

Cardiac tamponade in a patient with thyrotoxicosis

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Background:

Thyrotoxicosis, marked by elevated thyroid hormones, and pericardial effusion, fluid accumulation in the pericardial sac, are typically distinct conditions. However, in rare cases, hypothyroidism can link them through increased pericardial capillary permeability. In this case, however, pericardial effusion was caused by acute thyrotoxicosis.

Case presentation:

A 44-year-old female, previously healthy, presented to the ER with dyspnea, heart palpitations, significant weight loss, peripheral edema, and fever. The electrocardiogram revealed atrial fibrillation (AF) and tachycardia while the chest X-ray showed bilateral pleural effusions. Thyroid hormone levels showed clear signs of thyrotoxicosis, with high fT4 and fT3 and low TSH levels. Additionally, anti-TPO antibodies and TSH receptor antibodies were positive, which suggested Graves' disease (GD). She was admitted to the ICU and treated with beta-blockers, DOACs, thiamazole, corticosteroids, potassium iodide, diuretics, and PPIs. Pleural drainage preceded the patient's discharge with tapering doses of corticosteroids and thiamazole. One week later, the same patient returned to the ER with fatigue and dyspnea. Electrocardiogram showed AF with tachycardia and echocardiographically, pericardial and pleural effusion were present. The patient was admitted to the ICU where she underwent pericardiocentesis and pleural effusion drainage. High thyroid hormone levels were found. Subsequently, corticosteroid and thyrostatic therapy was intensified, accompanied by diuretics, and beta blockers. Blood tests for other systemic autoimmune diseases were negative. When thyroid hormone levels normalized, the patient underwent a successful total thyroidectomy. Her pleural effusion completely regressed and atrial fibrillation spontaneously converted. She was discharged with levothyroxine.

Conclusion:

GD, an autoimmune disorder causing hyperthyroidism, often accompanies other autoimmune diseases, emphasizing the need for comprehensive testing. A rare, life-threatening complication of GD is thyrotoxicosis. Even though pericardial effusion is a very rare complication of thyrotoxicosis, every patient with cardiac symptoms should be tested echocardiographically to rule out this possibility.