A Case Report of Constrictive Pericarditis in a Post–Tuberculous Pleurisy Patient

Zhe Jin¹#, Jiazheng Sun¹#, Ru Wang², Sheng Li², Sanwu Wu², Yang Xiang² and You en Zhang*²

¹Postgraduate Training Base of Shiyan, Jinzhou Medical University, China
²Department of Cardiology and Institute of Clinical Medicine, Renmin Hospital, Hubei University of Medicine, China

Received: February 08, 2022; Accepted: March 06, 2022; Published: March 15, 2022

Abstract
Constrictive pericarditis still poses a diagnostic dilemma, even in the modern era. A combination of immense morbidity and excellent prognosis following surgery dictates early, accurate diagnosis of the condition. We report the case of a patient with a post-tuberculous pleurisy, which was found in regular inspection.

Introduction
Pericardium disease is a common cardiovascular disease observed in clinical practice, and has a very wide disease spectrum [1]. It is difficult to make an accurate etiological diagnosis in clinical settings, making it correspondingly difficult to develop an appropriate treatment plan. Constrictive pericarditis can be associated with almost any pericardial disease, and is often mistaken for restrictive cardiomyopathy [2]. We here present a description of certain clinical and morphological findings in an elderly patient with constrictive pericarditis.

Case Presentation
A 64-year-old woman presented to our hospital with repeated chest pain occurring periodically over the previous 10 years. This pain was typically followed by chest tightness and shortness of breath lasting four days. Her medical history included hypertension. Results of the physical examination were as follows: heart rate, 61 beats per minute; blood pressure, 145/80 mmHg (1 mmHg = 0.133 kPa); respiratory rate, 20 beats per minute. She was conscious, automatic posture, clear ability to cooperate with the physical examination, no cyanosis of the lips, no induration of the jugular vein, no enlargement of the thyroid gland, no palpation of superficial lymph nodes, and coarse breath sounds in both lungs. No dry or wet rales were heard. Her heart rhythm was uniform, and no heart murmur was heard. Her abdomen was soft, without tenderness or rebound pain. There was no percussion pain in the liver or kidney area, and no edema in the lower limbs.

Some of the examination results showed improvement during the patient’s hospital stay. From Electrocardiogram (ECG), these improvements were in sinus rhythm and STT change. From heart color Doppler ultrasound, these improvements were in pericardium calcification in the free wall of the left ventricle, enlargement of the left ventricle, and fullness of the right ventricle. Overall systolic function of the left ventricle was normal, and diastole was limited in the resting state. The inner diameters of areas of the heart cavity (mm) were: left atrium (front and back × up and down × left and right) 42×61×45, left ventricular diameter (anterior-to-posterior) 37, right atrium (left and right) 44, and right ventricle (left and right) 30. The thicknesses of the heart’s chamber walls (mm) were: diastolic ventricular septal thickness (IVSD) 8, posterior wall of left ventricle during diastole (LVPWD) 8; Left Ventricular Ejection Fraction (LVEF) 59% (M type), Left Ventricular Shortening Fraction (FS) 29%, left ventricular diastolic function E/A>1 (mitral valve flow). No obvious abnormalities were detected in blood routine, hypersensitive troponin T, D-dimer, renal function, liver function, blood lipid, coagulation function. Pro-brain natriuretic peptide (pro-BNP) 634.00 pg/mL (reference range 0–300pg/mL).

Chest Computed Tomography (CT) showed pericardium calcification CAG [Figure 2]. A small amount of fluid had accumulated in the right thoracic cavity. Cardiac Magnetic Resonance Imaging (MRI) with enhancement showed left atrial enlargement [Figure 3]. The right chamber was full. At rest, the overall systolic function of the left ventricle was normal, and diastole was limited. The pericarditis may have been thickened and calcified, and we considered constrictive pericarditis given her medical history. No significant coronary artery stenosis was observed.

The patient’s medical history was examined, and the patient reported tuberculous pleurisy 50 years earlier (details unknown).
A Case Report of Constrictive Pericarditis in a Post–Tuberculous Pleurisy Patient

Anti-platelet aggregation, blood pressure control, ventricular rate control, lipid regulation, and symptomatic support treatment were given. The patient and her family declined further pericardiectomy, and the patient was discharged after her symptoms improved with medication. The hospital followed up with the patient for more than two years, during which the patient showed no readily visible symptoms.

Discussion

Constrictive pericarditis can be associated with almost any pericardial disease. The etiology of constrictive pericarditis is diverse. It is most commonly seen in tuberculosis, but it is also seen in open heart surgery, tumors, chemotherapy, and other conditions [3, 4]. Here, the diagnosis of constrictive pericarditis was based on clinical findings: specifically, the signs and symptoms of right heart failure associated with constrictive pericarditis and radiographic and cardiac ductal evidence; in this case, impaired ventricular diastolic filling. Echocardiography and X-ray examination should be performed for patients who may have constrictive pericarditis. CT and CMR can be used as second-line imaging examination methods to evaluate the pericardial calcification, thickness, and extent of pericardial damage [5, 6]. When imaging cannot provide sufficient diagnostic support, cardiac catheterization should be performed [5]. Clinical attention should be paid to distinguish constrictive pericarditis from restrictive cardiomyopathy.

The main treatment for constrictive pericarditis is surgery, and new guidelines still suggest that patients with primary-cause treatment, transient constrictive pericarditis syndrome, hyperemia progression, or surgical conscription should receive adjuvant drug therapy, which has confirmed value.

Figure 1: Echocardiographic image showing left ventricular free wall pericardial calcification, enlarged left atrium, full right atrium, ascending aorta slightly wider, multivalvular small regurgitation. The overall systolic function of the left ventricle at rest is normal, and the diastolic function is limited.

Figure 2: Chest computed tomography (CT). The heart is enlarged, showing pericardial calcification. We considered the possibility of constrictive pericarditis. A small amount of fluid is in the right pleural cavity.
A Case Report of Constrictive Pericarditis in a Post–Tuberculous Pleurisy Patient

Figure 3: Cardiac MRI+ enhancement. The left atrium is enlarged. The right atrium is full. In the resting state, the overall systolic function of the left ventricle is still normal, and the diastole is limited. The pericardium may be thickened and calcified. We considered the possibility of constrictive pericarditis due to the patient’s medical history.

Acknowledgement

This work was supported by the National Nature Science Foundation of China [No. 81500237] and Special Foundation for Knowledge Innovation of Hubei Province [Nature Science Foundation] [No. 2017CFB563].

References