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ART. I.—*A Statistical Inquiry into the Causes, Symptoms, Pathology, and Treatment of Inversion of the Womb.* By CHARLES A. LEE, M. D.

INVERSION of the womb is fortunately of such rare occurrence, that few physicians can be said to be practically acquainted with it. Many, in an extensive, life-long obstetric practice, have never met with a single instance. Others, have only now and then seen a case in consultation. In lying-in hospitals it is nearly, if not quite, unknown. The annals of the Dublin Lying-in Hospital and those of the London Maternity Charity together, do not show a single instance of the accident in a total of more than 140,000 labours. It is evident, then, that the affection can only be studied statistically, and not clinically. No one can ever expect to observe cases enough to become an authority on the subject; and hence, perhaps, it is, that there is so much obscurity and vagueness, as well as diversity, in the expressed opinions regarding its causes, pathology, and treatment. But however rare the accident may be, it is one which may happen to the most experienced obstetrician, as it did actually occur in the practice of the late Prof. Dewees. As it is one, moreover, so extremely hazardous to life, or, if the woman survive, entails such a vast amount of suffering, that it becomes the imperative duty of every physician to make himself fully acquainted with what is known regarding it, that he may be prepared to prevent, or if already existing, to pursue the most appropriate treatment. The present paper is not designed as a monograph, but rather as a collection of materials for such an essay at some future time. It originates in a desire to contribute something towards the elucidation of uterine inversion, and possibly to establish such principles and rules as may hereafter aid in the decision of questions connected therewith. In the attainment of this end, I shall present a synopsis, as brief as is deemed

consistent with my object, of such cases of inversion of the womb as are at present accessible to me, gathered from various sources, and authenticated by the names of the different reporters, together with such deductions as may, it is believed, be legitimately derived from them. With greater diligence the number of cases might have been considerably increased, but they are, perhaps, sufficiently numerous to answer our purpose. The results, in all probability, would not greatly vary, even if at all, by a wider and more comprehensive deduction. It may be, that in some instances, the same case may be reported more than once, in consequence of the references not being in all cases as exact as could be wished. Great care, however, has been taken to secure all possible accuracy.

Another object had in view, in the prosecution of this inquiry, has been to ascertain under what circumstances inversion generally occurs; the results of cases where reposition has not been effected; the effect of various modes of treatment, in chronic cases, where replacement has been impracticable, as by extirpation, ligature, excision; and, in short, all those facts connected with its causation, pathology, and treatment, which can be gathered from an analysis of a large number of examples. Considerable interest, moreover, has been excited of late in regard to the subject, from the fact that in several instances replacement has been effected several years after inversion occurred, and that too without endangering the life of the patient. There are other circumstances which seem to indicate that the time has arrived when the whole subject of *inversio uteri* needs to be resurveyed, and, if possible, more definite results arrived at than seem to have been hitherto attained, judging from the discordant views entertained by standard authorities on obstetric medicine.

Cases, moreover, occasionally occur, perhaps attended by a regular physician, where inversion of the womb at some future period is found to exist; and then the question naturally comes up, was the attendant physician guilty of inducing the accident, or did it occur from want of proper care, skill, or knowledge on his part? Did it actually happen at the time of delivery, or was there a partial inversion only, perhaps a mere dimpling of the fundus uteri, which afterwards gradually increased, until, on some sudden movement or muscular effort, it merged into complete inversion? In such a case, ought the practitioner to have discovered such partial inversion, if it existed at an early period? or what signs or symptoms would make it his imperative duty to institute a *vaginal* examination, in order to discover whether inversion existed or not? And, should it at length be found after days, or weeks, or months of suffering, that in all probability the patient had laboured under inversion ever since her confinement, would this furnish, in the present state of professional knowledge on the subject, just cause for blame, or possibly a prosecution for mal-practice? And again, suppose that a case of this kind should occur, where the symptoms from the very beginning, such as hemorrhage, nervous shock, great prostra-

tion, pain, &c., indicated something out of the usual course of things, and supposing they persisted for several weeks before any examination was made by the attending physician, and then complete inversion was discovered to exist; and suppose, what might very probably happen, that the husband of said patient should denounce the practitioner as guilty of ignorance, or great neglect, would an action against said husband for slander be entertained in any of our courts, and if so, what would be and ought to be enlightened medical testimony regarding the professional management of the case? All these questions may come up at any time in regard to these unfortunate cases, and the statistical survey and analysis we propose to make must, it is believed, throw more or less light upon them.

CASE 1. *Complete inversion*, projecting beyond the vulva, caused by *midwife pulling on the cord;* rapid delivery; great hemorrhage; convulsions; placenta had been separated after inversion by midwife; reposited without difficulty half an hour after by Dr. R. Lee, who states that this is the only case of complete inversion he ever saw, and he thinks "the accident is frequently if not invariably the consequence of pulling at the umbilical cord." Terminated fatally within a few minutes after reduction. (*Lectures on Midwifery*, by R. Lee, Am. ed. p. 410.)

CASE 2. *Complete inversion; fatal*—caused by pulling on the cord by midwife; whole womb and adherent placenta beyond the labia. Great hemorrhage; fatal in half an hour. (*Giffard*, quoted by Lee, p. 414.)

CASE 3. *Complete inversion*—from pulling on cord by midwife to deliver placenta; labour natural and easy; inversion was followed by convulsions, faintings, and great hemorrhage; fatal in half an hour. (*Chapman*, quoted by Lee, p. 414.)

CASE 4. *Complete inversion*—caused by an ignorant midwife pulling on the cord to deliver placenta; died immediately from hemorrhage. (*Smellie*, quoted by Lee, p. 415.)

CASE 5. *Complete inversion*—from pulling on cord by midwife, followed by speechlessness, imperceptible pulse, clammy sweats, deep and slow respiration, and death in a few minutes from hemorrhage. (*Smellie*, quoted by R. Lee, p. 415.)

CASE 6. *Complete inversion*—caused by pulling on cord; labour quick and natural; adherent placenta; traction made to extract and separate placenta, by which the womb was inverted, and caused to protrude beyond the vulva; great hemorrhage; death in one hour. (*Ramsbotham*, quoted by Lee, p. 416.)

CASE 7. *Complete inversion*—caused by traction on the cord by a midwife; labour easy; placenta adherent; attempts to extract it gave great pain; great hemorrhage, and sinking; reposited in an hour after by Prof. Meigs, after separating the placenta, the patient being pulseless, cold, suffering extremest distress, constant jactitation, and great thirst; recovered. (*Meigs' Females and their Diseases*, p. 232.)

CASE 8. *Complete inversion*—from pulling on cord by midwife; easy delivery; placenta adherent; one hour after accident uterus was discovered by Dr. Betton completely inverted and prolapsed, lying like a gum-elastic bottle between the thighs; patient pulseless; mind wandering, hemorrhage great; uterus was restored after the usual manner by firm pressure and indenting the fundus, in two or three minutes; resulted fatally in one hour after. (*Betton, in Am. Journ. Med. Sci*, vol. xix. 1836.)

CASE 9. *Complete inversion*—first child; midwife pulling at the cord; placenta adherent; uterus and placenta without the os externum; profuse hemorrhage, great exhaustion; placenta was separated and womb reposited; patient recovered with no unfavourable symptoms. (*Denman's Mid.*, p. 591.)

CASE 10. *Complete inversion; unreduced; fatal*—attended by midwife; inversion caused by pulling on the cord; placenta extracted with much force, and pain, followed by hemorrhage for 36 hours; at that time a physician was called, who found complete inversion of the womb, which resisted all attempts at reduction. Patient survived several months, was able to ride out, and attend to household affairs. Died at the end of a year. Autopsy disclosed the uterus entirely within the vagina, completely inverted, and but little exceeding the natural size. It was of a dark purple, veins much injected, marks of severe strangulation. (*N. B. Pickett, in Bost. Med. and Surg. Journ.*, vol. xxii. p. 95.)

CASE 11. *Complete inversion; unreduced*—natural slow labour, inversion from traction on cord very soon after delivery; placenta adherent; both uterus and placenta external to vulva. On the seventh day after, the womb is stated by Dr. Comstock to have been black, and covered with putrid coagula; fetor very offensive; serous discharge from tumour very profuse; no hemorrhage, though there was a loss of two or three pints of blood when the placenta was separated. A decoction of *Baptisia tinctoria* was applied to the tumour, and given internally with good effect. Fifty-four days after the accident, the uterus was contracted to the size of a large pear; colour white, substance firm; menstrual discharge continued. The patient was able to resume her former occupation, that of a dairy-maid, and enjoyed tolerable health. (*J. Comstock, Bost. Med. and Surg. Journ.*, vol. viii. p. 245.)

CASE 12. *Complete inversion*—great hemorrhage; not detected till two years afterwards, during which time she was greatly reduced by repeated attacks of hemorrhage. Dr. Meigs found, at that time, uterus of normal size, wholly within vagina, bled freely on pressure, not very sensible to touch; no attempts were made at reduction. Four years afterwards she became pregnant, uterus supposed by Dr. M. to have been spontaneously restored. (*Meigs, Females and their Diseases*, p. 237.)

CASE 13. *Complete inversion, except the neck*—delivery before the arrival of Dr. Levis, the physician; birth rapid; placenta was removed from vagina; great flooding; in two weeks much recovered; hemorrhage recurred often; five weeks after delivery the uterus was found inverted, lying within the vagina; no attempt was made at reduction; remained feeble for some time; afterwards became pregnant. Spontaneous reduction supposed by Prof. Meigs to have taken place as in the last case (*loc. cit.*, p. 239).

Two similar cases are related by Daillez (quoted by Crosse in his essay on *Inversion of the Womb*, and in *Dict. de Méd.*, vol. xxx. p. 458). In one case the reduction is said to have occurred at eight months, in the other eight years after the accident happened.

CASE 14. *Complete inversion*—natural labour; very sudden delivery by powerful uterine contraction, expelling the child with great force. Cord very short and twisted twice around the child's neck; placenta adherent; the placenta was separated, and attempts made at reduction without success, owing to contraction of cervix. Hemorrhage not profuse. Recovered. (*Denman's Mid.*, p. 592.)

CASE 15. *Complete inversion; reduced; recovery*—occurring, as sup-

posed, ten days after childbirth; took place after violent efforts to pass the contents of the rectum; attended with pain, faintness and flooding; protruded externally; two days after severe flooding; attempts at reduction failed at first, but succeeded after one hour and a half, by moderate and continued pressure with the hand; recovery perfect. Womb at the time of inversion is stated to have been of the size of a large pear. (*Dewees' Midwifery*, p. 484; *Case of Dr. Teallier, Journ. Univ.*, Nov. 1823.)

CASE 16. *Partial inversion; unreduced; death*—first child; rapid delivery; under care of a midwife; hemorrhage and faintings followed; two hours after was found pulseless, cold, bathed in perspiration, breathing laborious and hurried; placenta adherent; within the vagina was a tumour resembling in shape and size the swelling at the bottom of a common black bottle, and over which the placenta was spread. Attempts at reduction caused great pain, and were consequently suspended. Death occurred in half an hour. Dr. Dewees, who reports the case, states that, in company with Dr. Rush, he dissected out the uterus, which was so flaccid as to turn inside out with as much facility as a soaked bladder. The fundus dipped into the body of the uterus about three inches. (*Dewees' Mid.*, p. 486.)

CASE 17. *Partial inversion*—speedy delivery; placenta came away spontaneously, followed by inversion of womb, great pain, and flooding, faintings, vomitings, &c.; attended by midwife. Four days afterwards, was found by Dr. Dewees almost exhausted; pulse too frequent to be counted, faintings, difficult breathing; insatiable thirst, frequent vomiting, severe hemorrhage, &c.; fundus of uterus within the vagina; attempts at reduction failing, the uterus was designedly completely inverted, when the symptoms abated, as anxiety, faintings, flooding, pain, &c. Nine months afterwards, womb still unreduced, the patient was found "perfectly well, suffers no inconvenience from uterus, menstruated regularly, had more or less discharge of mucus, tinged with blood, for four months; for the last four months has had no discharge of any kind; uterus contracted to natural size." Ten years after the patient was enjoying a very fair proportion of health; the menstrual flow had ceased for five years. (*Dewees' Mid.*, p. 489.)

CASE 18. *Partial inversion; spontaneous; reposited; recovery*—sudden delivery, Dr. Dewees in attendance; child large; placenta adherent, presented at os externum; fundus uteri was found inverted; restored in half a minute soon after it took place, the placenta being first separated; no unpleasant symptoms followed. (*Dewees' Mid.*, p. 490.)

CASE 19. *Partial inversion; replaced*—placenta extracted without force, in fifteen minutes; considerable pain and hemorrhage, faintness, frequent pulse; great anxiety, paleness, and cold sweats; fundus uteri just within os externum. Three hours after, when seen by Dr. Dewees, the fundus was restored without difficulty; recovered. (*Dewees' Mid.*, p. 491.)

CASE 20. *Partial inversion; unreduced*—first child, easy labour; caused by short umbilical cord twisted round neck; placenta adherent; bleeding not profuse; not much pain or exhaustion for fourteen hours; uterus within vagina; reduction not effected, though long continued efforts were made. Patient lived several years, though constantly troubled with pain, profuse hemorrhage, and leucorrhœa. (*R Lee, Lect. on Mid.*, p. 417.)

CASE 21. *Inverted eight months before seen*—caused by midwife pulling on cord; reduction found impracticable; fatal in a few months from hemorrhage and constant discharge; also much pain, &c. (*Mauriceau*, 1684, quoted by R. Lee, *loc. cit.*, p. 414.)

CASE 22. *Complete inversion*—occurred two days before Mauriceau saw it; found uterus irreducible, ultimately proved fatal. (*Mauriceau*, quoted by Lee, *loc. cit.*, p. 414.)

CASE 23. *Complete inversion*—half an hour after delivery, the womb was found external between the thighs, "as large as a foot-ball;" great flooding; uterus reposited, but died in less than an hour from shock and hemorrhage. (*Lucas*, quoted by Lee, *loc. cit.*, p. 415.)

CASE 24. *Complete inversion; unreduced*—three weeks after uterus was the size of a goose's egg and regularly contracting; great suffering from flooding and its consequences; result not stated (*Ramsbotham, Midwifery*).

Two cases of polypus uteri, mistaken by Sir Charles Bell and others for inverted uterus. (See *Lee's Midwifery*, pp. 412–13.)

CASE 25. *Complete inversion*—midwife in attendance; little hemorrhage, but severe shock, from which the patient died one hour after the occurrence of the accident; uterus very flaccid; was restored half an hour after delivery without difficulty. (*Ramsbotham, Process of Parturition*, p. 318.)

CASE 26. *Complete inversion; unreduced; death*—cause not stated; died from hemorrhage soon after delivery; uterus lying in the vagina; the placenta was separated after the inversion, and the uterus crowded into the vagina. (*Ramsbotham, loc. cit.*, p. 319.)

CASE 27. *Complete inversion; unreduced; recovery*—case seen some weeks after delivery—uterus was found contracted to its normal size; patient was sinking from an exhausting fetid discharge. Attempts to re-invert the uterus proved unsuccessful; suffered greatly from irregular hemorrhage, with occasional severe pain in the lumbar region, afterwards a copious, glairy leucorrhœal discharge and violent bearing-down pains; uterus was ligated by Dr. Ramsbotham, with the object of removing it, but owing to the violent symptoms which followed the ligature was removed at the end of twenty-four hours; afterwards the menstrual discharge became regular; no leucorrhœa, the patient regained her flesh, colour, and appetite, could take long walks, had no bearing down, nor difficulty in passing water; could move and sit without inconvenience; bowels regular; health become better than it had been for many years; nothing solid passed from the vagina after the operation. (*Loc. cit.*, p. 319.)

CASE 28. *Complete inversion.*—Dr. White, of Manchester, who reports the case, represents the uterus as the size of a child's head, but retained within the vagina, and never expelled through the external organs; restored by compressing and then pushing up the fundus; cause of inversion not stated. Recovered. (Quoted by *Meigs, on Females*, p. 234.)

CASE 29. *Complete inversion; recovery*—primipara; patient 24 years of age; natural labour, but protracted; pains very frequent and of unusual force; after delivery there was great exhaustion; in twenty minutes patient seized with severe and continued pain, attended with great restlessness, sickness of stomach, and profuse hemorrhage. On examination by Dr. Bissell, who attended the case, the *fundus uteri* was found inverted, and forced down into the neck and os tincæ, with a portion of the placenta attached, while much the larger part lay in the vagina. The womb was folded inwardly upon itself, but not entirely inverted; flooding very severe. The placenta was detached, in doing which the uterus was entirely inverted. The reduction was readily and easily effected in the usual manner, the hand being retained within the womb until it contracted, when it was slowly withdrawn. (*Dr. P. Bissell, in Trans. Med. Soc. N. Y.*, 1859, p. 171.)

CASE 30. *Complete inversion*—primipara, age 26; natural labour;

strong continued pains for two hours before the head was expelled, when they ceased altogether. Strong traction was made to deliver the body; soon after pressure was made with one hand over the pubis, while traction on the cord was made with the other; pains and severe hemorrhage, with sinking; pulselessness, and great restlessness followed; skin cold, patient looking pale and ghastly, and rapidly sinking from combined effects of shock and hemorrhage. The placenta was not detached till the uterus was reposited, which was effected without difficulty. The uterus was excited to contract by the presence of the hand within its cavity, when the placenta was separated and withdrawn, which arrested the hemorrhage, and, in some degree, the sufferings of the patient. She sank, however, and died from exhaustion in about an hour. (*Bissell, loc. cit.*, p. 174.)

CASE 31. *Complete inversion; unreduced; recovery*—eighth pregnancy, age 35; labour natural and easy; placenta adhered, which the midwife attempted to extract by traction on the cord, by which the womb was inverted. Thirty-six hours after Dr. Bissell, who was called in, found "a tumour nearly as large as a child's head, at full time, filling the vagina and resting on the perineum. It seems the after-birth was not removed till three-quarters of an hour after the birth of the child; after-pains, so-called, came on soon after, very severe and attended with copious flooding, great prostration, and a tendency to syncope. Thirty-six hours after delivery, the patient was found with cold clammy skin, feeble and very frequent pulse, face pale and ghastly, and uterus inverted; attempts to restore the uterus proved unsuccessful, owing "to the engorged and strangulated condition of the body of the womb, and the firm contraction of the neck and mouth of it." Five days after, the womb "was forced out five or six inches beyond the labia; was found of a dark purplish or livid colour, and possessing little sensibility." It was replaced, still inverted, in the vagina, and sustained by a T bandage. In two weeks she began to walk, and was soon able to be about house, and perform some of the duties of housekeeping. (*Bissell, loc. cit.*, p. 177.)

CASE 32. *Complete inversion*—fourth labour, which was natural and rapid; pelvis very large; cord was tied immediately; there succeeded a long expulsory pain, which inverted the womb and forced it into and from the vagina. The organ, with the placenta adherent, was returned to its proper situation, and everything went on favourably. (*Denman's Midwifery*, p. 244, Eng. ed., quoted by *Churchill, on Females*, p. 372.)

CASE 33. *Complete inversion; reposited*; *recovery*—primipara; labour natural; ten minutes after delivery, violent bearing-down pains came on, which forced the womb, inverted, with placenta adhering externally, from the vagina. The placenta was separated, and the uterus reposited in the usual manner—no hemorrhage; yet great pallor of face, cold sweat, rapid, irregular pulse, great prostration of strength, and threatened convulsions. Under the use of powerful stimulants the patient soon recovered and did well. (*Radford's Essay*, quoted by Churchill, p. 372.)

CASE 34. *Inversion caused by polypus; unreduced; recovery*—patient aged 52; troubled with poor health and leucorrhœa for three years; great debility and emaciation; an attack of vomiting forced the tumour into the vagina, where it remained for three months; appearing externally at the end of that time, it was pushed up and remained in the vagina twelve months longer. On some exertion in walking it came down between the legs, drawing the inverted womb with it. No difficulty at any time in emptying bladder or rectum. A similar case is recorded by Dr. Browne

(*Dublin Med. Journ.*, vol. vi. p. 33); another by Dr. Higgins (*Ed. Month. Journ.*, July, 1849, p. 889); *case by Oldham*, quoted by *Ashwell on Diseases of Women*, p. 403; *case by Rigby, loc. cit.*, p. 404; *case by Leblanc, loc. cit.*, p. 405; *case by Velpeau, loc. cit.*, p. 405.

CASE 35. *Complete inversion; uterus removed by ligature*—primipara; labour natural; funis very short, placenta adherent, and much hemorrhage on its removal; retention of urine requiring use of catheter. Three months after Mr. Newnham, being called in, found constant mucous discharge from vagina, with frequent copious hemorrhages. On examination, the inverted uterus was found in the vagina; ligature applied April 13th, and tightened from time to time; uterus came away May 6th, and the patient did well. (*Newnham's Essay*, p. 31, quoted by *Churchill, on Females*, p. 386.)

CASE 36. *Complete inversion*—midwife in attendance; placenta adherent; caused by pulling on cord. Two hours after delivery, Dr. Radford found patient much exhausted, pallid, cold, &c.; placenta still adherent; no hemorrhage, nor convulsions; uterus reposited without difficulty; did well. (*Radford*, quoted by *Ashwell on Diseases Peculiar to Women*, p. 402.)

CASE 37. *Complete spontaneous inversion; reposited; recovery*—ten minutes after delivery, patient was seized with violent bearing down pains, and on examination the uterus was found inverted, having, with the attached placenta, passed externally from the vagina; no hemorrhage, but very great exhaustion; placenta was peeled off, and the womb reinverted; patient did well. (*Mr. Mann*, quoted by Ashwell, *loc. cit.*, p. 402.)

CASE 38. *Complete inversion, and supposed spontaneous reinversion*—labour propitious; placenta was said to be naturally detached and expelled; no hemorrhage; attended by midwife. Forty-eight hours afterwards, Dr. Radford found a large tumour passing partly through the os externum. Unsuccessful attempts were made at different times to reduce it; the patient laboured under symptoms of peritonitis; had afterwards sanguineous, purulent and mucous discharges, with great debility, diarrhœa, aphthous affection of the mouth, &c. Uterus gradually lessened to size of a large pear; purulent discharges continued; at end of seven months no tumour could be detected, "the remains of the os uteri could be felt, but no regular aperture, the upper part of the vagina forming a complete cul-de-sac." She lived several years, and died of cholera. (*Radford*, quoted by Ashwell, p. 402.)

CASE 39. *Complete inversion*—placenta adherent; cause not stated; placenta first detached, and then the womb reposited with little difficulty; little hemorrhage; patient recovered without any interruption. (*Radford.*)

CASE 40. *Spontaneous partial inversion*—tedious labour from contracted pelvis; delivered by perforation; "uterus inverted spontaneously, the cord not having been touched; the fundus partially passed through the os uteri, forming a tumour, globular, large, hard, and resistent, with the placenta attached nearly in the centre." The uterus was easily reposited, the placenta then separated; no flooding, faintness, nor convulsion, and the patient had a good recovery. (*Radford*, quoted by Ashwell, *loc. cit.*, p. 403.)

CASE 41. *Spontaneous complete inversion*—attended by midwife; evening after delivery, uterine tumour felt above the pubis; much difficulty in passing urine; catheter used; very low and weak for two or three days. On examination at end of that time, a tumour was found low down in vagina, protruding towards os externum; uterus reduced in about fifteen minutes, after several unsuccessful attempts had been made. (*Radford, loc. cit.*, p. 403.)

CASE 42. *Complete spontaneous inversion; replaced; did well*—at-

tended by midwife; a few minutes after delivery patient complained of a sudden violent pain low down in the belly. The midwife examining, found the inverted uterus and placenta adherent between the thighs. Three-quarters of an hour after, found the patient greatly prostrated, with all the symptoms of fatal collapse. There had been no hemorrhage; stimulants were given, and attempts to restore the uterus made with the placenta adherent, but without success; the placenta was then separated, without hemorrhage; afterwards reduction was effected without difficulty, and the patient had a prosperous recovery. (*Ashwell on Dis. of Women*, p. 410.)

CASE 43. *Complete spontaneous inversion; reposited; recovery*—attended by midwife; very speedy labour, followed by a very hard, protracted, bearing-down pain, which forced the womb, with placenta adhering, external to vagina; no hemorrhage, but all the symptoms of great exhaustion of vital powers; a rapid pulse, cold surface, &c.; attempts to reposit the uterus, with the adhering placenta, being unsuccessful, the placenta was separated, little blood lost, and reduction then effected with a good deal of difficulty. Syncope and laboured breathing continued for some time. In three weeks she resumed her usual avocations. (*Ashwell, loc. cit.*, p. 411.)

CASE 44. *Complete inversion; spontaneous; unreduced; death; fatal from hemorrhage.*—A mother of several children had a rapid labour, of a living child. In a few minutes, without traction on the cord, hard and sudden pain forced the inverted uterus into the vagina; placenta adherent; the surgeon in attendance tried to restore it before removing placenta, but this did not succeed. He now peeled off the after-birth, which was followed by such copious hemorrhage, as to prove immediately fatal. (*Dr. Lever*, quoted by *Ashwell, loc. cit.*, p. 411.)

CASE 45. *Complete inversion; partial recovery*—caused by midwife pulling on cord; patient not much exhausted. Dr. Dewees was sent for soon after the accident; uterus was returned by gently and firmly pressing the fundus uteri upwards, in the direction of the vagina. But the womb was not re-inverted, although two hours were spent in attempting reduction. The patient continued to labour under a bloody discharge, and six months after was still pale and sickly in look. (*Dewees' Midwifery*, p. 478.)

CASE 46. *Partial inversion—cause not stated.* Dr. Dewees failed in attempts to re-invert the uterus, and therefore completed the inversion, which afforded much relief. But the patient died thirty-six hours after. The patient was nearly exhausted by hemorrhage and suffering, and almost pulseless, before the reduction was attempted. (*Dewees' Midwifery*, p. 478.)

CASE 47. *Complete inversion; spontaneous*—twin birth, large pelvis, natural labour, complete in one hour and a half; placenta expelled with very trifling manual assistance; expulsion followed by small quantity of blood; remained comfortably in bed eight days, and was quite well. On the evening of the eighth day, dressed and got up, when she experienced slight uterine hemorrhage. Two days after, while sitting up it returned, and she lost, as was supposed, a quart of blood. A sanguineous serous discharge continued, and she presented the ordinary constitutional symptoms of a large loss of blood; a greenish vaginal discharge succeeded for two or three days, when hemorrhage returned, with symptoms of great exhaustion. Ergot was given, and cold applications made over pubis, but *no vaginal examination.* On the 21st day after delivery, hemorrhage still more alarming recurred, attended with syncope, and on examining, a tumour—the inverted uterus—was found rather larger than a hen's egg, at the upper part of the vagina. Attempts at reduction were made, without success. The

uterine hemorrhage ceased, and she gradually recovered her usual healthy appearance. Fourteen months after, she was pronounced a "very robust, active woman, and had been free from any vaginal discharge for eleven months. (*W. J. Square, in Provincial Med. and Surg. Journ.*, vol. i.)

Remarks.—This case, though called spontaneous, is doubtless to be ranked with those where inversion was begun by traction on the cord; for eight days, during which she remained quietly in bed, she was comparatively comfortable. On getting up, the inversion increased, with hemorrhage, &c., till completed. Mr. S., who was called in on the eleventh day after confinement, made no vaginal examination, though hemorrhage was severe until the 21st day, when the accident was discovered. There can be no reasonable doubt, however, but that partial inversion existed from the time of delivery. The case is also remarkable for the continuous good health the patient enjoyed for more than a year, notwithstanding the inversion.

CASE 48. *Complete inversion*—from midwife pulling on cord, placenta adherent; tumour the size of a child's head, soon became inflamed and gangrenous; ligature was applied in a few days, followed by convulsions and painful draggings in the loins; tumour separated on the 17th day; patient recovered. (*Journ. de Méd.*, Aug. 1786, p. 201.)

CASE 49. *Complete inversion; reposited; recovery*—primipara; labour tedious; delivered by the vectis; considerable hemorrhage; great exhaustion. Three weeks after Dr. Smart, who was called in, found the whole vagina filled with a soft, compressible tumour; no neck or os uteri to be felt; blood was oozing from the surface of the tumour; the attending physician stated it had been much harder, and felt like the head of a child, for which he at first mistook it. Reduced in three days, by gradual pressure, made with an instrument in the form of a common iron mortar pestle, and secured in place by a T bandage. The patient did well. (*B. Smart, in Am. Journ. Med. Sci.*, vol. xvi. p. 86.)

CASE 50. *Complete spontaneous inversion*—very rapid labour; in five minutes after the child was born, the placenta was thrown off, the cord not being touched, except to divide it. On examination, the uterus was found inverted, with the placenta attached. The placenta was removed, and the fundus uteri then passed up into place, without the slightest difficulty; very slight hemorrhage, but great exhaustion, so that for one hour the patient seemed to be dying. The patient, however, soon rallied, and had a favourable recovery. (*D. H. Storer, N. Eng. Quarterly Journ. Med. and Surg.*, July, 1842, also *Am. Journ. Med. Sci.* for July, 1842.)

CASE 51. *Complete inversion; not replaced; death*—midwife in attendance, favourable labour. In detaching and delivering placenta, the uterus was inverted. Dr. Sutton arrived just after the accident occurred, and found the patient ghastly, pupils dilated, pulse very weak, &c., but there had been but little hemorrhage. The patient did not complain much; attempts to re-invert the uterus did not succeed, and she died in about three hours. (*W. L. Sutton, in Am. Journ. Med. Sci.*, vol. iv. N. S.)

CASE 52. *Complete inversion*—primipara; uterus with placenta attached, expelled with the child; no hemorrhage, great sinking, lips and countenance livid, pulse very feeble; separated the placenta and restored the uterus. In this case the membranes gave way several hours before the child was born, presentation natural; body not expelled with severe pains that expelled the head; cord rather short; uterus followed the body with the same pains. Had a slow, but favourable recovery. (*W. L. Sutton, loc. cit.*, p. 84.)

CASE 53. *Complete inversion*—labour easy and rapid; fifth child; pla-

centa adherent; traction on cord brought down placenta, and uterus inverted. The placenta was peeled off, and reduction of uterus attempted, but without success; the uterus was crowded up into the vagina, but next day it came down beyond the os externum. Mental disturbance succeeded, and on the fourth day, the patient became maniacal. Ten days after the accident occurred, the uterus was reposited after an hour's gentle, but forcible compression, the patient having previously been fully brought under the influence of tart. antimony. The recovery was rapid and complete. (*J. P. Gazzam, in Am. Journ. Med. Sci.*, April, 1844, p. 357.)

CASE 54. *Congenital inversion; unreduced.*—This case was reported to the French Academy of Medicine by Dr. Williame, of Metz. The uterus was inverted in the patient, a virgin, so that the body of the uterus was below, and formed a tumour on the right side of the vagina, while its neck was above, and out of the reach of the finger. The patient menstruated regularly, the menstrual blood being always mixed with a copious leucorrhœal discharge. (*Dublin Med. Press*, Nov. 8, 1843.)

CASE 55. *Complete spontaneous inversion*—primipara; labour natural; about seventeen minutes after birth of child, a strong expulsatory effort was made; the uterus felt strongly contracted above pubis. The uterus inverted with placenta adherent, was expelled, and found lying between the thighs of the mother; the portion of the uterine surface, from which the placenta was detached, was pouring out blood in great violence. The patient lay in a state of syncope, pulse imperceptible, clammy perspiration, and vomiting every few minutes. The placenta was separated, and the uterus reposited without difficulty; recovery complete, though slow at first. (*S. Edwards, Lancet*, April 5, 1845, *Am. Journ. Med. Sci.*, July, 1845.)

CASE 56. *Partial inversion of the uterus occurring at the fourth month of utero-gestation.*—Mrs. S. was seized with flooding the 15th of January. On the 16th, abortion occurred, with much hemorrhage, after being pregnant four months. On the 18th, she got up, but the flooding returned with so much violence, that she went to bed, which she was obliged to keep. On the morning of the 25th, during vomiting, she was sensible of something falling down within her, and from that time to the 25th, at half past 10 o'clock P. M. that sensation continued, along with bearing-down pain, flooding, much general uneasiness, and extreme prostration. In the course of twenty minutes, on the 26th, the organ was reposited by the usual mode of procedure; recovery went on slowly. The eighth pregnancy; had been attended by midwives in every labour. (*Dr. Spae, Northern Journ. Med.* July, 1845, *Am. Journ. Med. Sci.*, Oct. 1845, p. 514.)

CASE 57. *Complete spontaneous inversion*—age 35, mother of several children; eighth month of pregnancy; large pelvis; feeble pains at first, "when suddenly a violent throe thrust fœtus, placenta, and body of the uterus inverted, beyond the labia externa;" fœtus small and putrid, umbilical cord but eight inches long. "The uterus was as flaccid as a wet bladder. The fundus was carried up to its place with ease, but no contraction of any part of the organ took place during the operation. *On attempting to withdraw the hand, the fundus followed it.* A strong infusion of ergot was given every ten minutes, while the fundus was grasped with the thumb and finger of the left hand, the right being still in the cavity. In fifteen minutes contractions came on, forcing the head into the vagina. There was no hemorrhage, nor pain, syncope, or any of the usual attendants on this accident. (*E. Fisher, Illinois, Med. and Surg. Journ.*, Dec. 1845.)

CASE 58. *Complete inversion of the womb, with rupture of the posterior walls of the vagina, and passage of the fœtus through the rupture*—age 27, delivered at full period, and spontaneously, but with much straining; after-birth was also discharged with much pain, "after this was delivered, acute pain was felt in the vagina, on applying her hand to the part, a smooth, round body was felt in the vulva. Dr. Snackenbergh being sent for, found the inverted uterus prolapsed through a rent in the posterior walls of the vagina; with his right hand well oiled, he endeavoured first to make the segment of the uterus re-enter through the fissure in the vagina, and afterwards to push it upwards with the hand applied flat on the wound. He supported for some time the perineum, and pressed it upwards with the base of the uterus, which rested on it. Gradually the uterus rose up and assumed its natural position. The lochia came on, and the patient got entirely well. (*Gaz. Méd. de Paris*, Oct. 5, 1834, *Am. Journ. Med. Sci.*, vol. xxvi. N. S., p. 230.)

CASE 59. *Complete inversion and abstraction of the uterus*—Mrs. C. delivered, in natural and easy labour, of a living child, without a physician; cord was tied, but the placenta retained; a physician was sent for, and an ignorant clerk in a drug store went, and finding the placenta adherent, made strong traction on the cord, and inverted the uterus, placenta still adhering; this was separated, and then mistaking the uterus for a part of the placenta, a tumour, or something else, proceeded to drag it from its attachments, and separate it from the body, during which operation she died. Three-quarters of an hour were spent in accomplishing the task. (*J. H. Griscom, in N. Y. Journ. Med. and Surg.*, 1839.)

CASE 60. *Partial inversion*—age 34, mother of four children, natural labour; placenta adherent; as the after-birth did not immediately come away, the midwife in attendance pulled strongly on the cord, while another woman made pressure with her hands over the fundus uteri, the patient being at the same time urged to bear down; the placenta, with the inverted uterus, was drawn down to the os externum, accompanied with severe hemorrhage, the uterine tumour being nearly of the size of the fœtal head, the patient expiring in a few minutes. Autopsy showed that the uterus had not contracted. (*John Christie in Ed. Month. Journ. Med. Sci.*, 1846.)

CASE 61. *Inversion produced by a polypus*—age 46, mother of five children, laboured under severe leucorrhœa; examination disclosed a polypoid tumour, projecting from os externum; this was excised, two years after the first appearance of the disease. One year after, a pyriform tumour was discovered in the vagina, with its base inferior, of a firm, resisting texture, and quite insensible to the touch. The uterus was drawn down by a uvula forceps, and the diagnosis made clear. The organ was left to itself; result not stated. (*M. Fleury, in La Presse Médicale*, No. lviii. 1837, and *Bell's Eclect. Journ. Med.*, vol. ii. p. 431.)

CASE 62. *Inverted uterus removed by ligature; death*—Mrs. S., aged 46, delivered at full time of a healthy child, labour lingering, placenta adherent, and removed by midwife by violent traction on cord. Hemorrhage succeeded, which was protracted for the space of nine months; patient pale, anæmic, weak, with a copious and very mucous discharge, during the intervals of the floodings. At the end of nine months, a tumour was found in the vagina two and a half inches in length, and an inch and a quarter broad, tapering upwards—firm and incompressible in texture, smooth and regular on its surface, devoid of sensibility when pressed or irritated, the os uteri embracing its upper part. The uterus was ligated and tightened every other

day; on the fifteenth day, the uterus came away; peritoneal inflammation succeeded, and the patient died on the sixth day after the operation. (*Symonds, Med.-Chir. Review*, vol. xiv. p. 251.)

CASE 63. *Partial inversion*—delivery by forceps; placenta adherent; traction drew it down, together with the *fundus uteri* into the vagina, followed by flooding; the uterus, with placenta adhering, was immediately returned; the adherent portion separated, and the patient did well. (*Rev. of Ingleby on Obst. Med. in Med.-Chir. Rev.*, vol. xxvi. p. 99.)

CASE 64. *Complete inversion from pulling on cord; reposited; recovery*—attended by midwife; placenta adherent. The whole uterus hung between the thighs; the fundus ulcerated, and discharging offensive matter, resembled, some years after the accident, a malignant tumour, the size of a cocoa-nut. The uterus was re-inverted by gradual and gentle pressure, and its prolapse afterwards prevented by a pessary, "which was secured round the hips by means of tapes." The health of the patient was afterwards comfortable; could walk any distance without inconvenience. (*Med.-Chir. Rev.*, vol. xxvi. p. 100.)

CASE 65. *Complete inversion, unsuspected during life.*—J. Lisfranc relates the case of an old woman, who died of bronchitis in the Salpêtrière, and, upon *post-mortem* examination, the uterus was found completely inverted. Convalescent from a former attack, she had been under observation a considerable time prior to the fatal seizure of bronchitis, and was observed to be very active in her habits, regular in most of her functions, and manifesting no one symptom whatever of uterine derangement; appetite and digestion good; no pain in pelvis, and no vaginal discharge. Lisfranc does not believe in the authenticity of those cases, in which the uterus is said to have been reduced spontaneously, at the expiration of days, weeks, or months after the inversion has occurred. (*Clinique Chir. de l'Hôpital de la Pitie*, 1843.)

CASE 66. *Partial inversion*—age 31, primipara; tedious labour, requiring the use of instruments; placenta adherent, and removed with difficulty, with probable traction on cord. Whenever she assumed the upright position, she had a very unpleasant, dragging sensation in the uterine region. Three weeks after labour, she had an attack of hemorrhage from the vagina; soon after, a tumour appeared below the vulva, which proved to be the uterus, partially inverted and prolapsed. The uterus was replaced in the vagina, and Sir Philip Crampton attempted to re-invert it, but without success; great pain, irritability of stomach, and syncope succeeded, and one week after, hemorrhage, and she finally sank from exhaustion, nine months after confinement, the prominent symptoms being hemorrhages, irritability of stomach, and mucous discharges.

Dr. McClintock, who reports this and the last case, in the *Dublin Journ. Med. Sci.*, 1845, remarks as follows: "In both of these cases, it will be perceived that there was some manual interference by the attendant in removing the placenta, by which, doubtless, the inversion was produced. Indeed, I cannot help expressing my conviction, that whenever the uterus is inverted at the time of parturition, it is to be attributed to some mismanagement of the delivery of the after-birth, in confirmation of which I would adduce the accumulated experience of Drs. Clarke, Labatt, Collins, Kennedy, and Johnson, in this hospital, which does not furnish a single instance of the occurrence of this accident, though the number of women delivered during their united masterships amounts to upwards of 71,000." (*Braithwaite*, 1845, vol. xi. p. 275.)

CASE 67. *Inverted uterus extirpated by ligature*—Mrs. A., natural labour, placenta adherent; midwife inverted the uterus, by pulling on the cord, to extract it; tumour lodged in the vagina; no hemorrhage after a few days, for several months, nor menstruation. Dr. Gooch, who then for the first time examined it, found the tumour, the size of a small apple, smooth surface, narrow stalk, encircled by the orifice of the uterus, like a polypus, but sensible to the touch; her health seemed to be sustaining no injury from it. Two years after, she was seen again, when it appeared that she had become subject to frequent and profuse hemorrhages, which had broken down her health; attempts at reduction having failed, the uterus was ligated, and the ligature tightened every other day. On the fourteenth day, it came away, proving to be the fundus of the uterus, for it was a hollow cup, the size of a small apple. The patient entirely recovered. (*Gooch, Med.-Chir. Rev.*, vol. ix. p. 252.)

CASE 68. *Partial spontaneous inversion*—age 25, primipara. Ergot was given during labour, and the funis presenting in advance of the head; the forceps were applied; child stillborn; no traction on cord, the placenta being naturally expelled in a few minutes; uterus contracted well; funis of natural length; an hour after, some hemorrhage took place, but the uterus had contracted, so stated, and she went on satisfactorily for three days; at the end of that time, a cathartic was given, attended with much pain and straining, during which the patient felt as if something had come down. Vaginal examination now showed that inversion had taken place, the fundus having descended to within an inch or two of the labia, but no hemorrhage had taken place since the day of delivery. Attempts to reduce it proved unsuccessful; rest and astringent injections used; sanguineous and serous discharges, however, soon came on, which caused great exhaustion. Nine months after delivery, another attempt at reduction caused so much pain, that it had to be discontinued. Severe hemorrhage continued, especially at the catamenial periods, which was attended with constipation, headaches, palpitations, frequent pulse, slow hectic fever, irritable stomach, &c. She survived a year and a half, and died from exhaustion. *Post-mortem* examination showed the uterus to be in a state of partial inversion; length of tumour three-quarters of an inch, transverse diameter one inch and a half, greatest circumference four inches and a quarter. (*J. G. Forbes, Med.-Chir. Trans.*, vol. xxxv. p. 127.)

CASE 69. *Inversion successfully reduced on the sixteenth day after the accident*—age 24, second accouchement; cause not apparent. On sixteenth day, Dr. M. found patient in bed, in a comfortable condition, free from pain, or other special inconvenience; uterus completely inverted, and occupying the entire vagina; reduced by placing patient on her back, under influence of equal parts of ether and chloroform. The body of uterus was grasped with the right hand, and pressed steadily upwards, in a line corresponding with the axis of the pelvis, while counter-pressure was made with the left, over the abdomen. The reduction was speedily effected, with but little pain to the patient, and the loss of but little blood. The patient felt comfortable, and did well. (*Mendenhall, Am. Journ. Med. Sci.*, Oct. 1859.)

CASE 70. *Inverted uterus replaced after a lapse of nearly twelve months*—age 25, second labour; rapid delivery; living child; placenta retained three and a half hours, during which there was great hemorrhage; patient became insensible, and hence unable to say whether placenta came away spontaneously, or was removed by hand; great weakness, diarrhœa, and pain in abdomen followed, which confined her to bed;

at the end of five weeks phlegmasia dolens set in, which was treated by leeches, &c. Three months after confinement, menstruation reappeared, discharge profuse, and mixed with coagula; flow lasted longer than natural, and returned more frequently, followed by yellowish, leucorrhœal discharge; reduced very low by oft-returning hemorrhages; skin sallow, pulse very feeble and frequent, &c. Examination disclosed partial inversion, a tumour of oval form, hanging down about two inches and a half through the os uteri, which closely surrounded, but did not constrict it. The uterus was reduced in the course of three days, by the use of an air-pessary, made of vulcanized India rubber, four inches long, by five in circumference at its middle, rendered comparatively inelastic at its lower half, by the introduction of several layers of linen between the folds of the India rubber; a belt fastened around the waist, the anterior half of steel, served as a fixed point for a metallic wire, attached to a small wooden dish or cup, bearing the pessary. The air was forced into the pessary by a syringe through an elastic tube connected with it. By this means continued pressure was exercised against the fundus of the inverted uterus, without painful distension of the vagina, until it was gradually reduced. (*Charles West, Med. Times and Gaz.*, Oct. 29, 1859; *Am. Journ. Med. Sci.*, Jan. 1860.)

CASE 71. *Inverted uterus removed by ligature*—age 22, second child; placenta adherent, extracted with great pain and excessive hemorrhage; flowed more or less all the time for three months; at this time ceased nursing child, hemorrhage became incessant; one year after confinement appeared bloodless, anasarcous, and very weak; attempts to reduce the uterus failed, though ether was given; tumour ligated by a cord, so as to be daily tightened by a screw, came away on the eleventh day, recovery perfect. (*C. G. Putnam, Am. Journ. Med. Sci.*, Oct. 1856.)

CASE 72. *Inverted uterus removed by ligature*—age 25; first confinement, had twins, and was much enfeebled by nursing; at second confinement she was not aware of any extraordinary pain, hemorrhage, or faintness, though she never "felt quite right" about the pelvis. During first week sat up in bed, and moved about the bed more freely than usual. On eighth day, having got out of bed to evacuate the bowels, she felt something protruding from the external organs, considerably larger than an orange. She suffered much distress till it was replaced in the vagina. It appeared no more externally, though she was occasionally obliged to press it upward, in order to relieve a painful sense of pressure. Local uneasiness gradually diminished; able to attend to her household duties for eight months, though flowing almost constantly, when she had to remain in bed. Palpitation, throbbing in head, dyspnœa on motion, urgent thirst, pale, very feeble pulse, white tongue, &c.; tumour two inches in length, two inches in breadth, and an inch and a half thick, high up in vagina. Ligature applied, and tightened as she could bear it. On the ninth day after, died from exhaustion, without peritoneal inflammation tumour detached, and cicatrization effected. (*C. G. Putnam, loc. cit.*, p. 572.)

CASE 73. *Inverted uterus successfully removed by ligature*—age 23; second confinement; unusual pain and hemorrhage during the delivery of the placenta; flowed for a year, almost continually. Exhaustion extreme, attempt to re-invert uterus failed. Ligature applied to tumour, which came away at the end of two weeks; recovered from the symptoms which attended. In the above three cases the writer thinks it probable that inversion took place at the time of delivery. (*C. G. Putnam, loc. cit.*, p. 573.)

CASE 74. *Complete inversion*—age 24; second confinement; breech presentation; child small, labour easy, placenta adherent; traction on the cord, and pressure over the pubis, brought the inverted uterus into the vagina; attempts to reduce the womb, with placenta adherent, failed at first, but in the course of an hour succeeded; but the patient died in twenty minutes from hemorrhage, placenta still adherent. (*Burrowes, Trans. Prov. Med. and Surg. Assoc.*, Aug. 5, 1846; *Am. Journ. Med. Sci.*, Jan. 1846, p. 217.)

CASE 75. *Complete inversion*—labour not exhausting; placenta adherent; strong pressure made over pubis; tight binder as soon as child was born; uterus was readily replaced, with placenta still adherent, which came away on withdrawing the hand. Patient recovered as well as she usually had done, and no unpleasant symptoms followed. (*Burrows, loc. cit.*)

CASE 76. *Complete inversion*—second child; labour eight hours' duration; child born naturally, placenta expelled in half an hour after; immediately the patient complained of great pain in back and groins, sense of fulness in vagina, followed by copious hemorrhage and fainting fits, rapidly succeeding each other; rapid respiration, gasping, deep sighs; small, thready pulse, 125 in a minute; palpitation, great prostration and collapse; no tumour felt over pubis; uterus easily reposited in usual manner; patient slowly but perfectly recovered; no undue force, it is stated, was applied to the cord, but there is every reason to believe that this was the exciting cause. The writer states that this was the first case in 3500 delivered in the hospital. (*T. R. Mitchell, Dub. Med. Press*, Sept. 9, 1846; *Am. Journ. Med. Sci.*, Jan. 1847.)

CASE 77. *Inverted uterus successfully extirpated by excision; recovery*—coloured woman; had laboured under inversion for twenty years; how it happened was unknown; she had always been greatly annoyed by it, but by means of a T bandage had been able to pursue her ordinary avocations. Latterly it had increased in size so much as to render this impracticable; any attempt at replacement caused excruciating pain. The tumour was of the size of a fœtal head at full term, pyriform in shape, and hung between the thighs; whole surface covered with a rough, thickened mucous membrane, abraded and ulcerated in many points, a good deal inflamed and disposed to bleed on handling. A strong ligature was applied to its neck, when it was cut through below the ligature by a probe-pointed bistoury with very little pain. The patient rapidly recovered and did well. (*E. Geddings, Am. Journ. Med. Sci.*, Oct. 1854.)

CASE 78. *Complete inversion, restored; recovery*—age 19, primipara; labour easy, six hours' duration. The accoucheur had kept his hand over the uterus above pubis to promote contraction, for fifteen minutes after the child was born, when, finding some flooding, he increased his pressure, when the uterus was felt suddenly to yield and recede from the grasp, and was expelled from the vagina with the placenta adherent. The woman became pallid, anxious, complained of considerable pain, and a sensation of sinking; pulse almost imperceptible; no hemorrhage. The placenta was detached and the uterus reposited in seven minutes, in the usual manner, making counter-pressure over the pubis. Patient made a perfect recovery, and did well. (*G. Johnston, Dublin Quart. Journ. Med. Sci.*, Feb. 1854; *Am. Journ. Med. Sci.*, Oct. 1854.)

CASE 79. *Complete inversion*—delivery at full term, after an ordinary labour; placenta came away without any difficulty or pulling at the cord. Forty-eight hours after this she rose from her bed to evacuate her bladder, when complete inversion took place. Thirty-one hours after, was found

pale, pulse small, rapid, look anxious, &c. The uterus had been pushed up into the pelvis and left. A cup-like depression could be felt above the pubis; under the influence of chloroform the womb was reposited after long and persevering efforts. (*E. P. Bennett, Am. Journ. Med. Sci.*, Apr. 1857.)

CASE 80. *Complete inversion of twelve years' duration, reduced; recovery*—primipara; delivered at the age of 18; inversion occurred, but was not suspected. When at length an examination was made, a tumour was found in the vagina. Flooding continued to a greater or less extent for nearly twelve years, never a single day free from a sanguineous discharge; all attempts to reduce the uterus failed. Dr. Tyler Smith, on taking charge of the patient, found anæmia existing in the highest degree. She was subject to epileptiform convulsions and frequent faintings, passed little urine; often twenty-four hours without micturition. Dr. S. determined to attempt its reduction by continuous pressure, with the intention of dilating or developing the os and cervix uteri. With this object the hand was passed into the vagina night and morning, and the uterus squeezed and moulded for about ten minutes at a time. Chloroform was not used. In the intervals the vagina was distended, and firm pressure excited upwards by a large air-pessary. These means gradually dilated the os uteri to such an extent as to allow of the partial return of the uterus, and on the eighth day from the commencement, complete reinversion took place. Recovery was rapid and perfect. (*Tyler Smith, Am. Journ. Med. Sci.*, July, 1858, p. 270.)

CASE 81. *Complete inversion*—Mrs. H., age 25; primipara; funis twisted twice around child's neck; natural labour, sixteen hours' duration; very strong, forcing pains; half an hour after child was born, a strong pain forced the inverted uterus and adhering placenta without the vagina; patient became pulseless, cold, prostrated, and in a state of collapse; breathing laborious. The uterus had been exposed three-quarters of an hour, and was much contracted. The placenta was peeled off, no hemorrhage, and uterus reposited with little difficulty, and in the usual manner. The hand was retained within the uterus till it contracted and then withdrawn; some peritonitis followed, which was successfully treated by leeches, fomentations, &c., and the patient was soon restored to her usual health. (*Borham, Am. Journ. Med. Sci.*, April, 1856, p. 533.)

CASE 82. *Complete inversion of the uterus*—age 34; second confinement; labour natural, lasted six hours; child large and living; no hemorrhage; funis very short and twisted twice round the neck; it was divided, as it was too tight to relieve it, or apply ligatures; in twenty minutes a strong expulsive effort brought down the inverted uterus with the placenta adhering; considerable hemorrhage followed; patient became weak, faint and exhausted; placenta was detached and the uterus reinverted without difficulty. Patient had a good recovery. (*Leonard, Ibid.*, p. 534.)

CASE 83. *Partial inversion from traction on the cord*—seventh confinement; labour natural; midwife pulled strongly on the cord, when sudden symptoms of collapse occurred; violent hemorrhage, pallor, delirium, syncope, &c.; portion of placenta unremoved. The uterus was replaced with the placenta adhering; all the symptoms disappeared, and the patient had a favourable recovery. (*Ellis, Med. Times*, Feb. 16, 1856.)

CASE 84. *Inversion following abortion at the fifth month of pregnancy*—age 23, second confinement; strong labour pains; child stillborn; cord of unusual length, and not wound round the neck; very severe hemorrhage came on immediately, pulse became imperceptible, face death-like, features

pinched, breathing laborious, body cold and bathed in perspiration; uterus was found between the thighs, inverted, flaccid, with placenta adhering to the fundus; the uterus was reposited with placenta adhering; about one-half was detached and removed, the hand remaining *in utero* till contraction took place; the uterus firmly contracted on the remaining portion of the placenta, and prevented its removal; about twenty-four hours after it was removed in a putrid state, with slight hemorrhage. Patient had a slow but perfect recovery. (*John A. Brady, N. York Med. Times*, Feb. 1856.)

CASE 85. *Inversion successfully reduced at the end of six months*—primipara, age 19; a German midwife in attendance; child weighed 10½ lbs.; the after-birth, she stated, soon came away, accompanied by a large tumour, which she supposed to be a mole or false conception. Great hemorrhage followed, producing protracted syncope. Five days afterwards, whilst making an effort to evacuate the bowels, the tumour descended through the os externum, and became suspended between the patient's thighs. One week after the inversion occurred, Dr. White found the uterus inverted, and as large as at the fourth month of pregnancy; inflamed and tender, as also the external organs. By powerful compression of the womb, it was finally relieved in a measure of its engorgement, and successfully reposited, but with considerable loss of blood. Patient died on the third day after from exhaustion. (*J. P. White, Am. Journ. Med. Sci.*, July, 1853.)

CASE 86. *Complete inversion; restored after six months' duration*—age 30, second confinement; natural labour; large male living child; placenta adherent, but removed at end of half an hour, followed by copious flooding, severe pain, and faintings; great prostration; continued very weak for three weeks, when she took an aloetic cathartic, which occasioned violent efforts at stool, with pains resembling those of labour, followed by profuse hemorrhage, and a large pear-shaped tumour made its appearance through the os externum; the neck being at the vulva and the larger extremity between her thighs. The tumour was carried high up in the vagina; for three months occasional severe hemorrhages, and constant discharge of muco-sanguinolent matter. Patient mostly confined to bed, with pulse 130, and all the symptoms of great exhaustion; uterus about the normal size, six months after delivery. The uterus was reinverted, the patient under the influence of chloroform, with the aid of a large rectum bougie pressed against the fundus, continuous, gentle pressure being made upon the external extremity of the bougie with the left hand, while the right compressed the uterine tumour, and kept the upper extremity of the instrument directly upon the fundus, and with the dorsum of the hand in the concavity of the sacrum, directed the force in the axis of the pelvic cavity, putting the vagina completely upon the stretch. Patient suffered but little during the operation, little flooding, and quite comfortable afterwards. Recovered perfectly. (*J. P. White, Am. Journ. Med. Sci.*, July, 1858.)

CASE 87. *Inverted uterus*—primipara, age 29; child stillborn, and delivered by forceps after ergot had been given. In half an hour uterus contracted, and the placenta adherent with inverted uterus, was forced into the vagina, followed by hemorrhage, fainting, &c. It was at once replaced, and the patient recovered. (*J. G. Crosse, Prov. Med. Journ.*, June 12, 1844.)

CASE 88. *Complete inversion removed by ligature; recovered*—same patient as above, aged 31, second labour, natural, eight hours' duration, female child, living, followed by severe hemorrhage, placenta partially adhering; hand was introduced into uterus, and the placenta removed

piecemeal; much flooding. Twelve hours after, the patient was faint, pallid, cold, nearly pulseless; on examination, the uterus was found in the vagina, inverted, of the size of the fist; attempts at reinversion failed, owing to the firm contraction of the uterine tumour, and the very feeble state of the patient. Four days after, the inversion from partial, became complete, on the patient raising herself incautiously, and straining at stool, while the inverted uterus was forced beyond the os externum and external labia. The tumour measured twelve inches in circumference, and protruded five and a half inches at external labia. The tumour was covered with soft linen, and encircled with a bandage; urine drawn off twice daily. Surface of tumour of a florid red colour, tender, vascular, and in some places ulcerated. Fifteen days after delivery, the length of the inverted organ was three and a half inches, greatest circumference, eight and a half inches. One month after delivery, a silk ligature was applied to the neck of the uterus, and tightened every few hours. The ligature was removed at the end of twelve days; the tumour came away, and the patient had a perfect recovery. (*J. G. Crosse, loc. cit.*)

CASE 89. *Inverted uterus mistaken for polypus, and removed by ligature; recovery*—age 32, married fourteen years, second confinement, attended by midwife, labour painful and protracted, profuse flooding, placenta adhering, followed by profuse sanguineous and mucous discharges, dragging in direction of round ligaments, pains and weakness in back, &c. Some months after, she was found labouring under hectic fever, profuse night-sweats, hacking cough, great prostration, &c. A tumour, the size of a large pear, occupied the vagina, the vagina irritable, and ulcerated; a ligature was applied, supposing it to be a polypus, and tightened every day. On the eighteenth day, it came away, with the uterine tumour; recovery slow, but perfect. (*J. M. Esselman, Am. Journ. Med. Sci.*)

CASE 90. *Uterus extirpated for inversion; recovery*—a large polypus attached to the fundus uteri, inverted the organ by its weight; when discovered, it was the size of a man's fist. Hectic fever, great prostration, &c., present. The tumour was seized with the double forceps of Museaux; the whole mass was thus drawn beyond the external organs of generation, and being held fixed in this position, was extirpated by means of a strong pair of curved scissors. The woman did well. (*M. Luytgaerens, Ed. Med. and Surg. Journ.*, July, 1840, p. 281.)

CASE 91. *Complete inversion successfully treated by ligature*—H. B., age 39, eighteen months' standing; much pain followed the application of the ligature. Threatening of peritoneal inflammation, requiring the use of leeches, and considerable constitutional disturbance. The tumour separated, with the exception of its peritoneal lining, on the twelfth day; this was divided with scissors, it contained part of the Fallopian tubes and round ligaments; recovered. (*Windsor, Med.-Chir. Trans.*, vol. x. p. 364.)

CASE 92. *Inversion successfully treated by ligature*—Mrs. G., æt. 26, three months' standing. Ligature applied April 13, 1837; much pain produced. It was observed on the 14th and 15th; on the 17th, the canula was removed, and the ligature left loosely on. On the 18th, it was again tightened, and this was done daily till the 6th of May, when the tumour came away; recovered. (*Newnham, on Inversio Uteri*, p. 31.)

CASE 93. *Inversion treated by ligature*—more than two years' standing. Ligature came away on the tenth day; patient suffered from emaciation, cough, ecthyma of the legs, pain, and profuse vaginal discharges. She recovered from the operation, but died of phthisis nine months afterwards.

Ligature made of fine, well-annealed silver wire and silk, twisted. (*Johnson, Med.-Chir. Trans.*, vol. xxxv. p. 141.)

CASE 94. *Inverted uterus successfully removed by ligature*—an elderly woman, many years' standing; continued and profuse hemorrhages. The tumour came away, after a considerable time, much softened and decomposed. Ligature same as in the preceding case; recovered. (*Johnson, loc. cit.*, p. 141.)

CASE 95.—*Inversion successfully treated by ligature*—Mrs. M., age 20, upwards of fourteen months' standing; supposed at first to be a polypus, and tied as such. So much pain was produced on tightening the ligature, that the error was discovered; it was not, however, loosened, and the tumour came away in three weeks. Violent pains, nausea, vomiting, and threatening of peritonitis were produced; catamenia returned. Ligature the same as in the preceding case; recovered. (*Johnson, loc. cit.*, p. 142.)

CASE 96. *Inversion treated by ligature*—age 27, six years' standing. Application of ligature followed by pain and retention of urine. It was removed on the second day; reapplied after an interval of three weeks, and the tumour which consisted of the fundus of the uterus, and part of the Fallopian tubes came away on the nineteenth day. Ligature same as in the preceding case; recovered. (*Johnson, loc. cit.*, p. 142.)

CASE 97. *Inverted uterus successfully treated by ligature*—age 60; complained of a tumour which hung down from the external parts, between the thighs, attended by a discharge of mucus and pus, so profuse as to make her extremely weak. On examination, Mr. Clark found it to be the inverted uterus, the whole surface in a state of ulceration. The vagina was also partly inverted, the surface being partially in a state of ulceration. A ligature was applied round the upper part of the uterus, and tightened daily till the eleventh day, when it sloughed off. Very little pain was suffered, and the woman recovered. (*Denman's Mid.*, p. 593, Am. ed.)

CASE 98. *Inverted uterus removed by ligature; recovery*—age 24; uterus inverted by midwife making forcible traction on funis to extract placenta. Ten hours after, while sitting up in bed, the womb prolapsed, but was immediately returned, and this occurred for several weeks. Five years after she complained of constant aching in the back, headache, and nausea, with palpitation on slight exertion. The tumour was only felt in the vagina, when the patient strained. A ligature was passed round the neck of the tumour with Gooch's canula, but had to be loosened a few hours after from the severity of the symptoms. On the eighteenth day the neck of the tumour was half cut through, and on the twenty-eighth the remaining portion was divided with the bistoury. The discharge was acrid, highly offensive, and irritating. The tumour equalled in size the head of a five months' fœtus. Six weeks after the patient was in excellent health, slight weakness of the back alone remaining. (*A. H. McClintock, Dublin Journ. of Med. Sci.*, March, 1835, p. 42.)

CASE 99. *Partial inversion; uterus removed by ligature*—Mrs. D., age 37; miscarried, followed by hemorrhage, which, on the second day after, greatly increased, and a tumour, size of a man's fist, appeared at vulva. Fourteen days after delivery, a tumour "large as a child's head," came down externally. The next day it was discovered to be the inverted uterus. A ligature of shoemaker's twine was placed around the neck, and tightened daily, giving rise to great pain, numbness of right thigh, and distress in urination. Five days after the tumour, partly destroyed by sloughing, was cut away; patient recovered. (*Weber, Siebold's Journ.*, 1826, p. 406.)

CASE 100. *Complete inversion treated by ligature*—age 19; midwife dragged on the funis and inverted the uterus; placenta adherent; tumour, size of a child's head, soon became inflamed and gangrenous. Ligature was applied in a few days, followed by convulsions and painful draggings in the loins, followed by diarrhœa, general œdema, &c. Tumour separated on the seventeenth day; patient recovered. (*Faivre, Journ. de Méd.*, Aug. 1796, p. 201.)

CASE 101. *Inversion; uterus removed by ligature*—two years' standing. Pain following the application of the ligature was easily borne, and the nervous symptoms slight. The tumour came away on the nineteenth day. All hemorrhage ceased, and though the catamenia never returned, her health was not affected. Patient was alive forty-two years after the operation. (*Martin, Med.-Chir. Trans.*, vol. xxxv. p. 142.)

CASE 102. *Inversion treated by ligature*—six months' standing; first taken for a polypus. Ligature applied in July, 1835. The pain was so excessive that it was removed in an hour. The case was then recognized as one of inversion. A ligature of catgut was applied on the 4th of August, and not drawn very tightly. Severe pain followed, and recurred whenever it was tightened, which was relieved by opiates. Tumour came away on the 21st August, the seventeenth day. Catamenia replaced by sanguineous discharge, occurring monthly. (*Med.-Chir. Trans.*, vol. xxxv. p. 143.)

CASE 103. *Inversion treated by ligature*—æt. 54; ligature applied April 12th, 1804, and tightened on the 14th, 20th, 23d, and 26th. Tumour cut off on the 2d May, being quite dead; patient recovered. (*Loc. cit.*, p. 143.)

CASE 104. *Inversion treated by ligature*—three years' standing; ligature applied with success; patient recovered. (*Bouchet (Père), Lisfranc, Clin. Chir.*, vol. iii. p. 400.)

CASE 105. *Inverted uterus; ligature*—sixteen months' standing. Ligature applied with Hunter's needle. Uterus came away softened on the eleventh day; no bad symptoms; recovered. (*Blundell, Obst. Med.*, p. 808.)

CASE 106. *Inversion*—ligature was applied, but the patient being of an irritable constitution, it required to be frequently loosened. Tumour ultimately came away, and the patient recovered. (*Blundell, loc. cit.*, p. 808.)

CASE 107. *Inversion treated by ligature*—upwards of two years' standing. Ligature applied, and tightened every other day; so much pain each day as to require an opiate. Tumour came away on the fourteenth day. Pain and vomiting occurred throughout the treatment. Enjoyed good health for more than twenty years. (*Gooch, Dis. of Women*, p. 263.)

CASE 108. *Inversion; ligature*—age 31; one month's standing. Patient had been the subject of inversion in her first labour, two years before, after the use of ergot and the forceps. Now the inversion was complete, and the tumour protruded externally. Ligature applied February 12th, on the neck of the uterus; pain in the lower part of the abdomen and in the loins followed, which was relieved by opiates. The ligature was gradually tightened, and on the 18th February the tumour was flaccid, dark, and putrefying, and it was cut off below the ligature. On the 20th, the ligature was removed. Catamenia suppressed entirely; recovered. (*Crosse, Prov. Med. & Surg. Journ.*, vol. viii. p. 155.)

CASE 109. *Inversion cured by ligature*—two years' standing. Profuse hemorrhage at the monthly periods. The tumour was drawn down with a volsellum, and strong silk ligature applied with great firmness, with the half of a double canula, and an eyed steel staff. Tumour came away in nine days. Reaction from the time of operation very moderate. An occasional anodyne required, and the catheter was twice used. The entire body and

neck of the uterus were removed. Patient up in twenty days, and recovered. (*Greyson, Med. Gazette*, vol. xxxvii. p. 342.)

CASE 110. *Inversion; ligature*—Mrs. M., age 27. Confined in April of second child; placenta was delivered in pieces, but afterwards the parts were apparently *in situ*. Without any evidence of inversion, the patient had floodings to a greater or less extent till the end of August, when the doctor was called on account of a tumour in the vagina, which was represented to be of recent origin. He found an ovoid tumour low down in the vagina, griped firmly at its base by the os uteri; it was not particularly sensible to the touch. The patient feeble and anæmic. A ligature of whipcord was placed firmly round the base of the tumour, close to the os uteri, with the double canula. The tightening of the ligature caused some pain, which was followed by a fit of hysteria, and syncope of considerable duration. A similar paroxysm followed every tightening of the cord. Canula with the ligature and tumour came away on the twenty-first day after its application. The patient recovered, and had a slight sanguineous discharge very regularly at monthly periods from the vagina, which was always preceded by slight headache. The size of the uterine tumour removed, was that of a small orange, but more oval. (*H. Davies, Med.-Chir. Trans.*, vol. xxxv. p. 145.)

CASE 111. *Inversion; ten months' and a half standing*—ligature applied June 5th, 1840. Rigors occurred three or four hours after the operation, followed by symptoms of violent peritoneal inflammation. Distress was so great, and danger so urgent, that the ligature was removed twenty-four hours after its application. Nothing solid passed from the vagina. Health was restored, and catamenia appeared July 13th, without pain or expulsion of coagula, and did so regularly afterwards without hemorrhage. (*Ramsbotham, Principles and Pract. of Obst. Med. and Surg.*, p. 541.)

CASE 112. *Inversion*—Dubois relates a case where the uterus was ligated for excessive hemorrhage, and the severity of the symptoms necessitated the removal of the ligature before extirpation was effected. (*Boivin & Duges*, vol. i. p. 242.)

CASE 113. *Inverted uterus*—age 36; three months' standing; mistaken for polypus; ligature was applied, and the patient cried out with pain. It was removed the following day, but she nevertheless sank and died on the fifth day. (*Velpeau, Clin. Chir.*, vol. ii. p. 423.)

CASE 114. *Inverted uterus*—age 24; mistaken for polypus; placenta adherent to the tumour, which hung between the thighs. The young surgeon who mistook the nature of the case, removed the placenta and ligatured the tumour on the day of delivery, July 6th, 1824. This arrested the hemorrhage, and he then returned the mass into the vagina. The tumour came away on the 1st of August. Death on the 12th, from peritonitis. (*Boivin & Duges*, vol. i. p. 242.)

CASE 115. *Inverted uterus mistaken for polypus*—age 37; disease of twelve months' standing. The vagina occupied by a pediculated tumour the size of a large egg, the pedicle that of the forefinger. The disease pronounced to be polypus by three of the first accoucheurs in London, two of them present at the operation. The operator, less certain of its nature, proceeded to the removal of the tumour with caution; having drawn this out of the vagina, the pedicle was exposed, and incised layer by layer; immediately on its being ascertained that the case was one of inversion, the knife was laid aside, and a ligature applied tightly above the incision.

Peritonitis; death in four days. (*Arnott, Med.-Chir. Trans.*, vol. xxxv. p. 148.)

CASE 116. *Inversion treated by excision*—age 24; three years' standing. The tumour was removed with a knife. The finger entered the peritoneal cavity, and felt intestines distinctly. The operation was followed by acute pains, cramps, extreme restlessness, and faintings, which continued with great intensity for three days. Little hemorrhage. In less than a month the patient was well. The whole body of the uterus was removed; a portion of the neck only being left. (*Velpeau, Clin. Chir.*, vol. ii. p. 441.)

CASE 117. *Inversion treated by excision*—age 35; fifteen years' standing. Two strong threads first passed through the root of the tumour for the purpose of restraining hemorrhage, but they were not tied. The uterus was then drawn down, and the fundus and part of its body removed, and the vagina was plugged. Patient died of peritonitis in two days. (*Velpeau, Gaz. des Hôpitaux*, vol. vi. p. 413.)

CASE 118. *Inverted uterus treated by ligature and excision*—age 23; eighteen months' standing. The ligature was applied, which was followed by repeated and severe pains, each time relieved by laudanum. When tightened, the pain was again so violent that it was necessary to loosen it. This occurred several times; at length a fresh ligature was applied around that portion of the tumour not destroyed, and it was removed by the knife. Peritonitis was threatened, and there was swelling of the left leg and thigh. Patient was well in thirty days. Catamenia did not return. (*Laperre, Velpeau, Clin. Chir.*, vol. ii. p. 443.)

CASE 119. *Inversion treated by ligature and excision*—eleven months' standing; mistaken for a polypus. A ligature was applied, which was followed by great pain, severe vomiting, and watchfulness. Not having produced the desired effect, it was removed at the end of a fortnight. The hemorrhage, however, ceased, and the health greatly improved. One day, on some effort being made, a large tumour shot suddenly out of the vagina. A ligature was then placed above the indentation produced by the old one, and the tumour was excised below it. Patient was quite well in six weeks; no return of catamenia. (*Clarke, Edin. Med. & Surg. Journ.*, vol. ii. p. 419.)

CASE 120. *Complete inversion treated by ligature and excision*—M. G., age 37, five weeks' standing; uterus inverted and protruding externally. An armed seton needle was passed through the vagina, and each half of it was included in a ligature. Another ligature was then placed around the whole vagina above this. The vagina was thus divided, by which one inch and a half of its length, and the whole of the uterus, were removed. The lower ligature came away in nine days; the upper one remained on longer. In six weeks the patient was quite well. An appearance of the catamenia on the 24th of October, and once afterwards. (*Baxter, Med. & Phys. Journ.*, vol. xxv. p. 210, and *Med.-Chir. Trans.*, vol. xxxv.)

CASE 121. *Inversion treated by ligature and excision*—confined January 27, 1795; considerable flooding directly afterwards; a tumour discovered next day in the vagina. On the eighth day it was expelled, and the uterus was inverted with it. It was separated to the fundus to which it strongly adhered, but the uterus could not be replaced. A ligature was therefore passed round the neck of the uterus close to the os externum, and after waiting six hours the uterus was excised below it. No pain or uneasiness followed. Patient was out of bed in fourteen days, and well in a month. No catamenia afterwards. (*A. Hunter, Duncan's Med. Annals*, vol. iv. p. 366.)

CASE 122. *Complete inversion treated by ligature and excision*—age 41; six years' standing; quite external and ulcerated. First ligature of Indian twist applied 26th March, other ligatures afterwards applied at different times, of whipcord, catgut, and wire, as the previous ones had not answered the purpose. A circular slough formed, but there was much difficulty in completely destroying the tumour. Violent pain, spasms, and vomiting, were induced by the ligatures. During the treatment the ligature was withdrawn for a week, owing to the severity of the symptoms. On the 16th of December the tumour was excised, and profuse hemorrhage occurred from some arteries, which were tied. December 31, able to leave her lodgings. January 8, superintending her domestic affairs. In three weeks a protrusion of intestine occurred through the broken cicatrix, but from this she recovered. (*Moss. Lancet*, vol. i. p. 359, 1837.)

CASE 123. *Complete inversion, treated by ligature and excision*—age 26; eight months' standing. Ligature applied June 6th, 1840, and the tumour excised below it. The latter proceeding was not attended with much pain, and but little blood flowed. Two hours afterwards there was pain of the abdomen and threatening of syncope. Patient died June 9th. Autopsy revealed six or eight ounces of blood in the lower part of the peritoneal cavity, with some signs of inflammation. The portion included in the ligature had slipped through it. Eighty leeches were applied. Death was attributed to the loss of blood, and not to the peritonitis. (*Velpeau, Clin. Chir.*, vol. ii. p. 445.)

CASE 124. *Partial inversion, treated by ligature and excision; death*—age 26. Patient much blanched by constant hemorrhage. Tumour, the size of a large pear, attached by a pedicle one inch and a half in diameter to the posterior half of the os uteri. The os uteri was dilated, and was felt as a thin layer around the anterior half of the tumour. It was supposed to be a polypus. A ligature was applied on the 18th of March, 1850, and the operation was followed by pain; but no symptoms of peritonitis. The patient passed a good night, but on the following day sickness and insensibility came on; the latter symptoms continued, with only a slight interruption on the day preceding her death, which took place on the 25th of March. Post-mortem examination revealed injection of the lining membrane of the ventricles of the brain, softening of their surface, and the central portions of both hemispheres, with slight extravasation of blood into the softened substance. The fundus, body, and part of the neck of the uterus were inverted. The portion of the organ below the ligature was gangrenous, and had partly separated. (*C. H. Hawkins, Med.-Chir. Trans.*, vol. xxxv. p. 152.)

CASE 125. *Inversion; uterus mistaken for polypus; treated by ligature and excision; death*—three or four months' standing, supposed to be polypus. The first application of ligature gave no pain. Next day, on its being tightened, great pain followed, which was relieved by withdrawing the canula. On the third day the ligature was twisted; and on the fourth, the tumour was excised below it, as it was supposed that its vitality was destroyed. This was followed by great loss of vital power, but no vomiting or peritonitis. Death took place in twenty-four hours from the shock of the operation. (*Forbes, Med.-Chir. Trans.*, vol. xxxv. p. 152.)

CASE 126. *Fibrous tumour mistaken for inverted uterus*—Jan. 1, 1830, a middle-aged woman was brought nearly insensible into Middlesex Hospital, London, with a great globular tumour, covered with blood, hanging out of the vagina between the thighs; the patient appeared to suffer great pain when it was touched, and it presented precisely the appearance of an

inverted uterus, the only difference being that it was more dense and compressible. Dr. H. Ley, Sir Charles Bell, and other surgeons of eminence examined the patient, and pronounced it a case of inverted uterus, and repeated unsuccessful attempts were made to reduce it. She died the next day from loss of blood, exhaustion, and peritoneal inflammation. Autopsy demonstrated that what had been supposed to be an inverted uterus, was a great fibrous tumour, covered with the lining membrane of the uterus, and attached to the cervix by a very thick coat. (*Lee's Mid.*, p. 412.)

CASE 127. *Polypus mistaken for inverted uterus; death*—Mr. Borrett was called to a lady in labour with her sixth child; found a large fleshy tumour within the vagina. Anterior lip of os uteri easily felt, posterior was occupied and covered by an attachment of the tumour, after the os had sufficiently dilated and membranes burst, the hand was introduced and the child delivered by the feet. Placenta expelled spontaneously. Left the patient at 7 A. M. and returned at 3 P. M., found her in strong pains, abdomen flat, contracted uterus, easily felt above pubis; at 8 P. M. pains continuing violent; found, on examination, a soft round tumour in upper part of vagina. Pains continued violent all night; next morning, a large, fleshy, livid tumour had been forced out of the vagina. She sank gradually, and died the next morning. Mr. Rigby examined soon after death. and pronounced it a case of inverted uterus. Autopsy revealed the uterus contracted, the orifice dragged down to os externum by a tumour, which grew from it by a thick stalk; it was attached to the posterior part of the cervix uteri, of a livid colour, and weighed three pounds and fifteen ounces. (*Lee's Mid.*, p. 413, related also by Gooch.)

CASE 128. *Complete inversion*—caused by pulling on cord by midwife; placenta adherent; profuse hemorrhage. The placenta was separated soon after by Dr. Fifield, and the uterus reposited; stimulants administered, and the patient rallied somewhat. Died in a few hours. On examining, cords were found tied around the thighs to arrest the hemorrhage. The account given by the midwife was, that she made no examination, and suddenly a violent pain came on, the child was expelled and the womb protruded. (*Fifield, Bost. Med. and Surg. Journ.*, vol. lxii. p. 907.)

CASE 129. *Complete inversion; uterus removed by linear écrasement; recovery*—age 22; very anæmic; admitted into the Dublin Lying-in Hospital, September, 1858. For twelve months had suffered very profuse discharges of blood, always coming on at the menstrual periods, and lasting for fourteen or twenty-one days. A pediculated tumour, of pyriform shape, and of the size of a walnut, was found low in the vagina; the neck of this tumour was embraced, but not constricted by the thin os uteri; it was quite insensible to ordinary manipulation; its surface was smooth, dark pink, and discharged blood when scratched. The patient had been delivered by a rude country midwife fourteen months before; the cord was broken by pulling on it. The tumour being drawn down by a volsellum, the os was entirely effaced, the vagina becoming quite continuous with the neck of the tumour. This led to the conclusion that the case was one of inverted uterus. Several attempts were made under chloroform, to effect reinversion, without success. On the 20th of October a silk ligature was passed around the neck of the uterus by Gooch's canula; this caused much pain, and some vomiting. In the evening the ligature was tightened, and again on the next day. After forty-eight hours the *écraseur* was applied below the ligature, the uterus having been drawn down by a volsellum. The chain was worked very slowly, the uterus being severed in eight minutes.

Pain attended the operation, and febrile excitement followed; opium was given, and turpentine epithems applied. In a fortnight the patient was allowed to get up. Six weeks afterwards the os uteri presented almost the ordinary appearance. A catheter passed about one-third of an inch up the cervical canal. On 27th of Dec. patient quite well, but had not menstruated. (*Dr. McClintock, Brit. and For. Med. Review*, April, 1859.)

CASE 130. *Complete inversion, treated by ligature*—age 22; second child; caused by removal of placenta; great hemorrhage. Inversion discovered, but no immediate attempts at reduction made. Great flow of blood at menstrual periods; perfectly bloodless and emaciated. None of the ordinary symptoms of anæmia present. Eighteen months after Dr. W. Channing made persevering attempts at reduction, but failed. Etherization not practised. Walls of abdomen thick, tense, and unyielding. The attempt produced violent resistance, and profuse hemorrhage. State of the external organs made the passage of the hand into the vagina impossible, or difficult to reach the womb. The ligature was accordingly applied on the 10th of June, womb came away on the 29th; patient did well. (*W. Channing, Bost. Med. and Surg. Journ.*, July 7, 1859.)

CASE 131. *Complete inversion; unreduced; death*—Mrs. ——, attended by a regular physician; labour severe; presentation natural; strong uterine contractions at the close; after-birth suddenly expelled; great hemorrhage; partial inversion followed, but was not detected by the physician. After the flow had ceased, on rising to pass water, felt something heavy and large pass the external organs, accompanied by great hemorrhage and pain. The uterus was restored to the vagina; occasional hemorrhage, very profuse, occurred; attempts to reduce the womb failed; palliatives were employed, but the patient became more reduced and anæmic, and died several months after the occurrence of the accident. (*W. Channing, Bost. Med. and Surg. Journ.*, vol. xl. p. 230.)

CASE 132. *Complete inversion; reduced; recovery*—Mrs. A., natural labour; placenta adherent, was taken away by force, being torn in three pieces, during which the uterus was inverted. Great hemorrhage followed, and severe pain, and prostration. The uterus was returned to the vagina or pelvis, the physician supposing he had reposited it; hemorrhage continued. Dr. C. was called in, "found a bowl-like cavity above the pubis," neck of the womb surrounded by a firm, fleshy ring, exquisitely tender; womb in the vagina. Firm pressure was made upon the womb, by grasping it forcibly in the hand, afterwards pressure upwards, the tumour receded, at first slowly, and as it passed the os, suddenly, by a bound. The patient had a good convalescence. (*W. Channing, ibid.*, p. 231.)

CASE 133. *Complete inversion*—Mrs. B., regular labour; last pains very violent; the child and after-birth rapidly expelled, and the womb inverted, all by the same continuous effort. The attending physician returned the uterus within the vagina. Dr. C. was sent for, who at once reduced it in the usual manner. The womb was entirely relaxed; no contraction took place after the last pain. (*W. Channing, ibid.*, p. 231.)

CASE 134. *Complete inversion; womb removed by ligature; recovery*—Mrs. C., age 24, natural labour; placenta adherent, was forcibly removed in pieces, with great pain, and much flooding. Inversion doubtless occurred at this time; occasional hemorrhages, great exhaustion, anæmia, &c., followed. No examination seems to have been made by her attending physician, who also had attended her in labour, and the inversion was not detected till one year afterward, when Dr. C. was called in. The uterus

was ligated, and came away in due time; recovered, but no menstruation afterwards. (*W. Channing, ibid.*, p. 232.)

CASE 135. *Complete inversion*—Mrs. ——, age 22, natural labour, placenta adherent, and removed by force, followed by great pain and hemorrhage. For a year troubled with floodings, and the other usual symptoms of inversion. Another physician was called in, and detected inversion, hitherto undiscovered. Dr. Channing was now called; found patient greatly prostrated, and sinking rapidly. Applied a ligature to the womb; this was gradually tightened as the patient could bear it. Ligature and uterus came away on the thirtieth day. Diameter of uterine mass two and a half inches, very solid; good recovery. (*W. Channing, ibid.*, p. 232.)

CASE 136. *Complete inversion; ligature; death*—Mrs. ——, age 35, labour natural; inversion somehow occurred, but was not discovered by the attending physician. Flooding, exhaustion, emaciation, pain, &c., followed. At the end of one year, Dr. C. was called in, and detected inversion. Ligature applied; tightened daily; at about the tenth day she was moved for the purpose of changing her dress and bedding; patient fainted, and became cold, reaction could not be brought on, and on the third day after she died. Examination showed the ligature held by a mere thread of fibre; separation of the womb was perfect, and not the smallest evidence that the ligature had caused disease. (*W. Channing, ibid.*, p. 233.)

"Four other cases of inverted womb," says Dr. C., "have occurred in my neighbourhood, two of which I heard of, which were treated by ligature, by other physicians, and successfully. They present one fact, in which they were related to many of the cases which have come under my notice; they were not diagnosticated at the time when inversion happened, and their symptoms were, of course, ascribed to something else. In two of the four cases above referred to, inversion was taken for polypus. The ligature was applied, the pain of tightening it in both cases far exceeding that which is ever felt in polypus treatment (some slight and temporary pain being now and then felt in the latter). The tumours in both cases were regarded as polypus, until being presented by the operators at meetings of medical societies, they were found to be *inverted uteri*. The patients recovered." (*Loc. cit.*, p. 231.) Another chronic case of inversion is also reported by Dr. C. as having been seen by him, but the particulars are not given. We are, however, left to infer that the inversion had not been detected by her former physician. (*Ibid.*, p. 229.)

CASE 137. *Spontaneous inversion and gradual replacement of the uterus by mechanical means; recovery*—primipara, not discovered till the third day after delivery; at what time, or in what manner it took place, was not clearly known. The uterus was protruded nearly an inch from the external orifice of the vagina, and its mouth carried high up; orifice completely contracted. Efforts to replace it caused great pain, and were unsuccessful; frequent syncope, pulse thready, and her countenance deathlike. Subsequent attempts at replacement, caused syncope and convulsions, and were useless; urine had to be drawn off by the catheter; repeated hemorrhages; a staff eight inches long was now made, with a knob of the size and form of a hen's egg, at one extremity, the fundus uteri, having been depressed with the end of the thumb as far back as possible into the cavity, the knob of the staff was then introduced into the depression, and the other end fixed by a moderately tight T bandage; after this, the patient had little pain, and all bleeding ceased. On the sixth day after delivery, and the third after the introduction of the staff, it was withdrawn,

and the vagina cleansed. The fundus uteri had already been forced two inches upwards; the same treatment was continued, and the next day the uterus was found completely reduced. The patient had a favourable recovery. (*Borggreve, Medicinische Zeitung*, June 9, 1841; *Brit. and For. Med. Rev.*, April, 1842.)

CASE 138. *Complete inversion, unreduced, attended with trifling inconvenience.*—Lisfranc relates a case of a woman, aged 70, while convalescent from bronchitis, was permitted to remain in La Pitié; she exercised in the court of the hospital, the greater part of the day; her appetite and digestion were excellent; she experienced no pain in the pelvis, and had no vaginal discharge. She afterwards died from a second attack of bronchitis. On dissection, the uterus was found completely inverted. (*Lisfranc, Clin. Surg.*, vol. iii. p. 393.)

CASE 139. *Inversion of uterus; ablation of womb; death*—labour natural; placenta adherent, and broken by pulling at the funis; great hemorrhage in consequence; the attendant left. In fifty hours was sent for, no attempt having been made to relieve the patient, and on his attention being called to something hanging from her, he used considerable exertion, giving great pain, and saying there was a false conception, proceeded with a pair of scissors to remove it, during which the patient fainted and died. The parts removed were preserved, and proved to be the uterus, right ovarium and tube, part of the vagina, part of the left Fallopian tube, the greatest part of the rectum, cæcum, appendix vermiformis, the ascending portion of the colon, the right side of the transverse arch, all the ileum, and inferior part of the jejunum, altogether many feet of the small intestine, with part of the mesentery, and the greater part of the omentum majus, which had been torn away from the right side of the large curvature of the stomach, &c. The practitioner was tried for murder and acquitted. (*John Boy's Ramsbotham's Process of Parturition*, Am. ed., p. 616.)

CASE 140. *Inversion remaining undetected for twenty-five years.*—March, 1858, I was called to see Mrs. J. D., age 45, who was suffering from severe occasional hemorrhages, and had been for twenty-five years, which had produced excessive anæmia, debility, and suffering, for the whole of that long period. Her sickness and ailments dated from the birth of her first and only child. On examination, I found a tumour of a conical shape projecting into the vagina, which I supposed was a polypus, or fibroid tumour, but a second examination satisfied me that it was the uterus inverted, inasmuch as the os uteri could be felt forming a ring at the upper part of the vagina, and embracing the root of the tumour, without adhering to it, the finger passing between the ring and the root of the tumour, but soon checked by a circular *cul-de-sac*. On explaining the nature of the case to the patient, a very intelligent woman, she expressed her belief that the accident occurred at the period of the birth of her only child, twenty-five years ago. She represented that her labour was natural but tedious, that the after-birth not coming away, the doctor in attendance, a regular physician, removed it, using considerable violence, that it was followed by severe flooding and faintings, which recurred at intervals, and kept her weak and miserable; that she had never since enjoyed comfortable health, or been capable of doing much work about the house, being subject every two or three weeks to great loss of blood, &c.; that she had employed several physicians, but none of them proposed a vaginal examination, nor had discovered the nature of her malady. I proposed to remove the uterus by ligature, to which the patient gave consent; but as she had reached that

period when the menstrual flow generally ceases, it was suggested to wait a few months, as her life was in no immediate danger, and see whether it might not make a favourable change in the state of her general health. In a few months the hemorrhage entirely ceased, and for the last year she has enjoyed a very comfortable state of health, her anæmic symptoms and general debility have also disappeared; she is able to take a good deal of exercise, and, in short, so much is she improved every way, that the idea of an operation has been abandoned. (*C. A. Lee.*)

CASE 141. *Partial inversion; unreduced; feeble health*—primipara; seen by Dr. Robert Lee fourteen hours after the accident, who states that it was the only case of inverted uterus he had seen in London. Labour easy; *umbilical cord very short and twisted firmly round the neck;* placenta spontaneously expelled in half an hour after delivery, with the inverted uterus attached to it. Placenta was detached, and efforts made to reduce the womb, which proved unsuccessful, owing to the firm contraction of the neck. Hemorrhage not very profuse; uterus felt to the touch like a soft cricket ball. Patient suffered ever after from pain, profuse menorrhagia, and leucorrhœa. (*Robert Lee's Midwifery*, Am. ed., p. 416.)

CASE 142. *Reduction of an inverted uterus of fifteen years' duration; death*—patient 17 years of age when inversion occurred, in labour with her second child. Fourteen days after the accident she was seen by Dr. White, and inversio uteri was diagnosticated. Has since been subject to repeated hemorrhages and constant leucorrhœa, and become very much prostrated and anæmic. Reduction was effected fifteen years after by Dr. White, in about fifty minutes. Chloroform was administered, and the difficulty of reduction is stated to have been little if any greater than in the case of six months' standing (see Case 85). Died sixteen days after of peritonitis. Post-mortem examination, six hours after death, disclosed considerable liquid effusion (from two to three pints), turbid, and containing flocculi of lymph in the peritoneal cavity, and lymph between the intestinal convolutions. The uterus was normal in size; the os presented nothing abnormal; no trace of any laceration anywhere; its structure and inner surface appeared healthy, although upon its exterior surface were a few patches of soft, loosely-adherent lymph; *ovaries* normal in size and appearance. (*J. P. White, Am. Journ. Med. Sci.*, July, 1858, p. 13.)

CASE 143. *Spontaneous complete inversion; reposited; recovery.*—Dr. George J. Fisher, of Sing Sing, has kindly communicated to me the following interesting case of spontaneous inversion: "Mrs. E. P. B., an American lady, aged about 26 years, was taken in labour with her second child, Feb. 9th, 1855. The labour, if at all remarkable, was characterized by the suddenness and violence with which the uterine contractions returned, lasting but a few seconds, and relieved by long intervals of perfect freedom from pain. The patient was cheerful and hopeful in the intervals of the paroxysms. Six hours from the commencement of the labour she was delivered of a male child, well formed, weighing about eight pounds. The patient and nurse informed me that in her first confinement the placenta was adherent, requiring the introduction of the hand to separate it from the uterine connections. Having learned this history of her previous delivery, I avoided the slightest traction on the cord. I remained by the side of the patient for nearly half an hour before the first contraction occurred; during which time I held the umbilical cord loosely in one hand, laying the other over the lower part of the abdomen, the patient in the mean time conversing freely about her previous confinement, and the probabilities of

being subjected to the same operation for the removal of the placenta. Without the slightest premonition, she was suddenly and violently seized with one of those paroxysms of uterine contractions, accompanied with a shriek much louder than when the child was expelled. She instantly fainted, became cold, pulseless, and presented every appearance of immediate dissolution. At the moment of this fearful pain, I felt the placenta come down in contact with my hand. I attempted to remove it, but found that it was attached. I discovered to my great astonishment that the womb was inverted, and that the placenta was adhering by several square inches. After gently separating the placenta from the fundus of the uterus, which had been expelled beyond the labia pudendi, an effort was made to compress and return the womb; but as the patient's vitality had been so much depressed by the shock of the accident, I feared to persevere until measures were taken to rally the energies of the nervous and circulatory systems. Therefore the immediate restoration of the organ was abandoned; two hours were expended in efforts of this kind, by the liberal use of general and diffusive stimulants, artificial heat, &c. At the end of this time an effort was made, which soon resulted in restoring the womb, in *situ naturale;* very little hemorrhage occurred during the time. The patient remained greatly prostrated for many days A highly putrescent vaginal discharge continued for nearly two weeks, accompanied by hypogastric tenderness, chills, and a low grade of irritative or puerperal fever. The patient had a lingering convalescence, and has since suffered from uterine disease, characterized by purulent discharge from the uterine cavity. Nearly three years elapsed before she was able to be generally about house. She was subjected to a variety of treatment, such as touching with solid nitrate of silver, intra-uterine injections of a solution of nitrate of silver, which I now regard as extremely dangerous treatment. The purulent discharge ceased under the use of Dr. B. Fordyce Barker's uterine ointment, composed of crystals of nitrate of silver, extract of belladonna, and spermaceti. This I introduced into the uterine cavity with an improved ointment tube, having a piston, &c. Under this treatment every five or six days, through several weeks, she is quite restored to health. This ointment is very kindly borne by the uterine surface, and is the best alterative I know of."

CASE 144. *Spontaneous partial inversion; reduced three weeks after delivery; recovery.*—For the history of the following case of inversion I am indebted to my friend, Prof. J. P. White, M. D., of Buffalo. "This case," he remarks in a recent letter, "occurred in the practice of Dr. Mackay, of this city. It was incomplete, the fundus of the uterus protruding through the neck an inch or more. This probably was spontaneous; it certainly was not suspected until three weeks after labour, and seemed the result of violent, bearing-down pains, which were promoted, if not induced by imprudent exertions on the part of the patient. I may remark that this last case, obscure as the diagnosis certainly was, being determined only after an intelligent vaginal examination, is the only one in which the nature of the accident had been suspected by the physician or midwife having the patient in charge when the accident occurred. Dr. M. called upon me informing me of the condition of the parts, and requesting me to make the reduction. I immediately accompanied him to the residence of the patient, when I found, as he had described, a partial inversion, the os embracing firmly the body of the organ, protruding an inch, or an inch and one-fourth. Holding the fundus between the fingers of the right hand, I introduced into the vagina and brought the end of Simpson's sound covered with a rag, to

enlarge it somewhat, to bear upon the fundus, making pressure with the left hand upon the handle of the instrument external to the female organs. A few minutes of gentle pressure sufficed for its restoration, perfect quietude was then enjoined, and the woman made a perfect recovery. It is worthy of remark, that in this instance, as well as the others, the mechanism of reduction consisted in folding the uterus upon itself, the neck passing down over the body and then over the fundus of the organ, without being at all promoted by the dimpling of the fundus, as some authors contend."

CASE 145. *Complete inversion caused by midwife pulling on the cord.*—Prof. J. P. White writes to us: "My fifth case occurred in the practice of a midwife, terrific flooding succeeded, when I was sent for, and immediately reduced the inversion. The uterus was completely inverted, lying between the mother's thighs, the placenta being detached by the midwife, after inversion. She also pulled *forcibly* upon the 'tumour,' but could not 'get it away as the woman fainted, and she got scared,' and sent for me."

CASE 146. *A case of inversio-uteri supposed to be spontaneous; reposited at about the end of four months; recovery*—Mrs. S., aged 20; primipara. When in labour, April 9th, 1858, at 4 P. M., in addition to regular labour pains, complained of severe pain in right side, between fourth and fifth ribs; delivered at 7 P. M.; no unusual pains except that in the side; cord rather short, and might have pulled on the placenta, which came away at the first pain without any assistance; some flooding, but not enough to produce alarm or syncope; uterine tumour was felt above the pubis. Cloths wet in cold water were applied to abdomen. Severe pain in right side continued for several hours; after-pains about as usual. Pain in side pretty much subsided on fourth day; no fever, pain in back, or tenderness of bowels; pulse more frequent than natural; no secretion of milk. On the 19th, visits discontinued; patient supposed to be doing well. On 7th May, was called again, eighteen days after discontinuance of visits; found she had been flooding two or three days; had been up and out to her meals; sung, played on piano, &c.; had no pain in back, or soreness of bowels; hemorrhage deemed to be the only trouble. From the 7th to 18th of May, cold applications, astringent injections, &c., were used to check the flooding, without much success, when a digital examination disclosed inversion of the womb. Dr. N. S. Davis was called in consultation, and it was concluded "that as the inversion was complete, and the patient very nervous and excitable, it would be safest and best to encourage her all we could, and not then try to return it; for if we undertook to do it, in the condition she then was, we should surely fail in our attempt, and it might endanger inflammation. We therefore advised astringent injections, with nutritious diet, and encouraged her with the hope of a spontaneus replacement, as there were cases of the kind on record well authenticated; intending all the time to watch the case and reduce it when she should be in a proper condition. Visited her daily almost, till the 14th July, when she went east." The uterus was reposited successfully, a few days after the above date, by Dr. H. A. Potter, of Geneva. (*A. Fisher, Chicago Med. Journ.*, Oct. 1858, p. 510.)

Remarks.—The above case is remarkable, according to the report, for the absence of any prominent symptoms indicating inversion up to the 7th of May, nearly a month after delivery. Still I think there can be little doubt that partial inversion, at least, existed from the time of delivery, which became complete, about the time the doctor was called in on the 7th May. As no examination had been made from the time of the delivery of the placenta, it would seem to have been highly proper to have exa-

mined at this time, to have discovered the cause of the hemorrhage; but this was neglected for eleven days longer, during which the hemorrhage continued. Had the rule of Denman been followed, viz., "to examine in all cases where hemorrhage occurs subsequent to delivery, to discover whether inversion may not be present," the accident would have been earlier discovered, and probably reposition effected without difficulty. The case, in this point of view, is a very instructive one.

CASE 147. *Complete spontaneous inversion*—Mrs. A.; no physician or midwife in attendance. Dr. F. found patient in convulsions, lying on her back, bathed in a cold perspiration; pulse almost imperceptible; thought to be dying. Adherent placenta and uterus found between her thighs. The uterine tumour, nearly as large as a child's head, had passed completely through the vagina. The tumour was compressed between both hands, till its size was sufficiently reduced, when it was reposited without difficulty, and the patient did well. (*A. Fisher, loc. cit.*, p. 514.)

CASE 148. *Complete inversion*—placenta adherent; womb became inverted with the same pain that delivered the child; no pain; very little hemorrhage. The placenta was separated, and the uterus reposited; cord about six inches in length; placenta very small; recovered. (*Robert Smith, Month. Journ. of Med. Sci.*, May, 1846.)

Summary of the assigned Causes of Inversion of the Womb in the 148 *Cases above reported.*—In analyzing the above cases, it is to be regretted that many of the original reports are so imperfect, that we are often left to surmise the cause of the accident. This is what might, perhaps, be expected; for, if it is an accident—as many writers allege—which may, with proper care and skill, always be prevented, then it is not to be presumed that the practitioner who places much value on his reputation, will be forward to acknowledge that so serious an accident has resulted from his ignorance or neglect. Hence, also, we may look, not unfrequently, for cases of *spontaneous inversion*—cases in which the womb, without cause, provocation, or premonition, turned itself inside out, all at once, some days, weeks, or months, after delivery, on going to stool, straining, laughing, crying, singing, walking, or other kinds of exertion, or no exertion at all. And we are asked, in all seriousness, to wonder at such strange anomalies, and ask why nature should enact such freaks, without special object?

Accordingly, we find that of the 148 cases, of which an abstract is above given, the cause is assigned in only 62 cases, and of these 39 are stated *to have been attended by midwives*, a large majority of them in Europe. In 39 cases, moreover, we are expressly informed that the inversion occurred *from pulling on the cord*, viz., Cases 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 16, 17, 18, 19, 21, 23, 25, 30, 31, 33, 45, 48, 50, 53, 56, 59, 60, 62, 63, 64, 66, 67, 83, 85, 89, 98, 101, 129, and in 7 *from attempts to deliver the placenta*, viz., Cases 73, 88, 111, 131, 133, 135, 136. In 25 cases *the delivery was very rapid*, and we are led to infer that this was generally regarded as connected, as predisposing cause, with the event; in most of these cases, it was unquestionably so. In several instances, we are informed that the pains grew very strong towards the close, and that at last, with a violent

throe, the adherent placenta and inverted uterus simultaneously accompanied the expulsion of the child. (See Case 148,) In 20 cases the labour was *natural, but slow*, and in a majority of them, at least, there were symptoms of *uterine exhaustion*, or *adynamia uteri*, where inversion doubtless occurred from, or was favoured by the extreme relaxation, or want of contractile power in the organ. In 10 cases, the *cord was very short*, and in several twisted round the neck. 2 were *forceps cases*, 1 of *twins*, and 23 are stated to have been *primipara*, viz., Cases 9, 16, 19, 20, 29, 30, 33, 49, 55, 59, 66, 68, 80, 81, 86, 87, 100, 139. It cannot be doubted, that it may be legitimately inferred from the cases reported, that by far the most frequent cause of inversion of the womb, is *traction on the cord, and attempts to extract the placenta*, for we shall soon have occasion to observe that the placenta was adherent in the great majority of cases. So that we may adopt the opinion of Dr. Robert Lee, of London (*Lectures on the Theory and Practice of Midwifery*, Am. ed. p. 410), as very nearly correct, when he says: "*Inversion of the uterus is frequently, if not invariably, the consequence of pulling at the umbilical cord, to extract the placenta* immediately after the birth of the child, before the uterus has had time to contract, and while the placenta is still adherent. It is also stated to have happened when the child has been allowed to be rapidly expelled, when the umbilical cord has surrounded the fœtus, or been unusually short."

Spontaneous.—*Spontaneous inversion* is usually understood to apply to cases which have occurred without interference or assistance on the part of the practitioner. *Twenty-three* such cases are enumerated in the 142 above given. (See Cases 37, 38, 40, 41, 42, 43, 44, 47, 50, 55, 57, 72, 76, 78, 79, 82, 132, 140, 143, 144, 146, 147, 148.)

Complete or Partial Inversion.—In *one hundred and eight* cases, the inversion is represented as *complete*, and in 18 as *partial*. By complete inversion is understood the passing of the body and fundus of the womb through the os uteri; it is not necessary that they should escape the os externum, and appear outside of the labia, for they may be concealed wholly within the vagina; but the neck should be inverted entirely to the os. *Partial inversion* is understood to be, where neither the body nor fundus has entirely escaped through the os uteri; and it may exist in different degrees, as simple depression or indentation; or, where the fundus has reached, perhaps, the centre of the uterine cavity; or, fallen to the mouth of the uterus, and is prevented from passing by the contraction of the os, or from want of sufficient propelling power; or, lastly, partly passed through the os, the body and fundus, perhaps, being strangulated by the neck of the uterus contracting forcibly upon the protruded part. That all these different grades or degrees of inversion must date from a preceding labour, if not owing to the dragging weight of a polypus, is almost self-evident; for it is not to be rationally supposed that such a process of

involution could commence without a cause, and no one can believe that after the placenta has been separated and the uterus normally contracted, that such event would be likely to happen. But we shall return to this point again presently.

Placenta Adherent.—This is stated to have occurred in 67 out of the 142 cases, viz., in Cases 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 21, 26, 29, 31, 32, 33, 36, 37, 39, 40, 42, 43, 44, 48, 50, 51, 52, 53, 55, 59, 60, 63, 64, 66, 67, 70, 71, 72, 73, 74, 78, 81, 82, 86, 87, 88, 89, 101, 116, 129, 132, 133, 135, 136, 139, 140, 145, 147, 148. If we exclude the cases imperfectly reported, and only for the purpose of showing the results of extirpation, ligature, or excision, of which there are 40 cases, from our analysis, as not furnishing the necessary data, we have 67 out of 102 cases, in which it is stated that the placenta was adherent, and it is but fair to infer that such was the case in many of the others. This has a most important bearing on the causation of the accident, and sustains the conclusions already arrived at, regarding the influence of traction on the cord, or attempts at removing the after-birth.

Spontaneous Delivery of the Placenta.—In 14 cases of the 102, pretty fully reported, the placenta is stated to have come away spontaneously, or without manual assistance, viz., in Cases 17, 38, 47 (with slight assistance), 50, 58, 68, 76, 79, 129, 132, 134, 141, 143, 146, 147, 148. Several of these were associated with cases of rapid delivery, or where the pains were very strong and urgent towards the close. In 20 cases the labour is simply represented as *natural.*

Hemorrhage.—*Severe and copious hemorrhage* occurred in 49 out of 102 cases, viz., Cases 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 25, 26, 29, 30, 31, 33, 36, 37, 38, 40, 44, 46, 49, 55, 56, 60, 62, 70, 71, 72, 74, 76, 82, 83, 84, 85, 86, 87, 88, 89, 100, 116, 129, 131, 132, 133, 135, 137, 139, 140, 142, 145, 147. *Moderate hemorrhage* occurred in 17 cases, viz., 14, 15, 16, 18, 19, 21, 23, 39, 47, 50, 51, 72, 79, 141, 143, 146, 148. There was an *absence of hemorrhage*, except on removal of the placenta, in eleven cases, viz., 33, 36, 37, 38, 40, 42, 43, 52, 57, 78, 82.

Inverted before Seen or Recognized.

Case 10	36 hours.	Case 15	10 days.	Case 21	8 months.	Case 12	2 yrs.
" 31	36 "	" 17	4 "	" 35	3 "	" 77	20 "
" 36	2 "	" 22	2 "	" 85	6 "	" 80	12 "
" 38	48 "	" 47	21 "	" 67	Several "	" 135	1 "
" 41	24 "	" 68	3 "	" 146	3 months.	" 136	1 "
" 79	48 "	" 69	16 "			" 137	1 "
						" 140	25 "

Case 27 had remained undetected several weeks; Case 66 three weeks; and Case 144 three weeks.

It seems hardly credible that in so many cases the nature of the malady

should have remained undetected for so long a time. It would seem that in very few was any vaginal examination made, although symptoms were present pointing to the probable existence of inversion. In the forty-second case, which came under my own observation and treatment, although the patient had been suffering for twenty-five years in consequence of the accident, and had been under the care of several practitioners of considerable repute, its nature had never been discovered, nor probably suspected, as no examination had been made for that purpose. The rule laid down by Denman, and so strongly insisted on by him, should never be disregarded, viz., that when, after the delivery of the placenta, if hemorrhage still continues, recurring at short intervals, attended or not with symptoms of nervous shock and great debility, a vaginal examination should at once be made, in order to determine whether inversion exists or not. Were this rule to be invariably observed, it would be the means not only of preventing much suffering, but of preserving many valuable lives.

Inverted Uterus mistaken for Polypus.—That the diagnosis of inverted uterus is not always easy, is evident from the fact that in seven cases it was mistaken for polypus, viz., in 95, 103, 114, 115, 116, 120, and 127. In Case 95, so much pain was caused by the ligature, that it gave rise to the suspicion that it was the uterus itself that was ligated, which turned out to be correct, as the organ came away with the ligature at the end of three weeks. The same occurred in Case 103, where the uterine tumour came away on the 21st day. Velpeau made the same mistake, which was corrected in a similar manner, although the patient died on the fifth day after the ligature was applied. (See Case 114.) Case 115 is interesting, from the fact that a recently inverted uterus, with the placenta still adherent, was mistaken by the attending accoucheur for a polypus, the placenta removed, and the uterus ligated, immediately after delivery, and returned within the vagina, July 6th. On the 1st of August the uterine tumour came away, and death followed on the 12th from peritonitis.

Polypus mistaken for Inverted Uterus.—Two such cases are included in our list, Nos. 128 and 129. The first is remarkable from the fact that the false diagnosis was made by Dr. Hugh Ley, and concurred in by Sir Charles Bell; while in the second, the same mistake was made by the distinguished writer on midwifery, Dr. Rigby. In this case the placenta had been separated spontaneously, and there was no hemorrhage.

Inversion caused by Polypus.—Several such cases have been recorded; we have given three, Nos. 34, 61, 90, and referred to several others. In the first, the tumour was forced into the vagina by the act of vomiting, where it remained three months before it appeared externally. In Case 61, a fibrous tumour had been excised a year previous; another formed, and by its weight inverted the womb. The sensibility or insensibility of the tumour would seem to be the most reliable means of diagnosis. It would appear that little difficulty could occur, where an examination is made soon

after the accident, and yet one such case is given. Our chief reliance in forming a diagnosis must, after all, be the history of the case, and the sensibility of the tumour. We are told by Sir C. M. Clarke, that in a case of polypus the os uteri encircles the tumour, and that in inversion of the womb the os uteri forms a part of the tumour itself. But in the chronic case of twenty-five years' standing which we have related (Case 142), the os uteri certainly encircled the tumour in the form of an elastic ring, or raised belt; we can readily imagine, however, that cases might occur where it would be very difficult to distinguish a polypus from an inverted uterus.

Uterus reposited.—The number of cases of *reposition of the uterus* is 51 out of 148 cases, viz., Cases 1, 7, 8, 9, 15, 18, 19, 23, 25, 28, 29, 32, 33, 36, 37, 39, 40, 41, 42, 43, 49, 53, 56, 57, 58, 64, 69, 70, 75, 74, 76, 78, 79, 80, 81, 82, 83, 84, 88, 86, 129, 132, 133, 137, 142, 143, 144, 145, 146, 147, 148.

The following table gives the results :—

Summary of 52 Cases of Reposition of the Uterus.

No.	Operator.	Age.	Time after the accident.	Result.
1	Robert Lee		Half an hour	Died from flooding.
7	C. D. Meigs		One hour	Recovered.
8	Betton		One hour	Died in one hour.
9	Denman		A few minutes	Recovered.
15	Teallier		Two days	Recovered.
18	Dewees		Half a minute	Recovered.
19	Dewees		Three hours	Recovered.
23	Lucas		Half an hour	Died in one hour.
25	Ramsbotham		Half an hour	Died in one hour.
28	Charles White		Half an hour	Recovered.
29	D. P. Bissell	24	Immediately	Recovered.
32	Williams		Immediately	Recovered.
33	Radford		Fifteen minutes	Recovered.
36	Radford		Two hours	Recovered.
37	Mann		Ten minutes	Recovered.
38	Radford		Supposed spontaneous, six months after	Recovered.
39	Radford		Immediately	Recovered.
40	Radford		Immediately	Recovered.
41	Radford		Twenty-four hours	Recovered.
42	Ashwell		Forty-five minutes	Recovered.
43	Ashwell		One hour	Recovered.
49	Smart		Three weeks	Recovered.
53	J. P. Gazzam		Ten days	Recovered.
56	Skae		Eleven days	Recovered.
57	E. Fisher	35	Immediately	Recovered.
58	Snackenbergh	27	Immediately	Recovered.
59	Coley		Seven years	Recovery.
69	G. Mendenhall	24	Sixteen days	Recovery.
70	Charles West	23	Three months	Recovery.
74	Burrows	24	One hour	Died in twenty minutes.
75	Burrows		Immediately	Recovered.
76	T. R. Mitchell		Immediately	Recovered.
78	Geo. Johnston	19	Immediately	Recovered.

Summary of 52 Cases of Reposition of the Uterus—continued.

No.	Operator.	Age.	Time after the accident.	Result.
79	E. P. Bennet		Thirty hours	Recovered.
80	Tyler Smith	18	Twelve years	Recovered.
81	Borham	25	One hour	Recovered.
82	Leonard	34	Immediately	Recovered.
83	Ellis		Immediately	Recovered.
84	J. A. Brady	23	Immediately	Recovered.
85	J. P. White	19	Six months	Died on third day.
86	J. P. White	30	Six months	Recovered.
87	J. C. Crosse	29	Immediately	Recovered.
132	W. Channing		In a few hours	Recovered.
133	W. Channing		Soon after	Recovered.
137	Borggreve		Third day	Recovered.
142	J. P. White	17	Fifteen years	Death 16 days after operation.
143	Geo. J. Fisher		Immediately	Recovered.
144	J. P. White		Three weeks	Recovered.
145	J. P. White		Immediately	Recovered.
146	H. A. Potter	20	Four months	Recovered.
147	A. Fisher		Immediately	Recovered.
148	Robert Smith		Immediately	Recovered.

Thus it appears that of the 52 cases in which the uterus was reposited, a fatal result followed in 7 only, one in 7.3; in two, from peritoneal inflammation, and the rest from hemorrhage and exhaustion. The latest period in which reduction of the womb was accomplished, was Case 144, reported by Prof. J. P. White, where fifteen years had elapsed since the occurrence of the inversion. The fatal result in this instance from peritonitis was regarded by him and his associates as accidental, and would not deter him from a similar attempt in a case of still longer standing. Although the operation would seem to be extremely hazardous so long a period after the occurrence of the accident, yet the success of Tyler Smith, in a case of twelve years' standing (Case 80), of Dr. Coley in one of seven years, and one of Charles West of three months' standing, will certainly justify the operation in cases perhaps still more chronic than this of Dr. White. It may, however, yet be found that extirpation of the womb by ligature is safer to the patient; but far more extensive statistics than we have at present are necessary to establish any rules regarding these operations.

Spontaneous Reduction.—Three cases in our list are represented as those of spontaneous reduction, viz: Cases 12, 13, and 38.

In Case 12, we are informed by Prof. Meigs that the inversion had existed for two years, and had taken place at the time of delivery, when she had a very profuse hemorrhage, so as to be supposed to be in danger of a fatal result; that her health gradually improved, although she remained subject to frequent attacks of hemorrhage, which greatly reduced her strength; that a physician was called in who detected the existence of inversion, and called in Dr. M. to verify the diagnosis. Dr. M. states that he found the womb projecting into the vagina, and believed it to have been

completely inverted. It was not much larger than the non-gravid womb; bled readily from pressure; was not very sensible to the touch. Dr. Moehring and Warrington, as well as Prof. Hodge, all examined the patient and agreed with Dr. M. in the diagnosis; attempts were made at its reduction, which proved unsuccessful. Four years after the patient became pregnant, and was attended by Dr. Warrington. The uterus was supposed to have been spontaneously reduced.

Cases of supposed spontaneous reduction have been recorded by different writers. Baudelocque states, that "the organ, after having been long inverted, has been seen to reduce itself spontaneously, in consequence of a violent accidental shock; and from a letter by Laroux, addressed to Louis, which is mentioned in *Daillez's Thesis*, the spontaneous reposition of the womb has been known to take place two months after the occurrence of the accident." (*Meigs' Trans. of Colombat*, p. 182.) If we admit the correctness of the diagnosis in this case, then we must, of course, acknowledge that an inverted womb may be spontaneously reduced. But while no one can question the eminent skill and experience of the reporter and his colleagues, we presume no one will claim for them infallibility. The history of the case is not altogether satisfactory, inasmuch as we are not informed in regard to the circumstances attending the inversion, how it happened, who attended the patient, &c. It seems not to have been suspected or detected for two years; was there not a mistake in the diagnosis, and a polypoid tumour, which afterwards sloughed off, as occasionally happens, mistaken for an inverted uterus? We have already related cases in which Sir Charles Bell, Hugh Ley, and Mr. Rigby, made a similar mistake, if this be one. The celebrated Paoli, in his *Researches and Observations on Surgery* (Leipsic, 1844), relates an instance in which, after repeated careful examinations, himself and five other surgeons could not agree in opinion as to the nature of the case, four supposing it to be an inversion of the uterus, whilst himself and Dr. Dampierre maintained it to be polypus. The woman died of internal inflammation, and the latter opinion was found to be the correct one. So M. Baudelocque states that he observed inversion of the uterus in a young girl of fifteen, who had never been pregnant. But A. Dubois states that, in his opinion, M. Baudelocque, in this instance, mistook a polypus for inversion of the uterus. So difficult, indeed, is the diagnosis in some of these cases that a mistake, even, is no impeachment of the knowledge, skill, or tact of the practitioner. Paoli (*loc. cit.*) has undertaken to show that the cases which have been published in various periodicals of late years, as instances of inverted uterus successfully extirpated by ligature, have been really cases of polypus of the uterus; and his reviewer (*Brit. and For. Med. Rev.*, July, 1846) remarks, that "his explanation of the nature of the disease appears to be the correct one, for we are much more ready to suppose an error of diagnosis than to believe that the uterus has been separated by ligature in a few days, with

little or no inconvenience to the patient, as we find related in more than one instance;" and this is said, too, in regard to cases in which the diagnosis could, with certainty, be verified or disproved, after the operation, by an examination of the part removed. We shall, however, see further on, that this remark of the reviewer is not in accordance with the existing facts of the case; we mean so far as regards the possibility of a safe removal of the uterus by ligature. But it is to the point as regards the acknowledged difficulty of diagnosis. With respect to the case of M. Baudelocque, above referred to, which he regarded as *congenital*, M. Lisfranc (*Clinical Surgery*, vol. iii.) admits the possibility of inversion, but considering distension and softening of the uterus from some cause essential to inversion, asks, Why may not the patient have been affected with retention of the catamenia, hydrometra, uterine hydatids, &c.? So, also, M. Colombat thinks that inversion probably existed, but that it took place in consequence of the distension of the parietes of the womb produced by retention of menses, an accumulation of serum, or the extrication of gases in the organ, and, subsequently, expelled suddenly. Must we admit, as established facts, the cases related by Puzos and Vigaroux, where females who had never borne children are said to have undergone inversion, the only cause being *obesity and the weight of the bowels resting on the womb*? However, if we must admit that the uterus can spontaneously invert itself, turning itself inside out, it is but right, perhaps, that we should also believe in its ability to turn itself back again!

In Case 13, also reported by Dr. Meigs, the same remarks will apply. The case was first seen by Dr. M. five weeks after delivery, and, though attended by a respectable practitioner, no inversion had been detected until two days before consultation was requested. She also became pregnant afterwards and gave birth to a living child. It seems to us more probable, by far, that a polypus had existed throughout the gestation, which is admitted as possible by Dr. M. in certain cases, than that the womb was inverted, and afterwards spontaneously reposited. The same supposition is probable in regard to Case 38, in which a large tumour was found by Dr. Radford in the vagina, forty-eight hours after delivery; but at the end of seven months could not be detected. We are told that the remains of the os uteri could be felt, but no regular aperture, the upper part of the vagina forming a complete "*cul de sac*." There is no good reason for supposing, in this case, that there was any reinversion of the uterus, even supposing inversion to have existed, of which there is some doubt.[1]

Cases in which the Placenta was separated before Reposition.—The cases in which the adherent placenta is said to have been detached from the womb before reposition were, 7, 8, 9, 18, 19, 29, 31, 33, 37, 39, 42, 43, 44,

[1] For several supposed cases of spontaneous reposition see Gardien, vol. iii., and Dict. des Sci. Méd., vol. xlvii. p. 465.

50, 52, 53, 55, 56, 78, 79, 82, 129, 132, 133, 137, 142, 144, 145, 146, 147, 148, a total of thirty-one.

In several of these, unsuccessful attempts were made to reposit the womb before separating the placenta.

Cases in which the Placenta was not separated before Reposition.— These were only ten in number, viz: Cases 30, 32, 36, 40, 58, 63, 74, 75, 83, 84. These were cases in which the womb became inverted from strong expulsive pains, aided, in several instances, by traction on the cord and pressure over the hypogastric region, under the charge of regular physicians; where advantage was immediately taken of the open and relaxed state of the os uteri to return the organ and secundines, before any contraction whatever took place. A review of all the cases on record goes to show, what would be concluded, *a priori*, that the most favourable time for effecting a reduction is immediately after the occurrence of the accident; and, if this opportunity be embraced, there will rarely be much difficulty in repositing it even with the placenta attached. It seems somewhat strange that this should have been discussed by so many writers as an abstract question, for whether it be proper to remove it before reducing the displacement will depend altogether upon the circumstances of the case. Professional opinion is about equally divided on this point. But certainly the rule of Merriman is a very safe one when practicable, and, perhaps, the best to follow, viz: to reverse the organ without reference to the placenta when it can be done; but if impracticable to peel off the placenta, using every precaution against hemorrhage, and then to return the part without delay. Had this course been pursued in some of the cases above reported, it would doubtless have been the means of saving life by preventing the loss of blood, for time would have been allowed for the administration of stimulants, and for reaction to take place before the separation of the after-birth. It is true that its detachment will be more difficult after the replacement of the uterus, and that the replacement is rendered more difficult by the adhesion of the placenta; but we are only speaking of cases where its attachment does not prevent reposition of the organ. In the large majority of cases I do not suppose there is much to apprehend from hemorrhage if we proceed with promptitude and dispatch. Mr. Radford found, in all his cases, that no such fatal effect followed the separation of the placenta before its return, for, when entirely detached, he states that he found the uterine vessels as effectually restricted as if the organ was in its natural situation. The flooding he supposed to be due to a partial separation, and, as in other cases, to be checked by a total detachment.

There is another advantage in separating the placenta before reposition, which is, that we can compress the fundus and thus reduce its size, while, at the same time, we check the flooding by the compression made. Denman says: "If the placenta be partly separated, it would be proper to finish the separation before we attempt to replace the uterus; but if the placenta

should wholly adhere, it will be better to replace the uterus before we endeavour to separate the placenta." Carus observes: "If the inversion be quite recent, and the placenta still adhere to the uterus, it is best to return the uterus before separating the former; but if it be in a great measure detached, which is by far the most frequent occurrence, it is advisable to separate it completely before returning the uterus." Siebold also advises that the placenta should not be detached if the reduction can be accomplished without its removal; but if this be impossible, he advises its separation at once. Newnham, Blundell, Gooch, Burns, Clarke, and other standard writers, give the same advice. Those who take the opposite view do so on the ground that the diminution of the volume of the tumour, and the consequent facilitation of its reduction, far counterbalances the danger of hemorrhage.

Cases of Inverted Uterus Removed by Ligature.

No.	Operator.	Age.	Length of time after inversion.	Result.
62	Symonds	16	Nine months	Died on the 6th day.
67	Gooch		Two and a half yrs.	Recovered, lig. came away on 14th day.
71	C. G. Putnam	22	One year	Recovered, came away on 11th day.
72	C. G. Putnam	25	Eight months	Died on 9th day.
73	C. G. Putnam	23	One year	Recovered, lig. came away in 14 days.
88	J. G. Crosse	31	One month	Recovered, lig. came away in 12 days.
89	G. M. Esselman	32	Several months	Recovered, lig. came away in 15 days.
91	Windsor	39	Eighteen months	Recovered, lig. came away on 12th day.
92	Newnham	26	Three months	Recovered, lig. came away on 23d day.
93	Johnson		Over two years	Recovered.
94	Johnson		Many years	Recovered, "considerable time."
95	Johnson	20	Fourteen months	Recovered, came away in 3 weeks.
96	Johnson	27	Six years	Recovered, came away on 19th day.
97	Denman	60	Many years	Recovered, came away on 11th day.
98	A.H.M'Clintock	24	Five years	Recovered, came away on 28th day.
99	Johnson	24	Five years	Recovered.
100	Weber	37	Fifteen days	Recovered, cut away on 5th day.
101	Faivre	19	Few days	Recovered, came away on 17th day.
102	Martin		Two years	Recovered, came away on 19th day.
103	Martin		Six months	Recovered, came away on 21st day.
104	Martin	54		Recovered, came away on 20th day.
105	Bonepet		Three years	Recovered.
106	Blundell		Sixteen months	Recovered, came away on 11th day.
107	Blundell			Recovered.
108	Gooch		Two years	Recovered, came away on 14th day.
109	Crosse	31	One month	Recovered, came away on 8th day.
110	Gregson		Two years	Recovered, came away on 9th day.
111	H. Davies	27	Four months	Recovered, came away on 21st day.
112	Ramsbotham		Ten and a half mos.	Recovered.
113	Dubois			
114	Velpeau	36	Three months	Died on 5th day.
115	Boivin	24	Day of delivery	Died on 36th day.
130	W. Channing	22	About two years	Recovered, came away on 17th day.
134	W. Channing	24	One year	Recovered.
135	W. Channing	22	One year	Recovered, came away on 30th day.
136	W. Channing	35	One year	Died, from asthma, very low before operation.

Of the whole number, thirty-two, in which the uterus was removed by ligature, *only four died, or one in eight*, which is a rate of mortality very far below what we should have expected. Indeed, it is very evident that obstetrical writers generally have greatly overrated the danger of this operation. We have already seen that Paoli, supposing that the operation must necessarily be fatal, infers that there has been a mistake in the diagnosis in all such cases, and that, in fact, they have all been cases of *polypus uteri*. *Twelve per cent.* is about the average mortality of all cases treated in our large hospitals; in some it is much higher; and yet this is only the rate after this operation, and that, too, when in a majority of the cases the patients have been greatly exhausted and debilitated by constantly recurring hemorrhages and a general anæmic condition. The question whether this operation, or attempted reduction in chronic cases, is safer as a general rule, can only be determined by more extended experience and a larger number of well-managed cases. With our present light on the subject, it would seem that the preference should be given to ligation over reposition; our data, however, are not sufficient to warrant any positive conclusion. There are other circumstances to be taken into consideration in deciding this question, such as the age of the female, the general health, &c. In the case of a young woman, to whom a family is desirable, reposition should certainly be attempted, within the bounds of safety, if there is any such thing as defining them, which may well admit of doubt; but in females past the age of child-bearing, if the general health still suffers, ligation would doubtless be preferable. There is, however, very good reason to expect that if a female, labouring under inversion, passes that period of life when the menstrual flow usually ceases, we may expect a cessation of the hemorrhages and probably also of the sero-mucous discharges, which hitherto had kept her weak and miserable. Such was the case in the instance I have related (140), the patient, at present, enjoying a very comfortable state of health, her anæmic symptoms, &c., having disappeared. In performing the operation, it would seem also that the safety of the patient is much enhanced by gradually tightening the ligature, as she can bear it, and also relaxing it occasionally if the constitutional suffering is very great, and not wholly strangulating the uterine tumour at once, as has in some instances been practised. If the uterus be mistaken for a polypus, no harm would result, as the same treatment should be adopted for the latter, and we have seen that such mistakes have often been made even by the most experienced practitioners. Where death has resulted from ligation, it has been in consequence of peritoneal inflammation, one patient having died on the fifth day, one on the sixth, one on the fourteenth, and one on the thirty-sixth. The last was where a ligature was applied immediately after delivery (No. 115).

Cases of Inverted Uterus Removed by Excision.

No.	Operator.	Age.	Length of time since inverted.	Result.
77	E. Geddings	"Aged"	Twenty years	Recovered, ligature and excision.
90	Luytgaerens		Not stated	Recovered, caused by polypus.
116	Velpeau	24	Three years	Recovered.
117	Velpeau	35	Fifteen years	Died second day of peritonitis.
118	Lasserre	23	Eighteen months	Recovered, ligature and excision, well in 30 days.
119	Clarke	"Young"	Eleven months	Recovered, ligature and excision.
120	Baxter	37	Five weeks	Recovered, ligature and excision.
121	A. Hunter	"Young"	One month	Recovered in 10 days, ligature and excision.
122	Moss	41	Six years	Recovered, ligature and excision.
123	Velpeau	26	Eight months	Died from bleeding on third day.
124	C. H. Hawkins	26		Died on seventh day from disease of brain.
125	Forbes		Four months	Died from shock of operation.[1]
129	M'Clintock	22	Twelve months	Recovered, operated by *écrasement*.

Remarks.—Thus of the 14 cases of removal of the inverted uterus by incision, four died, or one in 3.5, which is a rate of mortality nearly three times as great as occurred after the application of the ligature, and yet death seems in several of the cases to have been accidental, rather than a necessary consequence of the operation. Case 118 died on the second day after the operation from peritoneal inflammation; Case 124 perished on the third day after from accidental bleeding; Case 125 died suddenly on the seventh day from disease of the brain; while Case 126 died from the shock of the operation, by asthenia, having been much reduced previous to the operation. In all the cases a strong ligature was previously applied; and to check the bleeding consequent on excision, it had to be drawn very tight; this would necessarily produce severe shock, which is avoided in the operation by ligation only, where the ligature is gradually tightened as the patient can bear it. It seems, therefore, a justifiable conclusion, that it is safer to remove an inverted uterus by ligature than by excision, or ligature and excision as hitherto practised.

In conclusion, it may be useful to sum up our results deduced from the preceding cases, and first in regard to the

Causes of Inversion.—We have seen that they are either located in the uterine system itself; or such as act on the outer surface of the organ, pressing or driving it down; or, lastly, such as act on its internal surface, drawing or pulling it down. The efficient or direct causes are the only real and active causes of the displacement; what are called the predisposing causes and conditions leave the uterus quiescent until the efficient causes determine an inversion. But, as in all other cases, the more numerous and strong the predisposing causes, the less powerful are the efficient required

[1] Mistaken for polypus.

to be for producing the accident, and *vice versa;* however strongly predisposed the patient may be, by the state of her constitution, or of the uterus and neighbouring parts, there must be a power either to push or draw down a part of the uterus, in order to commence inversion of its walls. A survey of the above cases will satisfy the impartial reader that a state of *adynamia uteri*, or *inertia*, ought to be regarded, in general, as the necessary condition for the first step in the displacement. We have seen that the stage of delivery in which inversion commences is constantly that of the removal of the uterine contents, or the principal part of them, and all accounts of its causation have reference to that stage. All the wise precautions which experienced men have enjoined for the prevention of the accident, *post partum*, relate to the avoidance of collapse, total or partial, of the uterus, and not to the dread of its contracting irregularly or too rapidly. Recent writers on this subject seem disposed to attribute much to irregular action of the uterus—the contraction of some portions of the organ while others are in a state of relaxation, collapse, or inertia. But those who advocate this theory admit that the portion of the uterine walls which is in this state of inertia is the seat of the commencement of inversion. No one, scarcely, who knows anything about the different stages of this displacement will claim that the commencement of the process is in the spot actively contracted. As the uterine fibres must be lengthened when depression occurs, and contraction shortens them, it seems to follow, as a matter of course, that the uterus cannot be contracted at the same time it descends and changes shape. And, moreover, the attachment of the placenta to some part of the internal surface of the *fundus uteri* is found to be so general in cases of inversion, that it may be regarded as almost essential to its production. In all probability several causes and circumstances must combine to produce the accident, such as have been already pointed out.

I am willing, however, to admit that in rare and exceptional cases inversion may be what is called *spontaneous;* that is, after it has once commenced it may go on to completion by the gradual organic contraction of the uterus itself. This view is sustained by several cases included in our list, already referred to under the appropriate head. Denman, many years ago, remarked that "if a disposition to an inversion be first given by the force used in pulling by the cord, it may be completed by the action of the uterus." And Dr. Crosse has observed that this distinction between the commencement of inversion and its further progress requires constantly to be kept in mind in considering what share the uterus itself has in contributing actively towards the displacement. I fully coincide with this intelligent writer in the opinion that the womb itself has no power to commence the displacement, or to cause simple depression, and I know no writer who understands the mechanism of inversion who holds to such an opinion. But when the process has once commenced, and the case goes on to what some writers call *introversion*, bringing the fundus within the grasp and influence of the unin-

verted body of the uterus, this organ will, by the natural powers called into action by its sensibility, regard the inverted part as an extraneous mass, and proceed to act upon it accordingly, endeavouring instinctively, as it were, by successive and suitable efforts of its muscular fibres, to propel it downwards, whilst the os and cervix will by consent, as in natural delivery, become dilated, a part of the uterus thus acting on the rest, and urging on the displacement till completed. Moreover, so long as the displacement progresses by descent, the abdominal expulsive efforts, recently in great activity, and readily awakened by the attending sensation of a fulness in the passage of a foreign substance requiring to be expelled, will be brought into action, and assist in the process so long as the patient is not in an insensible state. And, as Mr. Crosse remarks, where the inversion has proceeded to a certain extent, but its further progress by descent is prevented by the resistance of the parts closing the lower aperture of the pelvis, if it go on to total inversion by the remaining part of the organ rising as it inverts, this change must undoubtedly be effected by the uterus itself, and will take place in direct opposition to both *traction and nisus depressorius*. The part of the uterus which assists inversion by contraction must be that situated between the cervix and the *angle of inflexion*, which defines a circle, changing in its situation as the inversion progresses, and where the uterine walls, turning at an acute angle, cannot be capable of contracting, but must be considered in collapse.

Mr. Crosse notices especially the abdominal nisus as one of the efficient causes of inversion, assisting in every stage of the displacement, from the commencement to the external prolapse, aiding not only in the production of depression, but often being the principal power in determining the most rapid inversion. We have seen, in several of the cases quoted, that where the predisposing causes are all present, the patient delicate and relaxed, her position sitting or erect, or perhaps even recumbent, and the uterus inert, a violent expulsive effort, made when there is no uterine contraction, may expel the fœtus rapidly through a very relaxed os and vagina, and with it, or close upon it, the placenta and the uterus inverted, which may quickly descend some inches beyond the external labia. Here the abdominal nisus seems to be almost the only efficient cause, although the adherent placenta and relaxed uterus are perhaps essential to the occurrence of the accident. Baudelocque relates a case where he observed the uterine walls to be very thin, and he cautioned the patient against straining, or bearing down; but she, being deaf, mistook what was said for an encouragement to make greater efforts, which she did, and inversion followed. It is very evident that all sudden efforts in which the diaphragm and abdominal muscles are opponents, such as sneezing, coughing, &c., may not only help in causing inversion to begin, where favoring conditions are present, but are still more efficient in advancing the displacement when already commenced. We have seen in several of the cases above recorded that partial inversion, remaining

latent and unsuspected for some hours, or days perhaps, has been increased to complete collapse under efforts at defecation, coughing, &c., although, as Mr. Crosse has suggested, not unfrequently the sensation was delusive, and the real source of those sensations in the pelvis which induced expulsive efforts was the inversion already present and distending the uterine cavity or vagina. In all cases there can be no doubt whatever that the first step in the process took place at or near the time of delivery.

We have seen above that of the fifty-two cases in which the cause of inversion is assigned, thirty-eight are distinctly stated to have been cases occurring from traction on the cord, thus confirming the opinion of Ruysch, Ramsbotham, Robert Lee, Dewees, Colombat, &c. Where an inversion is first detected some days, weeks, months, or years after delivery, blame is very apt to attach to the attending physician, and the censure, implied or expressed, is, with very few exceptions, undoubtedly deserved; for, as Colombat remarks, "the most common cause of inversion consists in attempts to deliver the placenta immediately after the birth of the child, and before the womb has become contracted." (p. 176.) "Whenever this serious accident has happened," says Ramsbotham, "it may *generally* be looked upon as the consequence of improper treatment." (p. 318.) Although this writer admits, what is proved by several of our cases, that it may occur without any force having been applied to the funis.[1] It is evident that the inversion will more readily take place if the umbilical cord answer to the axis of the fundus, and even when there is no strong tendency to inversion, if the placenta be adherent, the accident may be produced mainly, perhaps exclusively, by traction on the cord. But in cases where the predisposing causes are numerous and strongly marked, and the constitution feeble and relaxed, the slightest traction on the funis may prove sufficient to commence the inversion, which will be hurried on in its progress by uterine contraction and abdominal efforts, until partial and then complete inversion is established, without any additional interference from without. Whatever tends to increase the impetus downwards in the axis of the uterine cavity, of the pelvis, or of the vagina, whether by propulsion, weight, or traction, must have its influence in increasing the displacement already begun. There is another circumstance to be taken into account, viz., that the placenta still attached to the fundus, by its bulk distending the lower part of the uterus or vagina, will, as a foreign substance, requiring to be expelled, call into action all the sympathizing powers of the frame for effecting this expulsion, and as the placenta is driven down, the fundus comes with it. The weight of the placenta has, doubtless, much to do in causing the accident.

It has been denied that too short a cord, or one twisted about the child's

[1] See Radford, in Dublin Journ. Med. Sci., vol. xii. pp. 25, 215; Rigby, Lib. of Med., vol. vi. p. 219; Barker, in Med. Gazette, London, April 5, 1844; Ruysch, Obs. Anat. Chirurg., Obs. x. p. 13; Denman, Midwifery, p. 421; Merriman, Mid.; Dewees, Midwifery, &c.

neck, can cause inversion, but we have compiled the history of several such cases; in others it caused depression, which afterwards resulted in inversion. In several cases, where there was a large pelvis and strong pains, the sudden delivery of the body of the fœtus, after expulsion of the head, resulted in inversion.

To understand clearly how irregular actions of the uterine fibres may invert the uterus, let us consider, for a moment, their arrangement. Those on the external surface form two broad fan-shaped muscular layers, spreading from the round ligaments over the fundus uteri. On the internal surface, there are three distinct sets of fibres; two of these surround the Fallopian tubes in a concentric arrangement. The third set pass circularly round the body of the uterus, and the outer fibres of the two former layers gradually pass into and intermix with those of the latter. The mass of fibres lying between the external and the internal layers have no determinate direction. Sir Charles Bell describes them as passing in a vertiginous direction from the fundus to the os uteri. No muscular fibres exist around the os. In regard to their normal action, the *external* muscular layer slowly contracts for some time before labour commences, and draws the uterus gradually down towards the pelvis, and keeping the fundus in a perpendicular position, and proper direction. This organic contraction is unattended with pain. In regard to the *internal* muscular fibres, when those surrounding the Fallopian tubes contract together, the fundus will be equally diminished on all sides, and this combined effect on the os uteri through the liquor amnii is, to dilate it equally in all directions; and when the circular fibres of the body and cervix contract, the uterus becomes more cylindrical, at the same time they close in the cervix. It is evident that if the uterine contents were removed, the simultaneous action of all these different sets of fibres would be to draw the uterine walls equally towards the centre of the cavity. The fundal muscles, then, chiefly effect the dilatation of the os uteri and the expulsion of the child, this joint action being in the direction of the os, through the liquor amnii. It is worthy of note that no circular fibres at the os have been detected; neither Hunter nor Sir Charles Bell could succeed in discovering any. The manner in which the os dilates, also, is opposed to the theory of their existence; for its expansion is generally very gradual, yielding slowly to the force applied, and not contracting rapidly and relaxing like a sphincter muscle. Besides, it appears, on minute inspection, to be composed of a firm, highly condensed tissue, which undergoes a gradual vital process of preparatory softening, as well as mechanical dilatation, during labour. Its occasional sudden relaxation in cases of rapid labour, no more proves its muscularity, than the sudden yielding of the perineum proves its muscular structure. In regard to the order observed by the uterus in the contractions which take place, a diversity of views has prevailed. But fortunately this is a point which we are able to ascertain experimentally, for in passing the hand into

the uterus, after delivery, to remove the placenta, on withdrawing it, we feel the fundus contracting, and as it is drawn still lower, the contractions continue from above downwards, and even where we introduce the finger to irritate the os, and in an attempt perhaps to dilate it, it is the fundus and not the os uteri which immediately contracts. This, then, is the normal mode of contraction in ordinary labour, and where everything goes on naturally. But we know that abnormal or irregular uterine contractions do sometimes occur, as in hour-glass contractions, &c., and it is proper to inquire, what they are, and under what circumstances they occur. It is not very unusual to find the placenta retained from irregular contraction of the uterine fibres; one of the fundal muscles perhaps contracting and not the other, or the fibres of the body of the uterus may draw it into a cylindrical shape, and leave the fundus relaxed; or, even, there may be a spasmodic contraction of the fibres of the cervix, forming a kind of stricture. These and other similar irregular contractions may be caused by a too rapid delivery, or the fundus may remain relaxed from deficient irritation, the child being withdrawn rapidly, or the muscles of the fundus may be contracted by frictions over the hypochondriac region to excite uterine action. In this case, a cup-like depression in the centre or on one side of the fundus may sometimes be observed, by careful examination with the hand. Irregular uterine contractions are, also, sometimes owing to coagula in the uterine cavity. Can such abnormal action of the uterine fibres cause, in any case, inversion of the organ? If the placenta be adherent, as happens in a great majority of cases of this accident, and we pull even slightly on the cord, for the purpose of ascertaining whether or not it is separated, there is great danger that irregular contraction may take place, and even frictions over the fundus in the hypogastric region, may cause the same result; the anterior portions of the uterine walls may contract, while the posterior, where the placenta is commonly attached, may remain relaxed, and the middle and lower part of the womb, with the cervix, may remain in the same relaxed condition. This irregular contraction is doubtless of very frequent occurrence under such circumstances, and although it generally rectifies itself, yet by grasping the uterus in the hand, or pressure on the hypochondrium, to produce general contraction of the organ, there is danger of its merging into partial, which may go on to general inversion. By careful examination in such cases, a cup-like depression may be found at the fundus, or on one of its sides, while the greater part of the organ is wholly relaxed, and if nothing be done to restore uniformity of contraction, it would be very apt to terminate in inversion. If the placenta become detached, and the irregular contractions continue, the fundus will continue to descend, while the placenta, acting as a foreign body, or as the fœtus, with the liquor amnii, stimulates to further action, mechanically distending the cervix, and in a few hours, perhaps a single hour, or sooner, the uterus is completely inverted. It is impossible, of course, to say, how long this

process of involution will continue, before complete inversion takes place; the probability is, judging from the history of reported cases, that it generally occurs within a short time, in a majority within a few hours, and that it is very rarely protracted beyond the second day. Our statistics show, that in nearly all cases, the inversion is effected at the very time the after-birth descends, we do not say separated, but protruded into or beyond the vagina. The placenta, it is true, may be extracted, and the partial inversion go on, in consequence of continued irregular contractions, the inverted fundus, acting as a placenta or any other foreign body to stimulate to still further contraction, till complete inversion be brought about. These, however, we repeat, are rare and exceptional cases. When they do occur, they argue great want of care and proper management on the part of the practitioner. The peculiar circumstances of the case should lead the accoucheur to suspect irregular contractions, and of course, lead to inquiry and examination into its existence, and if not too late, for the employment of precautionary measures, to the prompt and energetic use of means calculated to remove it.

The opinion has been recently advanced, that in some cases of inversion of the uterus, the change does not take place according to the order above described, as commencing at the fundus by indentation and depression, and this portion of the organ passing successively through the body, neck, and mouth; but, on the contrary, may commence at the neck, this part being first forced through the mouth, the remainder of the organ following. No one, I believe, claims that such a process of involution ever has been observed; it is simply inferred from the circumstances under which some inversions take place. It may well be doubted, however, whether there are any circumstances which give any plausibility whatever to such an hypothesis. It is acknowledged by those who maintain this theory, that most inversions take place in connection with, or immediately subsequent to, the removal or expulsion of the afterbirth, and next in order of frequency are the cases occurring soon after delivery. They admit that the accident generally happens unexpectedly and suddenly, taking the practitioner by surprise, and allowing him no opportunity to watch the steps of the process; and in regard to those cases which occur half an hour, an hour, or a day or two after delivery, it is conceded that they were favoured by relaxation of the organ after it had been duly contracted. If the process of involution commenced at the fundus, a depression would exist, and, if so, it is taken for granted that it would be discovered by the practitioner, who is supposed always to examine with a view of ascertaining whether such cup-like depression exist or not. But this will depend very much on the thickness of the abdominal parietes, and the degree of depression, as well as on the care bestowed in the examination to test such change if existing. It is to be presumed, however, if the practitioner's attention is not specially called to this point by the particular circumstances of the case, if present,

it would most likely escape his observation. Indeed, so rarely is it observed, that the supporter of this theory asserts that he had never met with any such depression in his extensive obstetric practice of more than fifty years, and that he had never heard a practitioner say that he had noticed such a phenomenon, and, moreover, that he had not the slightest apprehension that he had ever overlooked it. We must, however, be allowed to express the opinion, that as the practitioner usually lays his hand over the uterine region to ascertain whether the organ has contracted or not, he would not be likely to detect slight, or even a considerable degree of depression of the fundus, even if it existed. If it be asserted that the assigned manner of uterine inversion, beginning at the fundus, is "simply an inference drawn from facts positively ascertained in but few cases," it may be replied, that a theory founded on a few positive facts, should outweigh an hypothesis unsupported by any facts whatever. It is assumed, moreover, that in cases of complete atony or exhaustion of the uterus from severe labour, copious flooding, or any other cause, "it becomes soft and pliable as a wet ox-bladder, the blood flowing off, and there being nothing to prevent the uterine surfaces from collapsing upon one another, if any pressure from above is brought to bear upon it, it will be crushed into an irregularly folded mass, which must emerge from its narrower mouth in an order commencing immediately above the neck." Fortunately we have several cases on record which have a bearing on this point. Prof. Dewees, in his Midwifery, remarks as follows: "We find mention of a case of inversion by Dr. Loffler, in which the fundus of the uterus could not be retained after reposition, *owing to the loss of the tonic power of this organ, but again and again descended through the os uteri.* The fundus uteri having receded through the orifice of the uterus, I pursued it with my hand, which I kept in the uterus, waiting for the contraction of this organ. But after I had continued in this position about half an hour, without perceiving any contraction, I was obliged to withdraw my hand, when the fundus immediately descended, but was prevented passing through the orifice." (*Loc. cit.*, p. 472.) (See Case No. 57.) We might quote several similar cases, all going to prove that in cases of relaxation of the uterus, the whole organ being passive, it is the fundus which invariably descends first through the os, and not the cervix. It is believed there is not a case on record where the latter phenomenon has been observed. It is far safer to reason from facts positively known, than to assume data, resting solely on assumption. It is, moreover, extremely improbable that the impulsive force generally brought to bear in such cases would be adequate in such a complete atony of the womb as is supposed, to force the whole organ through the neck in the order presumed.

Another theory recently broached on this subject seems no less improbable, and is equally unsupported by any known facts. It assumes that there are two sets of uterine fibres, the longitudinal and the circular; that the

circular fibres encircle the os, and form a kind of sphincter muscle of the womb, to which the longitudinal muscles are attached, and that when the circular fibres are relaxed, the longitudinal ones, which represent so many columns resting on this circular band, as a foundation, contract, and having no support, they begin to yield from the bottom, evolution takes place, the neck doubles in upon itself, and passes through the os, the body follows, and finally the fundus, dragged down upon the body, pursues the same course till complete inversion is the result. This theory only differs from the last in one particular, viz: it supposes the inversion to be owing to active contraction of the muscular fibres beginning at the os, while the former assumes that the womb is wholly relaxed, and that the displacement is wholly due to its passive condition. As this hypothesis rests on no observed facts, is totally opposed to everything known regarding the accident, and as it assumes the existence of muscular fibres around the os, where they do not exist, it may be dismissed as unworthy any serious attempt at refutation.
