The Binder and its relation to obstetrics

by

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The Binder and its relation to obstetrics.

A short account of the phenomena of natural labour.

Stages. Labour has been divided into various stages, even as many as six, but it is perhaps best to look upon it as consisting only of three.

The first stage takes up the phenomena which occur from the very commencement of the process to the complete dilatation of the os uteri, i.e., until it has acquired a diameter of four inches. This is the stage of preparation and dilatation as the uterine contents do not change their relation to the parturient canal but remain in the cavity of the uterus.

The second stage extends from the full dilatation of the os uteri to the birth of the child. This is the stage of expulsion.

The third stage extends from the birth of the child to the expulsion of the secundines i.e., placenta membranes and umbilical cord. This is the stage of delivery.

Individual phenomena of the first stage.

1. Premonitory symptoms. The time
at which these symptoms manifest themselves varies. They have been seen as much as a month before labour, but usually two or three days in primiparae and from twenty-four to forty-eight hours in multiparae.

They consist of (1) increased moisture and relaxation of the vaginal canal and external genitals. The vaginal mucous is increased, giving rise to a feeling of "wetting" as many patients call it, and just before actual pains come on the cervical canal opens up and is perhaps lacerated a little and its discharge gives the vaginal mucous a bloody tinge which is known as the "shovs." (2) Subsidence of the uterine tumour.

For a fortnight or three weeks before labour, the uterine tumour begins to sink into the pelvis, and the uterine contractions of a painless kind which are present during the whole of gestation now become more frequent and may even be accompanied by slight pain. The subsidence of the uterine tumour and these contractions being more frequent have the effect of diminishing the size of the tumour.
so that the patient appears less bulgy immediately before labour than she was three or four weeks before. The greater the subsidence of the tumour the more favourable the prognosis as it shows that the pelvis is roomy and capable of receiving the presenting part.

(3) Free state of respiration. From the subsidence of the tumour the diaphragm has more freedom to act and respiration is thereby carried on the more easily. Digestion also seems to be improved, and altogether this is frequently the patient's period of highest health.

(4) Pressure symptoms on bladder and rectum. The bladder being pressed upon, becomes irritable and gives the patient a frequent desire to empty it. The rectum is also pressed upon which sometimes gives rise to diarrhoea but more frequently the pressure gives rise to constipation, hence the necessity for a good dose of Castor oil before labour sets in. The pressure upon the pelvic nerves renders the patient less able to walk about and take exercise.

The occurrence of the uterine contractions and pains. This is the first
true indication that labour has set in. These contractions and pains coexist but the pains are only a symptom and effect of the contractions.

The seat and character of the pains. They may be in the front but more frequently at the commencement of labour, their seat is in the back and shoot round the loins and down the thighs. At this stage they are due partly to the pressure upon the nerve filaments caused by contraction of the muscular fibres to which they are distributed, and partly to the stretching and dilating of the structures of the cervix. At this time the pains are described as 'acute' and 'grinding' and are accompanied by the loud cries of the patient as each contraction supervenes. By and by, as labour advances into the second or expulsive stage other sources of suffering are added. The presenting part now presses upon the vaginal nerves as well as the large sacral plexuses, and as it nears the outlet it stretches the perineum and vulva. The seat of the pains is now the whole of the parturient canal, viz. uterus vagina and vulva. The pains have now changed their character. They are stronger, longer.
in duration, with a shorter interval between them, are more rending and tearing and accompanied by a distinct forcing effort and are known as "the bearing down pains." The cause of the pain is now the strong spasmotic contraction of the uterus, the colic-like pain of the abdominal muscles and the tearing and rending of the perineum and vulva.

Intermittent Character of the Pains. The uterine contents are not expelled by one long and continuous effort but by frequent attempts. And this is very important physiologically to both mother and child, because if there was no intermission not only would the muscular powers of the mother be rapidly exhausted, but the circulation through the uterus and placenta being also interfered with, the child would be in danger of perishing.

Method of Contracting. The wave of contraction seems to commence at the fundus and pass towards the cervix but the wave passes so rapidly that the whole organ seems to contract and harden en masse.

Gradual Opening up of the Cervix.
It is dilated by (a) the contractions of the uterus. As the uterus contracts it presses upon its contents with a force which is universal and everywhere equal and as the os is the only part where there is an opening, it is here that the walls yield and dilate. The longitudinal muscular fibres on the anterior and posterior walls of the uterus, as they contract, pull upon the lips of the os and also tend to dilate it. But the dilatation is mainly produced by the mechanical action of the uterus pressing upon its contents and driving them into the canal. (b) The bag of membranes. The bag of membranes act as a fluid wedge and is the best medium for transmitting the power of the uterus to the cervical canal, hence the necessity for keeping them entire until the os is fully dilated.

(c) Vidal dilatation. Before labour sets in we have before noticed that there is an increased secretion and softening in the parturient canal, and this goes on during the whole of the labour. This is vital dilatation. Formation and rupture of the bag of membranes.

The bag of membranes is formed by
the segment of the membranes exposed by the dilatation of the os. As the os dilates more and more of the membranes become detached from the lower segment of the uterus and driven through the os along with a quantity of liquor amnii. This is called the bag of membranes or forewaters. The form of the bag is globular and it hangs down, in the interval between the pains, like a finger of a glove or foot of a stocking, according to size. But during a pain it becomes tense and presses upon the cervix like a fluid wedge and dilates it when the os uteri has acquired a diameter of four inches it is fully dilated and the membranes generally rupture spontaneously and a considerable quantity of the liquor amnii escapes. The head if presenting, often acts as a sort of ball-valve, and, falling down on the aperture of the cervix prevents the complete evacuation of the liquor amnii which escapes by degrees during the rest of the labour, or may be retained in considerable quantity until the birth of the Child. Full dilatation of the os uteri when the cervical canal has opened
and elongated until it has attained a diameter of four inches and measures four inches from the os internum to the os externum it is said to be fully dilated. The membranes now rupture or ought to be ruptured and the forewaters allowed to drain away and with this the individual phenomena of the first stage of labour are brought to a close.

Individual Phenomena of the second stage.

This stage is the stage of progress, the child passing through the canals. The phenomena consist of:

1. Descent of the child (head) into the pelvis. Sometimes when the pelvic brim or upper strait is narrow or the head large, the presenting part is high and may almost out of reach of the examining finger. On the other hand when the parts are lax and roomy or the head small, the presenting part is low.

2. Formation of the perineal tumour. As the head passes through the pelvic cavity and nears the lower strait or outlet it presses on the soft structures between the tip of the coccyx and anterior margin of the perineum and these structures get stretched, thinned, and bulge out
before the presenting part, thus forming the perineal tumour.

Full dilatation of the external parts. During the whole of the labour the soft parts about the vulva and perineum except the myome are becoming soft and relaxed from hyperaemia and increased secretion. But now the head presses directly on these parts and dilates them. The dilatation takes place only during a pain and in the interval between the pains the head of the child recedes. The alternate advancing and recession of the head continues until the external parts are fully dilated. then follow the:

4th Expulsion of the head and body of the child.

When the foetus is expelled there is a rest, the contractions cease and the uterus is for a time paralyzed. But in from ten to twenty minutes the contractions return then follow: The Phenomena of the third stage. They consist of:

5th Detachment of the Placenta.
The placenta is inelastic and as the uterus contracts it shrinks and tears itself off from the placenta which is thus detached.
Expulsion of the Placenta.
It is expelled into the vagina by the uterine contractions. When in the vagina it acts like a foreign body and is expelled by the abdominal muscles in the same manner as feces from the rectum.

There are three factors in labour.
1. The powers by which the body is moved.
2. The passages through which the body passes.
3. The passenger.

Factoral elements of the first stage.
1. Powers. In the first stage the power is the uterus as the dilatation of the cervical canal is effected solely by the action of the uterus.
2. Passages. The lower segment of the uterus, viz. the cervix and its orifices and two or three inches of the uterus. But the cervix and its orifices are the chief.
3. Passenger. The passenger is the exposed portion of the membranes and a portion of the liquor amnii, having as yet nothing to do with the contents of the uterus higher up.

Factoral elements of the second stage.
1. Powers. We have still the uterus, which acts more powerfully than in the first stage.
2. The action of the abdominal muscles.
3. The weight.
of the child.

2 Passages. The passages are (1) the soft canals, viz., vaginal, canal perineum and vulva, and (2) the hard canals.

3 PASSAGERS. The foetus, especially the head.

Factorial elements of the third stage.

1 Powers. (1) The action of the uterus until the placenta is in the vagina and then (2) the abdominal muscles.

2 Passages. We take no note of the hard canals, as the placenta can easily pass after the foetus, so we only take note of the soft canals. But the placenta may be high up at the fundus; hence we take into account the uterine cavity.

3 Passages. The secundines.

I shall now take up the consideration of the first factor in labour viz., the powers; and I shall confine myself to the consideration of these as it is with these that my thesis has to deal.

The Powers

1 The uterus. The uterus in virtue of its power of contracting is considered the essential element in parturition as all other powers are unavailable until the uterine contractions are fairly established. These contractions increase in frequency and severity, the interval becoming shorter and the duration
of the contraction longer until the birth of the child.
The degree of mechanical power exerted by the uterus is difficult to estimate, as the uterine effort is assisted by that of the abdominal muscles. It is sometimes so great as to fracture the skull of the foetus or lacerate the passages of uterus itself, or even open up the pelvic joints. The uterus, being composed of nonstriated muscular fibre, goes on contracting as powerfully in sleep as in muscular patients, and being involuntary, it continues to contract when the patient is unconscious or in anaesthesia, and has even contracted after the death of the patient. When flaccid and the patient on her back the uterus is flattened from before backwards, and bulges from side to side, but when contracted it is firm and erect, contracted laterally, elongated, and more tubular.
The uterus then being the essential element in parturition, it is evident that the labour might be seriously delayed when from any cause the uterine action is defective.
When in lingering labour the delay is due to defective uterine action, we must have recourse to some means...
of evading the evil effects of the defective action. In these cases the contractions are feebly and ineffective and have no power upon the progress of the labour. The fault then, being defective contraction, the first indication is to increase the force of the pains. For this purpose remedies, called oxytocic from their stimulating action upon the uterus, are used. Of these a large number have been employed, as borax, cinnamon, &c., but the one which is now chiefly relied upon is Ergot of Rye. This ergot of rye is a powerful stimulant to the uterine fibres. It is given as an infusion, or 20 to 30 drops of the tincture or better still the hypodermic injection of ergotin. In fifteen to twenty minutes after its administration the pains increase in severity and frequency. These pains differ from the natural pains in being strong and persistent with no interval; in fact the uterus is thrown into a state of firm tonic contraction which is dangerous to both mother and child. Dangerous to the mother from exhaustion, or if there is an obstacle to the escape of the uterine contents from rupture of the uterus. The danger to the child is also very great as the persistent contraction interferes with
the utero-placental circulation and the child dies from asphyxia. Or, if perchance it be born alive it may have made inspiratory efforts and filled the air passages with the discharges so that it may be difficult or impossible to resuscitate it. For these reasons and seeing that we have other means at our disposal, I discountenance the idea of giving ergot at all until the birth of the child. Of course if the pains become weak when the head is low in the pelvic cavity and the passages dilated and roomy so that there is no obstacle to a speedy delivery, it might be given but never in the first stage, and even here I am of opinion that pressure is preferable and this leads me to speak of pressure as an oxytocic.

Pressure has been known as an oxytocic from the earliest times and it is truly wonderful what can be done by its judicious use. Albucasis for instance was well acquainted with its use and was in the habit of applying pressure to the uterus to assist the descent of the child. He speaks of it as follows: "Cum ergo vides ista signa, tune oporlet ut comprimatur uterus ejus ut descendat"
embryo velocity. There are some curious obstetric customs amongst various nations which probably arose from a recognition of its value; as for example, the mode of delivery adopted among the Falmutes where the patient sits at the foot of the bed, while a woman seated behind her, seizes her round the waist and squeezes the uterus during the pains. Amongst the Japanese, North American Indians & pressure is constantly used.

Husteller, however, was the first to bring the systematic use of uterine pressure as an oxytocic prominently under the notice of the Profession, under the name of "Expresio Foetus." He maintains that it is possible to effect delivery by properly applied uterine pressure even when pains are absent.

Playfair also speaks of it and says that he effected delivery by manual pressure on a patient, whose friends would not permit him to apply the forceps, when he could not recognise the existence of any uterine contractions at all, the foetus being literally squeezed out of the uterus. I have no doubt much can be done by
Manual pressure applied to the uterus, for example, after the birth of the child, is by no means a difficult task to expel the secundines by manual pressure applied to the uterus through the abdominal walls. Towards the close of the first stage and during the second stage manual pressure might have a good effect upon the progress of the labour, especially when the head has descended low in the pelvic cavity and lodged at the perinaeum. In the latter case pressure exerted by the hand upon the fundus during a pain might cause the head to glide over the perinaeum and so terminate an otherwise tedious labour. The use of the hand, however, as a means of applying pressure seems to me to be always accompanied by no small degree of discomfort and pain to the patient, as well as being unpleasant, irksome, and fatiguing to the Practitioner. Consequently of late I have been in the habit of using a means which I now consider more easy of application, more efficacious and which, so far from being a source of annoyance to the patient, is a great boon to her as a reliever of her suffering. The means here referred to is a Binder.
The binder is a piece of cotton or linen of rectangular shape, of sufficient breadth to extend from the ensiform cartilage to the pubes and of sufficient length to do a little more than pass completely round the body of the patient. The ordinary long pillow slip, which can be had in every house answers the purpose very well. The binder I am in the habit of using is about 2½ in. broader in the middle than at the ends, the increase in breadth being caused by the upper border being convex while the lower border is straight. It has also the ends split up into two for a distance of from 9 to 12 inches. The advantage of the binder having this shape is that it can be more evenly applied over the uterine tumour. The convex border of the binder passes up over the fundus, while the ends corresponding to the convex border pass downwards and backwards and reach the middle line behind at a lower level than do the ends corresponding to the lower portion of the binder. The lower ends pass directly round the patient. The ends of the binder are fastened behind with pins or twisted round each other and held in position by the hand.
For use during the first stage of labour when the uterine tumour is large, a binder of the above shape is preferable, whereas in the second stage, when the head is low in the pelvic cavity and the uterine tumour thereby diminished in size, it has no advantage over the ordinary oblong or rectangular shaped one.

Its action is that of a stimulant to the uterine fibres.

It has this stimulating action in virtue of the pressure which it exerts upon the Uterus through the abdominal muscles. And there are two classes of cases in which its use for this purpose is very serviceable. In the first class there are those first cases where the patient is pained often for days before labour actually sets in. In these cases the pains may be wholly in the back, or in the front, are more or less false, and have no effect upon the os uteri which may be dilated only to admit the tip of the finger or even not at all. Useless and ineffective though these pains be, they are nevertheless very painful and fatiguing to the patient, so
much so that she is often worn out before labour begins. In cases such as these, especially when the os uteri is slightly dilated, the binder is of great service. Shortly after it is applied tightly round the patient and fixed behind with pins, the pains become more powerful and regular, lose their false character and have a distinct effect upon the os uteri. In other words, the patient is sent into labour much earlier than she would otherwise be.

In the second class there are those cases in multiparae, where, from frequent child-bearing or other cause, the uterus is more or less inert, the pains being feeble and powerless. And, if, as often happens in this class of lingering labours, the membranes have ruptured and the forewaters allowed to drain away, the bag of membranes is consequently lost, and the presenting part (head) is not such a kindly medium for dilating the cervix as is the wedge-shaped bag of membranes. For this reason dilatation is slow and painful and the presenting part remains freely movable and unable to engage at the brim. In this class of cases the use of the binder is often followed by the best results as the
following case will show.
On the evening of April 9th, 1886, I was called to attend Mrs. M., aged 37 in her eighth confinement. She had, to use her own words, been in labour since morning and the pains had begun with the discharge which had been coming away more or less all day. The pains, which were mostly in front, were coming on about every five or six minutes, the patient stating that they had been doing so for the last two hours. Before that time they had been less frequent, recurring at intervals of from fifteen to twenty minutes.
On examination I found the os dilated sufficiently to admit the tips of two fingers, membranes ruptured, the head presenting but freely movable. I placed her in bed in the ordinary obstetric position on her left side and applied a binder tightly round her and twisted the ends behind her back. I kept the binder tight between the pains and during the pains I applied additional pressure by pulling upon the twisted ends of the binder. The result was most satisfactory, for in about twenty minutes the os was more dilated and the head fixed at the brim, and one hour later
the os was fully dilated and the head burn out of the uterus into the pelvic cavity. Here the action of the binder was clearly beneficial by pressing the presenting part (head) against the cervix as well as increasing and assisting the force of the pains.

The second action is that of diminishing the patients suffering. And this is a very important action.
The uterus, like the intestine, is largely composed of nonstriped muscular fibre and the pains are due to the strong spasmodic contraction of this muscular tissue. Hence a uterine pain resembles in character the pain produced by spasmodic contraction of the intestine, viz, colic (intestinal). The characteristic or essential symptom of colic is pain in the region of the abdomen without febrile disturbance. The pain is often very severe, paroxysmal in character and always relieved by firm pressure, consequently during a paroxysm the patient in order to obtain relief bends forwards pressing the abdomen firmly with his hands or against some hard surface.

But the labour patient has another source of suffering, viz, pain in the back.
This pain is at first due to the stretching of the sacroiliac joints and as labour progresses also to pressure upon and stretching of the sacrosciatic ligaments. The characteristic of this pain is that it is relieved by pressure so much so that the patient always calls out for some one to hold her back. For the relief of the uterine pain and also the pain in the back the binder is simply invaluable for, as the intestinal colic is relieved by pressure so is the uterine pain (colic) relieved by the pressure exerted by the binder, and the pain in the back is also relieved by the same cause. From the relief which it affords the binder is always highly spoken of by the patient, so much so that I often apply it in the first stage even when I have no other object in view than simply the relieving of her suffering.

The third action of the binder is to remedy any deviation of the uterus from its proper axis. This deviation may be lateral but more commonly it is an anterior one. In multiparae, with lax abdominal muscles, the fundus uteri sometimes
falls forwards and hangs down
over the pubes and may reach almost
to the patient's knees, constituting
pendulous belly. In these cases of
anteroposterior deviation or anteversion of
the uterus, labour is materially
interfered with as the force exerted
by the uterine contractions is misapplied
the presenting part being driven
against the posterior lip of the
 cervix, instead of along the axis of
the plane of the brim.

To remedy this condition the patient
should be made to lie upon her
back, so that the uterus may gravitate
towards the spine, and a firm
binder applied to maintain it
in its proper position.

The fourth action of the binder is
to assist the progress of the labour.
The binder had this action from
the very commencement of labour
by acting in the three ways already
described. But when the os is dilated
to the size of a fiveshilling-piece
the binder has an additional action
for by applying it tightly and
performing the ends behind the patient's
back and exerting additional
pressure by pulling upon the ends
during a pain, the presenting part
is driven more forcibly against the os which is thereby more rapidly dilated and the progress of the labour is materially assisted.

Necessary powers of Parturition.
The necessary powers of Parturition are the diaphragm and abdominal muscles.

These were once regarded as the chief cause of expulsion, the chief action of the uterus being to keep the child in position and guide it through the canals. But labour goes on even when the action of the abdominal muscles is not brought into play, as in anaesthesia &c., thus showing that their action is only necessary to that of the uterus. They are useless or almost so in the first stage but of great service in the second. Their action is voluntary, and the patient is often incited to bear down when it is useless as in the first stage for when the head begins to press upon the pelvic brim, it produces a sensation resembling that of a loaded rectum hence the desire to strain.

The patient should be warned of the inutility of her straining at this period and told to have her mind easy and mouth open thus
conserving her strength for the second stage. In the second stage, during the pains, she should be urged to hold her breath and bear down all the can, whilst in the interval between the pains she should lie at rest and recover her strength for the next pain.

The abdominal muscles act in a definite direction, with the viscera between them and the uterus. The intestinal coils act like a fluid and the force of the abdominal muscles is transmitted through this fluid medium equally to the whole peritoneal aspect of the uterus, and this gives additional power and support to the uterus.

The binder, in the second stage, in addition to continuing the action which it had in the first stage, has a special action or special actions upon the abdominal muscles and its first action is:

To assist the abdominal muscles.

By applying a broad binder and twisting the ends behind the patient’s back and pulling during a pain, the force thus generated resembles that of the abdominal muscles and is transmitted in the same manner.
to the uterus. Hence it greatly assists these muscles.

(2) Its second action is to support and strengthen the abdominal muscles. The binder, applied as above, in virtue of the pressure which it exerts upon the abdominal muscles, gives great support to these muscles and the patient is thereby enabled to use them with greater advantage and bear down with more power and effect.

(3) Its third action is to assist the progress of the labour. By assisting supporting and strengthening the abdominal muscles, the vis a tergo is increased and the progress of the labour is thereby assisted.

The binder I am in the habit of using in the second stage is the ordinary oblong or rectangular shape, one e.g. an ordinary pillow slip, which answers the purpose very well and has the advantage of not requiring to be removed after the expulsion of the child.

I shall now give a few cases illustrating the use of the binder in the second stage of labour.

Case 1: On the evening of May 9th 1886 I was summoned to attend Mrs. P. aged 34, in her eighth confinement. I reached her...
house about 10 p.m. and found her walking about on the floor, the pains coming on about every five minutes, mostly in front. She said she had not been feeling well all day but began to be worse about 9 o'clock. I asked her to go to bed and on vaginal examination I found the os dilated to the size of a five-shilling-piece, and the membranes ruptured. I turned the placenta. At 11 o'clock the head had descended into the pelvic cavity but was kept back by a firm fibrous band extending round the vagina most resistant behind.

I kept dilating this with my fingers during the pains, but as the pains were now less strong I applied the binder about 12 o'clock and pulled strongly when the pains were on with the result that the child was born at 12.30 a.m. the patient exclaiming I never saw the binder used before, but what a relief it does give.

This fibrous band I looked upon as stricture as I had treated her for genunchesia six months before.

Case 2. On the evening of March 25 I was called to attend Mrs. M. aged 32 in her fourth confinement. I reached her home at 7 p.m. when she informed me that she had been ailing all day but began to be worse about four
O'clock. On vaginal examination the os was found to be fully dilated, membranes intact. I ruptured the membranes and as this was my consulting hour I left her giving orders to be called when she felt the head coming down.

I was again called at 3.15 when the patient called out that I must help her as she was very bad. As the labour had not made much progress since I left I took her binder and applied it tightly round her and twisted the ends behind her back and held them tightly with the left hand while with the right I watched the progress of the head. A pain came on and the patient bore down and the head passed through the pelvis cavity, formed the perineal tumour and was expelled during one pain. The patient crying out to Doctor what a relief that binder has given me" as she bore down it took me all my time to prevent the ends of the binder from slipping.

These two cases illustrate the use of the binder and the relief which it affords in the second stage when the head is in the pelvis cavity. But the binder is equally serviceable when the head is lodged at the
perineum, for it may lie here for an hour or even hours especially in first cases. The following cases illustrate its use.

Case 1: On the early morning of March 2nd, I was summoned to attend Mrs. G—aged 26-in her second confinement. I reached the house about 3 o'clock a.m. and found the head at the perineum and the perineal tumour forming pains regular every four or five minutes. During the pain the head descended but receded again in the interval. With every pain I was expecting the head to be born, but this state of matters continued for a little over an hour and at 4:15 I applied the binder with the result that the head was born during the second pain after its application. I shall just quote another case.

On April 14th I was called to attend Mrs. W—aged 25-in her first confinement. I reached her home at 6 a.m. and found the head entering the pelvic cavity. As the patient seemed pretty comfortable, the pains not giving much inconvenience and labour progressing favourably, no binder was as yet
applied. The perineal tumour began to form at 7:45, but for the next hour the labour seemed to be almost at a standstill, so that I applied the binder at 8:45, with the result that the child was born at 9 o'clock.

These two cases show the advantage of the binder when the head is lodged at the perineum, in fact I have not as yet found a case with the head at the perineum which I could not deliver with the binder in from 15 to 30 minutes. The use of the binder however requires practice for I find that I can now do much more for my patient with it than when I first began its use.

The action of the binder in the Third Stage.

By applying the binder tightly to the patient after the expulsion of the child, the uterus is kept contracted and prevented from relaxing; thus haemorrhage is avoided.

The expulsion of the placenta however is best effected by the hand, as the uterus is now so small that pressure can be more equally applied to its whole surface by the hand than by the binder.
Subsequent action of the binder.

After the expulsion of the placenta a binder sufficiently broad to extend from the pubes to the ensiform cartilage should be applied. The lower margin of the binder should come below the hips and pudenda and be fixed as tightly as possible. The upper portion of the binder should only be sufficiently tight to keep the abdominal walls tense. Its use is to keep the uterine contents and give support and comfort to the patient.

Such then being the action of the binder, let us look briefly at the cases in which its use is indicated. In the first stage its use is of service in most first cases, especially if the patient feels the pains keenly or if from any cause the pains are feeble. The same applies to multipara. In the second stage its use is briefly indicated thus: When from any cause labour is lingering, the delay being due to either or slight disproportion between the passages and the passenger, or feeble and defective action of the expulsive powers.

Advantages of the binder.
The first advantage of the binder is that it is always at hand. There is no palace however noble or cottage however humble where the patient has not provided herself with a binder. Amongst the poorer class it generally takes the form of the ordinary long pillow slip which answers the purpose very well and for use in the second stage there is nothing better.

The second advantage is that it resembles the natural process. The means which nature has provided for the expulsion of the child are forces which are to be applied to it as to push or squeeze it through the canals. In other words the child is expelled by a vis a tergo not drawn forth by a vis a fronte. The binder by assisting and strengthening these forces thus resembles the natural process.

The third advantage is that it is safe to the mother and child. With regard to the child this is absolutely the case as it is not interfered with. But is there any danger to the mother attending its use? While talking the matter over with a medical friend some time ago he
suggested that it might cause rupture of the uterus. Is there any foundation for such a suggestion? I think not. For I look upon rupture of the uterus as being caused by its strong and persistent contraction with some obstacle to the escape of its contents, such as might be caused by giving argot in the first stage, the contents pressure being thereby so increased that the uterus gives way at its weakest part. In other words, rupture of the uterus is caused by a force acting from within not by a force applied from without. On the other hand, the force of the binder being, as I have already stated, transmitted through the coils of the small intestine equally to the whole peritoneal aspect of the uterus, so supports it, that so far from being a cause of rupture I look upon it as a preventative. I therefore consider the binder absolutely safe to the mother, always provided that the bladder and rectum are empty before its application.

The fourth advantage is that it is easily applied. The application of the binder does
not necessitate the administration of an anaesthetic nor in any other way does it inconvenience the patient or her friends. In the case of the forceps it is otherwise.

The fifth advantage is that it is a substitute for the forceps. How far is this the case? To begin with I would say that in all cases give the binder a trial and if you fail, then the application of the forceps is imperative. But, by the judicious use of the binder, and the skill to use it rightly, it is wonderful the number of cases in which you will succeed; for example, out of the thirty-seven labours which I have had this year there was only one case in which I had to apply the forceps, and this, I think, speaks favourably for the binder. There are, however, certain conditions when it is inapplicable, and the existence of which should contraindicate its use. Thus, if the uterus seems unusually tender on pressure, and if the tonic contraction of exhaustion be present it is inadmissible. The cases best suited for its application in the second stage, and it is in
this stage that its use is compared with that of the forceps, are those where the head or breech is in the pelvic cavity and the delay is due to defective expulsive action. In other words the binder is clearly a substitute for the short forceps, for it was in these cases that the short forceps previously found its application.

For these reasons I consider the binder one of the most useful articles in the Armamentarium of the accoucheur, and its judicious use as set forth in the foregoing pages as a distinct advance in the science of Obstetrics.