Subacute thyroiditis during pregnancy

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Introduction:
Hyperthyroidism during pregnancy is a rare condition and occurs in 0.1 to 0.4% of all pregnancies¹. Graves’ Disease and transient gestational thyrotoxicosis constitute the majority of emerging thyrotoxicosis during pregnancy⁻²⁻³. Subacute thyroiditis (SAT) may also cause temporary hyperthyroidism. Nevertheless, only a few SAT cases reported occurring during pregnancy⁴.

Case report:
A thirty-three-year-old, 13-week pregnant patients was admitted with fatigue, pain and swelling in thyroid gland. Thyroid function tests performed two months ago were found to be in the normal range. On physical examination of the patient, there was no symptoms other than pain in the neck, and bilateral thyroid gland was large with tenderness. The laboratory tests carried out at the patient’s admission are in Table 1. In the thyroid USG both lobes were large and parenchymal blood flow was not increased. There was a distinct view of bilateral subacute thyroiditis and reactive bilateral cervical lymphadenopathy. Paracetamol 3x500 mg was started because of the pain. The patient’s pain was significantly decreased 3 days later. Clinical and laboratory findings in patient was compatible with SAT. 10 days later, pain and tenderness in the thyroid gland was completely relieved. After repeated laboratory tests, 50 mcg of levothyroxine was instituted. Levothyroxine treatment, patient did not experience any problem during pregnancy and when she was 38 weeks and 2 days pregnant, vaginally delivered a healthy baby boy who weighs 3740 gr.

Discussion:
SAT is a condition characterized by neck pain, diffuse tenderness in thyroid lobe and changes in thyroid function⁵. Viral infections and post-viral inflammatory process are thought to play a role in the pathogenesis⁶. There are very few cases in the literature of SAT occurring during pregnancy. The first case was reported by Hiraiwa et al in 2006⁷. SAT has been determined in two cases who are 35 and 51 years old and respectively 11 and 6 weeks pregnant⁸. A similar case was reported by Anastasiadis et al in 2011⁹. Case, who was 30 years old, presented with SAT in 6th week of the pregnancy⁹. Regardless of the pregnancy, SAT is seen most frequently in the 28-30 and 40-50 age ranges⁶,¹⁰. It has been found that seasonal changes play role in the presence of SAT (more seen in March and August) but statistical significance could not be determined¹¹. This supports the hypothesis that viral infections play role in the pathogenesis.

Although it is rare when compared to other diseases occurring in the first trimester of the pregnancy, hyperthyroidism may lead to serious complications such as premature, low birth weight and eclampsia¹²,¹³. Thyrotoxicosis in pregnancy, occurs at the average rate of 1-4 per 1000 pregnancies⁵,¹². If it is assumed that subacute thyroiditis is responsible for 1% of the whole thyrotoxicosis cases, 10-40 SATs are expected to be occur in each 1,000,000 pregnancies⁵.

There are two main objectives in the treatment of patients; i.e. pain control and correcting the effects of thyrotoxicosis. NSAIDs and prednisone are used for pain control and the prevention of inflammation¹⁴. Thyroid peroxidase inhibitor is not recommended in the treatment of thyrotoxicosis but beta-blockers (pranopanolol, atenolol) can be used for the suppression of the symptoms¹⁵. Although most of the patients remain euthyroid after exacerbation, hypothyroidism is likely to develop and in these patients levothyroxine treatment can begin temporarily¹⁶.

Table 1. The course of thyroid function tests and LT4 treatment

<table>
<thead>
<tr>
<th>Time</th>
<th>TSH (0.4-4.2 mIU/L)</th>
<th>FT3 (2.2-4.2 pg/ml)</th>
<th>FT4 (0.55-1.7 ng/dl)</th>
<th>TRAb (0-14 U/L)</th>
<th>Anti-TPO (1-16 U/ml)</th>
<th>Anti-TG (5-100 U/ml)</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>At admission</td>
<td>0.17</td>
<td>4.58</td>
<td>2.67</td>
<td>3.88</td>
<td>3.54</td>
<td>1715</td>
<td>Paracetamol 3x500</td>
</tr>
<tr>
<td>10 days after the admission</td>
<td>0.32</td>
<td>2.18</td>
<td>0.49</td>
<td>2.4</td>
<td>1143</td>
<td>50 µg LT4</td>
<td></td>
</tr>
<tr>
<td>3 weeks after the admission</td>
<td>0.67</td>
<td>1.52</td>
<td>0.7</td>
<td>75 µg LT4</td>
<td>50 µg LT4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd trimester</td>
<td>3.8</td>
<td>1.66</td>
<td>0.5</td>
<td>75 µg LT4</td>
<td>75 µg LT4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd trimester</td>
<td>3.6</td>
<td>1.82</td>
<td>0.6</td>
<td>75 µg LT4</td>
<td>75 µg LT4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivery</td>
<td>2.6</td>
<td>1.89</td>
<td>0.7</td>
<td>75 µg LT4</td>
<td>75 µg LT4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 months after delivery</td>
<td>4.4</td>
<td>2.7</td>
<td>0.9</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 months after delivery</td>
<td>3.1</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion:
When determining the differential diagnosis of thyrotoxicosis in pregnancy, subacute thyroiditis should also be considered and detailed history and physical examination of the thyroid should not be neglected. Although the majority of the patients recover without treatment, complications in the pregnancy should be borne in mind and each patient must be evaluated individually.

References:
4. Werner & Hughes’ the Thyroid: A Fundamental and Clinical Text. 5th Ed.; 2005. https://books.google.com/books?hl=tr&lr=&id=HoOaqNjPswwC&pg=PA1&dq=Thyroid+itis+Thyroiditis+Thyroiditis+Presented+At+ECE+2016&pg=PA1&dq=Thyroid+itis+Thyroiditis+Thyroiditis+Presented+At+ECE+2016&ved=0ahUKEwi-FitPqR9wAhU1T4O8HStcoCwQ6AEIIjA