Effusive-constrictive pericarditis successfully treated with anakinra

Sirs,

We read with interest and wish to congratulate Dr D'Elia *et al*. on their reported case on '*Successful treatment of subacute constrictive pericarditis with interleukin-1b receptor antagonist (anakinra)*' and we wish to report a similar case.

A 46-year-old-male was diagnosed in May 2013 in another hospital with acute effusive pericarditis attributed to Coxsackie B3 virus infection. The patient was initially treated with a non-steroidal anti-inflammatory drug (NSAID – ibuprofen) but due to inadequate response, prednisone and colchicine was given with complete resolution of his symptoms. Prednisone was tapered and finally discontinued by the end of August 2013.

On September 8th the patient was admitted in our hospital with overt cardiac tamponade. He underwent emergent pericariocentesis and 1.8 liters of bloody fluid were drained through a dedicated pericardiocentesis catheter. A repeat work-up (including pericardial fluid analysis and cultures, cytology, adenosine deaminase (ADA) determination) was negative for a secondary cause of pericarditis. However, jugular vein distension and peripheral oedema persisted after complete evacuation of the pericardial space. A echocardiographic study performed 3 days after pericardiocentesis revealed a prominent inspiratory interventricular septal bounce, a 30% respiratory variation of the mitral E wave, inferior vena cava plethora without inspiratory collapse and mitral annulus reversus during a tissue Doppler imaging study, all findings compatible with constrictive pericarditis. Subsequently, a cardiac catheterisation confirmed the diagnosis.

Taking into account the presentation of patient with cardiac tamponade and the emergence of constrictive physiology after pericardiocentesis and fluid drainage, the final diagnosis of effusive-constrictive pericarditis was established. Due to previous side effects from corticosteroid use (severe muscular weakness, labile mood), ibuprofen 600 mg tid and colchicine (1 mg/day) were given. One month later, a cardiac MRI (cMR) showed a pericardial thickness of 5 mm along with mild pericardial and pleural effusion (Fig. 1A), pronounced inspiratory septal flattening and marked distention of both vena cava, confirming the diagnosis of constrictive pericarditis. Moreover, intense late gadolinium enhancement was noted in both visceral and parietal layers of the pericardium.

In view of the persisting pericardial inflammation and CRP elevation (31 mg/dL, normal values <5 mg/dL) despite treatment with ibuprofen and colchicine, administration of the interleukin-1β antagonist (Anakinra) was initiated at a daily dose of 100 mg subcutaneously. Anakinra therapy was followed by a prompt clinical remission and CRP normalisation. A full dose regimen of anakinra was given for 1 year and then, based on our previous experience a slow tapering was commenced (1, 2). At present, 18 months after anakinra institution he is receiving anakinra on alternate days. A follow-up cMR 6 months after anakinra administration showed an overt reduction of pericardial thickness (~ 2 mm) and absence of late gadolinium enhancement (Fig. 2B).

The estimates mortality of effusive-constrictive pericarditis is 22% at 12 months (3). Pericardiectomy is the treatment of choice in permanent constriction. In recent years it has been shown that in a proportion of patients (~ 17%) the condition is transient and thus, a 2–3 month course of medical therapy (including NSAIDs and/or steroids) may be attempted before pericardiectomy is recommended (4, 5). Recently, interleukin-1β receptor antagonist anakinra was successfully administered in a case of subacute constrictive pericarditis (6). Moderate or severe qualitative intensity of pericardial late gadolinium enhancement and higher baseline CRP levels have been found to predict reversibility (7).

In conclusion, this is the first case of successful conservative treatment with anakinra in a patient diagnosed with effusive-constrictive pericarditis. The patient is under close follow-up since recurrence after anakinra discontinuation and maintenance of the favourable results in the long-term are a matter of concern.

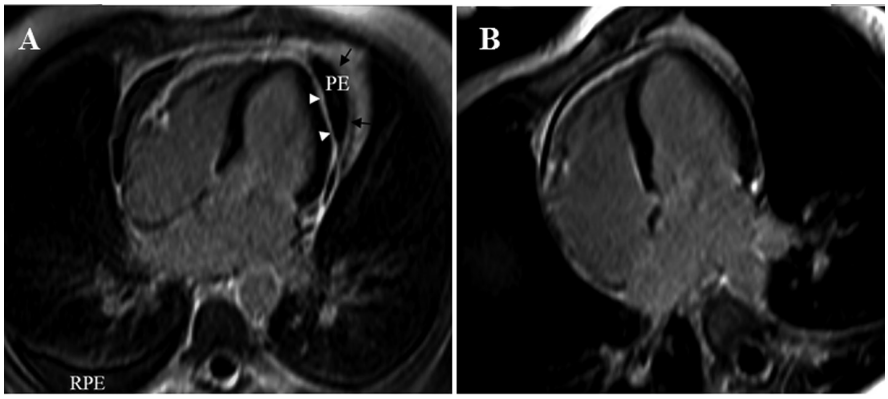

Fig. 1. A. Delayed contrast enhanced image in the four-chamber orientation. Both thickened visceral (white arrowheads) and parietal (black arrows) layers of the pericardium are noted with increased signal intensity, suggestive of active inflammation. B. Delayed contrast enhanced image in the four-chamber orientation. No pericardial or pleural effusions are evident. Thickness and signal intensity of the pericardium is markedly decreased. PE: pericardial effusion; RPE: right pleural effusion.

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