Severely Sustained Vomiting as the Main Symptom in a Man with Thyrotoxicosis

Thyrotoxicosis has a variety of presentations. Vomiting as a main presenting symptom of thyrotoxicosis is uncommon. We report a 40-year-old male with thyrotoxicosis who presented with sustained vomiting as the main symptom. He also had weight loss, about 10 kg over this 20-day period, and dizziness, particularly in the upright position. Esophagogastroduodenoscopy and abdominal ultrasonography were negative. Laboratory data were unremarkable except serum T4 of 21.2 µg/dl, T3 of 574 ng/dl and TSH < 0.03 µIU/ml. The patient’s serum microsomal antibody was positive at a titer of 1:409,600, but serum thyroglutamin antibody was negative at a titer of less than 1:100. The symptoms improved after administration of propylthiouracil and propranolol. A total of 31 such cases have been reported in English literature. The mean age of the patients was 46 ± 14 years with a range of 19 to 68 years. Only 4 patients, including ours, were male. Weight loss was found in about half of them and might be an important clue. Thyrotoxicosis should be considered in differential diagnosis of unexplained vomiting.

CASE REPORT

A 40-year-old man, a security guard, was aparently well until 20 days before admission, when he began to experience nausea and vomiting 5 to 6 times a day. The vomiting was not related to meals, and the vomitus contained gastric juice and undigested food. The patient did not suffer from abdominal pain, diarrhea or constipation. The patient did not lose his appetite, but he usually hesitated to eat for fear of vomiting. He had lost about 10 kg over this 20-day period. He did not have heat intolerance, excessive sweating, palpitation or sleep disturbance. He also had dizziness, particularly in the upright position, but this was not always associated with vomiting. The dizziness was not like spinning of surrounding objects, nor was it as such ated with tinnitus or hearing impairment. He did not have any weakness or numbness, nor any difficulty in drinking, swallowing, breathing or walking. He had consulted a local gastroenterologist who performed esophagogastroduodenoscopy on him the day before he was admitted to our hospital, and no significant positive finding was reported.
On admission, his blood pressure was 110/70 mmHg, pulse rate 98/min, respiratory rate 20/min, and body temperature 37°C. No significant changes in blood pressure and pulse rate were found on changing position from the supine to sitting or standing position. The patient looked calm, well-hydrated and was well-conscious and well-orientated, with no focal neurological signs. There was no palpable goiter, exophthalmos, tremor or excessive sweating. His abdomen was soft, non-tender, and with normoactive bowel sounds. The hepatosplenomegaly was not evident.

His Complete blood count and differential count, blood urea nitrogen, creatinine and electrolytes were within normal limits. His serum albumin was 3.3 g/dl, cholesterol 92 mg/dl, triglycerides 75 mg/dl, alanine aminotransferase 26 IU/L (ref. 23 IU/L) and aspartate aminotransferase 17 IU/L (ref. 23 IU/L). Abdominal ultrasonography was negative. Electroencephalographic examination and computerized tomographic scan of brain failed to show significant findings.

Despite treatment with an antiemetic agent, the patient’s vomiting persisted. To maintain normohydration, he was given intravenous fluids. Because of marked body weight loss, associated thyrotoxicosis was suspected, and there were no signs of hyperemesis gravidarum. A total of 31 such cases have been reported in the English literature, in which the age and sex profile were not mentioned. Female predominance was found, not surprisingly, and only 4 patients in cluding ours were male. The mean age of these patients was 46 ± 14 years, with a range of 19 to 68 years. Poor appetite, rather than increased appetite, was found in 16 cases (51.6%). Nausea was found in 11 cases (35.5%), abdominal pain in 7 (22.6%) and dizziness or faintness in 2 (6.5%). Diarrhea, which is commonly believed to be the most common gastrointestinal symptom, was found in only 5 of them (16.1%). Three cases (9.7%) were associated with pregnancy, and all of these were in their first trimester (9 to 10 weeks of pregnancy, mean 9.7 ± 0.6 weeks) at their first episode of severe vomiting. The possibility of combination of hyperemesis gravidarum could not be ruled out in these three patients. Weight loss was found in 19 cases (61.3%) and was an important clue for diagnosis of thyrotoxicosis, as we noted in our case, who did not have textbook features of thyrotoxicosis. Table 1 shows features of the present case with those of previously reported cases.

### DISCUSSION

Thyrotoxicosis has a variety of presentations but vomiting as a main presenting symptom in thyrotoxicosis is uncommon. A total of 31 such cases have been reported in the English literature, including 9 cases in which the age and sex profile were not mentioned. Female predominance was found, not surprisingly, and only 4 patients in cluding ours were male. The mean age of these patients was 46 ± 14 years, with a range of 19 to 68 years. Poor appetite, rather than increased appetite, was found in 16 cases (51.6%). Nausea was found in 11 cases (35.5%), abdominal pain in 7 (22.6%) and dizziness or faintness in 2 (6.5%). Diarrhea, which is commonly believed to be the most common gastrointestinal symptom, was found in only 5 of them (16.1%). Three cases (9.7%) were associated with pregnancy, and all of these were in their first trimester (9 to 10 weeks of pregnancy, mean 9.7 ± 0.6 weeks) at their first episode of severe vomiting. The possibility of combination of hyperemesis gravidarum could not be ruled out in these three patients. Weight loss was found in 19 cases (61.3%) and was an important clue for diagnosis of thyrotoxicosis, as we noted in our case, who did not have textbook features of thyrotoxicosis. Table 1 shows features of the present case with those of previously reported cases.

<table>
<thead>
<tr>
<th>Previously reported cases (n = 31)</th>
<th>Present case (n = 1)</th>
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<tbody>
<tr>
<td>Male sex</td>
<td>3 (9.7%) +</td>
</tr>
<tr>
<td>Age (years)</td>
<td>46 ± 14</td>
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<tr>
<td>Symptoms</td>
<td>40</td>
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<tr>
<td>Vomiting</td>
<td>31 (100%) +</td>
</tr>
<tr>
<td>Weight loss</td>
<td>19 (61.3%) +</td>
</tr>
<tr>
<td>Poor appetite</td>
<td>16 (51.6%) -</td>
</tr>
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<td>Nausea</td>
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ported cases.

The mechanism of vomiting in thyrotoxicosis is not well understood but it is not likely to be gas trointestinal in origin. Only one case showed markedly diminished peristalsis in the esophagus, stomach, and duodenum on barium meal examination.\(^{11}\) Some have suggested that too rapid ingestion of a large amount of food may be responsible.\(^3\) However, this was not the case in our patient, in as much as he ingested only a small amount of food for fear of vomiting.

There was no evidence of any hypermetabolism of the central nervous system that is related to vomiting.\(^{20}\) Vomiting in other endocrine conditions, such as hyperparathyroidism, Addison’s disease, and pregnancy is almost certainly induced by stimulation of the chemoreceptor trigger zone, and a similar assumption was drawn for thyrotoxicosis. The role of catecholamines in vomiting is still controversial.\(^{19,21,22}\)

The patient with thyrotoxic vomiting were treated by antithyroid medications in 15 out of 20 cases in which treatment was mentioned (75%) and by radioactive iodine in the remaining 5 cases (25%). ß-blockers were reported to be given in addition to antithyroid medications in 5 cases. Antithyroid medications seemed to stop vomiting in previously reported cases. However, in our case, ß-blocker was initiated on the third day, antithyroid medication was given on the fifth day, and symptoms improved on the sixth day. Therefore it was probable that ß-blocker acted first to stop vomiting, probably by blunting the adrenergic action of thyroxin hormone.

Association between elevated estradiol levels and vomiting in thyrotoxicosis has been suggested,\(^{11}\) but in our patient, the estradiol level was also proposed as responsible for thyrotoxic vomiting on the grounds that it is almost certainly induced by stimulation of the chemoreceptor trigger zone. However, this was not the case in our patient, in as much as he ingested only a small amount of food for fear of vomiting.

Hypomagnesia was attributed for thyrotoxic vomiting in two cases.\(^{3}\) In our case, the serum calcium level was normal. Hypomagnesia was attributed for thyrotoxic vomiting in one case.\(^{11}\)

Although vomiting was one of the presenting symptoms in thyrotoxicosis, the underlying mechanism is still uncertain. The aim of presenting this case was that thyrotoxicosis should be considered in differential diagnosis of unexplained vomiting. Weight loss may be an important clue.

REFERENCES