XVI.

PRENATAL CARE

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PRENATAL CARE

Prenatal care is that portion of obstetrics which has as its object the complete supervision of the pregnant woman in order to preserve the happiness, health, and life of both mother and child. In a broader sense, prenatal care may be said to include the entire development of a woman from her birth through the childbearing period. That is, the prevention of rickets in a child will give as a result a woman with a normal rather than an obliquely contracted pelvis; and the early removal of foci of infection will provide a better chance of a healthy potential mother. However, in a paper of this scope, we are forced to deal only with the management of the prospective mother from the time of conception to the delivery of the child.

Throughout the ages the status of the pregnant woman has varied directly with the stage of civilization and the development of medical science. The idealogy of a society is perhaps nowhere better reflected than in its care and regard for its pregnant women, as this shows the amount of planning for future generations or neglect of all save the immediate present. The periods of antenatal care are found to coincide closely with the great eras of history: the primitive, the Graeco-Roman, the mediaeval, the renaissance, and the modern.

Among some primitive people, childbearing was regarded as an entirely natural process and treated with indifference and brutality. The woman usually retired from her tribe as

the birth of the child became imminent, sometimes going alone, but more often accompanied by a friend. In the savage tribes, or among nomadic peoples on the march, she would usually merely drag out of the company and latter overtake them with her baby. As society became somewhat more stabilized, there were often set aside shelters for childbearing. The mother usually bathed in cold water when the child was born and then returned immediately to her many laborious tasks.

As mysticism arose, and the priest and witch-doctor gained the ascendency, pregnancy came to be regarded as a supernatural occurrence, and the prospective mother was regarded with reverence and awe. Special privileges were granted her, and so sacred was her abode that even a murderer seeking shelter under her roof could not be taken forth and killed. If she were physically injured by someone, the punishment was death. If she herself had committed some crime, the verdict was postponed until her child was born. Frequently a period of isolation and sacramental purification was required after childbearing before the mother was allowed to return to the activities of the society.

Many ancient records contain instructions for the care of pregnant women. A Chinese work enjoins them to avoid rich food, excessive exercise and "strange and wonderful" preparations. Both the old Testament and the Talmud give detailed advice concerning the conduct of women in pregnancy.-------

With the rise of Greek civilization and medical science,

the process of parturietion was regarded with a more rational viewpoint, and looked upon as a natural occurrence which should be prevented from becoming pathological. The Hippocratic school devoted their efforts chiefly to the prevention of abortion. They warned against excessive purgation, fear, and great mental excitement, all of which had been found to cause premature termination of the pregnancy.

The next record of any attempts at antenatal care is found in the writings of Suscruta, an Indian who lived in the second century, B.C. He set forth rules as to food and drink, exercise and clothing. The woman was told to surround herself during her pregnancy with cheerful company, both for her own and her child's sake. He also cautioned against marriage with a woman whose family is tainted with epilepsy or tuberculosis.

During the Roman Empire, the obstetrical profession was still given a menial role among the other medical specialties, but during the reign of the Emperor Trojan lived Saranus of Ephesus, who devoted many chapters of his book on gynecology to prenatal care. His discussion of abortion from trauma or physical exertion is written in quaint metaphor, but is yet true: "Houses built on firm foundations stand unshaken a long time, whereas the house that has a bad and loose construction falls under the slightest strain." He also instructs that wrinklings of the abdominal skin can be avoided by annointing with a wax ointment mixed with oil made of unripe olives and myrtle. A warm sitz bath is recommended toward the end of pregnancy for the purpose of softening the tissues and

producing an easy labor.

With the decline of the Roman empire, the care of women deteriorated along with all other science. All the practices which had been developed by the Greeks were lost or forgotten, and the art of obstetrics and antenatal care was put aside for thirteen centuries. At this period all natural phenomena had to be reconciled to the teachings of the church. Childbirth was looked upon as the result of a carnal sin, and was to be expiated in pain as defined in Genesis III: 16. Anyone who would have even suggested a method of making labor more easy at this time would have been an immediate subject for inquisitorial practice, and would probably have been quite fortunate to escape with his life. Accordingly, there were not only no advances, but the treatment given the childbearing woman was mostly worse than the mere neglect among the primitive peoples, who at least gave her the status and care of a domestic animal. Her sufferings were augmented by the fact that she was no longer a primitive woman, and childbearing had become more difficult.

Various superstitions were rampant at this time. One of the most widespread was that the moon had an influence over conception and childbirth, and that women who died during pregnancy or childbirth were those who had married in the wrong time of the moon. The secret of a successful union was supposed to lie in the selection of a time for marriage when the sign was right. This important responsibility was long ago

delegated to the woman. If she made a mistake, it was bad luck, but there was nobody to blame but herself. It is, of course, easy to see how such beliefs arose among an uneducated people. The influence of the moon on ovulation and menstruation was known, and time was frequently reckoned in "moons" rather than in months. There was high maternal death rate; therefore some explanation had to be given. It was often regarded as a sign of punishment for sin, but the viewpoint of the wrong phase of the moon was also prevalent.

Labor, itself, was looked upon by some people, at this time, as a voluntary act upon the part of the child. The character of the labor undergone by the woman was referred to the disposition of the child; all difficulties were blamed upon its evil disposition.

Later, when difficulties in labor were encountered, all sorts of things were done to induce it. The woman was picked up by her feet and shaken, head down; or rolled and bounced in a blanket; or possibly laid on the open plain in order that a horseman might ride at her with the apparent intention of treading on her, only to turn aside at the last moment, and, by the fear this inspired, aid in the expulsion of the child. Again, she might be laid on her back to have her abdomen trod upon, or else be hung to a tree by a strap passed under her arms, while those assisting her bore down on a strap over her abdomen.

These practices reflect the general attitude of the times, and show how truly miserable was woman's lot during the middle

ages. There was obviously no understanding of the anatomy or physiology of parturition and neither means nor opportunity for the few scholors to learn of these things. Medical care was not available, as we know it now, to even the most powerful potentate at this time, and the great masses of people were entirely without knowledge or assistance during the period of childbearing. Women would assist each other, and a few ignorant and inefficient midwives journeyed for one confinement to another, but there was no standardization of obstetric practice, and prenatal care, per se, consisted at most of doing less heavy work in the last few months of pregnancy.

With the gradual emergence of the western world from the chaos of the middle ages, attention was again focused upon the pregnant woman as an object of care, rather than a subject of scorn.

One of the earlier works of this period is a poem "Paidotrophia" (the nurture of children) published in 1584 by a French physician, Scenole de Sant Northe. This poem gives much good advice on prenatal care. For example, the opening lines read:

"Don't till 'tis born defer thy Prous core,
Begin betimes, and for its birth prepare.

and further on it gives this admonition:

"Refresh thy weary limbs with sweet repose
And when fatigue thy heavy eyelids close
Be careful how your meats you choose
And choose well, with moderation use."

The status of expectant mothers rose rapidly during this time, and they were treated with much more kindness and respect, but nothing of great significance was published until Mauriceau, in 1668, devoted an entire chapter in his book "Maladie Jes Femmes Grosses" to the hygiene of pregnancy. This chapter opens with the words: "the pregnant woman is like a ship upon a stormy sea full of white caps and the good pilot who is in charge must guide her with prudence if he is to avoid a shipwreck." Surely no better allegory can be offered today, and this summation of the dangers of pregnancy is as true now as it was 250 years ago. More specific advice is also given: "Fresh air, avoidance of extreme heat or cold, and freedom from smoke and foul odors are essential to her health. She should eat well-cooked wholesome food in small amounts at short intervals rather than at one large meal. Forbidden are highly spiced pastries, for they create gas. Fresh fish caught in streams are better than lake fish. And with this food, a bit of good old wine, tempered with water, rather red wine than than white wine, aids the digestion. Beware of cold drinks, for did not the Empress of Austria in July, 1677, take strawberries and ice, and about the fourth month of her pregnancy abort..." Since the prominence of the abdomen of pregnancy prevents women from seeing their feet, Mauriceau advises low-heeled shoes which will tend to prevent them from tripping. Stooping in the later months is forbidden as it may lead to a faulty position of the child and interfere with

the sumersault that normally brings the head into the pelvis. For constipation he recommends eating apples, stemmed prunes, and fresh figs. If necessary, he prescribes a mild enema of marshmallow, pellitory and anise with two ounces of beet sugar and a little oil.

We thus see that great advances had been made in prenatal care at this time, and a measure of common sense was beginning to be injected into the teachings. Empirical knowledge ruled the day, however, and no true conception of the physiology of pregnancy and labor was held by even the best obstetrician, as witness Mauriceau's "sumersaule" by which he brings the head into the pelvis (probably from witnessing the spontaneous version of a breech.)

In England, Denman (1801) warns against partaking of animal food in pregnancy. He points out that the women themselves, at this period, usually prefer vegetables, fruit and everything cooling. Concerning purgation, he writes: "The more gentle the means for the removal of costiveness, the more eligible they are, provided they answer the intention." He warns against the use of opiates, and avers that a glass of cold H_2O at bedtime will often suffice.

American obstetricians of the nineteenth century made a few valuable additions to prenatal care. W. Tyler Smith, in 1849, urged dental hygiene in pregnancy to prevent complication that may lead to abortion. Hodge stressed psychic management, and pointed out its importance.

One of the most important points in prenatal care to many

expectant mothers is that of maternal impressions. This subject has been discussed through the ages up to the present time, and there are many people living today who firmly believe that a child will be "marked" by actions of the mother, or even by her vision of some unusual object. The Greeks and early Christains considered that beautiful children were the result of gazing at beautiful objects in pregnancy. Columbo of Cremona, in 1559, declared that monstrosities were not due to the devil or to sorcery, but were the result of faulty development. The belief in maternal impressions has flourished for so long that even the demonstration of an absolutely independent circulatory system of the embryo has failed to convince many otherwise intelligent persons that such phenomena are impossible. One of the most common beliefs held at present is that a child will be musically inclined if the mother studies some instrument during the latter portion of the pregnancy. It is difficult to see just how her efforts will affect the cerebral cortex of the fetus, but piano-playing will at least keep the mother from harmful pursuits, and may make her happier than otherwise.

The most important single chapter in the history of prenatal care deals with the prevention of eclampsia and the associated toxemas. Previous to the middle of the nineteenth century the diagnosis and prevention of impending eclampsia was based wholly on clinical observation, and the first warning would be the convulsions themselves, or some other late

clinical sign which would not usually be apparent until it was too late for any treatment to avail. In 1843, however, an Englishman by the name of J.D. Lener noticed the constant presence of albumen in the urine of patients with eclampsia or pre-eclamptic symptoms. At about the same time, in France, Pager, followed by Blot, Labor, and Cahon noted the constancy of this finding. It was not long until the urine of every patient with eclema or headache ~~were~~ was examined, and the appropriate treatment instituted where albumen was found.

The next important step was the discovery of the blood pressure elevation in eclampsia. There was a lapse of almost half a century from the first manometer used by Carl Ludwig in his animal experimentations, to the air inflated sphygnomanometer of Patain in 1888. Working with this instrument, Vinay, in 1894, noted the regular occurrence of a high systalic blood pressure up to 180 to 200 mm of mercury in women with eclampsia.

Unfortunately, this chapter on eclampsia still remains open, as there is still very little known about its essential pathology or specific treatment, but the enormous improvement in diagnosis since the use of routine urinalyses and blood pressure readings has lowered the mortality greatly, by allowing the earliest stages to be detected and appropriate therapy instituted. The discovery and general usage of simplified tests for kidney function, alkali reserve, and blood sugar has also led to the detection of many early toxemias which would otherwise not have been found.

It was an accident of economic circumstances that led to the establishment by E.B. Sinclair and G. Johnson of the first prenatal clinic in the world at the Dublin Maternity Hospital in 1858. As a result of the crowded condition of the hospital, applicants for maternity care were required to present themselves for admission several months before the expected time of confinement. Their clinic card had to be signed by and of the staff physicians, who took this occasion to make a brief record and physical examination. Whenever a patient was found to have edema headache, dizziness, or albuminuria, she was immediately placed under treatment and instructed to attend the dispensary regularly. If her condition warranted, she was admitted into the chronic wards of the hospital. The treatment here consisted of free and repeated purgation, absolute bed rest in a cool room, and permission of only the lightest foods. Thus many patients were saved who might otherwise have died of toxema.

The establishment of special clinics for prenatal care on a nationwide scale under hospital or municipal administration dates vack to the beginning of this century, as there was only one such clinic prior to 1900. The man who first visualized the possibilities of prenatal care thus organized under hospital supervision was James Ballantyne of Edinbourgh. Influenced by many years of study in antenatal pathology, he urged the establishment of a prematernity ward for the study of complications of pregnancy.

In England the movement for prenatal care was greatly aided by the National Health Insurance Acts of 1911 and 1913, which provided for maternity benefits. In 1914 the Local Government Board issued a circular offering a grant to local authorities for antenatal care. This included:

1. Local supervision of midwives
2. Antenatal clinics
3. Home visiting of expectant mothers
4. Provisions in hospitals for treatment of the complications of pregnancy.

This program has been so successful that by 1927, there were six hundred prenatal clinics in existence in England alone.

In the fully organized obstetrical services of Holland and Scandinavian countries, the establishment of proper prenatal clinics through midwives and physicians was relatively simple. In Holland, according to Dr. De Snoo, the work has been done with each patient individually, through the person in attendance, rather than through a general prenatal clinic. This allows closer personal contact, and the patients are usually more cooperative with their own physician than in a large and soulless clinic. Soviet Russia has devoted special consideration to the care of the expectant mother, and has established centers for maternal welfare on a national scale. Patients are examined at the clinics, and instructed in proper care of themselves. In France, the movement for prenatal care was led by Pinard, but was interrupted by the World War. There was also excellent cooperation by American physicians in this

country at the close of the war, and many improvements were instituted.

In the United States, the first nationwide movement for improvement in maternal care came in 1920, when a committee of three was appointed by the American Gynecological Society to confer with similar committees appointed by the American Pediatric Society and the American Child Health Association. These three committees formed the Commission of Maternal Welfare, under the chairmanship of Dr. Fred Adair, and had for its purpose the formation of a maternal and child welfare program for the United States. The influence of this committee, and the general problems of antenatal care were amplified by the White House Conferences of 1931, in which the entire problems of maternal welfare were discussed, and many excellent suggestions made for the lowering of the still excessive maternal mortality rate. It was agreed that adequate prenatal care was one of the essentials for this objective, and that much could be accomplished by the improvement.

We have thus seen how the care of the expectant mother has risen through the ages, and how well each peak of improved culture is matched by better treatment of pregnant women. The point has been reached today when the care of a mother is regarded as a matter of concern to the state itself, and every effort is made to conserve the life of both parent and child by many public and philanthropic agencies.

There can be no doubt that the science of obstetrics now begins in each individual case at the start of the "nine months.

illness," instead of with the first labor pains. This tendency has also accelerated by the greater difficulty of childbearing today, particularly in countries with a very heterogeneous racial mixture such as we have in the United States.

GENERAL PRENATAL CARE

As soon as a woman is given the definite diagnosis of pregnancy, she should be instructed in the proper diet, clothing, exercise, hygiene, and all such matters as will influence the health and happiness of herself and her child. At the first visit to the physician a complete history and physical examination is done, and blood, urine, and seralogy are tested. General instructions are given at this time, and the patient is instructed to return every three weeks or month during the first seven months, and every two weeks thereafter. The blood pressure is taken and the urine examined at each visit, and any symptoms are investigated. Later, the position of the fetus is determined, heart tones checked, and any necessary manipulations performed. This procedure enables the obstetrician to have a complete knowledge of his patients' general condition as well as her pelvic measurements; keeps the patient under supervision by the necessity of returning to the office; and detects any signs of impending toxemia or other complication by the repeated examinations.

The patient should be advised that her diet should be adequate and balanced, but does not necessarily have to be increased. The old idea that the mother must eat enough for two is no longer tenable, but she most certainly needs a diet which includes all the necessary elements. Fresh fruits and vegetables should play a large part in each meal, while carbohydrates should not be much increased over the normal. The supply of inorganic calcium is very apt to fall too low; so at least a quart of milk should be taken daily. All vitamins are

essential, and added amounts of C and D, in the form of orange juice and cod liver oil are often advisable. If nausea and vomitting occur during the first trimester, as they will in about half of all pregnant women, the patient should be instructed to eat six to eight small meals daily, rather than three large ones. The carbohydrate intake should be increased, as a depletion of liver glycogen may be partially responsible for this condition. The meals should be eaten in a pleasant and cheerful atmosphere, and should never be hurried.

The clothing of an expectant mother should be light and porous, and loose enough to not interfere with the circulation or other bodily functions. There must be no pressure on chest or abdomen; no tight garters, belts, collars or shoes.

Foundation
Undergarments should be entirely comfortable, and are worn only if the woman has been accustomed to them, or feels that she needs added support for her abdomen. Care should be taken in the selection of shoes, as the mother's feet usually swell somewhat, and the added weight puts an additional strain on the arch. As a rule, they should be an inch longer than those ordinarily worn, should have broad common sense heels, and fit snugly over the instep. The heels should be gradually lowered if high ones have been used before, and will be found to give most support to the body in the latter months if broad and flat.

As to rest and sleep, it is a good plan to work and exercise in short periods rather than long, always lying down when tired, and for an hour or two after the noon meal, care should be taken to not be overactive or to overexercise at the time menstruation would normally occur, as this may bring on an

abortion. Fresh air, a comfortable bed furnished with warm but light bedding, and a hot drink upon retiring, are all conducive to sleep.

Exercise is best taken in the form of walking. Some time should be spent in this matter every day, rain or shine. The amount should be graduated, and exercise should always be stopped short of the point of tiredness. No strenuous work should be undertaken, and all heavy lifting and cleaning about the house is better done by someone else or left undone.

Local care of the breasts is quite important, and consists of supporting them if heavy, but avoiding pressure; bringing out flat and inverted nipples; and toughening the skin which covers them. Brassieres should be snug below the breasts, loose over the areolar tissue itself, and suspended from shoulder straps. The breasts and nipples should be washed with warm sopa and water, then with cold. The breasts secrete some colostrum from early pregnancy, and in the later months this may dry and form little crusts on the nipples. This should be gently removed, or the areas beneath will later become sore.

Scrupulous care should be given the teeth from the beginning of pregnancy. With the inclusion of proper amounts of calcium in the diet, the old saying, "for every child a tooth" no longer holds good, but there is a definite added strain thrown upon the mother's skeletal system at this time. She should visit a good dentist at the onset of her pregnancy, and have any necessary work done at that time, as any delay will lead only serious troubles.

Mental hygiene is probably just as important as physical care, but is usually neglected from lack of knowledge of treatment of such conditions. Thorough confidence in her physician is the most valuable asset a woman can have on the mental side, and she should engage someone in whom she can completely place her trust. Some degree of nervousness will probably arise in every case, and a frank talk with a good doctor will often suffice to relieve it. If it becomes apparent that the patient is on the verge of a neurosis, the services of a good psychiatrist should be secured.

To summarize, a pregnant woman should live under the most comfortable and hygienic conditions possible; she should be kept happy, and in the midst of cheerful surroundings; and she should certainly have a complete examination early in pregnancy followed by regular check-ups throughout its course.

The justification of, and necessity for, adequate prenatal care is quickly found. The statistics are remarkable when carefully considered. It must be realized that with prenatal care:

1. Only two women instead of seven die out of every one thousand confinements.
2. Only twelve babies, instead of forty-five are stillborn in every one thousand births.
3. Only ten babies, instead of forty, per one thousand born alive die before they are one month old.

The United States has been particularly lax in its antenatal work, and the death rate among parturient women actually

increased three to six per one hundred thousand during the first twenty years of this century, and the death rate among babies is thirteen times as high as among the mothers. To quote Dr. Muller, "the blackest part of this black record is the fact that it is so largely unnecessary. That by prenatal care this appalling mortality can be cut in half."

When such figures are available, it is obvious that the fight for adequate prenatal care is indeed a worthy cause, and should be carried out with vigor by all concerned.

Pregnancy always brings in its wake a trail of possible complications, some common, others rare, but all detrimental to the best interests of mother and child. Some of these complications arise definitely in the antenatal period, while others are found only in the puerperium , but all can be mitigated by proper prenatal care, and the attainment of the best possible physical condition by the expectant mother. Of course, a pregnant woman is subject to all the ills of her virginal sisters, but there are a group of diseases which are of special importance, either from their unfavorable influence on the pregnancy, or from their arising as a result of it.

One of the most common of these complications of pregnancy is pyelitis. At the New York Lying-In Hospital its incidence is approximately twice in every one hundred pregnant women. This disease is not only frequent, but its often irreparable damage to the urinary tract makes it demand careful attention and treatment.

The dondition may appear at any time during pregnancy, or soon after delivery. The occurrence is about equal in primipara and multipara. The right ureter and kidney pelvis are involved much more commonly than those on the left side, as a result of the deviation of the uterus on the longitudinal axis, which tends to compress the organs on the right more quickly.

For the development of the disease, only two major factors are necessary. There are urinary stasis and infection of the urinary tract. Stasis is a common accompaniment of pregnancy, as the muscular atony of the tract, plus the weight of the

pregnant uterus tends to compress the ureter as it crosses the pelvic brim. In about eighty per cent of all gravid women there is some degree of hydraureter and hydranephrosis produced so that this introduction of a sufficient number of bacteria is all that is required to produce the inflammation in the pelvis of the kidney.

The causative organism is found to be the Bacillus Cali in about ninety per cent of the cases. The most probable mode of infection is through the lymphatics, although a hematogenous spread is quite possible, and some cases doubtessly result from an ascending infection of the lower urinary tract.

A chill is usually the first symptom noted, and this is immediately followed by a marked elevation of temperature. The fever is frequently of the hectic type, and when sufficiently high is often accompanied by daily chills. The pulse rate is accelerated in proportion to the temperature, and anorexia, nausea and vomitting are often seen. There is usually pain or tenderness in the costovertebral angle on the affected side. The urine reveals a marked pyuria, usually accompanied by a bacilluria, in the later stages of the disease, but may contain only occasional pus cells in the early stages.

In prenatal clinics, the physician should be constantly on the watch for signs of acute infections of the urinary tract. Even very mild symptoms of dysuria, hematuria, or flank pain should be thoroughly investigated, and when a pyuria is found active therapy should start at once. The patient should be confined to bed, fluids are forced, and a bland diet given. The urine is made alkaline by the use of

large quantities of sodium bicarbonate. Good results have recently been obtained with the use of mandelic acid. This is effective only in an acid medium, so all efforts at alkalization are discontinued during its use. Changing the reaction of the urine from acid to alkaline and back is often effectual in bringing about recovery. If the temperature has been of the hectic type, the patient should be in bed at least a week after it has returned to normal. Exacerbation of the disease should be carefully watched for as the pregnancy progresses, and treatment begun immediately.

One of the gravest complications of pregnancy is pulmonary tuberculosis. This is an example of a disease which is made worse by the pregnancy, and which may very easily terminate fatally. Direct hereditory transmission of the disease to the fetus is not accepted as a fact at present, but a tuberculous parent cannot be expected to bear a healthy child. It thus appears that control is necessary both for the sake of the mother and child, but that the evil results of neglect are particularly manifest on the pregnant woman.

Despite the enormous decrease in the general mortality rate from tuberculosis during this century--from two hundred deaths per one hundred thousand population in 1900 to sixty-eight deaths for a similar number in 1931--it must be emphasized that it is still the first cause of death in persons from 18 to 35 years of age. Approximately 20,000 deaths of women between 15 to 45 years old can be attributed to this cause each year. As this corresponds almost exactly with

the reproductive period, it is easy to see how prevalent this complication is during pregnancy. Just what proportion of tuberculous cases become pregnant and abort or deliver we do not know, but it must be a rather high percentage.

One thing which is certain is the fact that most women who become pregnant while tuberculous do not receive proper care during pregnancy, labor, and the puerperium, and further do not receive proper medical supervision for a sufficient length of time following delivery. At present, according to Dr. Alice M. Hill, only 87 or 21% of the 413 sanatoria in the United States admit or retain pregnant tuberculous women and keep them through delivery.

Perhaps the best care for these cases would be prophylactic sterilization or refusal of permission to marry to those with active tuberculosis, but this is obviously impossible. Many cases do not become aware of the pulmonary lesion until the pregnancy develops; nor would it be proper to sterilize a woman whose tuberculosis might be clinically cured or at least arrested within a few years. Of course, those who know they have an active infection should take every precaution to keep from becoming pregnant, while maintaining adequate treatment of the tuberculous infection constantly.

In case pregnancy does develop in a woman with an active case of pulmonary tuberculosis, a therapeutic abortion is indicated during the first twelve to sixteen weeks of gestation. This holds true for any stage of pulmonary tuberculosis, early or late. The activity of the lesion, as determined by positive sputum tests and roentgenological evidence, is the chief

criterion for decision, while the degree of involvement is of but secondary importance. In all cases on early interruption of the pregnancy gives a better prognosis, and when coupled with adequate sanatorium treatment usually means recovery or does become necessary, the introduction of radium, X-ray irradiation, or voginal hysteratomy followed by X-ray or radium treatment to produce sterility are the methods of choice.

After the twenty-eighth week there is nothing that can be done to improve the condition. Any operative intereference is almost sure to terminate fatally, no matter what precautions are taken and what skill is used. Another point against such interference is the paradoxical seeming fact that many patients actually improve during the last trimester of pregnancy. This is the result of the greatly increased intra-abdominal pressure reducing the size of the thoracic cage. At the time of delivery, this pressure is released, and a tremendous load is thrown on an already diseased lung, resulting in many cases of re-activation or increased severity after labor. Properly controlled artificial preumothorax will prevent this calamity and is indicated in all cases where a pregnancy is being allowed to proceed in spite of an active tuberculous lesion.

In considering a method for the interruption of pregnancy, that procedure should be followed which will cause the minimum amount of shock and trauma to the mother. During the first eight to ten weeks a cervical and vaginal pack, followed by curretage is often sufficient. Often the twelfth week, anter-

ior hysteratomy is the method of choice, although this should not be done after the twenty-eighth week of gestation.

Even at the best, the co-existence of pregnancy and pulmonary tuberculosis presents a serious problem, and calls for very careful supervision of the patient throughout her pregnancy. Every effort should be made to discover an unknown foci of infection in the lungs during the general physical examination of the patient, as many cases of tuberculosis will thus be discovered at an early stage.

The next complication of pregnancy which must be considered is that of chronic nephritis. During the past ten years there has been a rather marked change in obstetrical opinion concerning the toxemias of pregnancy. The majority of such cases were formerly termed "pre-eclamptic toxemia," and if delivery and early puerperium were not attended by convulsions the patients were dismissed from consideration until the occurrence of another pregnancy. In only a few instances when the presence of marked renal arvascular change made immediate recognition easy was the diagnosis of "nephritic toxemia" made, and even then the true effect of gestation on the disease process was not adequately realized. Recently, however, many maternity services have inaugurated a series of "toxemia clinics" whose function is not only to care for toxemia patients during the prenatal period, but to include repeated visits for examination and investigation for months or even years after delivery.

It is realized that chronic nephritis complicating pregnancy should be considered as a medical complication, rather than as a toxemia. However, the signs and symptoms of mild nephritis during gestation resemble so closely those occurring with toxemia, and the differential diagnosis between the two conditions is frequently or difficult, that it has become common custom to consider them under the same heading.

Except in advanced cases, the course of nephritis complicating pregnancy is often insidious, and very few symptoms occur to cause the patient to seek medical advice. The most frequent complaint is that of headache which tends to be dull and generalized, rather than acute and frontal as in the true toxemias of pregnancy. Lassitude and general malaise are often observed, and, in severe cases, a blurring and dimunition of vision manifests itself. Symptoms of cardiac failure may be more prominent than any others; backache is rather inconstant. In the milder type of case, or in one resulting from an acute toxemia of pregnancy, the nephritis may run a protracted course in associated with many signs or symptoms. Indeed, persistent hypertension may be the only sign, and the development of definite symptoms and albuminuria occur only in the terminal stages.

Treatment depends upon diagnosis, so the first step in the care of the woman whose pregnancy is suspected of being complicated by nephritis consists of an exhaustive attempt to establish the diagnosis or to render one of "toxemia of pregnancy." The patient should be immediately hospitalized and put to bed. A careful history and physical, including

study of the eyegrounds by a competent person should be done. Laboratory aids which are available, including particularly renal function tests and blood chemistry, should be utilized. The blood pressure should be determined at least once daily, and the urine examined for albumen as often.

During this period of study the patient is placed on a diet relatively low in protein and poor in salt. The bowels are kept open with saline laxatives, which are given daily in case edema is present.

Generally speaking, the diagnosis of chronic nephritis should be considered by the conscientous obstetrician as an indication for termination of the pregnancy. The situation should be clearly explained to the patient and her family, and the dangers of attempting to carry the pregnancy to termination emphasized. Furthermore, the relatively poor prognosis for the child should be pointed out. If following such consultation with those interested, it is desired that the pregnancy continue, the patient must be followed closely, with rigid supervision of her activities and diet, and careful regulation of her bowels. The amount of activity which may be tolerated will depend upon the condition of the individual patient, and the severity of the accompanying cardiac symptoms. In general, however, the quieter the woman may be, the better she will be.

If after explanation, it is requested that the pregnancy be terminated, this should be done by whatever means seems most conservative. Therapeutic abortion will be indicated in

the early months, and later the induction of labor or even caesarean section for the sake of the child will be necessary. The problem as to type of delivery is often complicated by a desire to simultaneously sterilize the patient. Naturally, one is loath to expose the already ill woman to the risk of a laparatomy, but the prevention of future pregnancy is imperative. Often,lack of cooperation or intelligence will render contraception unsuccessful and immediate sterilization by hysterectomy or tubal ligation will then best serve the patient's interests.

Gonorrhea is a disease which should be combatted for the sake of the child as well as the mother. If infection is suspected from the history or from the character of the vaginal discharge, smears should be made, at once, and repeated several times if negative at first. Should gonococci be found, the treatment prescribed should be general rather than local, with emphasis on hygienic living and proper elimination. Local treatment should be very mild, and should consist of douches of potassium permonganate, 1: 8000, given with very little pressure. Swabbing of the cervix with merthiolate is of questionable value. The Credé treatment of the eyes of the infant should be used after every delivery, regardless of infection.

A moderate degree of hypochronic microcytic anemia will be found in the majority of pregnant women. Routine hematological studies should be made on every patient, and repeated at least every two months throughout her pregnancy. Proper

and adequate diet is the most important method of preventing this condition. When it does occur, iron in the form of ferrous ammonium citrate should be given in doses of at least six grams daily. Other blood dyscrasias, such as prolonged bleeding or clotting should, of course, be ruled out before delivery, particularly if any operative procedures are contemplated. A history of hemophilia in the family of a woman is sufficient grounds to advise sterilization, as it is almost certain that some of her male offspring will be afflicted with this incurable malady.

Syphilis is a disease which most often goes unrecognized from lack of performing routine seralogical tests. It accounts for many children being born with the taint of congenital syphilis, and in the great majority of cases could have been checked by diagnosis and treatment early in pregnancy.

In women the initial lesion is more elusive than in man, and usually goes unnoticed. Likewise, the secondary manifestation may be absent or not recognized, and the diagnosis will frequently come only through the seralogical report. History of previous miscarriages is very important, and care should be taken to find just how long gestation had proceeded before each one. As a rule, the older the infection, the longer the duration of pregnancy, so a history of two or three miscarriages, follwed by a stillborn child, is almost pathognomonic of hectic infection.

If the mother is found to be syphilitic, treatment is begun at once. Naturally, the results are better for both mother

and child if it is inaugurated early in pregnancy, and the outlook for the child is particularly good.

Any standard method of treatment, using arsenicals plus heavy metals, will usually suffice. A routine should be established for each clinic, and then followed as closely as possible. Treatment should be continuous from its inception until after the delivery. Toxemia is carefully watched for, and if any signs are present the arsenical is not given. Evidences of reaction from the arsenic should also be kept in mind, and treatment witheld if any such appear. If a seronegative woman under hectic therapy becomes pregnant, her regular course of treatment should be followed throughout the pregnancy. All cases are followed up after delivery to assure proper care.

There remain for consideration a group of diseases which are present independently of pregnancy, yet which are unfavorably influenced by this added strain on the body. These diseases include principally cardiac pathology, chronic nephritis independent of pregnancy, and lung disease other than tuberculosis.

Each case of cardiac disease must be judged on its own merits. Often a very careful physical examination and history, There is regularly a progression of the disease with each successive pregnancy, both from the increased age of the patient and the added burden of the pregnancy itself. If any signs are discovered in a primipara she should be placed under very strict supervision throughout the ante-

natal period. If decompensation occurs, subsequent pregnancies should be discouraged, but if it does occur, it should be terminated early by abdominal hysteratomy with sterilization at the same time.

Chronic renal disease is a very serious accompanist of pregnancy. The added load on an already overtaxed kidney frequently proves too much, and the patient fails to survive. In case pregnancy ensues, early hysterotomy with ligation of the Fallopian tubes is the treatment of choice.

Lung disease includes both acute and chronic disorders. The pneumonias and influenza are particularly severe in gravida. In some instances, the reproductive system is also affected, either through direct or blood stream infection.

To summarize, in all intercurrent infections during pregnancy in which the health of the mother is seriously endangered, the best course is usually to perform an early anterior hysteratomy and to sterilize the patient by tubal ligation at the same time.

ROLE OF THE NURSE

The exact part the nurse will take in the supervision, care, and instruction of the patient will differ in many communities. Just what it will be in any given instance will depend on the available medical and nursing facilities, and on the division of labor between the physician and nurse. Of course, many of the duties of the physician cannot be delegated, no matter how skillful the nurse.

The principal duties of the nurse during the prenatal period usually include the following: Instruction of the mother during pregnancy of the hygiene of antenatal care, how to dress, exercise, etc., and general supervision of these mothers; preparation for the delivery and for the care of the baby by securing of supplies and getting everything in readiness; observation and questioning of the mother to find any symptoms which may need attention, or should be reported to the physician, including mental and social problems; noting any defects in the health of any member of the family; and teaching the fundamentals of home hygiene and the proper method of caring for the baby.

If all these things are attended to prior to delivery, there will be little trouble afterwards, and a much easier adjustment of the mother to normalcy. Many grave accidents may be avoided, and a healthier, happier life assured for both mother and child.

The nurse is also a major factor in the fight for adequate prenatal care. She should educate her patients to its

necessity, and stress the great importance of such supervision to all pregnant women that she may see. Many environmental adjustments may also be suggested by the nurse, and these frequently assure the health or peace of mind of the mother.

The nurse must remember that the purpose of maternity care is to secure for every mother the minimum of mental and physical discomfort throughout pregnancy; the maximum of mental and physical fitness when the baby comes; the reward of a well baby and the knowledge to care for herself and for her baby. No nurse can attempt anything so difficult unless she herself knows obstetrical nursing, and, because of that knowledge, believes in the necessity for care for every mother and, because she knows how to teach, believes also that she can teach every mother what she should know. Needless to say, this paragon of wisdom must have both proper training and the proper personality if she is to be successful in this work, as she can do good only if the entire confidence and cooperation of the patient is secured.

METHODS OF TEACHING PREGNANT WOMAN

All of our efforts for prenatal care of no avail if they do not finally reach the one most interested party--the pregnant woman herself. She must be instructed, first, in the necessity for prenatal care, and, second, in how best to secure the optimum care for herself. Some of the most common methods of such instruction will be here discussed.

Prenatal clinics, under the supervision of state, county, or municipality, provide care for those unable to have a private physician. Examinations are performed, and the patients are instructed in the proper care of themselves. Any complication is quickly recognized and treated.

Mothers' classes are given in many cities, either to the patients of one obstetrician, or to a larger group. The hygiene of pregnancy, preparation for delivery, and other subjects closely related to maternal welfare are taught to the prospective mothers. The importance of regular examination is stressed, and questions about the proper prenatal care answered.

Prenatal letters are sent out each month to pregnant women in some states. These have for their object the teaching of hygienic principles to women unable to attend clinics and who lack satisfactory medical care. Correspondence courses are also given in some places, with series of lectures sent out with questions appended to each. The student studies the

lecture, then answers the questions and returns them to be corrected.

Maternal welfare pamphlets and books are available in every public library, and are usually collected in one section for the convenience of the mothers. Moving pictures, talks, exhibits, and radio addresses are frequently used for giving instruction, and are usually available to all women.

In addition, there are many other agencies such as consultation clinics and dental clinics, booklets of instruction published by life insurance companies, and articles put out by various manufacturers of baby food products and other articles used by mother or baby.

These means given above reach all prospective mothers alike, and are independent of their financial ability. While this phase of the problem remains of vital importance, if the best prenatal care is to be secured by the greatest number, in the final analysis, it is the private physician with the individual patient who will give the most thorough and intelligent prenatal care. To this end, the importance of such care, along with the methods of carrying it out, should be given a prominent place in medical education, and the physician should be trained through medical societies, post graduate courses, etc.

FUTURE OF PRENATAL CARE

It is difficult to make a prognosis of antenatal care without knowing just what social and economic factors may be present to influence it. Naturally, it depends greatly on the general standards of medical care in the community, which standards in turn are the reflection of the training and integrity of the physicians who practice there. It is certain that if medical science begins to stagnate, prenatal care will also become decadent.

One of the greatest problems in the care of the pregnant woman is in her education as to the importance of proper care. Too many still regard a visit to the doctor before the labor pains actually begin as a waste of time and money, and believe that they will not need any special training other than can be secured from their lay friends. Such a pernicious attitude can lead only to trouble, and its correction must be made a major objective in the fight for healthier mothers and babies. It should seem as natural for a woman to start making regualr visits to her physician as soon as she discovers that she is pregnant as it is now to have a doctor in attendance at delivery instead of a midwife. The fact should be pointed out that "pregnancy is a disease of nine months duration" and requires proper supervision and treatment.

One encouraging sign is the general increase of interest in all mothers pertaining to health which has taken

place in recent years. There is no longer the social taboo in discussing such subjects, and practically every women's magazine contains some article on a subject related to health. The education committee of the American Medical Association has also sponsored radio programs, exhibits, and lectures to make the public more cognizant of the importance of proper medical care. The United States Public Health Service has also been carrying on a very active anti-syphilitic campaign which has at last brought this problem into the open.

In conclusion, a word of warning should be given about misinformation which frequently masquerades as authoritative statements. This usually takes the form of syndicated articles, or utterances of faddists of various types. Good care is sensible, conservative care and does not rely on new and untried methods. We may look forward with confidence to that time in the not too distant future when every mother will have some degree of prenatal supervision, and most will have complete and adequate care throughout their pregnancies.