Seronegative rheumatoid arthritis: a rare cause of effusive-constrictive pericarditis requiring pericardiectomy

Alan Soo* and Alastair Graham

Department of Cardiac Surgery, Royal Victoria Hospital, Belfast, UK

* Corresponding author. 16 Gregg’s Quay, Belfast BT5 4GQ, UK. Tel: +44-7585-664787; Fax: +44-2890-314159; e-mail: drsoo@hotmail.com (A. Soo).

Received 16 October 2011; received in revised form 14 November 2011; accepted 21 November 2011

Abstract

Effusive-constrictive pericarditis is a rare condition. In this report, we describe a case of effusive-constrictive pericarditis caused by seronegative rheumatoid arthritis which was successfully treated with surgical pericardiectomy.

Keywords: Effusive-constrictive pericarditis • Rheumatoid arthritis • Pericardiectomy

INTRODUCTION

Effusive-constrictive pericarditis is a subset of constrictive pericarditis characterized by the presence of pericardial effusion [1]. Seropositive rheumatoid arthritis has previously been recognized as a rare cause of this uncommon condition, whereas seronegative rheumatoid arthritis is not [2–4]. In this report, we describe a case of effusive-constrictive pericarditis in a patient with known history of seronegative rheumatoid arthritis.

CASE HISTORY

A 65-year old man with a known history of seronegative rheumatoid arthritis presented with abdominal distension and progressive fatigue. Initial investigation including abdominal ultrasonography and computed tomography revealed significant ascites. This was drained percutaneously. Incidentally, computed tomography also detected a significant pericardial effusion (Fig. 1). Follow-up investigation with echocardiography confirmed significant pericardial effusion and raised the suggestion of pericardial constriction. The patient subsequently underwent cardiac catheterization which confirmed the diagnosis of effusive-constrictive pericarditis. The patient was then transferred to a cardiac surgical unit for planned pericardiectomy.

Routine anaesthetic technique was employed. Pre-operatively, the central venous pressure (CVP) and diastolic pulmonary arterial pressure (PAD) was recorded at 25 mmHg. The procedure was performed through a median sternotomy. Very thickened parietal and visceral pericardium with large amount of fibrinous pericardial fluid was detected. The heart was completely constricted by the visceral pericardium except for the apex. Pericardiectomy was carried out with aggressive stripping of the visceral pericardium. The visceral pericardium was initially incised to allow lifting of the edges. This was then gently peeled off the surface of the heart. In areas where visceral pericardium was densely adherent and could not be peeled off, multiple incision was made on the pericardium. This process was performed on all surfaces of the heart up to and including the great vessels. (Fig. 2) The procedure was completed without the use of cardiopulmonary bypass. At the end of the procedure, diastolic function of the heart improved visually and CVP was recorded to be 10 mmHg and PAD recorded at 15 mmHg. Post-operatively, the patient had an uneventful recovery and remains well at routine review 6 weeks later.

COMMENT

The pericardium is a double-walled sac composed of two layers of mesothelial cells. Inflammation of the pericardium, pericarditis, can lead to constriction of the pericardial sac. This in turn affect the diastolic function of the heart as the heart could not...
relax. The inflammation often involves the parietal pericardium sparing the visceral layer. However, in effusive–constrictive pericarditis, which is a rare subset of constrictive pericarditis, involvement of the visceral layer is the norm. It is also associated with the presence of a tense effusion. Sagristà-Sauleda et al. [1] stressed the importance of recognizing the contribution of the visceral pericardium in this condition and the need for its removal during surgical pericardiectomy.

Rheumatoid arthritis, although rare, is a recognized cause of effusive–constrictive pericarditis. Harada et al. [2] described a case of effusive–constrictive pericarditis revealed with simultaneous pericardiocentesis and pressure reading. Yildiz et al. [3] similarly reported a patient who had effusive-constricting pericarditis due to rheumatoid arthritis and tuberculosis. Their case was successfully treated with surgical pericardiectomy. In the review performed by Hakala et al. [4], investigating the significance of rheumatoid arthritis in causing pericardial effusion, they found that all the patients in their series had seropositive disease.

In our case, the patient has a known history of seronegative rheumatoid arthritis. Seronegative rheumatoid arthritis is characterized by negative rheumatoid factor. Patients who are rheumatoid factor-negative are known to have a less aggressive form of the disease and are associated with less complication [5, 6]. To the best of our knowledge, effusive–constrictive pericarditis as a result of seronegative rheumatoid arthritis has not been previously reported. Our patient was successfully treated with surgical pericardiectomy following the principle of effusive–constrictive pericarditis whereby visceral pericardium had to be removed as much as possible. Immediate improvement of diastolic function was evident both visually and a drop in the CVP and PAD.

Conflict of interest: none declared.

REFERENCES


Figure 2: (left) Complete constriction of the heart except the apex prior to pericardiectomy. (right) Post-pericardiectomy.