# PART III.

# HALF-YEARLY REPORTS.

## REPORT ON
## MIDWIFERY AND DISEASES OF WOMEN.

By Arthur Vernon Macan, B.A., M.B., M.Ch., M.A.O., Univ. Dubl.; Fellow and Censor, King and Queen's College of Physicians in Ireland; Gynæcologist to the City of Dublin Hospital; ex-Assistant Physician to the Rotunda Lying-in Hospital; and Lecturer in Obstetrics at the Carmichael College of Medicine.

### PORRO'S OPERATION.

The Cæsarean operation, followed by excision of the uterus and ovaries, now generally known as Porro's operation, after Dr. Porro, Professor of Obstetrics at the University of Pavia, is the subject of an able paper, by Dr. A. Pinard, in the *Annales de Gynécologie* for Nov., Dec., 1879, and Jan., 1880.

Before passing to the consideration of the operation itself, which Dr. Pinard thinks inaugurates a new era in the history of the Cæsarean section, he gives an interesting historical *résumé* of the indications which have, at different periods, been considered as calling for its performance.

All authors are agreed that, up to the 16th century, the Cæsarean section was performed only after the patient was supposed to be dead; but when a woman died during pregnancy it was not only considered to be indicated, but the medical man was legally bound to perform it. For fear the operation, if performed by mistake on a person not yet quite dead, might be done carelessly, and thus be the immediate cause of death, the Council of Venice passed laws in 1608 and 1721 punishing anyone severely who did not perform it with the same care and with the same precautions as though the woman were still alive. As the object of all these laws was to save the lives of future citizens, it was obviously unnecessary to perform the operation except where the woman died

within two or three months of the end of gestation. However, with the view of administering the rite of baptism to the infant, this limit was gradually extended, till finally it was held to be incumbent on the accoucheur to perform it if more than twenty days had elapsed since the probable time of conception. Now-a-days, of course, no one would think of performing the Cæsarean section on a dead woman, except it was supposed that the child itself was viable. Such, however, is the difficulty of determining the exact moment of death, and so varied and conflicting are the feelings, and often the interests, of the relatives who look on, that whoever performs the operation in countries such as France and England, where it is not required by law, does so at his own peril, and hence the Cæsarean section, performed *post mortem*, may be looked on as abandoned in both these countries. Thus we see the operation has passed through the following phases:—First. It was looked on in the ancient Roman period as indicated and performed for the purpose of extracting a living child, and was, therefore, insisted on by law. This limited its performance to the last few months of pregnancy. Second. In the middle ages, with the view of baptizing the infant, it was looked on as indicated whenever a pregnant woman died, no matter at what period of pregnancy. Third. Since the period of Guillemeau up to the year 1861, it was only performed when the child was looked on as viable. Fourth. Since the year 1861, chiefly from the greater acknowledged difficulty of diagnosing the exact moment of death, the operation has gradually been replaced by artificial delivery through the natural passages.

It is still uncertain by whom the operation was performed for the first time on a living woman—whether by Nufer, a pig-gelder, or by Trauttman, a surgeon, of Wittemberg. Rousset published a work on the subject in 1581, but the cases given are either unauthentic or refer to cases of extra-uterine pregnancy; and the exact indication for the operation had not been formulated down to the end of the 17th century. Condemned most vehemently by such men as Guillemeau, Mauriceau, and Peu, it was not till the second half of the 17th century that, owing to the exertions of Simon, and more especially the writings of Leveret, the operation began to be looked on as not absolutely fatal. Smellie, in his work, declares himself, under certain circumstances, in favour of the operation, as holding out the only possible chance for the safety of mother and child. Soon after his time a formidable rival to the Cæsarean section

appeared in Sigault's operation for the division of the symphysis pubis, which, however, after having caused the greatest excitement, was soon almost entirely abandoned. Hardly was this controversy settled when two other formidable rivals appeared—viz., the induction of abortion and premature labour, and the use of the cephalotribe. From this time the point to be determined was—In what cases should cephalotripsy be performed; and in what cases the Cæsarean section? On this question very different views are put forward by the highest authorities. Thus M. le Professeur Dubois says that, in a case where the pelvis measures only 67 millimetres, where the child is living and viable, the labour commenced, and the membranes either intact or but a short time ruptured, we should certainly perform the Cæsarean section. If the infant be dead, he would perforate. Should, however, the pelvis measure only 54 millimetres, or less, he would perform the Cæsarean section, whether the child were dead or alive. M. le Professeur Pajot, on the other hand, thinks the Cæsarean section should be confined to those cases where the pelvis is so narrow as not to permit the cephalotribe to be passed into the uterus. Prof. Depaul considers an antero-posterior diameter of 40 millimetres an absolute indication for the Cæsarean section. If the antero-posterior diameter be between 40 and 60 millimetres, he would be inclined, if the child were dead, to extract it per vaginam; if living, he would feel justified in performing the Cæsarean section. Tarnier thinks that if the antero-posterior diameter be only 5 centimetres, the dangers and difficulties of extraction are so great that we should hesitate between it and the Cæsarean section. The greater number of German authorities place the limit for the Cæsarean section still higher. Scanzoni at 68 millimetres if child be dead, at 80 millimetres if it be living. Naegele and Grenser place it at 54 millimetres, but quote Michaelis as having perforated successfully when the antero-posterior diameter was only 47 millimetres. Barnes puts the limit as low as 25 millimetres; Playfair at 38 millimetres, and says the fact of the child being alive or dead does not enter into the question at all. The Belgian accoucheurs, MM. Hubert, father and son, consider the operation is indicated when the infant is living, and the antero-posterior diameter less than 70 millimetres; for they cannot think that anyone has the right deliberately to kill a human being, even with the object of avoiding the dangers of the Cæsarean section for the mother.

Hence, with regard to its indications, the Cæsarean section has passed through three different phases—the first reaching from the beginning of the 16th century up to the date of the appearance of the memoirs of Simon. "This period," says Guéniot, "is characterised more especially by the rarity and want of authenticity of the recorded successes, by the opposition and incredulity which such successes were received by the most celebrated surgeons of that day, and by the sort of prescription of which the operation was the subject." The second reaches from the middle of the 18th century, the period of Simon and Leveret, up to the introduction of symphysiotomy, and more especially of cephalotripsy and cephalotomy. During this time it was looked on as an operation of necessity in all cases where delivery was impossible, except piecemeal—the use of the instrument for removing the fœtus piecemeal being then considered as more dangerous than the Cæsarean section; hence, during this short period the greatest efforts were made, by modifying the operation and the subsequent treatment, to lessen its mortality. The third commences with the Sigaultean operation, or more exactly with the introduction of the operation of cephalotripsy and the induction of premature labour, and reaches up to the present time. If, during this period, the supporters of the Cæsarean section, on the one hand, have seen fit to attack and condemn the operation of embryotomy, they have, at the same time, striven to modify and improve the Cæsarean section, so as to render it less deadly; and, on the other hand, the embryotomists have overlooked nothing which might tend to render extraction of the fœtus through a contracted pelvis more easy or safe.

The technique of the operation itself has also undergone many changes and modifications. Thus, the most ancient authorities recommend the incision through the abdominal walls to be made to the left side, with the object of obtaining more room and avoiding the liver. Mauriceau, indeed, recommended the incision to be made in the linea alba, but his advice was not followed till 1778, when Deleurye introduced it as his own idea. Smellie recommends the incision to be made between the umbilicus and the spine of the ischium; Lauverjat, that it should be made transversely; and Stein the Younger, that it should extend obliquely from the horizontal ramus of the pubis on one side to the extremity of the last false rib on the other. Velpeau incised the abdomen at whichever side the uterus was most prominent. All the more modern authorities, however, agree with Mauriceau that the incision should be made

through the linea alba, and the tendency ever since his time has been to shorten its length. For, while he made his incision to correspond to the length of the uterus, Dr. Pinard considers that a length of 13 cm. is ample. All authorities are also agreed that the incision should not be carried to within less than from 5 to 6 cm. of the symphysis pubis. M. Guéniot has made the strange proposition to substitute caustics for cutting instruments for making the opening in the abdominal walls.

As to the incision through the walls of the uterus, all authors, with the exception of Leveret, are agreed that it should be made in the median line in the axis of the uterus. He, however, recommends us to make it almost laterally. Baudelocque made the incision as near as possible to the fundus, to prevent the escape of the lochia into the abdomen, while Barnes warns us to avoid both the fundus and the cervix, as they both cicatrise badly, and the circular fibres of the cervix, if cut, cause the incision to gape. M. Guéniot protests against a long incision as naturally leading to the gaping of the wound, and agrees with Naegele and Grenser that it should not exceed 13·5 cm. If the placental site be met with the vast majority of authorities recommend that the placenta should be detached rather than cut through. All operators have striven to prevent prolapse of the intestines, or the escape of the liq. amnii into the peritoneal sac, and, with the latter object in view, have ruptured the membranes before incising the uterus. But it is only since ovariotomy has been followed by such success that efforts have been made to open the uterus, if possible, outside the abdominal walls.

The practice of closing the uterine wound with sutures was condemned by Leveret, both as useless and injurious, and this view was almost universally accepted down to the year 1870. In 1859, however, Lestocquoy, modifying a suggestion of Pillon, sewed the uterus, before opening it, to the sides of the incision in the abdominal walls. In 1873 Spencer Wells successfully united the uterine walls with a continuous suture, the end of which he passed out through the vagina, and recommended the suture for every case. Harris has collected sixteen cases operated on in the United States within the last eleven years, in ten of which the suture was used. In 1873 Grandesso Silvestri used an elastic ligature and the patient recovered. In a second case, which terminated fatally, the uterine walls were found to be united at the *post mortem* examination. Catgut sutures have also been extensively employed,

but in a great number of cases were found at the *post mortem* to have become loosened or untied. Barnes has proposed a most ingenious but complicated suture, which Dr. Pinard does not think has ever, as yet, been actually put into practice.

The older operators, in order to allow the lochia and discharges to escape, were contented to leave open the lower angle of the abdominal incision; others—as Wigand, Maygrier, Winckel, and Barnes—make provision for draining the uterus, either by a tube, passed per vaginam, or by passing a sort of seton from the abdominal wound through the uterus, and out of the vagina. It was with the same object—viz., of facilitating the escape of the discharges—that some have advised the removal of the placenta per vaginam.

One of the first modifications of the Cæsarean section was the operation now known as gastro-elytrotomy, the object of which is to remove the fœtus without wounding either the peritoneum or uterine wall, and thus avoid the dangers of peritonitis and hæmorrhage. In 1806 Joerg proposed, after opening the peritoneum, then to incise either the vagina or the neck of the uterus, and so extract the child, but it was not till 1821 that the idea occurred to Ritgen to remove the child without wounding either the peritoneum or uterus. In the first case, however, in which he essayed to put his theory into practice he failed, and had to finish by the Cæsarean section. In 1823 Baudelocque, the nephew, published a thesis at Paris, in which, being ignorant of these facts, he claimed the operation as an original idea of his own. It had, however, fallen entirely into disuse until Galliard Thomas, in 1870, read a paper on it before the New York Medical Association. The only point in which he attempted to improve on the original suggestion of Ritgen was by protruding the vaginal wall through the abdominal incision by means of a sound passed through the vulva. Dr. Garrigues, of Brooklyn, with a view to lessen the hæmorrhage, proposes the use of the thermo-cautery for making the opening into the vagina. The operation has been performed in America by several eminent surgeons as well as by Dr. G. Thomas, and in England by Eddis and Hime; but there have not yet been sufficient cases to enable us to settle definitely the value of the operation.

In spite of the various modifications the Cæsarean section itself has undergone, and of the undoubted fact that the operation is better done now-a-days than formerly, still, till very recently, the consequent mortality had not diminished, as may be judged from the

fact that there was not a successful case in Paris from the year 1787, till quite recently, though the operation had been performed fully fifty times by the most celebrated surgeons. The chief causes of this want of success, Dr. Pinard thinks, is the frequent occurrence of peritonitis and hæmorrhage, the latter being even more frequent since the use of chloroform became general. He thinks that with the antiseptic method, and the operation of Porro, we have it now in our power successfully to combat both of these accidents.

It is now a long time since the idea of removing the uterus after the Cæsarean section was first conceived. Thus, in 1769, Cavallini removed the uterus from pregnant animals, and thought the operation should also be performed on women. Fogliata came to the same conclusion from the results of his own and Geser's experiment on dogs and cats, and in 1876 the experiments of Rein led him to believe that the operation could be successfully performed on women; but, though Michaelis gave his adhesion to the theory, it was not put into practice till 1868, when Storer, of Boston, removed the uterus and ovaries of a woman on whom he had performed the Cæsarean section, on account of a fibrous tumour of the uterus. He had no intention, however, when he began the operation, of removing the uterus, but was driven to do it by the severity of the hæmorrhage from the uterine walls. The patient died five days afterwards of septicæmia, and the case attracted so little attention that it was unknown to Dr. Porro when he performed his first operation in May, 1876. This operation was performed under the strictest antiseptic precautions, and the woman left hospital on the fourteenth day. Such a brilliant success soon had imitators, and Dr. Pinard gives 38 cases, many of them at great length, which have been performed since that time. Of these 38 cases 18 recovered and 20 died, but he considers that 5 of these latter should not be included in the statistics, as being performed on complicated cases, either of fibrous tumour (Storer and Tarnier), or osteo-sarcoma (Inzani), convulsions (Hegar), or *in articulo mortis* (Franzolini). In 4 other cases the particulars of the woman's condition at the time of operation are not given, but these he includes in his statistics rather than be open to the charge of partiality towards the operation. Of the 33 cases left, 18, or 54·5 per cent., were successful, and in 15, or 45·5 per cent., the patients died. A very large majority of these cases were operated on in the public maternities of large cities, and Dr. Pinard asks—

"Has the old Cæsarean section ever given anything like the same result?" and answers, unhesitatingly, "No."

How much of this success may be due to the operation itself, and how much to the antiseptic precautions, it is at present impossible to say; but there can be no operation in which the antiseptic method can be more clearly indicated than in that for opening the gravid uterus. At the same time, by removing the uterus itself, we get rid of the great centre of subsequent septic infection.

It is not yet possible to dogmatise as to the best method of operation—to say whether we should incise the uterus *in situ*, extract the infant, and then apply the ligature and remove the uterus; or follow the advice of Rein and Müller, and first draw the uterus out of the abdomen, then tie the vessels of the broad ligaments, or ligature them *en masse*, and last of all incise the uterus, and extract the child. These are questions that only a more extended experience of the operation can settle. For the same reason he refuses to discuss what is the best way of treating the pedicle, or how long the pedicle ought to be; whether it should be fastened into the abdominal wound, or sunk into the abdomen; and how far we should make use of drainage after the operation. When all these questions are settled we may expect to find the operation yield even better results than it does at present.

The most difficult question of all, however, is to settle the indications for the operation. After what has preceded, it will readily be allowed by all that whenever it is right to open the uterus in order to remove a fœtus, it is also right to remove the organ itself. The question, therefore, resolves itself into a determination of the indications for opening the uterus itself. In order to consider this he takes three cases—1. Where the pelvis does not admit of the performance of embryotomy. 2. Where it admits of this operation, but measures less than 7 centimetres; and 3. Where it measures 7 centimetres and more. He further thinks that, should the difficulty in delivery be due to a malignant tumour, and the child be alive and viable, we should choose the operation which holds out the best prospect of saving the child. In case No. 1, where embryotomy is impossible, then the operation is one of necessity, and not of choice. This is, according to Prof. Pajot, where the pelvis is too small to permit the introduction of the necessary instruments. 2nd. Where we can perform embryotomy, but the pelvis measures less than 7 centimetres. Under such circumstances two cases may present themselves, according as the child is dead

or living. After reviewing the statistics of embryotomy given by Dr. Eugene Hubert (*De la Transforation du Crâne*), he concludes that if the child be dead, he would perform embryotomy in such cases, except where the woman herself was suffering from osteomalacia, when it would be well, for her sake, to do Porro's operation. Should, however, the child be living, there is a great difference of opinion among the highest authorities; for though embryotomy gives better results in such cases than Porro's operation, the difference is very slight, and when the child is alive and viable we may well hesitate before making our choice. 3rd. If the pelvis measures 7 centimetres and more, we should reject Porro's operation, whether the child be living or dead.

There is still another possible indication, which has been noticed by Alessandrini—viz., rupture of the uterus. For as it has been shown (*Thése de Paris*, 1871, Jolly Jacques) that opening the abdomen and cleansing the peritoneal cavity gives better results in cases of rupture of the uterus than simple expectant treatment, we may reasonably conclude that the results will be still better after Porro's operation.

In conclusion Dr. Pinard says that though these indications and contra-indications will most certainly be modified in the future, they are those which follow logically from the results which have, up to the present, been obtained by the Cæsarean section, followed by amputation of the uterus and ovaries.

*The Porro Modification of the Cæsarean Section in Continental Europe, chronologically and analytically examined; showing the success of the new method, its advance from Italy to other countries, and its diminishing fatality under a better knowledge of the requisites for securing success; the whole statement being prepared with a view to enable our Obstetrical Surgeons to decide whether we should introduce this method into the United States.*—A paper with this title was contributed by Dr. Robert P. Harris to *The American Journal of the Medical Sciences* for April of the present year. In reviewing the origin of the operation he gives credit to Dr. Blundell for being the second person who recommended this operation, which was first proposed by Cavallini in 1769. In a paper read before the Medico-Chirurgical Society in 1823, Dr. Blundell writes:—

"When the Cæsarean operation is performed, or when a patient is evidently sinking after rupture of the womb, might not the whole uterus be taken away? . . . Let it be remembered that the wound formed by the extirpation of the womb, and which might probably be much

reduced in extent by drawing the parts together with a ligature, would merely take the place of a more formidable wound—that, I mean, formed in the womb by the Cæsarean section—and which, by the operation here performed, would, together with the uterus, be taken completely out of the body. . . . . Experiments on animals—rabbits, for example—which have very large wombs, might be of use here."

He afterwards made such experiments, and, while losing all by the Cæsarean section, he saved three out of four by the method of ligation and ablation. He subsequently repeatedly urged the adoption of this operation on the human female, and it is certainly surprising, when we consider the great mortality of the Cæsarean section in England, that no one ever carried out his suggestion in that country. Dr. Harris has tabulated 36 cases of this operation, which include 2 cases operated on by C. Braun, of Vienna, not mentioned in Dr. Pinard's tables. The fifth case he gives was operated on successfully by Prof. Spaeth, of Vienna, and was the first recovery that had followed Cæsarean section in the whole obstetric practice of Vienna for a century, and naturally created a great deal of excitement. Besides these two cases of Braun's, Dr. Harris has also heard of 5 other cases (Previtali, 2; Lucas Champonniére, 2; Valtorta, 1) not entered in Dr. Pinard's table, but does not include them in his table, as he could not obtain the particulars in time. He says:—

"If we excluded the 6 who evidently died in consequence of diseased conditions existing prior to the operation, we have 30 cases whose fate rested upon the effect of the knife and the skill in the after-treatment, without any special reference to the length of labour; and of these 18, or 60 per cent., recovered. This is the proper way to measure the absolute mortality of the operation in coming to a decision as to its relative merits when contrasted with craniotomy and cephalotripsy. If women are to be operated on in a semi-moribund state in order that their children may be saved alive, it is not exactly fair to set down their cases as evidence of the danger of the operation. Examined in all its details, in different countries, and under different circumstances, I have formed the opinion that the Porro Cæsarean operation, performed under the carbolic spray, and followed by proper drainage and the Lister treatment, will be found successful to the woman in about one-half of all the cases of pelvic deformity requiring its performance that are brought for relief to lying-in hospitals. What it will accomplish in private practice, or in the United States, where but 1 Cæsarean case in 28 has been in hospital, I am not prepared to say."

Compared with the results shown by Dr. Harris' table of Porro's operation, the last 36 Cæsarean operations performed in the United States make but a sad show, with the 7 recoveries and 29 deaths in twelve years. He thinks, however, that the chief cause for the excessive mortality of the Cæsarean section is that it has been performed too late. Hence he concludes "there would be little for us to gain by the Porro method in private practice, if we could induce all midwives and accoucheurs having cases of deformity to call in at once a competent operator, that the Cæsarean section, if requisite, might be performed before the child dies or is sacrificed, and the case rendered more dangerous by prolonged uterine action than it is proved to be in the first few hours of labour." The main objection to Porro's operation is, he thinks, "that it entirely unsexes the woman, not only rendering her barren, but in some degree unfeminine." The number of cases of Cæsarean section does not, he thinks, nearly represent the number of women on whom it ought to be performed, on account of the want of proper assistance, and also because there is a general belief that death will follow the operation:—"What is requisite is a mode of operation which shall offer a fair hope of recovery, and which, in consequence, can be urged upon the patient when she begins to realise the fact that she must die in labour if not relieved. The physician must have faith in the method proposed, and be able to recommend it from its past successes. In countries where the Porro system has been adopted it has had the effect to increase the confidence of the operator, to secure a larger proportion of early operations, and to save alive nearly all of the children."

With regard to the pedicle, he thinks there is little weight in the theoretical objection against forcing the cervix uteri from its natural position and dragging it with the vagina to form an attachment to the abdominal wall above the symphysis pubis. The parts usually soon adapt themselves to their new relations, and Dr. Porro found that the attachment in his case was after some time converted into a long thin pedicle, so that the patient suffered no pain or inconvenience in walking or dancing. Several alternatives have been proposed to avoid this union of the cervix with the abdominal walls, such as—1. Sinking the cervix and ligature into the pelvis, and drainage. 2. The inversion of the uterus after its evacuation, and its removal per vaginam. 3. Opening the vagina close to the cervix, and turning the stump into the passage. All these, he thinks, tend only to render the operation more complicated and dangerous.

The great advantage of Porro's operation is, he thinks, first, that the wound originally within the abdomen is treated virtually without the body; second, that there is no bleeding or gaping uterine wound, no lochial discharge, no escape of fluids into the abdominal cavity from the uterus, and no uterine sinuses to absorb noxious matters, set up phlebitis or metritis. It reduces the proportion of deaths by shock and exhaustion, and almost entirely avoids the risk of secondary hæmorrhage. The causes of death are generally traumatic, or septo-traumatic peritonitis, and septicæmia without peritoneal inflammation.

Really to appreciate the results of Porro's operation we must remember that 32 of these were performed in public hospitals, many of which have been regarded as little better than pesthouses. That they have exerted a prejudicial influence on the results of the operation is shown by the fact that the results obtained in them after ovariotomy are much behind those obtained in both England and America.

In *The British Medical Journal* for January of this year is a paper by Dr. F. Barnes, in which he seems to think that the results obtained by Porro's operation are not as good as those which the Cæsarean section has of late years yielded on the Continent. Against his opinion, however, we have that of Drs. Tarnier, Fochier, Pinard, Welponer, Chiara, and Wasseige, who think that Porro's operation is much less fatal. Under most favourable circumstances, such as operating early in private practice, Dr. Harris thinks that the Cæsarean section may on the Continent save about half the patients. In America he thinks if cases were operated on early, as many as 6 or 7 out of 10 might be saved; but he, at the same time, puts the probable proportion of cases that are seen early as 1 in 4 or 5, and asks what is to become of the balance.

Since this paper was published Dr. Isaac G. Taylor, of New York, has introduced a fresh modification into the operation, which he published in *The American Journal of the Medical Sciences* for July, 1880. It consists of first removing the child, and then putting a temporary ligature round the cervix, and afterwards inserting a cobbler-stitch one inch below this for the permanent ligature, then removing the uterus and placenta with the scissors, and sinking the pedicle. The patient was attacked on the 17th day with phlegmasia dolens, and died on the 26th day after the operation with symptoms of embolism.