Syncope Due to Impending Cardiac Tamponade in Hashimoto's Thyroiditis

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Pericardial effusion develops in 25 to 35% of patients with severe hypothyroidism. These effusions can be large, but rarely if ever cause tamponade. We report here a 36-year-old woman who presented with recurrent syncopal attack, which turned out to be a case of Hashimoto's thyroiditis complicated by massive pericardial effusion with impending tamponade.

Key Words: Cardiac tamponade • Hashimoto's thyroiditis • Syncope

INTRODUCTION

Pericardial effusion in hypothyroidism is a common finding,[1] but an effusion which causes cardiac tamponade occurs infrequently.[2] We report here a 36-year-old woman who presented with recurrent syncopal attack, which after further examination turned out to be a case of Hashimoto's thyroiditis.

CASE REPORT

A 36-year-old woman, who had no history of heart disease and no known risk factor for cardiovascular disease, was sent to the emergency department with recurrent fainting attacks She suffered from syncope 3 times in one week, each episode lasting no more than 15 minutes. Her symptoms were not associated with any episode of seizure, tongue biting, or head injury. There was no other discomfort or patient complaint suggesting heart disease, such as breathlessness, palpitation or limb swelling. A physical examination of the patient revealed a well-oriented and cooperative, slightly obese woman with body mass index of 28 kg/m^2. She looked indifferent, and slow of speech in verbal communication. Her skin was coarse, and presented with non-pitting edema over her lower limbs. Upon lying down on the bed, the patient was found to have jugular venous distension (5 cm above Louis angle), and heart sounds muffled with a heart rate of 110 beats/min. Blood pressure was 133/94 mmHg, with varied Korotkoff sounds during measurement. Cardiac echocardiography was done (Figure 1) to confirm the diagnosis of cardiac tamponade on the basis of clinical pictures, low voltage in 12-lead surface electrocardiography (Figure 2A) and cardiomegaly in the chest X-ray (Figure 2B). Echocardiography study disclosed a normal left ventricular size and contractility but with massive pericardial effusion and signs of tamponade. Surgical drainage was performed to release the pericardial pressure due to failure of needle pericardiocentesis. Approximately 630 ml of pericardial fluid was immediately drained; it was exudative, straw in color, negative for bacteria and acid-fast bacilli. Pericardial biopsy showed only mesothelial hyperplasia. A total of approximately 1600 mL of the effusion was drained in the first 24 hours.

Hypothyroidism was suspected to be responsible

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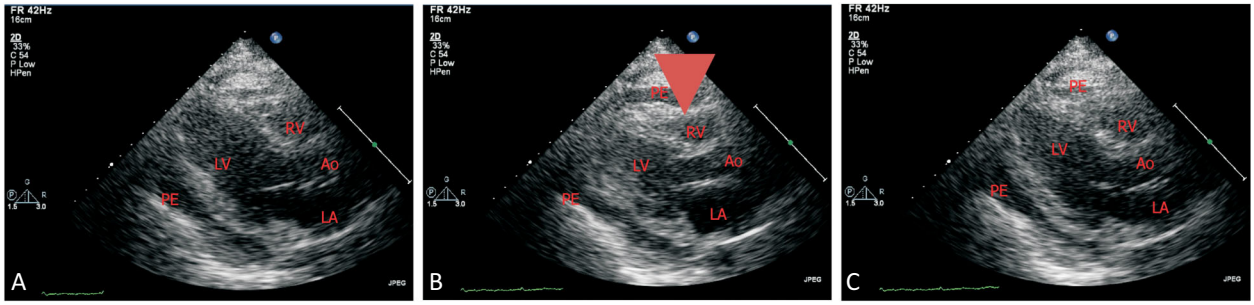

Figure 1. *Two-dimensional echocardiogram illustrating large amount of pericardial effusion and diastolic collapse or indentation of the right ventricle. (A) Systole. (B) Early diastole, indentation indicated by arrow head. (C) Late diastole. AO, aorta; LA, left atrium; LV, left ventricle; PE, pericardial effusion; RV, right ventricle.*

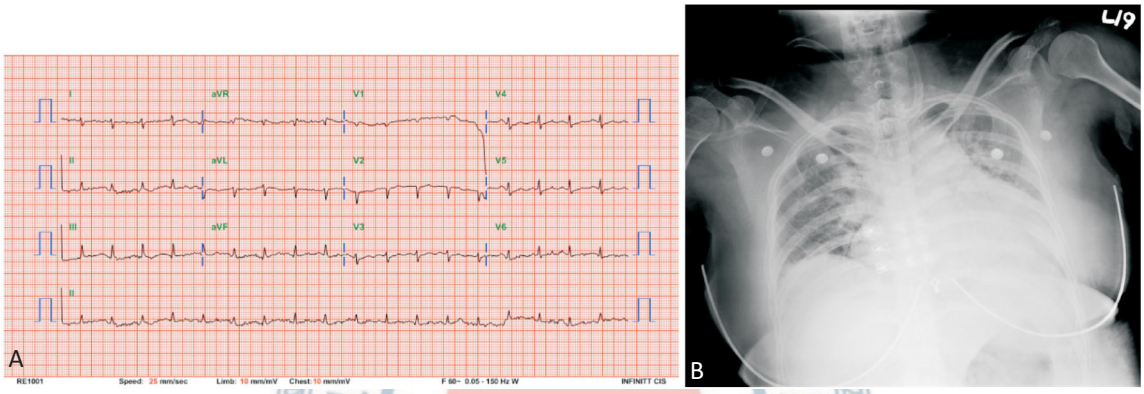

Figure 2. *(A) Sinus tachycardia, low voltage in precordial leads, right axis deviation. (B) A-P view, remarkable cardiomegaly with mild pulmonary congestion.*

for the cardiac tamponade, and the diagnosis was supported by low free T4 (0.08 ng/dL, normal range 0.7-1.8 ng/dL) and high thyroid-stimulating hormone (132.1 uIU/mL, normal range 0.3-6.5 uIU/mL). At that point we realized why the patient presented with indifference in facial appearance, slowness in speech, coarse skin, and myxedema in the legs. When questioning the patient in detail, she recalled that she felt a slight breathless on walking fast and upstairs and had been treated with unknown medications in a local clinic. Thyroxine sodium 100 mcg daily (Eltroxin) was prescribed. Follow up bedside cardiac echocardiography revealed trivial pericardial effusion. Before the patient was discharged from the hospital, brain computed tomography was carried out and no lesion could be detected. She was discharged several days later for outpatient follow up. The results of an antimicrosomal antibody 6400X test confirmed the diagnosis of Hashimoto's thyroiditis. No additional syncopal attack had occurred at one month after discharge.

DISCUSSION

Syncope, which is by definition a transient loss of consciousness,[3] is not an uncommon clinical problem.[4,5] Vasovagal attacks are the most common cause of syncope clinically, followed by cardiac etiologies, including structural heart disease and arrhythmia.[6] However, syncope is an unusual presentation of pericardial effusion or even cardiac tamponade,[7] and may be related to reduced cardiac output that leads to cerebral hypoperfusion.

Idiopathic pericarditis can be secondary to any infection, neoplasm, autoimmune or inflammatory process.[1,8] Pericarditis with moderate-large effusion due to hypothyroidism is uncommon. It is even rare to see a hypothyroidism patient present with syncopal attack due to cardiac tamponade. Syncope due to cardiac tamponade was described by Eloi Marijon in 2005.[9] The proposed mechanisms responsible for the pericardial effusion/cardiac tamponade include an increase in capillary

permeability with effusion of fluid rich proteins into the pericardial sac, a decrease in lymphatic drainage, and an increased retention of salt and water.[10]

SUMMARY

Syncopal attack due to cardiac tamponade is a rare presentation in daily clinical practice. It is even more rare to find syncopal attack secondary to a case of Hashimoto's thyroiditis. However, if clinicians are conscientious about taking comprehensive medical histories and physical examinations upon presentation, they may obtain important clues before diagnosis confirmed by medical imaging techniques.

REFERENCES

1. Maisch B, Seferović PM, Ristić AD, et al. Guidelines on the diagnosis and management of pericardial diseases executive summary; The task force on the diagnosis and management of pericardial diseases of the European society of cardiology. *Eur Heart J* 2004;25:587-610.
2. Velibey Y, Calik AN, Satilmis S, Iliksu H. First and only manifestation of Hashimoto's disease: pericardial tamponade. *Turk Kardiyol Dern Ars* 2012;40:454-7.
3. Moya A, Sutton R, Ammirati F, et al. Guidelines for the diagnosis and management of syncope (version 2009): the task force for the diagnosis and management of syncope of the European society of cardiology (ESC). *Eur Heart J* 2009;30:2631.
4. Savage DD, Corwin L, McGee DL, et al. Epidemiologic features of isolated syncope: the Framingham Study. *Stroke* 1985;16:626.
5. Huang HL, Hung CY, Chin CH, et al. Primary cardiac lymphoma with complete atrioventricular block. *Acta Cardiol Sin* 2011;27: 56-9.
6. Hsieh TH, Tsai LM, Tsai MZ. Characteristics of and atypical presentations in patients with acute aortic dissection – single center experience. *Acta Cardiol Sin* 2011;27:238-43.
7. El-Osta H, Ashfaq S. Cough-induced syncope as an unusual manifestation of pericardial effusion. *Kansas Journal of Medicine* 2008.
8. Troughton RW, Asher CR, Klein AL. Pericarditis. *Lancet* 2004; 363:717-27.
9. Marijon E, Jani D, Aubert S, et al. Cardiac tamponade in Hashimoto's disease. *International Journal of Cardiology* 2006; 2011:470-1.
10. Arvan S. Pericardial tamponade in a patient with treated myxoedema. *Arch Intern Med* 1983;143:1983-4.