Journal of the Formosan Medical Association (2015) 114, 1149–1150

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journal homepage: www.jfma-online.com

CORRESPONDENCE

Staphylococcal infection-related constrictive pericarditis with formation of a mycotic aneurysm in the right coronary artery

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Received 4 October 2014; received in revised form 20 November 2014; accepted 2 December 2014

Pericardial involvement in end-stage renal disease (ESRD) is mainly due to invasion from an adjacent pneumonia or empyema, or from hematogenous spread of a distant infection.[1] There are no previous reports of progression of purulent pericarditis to constrictive pericarditis with formation of a mycotic aneurysm in the coronary artery.

A 65-year-old woman who had diabetes, hypertension, coronary artery disease, hyperthyroidism after thyroidectomy, and ESRD, initially presented to our department. She complained of intermittent left anterior chest tightness during the previous 2 weeks. A computed tomographic (CT) scan indicated pericardial effusion (Fig. 1A), leading to the impression of acute pericarditis with pericardial effusion. That was managed by pericardiocentesis. The culture indicated methicillin-resistant *Staphylococcus aureus* (MRSA). After 3 weeks of antibiotic treatment (vancomycin 1 mg, intravenously once every 3 days), she was discharged.

Three months later, she complained of intermittent fever and dyspnea. An electrocardiogram (EKG) indicated diffuse ST (electrocardiogram ST segment, distance between S wave to T wave) depression, giving the impression of myocardial infarction with no ST elevation. Coronary catheterization indicated a large coronary aneurysm at the proximal right coronary artery (RCA), and equivalent diastolic pressure in all four chambers (Fig. 1B). This led to the suspicion of constrictive pericarditis. A second CT scan indicated a large pseudoaneurysm of the RCA (49 mm × 45 mm × 41 mm), and a thick pericardial membrane (~1 cm on average; Fig. 1C). A blood culture from the arteriovenous fistula in the left arm indicated MRSA. A cardiovascular surgeon was consulted.

In the operating room, the severe adhesion was difficult to remove after full sternotomy, and a partial pericardiectomy was performed, with excision of the mycotic coronary aneurysm (Fig. 1D). The surgeon tried but failed to identify the distal RCA because the thick pericardial adhesive tissue masked the coronary artery. After this procedure, the patient developed persistently unstable blood pressure and sinus tachycardia, and ultimately expired because of profound septic shock and heart failure. A culture of the perioperative pericardial tissue indicated MRSA.

Constrictive pericarditis is typically idiopathic.[2] Infection-related pericarditis is rare, and coronary artery aneurysm is unusual. In this case, acute purulent pericarditis was diagnosed at the initial presentation, and MRSA was isolated from pericardial fluid. An infected fistula with hematogenous spread due to repeated puncture was considered.

Conflicts of interest: The authors have no conflicts of interest relevant to this article.

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http://dx.doi.org/10.1016/j.jfma.2014.12.006

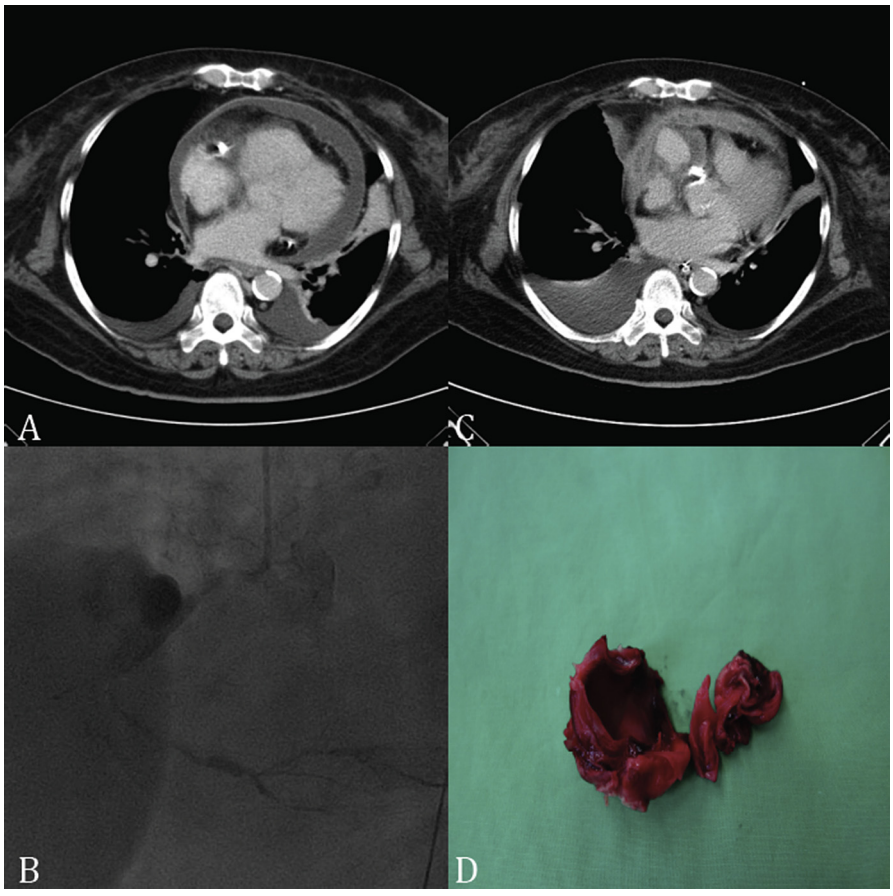

Figure 1 (A) Chest computed tomographic scan from the first hospitalization, indicating pericardial effusion; (B) coronary arteriogram at the second hospitalization (3 months after the first hospitalization), indicating a large coronary aneurysm at the proximal right coronary artery; (C) chest computed tomographic scan at the second hospitalization, indicating a large mycotic aneurysm in the right coronary artery and a thickened pericardium with loculated fluid accumulation; and (D) mural thrombus from the mycotic coronary aneurysm.

Pericardiocentesis is the simplest method for draining. However, Sagristà-Sauleda et al[3] indicated that pericardial constriction may occur following recovery if pericardiocentesis is the primary drainage method. In our case, the treatment was inadequate even though the drainage was successful. Pericardiotomy by a subxyphoid approach or intrapericardial fibrinolysis were other possible suitable treatments at the first hospitalization.[4,5] A regimen of fibrinolysis and streptokinase can inhibit the pericardial fibrosis response and prevent the invasion of bacteria.

Acute purulent pericarditis progressed to constrictive pericarditis with invasion of the coronary artery, which is more difficult to treat by pericardiectomy alone. Mycotic coronary artery resection and bypass reconstruction are challenging procedures when it is necessary to peel back the thick pericardium or myocardial calcification. Hence, the initial complete drainage of the pericardial effusion is very important to avoid subsequent complications.

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