

## Combined Takayasu Arteritis and Hashimoto Thyroiditis During 3 Consecutive Pregnancies

To the Editor:

A 25-year-old Turkish primigravida presented with Bell's palsy, numbness of the right side of the face, and pain of the right anterior neck in her 30th week of pregnancy. Thyroxine was given for previously known Hashimoto's thyroiditis. Blood pressure was 110/70 mm Hg at her left arm and 90/65 mm Hg at her right arm. Pulses were absent at her right arm; there were bruits over both carotid arteries. Erythrocyte sedimentation rate (ESR) was 68 mm/h, C-reactive protein (CRP) 1.4 mg/dl. Thyroid-stimulating hormone (TSH) was mildly elevated, antithyroid peroxidase (anti-TPO) antibodies and anti-thyroglobulin (anti-Tg) antibodies were highly positive. Ultrasound showed long edematous concentric wall thickening of both common carotid arteries with a 50% stenosis, as well as an occlusion of the right subclavian artery confirmed by magnetic resonance (MR) angiography (Figure 1). There were no signs of cerebral or retinal abnormalities or involvement of the abdominal aorta or renal arteries. Prednisolone 1 mg/kg/day was started for Takayasu arteritis (TA) and tapered to 20 mg/day with additional low-dose aspirin and thyroxine medication. Two weeks later Bell's palsy disappeared, ESR improved to 32 mm/h and CRP to 0.76 mg/dl, and TSH normalized.

Serial obstetric ultrasound investigations before and during prednisolone treatment revealed a growth restriction in the third percentile. Doppler ultrasound of fetal umbilical, uterine, and cerebral arteries remained normal. Fortnightly visits showed stable blood pressure, CRP, and ESR.

Four days before a scheduled cesarean section in her 37th week, fetal activity ceased. Ultrasound revealed intrauterine fetal death. Autopsy of the male infant showed no malformations or chromosomal abnormalities. Placental histology disclosed a reduced weight, with immature chorionic villi, yet no signs of vasculitis.

The patient was started on azathioprine 150 mg/day, prednisolone was tapered to 5 mg/day. One year later, blood pressure had remained normal,

CRP was 0.89 mg/dl, and ESR 27 mm/h. MR angiography showed an inflammatory mural thickening of the infrarenal abdominal aorta. A few weeks later, a second pregnancy was diagnosed. At the 8th week of gestation CRP and ESR went up to 1.38 mg/dl and 38 mm/h, respectively. Due to irregular intake of thyroxine, TSH was above 20 mU/l, T4 below 4.5 g/dl. Prednisolone was increased to 15 mg/day and thyroxine to 200 g/day. At the 11th week of gestation she miscarried.

Six months later she presented with her third pregnancy. Although she decided to stop azathioprine after the first trimester, the disease remained stable throughout pregnancy, with normal blood pressure, normal TSH, ESR < 35 mm/h, and slightly elevated CRP between 0.8 and 1.33 mg/dl. Ultrasound showed no progression of arteritis. Therapy was continued with prednisolone, low-dose aspirin, and thyroxine. At the 37th week a healthy girl was delivered by elective cesarean section with a birth weight in the 22nd percentile.

TA is a rare disease occurring mainly in women of childbearing age. In 136 pregnancies of 99 women with TA<sup>1</sup>, fertility was found to be unaffected by the disease<sup>2-4</sup>. Pregnancy in most patients did not worsen inflammatory disease activity, and fetal-maternal outcome was favorable<sup>2,3</sup>. However, extensive disease increased rates of intrauterine growth retardation, preeclampsia, and preterm births<sup>2</sup>. An Indian cohort of severe and extensive TA, with uncontrolled hypertension and involvement of the abdominal aorta, described intrauterine deaths in 5 out of 24 pregnancies<sup>4</sup>. Although maternal outcome is mostly good, uncontrolled hypertension, severe aortic regurgitation, and aortic aneurysms are risk factors for maternal morbidity and mortality during late pregnancy and labor<sup>2-4</sup>.

In our patient, the first intrauterine death occurred despite normal blood pressure and absence of abdominal aortic involvement. Therefore other risk factors like intrauterine growth restriction, placental pathology, or thyroid disease might have contributed to the fatal outcome<sup>5</sup>. Recurrent miscarriages, fetal death, and premature rupture of membranes was found to be associated with anti-TPO and anti-TG antibodies<sup>6-8</sup>. In addition, hypothyroidism



Figure 1. Magnetic resonance angiography showing an occlusion of the right arterial subclavian (arrow) and long stenoses of both common carotid arteries (open arrows).

increases the risk of preterm labor<sup>8</sup>. Thus, Hashimoto's thyroiditis might have influenced the adverse pregnancy outcomes.

Fetal growth retardations in our patient could have been caused either by the disease itself or by prednisolone therapy<sup>9</sup>. However, fetal growth retardation in the first pregnancy presented before TA was even diagnosed. Therefore, smoldering disease activity that adversely affected the placental blood flow was most likely the cause for fetal growth retardation in the first and third pregnancy. In retrospect, a pregnancy-compatible immunosuppression therapy such as azathioprine or cyclosporine might have been introduced earlier in the disease. However, drug compliance during pregnancy is often a problem.

Low disease activity of TA despite the presence of abdominal involvement and normal thyroid function was probably the relevant key factors for a favorable outcome of the third pregnancy. Since hypothyroidism is an additional risk factor for early abortion, TSH should be routinely monitored and T4 accordingly be adjusted, especially in cases of known Hashimoto thyroiditis. In case of combined autoimmune diseases a close interdisciplinary monitoring is essential to attain successful pregnancy outcomes.

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