treatment, which was forthwith rigidly pursued. General and local bleedings, purgatives, calomel and opium, cataplasms, and turpentine lotion, were the remedies adopted. She was bled three times in the arm—at the first visit to eighteen ounces; at the second visit, twelve ounces; at the third, ten ounces. The blood was drawn from a large orifice, and was found, after standing for some time, cupped and buffed on the surface.

On the 20th the symptoms had become seriously worse, and during the day became more and more unfavorable, until evening, when she expired.

Post-mortem examination.—The next evening (February 21st) the body was examined in the presence of Mr. Wood and Mr. Jordan. Upon making a longitudinal incision, and turning the parietes aside, a large quanity of bloody serum issued out. After a transverse division had been made and the flaps turned aside, the peritoneum was seen to be thickly coated with lymph. The convolutions of the bowels were strongly and universally agglutinated. Upon separating them, a quantity of bloody serum was found in the interstices, with flakes of lymph floating in it.

There was general peritonitis. The peritoneal coat of the uterus was very vascular, and thickly coated with lymph. Upon raising the uterus, we discovered three openings varying from the size of a shilling to that of half a crown, and about an inch distant from each other. These openings

were situated in the cervix, and were pervious from the peritoneal to the uterine cavity. The edges were ragged, and the surrounding texture was softened, and had an appearance as if the part had been beaten with some blunt instrument. There was no evidence of any gangrenous change.

The bladder was sound.

The pelvis was of a natural size, and free from any exostotic growths or sharp-edged projections.

The infant (a boy) was of an immense size, and weighed fully sixteen and a quarter pounds avoirdupois.

Remarks.—During the labour it was quite impossible to account for the suspended uterine action which took place, but the post-mortem examination unravelled the mystery. It was extraordinary and astonishing that so complete an immunity from any shock should have existed in all the organic functions of the body. The extraordinary constitutional tranquillity which existed, and likewise the total exemption in the uterus itself from the usual symptoms which indicate that some serious mischief had happened to it, were the circumstances which misled us in our opinion and kept us unacquainted with the real nature of the case. Nothing further occurred after the completion of the labour which could lead to such a conclusion. After the delivery of the infant, the placenta was spontaneously expelled. There was no hæmorrhage, and the uterus was found well contracted.

But the extraordinary size of the child is not alone sufficient to account for the accident. The character of the wounds and the condition of the surrounding texture prove that there must have been previous softening in the cervix uteri.

Case 3.—*Oblique laceration of the muscular structure of the cervix uteri, the peritoneal coat being uninjured; fatal.*

On June 4th, 1824, I was requested by Mrs. Holden, midwife, to visit a poor woman residing in Water Street, London Road, who was represented as being in great danger. On my arrival I was much struck with the

cadaverous aspect of the patient, and at once endeavoured to ascertain the cause. I was informed that this was her fourth pregnancy, and that all her former labours were tedious, but terminated safely by the natural powers. She had been in labour about ten hours; the membranes ruptured in six hours after its commencement; the pains were stated to have come on at regular intervals, and were of a grinding character. The midwife became alarmed, as the patient was seized suddenly with a pain very different from those she had endured up to this time. She uttered a violent exclamation, "What a pain, the cramp in my belly! I shall die." She instantly became ghastly, and vomited, and the surface of her skin was bedewed with a cold sweat; the pains ceased, and her pulse was extremely weak and fluttering. I found the os uteri dilated to rather more than the size of a crown-piece; on the left side its structure was decidedly diseased, and of a schirrous hardness. I carefully examined the pelvis, but detected no deviation from the standard measurement. The head of the infant presented, and was in intimate contact with the os uteri, which position it maintained when the finger was pressed forcibly against it. I then placed my hand upon the abdomen, but I detected nothing different in the uterine tumour from what is usually observed at this period of labour. Although I could not discover any rupture of the uterus, yet I felt assured in my own mind that this was the case, and decided upon immediate delivery. The only mode of accomplishing this object was to open the infant's head; and as I had not the instruments necessary for this operation, I went to Mr. Wood, Downing Street, and requested the loan of them, which he kindly lent me, and he accompanied me to the case. The head was perforated, and then, by means of the crotchet, was extracted. During the time the poor woman was extremely faint, and required to have brandy frequently administered to her. I found the placenta lying loose over the os uteri, and removed it. There was not more blood lost than in ordinary cases of labour. I now introduced the hand into the vagina, passed the index finger through the

os uteri, and on the left side I detected a rupture of cervix. Some gruel with a little brandy was given, and one drachm of Tinct. Opii was administered.

The day following she was seized with shivering, which in the course of a short period was followed by violent reaction: the skin became intensely hot, and the pulse quick; her tongue was furred, and there was much abdominal pain, which was considerably increased by pressure; the bowels were constipated, and there was retention of urine.

The case was treated upon as active an antiphlogistic plan as existing circumstances demanded. General and local bleeding, purging calomel and opium, turpentine lotion, and poultices to the belly; enemata containing Sp. Terebinth.: these were the remedies adopted. The vital powers were feeble; she did not bear the general bleeding very well, and became faint after about ten ounces of blood were abstracted; she died on the third day after delivery.

Post-mortem examination.—Present, Mr. Wood and Mr. Ollier. The peritoneal coat of the intestines was much inflamed, and the convolutions were glued together with lymph; there was a quantity of serous fluid in the abdomen. The uterus was tolerably well contracted. There was no laceration to be seen from the abdominal cavity; but along the left side of the lower portion of the cervix uteri, and extending backwards, there existed the bluish-red colour of ecchymosis, which, upon a more minute examination, was found to extend into the iliac fossa, and upwards behind the peritoneum as high as the meso-colon. This arose from an effusion of blood, which must have amounted in quantity from a pound and a half to two pounds.

The uterus, with a large portion of the peritoneum and some of the intestine, were now removed by cutting through the vagina very low down.

The os uteri was very carefully examined, and fully half of it was found of a schirrous hardness. A little above it there was a laceration in the cervix, about two or three inches long, extending obliquely upwards, but only involving the muscular structure. The peritoneal coat was entire.

Remarks.—In this case there are several important points worthy of consideration. The infant remained undisturbed within the uterus, and consequently one cause of shock which usually occurs in such cases was absent. It therefore became difficult to account for the extremely collapsed condition of the patient at the time of my first seeing her. But the post-mortem examination clearly revealed the cause. The large amount of blood which was effused under the peritoneum, and which doubtless had been suddenly lost, accounts for her great vital depression, and explains also why the venesection was not well borne.

The rupture of the uterus was caused by the rigid schirrous condition of the os uteri. Most probably the fatal issue might have been averted if I had seen the patient before the accident had happened. The prophylactic treatment in such a case would be to endeavour to relax the os uteri by bleeding, &c.; and afterwards, if this desirable change was not effected, then incisions, in sufficient number and extent, should be made into the os uteri: after which, if the natural powers of the woman are found not to be equal to the delivery, then a question would arise whether the long forceps, turning, or craniotomy, should be had recourse to.

Case 4.—*Anterior laceration of the uterus; fatal.*

I am unfortunately unable to give a very minute description of the following case, only brief notes having been obtained; yet there is connected with it a very instructive lesson. I am indebted to Mr. J. A. Ransome for the statements. His late father kindly lent me the pelvis which belonged to the poor woman who was the subject of this case, with the kind permission to have a cast made from it.

The woman was a patient of the Manchester Infirmary; she was twenty-one years of age, and unmarried; she was "deformed in every part:" the deformity, she stated, had commenced in childhood from rickets, and had continued to increase up to the present time; she was at the full

period of her first pregnancy. When Mr. J. A. Ransome first visited her, she was in strong labour; and, according to her statement, she had suffered strong pain for forty-eight hours. The membranes had spontaneously broken for some hours before he saw her. He says—"Upon attempting to examine her, I discovered a degree of narrowness which (being the first case of labour I had ever attended) completely puzzled me;" and therefore he obtained the assistance of a more experienced pupil. This gentleman, in his examination, encountered the same difficulties. Mr. J. A. Ransome, therefore, applied to his father, who, on seeing her, at once discovered the serious character of the case, and without delay desired a consultation with the other surgeons of the institution. Most of these medical officers attended, and concluded to have another meeting, at which some of the medical officers of the Lying-in Hospital were invited to be present. At this time the pains occurred at regular intervals, and she was far more comfortable and less exhausted than could be reasonably expected.

The performance of the Cæsarean section was proposed; but unfortunately this procedure was opposed, and in fact overruled by a majority. These parties founded their objections on the probability of the death of the infant, and on the imminent danger of this operation to the mother; and not only so, but they confidently entertained an opinion of the possibility of delivery "per vias naturales," if the cranial bones were removed. With this conviction, the head of the infant was perforated, and portions of bone successively removed. The crotchet was then firmly fixed, and powerful traction made and continued, until at last "there remained no point of traction;" which doubtless means, no hold could be maintained. Thus failing, it was agreed "to trust to the natural powers during the remainder of the night." In the morning no progress had been made, although the pains had continued unabated. Further attempts were again unsuccessfully made to bring down the head with the crotchet. Under these circumstances, the necessity of performing the Cæsarean section was a second

time proposed, and again obstinately opposed. In the evening the case of this poor creature was considered hopeless, and therefore no further attempts were made to deliver her. An opiate was administered. She continued to suffer pains during the night. At six o'clock the following morning, just seventy-two hours from the commencement of her labour, the pains suddenly ceased, and at this time there appeared to be, as it were, "a transference of the abdominal tumour from the hypogastric to the epigastric region." This change evidently pointed out that the uterus had lacerated, and that the infant had passed out of it into the abdominal cavity. She then fell into a quiet sleep, and in four hours she died.

Post-mortem examination.—On opening the abdomen, it was found that the anterior and upper part of the cervix and the lower part of the body of the uterus were extensively lacerated, and that the infant, with the placenta and membranes, had escaped into the abdominal cavity. The pelvis was extremely distorted.

Remarks.—Unfortunately, this case was brought by Mr. Ransome to be considered by those the great majority of whom were decidedly anti-Cæsareanists; and it is especially remarkable how violent party feeling was at one time in Manchester upon the question of the Cæsarean section. (See my observations on this operation.) But a strict examination of the capacity of the pelvis ought to have brought conviction to the minds of the most prejudiced opponents of this operation as to its positive necessity in this case. The result of craniotomy further proves what course ought to have been adopted.

I have forwarded, for the inspection of the Obstetrical Society, two drawings of the pelvis (see figs. 8 and 9), made by my respected friend Mr. Hunt, in order to show the physical impossibility of bringing a mutilated infant through it.

* Plates 2 & 3 at the end

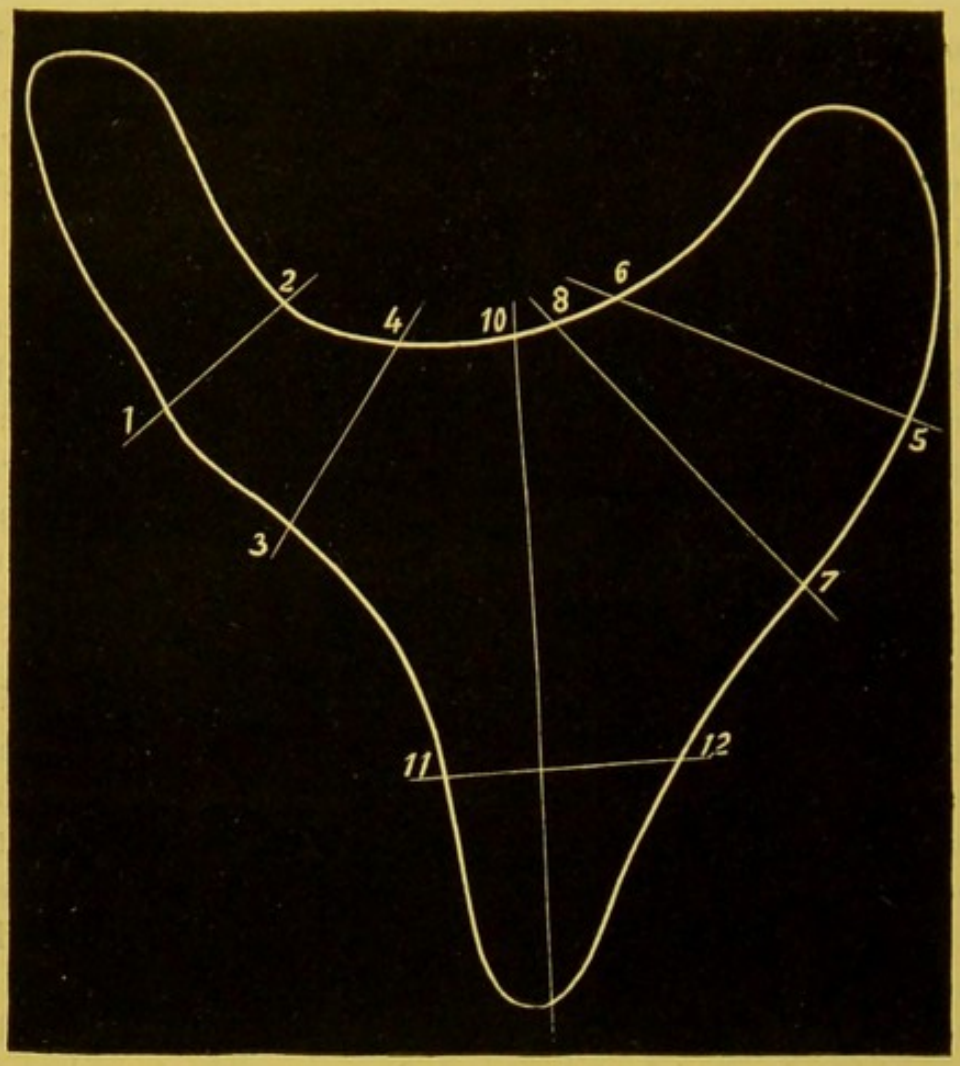


FIG. 8.

1, 2.—From the middle part of the fourth lumbar vertebra to the ilium on the right side, $\frac{1}{2}$ inch.

3, 4.—From the lower edge of the fourth lumbar vertebra to the ilium opposite the upper edge of the middle of the acetabulum, on the right side, $\frac{5}{8}$ of an inch.

5, 6,—From the upper edge of the fifth lumbar vertebra to the ilium on the left side, $1\frac{1}{8}$ of an inch.

7, 8,—From the upper edge of the fifth lumbar vertebra to the ilium, opposite the upper edge of the middle of the acetabulum, on the left side, $1\frac{1}{4}$ inches.

9, 10.—From the lower edge of the fourth lumbar vertebra to the symphysis pubis, $2\frac{1}{2}$ inches.

11, 12.—Across from one side to the other, opposite the anterior part of acetabula, $\frac{3}{4}$ of an inch.

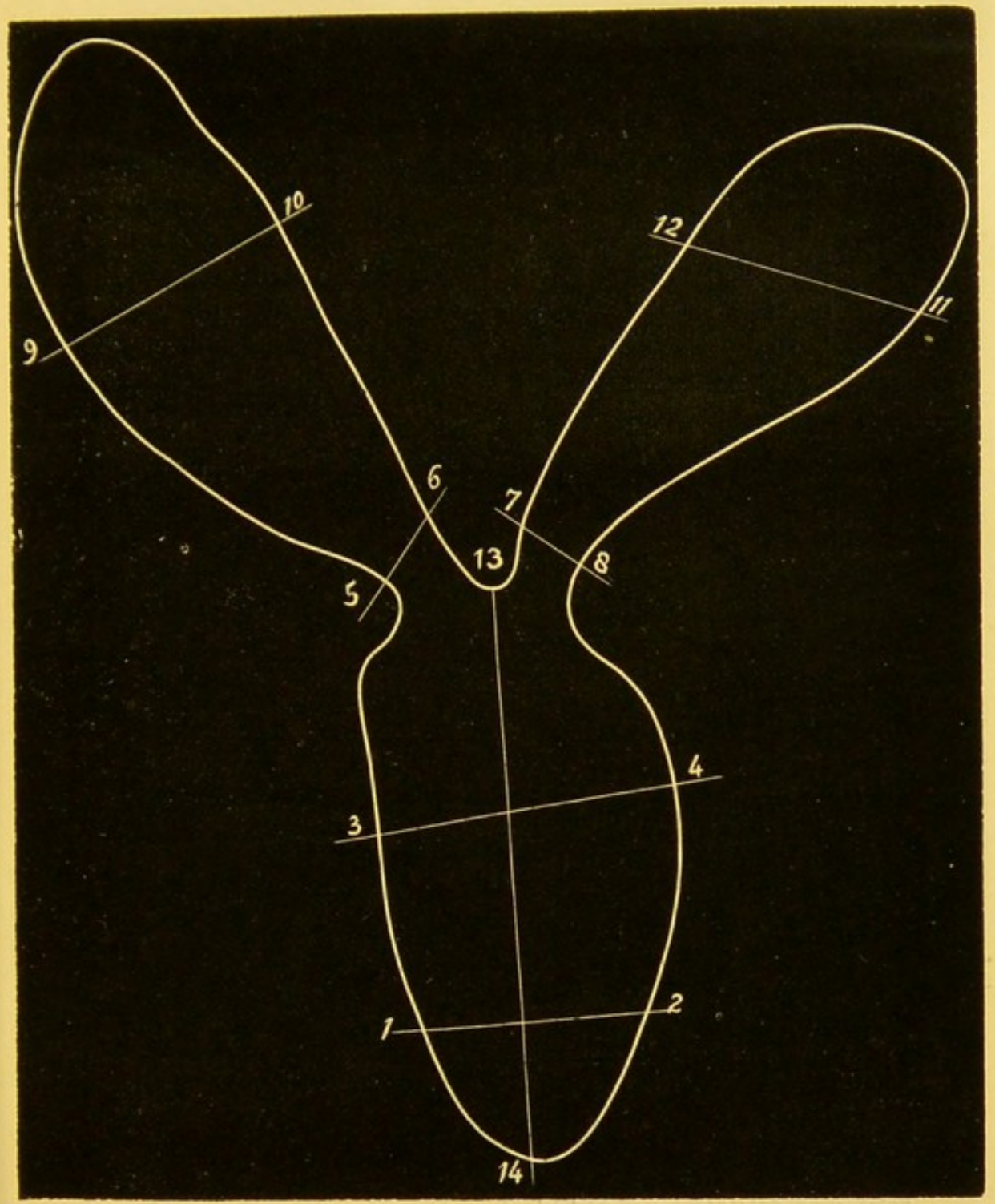


Fig. 9.

1, 2.—From one pubis to the other, below the symphysis, $\frac{3}{4}$ of an inch.
3, 4.—From one tuberosity of the ischium to that of the other, $1\frac{1}{2}$ inch.
5, 6.—From the spinous process of the ischium to the upper part of the coccyx, on the right side, $\frac{3}{8}$ of an inch.
7, 8.—From do. do. do. on the left side, $\frac{1}{4}$ of an inch.
9, 10.—From ilium to sacrum, on right side, $1\frac{1}{8}$ inch.
11, 12.—From do. do. on left side, 1 inch.
13, 14.—From point of coccyx to the symphysis pubis, $2\frac{1}{2}$ inches.

CASE 5.—*Oblique laceration of cervix uteri, left side; fatal.*

On March 25th, 1825, I was requested by Mr. Ollier to visit a woman residing in a court in Brazennose Street; I was informed by him that she had been in labour thirty hours; the membranes had ruptured sixteen hours before my arrival. The pains had been very strong and forcibly expulsive. I found the os uteri fully dilated, and the head of the infant had partially entered the brim of the pelvis, in which position I was informed it had remained stationary for some hours. A short time before I arrived the patient was seized with a violent cramp-like pain, which was accompanied with a shrill exclamation of "Oh, my belly!" She then became ghastly; her countenance anxious and pallid; her skin covered with a cold sweat; and the pains, which up to this time were very strong, now entirely ceased. There was no discharge of blood per vaginam. I placed my hand upon the abdomen, which was very tender to the touch, and distinctly felt the body of the infant lying out of the uterus. As I have already said, the head had partially entered into the brim of the pelvis, and had obtained a fixed position. The parietal bones overlapped, and presented a sharpish ridge to the finger. Although the head had not receded, yet we had not the least doubt but that the uterus was ruptured, and therefore we determined upon immediate delivery. I applied the long forceps, and obtained a firm hold of the head. After using considerable force, as I did not succeed in bringing the head down with them, I had recourse to the perforator; and after opening the head and evacuating the brain, the infant was delivered by the craniotomy forceps. I then passed my hand and brought away the placenta, which I found detached and lying in the abdominal cavity. The rent was situated on the left side, extending forward and obliquely upwards. The capacity of the pelvis was considerably diminished, the antero-posterior diameter not being more than from two and a half to two and three quarter inches. The uterus contracted well, and there was only a slight discharge of a little coagulated blood. The symptoms which supervened were those of peritoneal inflamma-

tion; and they were combated by general and local bleeding, purgatives, and calomel and opium. She died the third day after her delivery.

Post-mortem examination.—The peritoneum was highly vascular; and the convolutions of the bowels were very considerably agglutinated together, and some serous fluid was found in the interstices. The laceration extended obliquely upwards and forwards from the left side of the cervix. The edges of the wound were ragged, and the uterine tissue in the immediate vicinity of it had the appearance as if it had been contused or beaten between two hard bodies. The brim of the pelvis measured rather less in the antero-posterior diameter than two and three quarter inches, as before stated.

Remarks.—This case affords a strong example of the mischievous influence of protraction. Timely delivery by craniotomy would most likely have saved the woman's life. There were no premonitory signs of impending danger, and only the crampish, agonising pain, with the shrill shrieks, announced the occurrence of the accident. The long forceps were first tried unavailingly, and perhaps not advisedly, as the pelvis was so contracted, and as there is scarcely a possibility of saving the infant in such cases. The uterine tissue was severely contused, and thereby softened. I do not mean as ordinarily understood by "ramollissement," but a destruction of its organisation by being beaten by the head of the infant against the pelvic bones. Premature labour would have been the most proper means to adopt, if the degree of pelvic contraction had been known; but as this was her first labour, Mr. Ollier was ignorant that such deformity existed.

Case 6.—*Longitudinal laceration of the uterus anteriorly; fatal.*

I was requested by Mr. Dick to visit Mrs. —, æt. 36, residing in Bury Street, Salford, who was at the full period of her second pregnancy. For two days before he sent for me she had copious hæmorrhage, which was moderated by

rest and other suitable means. At five o'clock on the evening of the 7th April, 1825, I saw her, and found that a profuse discharge had again taken place. She had now slight pains; her pulse was quick and weak, and her countenance had an anxious expression. I found the os uteri high, rigid, projecting, and only slightly dilated. The head of the infant was lying over the brim of the pelvis. No part of the placenta could be perceived. Under these circumstances, it was judged proper to strictly watch the progress of the case, as delivery could not at this time be justifiably undertaken by forcibly dilating the os uteri; but as the strength of the patient was at this time considerably reduced from the copious discharge of blood, and as the flooding still continued, it was considered advisable to rupture the membranes. At eight o'clock in the evening I again visited the patient, and found the liquor amnii escaping very slowly, and which was slightly coloured. She was restless, and seemed fatigued; her pulse was quick, but perfectly distinct; the os uteri still continued high and undilated. Tinct. Opii, thirty minims, was administered, and fortunately produced some refreshing sleep. The pains afterwards became more frequent, and the head, which was still enveloped by the cervix uteri, descended lower into the pelvis. The os uteri had become softer, but still was not much more dilated. This report was furnished me. Having been again sent for at five o'clock a.m., 8th April, I found the patient was now restless, and very much exhausted; her pulse was very quick and feeble. There had been no more hæmorrhage. The os uteri, which had descended lower, had also become softer and more dilated. The pains, however, were still very ineffective. It was now quite evident the patient was gradually losing ground; and as the pains were too feeble to dilate the os uteri and afterwards to expel the infant, we decided to undertake artificial delivery. The hand was introduced, and the os uteri gradually dilated, and the infant was turned and delivered. This operation was both cautiously and slowly performed; but yet she did not bear it very well, and frequently required some brandy to be given

during its performance. She, however, seemed to have rallied a little after its completion. The placenta was naturally loosened and expelled. The discharge at this time was very moderate, but, from her very exhausted state, it was decided not to make further vaginal investigation.

The uterus could be felt above the pubes to be well defined, but larger than is common after the completion of the labour. She continued to sink, and at the end of three hours she expired.

Post-mortem examination.—Present Mr. Dick. Upon dividing and turning aside the abdominal parietes, the uterus was found larger than common. On raising this organ up, an opening was discovered in the peritoneum where it is reflected over the bladder, and there was some coagulated blood lying here. The bladder was empty and uninjured. The laceration extended upwards in a longitudinal direction through the os, the cervix, and part of the body of the uterus. The uterine tissue appeared sound, and the wound had the character of a simple tear. The pelvis was of standard size. All the organs had a particularly white appearance, which had doubtless been produced by loss of blood.

Remarks.—I felt very anxious to have my opinion corroborated by a post-mortem examination. The sudden sinking of the pulse during the operation led me to suspect that rupture had taken place; but this I could not ascertain by passing my hand per vaginam, in consequence of the very exhausted condition of the patient. The act of dilating the os uteri, and then passing the hand in search of a foot, in a contracted uterus, is an operation which always produces great excitement; and a sudden sinking of the vital power—the pulse becoming excessively frequent and weak during the performance of such a painful operation—is an unfavorable symptom. There was no premonitory sign to mark the time when the accident took place; but the state of the pulse led me to suspect, although the previous hæmorrhage greatly obscured and rendered this only an uncertain indicator.

The height of the os uteri, its rigidity, the absence of dilatation, and its great projection into the vagina, were the grounds of objection to an earlier delivery. And even afterwards, when the os uteri had assumed a more favorable condition, it was undertaken as an operation of necessity rather than one of choice. If the parts had been in a different state, an earlier operation would have been right; but the result shows that the delay was perfectly justifiable. When the os uteri is found to be situated very high, and at the same time is rigid, and more especially if it also projects into the vagina, its dilatation being so slight as only just to admit a finger, such a case must always be considered very unfavorable for performing the operation of turning. I have met with several cases in which there existed slow, insidious, and continued hæmorrhage, and yet the os uteri maintained these unfavorable characteristics, and the patients have been brought into great danger before delivery could be performed, which should in all such instances be as long delayed as the safety of the patient will allow. These several organic states rather indicate that pregnancy is not completed; and we know that a projecting os uteri shows that the cervix is not completely developed. In all labours in which the os uteri is in this very unfavorable state for dilatation to take place, there exists great danger of laceration. Another case occurred to one of my hospital colleagues in which the child presented with the arm. The os uteri was only slightly dilated and rigid. In this case turning was undertaken, but before it was accomplished the vital powers suddenly gave way; her pulse became scarcely perceptible, and in a few hours she died. He stated a laceration was found in the os and cervix uteri, and also in the upper part of the vagina, after death.

Case 7.—*Transverse laceration of the uterus on the left side; fatal.*

For the particulars of the following case I am indebted to my respected friend Dr. Stephens.

A poor woman, æt. 39, residing at Failsworth, mother of

several children. All her four labours, with the exception of the last, had been natural. In that she had experienced great difficulty, and the child was still-born; she was a patient of Mr. Pegg. At one time she enjoyed excellent health and was very strong, but for the last three or four years her health had been declining.

On Wednesday evening, May 15th, 1826, her labour came on, and continued all night, during which she had several rigors and vomited. Mr. Pegg, having experienced so much difficulty in her former delivery in consequence of pelvic distortion, became alarmed with these symptoms, and therefore immediately sent for Mr. Jordan. He arrived about three o'clock on Thursday. About two o'clock she had a very severe rigor, from which she very gradually and imperfectly recovered. Her pulse was then scarcely perceptible, and she appeared to be sinking. After a short time she rallied a little. When Mr. Jordan arrived, he found her with a pale countenance and great constitutional depression; her pulse was quick and weak; she had great and constant pain in the side of the abdomen. By a vaginal examination, "the head of the infant was found jammed at the upper aperture of the pelvis," "the forehead resting on the promontory of the sacrum and the occiput on the pubes." The os uteri was dilated, and the waters were discharged, as the membranes had spontaneously ruptured in the course of the preceding evening. It was decided to perforate the head of the infant; and when the instrument was brought into contact with it for this purpose, it receded into a space laterally, although a hand had been placed upon the abdomen to steady the uterus. Failing to accomplish this operation, it was decided to pass the hand into the uterus for the purpose of turning the infant. This operation was with some difficulty performed, and after using very considerable force "the hips, chest, and the shoulders were born;" but when the head came, so much difficulty was experienced as to require its perforation. The hand was again introduced, and the placenta extracted. Her exhaustion continued to increase, and at ten o'clock the same night (May 16th) she expired.

Post-mortem examination.—The following day the body was inspected. On opening the abdomen, about three pints of fluid blood were found, besides some clots and serous fluid. On this being removed, "a large rent was found in the left iliac region just opposite the acetabulum; it was about seven or eight inches in length, and extended over and into part of the psoas muscle, and somewhat into the fore part of the body of the uterus." The round ligament was found stretching across this rent, which was quite insulated, but it was adherent at the groin. On passing the finger through this rent, it was found to go into the body of the uterus. The laceration extended from just above the os uteri on the left side upwards and outwards, and was large enough to easily admit the fist. There was also a communication with the vagina. The peritoneum, where it is reflected from the upper part of the vagina over the posterior part of the bladder, was also torn through. The bladder was separated from the uterus, and there was a small lacerated opening found in the bladder sufficient to admit the forefinger. This viscus was empty. The bowels were not inflamed, but distended with flatus. The edges of the wound were jagged and very thin: "I could scarcely say there was softening of the uterus either at this part or any other." "The pelvis was decidedly much contracted, and this was produced by malacosteon."

Remarks.—Dr. Stephens has with great minuteness detailed the circumstances attendant upon this case. It furnishes us with another instance in which collapse is produced by the great effusion of blood into the abdominal cavity. It is surprising that immediate death did not take place from the effect of the loss, superadded to the shock which in these accidents is nearly always inflicted upon the nervous system.

The pelvis was considerably distorted by malacosteon, which doubtless had commenced previous to the last labour; and although Dr. Stephens was disposed to doubt whether there was softening of the uterine tissue, yet I am inclined to think, from the great extent of the laceration, that not

only the uterine tissue, but that also of the whole pelvic viscera was in an unhealthy state. This opinion is strengthened by the history of the case. The labour was only of moderate duration, and the pains are not reported to have been strong; so that it is reasonable to suppose the organisation of the uterus had not suffered from the effects of contusion which sometimes happens during protracted labour.

Case 8.—*Transverse laceration of the uterus posteriorly; fatal.*

On the 7th of April, 1827, I was requested by Mrs. Jeal, an hospital midwife, to visit a patient in Angel Street, who had been in labour thirty hours; this was her fourth pregnancy. I was informed the membranes had ruptured about two or three hours after the commencement of her labour, the os uteri being at that time only very partially dilated. The pains had varied very much in strength, but for several hours they had been strong and bearing down. A short time before I was sent for, she suffered one or two violent pains, and complained of the agony in her belly. The pains afterwards ceased.

I found her in a very collapsed condition; her pulse was very feeble, her countenance was much sunk, and she had vomited a large quantity of a very dark-coloured fluid like water containing coffee-grounds. I was informed that the pains had been all along very feeble. The abdomen was very tender, and so much tumefied that I could not feel the uterus or infant through the parietes. She was troubled with hiccough. On examination, I discovered that one hip was presenting at the os externum.

Before proceeding to deliver her, I ordered some brandy to be administered. I then passed the finger for the purpose of hooking it into the groin; but the presentation immediately receded, and I was therefore compelled to carry my hand through a lacerated opening in the uterus into the abdomen, and, coming in contact with a knee, I seized it, and brought it down, and afterwards easily finished the

delivery of the infant, which had been dead for a long time. The placenta, which was already detached from the uterus and lying loose in the vagina, was immediately withdrawn. In order to ascertain the extent and situation of the mischief, I introduced my hand, and, to my great surprise, found a large portion of intestine lying within the os uteri, and which had protruded through a lacerated opening which was situated on the back part of the cervix uteri, and which I immediately returned. She was now very much exhausted, and appeared to be sinking. She expired in three or four hours after I left her.

Post-mortem examination.—Present, Mr. Lowe. The peritoneum was very highly inflamed, and there was a great quantity of bloody serum in the abdominal cavity. The laceration was situated posteriorly in the upper part of the cervix uteri, and ran in a transverse direction. The edges of the wound appeared as if they had been bruised, and they were ragged. The uterine tissue in the vicinity of the laceration seemed as if its vitality had been destroyed. There was a diminution in the antero-posterior diameter of the brim of the pelvis, which measured about three and a half to four inches. This arose from the base of the sacrum projecting more inwards. The accident most probably happened a short time before the agonising pain took place, and when the pains ceased. As far as I could calculate, the dark-coloured fluid was vomited about four hours before she was delivered. There can be no doubt that the organisation of the posterior part of the cervix uteri was considerably and dangerously injured, if not totally destroyed, by the long-continued pressure it had sustained betwixt the presenting part of the infant and the projecting part of the sacrum. Most likely, if the membranes had not ruptured early, the event might have been different.

Case 9.—*Longitudinal laceration of the uterus; fatal.*

The following case is related by Mr. Roberton, in his 'Essays and Notes,' p. 293, and therefore I shall only

transcribe a few remarks on it from my own notes, which were made at the time of its occurrence.

In May, 1827, I was requested by Mr. Roberton, my hospital colleague, to visit a poor woman residing in Preston Street, St. George's Road. On my arrival at eight o'clock a.m., I found her in a very collapsed condition. As there was no flooding to account for this general vital depression, I was convinced that some serious organic accident had happened—most likely laceration of the uterus.

Mr. Roberton kindly informed me he had been called up at midnight, and at that time found the membranes were ruptured and the os uteri was dilated; the head of the infant presented, and lay over the upper aperture; the pains were of a spasmodic or crampy character, and the woman was restless and tossing about. These circumstances induced the midwife, who had not been many hours with the patient, to send for Mr. Roberton. He recommended patience. However, at six o'clock a.m. he was again requested to visit her. He found that the pains, which had been agonising, had now ceased; her skin was cold and clammy, and she vomited frequently; the head of the infant had slightly descended. After a reviewal of the attendant circumstances, we decided on immediate delivery; and as the infant's head had commenced its entrance into the brim, and as there appeared no recession of its body, we decided to apply the long forceps, which were readily passed and fixed on the head; but after a full trial of them the head could not be brought down. Craniotomy was then decided on, and performed by Mr. Roberton. On removing the placenta, I distinctly discovered an extensive laceration on the left side of the cervix, which ran in a direction upwards. The symptoms that afterwards appeared were those of peritoneal inflammation, which were combated by an active antiphlogistic treatment. She died on the third day.

Post-mortem examination.—On opening the abdomen, the general peritoneal membrane was seen to be highly inflamed; the convolutions of the intestines were glued together by the effused lymph, and there was a quantity of serum effused in

its cavity. The uterus being raised, a longitudinal laceration existed on the left side of the cervix; the edges of the wound were ragged, and that part nearest the os uteri had a contused character; the brim of the pelvis was less than natural, from the promontory of the sacrum projecting somewhat inwards.

The remarks upon this case need be few. The spasmodic pains which existed, along with the mechanical impediment from the projection of the sacrum, may be conjointly considered as the cause of this serious accident.

Mr. Roberton says—"The period from the commencement of labour to the occurrence of rupture was short of *twelve hours*."

Case 10.—*Longitudinal laceration of the uterus anteriorly, and also laceration of the bladder; fatal.*

August 10th, 1828, Hannah S—, æt. 40; pregnant of her eleventh infant. She sent for Mrs. Buckley, her midwife, at two o'clock a.m. In an hour afterwards the membranes ruptured, and was succeeded for a short time by strong labour-pains. The liquor amnii dribbled away, and the uterine contractions became less effective. The patient complained of a fixed pain in the left side of the hypogastric region. At this time the os uteri was situated very high, rigid, and only slightly dilated. At five o'clock Mrs. Buckley sent for a surgeon, as the patient's friends were very anxious about her. Her strength was gone; the pains were frequent; the os uteri was now disposed to dilate. The head of the infant presented. At ten o'clock she was again seen; and as everything was found favorable, he recommended the case to be trusted to the natural efforts, and ordered a common enema to be administered.—At twelve o'clock at night he was again sent for. He found she had vomited a little. The skin was natural, and there had been no shivering. The os uteri was not yet dilated; but the general state of patient was very favorable. He still decided not to interfere, fully expecting that the delivery would be safely terminated. The pains were at this time

feeble and irregular, and consequently not very effective. Tinct. Opii, thirty minims in a draught, was ordered for the purpose of obtaining some refreshing sleep. At two o'clock she vomited a very considerable quantity of a dark-coloured fluid; and the pains entirely ceased, and she now lay quiet. In about a quarter of an hour after my arrival she was seized with convulsive twitching, and immediately expired.

Post-mortem examination.—The belly was very much distended with air. Having divided the abdominal parietes, and turned them aside, a large quantity of bloody fluid was seen. The breech, trunk, and lower extremities of the infant, which had escaped from the uterus, were found in the abdominal cavity, enclosed in the membranes; whilst the head was lying within the os uteri, and partially engaged in the brim of the pelvis. The position of the head was natural. The fundus uteri was well contracted. The infant had apparently been dead for some time. The placenta was lying loose in the abdominal cavity. The peritoneum was generally very highly inflamed. After removing the infant, the laceration was found to extend through the lower portion of the body, cervix, and os uteri. It was situated anteriorly, and a little inclined to the left side; the edges of the wound were ragged; and the surrounding tissue appeared as if it had suffered from contusion, and its vitality nearly destroyed. A quantity of blood was extravasated.

The peritoneal covering on the anterior part of the uterus and the posterior part of the bladder was raised from its connection and lacerated. A large opening was found in the back part of the bladder. The brim of the pelvis was less than natural; its antero-posterior diameter measured about three and three quarter inches. The superior promontory of the sacrum projected rather more acutely than usual, and there was a rough projection on the inner surface of the pubes.

Remarks.—There were no symptoms in this case which could be supposed to indicate that so serious an accident had taken place, except the vomiting of the dark fluid like coffee-grounds, which only occurred a short time previous to death. Laceration of the uterus usually happens when this organ is

in a state of action, by which a portion of the infant may be forced through the wound into the abdomen. In this case the breech, &c., had most likely passed through the lacerated opening very slowly, as the head was not disturbed by the change. The absence of several of the common signs of this accident may be reasonably attributed to this circumstance. The appearance of the detached peritoneal covering of the anterior part of the uterus and that of the posterior part of the bladder shows that it must have been considerably raised, and carried upwards by the breech of the infant before it gave way after the muscular structure was torn.

The extent of the laceration was doubtless increased by the breech of the infant carrying the fundus uteri backwards, whilst the os was firmly fixed by the head in the pelvis. From the inflamed state of the peritoneum, it is right to conclude that the laceration had taken place some time previous to death, although the general condition of the patient at one o'clock, and the position which the head maintained, might reasonably lead to a different opinion.

In reviewing the progress of the labour, and the results of it as found after death, there can be no doubt that delivery might have been easily, and indeed ought to have been earlier performed, either by the long forceps or by craniotomy.

Case 11.—*Longitudinal laceration of the anterior portion of the cervix uteri and bladder; fatal.*

At ten o'clock on Sunday morning, October 20th, 1828, I visited Alice W—, residing at 3, Cooke Street, Salford, who was in labour of her second infant. Mrs. Booth, one of our hospital midwives, was in attendance. I was informed that her first labour was tedious, and that she suffered very much during its progress, and was ultimately delivered by Mr. Wilson by the perforator and crotchet. The remembrance of her former labour had a depressing effect upon her mind; and Mrs. Booth was on the same account induced to make an early application to me at an early period of labour.

By a vaginal examination, I ascertained that the os uteri was dilated to about the size of a dollar, and that it was also thin and soft. The membranes were unruptured, and during a pain they protruded through the os uteri. I afterwards carefully examined the pelvis, and fully satisfied myself that it was of a sufficient capacity to freely allow the head of an infant of standard size to pass through it.

During this examination, I discovered the head, which presented with the vertex towards the left acetabulum, but it was placed a little nearer to the symphysis pubis than is usual. The vagina was cool and moist; her pulse was natural, and her countenance good.

In order to ascertain the true position of the uterus in reference to the axis of the trunk, I requested the patient to rise from the bed. As soon as she had assumed the erect position, I was struck with the very great projection forwards of the fundus uteri,—constituting an extreme case of anterior obliquity of the womb. The knowledge thus obtained induced me to recommend the case to be trusted to the natural efforts. I assured the patient she would do well without the use of instruments, and that I had only one plan to suggest to her, which was a strict observance of keeping the recumbent position and constantly lying on the back. She faithfully promised to comply with this injunction. A bandage was placed round the abdomen. At four o'clock in the afternoon my immediate attendance was again requested. On my arrival I found the poor creature in a most dangerous condition. Her countenance was ghastly and expressive of great anguish. She had constant vomiting, which at first consisted of nothing but the ingesta, but very soon afterwards the ejected matter had assumed a dark colour like coffee-grounds; her general surface was pale and bedewed with a cold sweat; her pulse was feeble and nearly imperceptible. These symptoms clearly indicated that some serious organic lesion had happened, and in my own mind I felt convinced that the uterus had ruptured. On a very careful investigation, I found the

os uteri fully dilated. The membranes were ruptured, and the head was lying loosely over the superior aperture of the pelvis, and upon pressing it with the finger it appeared to recede. The abdomen, on examination, was found exquisitely tender; but I could discover no indication that the child had escaped from the uterus. I at once decided to perforate the head, and requested the midwife to steady the uterine tumour by an extended pressure of her hands. No sooner, however, was the instrument brought into forcible opposition with the head than it immediately receded and rapidly passed into the abdominal cavity, being followed by the rest of the body. As no further advantage could be derived from this mode of proceeding, I withdrew the instrument and introduced the hand, when I discovered a rent on the anterior part of the cervix uteri. The laceration was situated immediately above the os uteri, through which I easily passed my hand in search of the feet. During this part of the operation I was compelled to carry my hand very high, and in its progress I distinctly felt the convolutions of the bowels. On reaching one foot, I brought it down, and experienced a slight difficulty when the breech came to enter the brim, which was increased when the head passed through the same part. This obstacle was overcome by adjusting the diameter of the head with those of the pelvis without the aid of any instrument. A slight discharge of blood, partly coagulated, now took place. I introduced my hand and extracted the placenta, which I found loose in the abdominal cavity. During her delivery she was very much exhausted, and required from time to time the administration of brandy. After its completion some more brandy was given, and also a full dose of opium.

In three hours she was again visited, and found to have considerably recovered from the shock. She complained of great tenderness in the belly. She had not passed any urine. She had not slept, but she felt drowsy. A further dose of opium was prescribed; the catheter was introduced, but there was only a little bloody serum withdrawn. Linseed cataplasm was applied to the belly.

The symptoms from this time were those of violent peritoneal inflammation, and were combated by leeches, which were twice repeated, calomel and opium, saline medicines, cataplasms, enemata, with castor oil and spirits of turpentine. The catheter was several times passed, but no urine flowed. There was a perceptible urinous smell in the discharges. She continued to suffer agonising pain until Wednesday morning, when symptoms of sinking began, and early in the afternoon she died.

Post-mortem examination.—Present, Dr. Freckleton and Mr. Brownbill, sen. Upon opening the abdomen, the flaps were with difficulty reflected from the adhesion which had taken place to the parts beneath. The omentum was firmly glued to the bowels, and the convolutions of these organs were universally adherent by lymph of a soft tenacious consistence. The colour observed upon this surface had a beautiful variegated appearance. On separating the convolutions of the intestines, a serous fluid with floating flocculi of lymph was seen. The peritoneal covering of the uterus was highly vascular. When this organ was raised up, an extensive laceration of both the muscular structure and its peritoneal coat was discovered. It was on the anterior portion of the cervix, and ran upwards in a longitudinal direction. On introducing a catheter into the bladder, it was found that this organ was lacerated on its posterior part.

These organs were then removed, and the pelvis was accurately measured. The brim in its antero-posterior diameter was four and a half inches, transverse five and a quarter, and the oblique five inches. Both the cavity and the outlet were fully of the standard size.

There were no long projections found at the symphysis pubis, and the linea ilio-pectinea was not sharper than usual.

Remarks.—As soon as all things were adjusted for the patient's advantage, I took the opportunity of interrogating the midwife, how the day had been passed after my first visit, and what were the attendant circumstances at the time the case assumed the awful change. She told me that

the patient had strictly observed the position of lying on the back until the time above stated, when she obstinately determined to get up; and as soon as she had raised herself in the perpendicular position upon the floor, she was seized with an agonising pain, accompanied by a violent exclamation, "Oh—my belly! oh—the cramp!" She became faint, pale, and vomited; and it was with great difficulty she could be got upon the bed.

Mrs. Booth further stated that the os uteri had progressively opened and was fully dilated when the membranes ruptured, which took place about two hours before these symptoms occurred. The head was just beginning to enter the brim of the pelvis.

In the foregoing case it is natural to inquire what was the cause of the fatal catastrophe, as every circumstance promised so propitious a termination when I first visited the poor creature. There appears only one to which I can attribute the result. From long experience, I know that obliquity of the uterus is an influential cause of protracted labour. The infant's head cannot favorably enter into the brim, and thereby the uterine fibres are put unequally upon the stretch, which frequently induces irregularity of action, and therefore we need not wonder that in such cases, when the head of the infant is forced so unfavorably upon several points of the pelvis, that rupture of the uterus may take place. This is the only traceable cause in the present case. She was put upon her back, and so long as she kept that position all was well.

The edges of the wound were clearly defined, and the surrounding uterine tissues were apparently healthy, and showed no signs of having suffered from contusion or any tendency to organic tissue-softening.

Case 12.—*Transverse laceration of the uterus anteriorly, and also of the bladder; fatal.*

On the 25th March, 1829, I was requested by a midwife to visit Margaret Acton, who was stated to be very ill. I obtained the following account:—The patient was forty

years of age, and this was her sixth pregnancy. Her labour commenced at eight o'clock the preceding evening. As the pains were only slight, the midwife was not sent for until eleven o'clock, when the pains had become much stronger. She found the os uteri only slightly dilated, but the pains were regular and strong.

In the course of about three to four hours the os uteri was tolerably well dilated, and at this time the membranes ruptured. The head of the infant, which until now had remained above the brim, began to descend; and at ten o'clock A.M. it had fully occupied the cavity of the pelvis. Up to this time the pains had been very strong, and continued so for three or four hours, when the patient became very pale and cold. She also shivered and fainted several times. The labour-pains, which had been hitherto very strong, now ceased.

The midwife heedlessly allowed the patient to remain in this condition until eight o'clock in the evening before she sent for me. Upon my arrival I found the poor woman very faint and cold, and her pulse so feeble that I could scarcely feel it. Her countenance was very pallid, her breathing laborious, and she had continued vomiting. She complained of great pain in her belly, and of great oppression in the epigastrium. The vagina was cool and moist. I found the head of the infant had fully entered the pelvis, but it had not descended so low as to distend the perineum. Her condition induced me to conclude that some serious accident had occurred, and most likely that the uterus had lacerated. I decided on immediate delivery. The forceps were readily and effectually applied on the head of the infant, which was extracted in a few minutes. The delivery of the rest of the body was altogether artificial, for no assistance was derived from the uterus. Great difficulty was experienced (although I used considerable extractive force) when the shoulders came to pass through the brim, which was owing to one (the right) shoulder lying over the pubes, having passed through the rent. I therefore passed my hand upward, and hooked my finger into the axilla; and

after having by this means brought down the shoulder, the rest of the body soon followed. The placenta, being loose, was removed without trouble. The patient was very much exhausted, and her pulse was very weak. She had continued vomiting, which harassed her very much; and there was a great tendency to syncope. A little gruel with some brandy was taken, and a draught with Tinct. Opii gtt. xxv. was administered. In the morning I found she had passed a very restless night; she complained of great pain in the belly, which was much aggravated by pressure. She had now constant vomiting; her breathing was laborious, her skin was covered with a cold sweat, and her pulse was extremely feeble. She never rallied; on the contrary, her vital powers appeared to become gradually lower. Light poultices were applied on the belly. Thirty drops of Tinct. Opii was ordered; and as she had not passed any urine, the catheter was introduced, and a small quantity of bloody urine flowed. She died at three o'clock p.m.

Post-mortem examination. — Present, Mr. Lowe, Mr. Stephens, and Mr. Bryden. The body was inspected thirty hours after death. Upon opening the abdomen, a large quantity of coagulated blood was found upon the intestines. The peritoneal covering of the stomach and bowels was highly inflamed. The uterus was transversely lacerated at the upper and anterior part of the cervix, and the lower part of the body. The edges of the wound were ragged; and its tissue was softened, and presented something like an approach to gangrene. The anterior peritoneal covering of the uterus was raised up and lying loose; and that part of the membrane which is reflected over the posterior part of the bladder was also raised up, and under this two openings were traced into this organ. The inner membrane of the uterus was of a very dark colour.

Remarks.—The usual signs which indicate the occurrence of this serious accident were absent in this case. There were no sudden and shrill exclamations. She had no feeling of anything giving way in the belly. The presentation of the

infant did not recede. The violent syncope, her coldness and feeble pulse, and the vomiting, were the only symptoms from which I could imagine such a serious injury had happened. Although the head of the infant remained in the pelvis, its legs, thighs, and lower part of its body, and the right shoulder, had evidently passed through into the abdomen. The urinary bladder was undoubtedly lacerated by the body of the infant raising up and detaching the peritoneum when it passed from the uterus. The bloody fluid which was withdrawn by the catheter had, no doubt, passed into the bladder from the abdominal cavity. The extent of the laceration was probably increased by the difficulties experienced in the delivery in consequence of the unfavorable fixture of the shoulder over the pubes. But, notwithstanding this, there can be no doubt that this procedure was the only justifiable course to be adopted, as the presentation had not receded.

Case 13.—*Partial longitudinal laceration of the muscular structure of the cervix uteri; recovery.*

Having been called by Mr. Roberton to consult on the woman's case of which the following is a report, I shall first quote a part of his statement:

"October 31st, 1829.—Mary K—, Fletcher Street, a patient of the Lying-in Hospital, tall, apparently healthy and vigorous, and about thirty years of age, and has had six children. The midwife (Mrs. Buckley) states that the patient's previous labours were tedious and difficult; but I could not learn that she had ever been assisted by instruments. The children were born alive. This morning I found the os uteri dilated, the membranes ruptured, and the head presenting naturally at the brim, but without having in the least entered the inlet. The most notable circumstance was the state of the anterior lip of the womb, which was remarkably œdematous and enlarged. At first I took it for the bladder prolapsed, but on introducing the catheter I found how the matter was. The belly was very prominent, and somewhat pendulous. This condition of the labour, the midwife as-

sured me, had existed for eighteen hours. The pains had all along been trifling.

"At ten o'clock in the evening, on making a careful examination along with Mr. Radford, whom I called in consultation, we found the conjugate diameter of the inlet was little, if at all, more than three inches. There was no fever, neither were the parts hot; yet the patient had frequent vomiting." The pains were of a very trying nature, and, as Mr. R. says, "crampy and very severe." "She tossed about, and was restless and impatient. The head did not in the least advance."

The forceps might have been used if the os uteri had not been so much swollen. From the sharp and sudden exclamation she made during the preparation for her delivery, we thought that the uterus was ruptured, and therefore we lost no time in opening the head with the perforator. The extraction was effected with the craniotomy forceps. On making an examination after the birth, the cervix uteri was found "partially" ruptured posteriorly from two to three inches in extent, the rent not (so we imagined) penetrating into the peritoneal cavity. This patient recovered. The duration of the labour was about thirty-five hours.

Remarks.—The foregoing case is highly interesting, inasmuch as there are two circumstances belonging to it, each of which is quite equal to become a cause of this accident. Contraction at the brim of the pelvis opposes (in proportion to its degree) the progress of the head of the infant downwards, in cases in which the uterine action is strong and regular. But in cases of pelvic contraction, when the uterus is acting irregularly, or when the pains are of a spasmodic character, there is not only a mechanical obstacle to the descent of the head, but there exists great danger of laceration of some portion of the uterus by its own contraction. If, after the membranes are ruptured (as happened in this case), the infant's head becomes forcibly pressed for a long time upon the linea ilio-pectinea, during which time one set of the uterine fibres is in powerful action, whilst another portion of the muscular tissue of the uterus is comparatively

quiescent, it is quite obvious that there is great danger of laceration taking place. It is highly important, then, under such circumstances, to anticipate this great risk, and endeavour, as far as possible, to prevent it, first, by endeavouring to restore equal and regular contraction of the uterus by position, opiates, venesection if indicated, &c.; but, above all, by a timely delivery.

Another unfavorable condition existed in this case, viz., the anterior obliquity of the uterus. This position of this organ during active labour, if not the sole cause, at least aids the mischievous operations of any other cause in producing this accident. The recovery of this patient, doubtless, depended on the small extent of the laceration; its not penetrating the peritoneal membrane; and by the patient's being delivered as quickly as possible after the accident had happened. It was fortunate we were present at the time of its occurrence.

Case 14.—*An oblique laceration of the cervix uteri on the left side; fatal.*

At half-past eleven o'clock on Thursday night, January 7th, 1831, I received a message from my friend Mr. Partington, requesting my attendance on Mrs. D—, residing in Heath Street, Chorlton-on-Medlock. This was her eighth pregnancy. She was now in a very dangerous condition. Mr. Partington kindly related to me the following particulars:—He said the labour commenced about eleven o'clock a.m., and had been slowly progressing from that period until six o'clock in the evening. At four o'clock he made a vaginal examination, and found the os uteri dilated, and the membranes protruding as far as the os externum. At six they gave way, and the liquor amnii was discharged. The head of the infant was now felt to be in a natural position at the brim of the pelvis. The pains, which had hitherto been weak, now changed and became very powerful. They did not appear to produce much influence upon the head, for it advanced very slowly, and its apparent progress depended more on the elongation of the scalp which took place

than from any decided descent of the base of the skull. The pains continued to be thus violent until eleven o'clock at night, and increased in intensity as they successively occurred. She was seized with one of a very agonising, crampish character, which was accompanied with a shrill cry of "Oh! my belly—the violent pain!" After this the pains ceased. When I saw the patient, I found her in the state I shall now describe. Her countenance was ghastly, but it had not the same degree of anxious expression which is sometimes observed in similar cases. The pulse was 130, and very feeble. Her skin was covered with a cold sweat; she had vomited. When the hand was placed on the belly, a slight degree of pain was produced. No part of the infant could be felt through the abdominal parietes; but there was a sensation conveyed to the hand as if some fluid was interposed between the uterus and the infant's body. There was no hæmorrhage. Upon examination per vaginam, I found the head perforated, but its base was still situated above the brim of the pelvis. Mr. Partington mentioned he had just decided to apply the forceps when the accident happened, and therefore he concluded to abandon the use of this instrument; and, in order to hasten the delivery, he perforated the head, and used a blunt hook for the purpose of dragging the head downward. I was desired to undertake the subsequent management of the case; I therefore withdrew the blunt hook, and introduced Holmes's craniotomy forceps. After the scalp and cranial bone had been fairly engaged within their grasp, and a firm purchase obtained, I drew down, and the head was brought along and through the os externum. The instrument was then removed. Pains now occurred at very short intervals, which acted successively on the different parts of the infant until it was fully born.

A bandage was now applied; but it was immediately removed, as great pain was produced by its pressure. I introduced my hand for the purpose of extracting the placenta, which I found partially separated. On again passing my hand, I discovered a laceration (as far as I could judge)

about two to three inches long, and running from the left side obliquely upward and forward. The antero-posterior diameter of the pelvis was contracted, not being more than three inches. An anodyne draught, consisting of a drachm of laudanum, was now given; but it was soon rejected. Afterwards a grain of solid opium was ordered to be taken immediately, and to be repeated if necessary. Mr. Life, who was present at the delivery, remained with the patient all night, during which she had some comfortable and refreshing sleep. On our visit the following morning, we found her countenance really more cheerful than we could reasonably have expected after such an accident; but unfortunately the case from this time changed, and began to assume a character of peritoneal inflammation. The pulse became frequent and contracted; her skin was hot, and she had great thirst; her tongue was furred, and she felt intense pain in the abdomen, which was very considerably aggravated by pressure. The treatment consisted of two general bleedings, leeches, calomel and opium, poultices, turpentine lotion, enemata, catheterism, &c. The blood drawn was cupped and buffy. The symptoms continued unsubdued, and the patient sank on the second day after her delivery.

Remarks.—This is another instance of laceration of the cervix uteri, doubtless caused by a diminution in the capacity of the brim of the pelvis. The contractions of the uterus were very active and powerful, and therefore it is fair to conclude that no softening of the structure of this organ previously existed, or else its tissue would not have so long withstood the violence of its efforts. The mischief inflicted was most likely a clear rent, as there was no previous evidence that the texture of the uterus had suffered so much from contusion as to have produced such a result. The infant did not escape into the abdomen through the lacerated opening, and therefore it is nearly certain that the peritoneum was not very extensively torn. It is very remarkable that the uterus, after having reposed for some time after the occurrence of the accident, should again have

actually acquired its expellent power. This activity of the uterus clearly proves the truth of the above remark, that the peritoneum had nearly if not altogether escaped injury.

Permission to inspect the body could not be obtained.

Case 15.—*Longitudinal laceration of the muscular structure of the cervix and body of the uterus; fatal.*

Hannah S—, of Back Blackley Street, æt. 39, rather tall and very thin, of a swarthy complexion, occupied as a clear-starcher, of extremely industrious habits, and pregnant of the ninth child. Her health during pregnancy had been tolerably good, with the exception of slight stomach complaints, which were most probably produced by the uneasiness of her mind as to the certainty of the fatal event of her expected labour.

Mrs. Upton, midwife, was summoned to attend her at eleven p.m., January 28th, 1831, and was told that the liquor amnii had escaped. Upon making an examination per vaginam, she could not discover any dilatation of the os uteri. She therefore left her, desiring to be sent for again as soon as the pains came on. The day following, at four p.m., Mrs. Upton called (not having received any message), and the report made was that the patient was much the same, but that less water was dribbling. No examination was made. At nine p.m. of the same day her attendance was again requested. On her arrival she found that the pains were apparently strong, but considered them as more the result of voluntary effort than uterine contraction; and this opinion was corroborated by the unchanged condition of the os uteri. As her belly was extremely pendulous, Mrs. Upton placed the patient on the horizontal position, enjoining her to avoid all voluntary effort. Her skin during the whole progress of her labour was rather cold; but the midwife judiciously applied hot bricks to her feet, hot napkins to the belly, and gave her warm diluents to drink. Notwithstanding the injunction laid upon the patient as to the necessity of preserving the horizontal position, she would get out of bed and bear her pains upon her knees, from which

position, suddenly starting, she threw herself upon the bed; this was frequently repeated. At a quarter before eleven, Mrs. Upton again made a vaginal examination, when she found the os uteri dilating and the head entering the superior aperture of the pelvis. The husband of the patient became anxious to have another opinion, and a message was sent to my house. My pupil, Mr. Bryden, went down to see her, and upon his return reported that every circumstance connected with labour was favorable, and that he had no doubts as to the propitious termination of the case. About half-past twelve she was seized with vomiting, which was accompanied with great coldness of the skin. The midwife requested her to take a little brandy-and-water, which materially relieved her. After a short time she became worse: her countenance became pallid; her breathing was slightly hurried, and frequently interrupted by deep sighs; her pains (which until this period, one o'clock, had continued) now subsided. Under these circumstances, the husband was despatched for me; and during his absence she suddenly rose from the bed and stood on the floor. She now became faint, sighed and moaned, but was supported by the midwife, who laid her upon the bed, where she immediately expired. On my arrival, I found the event as just stated; and on making inquiry as to her complaints during the progress of labour, was informed that she had moaned much, but had never uttered any sudden exclamation or shriek. I passed my finger into the vagina, and clearly perceived the head of the child, which had partially entered the brim of the pelvis; and I found the os uteri not more dilated than the size of a dollar. The account received from the midwife was that no blood had been discharged, and this was corroborated by my vaginal examination, the finger not being tinged with the colour of that fluid. I placed my hand upon the abdomen, and was much surprised to feel two tumours running parallel with each other, a groove or depression evidently existing between the two, aad yet the sensation communicated to the hand was that they were connected together.

Post-mortem examination.—The body was examined twenty-one hours after death, in the presence of Mr. Dick, my pupil Mr. Bryden, and Mr. Bird. The general surface presented an exsanguineous character, similar to what is observed as the result of excessive uterine hæmorrhage. On opening the abdomen, the peritoneum appeared perfectly free from disease, nor was any fluid discovered in its cavity. The peculiar feeling presented to the hand upon making an abdominal examination (referred to above) was now fully explained. The uterus, which was very large, formed one segment of the tumour (viz., the left), and the child's body covered by the peritoneum the other. Upon making a very careful examination of these parts, not the smallest laceration was discoverable in any part of the peritoneal covering. An incision was made through this membrane, which exposed the body of the child. It also brought into view a longitudinal laceration of the cervix and part of the body of the womb, the remaining portion of this side of the organ being uninjured. The child was then removed, and the head, which had partially entered the brim of the pelvis, was discovered to be hydrocephalic and of very considerable size.

The uterus, as already stated, was not much contracted; its parietes were softer than I had ever before witnessed in cases of laceration. The edges of the wound were ragged, but no appearance of bruise or gangrene was discovered. There was only a small collection of coagulated blood found in the cavity of the womb, amounting to three or four ounces; but under the peritoneum and anterior to the body of the child there was a diffused clot, thicker in some parts than in others, according as it was situated on a prominent or hollow part of the fœtus. It in quantity would most probably amount to twelve ounces.

The lowest portion of the cervix and os uteri were not implicated in the rent; the placenta was situated on the left side of the uterus, to which it was completely adherent. The pelvis, on examination, was found of standard dimensions. The bladder was empty, but was perfectly entire.

The records of medical science furnish no case bearing the

least analogy to the one here detailed; and, indeed, the possibility of such an event as rupture of the womb, and an escape of the fœtus from its cavity without passing through the peritoneum, has been denied. In making this statement, I am aware that writers speak of cases in which the muscular structure of the uterus is lacerated without involving the peritoneal coat.

It will be quite obvious to the reader from the facts of the case of Hannah S—, that there will be no great difficulty to attribute the result to its proper cause:—the pendulous state of the abdomen, and consequently the altered axis of the womb; the hydrocephalic enlargement of the head of the infant; the early evacuation of the liquor amnii; the position of the woman, who in kneeling had the trunk bent forwards during the action of the womb; and, shall I add, a softening of the uterine structure?

The perforation of the fœtal head (which was discovered only by the post-mortem examination to be hydrocephalic) might in all probability have led to a more fortunate issue, but during the life of the patient this fact was not known. Speaking of the hydrocephalic head, it may be proper to state that its existence is not so easily ascertained as some writers would lead their readers to believe. Three cases of this description have come under my observation, and yet the indications which are stated to characterise this condition of the head were absent in all.

I should have extracted the child by an incision through the abdominal parietes, if I had been with the patient at the time of her death; but my absence and other circumstances induced me to defer the investigation until a more favorable period.

Case 16.—*Longitudinal laceration on the left side of the neck of the womb; recovery.*

On Friday, July 6th, 1832, I was requested to visit Mary W—, æt. 35, residing in a cellar under No. 6, Strand Street, out of Bridgewater Street. The abode of this poor creature was damp, close, and in every way

unsuitable as a habitation. I met my friends and hospital colleagues, Mr. Hunt and Mr. Stephens.

She was at the full time of her eighth pregnancy. Some of her former labours had been difficult, particularly the last, which was very protracted, and in which she was delivered by craniotomy.

Mrs. Langtree, midwife, had been called at four o'clock, a.m.; and when she arrived, she found labour had commenced between two and three o'clock, and was advancing slowly. The pains were slight and irregular, although the patient complained very much. The os uteri was undilated. At this time there was no sanguineous discharge.

Under these circumstances, Mrs. Langtree left her; but she was again summoned at seven o'clock. During her absence the pains had become very severe and very frequent. The os uteri was at this time a little more dilated, but its edges were still thick. The membranes had ruptured, and there was now some discharge of blood from the vagina. The head of the infant presented, and lay over the brim of the pelvis. Between eight and nine o'clock the case assumed a very different character: the labour-pains became suspended; her breathing very laborious and oppressed; her belly was now very painful, and was altered in its shape, on which account Mrs. Langtree applied a bandage. Her skin was pallid, and bedewed with cold sweat. The midwife, being alarmed with these symptoms, sent for Mr. Roberton, the surgeon of the week, who was absent from home. Mr. Stephens was, therefore, requested to attend. On his arrival at half-past ten o'clock, finding her in such a dangerous condition, he sent for Mr. Hunt and myself. At eleven o'clock we were present, and found her as before mentioned. She had also a sense of suffocation; her pulse was frequent and small; and her countenance had a very anxious expression. She had a violent fixed pain in the belly, especially on the left side, which was greatly aggravated by pressure. There was a total cessation of labour-pains, and, as before stated, the figure of the abdomen

was strikingly different from that which usually exists at this stage of labour; and there was also evidently a greater projection forward of the uterus than ordinarily observed, assuming the character of an anterior obliquity. I made a very careful vaginal examination, and satisfactorily ascertained that the dimensions of the brim of the pelvis were under the standard size, and that the head of the infant was loosely lying over this aperture. We concluded laceration of the uterus had happened, and that the best chance of recovery would be afforded to this poor creature by immediate delivery by craniotomy. Mr. Stephens then attempted to perforate the head of the infant; but he failed in consequence of its unsteadiness, although the greatest possible support was used by our extended hands being placed on the woman's belly. I then made a similar attempt, but was in like manner foiled. Upon pressure being made by the instrument, the infant instantly receded and passed into the abdominal cavity. I then passed my hand per vaginam, onwards through the laceration into the abdomen in search of a foot, which I readily found and seized, and I afterwards brought it down into the vagina and then fixed a fillet upon it. After steady tractive efforts had been made for a short time, the breech began to descend and was soon delivered; but when the arms came to enter the brim of the pelvis some difficulty was found, but the obstacle was soon removed. Great embarrassment was also experienced in attempting to adjust the position of the head, so that it might enter the pelvis as favorably as possible. The infant was of the average size. The placenta, which had also escaped into the abdominal cavity, was removed by Mr. Stephens. I now introduced my hand, and fully assured myself that no portion of intestine protruded through the laceration. During this exploration, I ascertained that the laceration was situated on the left side and a little anteriorly, and ran longitudinally from the os towards the fundus uteri. The exhausted state of the poor creature was so great, that we were afraid that she would sink before her delivery could be accomplished; but her fortitude and patience could

not be excelled. Some brandy-and-water was given to her at this time. Afterwards she considerably revived, and her countenance assumed a more comfortable and happy expression. A cordial anodyne draught was now administered. In the evening, her general condition was more comfortable than we could have reasonably expected. Her pulse was about 124; her countenance was composed; she had slept for some time. She had great pain in the abdomen, which was considerably increased by pressure; the lochial discharge was moderate; her bowels had not been moved; and as she had not passed urine, the catheter was introduced, and half a pint of high-coloured urine was drawn away. Two grains of calomel and half a grain of opium was ordered to be taken every four hours.

The next morning (Saturday, the 7th) we found the pain in the abdomen considerably increased. She had continued vomiting; her skin was very hot; her pulse had become quicker, beating 135 in the minute. From this date until the 11th, the symptoms were of that character which clearly proved there existed considerable inflammation in the peritoneum. They varied respectively in their intensity from day to day; and in order to avoid the tediousness of a daily report of the symptoms and treatment, I shall briefly remark that the case was seen twice a day at least, and was treated upon as active an antiphlogistic plan as the attendant circumstances warranted. The remedies used were of the following order:—She was bled from the arm three times, and the quantity of blood altogether taken amounted to twenty-six ounces; it was cupped and buffy. Twelve leeches were applied; a blister was applied to the belly. Calomel and opium in repeated doses; effervescent saline draughts and carbonate of magnesia; Sp. Terebinth. applied hot as a lotion to the abdomen; an anodyne stimulant liniment was applied to the belly; enemata with Sp. Terebinth.; catheterism, &c.

The bowels were not moved until the 8th (the third day after her delivery), when she had five very offensive evacuations, which afforded her great relief.

Wednesday, July 11th.—We found a fluctuant tumour in the hypogastrium, which we considered to be an abscess. This tumour continued to become more prominent, and as it progressed it more decidedly assumed that character. The catheter was required to be frequently passed, and on different occasions the urine which was drawn off evidently contained pus. At different times during her confinement, the nervous system was much excited in consequence of the brutal conduct of her husband. With other emotional excitement she had attacks of hysterical convulsions. If she had received kind conjugal treatment, she would have been much better at this period.

As her present symptoms appeared to depend on irritability and debility, a more generous diet was ordered, and she was directed to take repeated doses of the acetate of morphia. On the 16th I was urgently requested to visit her on account of her great exhaustion, which had been produced by excessive and continued vomiting. Ammon. Carb., &c., were prescribed; sago and gruel with a little brandy were given. The swelling in the hypogastrium was much reduced in size; pus still existed in the urine, and some was also discharged per vaginam. She still continued to be very irritable and weak, and had an attack of diarrhœa. Her mouth and throat became aphthous. These symptoms were removed in a few days by the usual remedies—Borax, Creta Pulv., Hyd. c. Cretâ, &c. She was ordered to take tonics and a generous diet; and after continuing this plan for a short time her health began to improve, and ultimately she perfectly recovered.

Remarks.—The recovery of this poor creature after such an accident is really wonderful, when the contingent circumstances of the case are considered. She had to struggle against all the deprivations of poverty; the mischiefs arising from an ill-ventilated, damp cellar; and, not the least, she had to endure all the effects which must necessarily arise from the brutal usage of her drunken husband.

The time between the commencement of the labour and the occurrence of the laceration was very short, not being

more than six hours; but the interval between this event and the discharge of the liquor amnii was very much less than that just stated. The membranes ruptured during the absence of her midwife, which probably might be at about from two to three hours before the accident happened.

The cause of the laceration is, doubtless, in a great measure traceable to the diminution of the antero-posterior diameter of the pelvis; but there also existed here some degree of anterior obliquity of the uterus. We find that in the early part of the labour, when the pains were very slight, they were irregular and most likely of a spasmodic character, and the patient complained very much of them.

The laceration took place not very long after the accession of strong pains, at which time the os uteri was only partially dilated, and its margin was thick. The head of the infant had not as yet engaged itself in the brim of the pelvis. There were several contingent circumstances which, no doubt, contributed to a propitious result: first, the labour was short, and the interval between the discharge of the liquor amnii and the occurrence was very much shorter, so that the tissue of the uterus could not possibly be contused, or its vitality injured. The rent must therefore be a clean division of structure, its character being something like an incised wound. Again, its longitudinal direction was favorable, inasmuch as its length must be much more diminished by the after-contraction of the uterus than if it had run transversely. I am at a loss to say where the abscess was exactly situated, but it terminated very satisfactorily, leaving no fistulous opening between the bladder and the vagina.

This poor woman has been pregnant twice since her recovery from the serious uterine laceration which happened in her last labour, and which forms the subject of the preceding observations. I was informed by Mr. Stephens that the first of these two pregnancies did not advance far before abortion took place. In the second of these two pregnancies, which occurred in the year 1834, she arrived at the

seventh month. Mr. Stephens, having been informed of her condition, concluded to call a general consultation of the surgeons of the Lying-in Hospital to consider the propriety of inducing premature labour, in order to lessen the hazards consequent on a greater development of the uterus, and also to afford a better chance of the head of a seventh-month infant passing through the brim of the pelvis.

Both Mr. Stephens and Mr. Hunt, who were present at the consultation, informed me that it was concluded to adopt this measure. Mr. Stephens therefore induced labour as decided upon by the consultation, and he had the sole and individual management of it. He informed me he had great difficulty in recognising the os uteri. He also stated that the labour was very tedious, and that he felt the cicatrix. The infant was dead. After the completion of the labour, the patient was very ill, but was soon restored to health by the measures adopted by Mr. Stephens.

Case 17.—*Longitudinal laceration of the uterus; fatal.*

The particulars of the following case were communicated to me by my friend Mr. Clough for publication:—"Ann K—, æt. 37, whose health was generally good; but she was apparently of rather a lax fibre. She was now pregnant of her tenth child. The labours have been generally tedious, and in three of them the children were born dead; but there had not been any necessity for either manual or instrumental assistance during any of them. At nine o'clock in the evening of November 8th, 1832, she began to have slight pains, the membranes having spontaneously ruptured the night previous; but up to the hour mentioned she had been able to do her ordinary house-work. The pains continued to be slight until one o'clock a.m., when Mrs. Taylor, the midwife, was sent for. She stated that at two o'clock she found the cord presenting. When I saw her at three o'clock, it had become cold and pulseless. The os uteri was now fully dilated, and the head of the infant had partially entered the brim of the pelvis. At this time the pains were good, and the action of the uterus was such as seemed likely

soon to effect delivery. I tried to place the cord so as to receive as little pressure as possible; but, from its cold and flaccid state, I did not consider myself called upon further to interfere, as I had no doubt the infant was dead. The woman's pulse was about 94, and soft; I therefore left her fully expecting she would shortly be naturally delivered of a dead child. At half-past seven o'clock the woman was very ill, and therefore the midwife again sent and desired me to come. I inquired from the messenger whether the pains had been active, and the reply was that the pains had left her altogether. I sent Mr. Whitehead to ascertain her condition; and on his return he informed me she was dying, and before I arrived at the house she had expired. I examined the bed and vagina, but there did not appear to have been any hæmorrhage whatever. I also examined the uterus through the abdominal parietes, and could not discover any very striking irregularity in this organ. It had in general the regular circular protuberance, excepting on the left side, where there seemed to be a very slight projection, and at this spot some portion of the fœtus could be rather more distinctly felt.

Post-mortem examination.—On opening the abdomen, the uterus was observed to be lying considerably to the right side; and on the left side, a little anteriorly, there was an enormous blackish-looking tumour, which was caused by the peritoneum being distended with coagulated blood. This sanguineous effusion had taken place under the peritoneum, and greatly distended this membrane, extending under it as far as the right psoas muscle; it had also distended the broad ligament. The round ligament was seen tightly stretched over this swelling. In one part the peritoneum was torn to about the extent of one and a half to two inches, and through this the bag of the membranes protruded, in which was contained one elbow of the infant. On enlarging this opening, it was seen that the muscular structure of the uterus was torn to the extent of four or five inches, and that the infant lay in the laceration, being only covered by its membranes and the peritoneum. The infant's face lay

towards the left acetabulum, its left ear almost opposite the pubes, and on the left parietal bone there was a large indentation caused by pressure. There was (besides the effused blood already mentioned) fully two pounds of blood in the abdominal cavity. All the viscera and the other tissues were nearly completely blanched. The antero-posterior diameter measured about three inches and three quarters; the transverse was of the average dimension. There was a considerable tumefaction of the joint of the pubes, as if its interarticular cartilage had been forced out. When the pubes was removed, a considerable movement was allowed, which permitted their separation to the extent of two lines.

The principal and most remarkable feature of this case is, that the action of the uterus was not so great as to be likely to produce a rupture of its fibres; indeed, the pains, the midwife informed me, were slight, nor was there at any particular period of the labour any severe or sudden pain to indicate the time when the laceration happened. A sudden and unaccountable alteration in the appearance of the patient came on, after which she rapidly sank. There was not any vomiting; there was not any escape of the contents of the uterus, except a slight protrusion of the membranes through the laceration.

The pelvis was slightly contracted in its antero-posterior direction; and the symphysis pubis had a hard projection internally, not very prominent."

Remarks.—The above case is detailed as nearly as possible in Mr. Clough's words, but there are two or three important circumstances in the case upon which I shall make a few observations.

The extraordinary collapse which happened, and the very rapidly fatal termination, must be referred to the large effusion of blood, superadded to the great shock which must be sustained by the nervous system. In this case the peritoneum was only lacerated to a very small extent; yet there was a larger discharge of blood in this, as there was also in two other cases in which the peritoneum was not

torn at all, than I have found in most of the other cases in which this membrane had been torn.

It is not a little extraordinary that the pains all along were so very trifling in this case; consequently we must inquire for some other cause rather than the powerful contractions of the uterus, upon which this accident depended. The brim of the pelvis was "slightly contracted in its antero-posterior direction; and the symphysis pubis had a hard projection internally, not very prominent." In order to judge rightly whether this slight projection had any injurious influence, we should first ascertain in what situation the laceration occurred, and also what parts were involved. If this slight projection had acted injuriously, the mischief must have been inflicted on the anterior and central portion of the cervix uteri, and it is more than probable that the bladder must also have been included in the injury; but we do not find that either of these two states existed. Was the contraction of the pelvis alone sufficient to cause the accident? Certainly not, in my opinion; for we well know that protracted labour may continue for a much longer time and be accompanied by much stronger pains than Mr. Clough mentions to have occurred in his case, and yet no injury has happened in such instances. But this state of contraction of the pelvic aperture in conjunction with a changed condition of the structure of the cervix uteri is quite adequate to have produced this accident, notwithstanding the uterine contractions were feeble.

It appears to me that softening had taken place; and this opinion is confirmed by the statement of my valued friend and partner, Mr. Hunt, who was present at the post-mortem examination. He says—"The uterine structure surrounding the laceration appeared softened, broken up, and loose in its texture."

Case 18.—*Longitudinal laceration of the neck of the uterus; recovery.*

Elizabeth J—, residing at 47, Great Ancoats Street, æt. 28, pregnant of her eighth child, sent for Mrs. Heyes

midwife, on Wednesday night, at eleven o'clock, May 29th, 1833, and at half-past twelve o'clock the membranes ruptured. When Mrs. Heyes first saw her, she found the pains were very trifling; but at two o'clock on Thursday morning, May 30th, she sent for me on account of a considerable hæmorrhage which began about an hour before. Mr. Bird, my assistant, went to see her. On his return, he reported her to be in danger. I immediately visited her, when I found the discharge had ceased. The os uteri was dilated to about the size of a dollar, and further dilatable. Its posterior lip was œdematous. The head of the infant was naturally placed, and was just entering the brim of the pelvis. Her pulse was 80, and perfectly distinct. As the urgency of the case had now (five o'clock) passed off, and as no means could be safely adopted to deliver her (except by craniotomy), it being quite impossible to use the long forceps, I determined to wait. I then left her, with a strong injunction to the midwife that I was again to be apprised at eight o'clock if the labour had not terminated. I was now informed that this poor woman had been delivered by instruments (kind not known) in one of her former labours. Mrs. Heyes had attended her during her last two confinements, the first of which was rather a quick labour, Mrs. Heyes being with her only three hours. The infant was born alive, and was a female and small in size. In the last of these two labours (being that preceding the present one) she was three days in labour, and the child (a male) was stillborn. I did not hear again until eleven o'clock, when I found her in a very dangerous state. I was informed that her labour had been (during my absence) slowly proceeding, and the pains had been very slight until ten o'clock, when they became rather sharper and more crampish in their character. At this time she was seized with a pain which was most violent and agonising, and was accompanied with a shrill exclamation—"Oh, my belly!" A slight sanguineous discharge ensued. When I now saw her, I found her countenance collapsed and exceedingly pallid; she had vomited, and complained of crampish

pains in the belly. Her pulse was very quick (about 140) and very feeble. She had great abdominal tenderness; the sanguineous discharge above mentioned had now ceased. I ascertained that the head of the infant was lying more loosely over the brim of the pelvis than it did when I visited her in the early part of the morning. I decided upon immediate delivery by craniotomy, and Mr. Dick, who was present, steadied the uterus whilst I passed the perforator. But no sooner had the instrument come in contact with the head than this part of the infant, as well as its entire body, immediately receded out of reach. After I had withdrawn the instrument, I introduced my hand into the uterus, and then, through the lacerated opening in this organ, into the abdomen, and searched for a foot. I soon found one, and brought it down. The pulse was now very weak, and the patient was much exhausted. Some brandy-and-water was administered. After resting a short time, the delivery was accomplished, although some little difficulty was experienced in bringing the breech and shoulders through the brim of the pelvis, which was found much greater when the head came to pass through this aperture. The infant was a female of the ordinary size, and was extracted without instrumental aid. Having again introduced my hand, I found the placenta lying loose amongst the bowels in the abdominal cavity, and brought it away. I now endeavoured to ascertain the character of the wound and its situation, and also to learn the precise measurement of the pelvis. During this exploration, I discovered that a portion of the intestine had passed through the laceration, and downwards into the pelvic cavity, which I immediately carried up and returned into the abdomen. The wound was situated on the left side a very little forwards, and ran longitudinally. Its edges, as far as I could ascertain, were uniformly equal or appeared to be so, and approached to the character of an incised wound. The pelvis was originally under the standard size, and it was likewise contracted in the antero-posterior diameter, which measured about three and a half inches. She bore the operation with great fortitude, but she was very

much exhausted. The uterus had contracted as much as is usually found to take place in these cases, and there was not more sanguineous discharge than occurs after ordinary labour. An opiate was now given. The necessity of great care was impressed upon the attendants. She took some gruel with a little brandy. At five o'clock the same evening, I met in consultation my respected friends and hospital colleagues, Dr. Hull, Mr. Hunt, and Mr. Stephens, and had the benefit of their valuable opinions during the after-treatment of this case. She was visited two or three times a day according to the urgency of the symptoms for a considerable time. At this visit we found she had slept; her pulse was 120; her countenance was composed; her belly was generally tumefied and tender to the touch; her tongue was white and moist. She was lying on her back, with her legs drawn upwards; the lochia natural. She had not passed urine. At a subsequent meeting this evening the catheter was passed; and an opiate pill with calomel, an antiphlogistic diet, and a saline medicine were ordered.

From Friday, May 31st, to June 3rd, inclusive, the symptoms were those which clearly indicated peritoneal inflammation, varying in number and intensity from one day to another: great pain in the belly on pressure, great thirst, a white furred tongue, constipated bowels, hot skin, and frequent vomiting.

The treatment was antiphlogistic:—Calomel and opium; castor oil with spirit of turpentine in enemata were occasionally administered; Spir. Terebinth. as a lotion was applied to the belly. Venæsectio ad ℥xvj. The blood drawn was very much cupped and buffy. Cataplasms and leeches to the belly. As the bowels had not acted, purgative pills were given, which were effectual in unloading the bowels of scybalous stools. Sinapisms were repeatedly applied to the pit of the stomach.

From the last date to June 10th nothing of great importance occurred. She had a cough, and her bowels had now become too open. Astringents, demulcents, and a blister to the chest were ordered.

On Monday her cough was troublesome; her pulse was 96; slight diarrhœa still continued; and she complained of a violent throbbing pain in the vagina. Upon examination, I found a swelling, which it appeared to me would prove an abscess, and which turned out to be so. It broke, and sanious matter was discharged the next day. She was ordered an anodyne draught; to continue her astringent mixture, and to have warm water frequently injected into the vagina.

From this date to June 13th, the symptoms were irritation in the bowels, colicky pains, and shivering. She was ordered hot poultices and an anodyne stimulating liniment to be applied to the belly; to take opiate pills with rhubarb, and to have an opiate enema. She complained of a burning sensation in the vagina, and said, "The stools are discharged through this canal." On examination, I found the vaginal membrane very red, and liquid stools trickling along it. I passed a pipe into the rectum, but I failed to detect the opening by a finger passed into the vagina. She was generally better, but suffered very much from the burning pain in the vagina and in the vulva, which was doubtless greatly aggravated by the acid character of the liquid green stools which were continually discharged from this part. Ordered opiate draughts and an astringent cretaceous mixture to be taken, and diligent ablution with warm water, and linseed infusion to be injected into the vagina. I afterwards discovered that the fistulous opening was situated at the upper part of the vagina just below the os uteri. The feeling conveyed to my finger was as if the surrounding part was disposed to close. It was afterwards found considerably diminished in size.

From this time forward all the symptoms continued to improve, and the bowels were restored to healthy action. The irritable and inflamed state of the vagina gradually subsided; the discharge of fæcal matter through this passage diminished; and, happily for this poor creature, the recto-vaginal opening had completely closed, and the natural

course of the fæces per anum was established long before I discontinued my attendance.

The medicines prescribed since the last date were injections, demulcents, astringents, and tonics, and were continued as long as they were necessary.

This poor woman, like the other who recovered, had to endure the deprivations of poverty during her pregnancy; and, after the occurrence of the serious accident, she depended for support on the kindness of a friend. Her tenement was much better than that of the other patient.

She has been pregnant four times, and all her labours have been premature.

The first labour took place on the 20th of May. It was very tedious, being thirty to forty hours. The infant, of six months, was born dead. She had slight flooding, but it was soon suppressed.

Her second labour occurred June 14th, 1835; and, after forty hours' duration, a six months' infant was born dead.

On July 2nd, 1836, she was a third time delivered of a six months' infant, stillborn.

In her last labour (at the end of 1837) the hand presented, and Mr. Hunt was sent for. He reduced the hand and arm above the head, after which it (the head) came down into the pelvis. After a few hours' duration, she was delivered of a living seven months' male infant. She recovered.

The infant last born continued to live, and most likely he arrived at manhood, as Mr. Hunt saw him when he was fourteen to fifteen years of age.

During the intervals of some of her pregnancies she had attacks of peritonitis, for which Mr. Hunt kindly attended her. She ultimately became an inmate of the Manchester Workhouse, and died there of phthisis.

The body was inspected by Mr. Hunt, in the presence of Dr. Francis and myself. There was not the slightest trace of any cicatrix in the womb to be seen. The only morbid result was a band of slight adhesion between this organ and a portion of the ilium.

Remarks.—The recovery of this patient after such an accident, and her safe delivery after four subsequent labours, is really astonishing.

The history of this case must bring conviction to every reflecting mind of the wonderful resources of nature. The duration of her labour, from its commencement to the occurrence of the accident, was twenty-four hours. The membranes had ruptured twenty-three hours before.

There is no evident cause to account for the occurrence of the laceration but the diminution of the antero-posterior diameter of the brim of the pelvis.

The labour had been slowly advancing for a great portion of the time, during which the pains were very weak. At ten o'clock a.m. (not an hour before the accident happened) they became strong and decidedly crampish. The mode of its occurrence had most probably considerable influence on her recovery. It was sudden and immediate after the access of strong uterine action, and therefore it may be fairly inferred that the uterine tissue had not sustained any considerable injury from the contusion by the head of the infant against the bones of the pelvis. The wound was a clear division of the part, like an incised wound, and therefore favorable for the healing process; and there is no doubt there was a freedom from softening.

The spontaneous occurrence of premature labour in all her last pregnancies proves that the uterus was indisposed to be distended beyond a certain range. These results clearly show that in cases in which laceration of the uterus has occurred, premature labour should be induced in subsequent pregnancies, as a means of preventing a repetition of this serious mischief.

CASE 19.—*Longitudinal laceration of the cervix and part of the body of the uterus on the left side; fatal.*

I am indebted to my friend Dr. Stephens for the following very interesting case:

"On December 2nd, 1838, I was called about eight

o'clock in the morning to consult with a friend on a case which he was then attending. The patient was a weakly, delicate woman, labouring under hemiplegia on the left side, which had existed for several years. She had passed through the entire period of pregnancy without any remarkable symptoms having occurred, with the exception of having great tenderness in the abdomen.

"Her medical attendant was called to her at four o'clock this morning, and found her labour slowly advancing until about six o'clock, at which time the os uteri was about the size of a crown-piece and did not feel firm. The pains were of a lingering character, and were not severe. Without any previous notice, a remarkable change now took place. She became very pale and faint, and she had a slight discharge of blood per vaginam. The pains became very trifling and inefficient, but were more continued, and were accompanied by much moaning and complaint. I found her very pale; her lips were blanched; her extremities were cold; her pulse was very small, weak, and quick; she had a profuse cold perspiration; her breathing was laborious; her countenance was anxious; she vomited a brown coffee-coloured fluid, and there existed some jactitation. The belly was a little tumid, and there was felt a fluctuation in it. The os uteri was fully dilated, and the head of the infant had advanced into the cavity of the pelvis. Believing that some serious internal mischief had taken place, most likely laceration of some portion of the uterus, yet we had no evidence that such an event had happened further than the serious nature of the symptoms indicated. The position of the infant remained unchanged in the uterus; we therefore decided upon immediate delivery, which was undertaken by my friend with the forceps, and accomplished without any difficulty. The child was dead. The sinking afterwards rapidly increased, the jactitation became quite incessant, and she died in about half an hour.

"*Post-mortem examination.*—On opening the abdomen, we found an enormous effusion of blood in this cavity. On raising the uterus, there was seen an extensive laceration of

the cervix and part of the body of this organ, which was situated on the left side, and taking a longitudinal direction. The edges of the wound were darker coloured than natural, and, as well as the surrounding tissue, were evidently softer and thinner than the structure is ordinarily found. The diameters of the pelvis were of an accurate or normal measurement; and there were no inequalities, projection, or sharp edges on any part of it. This was her sixth labour."

Remarks.—This case affords another example of laceration of the uterus happening without the least premonitory sign. In fact, there was less evidence of the time of its occurrence than is in general found. There were two causes to account for the great prostration—the loss of blood, and perhaps, in some degree, 'shock.' The absence of agonising pain at the time of the accident was most probably owing to the gradual manner in which the injury took place, and from the softened, thin, and weak state of the tissues.

A few General Remarks and Conclusions.

Of the 19 cases, the age of the patient is only registered in 11 cases, as follows:

In 1 case 21 years.	In 1 case 36 years.
In 1 „ 28 „	In 1 „ 37 „
In 1 „ 30 „	In 2 „ 39 „
In 1 „ 35 „	In 3 „ 40 „

No practical deduction can be drawn from this table; it only shows that in the greatest number this accident occurred at the more advanced ages—as 39 and 40.

The number of the labours which each woman underwent is recorded in 17 cases, and stands thus:

In 2 cases	it was	the 1st labour.
In 2 „	„	2nd „
In 2 „	„	4th „
In 1 „	„	5th „

In 2 cases it was the 6th labour.
In 1 „ „ 7th „
In 4 „ „ 8th „
In 1 „ „ 9th „
In 1 „ „ 10th „
In 1 „ „ 11th „

The above table shows that laceration of the uterus occurred most frequently in women pregnant for the eighth time, and that to those pregnant for the first time the accident happened quite as often as it did in any of the other cases which are registered.

The duration of the labour, from its commencement to the occurrence of the laceration, is given in 17 cases, as follows:

In 1 case it was from 3 to 4 hours.
In 2 cases it was 6 hours.
In 1 „ „ 8 „
In 1 „ „ 9 „
In 3 „ „ 10 „
In 2 cases it was 12 hours.
In 1 „ „ 24 „
In 1 „ „ 26 „
In 3 „ „ 30 „
In 1 „ „ 35 „
In 1 „ „ 72 „

The greatest number of accidents is here shown to have happened when the labour had lasted 10 and 30 hours.

The duration of the labour, from the time the membranes ruptured to the occurrence, is mentioned in 17 cases:

In 1 case it was 2 hours.
In 1 „ „ 3 „
In 2 „ „ 4 „
In 1 „ „ 7 „
In 2 „ „ 8 „
In 1 „ „ 16 „
In 2 „ „ 18 „
In 1 case it was 23 hours.
In 1 „ „ 24 „
In 1 „ „ 25 „
In 2 „ „ 27 „
In 1 „ „ 30 „
In 1 „ „ 36 „

We find the greatest number of accidents happened in those cases in which the membranes ruptured at 4, 8, 18, and 27 hours; 2 cases having happened at each of these dates. At all the other dates the number is equal.

Statement of the Causes or Conditions in which the Cases of Laceration of the Uterus happened.

In one case it was the result of protracted and neglected labour, in which the infant presented transversely.

In one case a schirrous hardness existed in the os uteri as the only appreciable cause of the injury.

In one case excessive size of the infant, with a softened state of the uterine tissue.

In one case turning performed, with the os uteri firm and undilated.

In one case there existed a large hydrocephalic head of the infant, and a great degree of anterior obliquity of the uterus, and a softened state of the tissue of this organ.

In one case there was no apparent cause, except an anterior obliquity of the uterus.

In two cases softening of the uterine tissue was the sole cause.

In one case a very extreme degree of distortion of the pelvis.

In one case there was a considerable degree of distortion of the pelvis, thinness and, most probably, also softness of the uterine tissue.

In nine cases the brim of the pelvis was slightly contracted. In one it measured two and three quarter inches; in two, three inches; in two, three and a half inches; in two, three and three quarter inches; and in two the dimensions are not stated. In two of these cases there was a slight exostosis at the symphysis pubis; in two there was also softening; and in four there was a contused state of the uterine tissue.

In five cases (out of the entire number) in which softening of the uterine tissue existed, there were two in which there was no other apparent cause; in one it was conjoined with another cause—an excessive bulk of the infant; in one with an hydrocephalic head; and, as above stated, in two cases in which the pelvis was contracted.

In the eleven cases in which there existed distortion of the pelvis, there were two which were generally affected by malacosteon, one of which was extremely distorted, the other not to so great an extent. In the remaining nine cases the brim alone was slightly contracted.

From these data, although limited, we may conclude that laceration of the uterus happens more frequently when slight contraction of the brim of the pelvis only exists, than when there is great distortion of the entire pelvis. The difference in the result in these two cases may be reasonably and, I think, truly attributed, first, to the varied position which the uterus assumes during labour in two such instances.

When the form of the pelvis is only slightly contracted, the os and cervix of this organ partially descend during labour into or a little through the aperture of the pelvis, so that, as the head of the infant is forced down, the uterine tissues become fixed between this body and the pelvic bones. The fixity of this structure actually forms a *point d'appui* from which the uterine fibres during contraction forcibly pull; and the great probability is, that sooner or later the tissue either directly tears, or, being first contused and softened, yields.

Secondly, when labour is protracted from slight disproportion between the brim of the pelvis and the infant's head, the patient is usually allowed to remain out of bed and to walk about in the earlier part of labour, which is always a very hazardous practice when there exists any mechanical impediment to the passage of the head, such as we are now considering. But in cases of labour protracted from an extreme distortion of the pelvis, the os and cervix uteri are always situated above the brim. The uterus assumes a retort shape, and its body and fundus lie upon the thighs of the patient,* and therefore its mouth and neck do not enter or pass through this aperture. The patient is, from necessity, confined to bed; so that the uterine tissue is not exposed to the same effects of gravity,

* See Cases in my 'Observations on the Cæsarean Section,' &c.

nor to the vice-like fixture, as it is when the pelvis is more limitedly contracted. It must not be understood that I mean that laceration of the uterus is not likely to occur in labours protracted from great pelvic distortion; on the contrary, there are two cases related in this paper—one extreme, the other moderate—in which this accident took place, and which, indeed, will happen in most of such cases if the patients are not delivered.

The situation of the laceration in 18 cases is as follows:

In 1 case the cervix was torn anteriorly.
In 2 cases „ posteriorly.
In 6 „ „ on the left side.
In 4 „ the cervix and body were torn anteriorly.
In 3 „ „ „ on the left side.
In 1 case „ „ on the right side.

In one case there were three circumscribed injuries of the size of a shilling to that of half-a-crown about an inch apart from each other in the cervix.

The cervix is the part of the uterus most frequently lacerated, and sometimes the body of the organ is implicated as well, and in both instances the injury is generally found on the left side.

In 11 cases the laceration was longitudinal.
In 3 „ „ „ transverse.
In 3 „ „ „ oblique.
In 1 case „ „ circular.

In 16 cases the muscular tissue and the peritoneum were both torn.

In one of these cases the peritoneum was only torn to the extent of one and a half to two inches. An immense effusion of blood was found in the abdominal cavity.

In two cases the peritoneal coat of the uterus was uninjured, whilst the muscular tissue was extensively torn. There was in both these cases an immense effusion of blood under the peritoneum.

These two cases are (each of them unique) especially

(Case No. 15) worthy of consideration, inasmuch as all writers upon the subject, as far as I know, are unacquainted with the facts contained in this case. We learn from it (Case 15) that the muscular structure may be very extensively lacerated, and the peritoneal coat lifted up, and yet not the smallest breach in its continuity be made.

Dr. McKeever could not be aware that such an event could possibly happen. This writer knew that the peritoneum might escape injury, but he certainly did not know that it was possible for the infant to pass out from the uterine into the abdominal cavity without this membrane being torn as happened in this case.

In both these cases there was great vital depression, which partly, doubtless, depended on the effusion of blood which took place under the peritoneum. In one of them (No. 15) the shock was so great as instantaneously to extinguish life; a result which I have never known before, notwithstanding that my long connection with the hospital has furnished me with frequent opportunities of witnessing instances of lacerated uterus besides those which are related in this paper.

Of the 19 cases three recovered, or nearly sixteen to seventeen per cent.; but although this is a small proportion of successful cases compared to those which proved fatal, still it bears a favorable comparison with the aggregate results of the cases which have been published.

The mortality which takes place in this accident, as shown by published cases, it is to be feared would be greatly increased if all those instances in which this injury has occurred were brought to light.

When we contemplate the frequent fatality of laceration of the womb, we are led to inquire whether there are no symptoms which show themselves as universal precursors of this dreadful catastrophe? And if there are, are we possessed of the means of prevention? The answer to these questions most certainly is that we do not possess that knowledge which would warrant us in adopting measures requisite to accomplish this object. If we were, without

great prudence and matured judgment, to act upon our limited knowledge of the preliminary symptoms, the catalogue of mortality might be greatly increased.

In all the cases now brought before the Society there are not to be found any premonitory symptoms *which of themselves* would warrant an operative measure being taken in order to avert the impending danger. But in most of them there was the most unmistakeable evidence that some serious internal lesion had taken place; but in others of them there was not the least sign that such mischief had happened. Notwithstanding the truth of these remarks, we should carefully consider all the contingent circumstances of protracted labour, and especially of those which are prolonged by mechanical impediments, and whether they are produced by relative disproportion of the capacity of the pelvis to the size of the head of the infant; and should adopt measures of timely delivery.

We should also recollect the mischievous influence of the erect position during labour, and guard against it by keeping the patient horizontal, not only in those labours in which there is an anterior obliquity of the uterus, but in all others in which we cannot satisfactorily prove to ourselves what is the cause of protraction. We have seen that softening of the uterine tissue existed in several of the foregoing cases, and therefore we ought never to forget that weak pains may be owing to weak organization. In all cases, therefore, in which the labour lingers for want of strong pains, we ought to investigate the cause of weak uterine action, and judiciously supply timely assistance.

Irregular or spasmodic pains misled in some of the foregoing cases; and, therefore, in all cases in which we find them occurring, it is highly expedient to watch carefully the case and to endeavour to discover the cause, and then to adopt suitable means to subdue irregular and promote regular action. In some cases of this kind artificial delivery may be required.

PLATE II

Represents the anterior view of the pelvis mentioned in Case 4, with a portion of the spinal column.

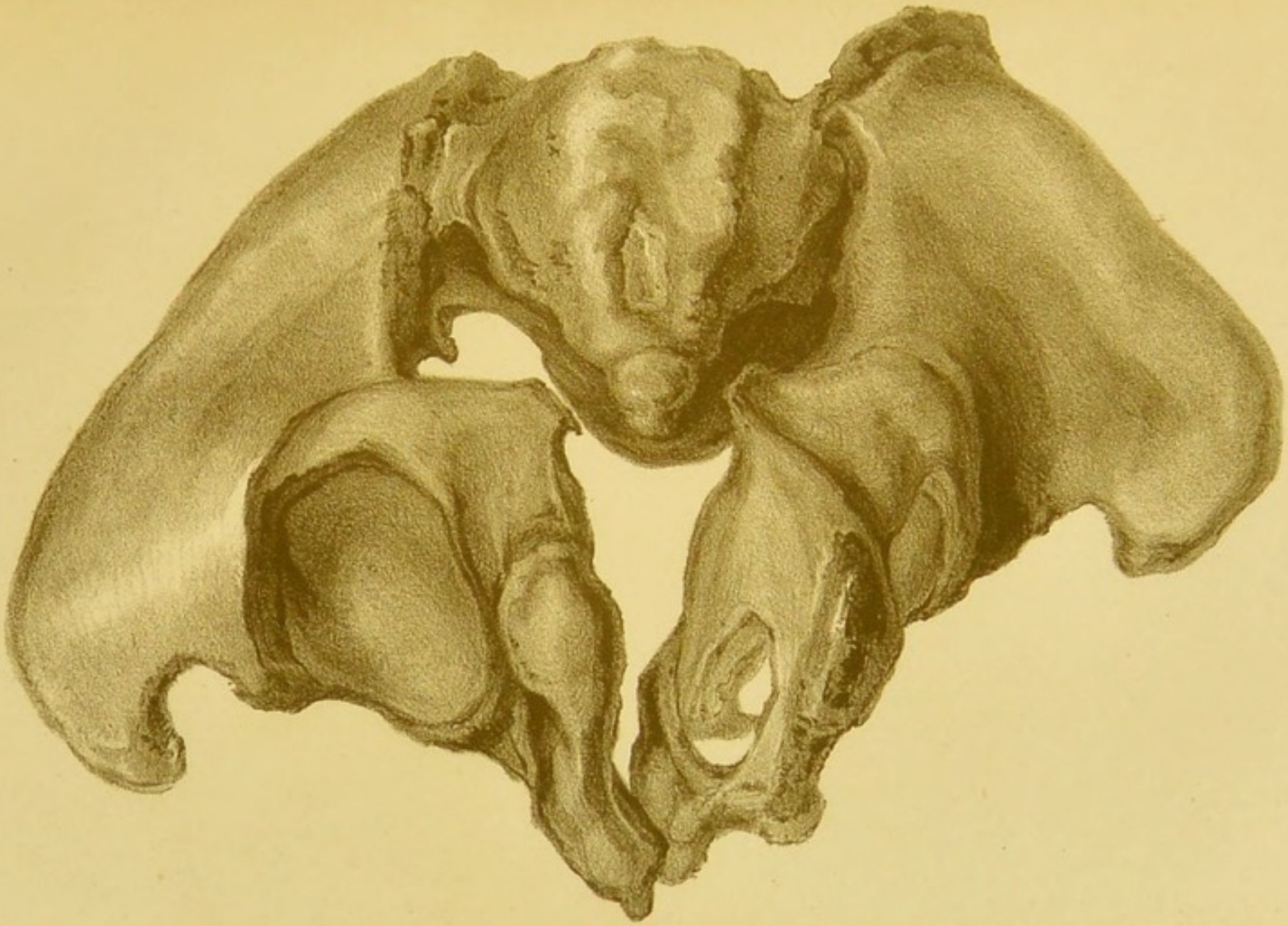
PLATE III

Represents the same pelvis reduced and seen from below.

nat. size.

Dr Westmacott del.

W.West lith.



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D[r] Westmacott direx[t]

W.West lith.