

to pass through the ordeal of labor, they will seek it of their own accord.

There was a time, not so very many years ago, when the men who argued in favor of hospitals as the proper place for the performance of a major surgical operation of any kind, were looked upon as unreasonable, selfish, short-sighted individuals; they were regarded as men prompted by greedy motives, nothing else.

How many capital operations are performed to-day at the houses of patients? Very few, indeed! At present men, women and children are taken to hospitals, not only for the purpose of having dangerous operations performed upon them, but they are taken there for trifling injuries and diseases. The results are good; better than before. Consequently everybody is satisfied. Objections are seldom heard.

Will anybody argue that the act of giving birth to a child is not a capital operation? Or an event free from special danger? Who will claim that every woman pregnant is hopeful and cheerful, because she knows she will pass through her labor safely and unharmed? Who is there that can always predict with certainty that there will be no complications and, if there are, that he can meet them with as much success as in a hospital equipped for this specific purpose?

A simple ovariectomy does not carry with it so grave an element of danger as does a normal case of labor. Yet every abdominal surgeon knows that, when he performs ovariectomy, though simple in its aspects, at the house of his patient, he does so at a greater risk than at the hospital. The care is far greater and the responsibility he assumes much more grave when he operates at the house. At the hospital he has but to say what he intends to do and when he wants to do it. Everything is then prepared for him. He has no care of minor details and he can concentrate his whole mind upon the work to be performed. Not so when he operates at the home of the patient. Here he must himself supervise all the details necessary for the success of the operation and the recovery of his patient; and still he runs the risk that, just prior to, during or immediately after the operation, something very important is wanting or has been left undone.

This is never more true than in a labor case attended at the patient's home; and yet, both the women and the great majority of physicians object (some of them earnestly and persistently) to maternity hospitals. Why? Because the former are not accustomed to it; the latter are apprehensive that they may lose a stronghold upon their patrons through which and through whom they believe to obtain the good will and confidence of the one and other families.

The prejudice against hospital deliveries can be as easily overcome, in my opinion, as the antipathy which existed in the past against the hospital for any kind of treatment, medicinal or surgical.

I have had occasion to attend ladies in confinements who were suddenly taken in labor while traveling, and who had no other choice than to go to a hospital. Some of them had had previous, others subsequent experiences of the same kind at their homes. All were unanimous in their expressions that the hospital is the better and the most convenient place for confinement purposes. It, too, has been my satisfaction of late not only to deliver the wives of prominent citizens at the hospital, but also the wives of some of my professional brethren. In every instance the difference between home and hospital was keenly appreciated and the verdict invariably in favor of the latter.

The fear that the family physician will suffer by the change and that the young physician will be deprived of a legitimate opportunity to "obtain practice," is imaginary, not real. Maternity hospitals should be so conducted that they would please the humblest as well as the most fastidious. Let the patient and her friends make their own selection of accommodations. The absolutely destitute should be admitted free of charge. Others should pay what they can, or for what they want. The latter two classes have the privilege of employing their own physician. This gives the family physician, if there is one, still the first choice. This being so, the doctor not only continues to sustain the same relations to his clientele as before, but it makes his work easier, safer and more satisfactory. He need no longer trouble himself with the minor details; the help he may want is there and already well trained; whatever instruments, dressings or other articles he may need without delay, will be ready for use; all he is to do is to look to his own aseptic condition and then help himself or ask for what he may need. His results will, therefore, be better; the work itself much more agreeable and not half so burdensome as when the patient is delivered at her home. He will thus save the patient's health and wealth, himself a great deal of time and worry, increase his reputation and be better paid in the end, financially and otherwise.

In our larger cities hospital accommodations are already very extensive, but by no means sufficient. The smaller cities and towns are beginning to build hospitals, and there is no good reason why the smallest village should not erect a hospital for this purpose alone, if not for any other. Where hospitals do not or can not exist the practice of obstetrics must, of course, be carried on as in the past.

POSITION OF THE WOMAN DURING DELIVERY.*

WILLIAM D. PORTER, M.D.

CINCINNATI, OHIO.

The literature of this subject is practically confined to two questions: 1. What effect has posture on the mechanics of labor? 2. How does posture affect the pelvic diameters?

It is not the purpose of this paper to discuss either of these questions; but rather to consider posture with reference to its bearing on sepsis, and to determine, if possible, what position is most conducive to an aseptic technique. The plan of delivering the woman as she lies in bed—the amniotic fluid, the child, the blood, the placenta and often fecal matter being received by the bed or its protections—has had from antiquity to the present, the sanction of universal custom. With such conditions an aseptic technique is incompatible. In the homes of those who are able to command the comforts and some of the luxuries of life, these unfavorable conditions can be greatly modified.

Given a clean patient in clean garments, a firm mattress with clean protectives, sheets and pads, together with a competent nurse, and the danger is largely, though by no means entirely, eliminated. Under the most favorable circumstances there are dangers of infection which would not be tolerated in a surgical

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operation. When the head is on the pelvic floor, in spite of all preliminary preparation, fecal matter may escape coincident with the pains; and, if the labor is about to terminate, the nurse has not the necessary time for again cleansing the patient. Infection may occur through soiling the hand, which in the necessary haste, the accoucher might easily overlook. Or an accumulation of fluids may float fecal matter into contact with lacerations or abrasions or even into the vagina. The serious infections of the colon bacilli probably occur in some such way. Unless the mattress be exceptionally firm, the woman's hips occupy a depression which will be filled with fluids. When we recall the relaxed condition of the vaginal outlet at the end of labor, the wonder is that infection does not oftener occur.

This danger of immediate infection is not lessened by the Kelly pad as ordinarily used. It protects the bedding admirably. But with the woman in the ordinary position on the ordinary mattress, fluids will not drain away from the parts, owing to the depression in which the hips lie. The pad prevents the rapid escape and absorption of fluids, and by holding a pool about the vulva, the chances of infection are increased. This objectionable feature is sometimes overcome by following the English custom of placing the woman on her side with her hips well to the edge of the bed. In this position the Kelly pad can be well utilized. But it is a position in which it is difficult to control the patient, particularly when she is partially anesthetized. It involves flexion of the thighs which distinctly increases the danger of perineal laceration. And, moreover, it is a position which has never met with favor in this country.

For years it has been the invariable custom of the writer to deliver in the following position: The woman lies on her back across the bed, her hips well to the edge and on a Kelly pad, so arranged as to carry fluids into a vessel on the floor. For this purpose, the small square pad is most suitable. The patient's legs are separated and extended. They are supported by assistants, by a couple of suitably placed chairs, or—and preferably—over the knees of the obstetrician, who sits on a chair facing the bed at a convenient distance. She should wear her stockings, her thighs should be enveloped in clean towels and she should be covered with a sheet. This position is maintained from the end of the first stage until the termination of labor, unless the second stage be tedious. In that event, the patient can resume her ordinary position in bed, to be again brought into the position described before the end of the second stage. The position is not tiresome to the patient or physician and can be maintained for hours without discomfort to either.

The first thing after placing the woman in this position, is to have the nurse thoroughly cleanse the external genitals and inner surfaces of the thighs with a generous application of soap and hot water, followed by an antiseptic solution. This should, for obvious reasons, be a routine procedure, irrespective of previous preparation. It corresponds to the final preparation of the site of a surgical operation. It is claimed for this position that, with intelligent management, the parts so cleansed will not be infected during the labor. In case fecal matter escapes during a pain, it gravitates at once to the vessel on the floor, and all traces which could offend the sense of sight or of smell, are swept into the vessel by the free application of an antiseptic

solution. The maintenance of a fixed position is unquestionably favorable to asepsis. The patient is less likely to contaminate the parts than if she were permitted to frequently shift her position. The physician can much more certainly keep his hands clean than if he were compelled to move about to accommodate himself to the changing position of his patient. He is constantly prepared to render assistance, and thus avoids the too common blunder of managing the termination of labor with hands improperly cleansed, on account of haste at the last moment.

This position also reduces the number of vaginal examinations. The examinations usually made from time to time by the accoucher, that he may be apprised as to the probable termination, are not necessary. Within reasonable limits, the time makes no difference, as the position insures constant readiness on his part.

This position, better than any other, insures control over the advance of the head as it is about to emerge. In the ordinary position the degree of control is by no means satisfactory. Unless anesthesia be profound, the woman is likely to toss about at the critical moment. This often results in a needless degree of laceration. The position advocated eliminates this unfavorable element. The patient, unable to secure points of resistance for her feet, can not change her position. The obstetrician is in complete control and can delay, to the most favorable time, the delivery of the head and can manage accurately the rate of advance when it is delivered.

When delivery occurs, first the head and then the body is grasped, and the child is carried up over the pubes. The nurse places the blanket, in which the child is to be wrapped, across the abdomen and pubes of the mother. On this the child is placed transversely and low enough to permit of ready manipulation of the uterus. This avoids the danger to the child of infecting the eyes or cord with fecal matter and there is less liability that it may aspirate fluids into the air passages. Before the child is moved the cord is dressed and dressing secured by a binder. To allow quite an interval to elapse between the cutting and the dressing of the cord, with the possible danger of infection, is an unsurgical procedure. The facility afforded by this position for the delivery of the placenta and for the detection and repair of perineal laceration needs no comment.

Of no very slight importance is the ease with which the patient can be cleansed at the termination of labor. No other position permits such free use of water. If ordinary care has been used the woman is clean and her garments and bedding spotless.

We have been considering that small minority of patients who live in well-appointed homes and command the services of the trained nurse. The vast majority of child-bearing women are unable to secure these safeguards. The membership of the lower classes is prolific as well as numerous. Living, as they do, in cramped quarters, the bath-tub an unknown luxury, it would be unfair to expect a high standard of household or personal cleanliness. In isolated cases, the housewife rises superior to her surroundings and is a model of neatness and cleanliness. She is the bright exception to the general rule of dirt and disorder. If the woman of this class is able to have in readiness, at the time of her labor, a change of linen for her bed and a few clean towels, she feels entitled to credit. She probably depends for nursing on some member or friend

of the family; or much worse, on a so-called nurse, but one without training, and whose ignorance of asepsis is equalled only by her assurance, and her readiness to act on her own initiative and in defiance of instructions. In this class the young physician, struggling to make his way, finds most of his obstetric work. Should he choose the usual position for delivery, his examinations are fraught with danger. Bedding and patient are likely to be in a sorry plight at the end of labor, and the chances are that these conditions will continue during the lying-in period.

If he adopts the position herein recommended he needs only soap and sterilized water to insure safety to his patient. A liberal application of soap and the use of a large fountain syringe of hot water, followed by an antiseptic solution, comprises a ready means of cleansing the external parts. If necessary, this can be done by the physician, and there is need of little or no exposure. If he will exercise the forethought to sterilize forceps, ligatures, sutures, needles, scissors, etc., and place these within convenient reach, it will be unnecessary for him to leave his chair until the labor has terminated and every necessary detail has received attention. He is in complete control of the situation and protects his patient from infection in the most unfavorable surroundings.

Incidentally, in an emergency such as post-partum hemorrhage, this position is advantageous. There is necessarily a prompt notification of the danger, and the woman is already in the most favorable position for treatment. Moreover, the young physician will find the position the best for studying the mechanism of labor.

In conclusion a brief recapitulation embraces the following claims for this position:

1. There is less liability of infection with fecal bacteria.
2. Fewer examinations are necessary.
3. There is better control of the head at the time of delivery, and consequently less danger to the perineum.
4. The woman can be more thoroughly cleansed after labor, and clothing and bedding are not soiled.
5. There is less danger of infecting the eyes or cord of the child and less risk of its aspirating fluids into its air passages.
6. In managing cases in the unfavorable environments of the lower classes, the position is especially valuable to the young physician, whose experience is gained largely among these classes.

THE PROPHYLAXIS AND TREATMENT OF PUERPERAL SEPSIS.*

JOHN F. MORAN, M.D.

Professor of Obstetrics, Medical Department, Georgetown University; Obstetrician to Columbia and Georgetown University Hospitals.
WASHINGTON, D. C.

The recent developments in bacteriology and pathology have demonstrated conclusively the fallacy of the previously accepted theory of the essentiality of puerperal sepsis, and likewise have been able to explain its manifold manifestations by showing that wound infections and puerperal infections are identical and may be due to a variety of pathogenic organisms. Streptococcus, staphylococcus, bacillus coli communis, gon-

ococcus and pneumococcus are the most frequent causes of puerperal infection, while the bacillus of diphtheria, anaerobic and other micro-organisms have been demonstrated to be occasional factors in the pathogeny.

Streptococcus pyogenes is found in the body under a variety of circumstances, and is probably the most important cause of septicemia and pyemia following wounds of ulcerative endocarditis, of tonsillitis and erysipelas. Bacteriologic investigation shows it to be the most frequent cause of the various septic processes following labor, and it may be found pure or associated with other organisms. It has long been recognized that its manifestations are varied and that they depend upon several factors: the nature of the organism; the soil; the dose of virus, and the place of entrance. The most important factors are the virulence and character of the infecting organism. Variation is common to different specimens of the same species. Under certain conditions the virulence is increased, while under others it may be decreased or attenuated. It may produce abscesses at the point of inoculation, which may, or may not, become diffused throughout the body, or it may even cause death without the appearance of any local change.

The staphylococcus and colon infection are as a rule milder forms of sepsis, but Strunkman has collected twenty-five fatal cases of the former and three of the latter. The writer has seen one fatal case of staphylococcus aureus and two of the colon variety.

The parturient tract has been aptly compared to a surgical wound and it is easy to conceive, that, with the contusions and lacerations together with the lowered resistance of the system incident to labor, the conditions are very favorable for the development of germs when once they are introduced. According to Widal, Baum, and Gärtner, the placental site is the favorite point of invasion of the infecting germs, either by way of the lymphatics, or veins, or both. Yet infection frequently takes place from wounds of vagina and cervix.

The results of the bacteriologic examination, with regard to the presence or absence of pathogenic germs in the vaginal secretion under ordinary conditions, are by no means in harmony. Gonner and Döderlein in 1887 investigated the subject and, while the former obtained negative results, the latter obtained many varieties of pathogenic organisms, including streptococci. Since then, numerous capable observers have investigated the subject with variable results. Menge, Kronig, and Williams have gone over the work very carefully and find that the uterus and vagina, under ordinary conditions, are sterile as regards pathogenic organisms, and, that the discrepancies of other observers are due to faulty technique in obtaining cultures. Further, the investigations directed more particularly to the vulva, show that it is rarely, if ever, free from pathogenic organisms, and that it is almost impossible to render it so.

Döderlein attributes the absence of pathogenic organisms in the vaginal secretion to the bactericidal influence of the acid products of the vaginal bacillus. Kronig does not think this view justifiable and believes that several factors play a part, namely: chemical substances in the secretion, probably acids; antagonism of the bacteria living in the vagina to imported bacteria; leucocytosis and phagocytosis; lack of oxygen and tissue juices.

From the foregoing survey of the literature, it is seen that the uterus, under normal conditions, is sterile and some hold a similar view regarding the vagina; but

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