patient to believe that his recovery will be rapid and complete, as there is a considerable tendency for a minor degree of pain or weakness to persist as a hysterical condition after the organic cause has been removed. This is especially likely to occur in patients who have already been disappointed at the failure to gain relief from prolonged treatment by rest, physiotherapy, and perhaps injections of one kind or another.

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EFFECT OF PREGNANCY AND PARTURITION ON PULMONARY TUBERCULOSIS

BY

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A voluminous literature has not provided any clear decision on the vital question of the effect of pregnancy and parturition on the phthisical woman. From the middle of the nineteenth century there was an increasing tendency to regard pulmonary tuberculosis, even when quiescent or arrested, as an indication for therapeutic abortion, and, though more recently the pendulum has tended to adopt a neutral position, the fear of the effect of pregnancy on the tuberculous still leads to many such operations. Surely it is time our ideas on this subject should have crystallized out? Moreover, in the last 20 to 25 years improved methods of treatment, and the hard-won skill medicine has gained in applying them, call for reconsideration of therapy which was in danger of being decided by custom. I have had the opportunity of studying this problem from personal experience, and this paper records the results of pregnancy and labour in 100 consecutive cases which have been confined in Black Notley.

The Maternity Unit at Black Notley Sanatorium

In July, 1937, the Essex County Council, in building additional wards at their sanatorium at Black Notley, provided a small maternity unit attached to one of the pulmonary wards. This was designed for the supervision and treatment of pregnant tuberculous women. Much of the success of this novel venture has been due to the advice and guidance of the late Dr. W. Burton Wood, consultant physician to the Essex County Council, whose clinical experience, and help in the solution of problems new to sanatorium administration, have been invaluable.

Any woman resident in the county of Essex who suffers or has suffered from pulmonary tuberculosis is eligible for admission. A number of cases of non-pulmonary tuberculosis have also been confined in this unit, but they are not included in this paper. As a general rule, quiescent cases are admitted 6 to 8 weeks before confinement, but a woman suffering from active disease would of course be admitted as soon as possible after the diagnosis of tuberculosis was made, and retained for treatment as indicated after the labour. A follow-up has not yet been made of the babies born, and this paper is concerned only with the effect on the mother; but it may be said here

that none of the offspring revealed any evidence of tuberculous infection; neither has it yet been reported that any child subsequently developed tuberculosis, with the exception of one who was admitted to the sanatorium at the age of 2½ years suffering from tuberculous cervical glands.

Management of Cases

As regards the management of the expectant mothers, quiescent cases are encouraged to live what one may term an active sanatorium life—i.e., to walk up to two miles daily and perform the little daily tasks which form part of the normal life of such cases in a sanatorium. Progressive cases are managed in accordance with the extent and activity of their pulmonary disease, and on the usual sanatorium lines, including, where necessary, active treatment such as collapse therapy. During labour forceps are not applied as a routine in the second stage, as has been advocated, but only when a definite indication exists. As a general rule, however, no woman was allowed to go more than two hours in the second stage without their use being considered, and if there were signs of maternal fatigue without satisfactory advance of the head they would be applied. For anaesthesia, Minnitt's gas-and-oxygen apparatus is used for normal labours, and chloroform or gas-and-oxygen for any manipulation.

It was found that an artificial pneumothorax did not cause any embarrassment to the mother during labour; neither was it ever necessary to give a refill immediately after labour in order to compensate for the alleged fall in intrapleural pressures which has been thought to occur as a result of the descent of the diaphragm.

It must be emphasized that the results here reported are obtained under sanatorium conditions and only the immediate effects of the pregnancy and labour are available, but it is these which have so often been cited as the dangerous results of pregnancy.

The cases have been divided into three groups: (1) *arrested and recovered cases*—those in which there has been no clinical or radiological evidence of active disease for over two years; (2) *quiescent cases*—those in which the disease appeared to be quiescent on their admission to hospital for confinement; (3) *progressive cases*—those in which there was clinical or radiological evidence of active disease on admission to hospital for confinement.

Results

Any sign of retrogression, however slight, revealed by laboratory or x-ray examination has been accepted for the present purpose as being due to the pregnancy and labour, and, including all such cases, the results may be summarized thus:

TABLE I

Class of Case	No. of Cases	No. showing Retrogression
Arrested and recovered ..	46	3
Quiescent	29	2
Progressive	25	7
Totals	100	12

Increased pulmonary disease was observed in 7 out of 25 progressive cases, but only in 5 out of 75 quiescent, arrested, or recovered cases. The latter is probably no higher a proportion of breakdowns than might be expected to occur in 75 women of similar phthisical history and age group. Further, it would be misleading to assume that these figures indicate that the actively tuberculous show a significantly worse effect than the quiescent cases, as there is no reason to assume that the disease in the former would not pursue its steady and relentless course.

The following points were also brought out by study of the case histories:

1. Of the 3 "arrested and recovered" cases which retrogressed 2 subsequently improved; of the 2 "quiescent" cases 1 improved; and of the 7 "progressive" cases 2 improved.

2. The 12 cases which appeared to suffer as a result of pregnancy and labour all had normal labours. On the other hand the 23 cases which had forceps applied or other intra-uterine manipulations did not appear to suffer as a result.

3. Only 2 women had premature labours: in one of these the pulmonary disease was "recovered," and in the other "progressive."

4. The influence of age and previous pregnancies cannot properly be assessed on only 100 cases, but Table II summarizes the facts available, considering the cases which retrogressed:

TABLE II

	Arrested and Recovered Cases		Quiescent Cases		Progressive Cases		All Cases
	Under 30	Over 30	Under 30	Over 30	Under 30	Over 30	
Primiparae	2	1	2	0	1	2	8
Multiparae	0	0	0	0	3	1	4

Two-thirds of the patients showing retrogression were under 30 years of age, and two-thirds were primiparae. This does not support DuBois' famous remark: "If a woman threatened with phthisis marries she may bear the first accouchement well, a second with difficulty, a third never." The primipara has not had repeated pregnancies to threaten her general health; on the other hand, she is usually younger and in an age group which has a less favourable prognosis for her tuberculous condition than that of the average multipara. It seems probable that this is a more important factor than the number of babies she may bear.

Conclusions

The deductions based on this study of 100 cases of pulmonary tuberculosis complicated by pregnancy are probably accurate for cases of similar social circumstances. It is recognized that much larger figures must be produced before anything approaching statistical accuracy can be reached. None the less, enough experience has been gained to establish certain well-defined clinical impressions, and I have come to these conclusions:

1. Pregnancy and labour *per se* rarely exert any harmful effect on the progress of a woman known to have suffered from pulmonary tuberculosis.

2. It follows that therapeutic abortion is not a procedure to be resorted to simply because a woman is known to have suffered from pulmonary tuberculosis.

3. Active pulmonary disease is seldom accelerated by pregnancy and labour, and I have found that in such cases, treated under favourable conditions, pregnancy has been little more than an incident in their tuberculous career.

With these conclusions in mind, it is possible to counsel the tuberculous woman with greater confidence on the advisability of pregnancy or on the desirability of its termination if already established. It is not meant to imply that a woman suffering from active pulmonary tuberculosis should be encouraged to become pregnant; and there are, of course, other factors to be considered. In the above I have been considering the later stages of pregnancy and confinement supervised in a fully equipped sanatorium, and I am well aware that other considerations may have to be taken into account. There is the immediate and grave risk of infection to which the offspring may be exposed; there is the additional work, there are the disturbed nights, and sometimes the financial strain which may be imposed on the mother; and it may be distressing to a woman with advanced phthisis to endure the added discomforts and fears incidental to pregnancy. In some cases of advanced or very active disease the extra strain of pregnancy might be a precipitating factor to determine a devastating breakdown, and in such cases, if seen early enough in pregnancy, therapeutic abortion should be considered. On the whole, however, this investigation, though limited in numbers, indicates that so long as the tuberculous woman is placed under favourable conditions the risk of pregnancy to her progress has been exaggerated, and in the majority of cases it may safely be allowed to proceed to term.

I wish to express my appreciation of encouragement given by the late Dr. W. Burton Wood in the preparation of this paper, and my thanks to Dr. W. A. Bullough, County Medical Officer, and Dr. M. C. Wilkinson, Medical Superintendent, for permission to publish the results; and particularly to Mr. Alan Brews for his generously given advice and help in obstetrical problems.

DIFFERENTIAL DIAGNOSIS OF CHRONIC SCIATIC PAIN

A NOTE, WITH A SHORT ANALYSIS OF 100 RECENT CASES

BY

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Kellgren (1941) remarks that the term "sciatica" signifies a syndrome of deep pain and tenderness down the back of the leg and thigh, of varying distribution, and it is plain that this is a true statement of current usage. This being so, a diagnosis of "sciatica" without qualification is no more illuminating than a diagnosis of "abdominal pain." Three years ago Love (*Proc. roy. Soc. Med.*, 1939) made a similar remark, but nevertheless the term is still used as a complete and final diagnosis. An excellent War Office publication (*Army Medical Department Bulletin*, 1942) begins by calling for "a greater familiarity on the part of medical officers with the common causes of sciatica in the Army and of their corresponding clinical features."

Aetiological Analysis

Kellgren (1941) divides cases of sciatic pain into, first, referred pain from fascial structures in the back or round the hip, including also bone and joint disease, which, he states, accounts for three-quarters of all. The rest, except for occasional tumour or similar lesion, he believes to be cases of ruptured intervertebral disk. Bankart's topographical analysis presupposes direct involvement of the sciatic nerve, dividing cases into those with lesions of the cord, nerve roots, foraminal trunks, lumbo-sacral plexus, or peripheral nerve. Douthwaite (1933) divides cases into primary and secondary, and proceeds further to analyse primary ones into peripheral and central on clinical grounds which I find very difficult to follow. Symonds (*Proc. roy. Soc. Med.*, 1939, 1942) believes that the great majority of chronic cases are due to damaged disk, whereas analysis by Henderson (*Proc. roy. Soc. Med.*, 1939) of a large series from the Mayo Clinic showed the disk syndrome in 2% of all cases of low back or sciatic pain. Good (1943) claims that the vast majority (64 out of 65 consecutive cases!) arise as referred pain from "myalgic spots."

The cases here cited were all chronic or recurrent, most of which had been treated in several hospitals previously. The great majority were admitted to the neurological or neuro surgical unit of an E.M.S. hospital during 1942 as unselected cases of "sciatica" mostly from the Services and resistant to ordinary treatment elsewhere. They represent in general those mixed cases of chronic sciatic pain occurring in increasing number, especially in the Services. All cases were examined by at least two doctors while in hospital, and the final diagnosis was approved by Dr. W. Russell Brain or Mr. D. W. C. Northfield. I have divided this series as follows:

Diagnosis	Number
Doubtful	21
Fibrositis (local)	20
Ruptured intervertebral disk	18
Hysteria	10
Fibrositis and neurosis	8
Congenital bony abnormality	4
Fibrositis (generalized)	3
Sciatic neuritis	3
Malingering	2
Sacro-iliac strain	2
Lumbo-sacral strain	2
Spinal osteo-arthritis	1
Bony infection	1
Neoplasm of cauda equina	1
Polyradiculitis	1
Secondary carcinoma	1
Disseminated sclerosis	1
Spastic paraplegia (? aetiology)	1
	100

Of the doubtful cases, seven were probable but unproved damaged disk, and the rest were mostly seen in the later stages of a pain from which recovery was occurring and which gave insufficient evidence for a positive diagnosis. These included doubtful cases of zoster, radiculitis, sacro-iliac strain, and fibrositis of the ligamentous strain type. There was also a probable case of spinal arachnoiditis and one of thickened ligamentum flavum, in which no disk damage was discovered at operation. Others were obscure, and often so rendered by superadded neurosis. The ruptured disk cases were all proved at operation.