

X.

OBSTETRICS

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OBSTETRICS

In the earliest times the care of pregnant women fell upon her women friends and the members of her family. It was gradually assumed that these women trained by experience were more expert than others, and they began to teach others what they had learned. These women were known as "midwives" which is the Anglo Saxon word meaning "with the wife".

The early women of culture and high social position took care of the sick and also maternity patients as history records. Aspasia in Hippocrates time knew much about the care of maternity cases and of diseases of women. Trotula lived in Salerno in 1050 A.D. She was another educated woman who was noted for her work and writings on Obstetrics and Gynecology. In her book "Diseases of Women - Before, During, and After Childbirth", she described and advocated perineorrhaphy for complete tears.

The earliest reference and description of the education of midwives is found in a book by Soranus of Ephesus in 100 A.D.

In very early times the priests assisted with abnormal caese. Hippocrates and his pupils began to study midwifery in 400 B.C., but they were rarely called in until the removal of a dead child was necessary.

An attempt to regulate midwifery practise in Germany in 1452 was made, and the Guild for Midwives was formed. The first school was in Munich in 1589. Another was started in Paris at the Hotel Dieu in 1629.

There was a great deal of prejudice against male physicians. Dr. Werth of Hamberg was burned alive as late as 1523 when he dressed as a woman and attended a delivery to further study maternity cases.

Midwives and the obstetrical stools were referred to by the King of Egypt in Exodus 1:16. As early as 3500 B.C. the Egyptians had maternities, and in 1500 B.C. the Jews taught extreme cleanliness in handling maternity cases. This was lost sight of in later centuries.

New York City in 1716 passed an ordinance that women must take the following oath before they could attend deliveries: "that she would be diligent and ready to help any woman in labor, whether rich or poor, that in time of necessity she would not forsake the poor and go to the rich, that she would not cause any woman to name any other than the true father of her child, that she would not administer any medicine to produce miscarriage, that she would not force a woman to give her more than her services were worth that she would not keep secret the birth of a child, that she would be of good behavior, that she would not conceal the births of illegitimate babies!"

In America, as in Europe, physicians were not allowed to attend births until the middle of the eighteenth century. Probably the midwives were quite skilled as they were held in high esteem by the people who could afford their services. Studies made of conditions then are convincing that pregnant women were safer with midwives than with physicians because the latter made internal examinations which often introduced infection. The best midwives let nature take its course.

DIAGNOSIS OF PREGNANCY

Usually the diagnosis of pregnancy is not difficult as the mother has an idea or is aware of her condition before she consults her physician. There are exceptional cases when signs and symptoms are baffling, and a false diagnosis may be made. The main error is the confusing of large abdominal tumors with pregnancy. This could be avoided if the case was given thorough study, but often when the case seems obvious further investigation seems unnecessary and is only more expense for the patient and a waste of the doctors time.

Frequently women believe themselves pregnant when they are not. A dread of being pregnant usually causes these imaginary symptoms. This is called "pseudocyesis" or false pregnancy. Often women go to abortionists or commit abortions upon themselves when they are not even pregnant. If these same women would have gone to an experienced physician before attempting such a drastic measure, serious infections and fatalities could be cut down.

Pseudocyesis may be classed as a mental disease when it is wishful thinking on the part of the barren woman, who, when going through the change of life, hopefully interprets her cessation of menses as proof of pregnancy. They may develop nausea, mistake increasing abdominal fat for a growing uterus, and confuse flatus with fetal movements. They refuse to believe that their baby is merely a brain-child and change doctors hoping that one will confirm her condition.

The diagnosis of pregnancy may be of great medical or legal importance. Pregnancy aggravates a number of diseases to the extent that the patients life is endangered. Early diagnosis in these cases help the physician to prescribe additional care that the mother may stand the strain of her

pregnancy and have a normal baby, or in more serious cases a life saving therapeutic abortion may be done.

In certain legal cases a correct diagnosis is necessary when, for instance, a woman declares herself pregnant to defraud or blackmail others, or when convicted of a crime and capital punishment is to be dealt her.

The patients observations: The first sign of pregnancy is amenorrhea or absence of menstruation. This occurs in other conditions than so that other factors must be considered to discover its significance.

Some women have very irregular menses so that for diagnostic purposes this isnt important. Age must also be considered for obvious reasons. Recent childbirth, lactation, illness, and certain glandular disturbances all tend to produce amenorrhea. However, regular menstruation may occur during the early months of pregnancy; the periods becoming shorter and more scant.

To primiparae such emotional changes as losing her good disposition and becoming moody are very distressing. Older women are less disturbed because they know this will not last a lifetime. Attacks of weeping and sadness are also common in pregnancy.

"Vomiting in connection with stopping of menses usually confirms pregnancy to most women!" So wrote Francois Mauriceau in 1668. This symptom hasnt changed as most women still suffer nausea and vomiting. Vomiting begins when a woman is about two weeks along. To one third of pregnant women this is a marked or moderate degree. Another one third has only a mild form while the remaining one third may be entirely

free from it.

5.

Longing for strange and out of season foods may be considered a symptom sometimes. Women usually have an enormous appetite and eat great amounts of food. To-day when diets are better balanced and more diversified, it is possible to supply these cravings as long as they do not result in a dietary deficiency.

Another early symptom in some cases is a greater need for sleep. This usually disappears after the first few months.

Frequency of urination is another early symptom. It also soon disappears but usually recurs a few weeks before delivery. In this case patients should refrain from drinking fluids in the evening so they will be able to sleep all night.

Breast changes may occur early in pregnancy. The breasts increase in size, and the nipples become sore and painful. Pigmentation of the nipple and areola becomes marked. About the twelfth week a yellow fluid called colostrum can be expressed. Within the areola small elevations-the glands of Montgomery, develop.

As the pregnancy progresses the abdomen enlarges. The patient begins to show between the twelfth and sixteenth weeks. Like the increased pigmentation of the areola a dark line develops down the midline of the abdomen. As the abdomen increases white- pinkish streaks become noticeable. These are striae or stretched places, and good corseting will prevent some of them.

At about 4½ months quickening or fetal movements can be felt. These are slight at first and become more frequent and harder as the fetus grows.

PHYSICIANS OBSERVATIONS

The doctor never makes a physical examination without first taking the complete history of the patient. A complete and thorough examination is made and all facts are recorded. Height, weight and a complete description of the patient is noted. Previous obstetrical and menstrual history is important. Blood pressure is taken, Special attention is given the mouth and teeth for evidence of infection and need of dental work. The thyroid is examined for abnormalities. Heart and lungs are examined and findings recorded.

The breasts are checked as to changes the patient has noticed. The abdomen is palpated. After the sixteenth to twentieth weeks the fetal outline can be determined and the heart sounds heard. At this time also there should be movements. Fetal heart tones can sometimes be heard with the naked ear. In 1818 Mayor in Geneva Heard fetal splashings but didnt realize his discovery. The rate of normal fetal heart beats is between 120-160, the average being about 140. A difference in heart rate doesnt indicate the sex of the child. During labor if the heart tones change it is an indication that something is wrong. Heart tones are helpful in diagnosis of twins.

In 1899 the first successful x-ray of a living pregnancy was preformed by Mullerheime. This was four years after the discovery of x-ray by Wilhelm von Rontgen. In addition to the diagnosis of pregnancy by x-ray the physician can determine the size and position of the fetus in the mothers pelvis and also the size of the pelvis. Abnormalities can also be

determined.

Pelvic examination early in pregnancy is done for indications pregnancy. Arreddening of the tissues indicates pregnancy for there is normally a congestion of blood in the tissues if pregnancy is positive. Softening of the cervix or Hegars sign is another indication. This usually begins about the eight week. A pregnant uterus will feel broader and softer. A bluish tinge of the cervix and vagina is called Chadwicks sign.

External measurements are taken with a pelvimeter.

Normal measurements are:

Intraspinous-----26 cm.

Inter crestal-----29 cm.

Bitrochanteric-----31 cm.

Baudeloque----- 20 cm.

Measuring of the pelvic outlet should also be done.

Bituberous(transverse diameter of outlet)

-----11cm.

Posterior Saggital (from line bisecting the tuberosities to sacrum) $8\frac{1}{2}$ cm.

The spine is examined with the patient in an erect or sitting position.

The legs are examined for varicosities, and her feet are inspected for condition of the arches.

A blood examination consisting of hemoglobin determination, erthrocyte and leucocyte counts should be done on all patients. A Wasserman test should also be taken at the first visit so that if syphilis is found it can be treated immediately.

Urinalysis done at each visit includes specific gravity, reaction(PH), and tests for albumin ,sugar,

and casts. A microscopic should also be done to determine if pus and blood is present.

All cases should be followed routinely during pregnancy and in the post-partum period. Patients should be seen every month during the first six months or more often if there is evidence of any complication, and at least every two weeks during the next two months; then every week in the last month. Blood pressure, urinalysis, and weight should be taken and recorded at each visit.

LABORATORY FINDINGS

In 1928 a reliable and authentic urine test was evolved by Ascheim and Zondek which is now commonly called the "AZ" test. The test is made by injecting 7 drops of urine of a patient suspected of being pregnant into a 4 to 6 weeks old female mice. There are six injections-three a day for two days. The mice are killed then and their ovaries examined.

If the patient is pregnant her urine will contain a hormone from the anterior portion of the pituitary gland which will increase ovulation in the mice. In this case there will be minute hemorrhagic protrusions on the ovaries of the mice.

In 1930, M.H. Friedman in this country simplified the AZ test by injecting urine into a non-pregnant rabbit. The result is the same upon the ovaries of the animal if the woman is pregnant. Both these tests are quite reliable. As yet there are no chemical tests with urine to prove pregnancy.

THE PREGNANCY

In spite of history, physical exam. x-ray, and other tests no one can yet be sure of the actual date of labor. Ten lunar months is the usual length of pregnancy. The approximate date of labor is determined by adding 7 days to the date of the last menstrual period and subtracting three months.

The life of the fetus begins at the moment of fertilization within the Fallopian tube. Between this time and nidation (implanting in the wall of the uterus) which occurs about the 9th day this tiny single cell has subdivided many times forming a round sphere filled with fluid and is called a blastocyst. In the wall of the uterus it thickens on one side and begins to absorb nourishment from the blood of the mother, and so begins its growth. There are three uterine linings: the decidua capsularis, which grows up over the ovum; the decidua vera, which thickens; and the decidua basalis, which becomes part of the maternal placenta. The closed amniotic sac in which the fetus lies fills with fluid, and, as it grows the fetus floats in this fluid. This acts as a shock absorber, protecting the fetus from trauma. It also prevents the walls of the uterus from contracting and hampering the growth of the fetus. The amniotic fluid is thought to be excreted by the uterine cells. The usual amount is one quart, and in an excess of two quarts the condition is called hydramnios.

The umbilical cord attaches the fetus to the placenta which is a complex vascular organ. There is no direct flow of blood from the mother to the baby. The fetus absorbs oxygen and nourishment from the mother's blood and gives

off waste products and carbon dioxide by the process of osmosis. These waste products are excreted by the mother's kidneys, and the CO₂ is carried to her lungs and exhaled.

There are several factors determining the size of the baby. A young girl has a smaller baby than an older woman who has had several babies. Upper class groups usually have larger babies due to the fact that they have better food and more leisure. On the matter of nutrition and size of the baby there is a great deal of discussion and disagreement. The World War and its reduction and conserving of food supplies was an excellent opportunity for study along this line. However, the conclusions of many obstetricians showed there was no great amount of difference. Opposed to this is the results of work done by Dr. J. Morris Slemons in this country. By keeping his patients on a 2000 calorie diet the average weight of babies was a pound less than the general average. A starvation diet will affect the nutrition of the fetus which is really a parasite. It will first draw upon the mineral, vitamin, and nutritive stores of the mother.

The child assumes only two positions in utero—longitudinal and transverse, longitudinal being the most common. These positions may be subdivided into vertex(head) and breech(buttocks) presentations. Breech position is common (50%) during the first months, but the fetus usually turns itself. The presentation may alter during labor, or the baby may be turned by the obstetrician before term. Unless this is done the

part presenting or engaging at the onset of labor is delivered first.

In twins the ordinary position is vertex to breech. 39% of twins both deliver in vertex position; 36% in vertex to breech; 11% both breech; and 14% one or both in transverse.

Little need be said of maternal impressio and marking of babies. Great mental emotion may cause abortion and premature labor, but there is no evidence that a child may be deformed because the mother is frightened.

PRENATAL CARE

Diet should be sensible and well balanced in pregnancy. A patient needs a diet so varied that she will receive the necessary amounts of protein, fats, carbohydrates, vitamins, minerals such as iron, calcium, phosphorus, and water. It should be sufficient to build up her tissues to full strength without causing marked storage of body fat. Only the minimum amounts of protein are to be eaten as it places an extra burden upon the kidneys which are already over worked in pregnancy. One serving a day of lean meat, fish, or eggs will provide sufficient protein. Carbohydrates are found in cereals, bread, rice, honey, sugar, jams and jellies, and candy. Fats are obtained in cream, butter, cheese, fat meats, and oils.

Minerals are the chief building material for bones and teeth. Iron found in lean meat and green and yellow vegetables helps build the hemoglobin of the blood. Milk is the chief source of calcium.

Vitamins are contained in milk, butter, cheese,

eggs, meat, whole grained cereals, vegetables, fruits, and cod liver oil.

Cutting down on sugars and fats during pregnancy is a sensible precaution towards gaining a great deal of weight. Plenty vegetables and fruits in the diet give the necessary bulk which combats constipation. At least eight glasses of water or some fluid a day helps to flush the kidneys.

The weight gain should be influenced by the weight at the beginning of pregnancy. By term the patient has gained ten to twelve pounds due to the fetus, membranes, and placenta. In addition to this there should be a normal gain of ten to fifteen pounds by the storage of glucose, fat, and other foods to be used in labor and lactation.

Daily exercise is important but should not be fatiguing. A patient should be warned against lifting heavy objects. If a woman is ordinarily the athletic type pregnancy need not eliminate all of the sports she has taken part in. She should keep in mind that she must not become too tired.

Ordinarily one bath a day is sufficient. The skin excretes more waste products during this time than it ordinarily does. Tub baths should not be taken during the last six weeks. There is greater danger of introducing infectious material into the vagina and cervix in the last trimester. Likewise vaginal douches are forbidden.

Constipation is common in pregnancy as the enlarging uterus interferes with normal peristaltic movements. Strong cathartics should not be taken. Liquid petroleum in small doses of 8 to 12cc. after each meal will

help develop regular habits.

If breasts are given care during pregnancy the mother will have a better chance to nurse her baby. Cleanliness is important. Daily washing with a non-irritating soap and thorough wringing will tend to toughen the nipples. Uplift brassieres or supporting binders should be worn if breasts are pendulous.

Intercourse during pregnancy- especially in the first two to three months may cause abortion. In healthy women intercourse does no harm unless the abdomen is large. It is forbidden in the last two months period since infection can be easily introduced.

Clothing during pregnancy is simple and hung from the shoulders. Shoes in which the mother can maintain her balance should be worn. Tight, round garters tend to cause varicose veins. If high heels are worn the lumbar curve of the back is increased, and backaches result.

Some of the minor discomforts of pregnancy besides varicose veins are leg cramps which appear late in the pregnancy. Massage gives relief in this case.

Hemorrhoids or varicosities in the rectum are caused by the increased abdominal pressure. Cold water and witch hazel packs may give relief. Rectal suppositories may also be used. Relief from constipation also helps, and an operation should be done only as the last resort.

Leukorrhea causes a great deal of distress in some women as it is extremely irritating. A search for the causative factors such as gonococci, trichomonads, or monilia should be made. Mild solutions of NaHCO_3 and bran baths help to relieve itching.

Nausea and vomiting can usually be controlled early by diet and elimination. Barbiturates and bromides are sometimes used. Also in case of hypoacidity dilute HCl is given.

Patients should be given printed directions along with their advice about pregnancy. Appropriate diet for the individual patient should always be included. There should also be a list of points to warn mothers of early symptoms of unfavorable conditions. The symptoms listed should be these:

1. marked nausea and vomiting
2. bleeding
3. headaches
4. visual disturbances
5. dizziness
6. pain in the epigastrium
7. edema of the face, hands, and ankles
8. shortness of breath

COMPLICATIONS of PREGNANCY

Abortion and premature labor do not often occur if the implantation of the ovum is normal and firm unless the pregnancy is interfered with. When a pregnant woman bleeds she should be put to bed with complete bed rest. When pain follows bleeding there is little chance of arresting labor. A bleeding patient in the first half of pregnancy should not be examined unless preparations are at hand to control hemorrhage. Aseptic technique is at all times necessary in these cases. Misplacement of the uterus, endocrine deficiency, a diseased ovum, and trauma will also cause abortion. If the fetus dies in utero contractions can usually be

stimulated by medical means. Otherwise, it may be necessary to artificially rupture the membranes.

Persistent edema may give warning of a developing toxemia before there is an elevation of blood pressure. There is some edema present at all times although it may not show. Edema of the feet is partly due to pressure upon the aorta and other large blood vessels. When there is actual and recognizable toxemia blood pressure is always high. The diastolic does not always rise as high as the systolic. These readings are important in the antepartum records of every patient. Along with the elevated blood pressure the patient has visual disturbances, headaches, chest pains due to the constriction of the aorta, and anuria. If the toxemia persists there is apt to be kidney damage. Blood analysis shows very little. Urinary findings include albumin and casts. The treatment should be first of all good prenatal care or prophylaxis. The patient should be put to bed and given fluids to increase the kidney output. The diet in toxemia is a high carbohydrate, low protein, and salt poor diet. The patient is hospitalized and given sedation if the toxic state persists. Blood pressure should be checked every four hours. Also the fetal heart tones should be taken often as the placental veins are apt to infarct. If the patient is near term labor is induced when the patient gets no better as the baby has a better chance and the mother's toxemia clears up. On the other hand, if the toxic condition is left untreated it may go on to the true eclampsia or convulsive state which has a high infant and maternal mortality.

The type of nausea and vomiting generally occurring in the early months of pregnancy has been considered as one of the common discomforts of pregnancy. If the patient does not respond to mild forms of treatment and this severe vomiting persists she may suddenly be in a serious condition.

This pernicious vomiting or "hyperemesis gravidarum" is an early toxemia of pregnancy which has a neurotic origin. It is also believed that there may be some anterior pituitary disturbance which causes such an upset. This long-continued, uncontrolled vomiting will result in extreme dehydration, fever, and liver, kidney, and circulatory damage. It is the starvation and loss of gastric juices which will first cause pathological changes in the liver and secondly damage the kidneys.

Signs and symptoms are:

1. vomiting of everything eaten
2. weight loss-- dehydration
3. dry, doughy skin
4. fetid breath, dry lips
5. temperature rise
6. acetone and diacetic acid in the urine
7. jaundice-- after liver damage results
8. casts in urine indicate nephritis
9. heart symptoms

For effective treatment the patient must cooperate. Hospitalization is necessary for isolation of the patient away from visitors who might upset her emotionally. Sedation in the form of Barbitals and Bromides is given and if necessary, Morphine and Dilaudid. To restore fluids and lost chlorides intravenous injections of glucose and

saline are given in 1000 cc. to 1500 cc. amounts twice a day. Normally in pregnancy there is a positive water balance in the tissues, but after continued vomiting this is destroyed. The loss of chlorides makes it impossible for the tissues to hold water. Since the stomach can not hold anything, fluids must be given in some other way. Glucose nourishes the body, and it has been found that a patient can be carried for some time by these intravenous injections.

Psychotherapy plays an important part in the treatment. Attendants should be cheerful and sympathetic to a certain extent. They may be able to help by assisting the patient to adjust to her pregnancy if this is a factor in her vomiting. Experience has proved that this type of patient improves rapidly when placed on a maternity floor where she usually develops a keen interest in the other patients.

From the first the patient should be given a diet of some kind. It should be served in small portions and should not be liquid as dry foods will stay down better. Celery hearts, baked potato, graham crackers, and other such foods may be successfully given with increasing amounts of others added as the appetite improves. Food odors are usually distressing to the patient, so her room should be some distance from the floor kitchen.

Vitamin B in the form of Thiamine Chloride is a new addition to treatment. It is believed to stop the degeneration of nerve sheafs. It is given intravenously by Murphy drip, or hypodermically.

If there is no response to treatment, it is best that a therapeutic abortion be done.

Women with heart disease usually decompensate during pregnancy if the heart has previously broken down. If this is the case they do so early in pregnancy if there signs of nausea and vomiting and other toxic symptoms; otherwise it is delayed until later when the abdomen is crowded with the fetus. Rest in bed and cardiac tonics are prescribed. Most women with heart lesions deliver without difficulty. As soon as dilatation is complete the child should be delivered with as little delay as possible. If caesarian section is done the anesthetic should be local and a permit beforehand for sterilization.

If a patient has a positive Wasserman treatment should begin at once. Or if a woman has had treatments previously until her blood was negative, treatment should be resumed during pregnancy for added protection. Some physicians believe that arsenicals should not be used in the last month and that mercury and bismuth preparations are safer. This therapy does not cause miscarriage or premature labor but tends to cure and prevent syphilis in the fetus. The husband and other children of the family should also have Wasserman tests done.

Tuberculosis is responsible for some deaths during pregnancy and childbirth and is often not diagnosed until the later stages. A routine chest roentgenogram or fluoroscopy is desirable early in pregnancy, and the disease should be treated if found.

Diabetes, goiter, and infectious diseases must all be considered and investigated and carefully treated.

Nephritis does not result from pregnancy but is an injury which is complicated by pregnancy. Some of the

causes are scarlet fever, glomerular, interstitial, and tubular injury. The symptoms are not unlike those of toxemia being high blood pressure, edema, albumin, red blood cells, and casts in the urine, and differing from toxemia the blood picture shows a high blood urea nitrogen and ureic acid. The life expectancy of a nephritic mother is shortened with each pregnancy. Treatment, therefore, is termination of the pregnancy

Placenta praevia is best defined as implantation of the placenta low in the uterus in the zone of dilatation. It is more common in multiparae. This may be because the endometrium around the cervix is better for the implantation than in the fundus. Near the end of term the lower uterine segment begins to stretch, and, if the placenta is located in this area, a small portion of the placenta is torn loose. There is painless, causeless bleeding. Diagnosis is made by history, cystogram, and the feeling of a boggy mass in the cervix by rectal or vaginal examination. There are three types:

1. Low insertion
2. Marginalis-- at the level of the internal os
3. Lateralis--- partly covering the internal os
4. Centralis--- Totally covering the internal os

Treatment is first to hospitalize the patient and to type donors for blood transfusions, and then to do the cystogram and examinations to prove the diagnosis. Then labor is induced. It is better if labor begins spontaneously so that the head will press upon the

able degree of safety. Safety depends upon the maintenance of asepsis in three places: first, the surgical field, the vulva, and the genital passages; second, the attendants hands; and, third, all instruments and supplies which are used in the delivery. If this asepsis is rigidly carried out, a high degree of safety may be attained even in very unfavorable surroundings. Out-patient services which take care of patients in the filthiest tenements, have a highly gratifying freedom from sepsis in spite of the fact that much of the routine work may be done by relatively inexperienced persons, such as interns and students. These results are due to the fact that the personnel of such services is held strictly to a simple but efficient aseptic technic, and operative interference is not permitted without the approval of someone whose experience is sufficient to enable him to good judgment.

As labor begins, the preparation of the patient should be made as completely and carefully as possible. She should have a low soapsuds enema to cleanse the lower bowel and to prevent contamination of the surgical field with fecal matter at the time of delivery.

During the first stage the patient may be up and about, sitting in an easy chair, or lying down, whichever seems most comfortable for her. Pains seem to be stimulated by walking, but the woman should not be allowed to tire herself. After the membranes rupture the patient is best kept in bed. She should be encouraged to drink water to care for the needs of her body and, if the labor is a long one, she should have some easily assimilable food, preferably liquid.

A surgical preparation, including shaving the hair

from the vulva, should be done. This is especially needed in the case of those who are apt to have perineal or vulvar tears or when an episiotomy is necessary. Postpartum care is likewise simplified if the labial hair is removed. If it is possible the patient should have a sponge bath or shower. Long hair should be braided and hairpins removed.

During the first stage no inhalation anesthetics are usually required. For any one who has a long, prolonged labor an opiate will aid the patient. Morphine Sulphate gr. $\frac{1}{8}$ to $\frac{1}{4}$, to which Scopolamine gr. $\frac{1}{300}$ to $\frac{1}{150}$ may be given to primiparae when the external os is dilated 3 to 5 cm. This enables the patient to pass the first stage with less nervous wear and tear and exhaustion than if she had had no sedation. Morphine should not be used in the last four hours of labor. Nembutal gr. $4\frac{1}{2}$ to $7\frac{1}{2}$ has been found to be one of the best analgesias.

The use of rectally administered drugs is not agreed or settled upon. Chloral hydrate may be used in cases in which there is a spastic cervix. It is given per rectum in 20 to 30 gr. doses with several ounces of some bland fluid.

The most widely used anesthetic in obstetrics is chloroform which is used by the best maternity centers. Its ease of carriage and the widespread conviction that the pregnant woman is immune to its dangers are factors which cause it to be widely used still. Experimental work has shown that a fetus in utero may be injured by small amounts of chloroform which the mother inhales, and it is not safe for the mother if surgical anesthesia is used.

Ether is less likely to produce harmful effects upon the organs of the mother and child. It is not quite so rapid in its action, but it is safer. With care, good results may be attained with ether as an analgesia or as an anesthesia.

Nitrous oxide and oxygen, ethylene, cyclopropane, and other gases give good results but are difficult to use anywhere except in the hospitals. There are small portable machines obtainable for the use of gas in home deliveries.

An essential part of antepartum care is to try to diagnose fetal position and pelvic deformities. It is bad obstetrics to discover these facts after hours of labor. An abnormal presentation, if present, should be discovered early in the first stage if not before.

Rectal examination to determine the amount of dilatation is safer than vaginal examination even under aseptic technique. More frequent examinations may be done also. The examination should be gentle, and care should be taken not to push any fecal matter into the vagina.

The length of labor varies in different individuals. It depends upon the strength of the pains and their frequency and the amount of resistance to be overcome. The average time for labor in a primipara is from 12 to 18 hours and in a multipara from 8 to 12 hours. This may vary greatly even with no particular disproportion between the child and the pelvis, and when disproportion does exist the labor may be greatly prolonged. The time required for the dilatation of the cervix is the longest, while the expulsion of the child requires two to three hours in primiparae and from

15 to 30 minutes in multiparae.

With the onset of pains the intrauterine pressure is increased by the contraction of the walls and the bag-of-waters is compressed from all sides. The sac changes shape and bulges down toward the cervix . This pressure causes first the internal os to dilate, then the cervical canal, and, finally, the external os. The pressure forces the child's head into the pelvis, giving more room in the upper portion of the abdomen. This engagement usually occurs in the last weeks of pregnancy and is called "lightening". In multiparous women the uterus and abdominal walls are less rigid from previous pregnancies, and this does not occur in most cases so that the internal os remains closed until labor starts. The entire pressure exerted by the uterus is not exerted against the bulging portion of the sac because the head is also forced down into the lower segment and cuts off the bulging sac in front of the head. Normally when the cervix is completely open the membranes rupture.

If the membranes do not rupture naturally, it may be necessary to rupture them when dilatation is complete and the head engaged. An ordinary forceps is passed up beside the finger, and the membranes are pinched. This is quickly done at the height of a pain, but is preferably done between pains as there is danger of a prolapse of the cord if the water is allowed to gush out too rapidly. Artificial rupture of the membranes is of course done under aseptic means.

As the first stage of labor continues the patient is frequently urged to bear down or pull upon something with her pains. This is an error which is often committed

and should be avoided. The patient should not be encouraged or allowed to bear down until dilatation is complete. This does not hasten the termination of labor and causes the woman to waste her strength and energy.

The time to prepare a primipara for delivery is when the baby's head is on the perineum, as a great deal of stretching of tissues is yet to occur. Multiparas are to be "scrubbed up" when they are completely dilated. Their tissues have been previously stretched so that expulsion of the child is not held up.

In getting the patient ready for delivery she is placed in lithotomy position. She lies on her back with her buttocks well down toward the edge of the table. Her knees are flexed and elevated in stirrups in about a 45 degree angle. Her shoulders are slightly elevated and her arms placed down at her sides or across her chest.

The unsterile nurse dons sterile gloves and scrubs the patient's abdomen, thighs, and perineum with green soap and lysol solutions. The sterile nurse drapes the patient with sterile muslins and canvasses. The anesthesiologist should begin the anesthetic at this time.

After the cervix is fully dilated the patient usually has a strong desire to push and bear down. She may now be urged to do so, but she should be instructed how to save her energy and to make the best use of her pains and strength. The presenting part at this stage begins to distend the perineum. It is then necessary to control the progress of labor. This is best done by means of a sterile folded towel or gauze held across

the perineum with the fingers on one side and the thumb on the other. If the presenting part does not progress the labor should be terminated by forceps, or the release of tension by cutting the perineum- or an episiotomy. An episiotomy is not recommended as a routine process in hospitals and most certainly should never be done in the home. Fetal heart tones should be taken frequently during the second stage.

In cephalic presentations the head should be delivered by easing the most favorable diameter through the outlet. For occiput-anterior positions this means maintaining the flexion of the head until the occiput is fully engaged under the pubic arch and then the completion of the delivery by gradual descent and extension.

As soon as the head is born the nose and mouth should be freed of mucous, blood, and fluid, to prevent aspiration of this material. Usually the cord is looped around the child's neck and must be removed to allow the passage of the shoulders and body. The anterior shoulder is drawn out from under the pubic arch before the other is allowed to come out. There should be no traction upon the child's neck. It is better to press down upon the fundus of the uterus, as many obstetrical paralyses result from too much traction upon the infant's delicate nerves of the neck. If one or both arms are flexed, the hand may be grasped and the arm delivered across the chest, which will often aid in the extraction of the shoulder. Unless there is some body deformity the rest of the delivery is simple.

After the cord is properly clamped, ligated, and cut, the infant is carefully placed in the receiver

ready for it. Then the necessary attention is given the mother in the third stage.

The use of pituitary extract is dangerous if used before delivery as it may rupture the uterus if given repeatedly, and the fetus may be stillborn due to the serious tonic contractions produced. This extract may be used to stimulate labor but should be stopped as soon as contractions begin. As soon as the child is delivered it may be given to contract down the uterus to aid in delivery of the placenta and to cross-hatch the uterine muscles to prevent serious hemorrhage. The placenta should always be inspected to see if it is intact.

The episiotomy, if done, is a cut usually down into the levator ani muscle and the pelvic fascia toward the rectum. It is repaired with Chromic # 2 catgut on round needles.

Delivery with forceps adds to the risk for both mother and child. The higher the station of the head, the greater the danger. The types of forceps operations are:

1. High or inlet forceps operation, which should rarely if ever be done.
2. Midforceps operation, which should be done only on strict indications.
3. Outlet or low-forceps operation, which may be done with relative safety, with proper precautions.

The use of forceps requires proper preparation and accurate diagnosis. This should be done by someone who knows how to apply the forceps correctly and to control traction and so deliver the head properly. The child's body should deliver normally.

Version may be divided into external, combined, and internal. The conversion of a breech to head presentation is ordinarily done in the interest of the fetus by external manipulation. It is not easily accomplished. It is indicated in primiparae where the dangers for a fetus to deliver in breech are greater. It should be done before delivery, and the patient should lie on her back with the uterine and abdominal walls relaxed. One hand is placed on the breech and the other on the fetal head, and pressure is exerted in opposite directions, pushing the breech upward and to one side and the head downward and to the opposite side. It is not recommended to be performed except by a trained obstetrician.

Indications for the Braxton Hicks version are:

1. Fetal malposition, such as brow, face, or transverse presentations.
2. Prolapsed cord or extremities
3. Placenta praevia
4. Need for rapid termination of labor due to fetal distress

5. When forceps is contraindicated or has failed

When there is sufficient dilatation to admit two fingers the foot is grasp and pulled downward. Externally the head is fetal head is pushed toward the fundus. The patient should be anesthetized. Contra-indications for this procedure are:

1. Disproportion between the size of the fetal head and the maternal pelvis.
2. When there is no dilatation of the cervix.
3. When there is no indication for rapid and immediate delivery.
4. Fetal disproportions as hydrocephalus

5. If the baby is dead unless version is the easiest method of delivery.

6. When all the amniotic fluid has been dispelled True internal version is rarely indicated, as external manipulation usually facilitates the procedure.

BREECH DELIVERY

Breech delivery is regarded as a major operative delivery, and should be handled by competent attendants. Breech labors are slow and tedious, but it is best not to interfere.

The large majority of cases terminate without serious difficulty. The membranes are apt to rupture early in breech presentations. This favors prolapse of the cord since the breech does not fit snugly into the inlet. Meconium usually escapes, but this is not a sign of fetal distress. Occasionally, it may be necessary to release a leg which interferes with engagement of the buttocks. Sometimes it may be necessary to do an episiotomy to deliver the child when the perineum bulges.

Very little traction, if any, should be used as the infant descends after the legs have been brought down. When the umbilicus appears the cord should be pulled down to lie loosely. The head and arms should be delivered under anesthesia. In case of difficulty in delivering the head and the fetus dies or is dead, the head may be perforated to allow it to deliver.

Forceps should not be applied to the breech, but it may be necessary to apply them to the head. External version is always to be considered by those experienced but not after the woman has been in labor.

In the placental stage the two greatest dangers are hemorrhage and infection. It is best for the placenta to separate by itself rather than to manually express it. After the child is born the fundus rises with several contractions. This usually means the placenta has detached itself. At the same time there is a small spurt of bright blood.

The Cre^{ide} method of forcibly expressing the placenta is not resorted to except in emergencies, or in case the placenta is retained. Manual removal results in frequent and serious morbidity and a high percent of mortality. The difference between a retained and adherent placenta should be recognized. Manual removal in cases of placenta "accreta" usually results in a retention of fragments. The best treatment in this case is hysterectomy.

As soon as the third stage ends the placenta should be inspected. Some form of Ergotrate is usually given at this time to stimulate uterine contractions and to prevent hemorrhage. Pitocin may be given intramuscularly after the child is born to help the third stage. One of the newer preparations, Ergonvine, apparently does not cause a rise of blood pressure. A course of ergot may be given for 48 hours after the delivery to keep the fundus contracted.

IMMEDIATE CARE of the CHILD

The child should be placed in its crib with the foot elevated so that any secretion may gravitate toward the nasopharynx. Then the secretions can be with-

drawn with a soft rubber syringe or tracheal catheter. The child should be covered to prevent evaporation and chilling. While it is necessary to keep the baby warm it should not be allowed to get heat stroke. Oxygen may be given cyanotic babies. There is some question as to the value of Carbon Dioxide in case of asphyxia.

The eyes should be cleansed and treated with 1% drops of Silver Nitrate. This is a compulsory procedure to prevent ophthalmia neonatorum, or gonorrheal infection of the eyes of the newborn.

Babies are not usually taken to breast until 6 hours after they are born. Then they are allowed to nurse every 4 hours thereafter.

The postpartum period for the mother begins after the third stage is finished. For the first two hours she should be watched for hemorrhage. Predisposing causes to hemorrhage are low clotting time of the blood, uterine inertia, cervical lacerations, and perineal lacerations. Treatment is according to cause therefore. The foot of the bed is to be elevated in any case to a 45 degree angle. Blood transfusion before the delivery will help build up the blood and increasing the clotting time. Drugs, massage of the fundus, and uterine packing will help the uterine inertia. Lacerations should, of course, be repaired as soon as the placenta is expressed.

Rest is always essential after delivery. Sleep usually follows the completion of labor and should not be interrupted by the husband or parents. Sedatives may be used.

The first food should be soft and easily digested.

Women after delivery are more or less dehydrated, so that fluids are given freely. This helps with the milk supply also. The diet should as in the prenatal period be well balanced and contain sufficient vitamins and minerals. If the diet is high in fats (the mother's diet), the baby will develop indigestion and colic and may be constipated. Diagnosis can be made from the baby's stools.

It is not unusual that the mother is unable to void after delivery due to the pressure of the fetus upon the lower uterine segment which compresses the bladder and urethra against the pubic bones. She should be watched for distention of the bladder and catheterized with a soft rubber, sterile catheter. If over-distention is avoided the normal tone of the bladder will soon be regained and the danger of infection minimized. After voiding the bladder should also be emptied to be sure there is no great residual.

The care of the bowels is very important. If there has not been a normal movement an enema should be given on the third postpartum day. Strong cathartics should be avoided the first week. If the patient has hard stools they may be softened by taking an ounce of mineral oil each evening. When a cathartic is indicated one of the vegetable products should be used rather than the saline ones because these decrease the milk supply.

The return of the uterus to normal size and position is called involution. This usually takes from six weeks to two months time. Menstruation is not established for three months or more. Lactation and nursing the baby may have something to do with this.

The puerperal patient should be kept in bed at least nine or ten days. At this time there should be no bleeding, the lochia having changed from rubra to sero-sanguinous to alba in the time spent in bed. Within 24 hours following delivery the patient should be turned from side to side to prevent pneumonia, thrombosis, or embolis. She can turn over and lie on her stomach several times a day. Simple calisthenics such as kicking, arm exercises, and bicycling may be done in bed. Schedule for getting up!

1. keep flat for 8 days
2. back rest on the ninth day
3. sit on edge of the bed tenth day
4. sit on chair, walk some on 11th. day
5. up and about

Before going home the patient should be given instructions not to climb stairs, do any heavy lifting, and to rest two hours a day for two weeks. Bending and other exercises can be given her to do at home.

The mother should be taught the importance of taking care of her breasts before her confinement. The breasts and nipples should be kept clean with plain soap and water. Use of special solutions are of little value and may make the skin tender. Full, heavy breasts need supporting with binders or adhesive straps. The "hands off" method of caring for breasts is the best as there is less chance then of infecting them. Sore, cracked nipples may be painted with Silver Nitrate which forms a protecting coat and helps to heal the fissures. Ice bags may be used for congested or inflamed breasts. A breast pump should be used to remove an oversupply of milk. If the baby does not nurse

well, the milk supply is maintained better if the breasts are emptied completely by pumping after each nursing. Five feedings a day will be sufficient for the baby to thrive and grow on. This will eliminate one night feeding and enable the mother to get more rest.

Every mother usually has afterpains. These are the contractions of the uterus within the first 48 hours after delivery. Nursing the baby will sometimes bring on the pains. This is an aid to involution.

The new mother should have a bath every day of her hospitalization. She loses a great deal of fluid by perspiring while in labor and afterward so that daily bathing is necessary to keep the skin in good condition.

At the time of her discharge from the hospital the patient should be given instructions about a postpartum examination. This is done six weeks after delivery. Attention is given to the condition of her breasts and pelvic organs. Vaginal examinations determine the position of the uterus, its degree of involution, mobility, and sensitiveness. Malpositions of the uterus may be corrected by the knee-chest positions, or else pessaries inserted properly will retain the correct position. The knee-chest position is valuable if done 4 to 5 times a day- having the patient separate the labia to allow air to enter the vagina- and also to walk about on hands and feet- "the monkey walk!"

Postpartum examinations should be done once a month for three months or until everything is all right. It is also a good idea for the patient to be seen once a year.

CARE of the BABY

A newborn infant is only handled when necessary and is to be kept away from people- especially those with colds or other illnesses. Every precaution should be taken to protect the baby as a newborn is extremely delicate.

The babys temperature should be taken every four hours for the first few days, and the cord should be checked for bleeding. Many doctors are now leaving the vernix caseosa on the baby as this is thought to protect it from infection. Except for changing and taking the babys temperature and taking it to breast it should be left in its crib to sleep and gain strength.

Breast feeding is urged unless artificial feeding is ordered by the physician. The baby should go to breast six hours after delivery and every four hours thereafter. If the mothers milk supply is scant the baby should nurse both breasts to help stimulate the secretion. He may be given water between nursings.

The baby should be on regular feeding, bathing, exercise, and sleep schedule by the time he leaves the hospital, or in case of home delivery, by the time the mother is able to be up again.

Babys clothes and bed covers should be suitable to the climate. His stools and urine should be noted for any thing abnormal. Often the babys breasts become engorged with fluid. They should not be massaged or squeezed.

After the cord is off and the umbilicus healed the baby may be given a tub bath.

If artificial feeding is necessary the physician should prescribe it, and the mother should be demonstrated to as to how to prepare it. The baby should be seen by the doctor regularly during his first months of life.

COMPLICATIONS of the PUERPERIUM

Puerperal sepsis - the general septicemia process which comes on soon after labor and the secondary or local morbid processes which develop any time within a few weeks is one of the most dangerous of the puerperal complications. The general sepsis is caused by absorption of infectious material from the body of the uterus. It is favored by reduced local resistance. Foci of infection are believed to cause sepsis in cases where nothing in the labor can be found to account for infection. Vulvar cleanliness is an important prophylactic measure against infection and should be done early in the labor. This should include shaving, soap and water scrubbing, and painting or spraying the vulva with Iodine or Merthiolate.

Treatment of sepsis is unsatisfactory. Interference by curette, douching, and operating has been shown to be worse than useless. The use of the new drug Sulphanilamide is working wonders on streptococcus infections. Supportative treatment such as adequate drainage, avoidance of trauma, and blood transfusion has met with more success than local measures.

Erosions of the cervix may be treated by cauterization. Replacements should not be done until any inflammation of the cervix has cleared up. Glycerine tampons, hot douches, and the knee-chest position will overcome this trouble. Myotic infection as well as trichomoniasis should be diagnosed and treated.

There is no proved relationship between injuries of childbirth and cancer, but periodic check-ups are important. While examination once a year is desirable,

erosion of the blood vessels in the wall of the tube by the chorionic villi, to the separation of the ovum either partly or completely from the wall of the oviduct, and to rupture of the tube.

Diagnosis is not always easy especially when the tube ruptures. The symptoms may be very abrupt and fatal hemorrhage. There are usually vague, lower abdominal or pelvic cramps after the patient has missed a menstrual period or two. There is also irregular bleeding or spotting. In a woman suspected of having a tubal pregnancy care should be taken in examining her as there is danger of traumatic rupture.

Treatment consists of transfusion of patients with internal bleeding and treating shock. Intravenous fluids may be given. Operation for removal of the tube, "salpingectomy" should be done as rapidly as possible. Following the operation more blood should be given and also other supportive measures as iron, liver extract, and a high vitamin diet.

ABORTION

Abortion is the termination of an intrauterine pregnancy before the period of viability of the fetus. They may be classified as threatened, incomplete, or complete. There are also the habitual, missed, and abortions with pathologic embryos.

Symptoms are pain and bleeding. A third sign is the discharge of part or all of the products of conception. The pain is usually located in the midline of the lower abdomen and is cramp-like. The more advanced the pregnancy, the more bleeding there will be.

A point which is important in diagnosing the case is whether or not there are any complications such as benign or malignant neoplasm, or genital malformations of the uterus.

Fever due to infection frequently accompanies intentional abortions. In the presence of infection conservative treatment is desirable except when the hemorrhage is severe enough to endanger life of the patient. The rules in treatment are to keep the organs of the pelvis free from trauma and to maintain drainage.

In the treatment rest and opiates may control the hemorrhage in threatened abortion. If conservative measures fail and the abortion occurs, any unexpelled material may be removed under sterile conditions. Packing of the uterus should be done in exceptional cases where bleeding continues after the abortion is apparently complete, or when there is infection present and further manipulation is not advisable.

HYDATIDIFORM MOLE

This condition should be mentioned because of its infrequent occurrence and because from 2 to 3 percent are followed by the extremely malignant chorio-epithelioma. It is recognized by the abnormal distention of the uterus from the rapid growth of the mole.

The vaginal discharge may be fresh blood or bloody serum. The presence of the hydatid cysts are indicative of mole. Treatment is complete emptying of the uterus. This may occur spontaneously. Transfusion to combat anemia and shock are often necessary.

If the bleeding continues for weeks chorio-epithelioma should be suspected. Also if the biologic test for

pregnancy- often repeated- remains positive this indicates malignancy. The methods of treating chorio-epithelioma are by hysterectomy or with radium or both.

RUPTURE and INVERSION of UTERUS

Rupture of the uterus is rare but a serious complication which may occur during or before labor. It may be the result of trauma or may occur without reason. Operative procedures, especially breech extraction and version, may accidentally perforate the uterus. Also manual removal of the placenta may rupture the uterus when there are old scars caused by caesarian section or disease of the wall of the uterus.

Shock immediately follows sharp tearing pain in the abdomen when rupture occurs. The patient should be anesthetized at once to prevent strong contractions, and preparations made for immediate delivery of the child. Occasionally, it may be possible to suture an incomplete tear, but when actual rupture has taken place, the only treatment is hysterectomy after the child is delivered. Donors should be typed and transfusion done at the earliest moment. Fluids, heat, and cardiac stimulants are usually necessary. The mortality of rupture is high- about 60 percent- and is due to both blood loss and infection.

Inversion of the uterus is turning inside out of the corpus through the cervix. It may be complete or incomplete. Its occurrence is about once in 4000 cases. It is believed to be due to a sag in a segment of the wall which, with extreme pressure, pulls the rest of the organ downward. Hemorrhage may not be marked, but the patient usually goes into shock. The shock is treated with heat, fluids, stimulants, and transfusions. This is done while

nursing services. These departments give the following services:

1. Prenatal and postnatal clinics and conferences
2. Home-delivery nursing services
3. Supervision of midwives
4. Child-health conferences
5. Consultation services for practicing physicians
6. Postgraduate education of practicing physicians in obstetrics and pediatrics

In spite of these services there are too many avoidable deaths of mothers and young babies. Out of the 2,000,000 babies born every year approximately 75,000 are born dead and 70,000 more die in the first month of life. 14,000 mothers die of conditions connected with childbirth. From this great number doctors say that 2 out of 3 maternal deaths can be prevented, and that 1 out of 3 deaths of babies can also be prevented. The number of negro mothers that die is nearly twice that of the white mothers. The greatest number die between the ages of 17 and 30.

There are two main causes of these deaths: medical and social and economic factors. Of the medical causes sepsis or infection, toxemias, and hemorrhage, in the order given, are the chief causes for death. Of the social and economic factors- poor sanitation, dirt, poor food, ignorance, poverty, and inaccessibility are the chief causes. These causes point the way to the cures. First, strict cleanliness in technique of doctors and nurses, avoidance of abortion, unnecessary operations, and

injury will prevent septic conditions. Secondly, adequate medical care during the early months of pregnancy and continuing throughout will control toxemias. Last of all, to control hemorrhage competent medical and nursing attendants should be on hand, and there should also be facilities for blood transfusion.

Adequate care before, during, and after childbirth is the right of every mother. She should go to the doctor for a complete examination before the fifth month of pregnancy for repeated tests and supervision. The delivery, whether in the home or hospital, should be planned for - as should the care of the mother during her lying-in period.

One-half of all the babies born are born into the poorest homes. Of the babies who die the greatest number is from the negro race, the number of whites being about two-thirds that of negro babies. In the first month the greatest cause of death is premature birth, and after the first month more babies die of respiratory and gastrointestinal ailments than from any other causes. To prevent infant deaths on the first day of life good obstetric care to prevent birth injury is important. Then, the provision for special care of premature infants should be done. Good prenatal care of the mother is helping to cut down the number of deaths of babies soon after birth. By encouraging breast feeding babies get a better start in life. Child health clinics provide supervision by physicians and public health nurses and are also a means of educating the parents as to good child health programs.

Stillbirths may be prevented by early prenatal care and early diagnosis and proper treatment of syphilis, toxemias, and hemorrhage.

One of the most encouraging and beneficial influences

in the fight to lower maternal and infant death rates is the raising of standards of obstetrical practice by the medical profession. Hospital facilities are becoming more adequate, and better obstetrical training is being given to medical students. Segregation of the obstetrical division from the other hospital services is another important step. A great deal is yet to be done in educating mothers to obtain prenatal care early and to overcome their fears about pregnancy. Educational and mental hygiene movements can be considered invaluable to maternal and child health programs.

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It has been difficult to give an interesting description of obstetrics in all of its many and varied phases in such a short paper. Each of the complications I have mentioned in not too great detail could and have been written upon by many persons—in volumes. Prenatal care, which I have merely given some of the high points upon, is a subject in itself large enough for a thesis.

I hope to have put in simple, understandable form some of the basic principles in obstetrics and care of obstetrical patients — something which might be of value to anyone interested in obstetrics who might chance to read this paper.

H.R.H.

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