THE BANEFUL INFLUENCE OF PREGNANCY ON LARYNGEAL TUBERCULOSIS.*

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In bringing the above subject, which has been discussed so extensively abroad, to the attention of this large and experienced audience, it is not so much the desire of the writer to present his own observations, as to elicit a full discussion by all who have seen cases belonging to this category.

Right here permit me to mention one question, viz., that of primary tuberculosis of the larynx. While not denying the possibility¹ of a primary infection of the larynx, I shall eliminate it entirely from this paper solely to facilitate the discussion. Consequently we have to deal here with those cases of laryngeal tuberculosis which are associated with a pulmonary affection.

The first question that confronts us, is: Has pregnancy any influence in producing laryngeal tuberculosis in a person already afflicted with tuberculosis of the lungs? It is impossible to give a direct and satisfactory answer to that. Personally I believe that after the tuberculous virus has once gained entrance into the system (lungs) it is apt to form a new focus, wherever there is a locus minoris resistentiae. This law holds good for syphilis, carcinoma and other systemic diseases as well. Now if the larynx has been weakened previously by inflammatory attacks it will be more prone to become tuberculous at the slightest provocation. And gestation may well be considered such a factor. But a direct influence in causing laryngeal tuberculosis cannot be proven.

On the other hand, how is it, if laryngeal tuberculosis is already established? Has pregnancy then a deleterious effect? To this we must decidedly answer in the affirmative. Gestation can undoubtedly light up an old process that has practically been arrested, and it is a positive contributing cause in rendering worse an already existing one.

But let us consider for a moment certain physiological conditions belonging to pregnancy. With the growth of the foetus the mother requires not only nourishment for herself, but a constantly increasing supply for her offspring. Everyone is aware of the difficulty of nourishing any phthisical patient; how much more difficult is the

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1. I say purposely "the possibility," altho I have never seen a primary tuberculosis of the larynx. The cases shown by others as well as some doubtful ones in my own practice have not convinced me that the lungs were free from tuberculous invasion.

task, if the maternal organism has to assimilate food for two instead of one being? Is it therefore, surprising that we so often fail in the attempt and that the pulmonary tuberculosis grows worse and with it, *pari passu*, the affection of the larynx?

Furthermore, with the growth of the child the abdomen expands and breathing becomes more difficult. Add to this some obstruction in the larynx, as for example perichondritis of the arytenoids, interarytenoid tumefactions, extensive infiltration of the vocal cords, etc., and you have a second factor that helps to impair both the general condition and with it that of the larynx as well.

During pregnancy there are certain other conditions that are not entirely physiological. They too have no beneficial influence upon tuberculosis, but on the contrary accelerate the process. Among these may be mentioned anemia, which here acts so perniciously, as well as a large variety of neuralgias.

A direct influence on laryngeal tuberculosis is exercised, however, by a symptom which is as painful, as it is deleterious, viz., vomiting. With each act of vomiting, which occurs more or less frequently in almost all women during the first months of pregnancy, there is marked irritation of any existing ulcerations in the larynx, with increase of the pain and dysphagia previously present. A similar, and more deleterious influence is exerted by the cough, whatever may be its source. It is easy to understand that under such circumstances the chances for a cure of any laryngeal affection are almost nil.

Occasionally paroxysms of coughing or vomiting are so severe as to induce premature labor. More often, if this does not occur, the patients get worse rapidly. If they survive the accouchement they die as a rule very quickly afterward. For though pregnancy is fraught with danger to the life of the phthisical mother, childbirth, according to all experience, is still more so. Few women with tuberculosis survive this period for any length of time, as the cardiac weakness consequent upon the loss of blood cannot be repaired. This is the experience of many observers, though not of all. Now while there are differences of opinion in regard to the purely pulmonary cases, the views are somewhat more uniform concerning the influence of pregnancy upon tuberculosis, if complicated by involvement of the larynx. "Whether pre-existing or developing in the course of gestation, this form of tuberculous affection is always markedly increased during pregnancy. This typical unfavorable development of the disease and the danger of suffocation, in case tracheotomy cannot be performed in time, has led

to the almost general acceptance of laryngeal tuberculosis as a positive indication for the artificial interruption of pregnancy." Thus speaks an obstetrician, H. Ehrenfest. (Peterson's Practice of Obstetrics, p. 346).

But do not let us dwell on the latter point as yet. First, we must answer the questions: What becomes of the mother, if we let gestation go on to the end of the normal period, and what becomes of the child? I have seen an unusually large number of such cases in my practice, in which the mother invariably died shortly after delivery, and the child in almost every instance. A gloomier outlook can, therefore, hardly be imagined, and the question of treatment was settled in my mind long ago. Great was my surprise, when, a few years ago, Professor A. Kuttner, of Berlin, took up the question and discussed it in that thorough manner we are accustomed to expect from him. Then it became evident that there was not such a unanimity of opinion as was believed before. K. gathered statistics from different sources and presents the following data: "* * * If we deduct from that number (100) three cases in which pregnancy was interrupted in the third or fourth month with beneficial result, only seven of the others survived the confinement, while all the rest succumbed quickly, following a deterioration of the laryngeal and pulmonary condition." These statistics furnish as bad a prognosis as my own. Nevertheless cases have been published, off and on, which were intended to show the fallacy of the rule first laid down by Kuttner. Thus Lennhoff exhibited a patient before the Berlin Laryngological Society who had survived childbirth and in whom the disease apparently did not run the usual fatal course. But at a later meeting of the same society Kuttner was able to show that even in this instance childbirth was the turning point for the worse. The woman ran down rapidly after confinement and the outlook was in no wise favorable.

Soon after I started here in practice, the first of these cases came under my observation. The patient died three days after giving birth to a dead child. The next case occurred a year later with the same result, only that the child was kept alive with the greatest effort for two years. And so it went on. In every instance the mother died, and, with one exception, the child, too, until I finally established the rule that to let such a woman carry her child to the full term would mean the death of both.

In my history books there are ten cases, but I am positive that during the last twenty-one years I have seen many more, per-

haps double that number. This may seem unusually large in the experience of one man, but it is probably due to my long connection with tuberculous hospitals in this city. It will not be necessary to give the histories of all in full, but three cases may suffice.

Case 1 (No. 2 in my statistics). Mrs. S., primipara, aet. 23, was seen by me in March, 1888. She was in the ninth month of pregnancy and suffered greatly from dysphagia. There were ulcerations on both vocal cords and the interarytenoid space. Both lungs were affected. Local treatment did not ameliorate the condition in the larynx, and at the normal end of gestation she gave birth to a dead child. Twelve days later she also died. There was no reason for inducing premature labor in this case, for it could not have saved the mother, as pregnancy was too far advanced.

Case 2 (6). Was seen in consultation with Dr. M. She was a sextipara and had acquired tuberculosis, apparently, before becoming pregnant. At least, cough had been present for some time. This was a wretched case. When I saw her first in October, 1885, she was in the fifth month and appeared quite weak. There was an infiltration of the right vocal cord, an ulcer on the anterior third of the left one, and the arytenoids showed oedema. Apparently only the right apex was tuberculous. For that reason I advised immediate resort to abortion, which was refused for religious reasons. Consequently the usual remedies were applied to the larynx, but the woman grew rapidly worse. When I was called in again five weeks later, the scene was almost tragic. To hear that wretched woman with her husky voice scold her family physician for not having treated her exactly as I had advised, and then begging his pardon, only to tell me a moment later that the whole medical profession did not know anything, and then again to pray of us to save her for the sake of her five little children, was pitiful, to say the least. One week later the Parcae cut the thread of her life.

Case 3 (8). A woman was brought at the close of her pregnancy to St. Mark's Hospital suffering from tuberculosis of one lung and of the larynx. In the latter there was a diffuse infiltration and a deep ulcer on the epiglottis. When I told the gentlemen present that, according to my experience, the prognosis *quoad vitam* was absolutely unfavorable, there was great surprise. On the sixteenth day after childbirth the woman died. The child, I hear, lived for several months. In this case, too, the interruption of pregnancy at such a late period would not have been of any benefit, but an early abortion might have saved the mother.

Such is the fate of the mother. How about the child? According to K., 72 to 73% of the children died immediately after birth or within a few weeks afterward. This is certainly a very low percentage, but still more perplexing are the statistics by Weinberg of Munich. Out of 321 children born alive, whose mothers died within a year, not less than 217 (67.9%) died in the first year. Of the 57 infants born alive, whose mothers died in the first twenty-eight days of the puerperium, as many as 37, or 78.8%, succumbed in the first year. And this apparently was the case with women afflicted only with pulmonary tuberculosis. In the presence of a complicating laryngeal tuberculosis, the prognosis for mother and child is so unfavorable that H. W. Freund¹ considers the former as the most important of all indications for the early interruption of pregnancy.

But there is another side to this question. Have we a moral right to sacrifice an unborn child in order to save a mother, whose life, as some maintain, is also doomed? This question has been asked me by physicians as well as laymen, and it is proper to answer it now.

In regard to the lives of children born of such mothers, the above statistics, which are supported by my own experience, speak a very clear and sad language. I recollect only one instance of a child that lived as long as two years. What became of it afterwards is unknown to me. As K. has shown, however, of those who survived for more than a year only a small percentage could be reared with the greatest care in well-to-do families, and even these children were weaklings.

What about the mothers? Is the percentage of deaths really equal 100%? Not in my experience, nor in that of others, when pregnancy is interrupted at an early stage. The reports on that point are meager, but every such case counts. Thus Levinger, of Munich, saw two cases. The first one which died in the puerperium, had a tuberculous tumor in the larynx that caused dyspnoea. Tracheotomy could not save the woman. In the second case, however, abortion was induced at the end of the fifth month, and the laryngeal tuberculosis was afterwards "permanently" cured, the lungs apparently, too.

The writer can report two cases that were saved.

Case 1 (No. 8 of my statistics). Mrs. F. M., aged about 30, mother of two very delicate children, was referred to me, on

1. Quoted from Gustav. Freitag's Inaug. Diss.: "Die kuenstliche Unterbrechung der Schwangerschaft wegen Tuberkulose." Breslau, 1906.

February 18, 1901, on account of pain in the left ear and persistent cough. The ear was normal, but there was an ulceration on the left ventricular band, and the upper lobe of the left lung was affected. Tubercle bacilli in the sputum. She was treated for several weeks and then left for Asheville, N. C. Afterwards she went to Germany, consulted Prof. v. Leube and other well-known men, and returned to this country at the end of 1902 greatly improved. I had warned her against conception, but upon the advice of a good friend she became pregnant, expecting in that way to get rid of all her trouble. Instead of this, the old laryngeal symptoms returned with renewed activity. When I saw her an immediate abortion was recommended, which was induced at the end of the third month of pregnancy by an obstetrician of this city. After that the larynx yielded to treatment again and was practically healed within six months. This lady is still living—it is now four years—although she had an attack of pleurisy two years ago. She is feeling so well that she has not consulted a physician for one year.

Case 2 (No. 10 of my statistics). Mrs. N. consulted me while in the fourth month of pregnancy. For several weeks she had been hoarse and felt a constant irritation in her throat. The ary-epiglottic folds were swollen and injected, so were the ventricular bands. Right vocal cord serrated; t. b. c. of both apices; tubercle bacilli in the sputum. Immediate interruption of pregnancy was advised, and this was done within six days. Three weeks later the patient went to the mountains, where she stayed a year and a half. Since October, 1903, i. e., more than three years, she has been back in New York City enjoying comfortable health.

These two cases demonstrate that a cure, or, let us say, a relative cure, does occur after the induction of a premature labor. These women have been restored to their families and are able to enjoy life once more.

Similar was the experience of de Bruine Ploos van Amstel, who, in a very elaborate paper on "Phthisis pulmonum and abortus provocatus" (*Beitragte z. Klinik der Tub.*, Bd. 7, 1907), reaches the conclusion that the less far advanced tuberculosis is in a gravida the more urgent is the indication to interrupt pregnancy in the interest of the mother; in that way the possibility of saving a relatively healthy woman is the greatest.

Before laying down a general rule, however, in regard to the artificial interruption of pregnancy, I asked several prominent obstetricians of this city for their opinion. It is remarkable to note

how very few cases of laryngeal tuberculosis had been observed by these gentlemen in spite of their enormous experience in obstetrical work.

Thus, Dr. J. W. Markoe, in an experience of sixteen years at the Lying-In Hospital, during which time 49,000 women had been confined, does not recollect one such instance. The fact is that such cases consult the laryngologist rather than the obstetrician, and, furthermore, they are not admitted to hospitals.

Dr. J. Clifton Edgar remembers only one case that lived a short time after delivery at the fortieth week.

Dr. S. Marx reports the following cases:

Case 1. A well-known singer, pregnant in the third month, showed incipient pulmonary tuberculosis and "ulcerations in the larynx." Abortion was induced and the patient afterwards sent away. She is living now in this city in full possession of her health and voice. The abortion occurred six years ago.

Case 2. Young woman, very similarly affected as the former, died within six weeks after confinement at the regular time. Dr. Marx makes it a practice to induce abortion as early as he can.

Dr. J. B. Cragin writes: "In reply * * * would say that in the last 8,000 deliveries at the Sloane Hospital we have had 13 cases of tuberculosis, but in none of these was there any special laryngeal involvement. This may be accounted for by the fact that we do not usually take into the hospital cases with active tubercular inflammation. I remember delivering only one woman with marked laryngeal tuberculosis, and she died within a few months following her confinement."

All these colleagues, and a few more consulted by me, advise immediate interruption of pregnancy, if the case be seen early. If seen late, they generally wait in the interest of the child.

It seems to be the general opinion that the tubercular process is greatly stimulated by gestation and labor. Only Austin Flint, Jr., has seen a few cases improve during pregnancy "by ordinary anti-tubercular treatment." This we must consider as a decided exception, as it is not in accord with what others have observed. Still such cases ought to be recorded in full, if the above question is ever to be settled definitely.

In going over the literature, we come across several other cases improved during pregnancy and after delivery, even without any treatment whatsoever. It must be repeated, however, that in most of these it has not been proven satisfactorily that the laryngeal affection really was tuberculous. A slight swelling here or there

or a redness in a consumptive patient, while certainly to be treated with every care, is no positive symptom of laryngeal tuberculosis, and for that reason should not be considered an indication for the interruption of pregnancy. All of my cases were, unfortunately, of such advanced type that the diagnosis could not be doubted for a moment.

But is there nothing that can be done for such patients excepting the artificial interruption of pregnancy? The usual remedies that leave us in the lurch so often are even less reliable here. The disease makes rapid progress, and the only thing left to do in some instances is tracheotomy as an *indicatio vitalis*. Kuttner seems to think favorably of the latter, even as a means of cure in some cases. I am not so optimistic, but would rather reserve tracheotomy for such patients who present marked dyspnoea. Then it will be a life-saving means for the time and no more.

In all other cases, however, especially those showing a diffuse tubercular affection of the larynx, we have to fall back to an early interruption of pregnancy as the only means of saving the life of the mother.

There are some exceptions to this rule. If a woman is first seen at the end of pregnancy, then a few weeks make no difference, and it is best to wait in the interest of the child. Otherwise the life of the child can be regarded as a negligible factor, since it is lost, anyway, in almost every instance.

Furthermore, if the progress of the disease is so rapid that we are positive the mother will die shortly, then, too, it is useless to induce premature labor. But these cases should be weighed very carefully, since nothing is so surprising as irregularities in the course of tuberculosis. Patients sometimes recover in a marvelous way, while others succumb as unexpectedly.

The medico-legal side of this question has been ably discussed by K. and several prominent jurists abroad, but I do not feel inclined to enter into it here. It seems hardly possible that any judge in this or any other country would condemn a physician because he acted in the purest interest of his patient, of humanity, and often even to his own detriment, when he advocated an early interruption of pregnancy as the only possible salvation for the mother.

For that reason, it is so much the more our duty to be extremely careful in making a diagnosis and in advising our patients what to do in such a dilemma.

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