Pregnancy in Tuberculosis

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The private physician is still Keeper of the Keys of Health for the families of the nation, and his care of his private patients is the Master Key opening the way to the final solution of the tuberculosis problem. In the last analysis, his is the responsibility for the control of the spread of this disease and for its final elimination; and it is his duty to allay the morbid fears of his patient's family, to give expert advice, mental comfort and ultimate happiness by a proper and personal decision when particular emergencies arise.

One of the emergencies likely to occur during the treatment of a tuberculous woman is pregnancy. Great as the responsibility is in such a combination of events, it is still greater when active unsuspected tuberculosis is discovered in a woman who is pregnant. Another situation occurs when tuberculosis has been discovered and arrested and the couple desire a child and heir, and they consult their physician for advice on the proper procedure to follow to give them reasonable assurance that no harm will befall the prospective mother or offspring. In each of these situations the physician must have an answer that will give this assurance, and must have a definite and logical course to follow when they occur. The procedure to be followed in treating these patients requires the closest cooperation between and study by obstetricians and those skilled in the treatment of chest diseases, to properly preserve the lives of the mothers, conserve their health and insure a healthy future for the infants.

There is still some controversy concerning the effects of pregnancy on the course of active tuberculosis. This problem is notoriously difficult to submit to statistical analysis and the conclusions arrived at in articles published in the last thirty years, from both general practitioners and specialists, have shown a wide divergence of opinion, seemingly supported by statistics of the authors, as to the effect of pregnancy on the tuberculosis and as to the proper procedure to be followed when the two conditions coexist. However, the best observers know from practical experience that the effect of pregnancy on active tuberculosis is predominantly bad.

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Pregnancy does constitute a serious drain on the tuberculous woman. The fact that she gains weight and looks better during pregnancy is misleading to the clinician and constitutes one of the most puzzling phenomena in clinical medicine. There is something that carries the chronically ill and doomed woman through pregnancy until her function with regard to propagation of the species has been fulfilled and then allows her to die, sometimes quickly. Had this phenomenon not been observed in women with cancer, diabetes and pernicious anemia, one would be inclined to believe that in the case of tuberculosis it is due to a gradually increasing partial collapse effect of the pregnant uterus which causes an elevation of the diaphragm in the last half of pregnancy. For many years this has been considered as a possible benefit by giving a form of collapse therapy equivalent to a phrenic nerve operation, but recent investigation has disproven this theory. The elevated diaphragm of pregnancy is not comparable to the high immobile diaphragm of phrenic nerve paralysis. It moves about as much as a normal diaphragm, the respiratory excursion is not decreased and may possibly be increased, so that the lung is not immobilized as we formerly supposed.

Tuberculosis has moved from first place to seventh as a cause of death in the general population, but for child-bearing young women it still stands in first place. Twenty per cent of all deaths in this group are due to the combination of tuberculosis and pregnancy, a rate twice as high as the mortality from all puerperal causes; and modern medicine generally deplores the intercurrence of pregnancy in the tuberculous woman.

Nevertheless, there is no doubt that the gloomy picture displayed in the literature of both medicine and obstetrics a few decades ago and the statistics which supported this grey pessimism belong in a past era. With the advantages of early diagnosis and collapse therapy, the pessimism often expressed is no longer warranted and much of the harm that might have befallen these patients has been averted. When the management of both conditions is conducted properly and use is made of collapse therapy, sanatorium care, local anesthesia, Caesarean section, and improved treatment of all the possible complications of pregnancy and delivery, it gives a solid foundation on which the successful child-bearing of these patients may rest.

It has been shown by investigators at the Chicago Lying-In Hospital that ten times more unsuspected tuberculosis can be found in pregnant women by fluoroscopic and radiographic examination. Of nearly 11,000 patients examined, one woman out of one hundred had tuberculosis which had never been suspected.
The incidence of unsuspected tuberculosis is about three times the incidence of unsuspected syphilis in the same group.

From statistics of this and similar compilations it is conclusive that the existence of tuberculosis and pregnancy together is still one of the problems that face the obstetrician and the chest physician, and a search for tuberculosis in all pregnant women becomes an essential part of prenatal care.

The adoption of routine tuberculin testing early in pregnancy and radiographic examination of the reactors for pulmonary tuberculosis should be encouraged; and as tuberculosis control becomes more efficient the problem of finding the tuberculous pregnant woman will be simplified and adequate care can be provided earlier. Inclusion in the marriage laws of routine radiographic examination for tuberculosis as a requirement for a license to wed would decrease the morbidity rate of active tuberculosis comparable to the reduction achieved in syphilis.

The avoidance of pregnancy is the most important primary consideration for the tuberculous patient and her physician. No woman who has active tuberculosis should consider pregnancy for at least two years after complete arrest of her disease, or even longer if the treatment required to heal the lesion was difficult, or if there is even the slightest doubt in the mind of the physician. The diagnosis of arrest of the disease must be based on a very careful study of the entire progress of the case and must not be arrived at casually. Many tuberculosis patients appear to improve throughout pregnancy, only to show a decided tendency toward aggravation of a mild lesion or activation of a dormant lesion in the first few months after delivery. This type of case is especially hard to prognosticate and should be sufficient reason for a reserved attitude toward allowing a pregnancy.

Therefore, when matrimony is contemplated by a woman with active or latent tuberculosis a very careful study of her condition should be made before allowing the possibility of pregnancy, so as to be assured of a reasonable chance that her chest lesion will remain quiescent, that she can stand a labor—normal or modified—and that satisfactory supervision and treatment can be provided. On such a study alone can be based a recommendation for or against marriage. In some cases the type of tuberculosis together with the nature and severity of the lesion in other organs may indicate postponement of marriage until these disabilities are eliminated.

Sterilization should be considered where a slowly healing chest lesion is present, where a longer period than is deemed convenient must elapse before the marriage, or where there is uncertainty as to the outcome of the healing of the chest pathology. This
can be done through a small incision in the abdomen under local anesthesia, the tubes ligated, and the incision closed with no shock and practically no danger to the patient. In younger women with better chances of healing, or in those whose tuberculosis is of such nature that the indication for sterilization is less obvious, contraceptive advice including a properly fitted diaphragm is the better choice.

When pregnancy is suspected, every available diagnostic aid must be used to confirm its presence beyond doubt. Tuberculosis often interferes with normal menstruation, so that absence of the normal menstrual flow in a woman previously regular may not have the same diagnostic value as it would in a nontuberculous woman. Consideration must be given to other presumptive signs of pregnancy, such as breast changes, discoloration of the vaginal and cervical mucosa, dermal pigmentation and gastro-intestinal disturbance. The Friedman and other reliable tests may have to be employed to determine the true diagnosis.

If and when the diagnosis of pregnancy in the tuberculous woman or tuberculosis in the pregnant woman has been made, there need be no serious concern or panicky procedure. The course of action must depend upon a consultation between the obstetrician and the phthisiotherapist. There are two courses that can be followed, requiring the closest study and keenest judgment to arrive at a decision as to which is proper—either to permit the pregnancy to continue to delivery or to recommend its termination. The responsibility of terminating a pregnancy cannot be taken lightly when it may mean ending the career of a potential Lincoln, or Galileo or Burns, before he has even begun to breathe.

The study on the part of the obstetrician should disclose whether or not the evidence indicates the prospect of a long, difficult labor, a pregnancy complicated by serious depletion from nausea and vomiting, or whether serious damage to essential organs is present or expected later, and note should be made of any other factors depleting the patient's system. It should give information as to the dangers and difficulty of interrupting pregnancy under conditions present and the method suited to the case if it is decided to interfere. If pregnancy has continued to the point where the fetus is viable, he will have to decide when and how labor is to be induced, and foresee the obstetrical complications as they arise and direct their management. This information will allow the internist to judge the probable effect of the strain of pregnancy and delivery on the pulmonary lesion and make it possible to guard against advance of the disease.

On the part of the phthisiotherapist, many factors enter into determination of the prognosis of the individual case. The stage
and duration of the disease, the type and activity of the lesion, the patient's age, her morale, her mental capacity to cooperate in the treatment, and the nearness of sanatorium facilities are some of the factors that enter into the problem. Other than medical factors modify the picture, such as the physical and emotional strain which the mother endures in the care of an infant. This is particularly marked in those homes which cannot afford to hire adequate help or, in these war times, in homes where it is impossible to obtain assistance. All too often the health of even normal mothers is unable to withstand the increased load of work and responsibility.

When all these factors are given their proper study and thought it will rarely be found necessary to terminate pregnancy if use can be made of the facilities to control the disease during gestation, to insure proper delivery and to provide adequate postpartum care. This may mean continuous observation and treatment by a physician trained in the management of tuberculosis and should, preferably at least, mean sanatorium care or its equivalent for a longer or shorter period during and immediately after pregnancy. It may have to include premature delivery of the child, termination of the pregnancy just before viability of the fetus, or even the performance of therapeutic abortion.

The seriousness of pregnancy to the tuberculous woman is comparatively slight if these therapeutic measures can be successfully carried out; and, given good hospital care and skillful surgery at a properly selected time, the risk is minimal and well worth assumption to insure a much wanted offspring. Given a better and more intelligent understanding of the problems of each individual case, many infant lives that previously would have been sacrificed by therapeutic abortion to save the mother may be preserved, and the mother may emerge from her pregnancy experience (once looked upon as a most dangerous and unjustifiable happening), almost if not quite as safely as the nontuberculous obstetric patient. We can only require for her the same care imposed on all obstetric patients, viz., that her general condition shall be such that she can endure the changed bodily functions incident to her pregnancy and a competence of her organs to carry to a successful conclusion through the stresses of delivery and the postpartum period.

Early or minimal cases of tuberculosis do not offer a serious problem to the consultant when pregnancy complicates the treatment. It may be stated as an elastic rule, subject to individual modification, that in some cases of active minimal tuberculosis it is best to remove the pregnancy and let the woman have all her facilities for conquering the tuberculosis. When the cure of
her disease is complete, then and then only, let her bear children. In other cases, a group becoming larger as the result of early diagnosis and application of collapse therapy, therapeutic abortion may be withheld. The patient is immediately placed in a tuberculosis sanatorium for observation from six weeks to three months. If the lesion appears to be controlled by bed rest or a combination of bed rest and artificial pneumothorax, and if the erythrocyte sedimentation rate is satisfactory, the pregnancy may be allowed to proceed; but if the disease progresses under these conditions, interruption of pregnancy is indicated immediately, preferably before the end of the second month, followed by active tuberculosis therapy. It is better to interfere too soon than too late.

In the case of the woman with advanced tuberculosis the choice of treatment more often becomes a choice of preserving the life of either the mother or the child instead of saving both of them. If the woman wishes to risk all for a living child she should be allowed to do so in the interest of the fetus, since the prognosis for the mother is frequently poor irrespective of the pregnancy.

With collapse therapy even apparently hopeless cases can often be carried through a normal pregnancy and delivery, tuberculosis treatment being continued after delivery. By doing a phrenic crushing using greater than usual pressure, or phrenicectomy, by pneumothorax, and in selected cases holding the diaphragm by use of pneumoperitoneum after delivery, the prognosis is materially improved. The efficacy of collapse therapy may reduce the indications for therapeutic abortion in this type of case.

It has been shown that in some cases abortion may act as a stimulus to the chest lesion, and non-interference is at times the preferable choice for this reason. It may be felt after careful observation that abortion will mean death for both mother and fetus, while allowing progress of the pregnancy may mean only death of the mother, thus sparing the life of the child.

When pregnancy has advanced to the fifth or sixth month before the tuberculosis is recognized it is best to allow it to continue at least until the thirty-second week and then to terminate it by induction of labor or Caesarean section. The time for intervention is not always easy to determine, and depends on how well the mother is able to compensate for the additional strain of the later months of pregnancy. The longer the fetus can remain in the uterus with safety to the mother, the better its chances for living.

Fall states that it might naturally be supposed because of the absence of trauma that there should be no danger to the fetus in Caesarean section, and states that such is not the case. In a
fairly high percentage of cases there occurs following delivery of an apparently lusty baby a gradually progressive weakening of respiration with blue spells and finally death. Autopsy in these cases shows a marked atelectasis which so far has not been explained. The more premature the baby, the greater the danger of this complication.

The technique of delivering the tuberculous woman is one that must be carefully decided upon after close study of the individual case. A woman with a closed quiescent chest lesion, who has had adequate care during pregnancy, may receive the same treatment during labor as any other woman. Gas or intravenous anesthesia is preferred to ether to avoid the irritating effect of the latter agent. If the second stage of labor exceeds an hour, a forceps delivery is indicated to avoid unnecessary pain, exertion and exhaustion. Perineal block with a local anesthetic or caudal anesthesia may be used to relax the outlet, allowing delivery, spontaneous or instrumental, with the least general anesthetic, and allowing post-delivery repair without further general anesthetic.

Conservation of blood is to be encouraged so as to allow all possible help to the patient to battle her tuberculosis, and a supplemental blood or plasma transfusion may be indicated in some cases. Frequent blood studies for anemia during pregnancy may indicate suitable therapy and may disclose, before delivery, an indication for a transfusion so that compatible donors may be on hand in case of postpartum or pulmonary hemorrhage. The danger of even a small blood loss during labor in cases of anemia deserves serious consideration, since under the circumstances a loss of 200 or 300 cc. which ordinarily would be without danger, may prove rapidly fatal.

In no case should lactation be permitted, as it increases the hazard for the mother by using her recuperative and healing powers for the production of milk. If the lesion is kept well collapsed, and the sputum proven negative, it is not usually necessary to separate the mother and infant after delivery to prevent infection of the infant from the mother. If the sputum is positive, protection of the infant from infection is imperative.

CONCLUSIONS

The principles to be followed in the treatment of the tuberculous obstetric patient can be stated in the following items:

First: No one has shown definitely that pregnancy is good for the health of a tuberculous woman in any type or stage of tuberculosis. A neutral effect of pregnancy on a tuberculous lesion is not asked; the risks are too great.

Second: Most investigators, easily 75 per cent, believe that preg-
nancy can, or does, aggravate tuberculosis, while no one has proven that abortion properly performed, early, will be likely to aggravate an early or arrested lesion, if proper tuberculosis therapy is followed afterward.

Third: Every one admits that pregnancy places a severe strain on a tuberculous woman's resources and strength, and that labor is fraught with immediate and remote perils not present in a normal woman.

Fourth: After labor or abortion, treatment for the chest disease should be carried on vigorously, must be continued over sufficient time to guarantee arrest and should not be discontinued too early. In any event, only after careful observation and study by an experienced phthisiotherapist should subsequent pregnancies be allowed and only after careful study of the history and findings have shown the chest lesion to be completely arrested or under complete control.

Fifth: If therapeutic abortion is decided upon it should be done as early as possible, with spinal or gas anesthesia, and a technique adopted to give as rapid delivery of the fetus as possible.

Sixth: After the fourth month of gestation the effect of intervention is comparable to a full term delivery but with proper collateral care in those that have not shown an acute flare up earlier, the risk can be safely assumed, the obstetrician being ready to interfere as soon as labor starts, so as to terminate it rapidly, as by forceps, sparing the patient the stress of inhalation anesthetics. In selected cases labor may be induced after the thirty-second week.

Seventh: The best prognosis for mother and child in any case depends on the close cooperation between the obstetrician and the phthisiologist, with a careful evaluation of the chest lesion and the obstetrical problems involved to insure individualization of treatment for each case according to the conditions that prevail.

Eighth: Every tuberculous woman must have an individual audit of the assets and liabilities present before a decision is made allowing her to become pregnant.

Ninth: Every woman should have a chest diagnosis before marriage and every pregnant woman must have a tuberculin test and/or x-ray study of the chest made early, so that the proper procedure may be followed in her care during pregnancy, delivery and aftercare.

CONCLUSIONES

Los principios que deben observarse en el tratamiento de la paciente obstétrica tuberculosa pueden ser establecidos en los párrafos siguientes:
Primero: Nadie ha demostrado definitivamente que la preñez es beneficosa para la salud de la mujer tuberculosa en ningún tipo o periodo de la tuberculosis. No es suficiente que la preñez tenga un efecto neutral sobre la lesión tuberculosa, pues los riesgos son demasiado grandes.

Segundo: La mayor parte de los investigadores, quizás el 75 por ciento, opinan que la preñez o agrava o puede agravar la tuberculosis, mientras que nadie ha demostrado que el aborto temprano, correctamente ejecutado, corre mucho riesgo de agravar una lesión temprana o estacionada, si se sigue después una terapia tuberculosa apropiada.

Tercero: Todo mundo admite que la preñez constituye una carga muy severa sobre las fuerzas y recursos físicos de la mujer tuberculosa, y que el parto está lleno de peligros inmediatos y remotos que no se presentan en la mujer normal.

Cuarto: Después del parto o del aborto, el tratamiento de la enfermedad pulmonar debe ser llevado a cabo vigorosamente, debe ser continuado por suficiente tiempo para asegurar el estacionamiento de la enfermedad y no debe ser suspendido demasiado pronto. Sea lo que fuere, no deben permitirse preñezes sub siguientes sino después de cuidadosa observación y estudio de parte de un tisioterapeuta experto, y después de que el estudio cuidadoso de la historia y los hallazgos haya demostrado que la lesión pulmonar está completamente estacionada o bajo completo control.

Quinto: Si se decide ejecutar un aborto terapéutico, éste se debe llevar a cabo tan pronto como sea posible, usando anestesia gaseosa o espinal, y debe adoptarse una técnica que permita el parto del feto tan rápidamente como sea posible.

Sexto: El efecto de la intervención después del cuarto mes del embarazo es comparable a un parto al fin de la gestación; pero se puede tomar el riesgo sin novedad, con la propia atención colateral, en aquellos pacientes que no han sufrido antes una recaida aguda de la enfermedad. En estos casos el especialista en obstetricia debe estar listo a intervenir tan pronto como comience el parto a fin de terminarlo rápidamente, como con forceps, para evitar a la paciente el esfuerzo de la anestesia de inhalación. En casos seleccionados se puede inducir el parto después de la trigésima segunda semana.

Séptimo: El mejor pronóstico para la madre y el niño en cualquier caso depende de la cooperación íntima entre el especialista en obstetricia y el tisiólogo, con un avalúo cuidadoso de la lesión pulmonar y de los problemas obstétricos implicados a fin de asegurar la individualización del tratamiento en cada caso de acuerdo con las condiciones prevalecientes.
Octavo: Cada mujer tuberculosa debe ser sometida a un recuento de las ventajas y desventajas presentes, antes de decidir si se le puede permitir el embarazo.

Noveno: A toda mujer se le debiera hacer un diagnóstico pulmonar antes del matrimonio, y a toda mujer embarazada se le debe hacer una prueba tuberculínica o un estudio radiográfico torácico temprano, o ambos, a fin de poder determinar el correcto procedimiento que se debe observar en su cuidado, tanto durante la preñez y el parto como después del parto.

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