The Expectant Mother_Part 2 of 4 – Childbirth

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About the Author: Dr. William S. Sadler M.D. was a well-known American psychiatrist and college teacher in the school of medicine at the University of Chicago. For over sixty years he practiced his profession in Chicago, thirty-three years being associated in practice with his wife, Dr Lena Kellogg Sadler. The doctors were pioneers in the research on the mysterious *Urantia Papers*.

Preparations for the Natal Day: Part 1
The Mother and Her Child

By William S. Sadler, M.D., Lena K. Sadler, M.D.

Two months before baby is to arrive, the expectant mother should pay particular attention to the conservation of her strength. The woman who is compelled to leave her home for the factory, the laundry, the office, or other place of employment, should stop work during these last two or three months. The active club woman should pass the burdens on to others, and the woman of leisure should withdraw from active social life with its varied obligations. During the final weeks of pregnancy, the prospective mother needs the same hygienic care regarding fresh air, exercise, diet, and water drinking, as outlined in a former chapter.

The Final Weeks

As the gravid uterus rises higher in the abdomen, increased pressure is exerted on the stomach, the lungs, and upon the nerve centers of the back; and it is because of this situation, that the duties and obligations of the prospective mother should be reduced to a minimum, that she may feel at liberty to lie down several times during the day on the porch or in a well-ventilated room, in the midst of the best possible surroundings. Sexual intercourse should be largely discontinued during the last months of pregnancy.

I sometimes wish the prospective mothers in our dispensary districts might have some of the care and the kind treatment which is bestowed upon an ordinary prospective mother horse, which at least enjoys a vacation from heavy labor, and whose food is eaten with calm nerves and in the quietness of a clean stall. While the state of the mother's mind does not materially influence the child; nevertheless, the state of the mother's body, the weary over-worked muscles and nerves of hot, tired women, bending over cook stoves, laundry tubs, or scrubbing floors, does materially derange the mother's health and digestion, which in turn, by reflex interferes with the growth and physical development of her child. Extra strength is required for the day of labor, and since the baby doubles its weight during the last two months, the mother is living for two, and should, therefore, avoid extreme fatigue, over tiring, and irksome labor during these final weeks of watchful waiting.

Selection of the Home

It may or may not be within the province of prospective parents to rearrange, rebuild, or otherwise change the home. Usually the size of the pocketbook, the bank account, or the weekly pay envelope decide such things for us. The home may be in the country or suburbs, with its wide expanse of lawns, its hedges of shrubbery, and with its spacious rooms and porches; or it may be a beautifully equipped, modern apartment on the boulevard of a city, with its sun parlors, large back porches, conveniently located near some well-kept city park, or it may be one of those smaller but "snug as a bug in a rug" apartments, in another part of the city, where usually there is a sunny back porch; or again some of my readers may themselves be, or their friends may be, in a darkened basement with broken windows, badly ventilated rooms, with no porches, no yards, no bright rays to be seen coming in through windows - and yet into all of these varied homes there come little babies - sweet, charming little babies, to be cared for, dressed, fed, and reared. And we must now proceed to the subject of making the most of what we have - to create out of what we have, as best we can, that which should to be.

Sanitary Premises

In both the country and city place, yards and alleys should be cleaned up. Garbage - the great breeding place of flies - should be removed or burned. The manure pile of the stable or alley should also be properly covered and cared for. In this way breeding places for flies are minimized and millions and billions of not hatched eggs are destroyed. In the large cities, provision is made for the prompt disposal of garbage, and laws are beginning to be enforced regarding the covering and the weekly removal of manure, and therefore in many of our large cities flies are diminishing in numbers each year. Fly campaigns and garbage campaigns are teaching us all to realize the dangers of infection, contagion, and disease as a result of filth; while through the schools, the children of even our foreign tongued neighbors take home the spirit of "cleaning up week." Even in the rural districts we hope for the dawning of the day when filth, stagnant pools, open manure piles, and open privies, will be as much feared as scorpions or smallpox.

Engaging the Doctor

As suggested elsewhere, as soon as the expectant mother is aware that she is pregnant, she should engage her physician. And since these are days of specialists, he may or may not be the regular family doctor. The husband and friends may be consulted, but the final choice should be made by the prospective mother herself. "The faith which casts out fear, the indefinable sense of security which she feels in her chosen physician, supports her through the hours of confinement." Twenty-four hour specimens of urine should be saved and taken to the physician twice each month and oftener during later months of pregnancy. The chosen physician's instructions and suggestions should be carried out and counsel should be sought of him as to the place of confinement.

The Place of Confinement

There are a number of factors that enter into the selection of the place of confinement. In the first place, if the home be roomy, bathroom convenient, if the required preparation of all necessities for the day of labor can be effected, and it is further possible to prepare a suitable delivery-room at home with ample facilities for emergencies and complications, and you can persuade your physician to do it - then the best place in the world for the mother to be confined is within the walls of her

own home. But such is the case in but one home out of hundreds, and I regret that time and space will not allow me to describe and portray the many untimely deaths that might have been avoided if this or that supply had only been ready at the moment of the unexpected complication of delivery.

Why should we needlessly risk the lives of prospective mothers, when, in every up-to-date hospital delivery-room, all these life-saving facilities are freely provided? Here in the modern hospital, the mothers from small homes and apartments, the mothers who live in stuffy basements, as well as those from the average home in the average neighborhood, can come with the assurance of receiving the best possible care and attention. Every woman who can arrange or afford it, should plan to avail herself of the benefits, comforts, quietness, and calm of a well-equipped hospital and the surgical cleanliness and safety of its aseptic delivery-room.

Fortunately, the mother of the basement home may have the same clean, sterile dressings used upon her as does the mother of the boulevard mansion. The maternity ward bed at $8.00 to $10.00 a week can be just as clean as the bed of the $40.00 a week room. The methods and procedures of the delivery-room can be just as good in the case of the very poor woman as in the case of the magnate's wife. In no way and for no reason fear the hospital. It is the cleanest, safest, and by far the cheapest way. The weekly amount paid includes the board of the patient, the routine care, and all appliances and supplies of every sort that will be used. **Under no circumstances should a midwife be engaged. Any reputable physician or any intellectual minister will advise that. Let your choice be either the hospital or the home; but always engage a physician, *never* a midwife.**

Preparations for the Natal Day : Part 2
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The Nurse

After selecting the place of confinement, the question of the nurse may next be considered. If it is to be the hospital, you need give little further thought to the nurse, for your physician will arrange for the nurse at the time you enter the hospital. She will be a part of the complete service you may enjoy. You will find her on duty as you, quietly resting in your room, awaken in the sweet satisfaction that at last it is all over - at last your baby is here.

A competent nurse is a necessity, if the confinement takes place in the home. She may be a visiting nurse, who, for a small fee, will not only come on the day of labor, but will make what is known as "post-partum calls" each day for ten or twelve days. These are short calls, but are long enough to clean up the mother and wash and dress the babe. She is not supposed to prepare any meals or care for the home. Then there is the practical nurse - women who have prepared themselves along these lines of nursing, whose fees range from $12.00 to $18.00 a week. If your physician recommends one to you, you may know she is clean and dependable. The trained nurse, who has graduated from a three years' course of training, is prepared for every emergency, and will intelligently work with the physician for the patient's welfare and comfort. Her fees range from $25.00 to $35.00 a week.

Both the practical and the trained nurses are human beings, and require rest and sleep the same as all other women do. One nurse, after having faithfully remained at her post of duty some sixty hours reminded the husband and sister of the patient that she must now have five hours of unbroken rest

and they replied in a most surprised manner, "Why we are paying you $30.00 a week, and besides, we understood you were a *trained* nurse."

The physician usually makes arrangement with the family for competent relief for the nurse. She should have at least one to two hours of each day for an airing, and six hours out of the twenty-four for sleep.

The Preparation of the Supplies

1. ***The sanitary pad*** is used to absorb the bodily fluid after confinement, and needs to be changed many times during the day and night; fully five or six dozen will be required. They are usually made from cotton batting and a generous layer of absorbent cotton. If made entirely from absorbent cotton they mat down into a rope-like condition. They are four and one-half to five inches wide and ten inches long. The sterile cheesecloth is cut large enough to wrap around the cotton filling and extends at both ends three inches, by which it is fastened to the abdominal binder. With a dozen or fifteen in each package these vulva pads are wrapped loosely in pieces of old sheets and pinned securely and marked plainly on the outside.

2. ***Delivery pads***. These pads should be thirty-six inches square and about five inches thick, three or four inches of which may be the cotton batting and the remainder absorbent cotton. Three of these are needed. Each should be folded, wrapped in a piece of cloth and likewise marked.

3. *Gauze squares.* Five dozen gauze squares about four inches in size may be cut, wrapped and marked. These are needed for the nipples, baby's eyes, etc.

4. *Cotton pads.* These are cotton balls, made as you would a light biscuit with the twist of the cotton to hold it in shape. They should be about the size of the bottom of a teacup. These are thrown in a couple of pillow slips and wrapped and marked.

5. *The Bobbin.* Cut the bobbin or tape into four nine-inch lengths and wrap and mark.

6. The *tooth picks* are left in the original package and do not require sterilization.

7. *Sterilization.* Before steaming and baking, wrap each bundle in another wrapping of cloth and pin again securely. Mark each package plainly in large letters or initials. These packages may be sent to the hospital for sterilization in the autoclave or they may be steamed for one hour in the large wash boiler, by placing them loosely into a hammock-like arrangement made by suspending a firm piece of muslin from one handle of the boiler to the other. The center of the hammock should come to within five inches of the bottom of the boiler which contains three inches of boiling water. The cover of the boiler is now securely weighed down and the water boils hard for one hour, at the end of which time they are removed and placed in a warm oven to dry out. The outer wrapping may be slightly tinged with brown by this baking. After a thorough drying they are allowed to remain in the same wrappings into which they were first placed and put away in a clean drawer awaiting the "Natal Day."

Requisites for the Hospital

Each hospital has its own methods and regulations for caring for obstetrical patients and it is well for the expectant mother to visit the obstetrical section, the delivery-room and the baby's room, that she may personally know more about the place where she is to spend from ten days to two weeks. Here she may ascertain from the superintendent just what she will need to bring for the baby. Many of the hospitals furnish all the clothes needed for the baby while in the hospital; in such instances, the hospital also launders them. Other hospitals require the baby's clothes to be brought in, in which case the mother looks after the laundry. The mother always takes her toilet articles, a warm bed jacket with long sleeves, several night dresses and a large loose kimono or wrapper to wear to the roof garden or porch in the wheel chair. Warm bedroom slippers and a scarf for the head completes the outfit.

The Confinement Room

By special preparation, the ordinary bedroom may be fashioned into a delivery-room. Carpets, hangings and upholstered furniture must be removed. Clean walls, clean floors, and a scrupulously clean bed must be maintained throughout the childbirth. Bathroom, and if possible, a porch should be near by. In the wealthy home, a bedroom, bathroom and the nursery adjoining is ideal; but I find that real life is always filled with anything but the ideal.

The dispensary doctor is compelled to depend upon clean newspapers to cover everything in the room he finds his patient in. The only sterile things he uses he brings with him, and should he have to spend the night, the floor is his only bed. A student who was in my service told me that there was not one article in the entire home, which consisted of but one room, that could be used for the baby. He wrapped his own coat about it and laid it carefully in a market basket and placed it on the floor at the side of the pallet on which the mother lay and by the aid of a nearby telephone secured clothes from the dispensary for the babe.

Always select the best room in the house for a home confinement. If the parlor is the one sunny room, take it; remove all draperies, carpet, etc., and make it as near surgically clean as possible. While sunshine is desirable, ample shades must be supplied, as the eyes of both mother and babe must be protected.

The Bed

A three-quarter bed is more desirable than a double bed. If it is low, four-inch blocks should be placed under each leg, the casters having been removed to prevent slipping. The bed should be so placed that it can be reached from either side by the nurse and physician. The mattress may be reinforced by the placing of a board under it if there is a tendency to sag in the middle. Over this mattress is securely pinned the strip of rubber sheeting or table oilcloth. A clean sheet covers mattress and rubber cloth and at the spot where the hips are to lie may be placed the large sterile pad to absorb the escaping fluids. The floor about the bed is protected by newspapers or oilcloth. Good lighting should always be provided. Much trouble and possible infection may be avoided by clean bedding, plenty of clean dressings, boiled water, rubber gloves, and clean hands.

The Day of Labor : Symptoms, Progress

As the two hundred and seventy-three days come to a close, our expectant mother approaches the day of labor with joy and gladness. The long, long waiting days so full of varied experiences, so full of the consciousness that she, the waiting mother, is to bring into the world a being which may have so many possibilities - well, even the anticipated pangs of approaching labor are welcomed as marking the close of the long vigil. These days have brought many unpleasant symptoms, they have been days of tears and smiles, of clouds and sunshine.

The Time of Waiting

The prospective mother has thought many times, "Will my baby ever come?" But nature is very faithful, prompt, and resourceful. She ushers in this harvest time under great stress and strain, for actual labor is before us - downright, hard labor - just about the hardest work that womankind ever experiences - and, as a rule, she needs but little help - good direction as to the proper method of work and the economical expenditure of energy. In the case of the average mother this is about all that is needed, and if these suggestions come from a wise and sympathetic physician - one who understands and appreciates asepsis - she may count herself as fortunately situated for the oncoming ordeal.

In the days of our grandmothers it was almost the exception rather than the rule to escape "child-bed fever," "milk leg," etc.; but in these enlightened days of asepsis, rubber gloves, and the various antiseptics, puerperal infection is the exception, while a normal childbirth is the rule; and this work of prevention lies in the scrupulous care taken by anyone and everyone concerned in any way with the events of the day of labor.

On this day of labor, the mother, who has gone through the long tedious days of waiting, should see to it that nothing unclean - hands, sponges, forceps, water, cloth - is allowed to touch her. Above all things do not employ a physician who has earned the reputation of being a "dirty doctor." Puerperal infection is almost wholly a preventable disease and every patient has a right to insist upon protection against it.

In a former chapter will be found a detailed description of the "delivery bed." Beside this bed, or near by, are to be found the rack on which are airing the necessary garments for the baby's reception - the receiving blanket and other requisites for the first bath - together with numerous other articles essential to safety and comfort.

There should be an easy chair in the room for the mother to rest in between her walking excursions during the first stages of labor. The sterilized pads and necessary articles mentioned in an earlier chapter are, of course, close at hand.

First Symptoms of Labor

Regular, cramp-like pains in the lower portion of the abdomen which are frequently mistaken for intestinal colic, often beginning in the lower part of the back, and extending to the front and down the thigh, are often the first symptoms of the approaching event. With each cramp or pain the abdomen gets very hard and as the pain passes away the abdomen again assumes its normal condition. These regular cramp-like pains are the result of the early dilation of the cervix - the first opening of the door to the uterine room which has housed our little citizen through the developmental stages of embryonic life - and as a result of this stretching and dilating there soon appears that special blood-tinged mucus flow commonly known as "the show."

The Enema & Preliminary Bath

At this time a very thorough-going colonic flushing should be administered. The patient takes the "knee-chest" position, or the "lying-down" position, and there should flow into the lower bowel three pints of soapy water; this should be retained for a few moments; and after its expulsion, a short, plain water injection should be given. Now follows the preliminary general bath.

Just prior to the bath, the pubic hair should be clipped closely, or better shaved. Then should follow a thorough soap wash, with patient standing up in the tub, using plenty of soap, applied with a shampoo brush or rough Turkish mit. The rinsing now takes place by either a shower or pail pour. *Do not sit down in the tub.* This is a rule that must not be broken, because of the danger of infection in those cases where the bag of waters may have broken early in the labor.

A weak antiseptic solution, prepared by putting two small antiseptic tablets into one pint and a half of warm water, is now applied to the body from the breasts to the knee. Put on a freshly laundered gown, clean stockings and wrapper. The head should be cleansed and hair braided in two braids.

The Progress of Labor

If all the mothers who read this volume could bear children with the comfort Mrs. C. does, I should be happy, indeed.

At four o'clock one morning a very much excited father telephoned me, "Hurry, quick, Doctor, it's almost here." It was well that we did hurry, for the first sign the little mother had was the deluge of the waters - at this point the husband ran to telephone for the doctor - no more pains for thirty-eight minutes (just as we entered the door) and the baby was there. But such is not usually the case, nor will it be, as labor usually progresses along the lines of conscious dilating pains, occurring at intervals twenty minutes apart at first, later drawing nearer together until they are three to five minutes apart. This "first stage of labor" lasts from one to fifteen hours - during which time the tiny door to the uterine room which was originally about one-eighth of an inch open - dilates sufficiently to allow the passage of the head, shoulders and body of the fully developed child.

About this time the bag of waters usually bursts, and, as a rule, this marks the beginning of the "second stage of labor." The amount of water passed varies in amount. Should the rupture take place before the door is fully open, then labor proceeds with difficulty and the condition is known as "dry labor."

The head after proper rotation now begins the descent; and here the pains begin to change from the sharp, cramp-like pains which begin in the back and move around to the front, to those of the

"bearing down" variety, while at the same time there begins to appear the bulging at the perineum, which means that the head is about to be born. At this time great stress is brought to bear upon the perineum and often, in spite of anything that can be done to prevent it, the perineum is more or less lacerated.

As soon as the baby is born the "second stage of labor" has passed and within thirty to fifty minutes the close of the third stage of labor is marked by the passage of the placenta or "afterbirth."

The Day of Labor : Labor Pains

The Mother and Her Child

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Sometimes, as long as two weeks before the birth of the child, certain irregular, heavy, cramp-like pains occur in the abdomen and back. For a half-dozen pains they may show some signs of regularity; but they usually die down only to start up again at irregular intervals. These are known as "false pains."

When the pains begin to take on regularity and gradually grow heavier and it is near the appointed time for the labor, the patient should prepare to start for the hospital; or, if it is to be a home delivery, the physician should be called. As noted above, the first subjective symptom may be the rupture of the bag of waters, and it is imperative to prepare at once for the labor. It is far better to spend the day at the hospital, or even two days waiting, rather than to run the risk of giving birth to the child in a taxicab or street car; or, in the event of a home labor, to have the child born before the doctor arrives.

What to Do In the Absence of a Doctor

It is often the case that when we need our physician the most, he is busy with another patient and cannot come, or perhaps an automobile accident detains the man of the hour. The hospital delivery always possesses this advantage over the home - physicians are always on hand. We deem it wise to relate in detail the method of procedure during the rapid birth of a child; that the husband or nurse may give intelligent and clean service.

After the patient has been given the enema and has been shaved and the bath has been administered as previously directed, the helper most vigorously "scrubs up." There are three distinct phases to the "scrubbing up": First, the three-minute scrubbing of the hands and forearms with a clean brush and green soap; to be followed by, second, the trimming and cleaning of the finger nails, for it is here, under the nails, that the micro-organism lives and thrives that causes child-bed fever or septicemia; and, third, the final five-minute scrubbing of the fingers, hands, and forearms. An ordinary towel is not used to dry the well-cleansed hands, but they are now dipped in alcohol and allowed to dry in the air.

And now if the pains are returning every three to five minutes or if the bag of waters has broken, the patient should go to bed. She will lie down on her back with the knees drawn up and spread apart. The patient, having had the cleansing bath, is now washed with the disinfectant bath (2 antiseptic tablets to 1½ pints of water), from the breasts to the knees. Another member of the family takes the outer wrappings off the sterilized delivery pad and the "clean" helper places the sterile delivery pad

under the expectant mother, who is directed to "bear down" when her pains come. She may be supported during these pains by pulling on a sheet that has been fastened to the foot of the bed.

The *clean*, helper then sits by her constantly until the baby is born but under no circumstances should touch her until after the head appears. Immediately after the birth of the head, the shoulders usually follow with the next pain, which should to occur within two or three minutes. Occasionally the face turns blue, in such an instance, the mother is directed to strain vigorously and presses down heavily on the abdomen with both her hands, this usually hurries matters materially, and the body of the child follows quickly.

The baby should cry at once. If the child does not show signs of life, quick, brisk slapping on the back usually brings relief. During the birth of the head it is imperative that, in the event of liquid passing at the same time, no water or blood be sucked into the mouth by the baby. Great care must be exercised in this matter. Should the baby remain blue, lay it quickly upon its right side near the mother, and after the pulse of the cord has stopped beating the clean helper ties the cord twice, two inches from the child and again two inches from this tying toward the mother, and then the cord is cut between the two tying with scissors that have been boiled twenty minutes.

Should there be more difficulty with the breathing of the new born child, if slapping it on the back brings no relief, its back (with face well protected) may be dipped first in good warm water, then cold, again in the warm, again in the cold - this seldom fails. The child should then be kept very warm, lying on its right side.

Care of the Mother

All this time, a member of the family has been firmly grasping the mother's abdomen, and within an hour the afterbirth passes out through the birth canal. If the physician has not yet arrived, all dressings, the pad, the afterbirth, must all be saved for his inspection.

The inside of the thighs and the region about the vagina is now washed with bichloride solution, the soiled delivery pad removed, a clean delivery pad is placed under her; an abdominal binder is applied and two sterile vulva pads are placed between the legs, and hot water bottles are put to her feet, as usually at this stage there is a slight tendency toward chilliness. She should now settle down for rest. Fresh air should be admitted into the room.

There may be some hemorrhage, and if it is excessive, grasp the lower abdomen and begin to knead it until you distinctly feel a change in the uterus from the soft mass to a hard ball about the size of a large grape fruit; therefore contraction has been brought about which causes the hemorrhage to decrease. If the doctor has not yet arrived put the baby to the breast, and place an ice bag for ten or fifteen minutes on the abdomen just over the uterus. Should there be lacerations, the doctor will attend to their repair when he comes. One teaspoonful of the fluid extract of ergot is usually given at this time, if possible get in touch with the physician before it is administered.

Care of the Baby

After the mother is comfortable, your attention is directed to the baby; the condition of the cord is noted; should it be bleeding, do not disturb the tying, but tie again, more tightly just below the former tying, and with the long ends of the tape, tie on a sterile gauze sponge or a piece of clean untouched medicated cotton, therefore efficiently protecting the severed end of the cord. No further dressing is needed until the doctor arrives.

Grave disorders have arisen from infection through the freshly cut umbilical cord.

Should the doctor be longer delayed, one drop of twenty percent argyrols should be dropped in each of the infant's eyes and separate pieces of cotton should be used for each eye to wipe the surplus medicine away.

This application must not be long neglected, for a very large percent of all the blindness in this world might have been avoided had this medicine been placed in each eye soon after birth.

The warmed albolene is now swabbed over the entire body of the infant (this is done with a piece of cotton), the arm pits, the groins, behind the ears, between the thighs, the bend of the elbow, etc, must all receive the albolene swabbing. In a few minutes, this is gently rubbed off with a piece of gauze or an old soft towel, and the baby comes forth as clean and as smooth as a lily and as sweet as a rose.

The garments are now placed on the child - first the band, then shirt, diaper, stockings, flannel skirt, and outing flannel gown - and it is put to rest after the administration of one teaspoonful of cooled, boiled water. In six to eight hours it will be put to the breast.

Pregnancy - Twilight Sleep and Painless Labor : Part 1
The Mother and Her Child

In recent years much has appeared in both the popular magazines and the medical press concerning the so-called "twilight sleep" and other methods of producing "painless childbirth." Many of these popular articles in the lay press cannot be regarded in any other light than as being in bad taste and wholly unfortunate in their method and manner of presenting the subject; nevertheless, these writings have served to arouse such a general public interest in the subject of obstetric anesthetics, that we deem it advisable to devote two chapters to the brief and concise consideration of the subjects of pain and anesthetics in relation to the day of labor.

The Pain of Labor

First, let us briefly consider the question of pain in connection with childbirth. Many women - normal, natural, and healthy women - suffer but comparatively little in giving birth to an average-sized baby during an average and uncomplicated labor. Like the Indian squaw, they suffer a minimum of pain at childbirth - at least this is largely true after the birth of the first baby; and so there is little need of discussing any sort of anesthesia for this group of fortunate women; for at most, all that would ever be employed in the nature of an anesthetic in such cases, would be a trifle of chloroform to take the edge off the suffering at the height or conclusion of labor.

But the vast majority of American mothers do not belong to this fortunate and normal class of women who suffer so little during childbirth; they rather belong to that large and growing class of women who have dressed wrong; who have lived unhealthful and sometimes indolent lives; who are more or less physically and temperamentally unfitted to pass through the experiences of pregnancy and the trials of labor.

The average American woman shrinks from the thought and prospect of suffering pain; she is quite intolerant with the idea of undergoing even the few brief moments of physical suffering attendant upon childbirth. She refuses to contemplate the day of labor in any other light than that which insures her against all possible pain and other physical suffering.

And it is just this unnatural and abnormal fear of labor-pains - this unwomanly dread of the slightest degree of physical suffering - that has indirectly led up to so much discussion regarding the employment of "twilight sleep" and other forms of obstetric anesthesia.

While the authors recognize the great blessing of anesthesia to the woman in labor - and almost unfailingly make use of it in some form - nevertheless, we also recognize that it would be a fine form of mental discipline and mighty good moral gymnastics, if a great many self-centered and pampered women would "spunk right up" and face the ordeal of labor with natural courage and normal fortitude. It would be "the making of them," it would make new women out of them, it would start them out on the road to real living. At the same time we do not mean to advocate that women should suffer unnecessary pain in childbirth any more than we allow them to suffer in connection with surgery.

Preparation for Labor

While so much is being written about "twilight sleep" and "painless labor," it might be well to remind the American mother that much can be done to lessen the sufferings of the day of labor by one's method of living prior to the confinement.

We believe that child-bearing is a perfectly normal physical function for a healthy and normal woman - that it is even essential to her complete physical health, mental happiness, and moral well-being. Theoretically, child-bearing should to be but little more painful than the functioning of numerous other vital organs - stomach, heart, bladder, bowels, etc. - and, indeed, it is not in the case of certain savage tribes and other aboriginal people, such as our own North American Indian.

But we must face the facts. The average American woman does suffer at childbirth; and she suffers more than we are disposed to allow her, or more than she, as a general rule, is willing to suffer. So, while we discuss appropriate methods of lessening the pain of labor and the pangs of childbirth by the scientific use of anesthetics, let us also call attention to certain things which may aid in decreasing the amount of pain which may reasonably be expected to attend child bearing.

To assist in bringing about this preparation for decreased pain at childbirth, mothers should teach their daughters how to develop, strengthen, and preserve their physical, mental, and moral resistance. The young mother should be taught by both her mother and her physician how to dress, how to work, and how to eat. Every care should be given to the hygiene of pregnancy and labor.

The expectant mother should have plenty of fruits and fruit juices, and if not physically well endowed to give birth to a large babe, she should have her diet restricted in meat, bread and milk, as well as the cereals. Overeating during pregnancy should be carefully guarded against, as emphasized in an earlier chapter. Deformities of the pelvis, etc., should rule out a consideration of pregnancy.

While artificial painless childbirth by means of "twilight sleep" and other similar methods all have their place; nevertheless, these procedures should not lead to the neglect of those natural methods and preventive practices which aid in preparing the normal expectant mother for nature's relatively painless labor. When so much anesthesia has to be used in a normal labor, it cannot but strongly suggest that both patient and physician have neglected those common but efficient methods which contribute indirectly to lessening the pangs of child bearing.

Pregnancy - Twilight Sleep and Painless Labor : Part 2
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What Is Twilight Sleep?

"Twilight sleep" is a recent term which has become associated in the public mind with "painless labor." The reader should understand that "twilight sleep" is not a new method of obstetric anesthesia. While this method of inducing "painless labor" has been brought prominently before the public mind in recent years by much discussion and by numerous magazine articles - being often presented in such a way as sometimes to lead the uninstructed layman to infer that a new method of obstetric anesthesia had just been discovered - it has, nevertheless, been known and more or less used since 1903. Later known as the "Freiburg Method," and as the "Dammerschlaf" of Gauss, and still later popularized as "twilight sleep," this "scopolamine-morphine" method of obstetric anesthesia, has gained wide attention and acquired many zealous advocates.

"Twilight sleep" is, therefore, nothing new - it is simply a revival of the old combination of *scopolamine* and *morphine* anesthesia. While many different methods of administering "twilight sleep" have been devised, the following general plan will serve to inform the reader sufficiently regarding the techniques of this much-talked-of procedure.

The scopolamine must always be fresh, although different forms of the drug are used. It tends quickly to decompose - forming a toxic by-product - and, according to some authorities, this decomposed scopolamine is responsible for many undesirable results which have attended some cases of "twilight sleep." Various forms of morphine are also used.

Techniques of "Twilight Sleep"

The "twilight-sleep" injections are not started until the patient is in the stage of active labor. The initial injection consists of the proper dose of scopolamine and morphine (or some of their derivatives), while the patient's pupils, pulse, and respiration are carefully noted, as also are the character of the uterine contractions and the character of the fetal heart action.

Usually within an hour, a second dose of scopolamine is given, while the application of so-called "memory tests" serves to indicate whether it is advisable to administer additional injections. Some leading advocates of this method claim that the majority of the unfavorable results attendant upon "twilight sleep" are the direct result of failure to control the dosage of the drug by these "memory tests;" and they call attention to the large percentage of "painlessness" as proof of probable overdosing. If the patient's memory is clear and she is not yet under the influence of the drug, a third dose is soon given. If, however, the patient is in a state of amnesia (lack of memory), this third injection is not commonly given until about one hour after the second injection. The amount of amnesia present is used as a guide for repeated injections at intervals of one to one and a half hours. As a rule, the morphine is not repeated.

It must be evident that the success of such a method of anesthesia must depend entirely upon thoroughgoing personal supervision of the individual patient by a properly trained and experienced physician; and it is for just these reasons that "twilight sleep" is destined to remain largely a hospital procedure for a long time to come.

Experience has shown that those cases of "twilight sleep" that are not under the influence of scopolamine over five or six hours do vastly better than those under a longer time. When employed too long before labor this method seems to favor inertia and therefore tends to increase the number of forceps deliveries.

The number of injections may run from one to a dozen or more, and patients have come through without accident with fifteen or more doses, running over a period of twenty-four hours.

The Claims of "Twilight Sleep"

While "twilight sleep" as a method of anesthesia is not altogether new, many of the claims made for it by recent advocates are more or less new; and, to enable the reader clearly to comprehend both the advantages and disadvantages of this method, both the favorable and unfavorable facts and contentions will be summarized in this connection. The favorable claims made for "twilight sleep" are:

1. That eighty to ninety percent of all women who use this method can be carried through a practically painless labor.

2. That there is practically no danger to the mother (some degree of danger to the child is admitted by most of its champions) other than those commonly attendant on the older and better known methods in general use.

3. That "twilight sleep," being almost exclusively a hospital procedure, would result in more women going to the hospital for their confinement - if it were used more; and would, therefore, tend to bring about more careful supervision and individual care on the part of the attending obstetrician.

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4. That by lessening the dread of labor and the fear of painful childbirth, there will probably occur an increase in the birth rate of the so-called "higher classes of society" - the social circles which now show the lowest birth rates.

5. That it is of special value in the cases of certain neurotic women and those of low vital resistance; especially those patients suffering from certain forms of heart, respiratory, kidney, and other organic diseases.

6. Some authorities maintain that "twilight sleep" is of value even in threatened eclampsia, although they admit it tends to produce a rise in blood-pressure.

7. It is supposed to shorten the first stage of labor - by facilitating the dilation of the cervix - owing to the painless stretching; although the majority of its special advocates admit that it lengthens the second stage of labor, during which the patient must be very closely watched.

8. That even in those cases where the sense of pain is not entirely destroyed, the patient seems to possess little or no subsequent memory of any physical suffering or other disagreeable sensations.

9. That the method is of special value in sensitive, high-strung, nervous women of the "higher classes," who so habitually shun the rigors of child bearing - especially in the instance of their first child.

10. That the action of scopolamine is chiefly upon the central nervous system - the cerebrum - that it diminishes the perception of pain without apparently decreasing the contractile power of the uterus; labor may, therefore, proceed with little or no interruption, while the patient is quite oblivious to the accompanying pains.

11. That the physical and nervous exhaustion is quite entirely eliminated - especially in the case of the first labor - that patients who have had this method of anesthesia appear refreshed and quite themselves even the first day after labor.

12. That there is decidedly less "trauma" (appreciable injury) to the nervous system and therefore less "shock;" and that all this saving of nervous strain tends greatly to hasten convalescence.

13. And, finally, that "twilight sleep" does not interfere with the carrying out of any other therapeutic measures which may be deemed necessary for a successful termination of the labor.

Dangers of Twilight Sleep

While we are recounting the real and supposed advantages of "twilight sleep" - especially in certain selected cases - it will be wise to pause long enough to give the same careful consideration to the known and reputed dangers and drawbacks which are thought to attend this method of anesthesia in connection with labor cases.

We desire to state that these expressions, both for and against "twilight sleep," are not merely representative of our own experience and attitude; but that they also represent, as far as we are able

to judge at the time of this writing, the consensus of opinion on the part of the most reliable and experienced observers and practitioners who have used and studied this method in both this country and Europe. The dangers and difficulties of "twilight sleep" may be summarized as follows:

1. That this method tends to weaken the mental resistance of many women; to lessen their natural courage and to decrease that commendable fortitude which is such a valuable feature of the character endowment of the normal woman.

2. That "twilight sleep" is essentially a hospital method and is, therefore, inaccessible to the vast majority of women belonging to the middle and lower classes of society, as well as to those women who live in rural communities.

3. That in fifteen or twenty percent, the method fails to produce the desired results - at least, when administered in amounts which are deemed safe.

4. That this method does decrease the baby's chances of living; that the second stage of labor is definitely prolonged; that from ten to fifteen percent of the babies are sufficiently under the influence of the anesthesia when born as to be unable to breathe or cry without artificial stimulus.

5. That it is a method requiring special training and experience; that it will be many years before the average practitioner will become proficient in its use; and that the older methods are probably far safer for the average physician.

6. That the method requires more care in its administration than can be expected outside of the hospital in order to avoid the dangers of fetal asphyxiation - which danger has led not a few obstetricians to abandon it.

7. That a satisfactory techniques is almost impossible of development; that every patient must be individualized; that the chief dangers are connected with the over dosage of morphine; that the method is not adaptable to the general practice of the average doctor.

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8. That by prolonging the second stage of labor and by sometimes giving too much morphine, the number of forceps deliveries is greatly increased, with their attendant and increased dangers to both mother and child.

9. That the prospects of passing through labor which may be rendered painless by artificial methods, tends to produce an attitude of carelessness and indifference towards those natural methods of living and other hygienic practices which so greatly contribute to naturally painless confinements.

10. That this method as sometimes practiced greatly increases the dangers of a general anesthetic, if such should be found necessary later on during the labor.

11. That "twilight sleep" is contra-indicated (should not be used) in the following conditions: primary inertia (abnormally delayed and slow labor); expected short labor - especially in women who have already borne children; when the fetal head is known to be large and the mother's pelvis small; placenta praevia (abnormal placental attachment); accidental hemorrhage; absent or doubtful fetal heart beat; when labor is already far advanced; and in threatened convulsions and eclampsia.

Conclusions Regarding Twilight Sleep

Having presented the evidence both for and against "twilight sleep," it may be of assistance to the lay reader to have placed before her the personal conclusions and working opinions of the authors. We, therefore, undertake to summarize our present attitude and outline our practice as follows:

1. "Twilight sleep" as a method of obstetric anesthesia in certain selected cases and in well-equipped hospitals, and in the hands of careful and experienced practitioners, has demonstrated that it is a scientific reality - and has probably come to stay - at least until better and safer methods of affecting a relatively painless confinement are discovered; although we are compelled to state that it is not the panacea the lay press has led many of our patients to believe. (That we believe a much better and safer method has been devised, the next chapter will fully disclose.)

2. We do not expect this method ever to become general in its use; we do not look for a chain of special "twilight hospitals" to stretch across the continent and then to overrun the country. We expect much of the recent forced enthusiasm to die down, while scopolamine-morphine anesthesia takes it proper place among other scientific methods of alleviating the pangs of labor.

3. We know that standard and fresh solutions - as already noted - are absolutely essential for the success of this method.

4. We are certain that no routine method or techniques can be developed. Each patient must be individualized. The method does not consist in injecting scopolamine every so often. The patient's mental and physical condition - as also that of the unborn child - must control the administration of "twilight sleep."

5. The patient must be in a quiet and partially darkened room. She must not be disturbed; while the physician, or a competent trained nurse, must be in constant attendance.

6. While this method of treatment is best carried out in the well-appointed hospital, there is no real reason why it cannot be fairly well carried out in a well-regulated private home, provided the necessary preparations have been made, a trained nurse is present, and provided, further, that the physician is willing to remain in the home with the patient the length of time required properly to supervise the treatment.

7. Even when the treatment is not instituted early in labor, it can, in certain selected and appropriate cases, be utilized even in the second stage of labor - thus saving these special cases much unnecessary pain; in fact, some authorities regard it as a valuable adjunct in the management of "borderland contractions" as it allows the patient a full test of labor.

8. In our opinion, this method has little effect on the first stage of labor if properly administered; but it does undoubtedly prolong and tend to complicate the second stage; in fact, we are coming to look

upon "twilight sleep" as being more distinctly a first stage procedure; that it bears the same relation to the first stage of labor that chloroform bears to the second stage - relieving the pain but not stopping the progress of labor.

9. That when safe amounts of the drug are used the pain is greatly lessened in all cases - the subsequent memory of pain is absent in the majority of the patients - but the labor is not always entirely painless as is popularly supposed.

10. We do not believe that this method when properly administered increases the number of forceps deliveries - at least not in the case of high forceps operations. It undoubtedly does cover up the symptoms of a threatened rupture of the uterus, and therefore increases danger from that source; nevertheless it may be safely stated that this method does not in any way greatly interfere with any other measures which might be found necessary to institute in order to bring about a successful termination of the labor.

11. The baby's heart beat must be carefully and constantly watched; sudden slowing means that the treatment must be discontinued and the child delivered as soon as possible; even then, difficulty may be experienced in getting the baby's breathing started after it is born. In the vast majority of cases where the baby does not cry or breathe at birth, the usual methods employed in such cases serve quickly to establish normal respiration, and the baby seems to be but little the worse for the experience.

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12. While altogether too much has been claimed for "twilight sleep" at the same time many false fears have also been suggested, among which may be mentioned the fear of the mother losing her mind after the treatment; the undue fear of asphyxiation on the part of the baby; the fear of post-partum hemorrhage; and the fear that it will lessen the milk supply. We cannot deny that the child's dangers are often increased; but in other respects, this method (in properly selected cases) presents little more to worry us than the older methods of anesthesia.

13. We are inclined to the belief that this method has but little influence on the course of convalescence following labor. Certain nervous and highly excitable women certainly seem to do better, as a result of experiencing less pain and nervous shock; while other cases do not turn out so well. It certainly does not retard repair and recovery during the childbirth.

14. This method seems to have its greatest field of usefulness in those cases of highly intelligent but excessively neurotic women who have an abnormal dread of pain and child bearing; or women who have suffered unusually at the time of a previous confinement - perhaps in the case of the first baby - or from other complications; women such as these, and other special cases, are the ones to benefit most from the employment of "twilight sleep."

15. This method as has already been intimated, is most useful in the case of the first baby, or in the case of women who have established a record of tedious and painful labors. It has no place in normal and short labors; although it may be used to great advantage in certain cases during the first stage of labor - being carefully and lightly administered - while chloroform or gas is utilized at the end of the second stage just as has been our custom for a generation.

16. As noted under the special claims made for this method, it is (as also is nitrous oxide) the ideal procedure in cases of heart, respiratory, kidney, and other organic difficulties, the details of which have already been noted, and their repetition here is not necessary.

17. It must be remembered that scopolamine and morphine are more or less uncertain in their action; scopolamine is variable in its results, often producing such marked nervous excitement in the patient as greatly to interfere with the carrying out of an aseptic techniques; while morphine has been shunned by obstetricians for a whole generation, because of its well-known bad effects on the unborn child as well as its interference with muscular activity on the part of the mother.

In Germany, it is said, that a great many damage suits against prominent physicians have resulted because of the alleged ill effects which have followed the use of "twilight sleep."

18. In presenting these facts and opinions regarding "twilight sleep," the reader should bear in mind that we are not only endeavoring to state our own views and experience, but also to give the reader just as clear and fair an idea of what other and experienced physicians think of the method, both favorably and unfavorably; and we will draw these conclusions to a close by citing the opinion of one or two who have had considerable experience with the method and who, in summing up their observations, say:

The disadvantages of the method are entirely with the accouter and not to the mother or child. *It requires his presence at the bedside from the time the treatment is undertaken until the completion of labor*, not so much because of any danger, but to keep the patient evenly under anesthesia on a line midway between consciousness and unconsciousness, for if she is allowed to go above that line in several instances she will have several so-called "isles of memory," and will be able to draw a picture of her labor in her mind and therefore lose the benefit of the treatment.

These methods of anesthesia are very important and have merit. They should be used when properly indicated. No one should limit himself to a routine method. Each case should be individualized and the form of anesthesia best suited to the case in hand should be employed. For instance, in dealing with a primipara - one who is full of fear, who cannot stand pain, who is of an hysterical nature - morphine-scopolamine anesthesia is best suited in that particular case, because these drugs have a selective action when it comes to allay fear and produce amnesia. On the other hand, in a multipara who has had three or four children, whose soft parts are relaxed and who has short labors, the anesthetic of choice would be a few whiffs of chloroform as the head passes over the perineum.

It is ridiculous to try to give such women the "twilight sleep." Furthermore, take the cases you see for the first time at the end of the first stage of labor, or during the second stage; these cases are best treated with the nitrous oxide and oxygen method. You have to individualize your cases. The prospective mother now consults the obstetrician early to find out if her particular case is suitable for the "twilight sleep." She has been informed that certain examinations - urine, blood pressure,

etc. - are necessary. She knows that these examinations have to be made at regular intervals. In other words, we get the patients early and we can give them good prenatal care.

This chapter has been devoted to "twilight sleep;" the following chapter will consider "nitrous oxide" and other methods of anesthesia in connection with labor, and should be read along with the foregoing discussion in order to obtain an intelligent view of the whole subject of "painless labor."

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Since the public has already been told so much about obstetric anesthesia, we deem it best to go into the whole subject thoroughly, so that the expectant mothers who read this book will be able to form an intelligent opinion regarding the question, and therefore be in a position to give hearty cooperation to the decision of their physician to employ, or not to employ, any special form of anesthesia or analgesia in their particular case. In order to give the reader a complete understanding of "painless labor," it will be necessary to give attention to that newer and more safe method of obstetric anesthesia called "sunrise slumber." This method of anesthesia consists in the employment of nitrous oxide or "laughing gas," and will be fully considered in this chapter.

Obstetric Fear

In this connection we desire to reiterate and further emphasize some statements made in the preceding chapter concerning the unnatural fear and abnormal dread of childbirth.

We feel that it is very important in connection with this new movement in obstetrics to reduce the woman's pain and suffering to the lowest possible minimum, that the trials of labor should not be overdrawn and the pangs of confinement overestimated. We must not educate the normal woman to look upon labor as a terrible ordeal - something like a major surgical operation - which, since it cannot be escaped, must be endured with the aid of a deep anesthesia.

The facts are that a very small percent of healthy women suffer any considerable degree of severe pain - at least not after the first child. We often observe that judicious mental suggestion on the part of the physician or nurse in the form of encouraging words and supporting assurances tends to exert a marked influence in controlling nervousness and subduing the sufferings of the earlier labor pains.

We must not allow the efforts of medical science to lessen the sufferings of child-bearing, to rob womankind of their natural and commendable courage, endurance, and self-reliance.

We do not mean to perpetuate the old superstition that pain and suffering are the necessary and inevitable accompaniments of child-bearing - that the pangs of labor are a divine sentence pronounced upon womankind - and that, therefore, nothing should be done to lessen the sufferings of confinement. Severe and unnatural pain is not at all necessary to childbirth, and there exists no reason under the sun why women should suffer and endure it, any more than they should suffer the horrors of a very painful surgical operation without an anesthetic.

In this connection, it should be recalled that analgesic drugs have been introduced into obstetric practice only during the last fifty years, while such methods of relieving pain have been used in general surgery for a much longer period. It is now only sixty-nine years since Simpson first employed anesthetic in obstetrics, while six years afterwards Queen Victoria gave her seal of approval to the use of chloroform in labor cases.

Thirty years ago, in speaking of the expectant mothers, Lusk warned us:

As the nervous organization loses in the power of resistance as the result of higher civilization and of artificial refinement, it becomes imperatively necessary for the physician to guard her from the dangers of excessive and too prolonged suffering.

Nitrous Oxide - "Laughing Gas"

Nitrous oxide, or "laughing gas," was first used in labor cases in 1880 by a Russian physician. During the last twenty-five years it has been used off and on by numerous practitioners in connection with confinement, but not until the last few years has this method of relieving labor pain come into prominent notice.

While the "laughing gas" method of obstetric anesthesia did not gain notoriety and publicity from being exploited in magazines and other lay publications, it did get its initial boost in a very unique and unusual manner. A gentleman who manufactured and sold a "laughing gas" and oxygen mixing machine for the use of dentists, insisted that this method of anesthesia should be used in the case of his daughter, who was about to be confined. This patient was kept under this nitrous oxide anesthetic for six hours - came out fine - no accidents or other undesirable complications affecting either mother or child, and therefore another and safe method of reducing the sufferings of childbirth has been fully demonstrated and confirmed, although it had previously been known and used in labor cases to some extent.

Starting from this particular case in 1913, many obstetricians began experimental work with "gas" in labor cases; and, at the time of this writing, it has come to occupy a permanent place in the management of labor, alongside of chloroform, ether, and "twilight sleep."

Analgesia vs. Anesthesia

The reader should understand the difference between analgesia and anesthesia. Anesthesia refers to the condition in which the patient is more or less unconscious - wholly or partially oblivious to what is going on, and, of course, entirely insensible to all pain. Analgesia is a term applied to the loss of pain sensation. The patient may not be wholly or even partially unconscious - merely under the influence of some agent which dulls, deadens, or otherwise destroys the realization of pain. This is the condition aimed at by the proper administration of any form of "twilight sleep," whether by the scopolamine-morphine method, or by the nitrous oxide ("sunrise slumber") method.

Any method of treatment which can more or less destroy the pain of labor without in any way interfering with its progress, and which in no way complicates its course or leaves behind any bad effects on either mother or child, must certainly be hailed with joy by both the patient and the physician. While chloroform has served these purposes fairly well, there have been numerous drawbacks and certain dangers; and it was the knowledge of these limitations in the use of both

chloroform and ether, that has led to further experimentation and the development of these newer methods of producing satisfactory analgesia - freedom from pain - without bringing about such a state of profound anesthesia as accompanies the administration of the older methods.

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Analgesia is the first stage of anesthesia - the "twilight zone" of approaching unconsciousness - in which the sense of pain is greatly dulled or entirely lost, while even that which is experienced is not remembered. It seems to the authors that "gas" is the ideal drug for producing this condition whenever it is necessary, as nitrous oxide is the most volatile of anesthetics, acts most quickly, and its effects pass away most rapidly, while its administration is under the most perfect control - it may be administered with any desired proportion of oxygen - and may be discontinued on a moment's notice. It is practically free from danger even when continued as an analgesic for several hours. Nitrous oxide never causes any serious disturbance in the unborn child, as chloroform sometimes does when used too liberally.

Effects of Nitrous Oxide

It will not be necessary to compare the favorable and unfavorable claims for nitrous oxide as we did the contentions for and against "twilight sleep." Whatever service "laughing gas" or "sunrise slumber" can render the cause of obstetrics we can accept, knowing full well that, in competent hands, it can do little or no harm; and this we know from the facts herewith recited and from the further fact that we have gained a wide experience with this agent in the practice of both dentistry and surgery. In a general way, the influence of "sunrise slumber" on mother and child may be summarized as follows:

1. It can accomplish its purpose - can quite satisfactorily relieve the mother of severe pain - when employed as an analgesic. It is not necessary to administer the gas to the point of anesthesia except at the height of suffering at the end of the second stage of labor, when the head of the child is passing through the birth canal.

2. This method can be stopped at any moment - the patient ran be brought out from under its influence entirely and almost instantaneously. It is not like a hypodermic injection of a drug which may exert a varying and unknown influence upon the patient, and which, when once given, cannot be recalled.

3. It is a method which may be used in the patient's home just as safely as in a hospital; the only drawback being the inconvenience of transporting the gas-containing cylinders back and forth. This is even now partially overcome by the improved combination gas and oxygen form of apparatus which has been devised.

4. The administration of nitrous oxide analgesia or anesthesia does not interfere with or lessen the uterine contractions or expulsive efforts on the part of the mother - at least not to any appreciable extent.

5. Just as soon as a severe uterine contraction - attended by its severe pain - begins to subside, the gas inhaler is immediately removed, and in a few seconds the patient is again conscious. It is not necessary to keep the patient continuously under the influence of the drug, as in the case of the scopolamine-morphine method of "twilight sleep."

6. This method ("sunrise slumber") is certainly far more safe in ordinary and unskilled hands than the "twilight sleep" procedure. The patient is more safe with this method in the hands of the average doctor or trained nurse.

7. It has been our experience that nitrous oxide in the smaller, interrupted and analgesic doses, actually tends to stimulate the uterine pains and contractions, while at the same time rendering the patient quite oblivious to their presence. When properly administered, the freedom from pain is perfect.

8. Under the influence of "gas," patients often appear to "bear down" with increased energy. It certainly does not lessen their cooperation in this respect.

9. We have not observed, nor have we learned of, any cases of inertia (weak and delayed contractions), post partum hemorrhage, or shock, as a result of "laughing gas" or "sunrise slumber" analgesia.

10. This method lends itself to perfect control - it may be decreased, increased, or discontinued, at will; it may be given light now and heavy at another time; while, at the height of labor, it may be pushed to the point of complete anesthesia, if desired.

11. We have found "sunrise slumber" (nitrous oxide) analgesia to be the ideal obstetric anesthetic, and have adopted it quite to the exclusion of both chloroform and "twilight sleep." We find that this form of analgesia has all the advantages of "twilight sleep" without any of its dangers or disadvantages.

12. A possible objection to the nitrous-oxide method is the cost, especially in the private home. The average cost in the hospitals where we are using this method runs about $2.00 for the first hour and $1.50 for each hour thereafter. This is the cost when using large tanks of gas, and is, of course, somewhat increased when the smaller tanks are used in the patient's home.

Method of Administration

Since it was thought best to give the reader some idea of the techniques for the administration of "twilight sleep," it may not be amiss to explain how "sunrise slumber" is usually employed in labor cases. The techniques is very simple. The administration of the gas is generally begun about the time the patient begins seriously to complain of the severity of the second stage pains; although, of course, the gas can be given during the first stage pains if desired. In the vast majority of cases, however, we think it is best to encourage the patient to endure these earlier and lighter pains without resorting to analgesic procedures

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The form of apparatus used is the same as that employed by dentists and contains both nitrous oxide and oxygen cylinders. A small nasal inhaler is best, although the ordinary mouthpiece will do very well. The gasbag attached to the tank should be kept under low pressure and, as a pain begins, the patient is told to breathe quietly, keeping the mouth closed. As a rule this sort of light inhalation serves to produce the desired analgesic effect. It is not necessary to put the patient deeply under in order to relieve the pain.

It is our custom to begin "sunrise slumber" as soon as the uterine contractions become painful. The earlier the gas is started, the more oxygen should be used. Two or three inhalations will suffice to take the "edge" off the earlier and lighter pains. When the pains grow heavier we use less oxygen and permit three or four deep inhalations just before a bearing-down pain. At the first suggestion of a contraction, the patient must begin to inhale the gas; while after the patient has pulled hard on the traction strops - just as the contraction pain is passing - she is given an inhalation containing a larger percentage of oxygen.

At the beginning of a pain, pure nitrous oxide is administered, and the patient is instructed to breathe deeply and rapidly through the nose. The gasbags should be about half filled. The mixture of gas and oxygen must be determined by the severity of the pains and individual behavior of the patient.

Four to six inhalations of the gas are sufficient to produce the required analgesia in the average case. Following the first few deep inspirations through the nose, the patient can be instructed to breathe through the mouth, while the gas is well diluted with oxygen and continued until the end of the pain. In this way a satisfactory analgesia is maintained throughout the "pain" with a minimum of "gas." The proportion of oxygen used will run from nothing up to ten percent. This procedure is repeated with the occurrence of each pain.

The use of the "mask" is just as effective as a nasal inhaler, but wastes more gas and so is more costly.

When the head is passing the perineum the gas should be pushed to the point of anesthesia, while the patient's color will suggest the amount of oxygen to be used as well as serve to control the administration of the nitrous oxide.

Chloroform and Ether

For many years chloroform and ether have been used to alleviate the pains of women in labor. Valuable as these agents are when deep anesthesia is required for the carrying out of operative procedures, they have not proved satisfactory as analgesic agents. If administered in small quantities at the commencement of a strong uterine contraction, the patient does not usually inhale sufficient to abolish pain. She is then apt to be irritated and is certain to insist on being given a larger quantity. If a sufficient amount be administered to satisfy the woman, the continued repetition gradually inhibits the power both of the uterus and of the accessory muscles, so that labor is unnecessarily prolonged, and, possibly, the life of the fetus endangered.

Physicians have, therefore, been accustomed to employ these drugs very sparingly, restricting their use to the very end of the second stage, during the painful passage of the head through the vulva. The results of the administration at this time are also uncertain. If delivery be rapid the woman may not be able to inhale sufficient to abolish her consciousness of pain. If it be slow she may take too much and weaken the muscular powers, thereby prolonging labor and, often, necessitating forceps delivery. It is not surprising, therefore, that the medical profession has long been hoping that a more satisfactory method of relieving the pain of labor would be found.

Conclusions

In summing up our conclusions regarding analgesia and anesthesia in labor cases, the authors would state their present position as follows:

1. That anesthetics or analgesics are a necessary accompaniment of confinement in this day and age; that the average labor case demands some sort of pain-relieving agent at some time during its progress; but that intelligent efforts should be put forth to limit and otherwise control their use. While we recognize the necessity for avoiding needless suffering, at the same time we must also avoid turning our women into spineless weaklings and timid babies.

2. That we should seek to develop, strengthen, and train our girls for a normal and natural maternity; that we should study to attain something of the naturalness and the painlessness of the labors of Indian tribes; and, even if we partially fail in this effort, we should at least leave our women with ennobled characters and strengthened wills.

3. That the scopolamine-morphine method of inducing "twilight sleep" has its place - in the hands of experts - and in the hospital; and that in many cases it probably represents the best method of obstetric anesthesia which can be employed.

4. That as a general rule and in general practice, the safest and best method of inducing the "twilight" state of freedom from severe pain, is by the use of nitrous oxide or "laughing gas" - the "sunrise slumber" method. It has been our practice to start all general ether anesthetics with "gas" for a number of years, while we have been doing an increasing number of both minor and major operations with "gas" alone.

5. That we still employ general ether or chloroform anesthesia in Cesarean sections and other major obstetric operations, although several operators are beginning to use "gas" in even these heavy cases.

6. That the intelligent and careful use of pituitary extract in certain cases of labor serves greatly to shorten the second stage; that it is of great value in certain "slow cases," and serves greatly to reduce the use of low forceps.

We have treated the subject of obstetric anesthesia in this full manner, because of the fact that so much has appeared in the public press on these subjects, and, further, because we desired that our readers should have placed before them the facts on all sides of the question just as fully as a work of this scope would permit.

Pregnancy - The Convalescing Mother: Part 1

The Mother and Her Child

By William S. Sadler, M.D., Lena K. Sadler, M.D.

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The uterus, now more than fifteen times its normal size and weight, begins gradually to contract and assume its normal weight of about two ounces; and it requires anywhere from four to eight weeks to accomplish this involution. In view of all this it is obvious that there can be no fixed time to "get up." It may be at the end of two weeks, or it may not be until the close of four or five weeks, in the case of the mother who cannot nurse her child; for the nursing of the breast greatly facilitates the shrinking of the uterus. Extensive lacerations may hinder the involution as well as other accidents of childbirth, so it must be left with the physician to decide in each individual case when the mother may enter into the activities of life and assume the responsibilities of the care of the baby and the management of her home.

The Nurse

During this period of the childbirth a member of the family, a neighbor, a visiting nurse, a practical nurse, or a trained nurse, looks after the mother and gives to the babe its first care; whoever it may be, certain laws of cleanliness must be carried out if infection is to be guarded against. If there are daily or semi-daily calls made by the physician, a member of the family may be trained to care for the mother with proper cleanliness and asepsis; but it is far better for the mother, if possible, to secure the services of a trained nurse, or the visiting nurse, in which instance she will call each day, wash and dress the baby, clean up the mother and care for the breasts. She is not supposed to clean the room, make the bed or prepare the food. If a trained nurse can be in charge, the convalescing time is usually shortened as the responsibilities are taken from the mother, her mind freed from care and it is here to improve, rest, and wait for the restoration of the pelvic organs, when she may again go forth among her family.

The nurse may have to sleep in the same room; but, if it be possible, she should occupy an adjoining room, she should have a regular time each day for an hour's walk in the fresh air, she should be served regular meals, and be allowed some time out of the twenty-four hours for unbroken slumber. In return she will intelligently cooperate with the physician in bringing about the restoration of body and up building of the mother's nerves.

Rest and Exercise

From a monetary standpoint there can be nothing so wasteful or extravagantly expensive in the home as to allow the mother to drag about from day to day and week to week with chronic weakness or invalidism because she did not have proper care during her already too short childbirth, or because she got up too soon.

Having a baby is a perfectly normal, physiological procedure. It is also, usually, downright hard work; and, beside the hard laborious work, there is not only a wearied and severely shocked nervous system to be restored, but there is also a certain amount of uterine shrinkage which must take place - and this requires from four to eight weeks; and so our mother must be allowed weeks or even a month or two to rest, to enjoy a certain amount of well-directed exercise, to have an abundance of

fresh air, to be wheeled or lifted out of doors if possible into the sunshine, that she may be the better prepared for the additional duties and responsibilities the little new comer entails.

Sunshine and fresh air are wonderful health restorers as is also a well-directed cold water friction bath administered near the close of the second week of a normal childbirth. During the second week a few carefully selected exercises such as the following are not only beneficial, but tend to increase circulation and therefore to promote the secretion of milk and the shrinking of the uterus.

1. Head raising, body straight and stiffened. 2. Arm raising, well extended. 3. Leg stretching, with knees stretched and toe extended. 4. Massage, administered by the nurse.

A splendid tonic circulatory bath may be administered at the close of the second week (in normal childbirth), known as the "cold mitten friction," which is administered as follows: The patient is wrapped in a warm blanket, hot water bottle at feet, and each part of the body - first one arm then the other; the chest, the legs, one at a time - is briskly rubbed with a coarse mit dipped in ice water. As one part is dried it is warmly covered, while the next part is taken, and so on until the entire body has been treated. The body is now all aglow, the blood tingling through the veins, and the patient refreshed by this wide-a-wake bath. Properly given, the cold-mitten friction bath is one of the most enjoyable treatments known and under ordinary conditions, if intelligently administered, may be given as early as the eighth day.

After Pains

After the birth of the first baby the uterus usually is in a state of constant contraction, hence there are no "after pains;" but after the birth of the second or third child, the uterine muscle has lost some of the tone of earlier days - there is a tendency toward relaxation - so that when the uterine muscle does make renewed efforts at contraction, these "after pains" are produced. They usually disappear by the third day. Nothing should be done for them, indeed they should be welcomed, for their presence means good involution (contraction) of the uterus.

The Temperature

Careful notations of the temperature should be made during the first week. A temperature chart should be accurately kept and if the temperature should rise above 100° the physician should be notified at once. The third day temperature is watched with expectancy, for if an accidental infection occurred at the time of labor, it is usually announced by a chill and sudden rise of temperature on the third day. This may be as good a place as any to mention the commonly met night sweating. This is due to a marked accentuation of the function of the skin. It is not at all unusual for a sleeping mother in the early childbirth to wake up in a sweat with night gown very nearly drenched. The gown should be changed underneath the bedding, while alcohol is rubbed over the moistened skin surface.

These sweats will disappear as soon as the mother begins to regain her strength. A vinegar rub administered on going to bed may often prevent these sweats.

Pregnancy - The Convalescing Mother: Part 2

The Mother and Her Child

Urination

The patient should be encouraged to urinate during the first few hours after labor; catheterization should not take place until every effort has been made to bring about normal urination; or, until there is a well marked tumor above the bony arch of the pelvis in the lower part of the abdomen. It is far less harmful to the patient for her to sit up on the jar placed on the edge of the bed, than to undergo the risk of inflammation of the bladder which so often follows catheterization.

The Bodily Fluid

The first few days the bodily fluid is very red because of the large amount of blood which it contains. After the third or fourth day it is paler and after the tenth it assumes a whitish or yellowish color. During the three changes it should always smell like fresh blood. Any foul, putrefying odor should be promptly reported to the physician.

If on getting up at the close of the second week the bodily fluid should resume its red color, the patient should return to bed and notify her physician.

The Abdominal Binder

After the tenth day, the abdominal binder may be pinned as tightly as the patient desires, but prior to the tenth day many physicians believe the exceedingly tight binder causes misplacements of the enlarged, softened, and boggy uterus. It should be pinned snugly; but not drawn as tight as possible with the idea of keeping the uterus from relaxing, for at best, it does not do it; while tight constriction may produce a serious turning or flexion of the uterus. The breast binder is applied during the first twenty-four hours to support the filling breasts, loosely at first, and as they increase in size, as the glands become engorged, the binder is drawn more tightly. A sterile piece of gauze is placed over the nipples.

The Bowels

On the morning of the second day a cathartic is usually given - say one ounce of castor oil or one-half bottle of citrate of magnesia. The bowels should move at least once during each twenty-four hours; if they are obstinate, a simple laxative may be nightly administered. Certain constipation biscuits, sterilized dry bran, or agar-agar may be eaten with the breakfast cereal. Prunes and figs should be used abundantly. Bran bread should be substituted for white bread. The enema habit is a bad one and should not be encouraged; however, the enema is probably less harmful than the laxative-drug habit. Mineral oil is useful as a mild laxative, and does not produce any bad after results.

The Diet

For the first three days a liquid and soft diet is followed such as hot or cold milk, gruels, soups, thin cereals, eggnog (without whiskey), eggs, cocoa, dry toast, dipped toast, or cream toast. There should be three meals with a glass of hot milk at five in the morning (if awake) and late at night; nothing

between meals except plenty of good cold water. After the third day, if temperature is normal, a semi-solid diet may be taken, such as baked, mashed, or creamed potatoes, soups thickened with rice, barley or flour, vegetables (peas, corn, asparagus, celery, spinach, etc.); eggs, light meats, stale breads, toast, bland or sub acid fruits (sweet apples, prunes, figs, dates, pears, etc.); macaroni, browned rice (parched before steaming), etc.; ice cream, custards, and rice puddings for desserts after the seventh day. Three good meals a day, at eight and one and six, with a couple of glasses of hot milk or cocoa or an eggnog at five A.M., to be repeated at 9 or 10 P.M., with plenty of cold water between the meals, will abundantly supply the necessary milk for the growing babe. Tea and coffee are not of any special value in encouraging a flow of milk.

The constant coaxing of the mother with "Do drink this," and "You must drink this, or you won't have any milk," not only saddens her but seriously upsets digestion and therefore indirectly interferes with normal lactation.

Getting Up

Everybody should stay at home and away from the mother and her new born child until after the seventh day, and then, if our patient is normal, visitors may call, but should not stay longer than five minutes. The convalescing mother will improve faster without the neighborhood gossip, or the tales of woe so often carried by well-meaning, but woefully ignorant acquaintances.

When the hard ball-like mass can no longer be felt in the lower abdomen, when the bodily fluid has passed through the three changes already mentioned, and the flow is whitish or yellowish, scanty and odorless, the patient may sit up in a chair increasingly each day. Such conditions are usually found anywhere from the tenth to the fifteenth day. The patient first sits up a little in a chair - she has already been exercising some in bed - and this enables her to sit up with ease for a half-hour the first day, increasing one-half hour each day during the week following. At the end of three weeks, she may be taken down stairs providing there is ample help to carry her back up stairs. After another week (at the close of the fourth), if the bodily fluid is entirely white or yellow, with no blood, she may begin carefully to go about the house. There should be no lifting, shoving, pulling, wringing, sweeping, washing, ironing, or other heavy exercise for at least another two weeks, better four weeks. Any variance from this program usually means backache, lassitude, diminished milk supply, and frequently a general invalidism for weeks or months - sometimes years.

Complications

Cystitis, or painful urination, is avoided by tardy "getting up;" quietly, slowly moving about; abundant water drinking; and the avoidance of catheterization.

Hemorrhage. Notify the physician if it occurs at any time. The treatment is heavy kneading of the abdomen until the uterus again becomes like a hard ball. Cold compresses over the lower abdomen may sometimes help.

Infection is manifested by chilly sensations or a distinct chill followed by fever, usually on the third day. Take a cathartic; notify the physician at once and follow his directions.

Mastitis, inflammation or caking of the breasts. Very hot fomentations wrung out of boiling water, alternating with ice-cold compress, should be applied to the breast for an hour or more, three or four

times a day. Cathartics should be administered, and eliminative measures instituted such as the hot-blanket pack.

Pneumonia. Keeping the arms and chest well protected by a long-sleeved coat of warm texture, should help in preventing this serious complication. Pneumonia complicating labor is usually the result of carelessness and exposure.