

HYPOTHYROIDISM AND PREGNANCY

(Case Report)

by

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Thyroid has a dynamic role to play in the performance of reproductive function. The thyroid dysfunction disturbs menstruation causing anovulation and amenorrhoea, thereby resulting in sterility. Myxoedema in association with pregnancy is rare, because of above mentioned causes or because the condition tends to develop after the child-bearing years (Barnes, 1962; Rovinsky and Guttmacher, 1965). The association of pregnancy is influenced more in hypothyroidism than in hyperthyroidism. Forty-six cases of hypothyroidism with pregnancy have been reported so far in the world literature. Echt and Doss (1963) feel that the scarcity of reported cases may be because association of pregnancy with hypothyroidism is rare or that the condition remains undiagnosed in some cases. However, there are reports in the literature which show that survival of children with hypothyroidism, congenital or acquired, until childbearing age is not unusual (Townsend, 1897; Herrgott, 1902; Parking and Greene, 1943). One patient has been reported by Paz-Carranza *et al*, (1969) who had evidence of untreated hypothyroidism before the

onset of puberty and who had two full term pregnancies with birth of two normal children. Later, she developed myxoedema about four years after the delivery of the second child. We describe a case who conceived with hypothyroidism when she was not getting any treatment but was diagnosed as a case of hypothyroidism within one month of conception.

CASE REPORT

V.A. 22 years, primigravida was first seen in the gynaecological out patients department on 2.5.73 with the diagnosis of 6 weeks of pregnancy and hypothyroidism. She had conceived before she started taking treatment for hypothyroidism. She had no other symptoms except enlargement of the thyroid which she noticed about two years prior to seeking medical consultation. Since the menarche at 14 years of age menstruation had been normal and regular. She got married in April, 1972 at the age of 21 years. Her parents and brothers and sisters are all healthy. The last normal menstrual period was on 20th March, 1973.

For the first time she came to thyroid clinic on 5.4.73 and the findings recorded at that time showed that she had a multinodular goitre, height 5' 1", looked rather obese with puffy face, pulse 74/mt regular, B.P. 110/70 mm. Hg. Skin was normal, voice and hair distribution were also normal. She had solid oedema of the lower limbs. The serum cholesterol done at that time was 196 mgm.% and PBI 2 ugm%. Immunological pregnancy test was +ve. She was put on tablet Eltroxin 0.1 mgm. twice a day. The second visit to gynaecological

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O.P.D. was on 11.7.1973 at 17 weeks of gestation. Her Hb. at that time was 9.5 gm%.

Urine revealed no abnormality, blood group B +ve. She attended the antenatal clinic regularly thereafter and had no antenatal complication except mild anaemia, which improved on supplementary therapy with iron and folic acid. She was admitted to the ward on 11.12.1973 (at 38 weeks of gestation), vertex was free, but pelvis was found to be adequate. She was kept for vaginal delivery. Her Hb. was 10.5 gm., P.B.I. 4.5 ugm%. On 20.12.73 P.B.I. was 7.4 ugm%. She complained of diminished foetal movements on 26.12.73 but on examination foetal heart was found to be normal. On 29.12.73 membranes were stripped, she started having mild labour pains on 31.12.73. The total duration of labour was 14 hours. 35 minutes, 2nd stage was cut short by outlet forceps and a 2.5 kg. female baby was extracted with normal Apgar score. There was no P.P.H. She was discharged on 11.1.1974. The baby and mother were both normal at the time of discharge.

The total wt. gain was normal during pregnancy.

Discussion

This patient had obviously conceived before she sought medical consultation, even though she had noticed the enlargement of the thyroid 2 years prior to the onset of this pregnancy. That shows that with pregnancy the signs of hypothyroidism became exacerbated forcing her to attend medical O.P.D. This case clearly shows that in a mildly hypothyroid patient the menstruation may remain normal, even though subfertile and conception could occur even without any treatment. The diagnosis of mild hypothyroidism is not easy but in this patient the presence of goitre made it easy.

Echt and Doss (1963) reviewed the whole literature on this subject and collected 29 cases and they had three cases of their own. Later on, more reports appeared in the literature (Chatfield, 1966; Anderson and Beales, 1970 and

Lachelin, 1970). At present, there are altogether 49 cases, out of which 17 had either cretinism or juvenile myxoedema and the remaining 32 developed hypothyroidism during adult age (Roy *et al.*, 1974).

During normal pregnancy, P.B.I. levels are raised and the cause of this is the raised levels of T.B.G. (Thyroxine Binding Globulin). This change is because of the high level of oestrogens (Dowling *et al.*, 1956; 1960). The bound form of thyroxine is increased at the cost of circulating free thyroxine. Normally, this is compensated by some rise in the secretion of thyroid stimulating hormone (TSH) with resultant increased secretion of thyroid hormone. However, in cases with abnormal thyroid gland function this compensation cannot occur. As a result, the degree of hypothyroid state becomes worse and would require larger dose as compared to that in non-pregnant state.

The foetal wastage is increased in hypothyroidism more as compared to hyperthyroidism. The precise explanation of this foetal wastage is obscure. Man *et al.* (1951) and Russell (1953) observed that persistently low P.B.I. levels in early pregnancy were associated with abortion in euthyroid patient. They therefore, considered that the pregnancy terminated as a direct result of the failure to attain the anticipated rise in P.B.I. level. Again Man *et al.* (1958) reported the result of the observation of the offspring of hypothyroid women. They have indicated that the children who develop normally, both physically and mentally, are rare. In endemic cretinism maternal hypothyroidism may play a significant role. Twenty-four pregnancies of 16 women with frank untreated myxoedema have been reported. These 24 pregnancies resulted in 3 abortions, one premature delivery, the

birth of 7 infants who were stillborn or died early in life, 2 children who were myxoedematous and 4 who were mentally deficient.

Echt and Doss (1963) reviewed the literature and concluded that there was no increase in the foetal abnormality in these cases, although Greeman *et al* (1962) drew attention to the possibility of abnormalities in the mental and physical development in these children. It appears that normally the foetus does not depend upon any maternal supply of thyroid hormone. However, Man *et al*, (1971) have reported that 4 out of 6 children of hypothyroid women who were not given proper thyroid replacement medication during gestation have been classified as "not normal" with low I.Q. at the age of 4 years and that more suspect or abnormal children are noted in the families of inadequately treated hypothyroid women than in those of euthyroid women.

Summary

A case of hypothyroidism detected early in pregnancy and treated with adequate antenatal supervision resulting in normal full term child without any maternal or foetal complication is described. Available literature is reviewed.

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