THESIS

for degree of M. D.

Presented by

HERBERT OSBURN COWEN M.B., C.M. Glasgow University, 1888

Cotham Road,
Kew,
Victoria.

April, 1911

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

ONE THOUSAND CONSECUTIVE CONFINEMENTS IN PRIVATE PRACTICE.

This record comprises 700 cases, which formed the basis of a paper read at the Intercolonial Medical Conference at Hobart in 1902, and 300 cases attended since that date, the whole forming a series of 1,000 consecutive confinements. The conditions and circumstances of the work were as follows:-

1. Responsibility has been assumed for all cases in which I have been present before the delivery of the placenta.
2. No post-partum time limit has been imposed. Personally I do not think the statutory thirty days sufficient. I have known cases in which, had death occurred six or more weeks subsequently, it would have been as clearly due to the confinement as if but one week had elapsed.
3. Miscarriages before the fifth month have not been included, though no fatality has occurred from this cause, as I consider them a factor in a somewhat different equation.
4. The cases have been taken in the course of a mixed general practice, and, with very few exceptions, in spite of post-mortem work or the currency of a septic case.
5. The first 700 cases in the series occurred in a working class neighbourhood, chiefly mining. During this period only untrained nurses and relatives were available.
6. The remaining 300 represent my practice in a good residential neighbourhood. During this period I have almost invariably had the assistance of efficiently trained nurses.

PRELIMINARY CONSIDERATIONS

It has been said that the medical man begins his struggle with infection on laying hold of his obstetric bag. But he must begin it long before this, recognizing that successful warfare depends hardly less upon preparation than upon performance. Apart altogether from the added horror of puerperal infection, pregnancy and parturition in themselves involve no small risk and strain. Even under modern conditions there still remains a small proportion of women to whom pregnancy brings improved nutrition and general health, but for the large majority it involves more or less impairment of function, digestive, haemapoietic, nervous and mechanical. There results loss of individual resisting power and of tissue vitality. Deficient innervation, for example, and inefficient muscular contractility increase the liability to post-partum haemorrhage. The resulting diminution of systemic resistance to microbial invasion and the greatly enhanced activity of the absorbents seriously increase the liability to generalized infection. And over and above its special significance, albuminuria, with the cellular degradation to which it gives rise, has an important bearing in this direction. In short, from the date of his engagement to attend a confinement, everything that concerns the functional and organic health of his patient must concern the practitioner who desires to conduct her with the minimum of risk through her coming trial.

THE OBSTETRIC BAG

It has always seemed to me that quite an unnecessary amount of abusive criticism has been directed against the obstetric bag. Various measures having been suggested for its reformation, and in vain, its abolition is now demanded. The so-called aseptic detachable lining is a delusion and may be in a very real sense a snare. As it is impossible to keep such a lining aseptic, it cannot be looked upon as a defence, and after two or three boilings, it becomes utterly lost to all sense of size and proportion. The bag should certainly be clean, but it is the man who must be aseptic. The principle which so much insistence upon the character of the bag is apt to make us lose sight of is, that the only safety in obstetric work lies in personal and instrumental sterilisation for each individual case. The obstetric bag should be kept strictly for primary obstetric work and it should be much larger than that in common use, in order to carry in washable coverings an apron and the necessary instruments and appliances.

PREPARATION OF PATIENT AND PHYSICIAN.

After reaching the sick room and noting the general condition of the patient, the medical attendant's first duty is the careful sterilisation of his hands. I need not go into detail as to this, but need only say that it should be as

conscientious and thorough as for any surgical undertaking. If, owing to previous septic contacts, he is in doubt of its completeness, sterilised rubber gloves should be worn. The nurse will, in the meantime, have been engaged in the careful preparation of the skin at and around the vaginal orifice and the combined abdominal and vaginal examination of the uterus may now be undertaken.

Vaginal examination must only be performed after thorough preparation of the physician's hands, and the careful separation of the labia minora, in order that the examining finger may not carry infective organisms from the external genitalia to the upper part of the vagina. In a large proportion of multiparous cases it may be entirely dispensed with, and in primiparous cases where the head is well advanced. But if we keep before us as our ideal, not to make more than one vaginal examination, and not to make that if we can avoid it, we can so safeguard the procedure as not only to increase but actually to diminish the risk to mother and child.

Much as we may learn from abdominal palpation as to the position of the child, and even as to the progress of labour, there remain points upon which vaginal examination only can inform us, such as the condition of the cervix, the descent of the anterior lip, which not infrequently prolongs labour and renders it more painful, and the exact bearing of coccygeal abnormalities. For the early recognition, too, of prolapse of the cord, upon which the life of the child may turn we are entirely dependent on vaginal examination.

I am interested to note that, in speaking of abdominal

palpation, Berry Hart says, "The method is not so suitable for private practice, but there the reduction of internal examination to a minimum, with the use of gloves, should give results as good, and probably more sure". Needless to say, t h e casual "trying of the pains" by the nurse must be absolutely prohibited. For the rest, in the conduct of a normal case of labour, it is well for us to bear in mind that it is a natural and not a morbid process with which we have to deal, and that nature has provided safeguards for the parturient woman in the way of secretion, contraction and direction of flow. It is for us to do our utmost to avoid contaminating t h o s e secretions or unnecessarily interfering with those processes.

P R E S E N T A T I O N S E T C.

In the series of 1,000 cases, 287 were primiparae. Of the presentations 975 were cephalic. Of these 53 were noted as being occipito-posterior, but this cannot be taken as the full number of such positions as some may have rotated before my arrival. My personal experience of occipito-posterior positions leads me to question the approximate accuracy of Dr. West's estimate, that not more than 4% terminate with the face to the pubis. Of my last 30 cases of O.P. positions I find that no less than 10 terminated in this way and delivery in these was by no means always difficult. But in view of the relative frequency of the O.P. position and the greater difficulty and delay which it frequently entails, the question of its correction seems to me to be most important. When the

head remains high in this position my present practice is to rotate the head with the left hand in the uterus and the right hand over the fundus. Having thus rotated, I hold the head in position until the blades of the forceps are accurately applied. More tentative efforts at digital rotation and the application of the forceps, without being absolutely certain that the corrected position was maintained, almost without exception ended in disappointment. The subsequent difficulty in delivery with its attendant traumatism of the maternal soft parts being explained by the appearance of the vertex in its original faulty position. I have not attempted rotation with the forceps on notwithstanding Smellie's "great joy" as I do not know what damage the blades may be doing in positions in which I am not accustomed to handle them. Upon no point in the management of difficult labour has my individual experience thrown such clear and definite light as upon this. I had thought and read much about it and keenly realized its difficulties and theoretically at least knew the way out. But my efforts were tentative and half-hearted and too easily influenced by the anxiety of the moment. Suddenly, however, two consecutive cases crystallized my thinking and theory into a practical procedure. Both were second cases and in both the first labour had been very difficult. In the first, which was a case of my own, I had the assistance of a colleague of great experience. The head remained high in the O.P. position and we both tried unsuccessfully to deliver with forceps and failed to move the head at all owing to the repeated slipping of the blades. I then rotated the head and applied the forceps with the left hand in the

uterus as detailed above, and delivered a dead and mutilated child without undue difficulty. The second was a case in which a fellow practitioner asked me to assist him. He told me that the first confinement had been most difficult and protracted and that the child had died during delivery. He had on this occasion made repeated attempts at the accurate application of the forceps and had failed. In this case I did not attempt to apply the blades until I had rotated and retained the head in position. The result was entirely satisfactory and delivery of a living unmutilated child was effected without difficulty. I lay no claim, of course, to originality for this procedure, I only regret that I had not boldly adopted it long before and that it is not more frequently resorted to by practising obstetricians.

There were four face and brow presentations and two of the whole vertex, in which neither brow nor occiput showed any tendency to engage. I can find little as to this condition in the text books, but I am quite clear that these were two of the most difficult cases to deliver which have occurred in my practice. Both were large square-headed children: in both the head remained high and the forceps showed an inveterate tendency to slip. Ultimately version was performed and both children were born dead. Looking back I cannot but regard the failure with the forceps as fortunate, since delivery by that means must have involved serious injury to the maternal soft parts.

There were 21 presentations of the breech, one of the funis, two mixed (one arm and head and one hand and breech)

and two transverse. Of three cases of Placenta Previa two were partial and one central, the latter accounting for the only maternal death in the series. Of eight cases of twins two were premature and in two the second child was still-born.

A C C I D E N T S.

Of three cases of Eclampsia, one occurred during labour one six hours and one 60 hours subsequently. The two post partum cases were very severe, but one has a much freer hand in treatment when delivery has not to be considered. All three mothers recovered. These cases occurred in my first series. In the second series I have been confronted with a proportion of cases of pronounced albuminuria with dropsy, but treatment has been instituted earlier, control has been closer and more continuous and in no case has Eclampsia developed. I do not propose to discuss the much debated question of the causation and treatment of Eclampsia, but my later experience has confirmed my preference for its preventive treatment. Purgation diuresis, milk diet, and later on sedatives have, as it seems to me, saved me much anxiety, while they have at the same time restricted my experience of eclampsia.

In 975 head presentations forceps were applied in 164 - practically an average of 1 in 6. Of 287 primiparae 96 were forcep cases - an average of one in three. I do not find any marked difference in the ratio as between my two series of cases, one representing practice in a working class and the

other in a good middle class neighbourhood. My later series shows a slightly diminished ratio for primiparous and a slightly increased ratio for multiparous cases, indicating it may be a greater relative frequency of uterine inertia. But the numbers are not large enough to establish anything definite on this point. As far as I am able to guage it, my tendency is to leave more to the natural efforts of the primiparae and to assist those of the less vigorous multiparae in the later stages of delivery. Milne Murray's aphorism is excellent "only apply the forceps when the danger of delivery is less than that of delay", but what a rare amount of wisdom and experience its true interpretation requires. Of this I am persuaded that the too early and too frequent use of the forceps is an important factor in the maintenance of the high puerperal mortality and morbidity rates. Important as trauma is from the point of view of mortality, it is even more so from that of morbidity. Broadly, I think it may be said that the morbidity of thepuerperium is more largely determined by the traumatism produced during the second stage of labour, and its mortality by the complications of the third stage.

THE MANAGEMENT OF THE THIRD STAGE

This, more than anything else, marks the dividing line between safe and dangerous midwifery. In it lies the key to the prevention of post-partum haemorrhage, and in the great majority of cases, of puerperal sepsis also. Antiseptic precautions may carry the accoucheur safely through many an error

in the use of the forceps, but they will not save him from the consequence of want of thought and want of patience in the delivery of the placenta. So far as I am aware, it is only within the last few years that the necessity for a more rational and deliberate treatment of the placenta has been borne in upon the profession at large. ... Credé's method had become a positive fetish, and comprised all that was worth knowing about the third stage of labour. It was indeed all that I carried away of the teaching in my own student days on the subject. And yet, practised as it has so generally been without limitation as to time and force, I take it to have been the most important factor in the maintenance of the puerperal death-rate. It is not, I think, generally remembered that shortly before his death, Credé recommended a lapse of thirty minutes before his method was to be attempted. My own practice is to follow down the uterus after the birth of the head, and then with the hand over the uterus, to watch rather than control it for 20 minutes. I am sure I did harm in my earlier cases by trying to maintain contraction of the uterus at this stage; it is not nature's way; it is goading the jaded steed, which only asks rest, and it will do all that is required. I have n o t seen hour-glass contraction since I abandoned this procedure.

After a few pains the uterus will be found to rise above the pubis, this signifying according to Professor Byers, that separation of the placenta has been effected. Then, during a pain, with the whole hand square above the fundus, I follow down the uterus, and it is not until I have repeated this manoeuvre without success, that I attempt expression by Credé's

method. In more than 95% of my cases, nothing further has been required. If, however, after the lapse of half an hour, further attempts at expression give the impression of organic immobility, which one soon comes to recognise, I do not hesitate to remove the placenta manually. I find that this has been done thorty-eight times in all. With careful preparation of the hand and forearm, I have found the procedure both safe and satisfactory and I am convinced that the warnings of the older text books, as to the grave nature of the proceeding, have often tempted the attendant to employ force sufficient to detach the main body of the placenta from an adherent portion. It is only in cases in which forcible expression has been employed that I have found difficulty with the membranes, I then support the placenta on the palm of the hand, and, waiting for relaxation of the uterus, use gentle traction in the axis of the canal, always stopping short at the suggestion of a "give" I prefer this to the method of twisting the membranes so commonly recommended, as this seems to re-inforce the stronger as against the weaker portions, and so to increase the liability to tear.

As a matter of routine, the placenta and membranes are examined, and if I conclude there has been a retention of a portion, I go in search of it at once. In cases where early escape of the liq. amnii suggests that the membranes are unusually friable, additional care is necessary in the removal of the placenta. In such a case I have known the placenta to

appear stripped entirely of membranes by its own weight.

THE POST-PARTUM PULSE-RATE

On the conclusion of labour there occurs, in a fair proportion of cases, a phenomenon, to which it seems to me sufficient attention has not been given. I refer to a marked fall in the pulse-rate. One text-book speaks of this as beginning eight to forty-eight hours after labour; another, vaguely as being most marked on the second or third day. In a series of one hundred confinements, I have notes of its occurrence in nine cases. Of these three were in first-cases, and gave the following counts:-

1. Ante-partum pulse-rate not recorded, but next morning pulse was fifty, counted to the full minute, and on the third day it was fifty-eight.

2. Ante-partum pulse-rate sixty-five to seventy; fell to forty-four within quarter of an hour after the expulsion of the placenta.

3. Very tedious case; pulse sixty-four before putting on forceps under chloroform; placenta was expelled spontaneously and pulse fell to fifty-three.

Two were second cases, one a third, two fourth and one sixth. In the last, the ante-partum pulse-rate was sixty-six and there was great distension of the uterus, both placenta and

child being very large; six hours after the pulse was forty-five and on the second day sixty. They all gave counts of fifty-three to forty-four. In one only was the lowest count noted as occurring thirty hours after, and in the remaining eight it was just after the expulsion of the placenta. These are cases which almost invariably make good recoveries, and it may be inferred from this that there is nothing pathological in the phenomenon. The explanations offered in the text-books that "it is due to the mental and physical rest which follow delivery," and the sudden diminution in the amount of labour put upon the heart etc. do not at all satisfy me. These are common to 95% of confinements, but the fall in the pulse-rate occurrs in but a small percentage. I am not prepared to define the complete significance of the phenomenon, but I have a suggestion to make as to its occurrence. I premise that the parturient woman has a varying physiological amount of blood to lose. When this is exceeded, the pulse rises and much in proportion to the excess, the heart being spurred to supply the wants of the economy with a diminishing quantity and quality of blood. On the other hand, when less than the usual amount of blood is lost, and this has been true of all the cases I have observed, the heart has more blood for distribution than is actually required and beats more slowly until the status quo is regained. It may be, too, that the infrequency of septic complications in these cases is explained by the engorgement of the circulation reducing absorption to a minimum.

REPAIR OF LACERATIONS: Experience has convinced me of the folly of pursuing the policy of the open door with regard to lacerations of the perinaeum. If extensive, they should be repaired in the dorsal position and deep and accurate apposition obtained. I am at a loss to explain nature's apparent indifference to the integrity of the perinaeum, even in normal cases, seeing that it constitutes such an important safeguard against puerperal infection.

If for any reason there has been recourse to forceps extraction before the full dilatation of the cervix, it is advisable to explore the upper reaches of the vagina and the cervix, as rupture into the posterior fornix is known to occur as a result of instrumental delivery in such cases, while the perinaeum itself remains intact. In normal cases, however, and even in the large majority of difficult cases, post partum interference is to be strongly deprecated. For this reason routine post partum douching has been abandoned. In my opinion, vaginal douching post partum is worse than useless as a prophylactic, and is only called for as a preliminary to intrauterine irrigation. For such a procedure only a fountain douche should be used because of its one way flow, the domestic Higginson with its two way suction being, to my mind, a dirty and dangerous instrument over which one can exercise no efficient control.

PUERPERAL SEPSIS.

Our attitude towards septic infection has so radically altered during the past twenty years, that it

is hard for us to realise the point of view from which it was then regarded. As late as June 1894, the Lancet reports a discussion at the Royal Academy of Medicine of Ireland on the Etiology, Prevention, and treatment of Puerperal fever or Septicaemia. It was introduced by a gynaecologist of world-wide reputation, and in the course of his remarks, he spoke of the epidemic diffusion and local prevalence of puerperal septic-aemia due to air-born "germs" much as if he were discussing a disease of the nature of measles or scarlet fever. I venture to say that no ordinary practitioner to-day, who makes claim to the modern point of view, would for a moment think of sheltering behind a proposition such as this.

To-day we acknowledge, not without fear and trembling, that sepsis occurring in a healthy woman during the puerperium, is due to some error on the part of her attendants.

But not only has the old complicated view of these conditions failed to lay the blame on the right shoulders, it has also created a paralysing amount of needless alarm. I have had, I regret to say, several cases of sepsis in my series of 1,000, the most serious of which I reported at some length to the Victorian Medical Society; but they have all, without exception, yielded to treatment. I attribute this largely to the simplification of the situation in my own mind. For all practical purposes, puerperal fever, so-called, has resolved itself into secondary infection of retained membranes, placenta,

or clot, or of vaginal or uterine laceration.

It has been usual to distinguish at this point between sapraemia, or septic intoxication, and septicaemia, or septic infection. It is now generally admitted that this is a distinction of degree and of duration only. The attack of pathogenic organisms upon dead tissue producing toxaemia may, at any moment, develop into a general invasion producing septicaemia. It is more correct, therefore, and it is certainly safer clinically, to regard the so-called sapraemia, as a stage on the road towards a general septic infection, and to treat the case from the outset as having all the inherent possibilities of the latter. Foetor of the lochia is not regarded as evidence of puerperal sepsis. In some of the most virulent cases of streptococcic infection it may be entirely absent. It is evidence of decomposition of dead tissue, but tells us nothing as to systemis invasion; in fact, given other evidence of general infection, I should regard marked foetor of the lochia as a favourable symptom. It suggests local rather than general bacterial activity, and it promises a satisfactory response to energetic local treatment. Where it is possible, a bacteriological examination should be made of the uterine contents, and, if performed early, this may give invaluable indications for treatmerit. In the later stages of puerperal sepsis, mixed infections so confuse the issue that the indications for treatment are much less definite.

T R E A T M E N T

Given the presence of infective organisms in the parturient canal during the puerperium, and everything favours their multiplication and distribution. This is no time for hiding one's head in the shifting sand of conjecture. Above all other explanations, let us banish the ever-handy 'influenza' from our consideration of the earlier, and 'typhoid' from that of the later stages of puerperal sepsis. Every hour is of importance. Acute immediate general infection, presumably streptococcal, is comparatively rare, and the development of puerperal sepsis may frequently be inferred before a general microbial distribution has occurred. Such inference should spur us to immediate action. If we have been quite sure of the integrity of the membranes and placenta, it will be sufficient in the first instance, to douche the vagina, and, subsequently the interior of the uterus, and to deal with such breaches of surface as our examination reveals. This will remove the uterine debris, destroy organisms which have not penetrated the decidua, and, according to Pryor, if performed within 12 hours of the onset of the first evidences of infection will effect a cure. If it does not, and especially if there has been any doubt about the placenta, my own practice has been to explore the interior of the uterus under an anaesthetic and to remove adherent tissue and debris with a blunt flushing curette; thereafter to swab out the uterine interior with an

antiseptic strongly germicidal but not escharotic; to irrigate with a normal saline or very dilute antiseptic solution; and then pack the cavity with 10% iodoform gauze. In the limited field of private practice I have not found it necessary to employ the more radical procedure of the cul de sac operation so strongly recommended by Pryor. Such is my attitude towards the much debated question of primary curettage in cases of puerperal sepsis. It has given me most satisfactory results, and carried out carefully, and with a rigid regard for asepsis has proved itself a sound and safe procedure. As to the wisdom of curetting when secondary endometritis has become established, I am not prepared to dogmatize. Theoretically, as it seems to me, such a condition would be most scientifically attacked from the side of the blood stream, with such reinforcements as bacteriology could suggest in the form of personal vaccines and sera and by free drainage of the uterus. In the case of direct virulent streptococcic infection, in which there is no question of retained secundines curettage is not indicated; but these are cases, the true nature of which can only be determined by bacteriological examination and in which it is reasonable to expect good results from antistreptococcic serum.

R E S U L T S.

Foetal Mortality.

In all twenty-six children were born dead, but of these eleven had been dead for some time, as indicated by pealing and maceration, one was hydrocephalic, two were the second of twins, and two were born dead before my arrival. This

leaves 10 foetal deaths directly attributable to difficult and regarded delivery under my own control. It is difficult, at this distance, to get statistics as to foetal mortality in this restricted sense, and I do not know how these results compare with others.

Maternal Mortality

There was one maternal death due to central placenta previa. In view of the high mortality in such cases under the best possible conditions and treatment, this can hardly be considered a preventable death.

I N C O N C L U S I O N. I freely admit that I might have been equally careful and yet less fortunate. In not a few cases, at the termination of labour the condition of the mother was such as to cause the greatest anxiety from shock or haemorrhage or heart failure, singly or combined, but in all the balance ultimately turned in favour of recovery. I have had, too, especially in the first series, a proportion of cases of puerperal morbidity due to sepsis, some of them alarming, but all have yielded to treatment. I recognise that in the latter class as well as in the former the favourable issue was largely beyond my control. I am, none the less, glad to be able to present to my old medical school this series of 1,000 consecutive confinements without a maternal death from preventable cause.