

PREGNANCY COMPLICATING HYPERTHYROIDISM AND FOLLOWING  
THYROIDECTOMY\*

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THE management of hyperthyroidism with co-existing pregnancy, and the result of pregnancy following a recent thyroidectomy, are questions upon which there is not universal agreement. Pregnancy and severe hyperthyroidism are not commonly associated but do so occur occasionally and require very careful management.

Mussey *et al.*<sup>1</sup> state that in the examination of 7,228 women with hyperthyroidism, pregnancy was found in only 42. The work of Knude *et al.*<sup>2</sup> shows that in rabbits with severe hyperthyroidism experimentally induced, the processes of oestrus, ovulation, fertilization, migration and implantation take place, but in most cases the young are never born, resorption occurring instead. Resorption of all or many of the fetuses occurred during the latter two-thirds of pregnancy. Gardiner-Hill<sup>3</sup> states that the prospect of a normal baby is bad when hyperthyroidism exists during pregnancy.

The work of the last writers quoted would suggest that elimination of the hyperthyroidism early in pregnancy would be a desirable procedure. Falls,<sup>4</sup> however, advises conservative treatment when pregnancy and hyperthyroidism coexist.

I wish to report the results obtained in this type of patient in my own practice in the five years immediately preceding 1930.

In order to obtain information on this problem, I sent a questionnaire to all women of child-bearing age on whom I had done a thyroidectomy during this period. The material in this paper is made up from the information received from the questionnaires returned duly completed and from my personal records. A number of the questionnaires were returned by the post

office because of incorrect addresses, and a still greater number were not returned, so that, no doubt, this report does not include all the women who became pregnant following thyroidectomy. This series includes only the women who were pregnant at the time of thyroidectomy and those who became pregnant within two years after thyroidectomy.

In the whole series there were 73 women. Of these, 14 were pregnant at the time of operation, 22 became pregnant within one year after operation, and 37 became pregnant the second year after operation. In addition, 10 women reported miscarriages within two years after operation, some of these women becoming pregnant a second time within the two years and going on to term, in which case they are included in the above group. In no case was it stated whether or not the miscarriage was self-induced or brought on as a therapeutic measure.

In the group studied there were 28 primiparæ and 45 multiparæ. There were 4 pairs of twins, all of whom were reported to be normally developed babies, two of these twin pregnancies being in women who were operated on when 3 months pregnant. Eight women became pregnant a second time within 2 years after operation, so that including these second pregnancies and the four pairs of twins, there were 85 babies and 73 women in this series.

In the group of 14 women having thyroidectomy done during pregnancy, 11 had exophthalmic goitre and three toxic adenomatous goitre. All of this group had moderately severe hyperthyroidism showing increased metabolic rates corresponding to the respective hyperthyroid states.

In 13 cases the time of operation varied from 6 weeks to 4 months in pregnancy. The 14th case was operated on when 6 months pregnant. This woman, a multipara, had a very large

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adenomatous goitre with moderately severe hyperthyroidism. Her basal metabolic rate was plus 47 per cent. Her physician stated that one year previous to this she had been confined, that she had been very sick all through her pregnancy, and was confined when critically ill. He sent her to me with the recommendation that this pregnancy should be interrupted or the goitre removed. On this account, after the usual preparatory treatment, a thyroidectomy was done. Her recovery after operation was satisfactory, but 6 weeks later premature labour came on but the fetus was still born, apparently having been dead some time before birth. The fetus seemed to be normally developed. This woman was quite ill immediately after operation, and was given a transfusion of 400 c.c. of whole blood a few hours after the thyroidectomy. This may have contributed to the death of the fetus.

One woman of this group, who was operated on when three months pregnant, made a satisfactory post-operative recovery but three months later developed severe uterine hæmorrhage, which was due to placenta prævia. Labour came on at this time and she was delivered of twins, both alive at birth and normally developed, but they died shortly after, being three months premature. The mother made a good recovery. The other 12 women operated on when pregnant went to full term and were all delivered of healthy, normally developed babies, one being a twin pregnancy. All the babies did well.

In the group of 59 women who became pregnant within two years after thyroidectomy and went on to confinement, 35 had been operated on for exophthalmic goitre, 8 for toxic adenomatous goitre and 16 for non-toxic nodular colloid or non-toxic adenomatous goitre. Six of these women were confined one to two months prematurely, but all the babies were normal and lived. The other 53 women went to full term, three babies dying at birth, but all were reported as normally developed and free from any congenital deformity. The cause of death given in the case of these three babies was difficult labour. The other 50 babies were reported normally developed in every sense and all did well after birth.

All the women in both groups made a good post-partum recovery with the exception of

one, a primipara, who had been operated on 18 months before for exophthalmic goitre. This woman, following confinement, developed eclampsia from which she died.

In the whole group of 73 women, 1 died of eclampsia. Of the 85 babies born, 6 died; 1 was still-born at seven and one-half months; 2 (a twin pregnancy) died following birth at 6 months' gestation, the premature birth being due to placenta prævia; the remaining 3 deaths were attributed to difficult birth.

The remaining 79 babies were apparently normal and did well following birth. Although the questionnaire asked specifically for congenital deformities of the babies, such as monstrosities or more minor disfigurements, all babies were reported free from any such impairment. Williamson<sup>5</sup> reports a number of congenital deformities in babies born of mothers who became pregnant a short time after thyroidectomy.

The type of operation done in all the women with exophthalmic goitre was a moderately radical bilateral resection of the thyroid lobes and complete removal of the isthmus. In the other forms of goitre, a slightly less radical operation was done in many cases, particularly in the non-toxic types. A few were done under local anæsthesia, but the great majority were done under light ethylene and oxygen anæsthesia, combined with local infiltration of novocaine solution.

All the hyperthyroid women were given Lugol's solution in doses of 10 to 20 minims t.i.d. for from 5 to 14 days before operation and for varying periods after operation.

#### CONCLUSIONS

When pregnancy and hyperthyroidism exist at the same time, I consider that if the patient is less than five months pregnant a thyroidectomy is the preferable procedure. I do not think the risk to the patient is much increased by pregnancy, and there seems to be very little danger of miscarriage. I have yet to meet with a miscarriage or abortion under these circumstances. In my opinion the interruption of pregnancy at three to five months is much more dangerous than a properly conducted thyroidectomy. After the operation, the pregnant woman is in such physical condition as to be able to go through to confinement in a compara-

tively normal manner. Her condition a short time after operation contrasts very favourably with the highly nervous toxic state often seen before operation, and without operation there is no reason to suppose that this condition will improve much as pregnancy advances. Indeed it may become aggravated, as I have found in a number of women.

In women six to nine months' pregnant I favour conservative treatment rather than thyroidectomy. After confinement the patient may wisely come to operation but not too soon after.

In considering the advice to give women who have recently had a thyroidectomy, I favour advising them against pregnancy for at least

two years, but should they become pregnant in the interval, I certainly think there is as a rule no justification for advising interruption of pregnancy. My opinion on this question has become steadily more positive as I have followed such patients as have been reported in this paper. Particularly do I wish to call attention to the absence of congenital deformities in these babies, which is not in full agreement with the opinion expressed by a few other writers.

#### REFERENCES

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## RESPIRATORY COMPLICATIONS FOLLOWING SURGICAL OPERATIONS\*

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THE subject of respiratory complications following surgical operations has been a source of worry to all concerned, while endless controversies have arisen as to the part inhalation anæsthesia plays as a causative factor. There was a time when almost every post-operative complication, barring hæmorrhage, was put down to the latent influence of the anæsthetic. One hundred per cent of the vapour necessary to produce anæsthesia passes through the lungs to the patient, while ninety per cent is excreted by the same route. Any abnormal post-operative lung trouble is so easily put down as "irritation" from the ether. "Time heals all things." During the last decade, the etiology of respiratory complications has changed; the extensive use of novocain for major surgical procedures, with subsequent pulmonary lesions, has brought forcibly to mind that other factors besides ether-irritation enter into respiratory complications.

In the following analysis of lung lesions following a four-years' period in a large general hospital, the only claim I make for originality lies in the compilation of data peculiar to this hospital and geographical situation. In the short time at my disposal, I shall only touch upon a few of the salient features, leaving the

discussion following to fill in details upon the various headings.

As you are well aware, series of cases giving the pulmonary complications following surgical operations vary widely in the ratio to numbers of operations; so much so that comparisons are of limited value. An extensive review of the literature upon the subject varies in the interpretation of the end-results. However, one finds agreement upon some points. For example, operations on the upper abdomen and patients with gross sepsis show a higher ratio of post-operative pulmonary trouble than is met with in other cases. Considering the magnitude of modern surgical procedures, one wonders whether respiratory lesions are not more frequent than the records would indicate. For comparative purposes I am including a limited number of reports from other hospitals. These comparisons are not invidious, as climate, surgical technique, type of operation, suggest a wide variation in the end results.

Silk<sup>1</sup>, in 1897, reported 5,000 operations with 13 respiratory complications. Of these thirteen, 5 followed operation upon the tongue or jaws. Thirty years ago laparotomies were not entered upon so lightly as at the present day.

Mickulicz and Henle<sup>2</sup> reported that in 1,787 upper abdominal operations 8 per cent, or 143 patients, developed lung lesions. Mickulicz states

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