Journal of Cardiology Cases xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Journal of Cardiology Cases

journal homepage: www.elsevier.com/locate/jccase

Case Report

Impact of low-dose prednisolone on refractory pitting edema manifesting remitting seronegative symmetrical synovitis with pitting edema syndrome

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ARTICLE INFO

Article history:
Received 1 April 2016
Received in revised form 16 May 2016
Accepted 14 June 2016

Keywords:
Localized pitting edema
Remitting seronegative symmetrical synovitis with pitting edema
Low-dose prednisolone

ABSTRACT

We encountered an elderly male patient who after cardiac surgery for mitral stenosis had refractory pitting edema in both legs involving painful leg joints after a 1-month history of waxing and waning arthralgia. His family doctor had prescribed a combination of diuretics, 40 mg furosemide and 25 mg spironolactone; however, pitting edema in his lower legs persisted. He was diagnosed with worsening of congestive heart failure because of a previous cardiac surgery and was transferred to our hospital. On admission, we closely observed the patient's condition and noticed that his body temperature increased to 38.0 °C every evening. Furthermore, his ankle joints felt feverish and were swollen. Therefore, we suspected polyarthritis as an etiology, although we initially suspected rheumatoid arthritis (RA). Antibody testing did not support RA diagnosis; therefore we concluded the association of remitting seronegative symmetrical synovitis with pitting edema (RS3PE) syndrome with his condition. After daily treatment with 15 mg prednisolone, the refractory edema symptom dramatically improved. The concept of RS3PE syndrome could explain such as an impressive clinical course.

<**Learning objective:** Physicians encounter patients with pitting edema of unknown etiology in daily clinical practice. In particular, cardiologists usually tend to prescribe diuretics for patients with pitting edema in their legs. Cardiologists should consider RS3PE syndrome as a differential diagnosis, for patients with localized pitting edema in their extremities. This report cautions regarding arbitrarily prescribing diuretics for localized pitting edema.>

Introduction

Edema is one of the most common clinical symptoms. Physicians must consider a range of etiologies while examining patients with bilateral edema. Etiologies in edema are mainly classified into the following two groups: (1) generalized and (2) localized. Generalized edema can arise from various disorders involving cardiogenic, hepatic, and nephrogenic etiologies. Localized edema occurs because of venous or lymphatic obstruction (e.g., deep venous thrombosis, tumor obstruction, and primary lymphedema). Remitting seronegative symmetrical synovitis with pitting edema (RS3PE) is characterized by the sudden onset of arthritis that is accompanied by pitting edema in the joints of the extremities. Moreover, RS3PE most commonly occurs in elderly men (most in their 70s or 80s). We report a case of a patient who was admitted with refractory pitting edema in his lower extremities. The symptom of pitting edema was resolved by treatment with low-dose prednisolone (PSL).

Case report

A 90-year-old man with a history of open mitral commissurotomy and ring plasty of the tricuspid valve for mitral stenosis was referred to our hospital with complaints of refractory pitting edema in both lower extremities. He presented with sudden-onset,

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http://dx.doi.org/10.1016/j.jccase.2016.06.006
1878-5409/

severe worsening bilateral, swollen, painful leg joints after a 1-month history of waxing and waning arthralgia. He had no exceptional history involving obvious neurological and rheumatic disorders or of taking prescription drugs, such as calcium channel blockers, pioglitazone, or anti-inflammatory agents, that would likely cause water retention in his body and subcutaneous tissues. Physical examination revealed swelling and redness in the joints of both lower extremities with markedly pitting edema. Otherwise, pitting edema was not detected in both his hands (Fig. 1A and B). His jugular veins were not dilated, which indicated no elevation of jugular venous pressure. Respiratory sounds revealed velcro rales at bilateral lower lung fields; cardiac sounds were not abnormal. Laboratory studies revealed increased C-reactive protein level [6.1 mg/dl; reference value (RV), 0–0.5 mg/dl] and erythrocyte sedimentation rate (64 mm/h; RV, <15 mm/h, male), with no increase in white blood cell count (4990/μl; RV, 4000–8500/μl). Serum levels of total protein (6.4 g/dl; RV, 6.4–8.4 g/dl), albumin (3.6 g/dl; RV, 3.6–5.1 g/dl), urinary acid (4.0 g/dl; RV, 3.5–7.8 g/dl), creatinine (0.70 mg/dl; RV, 0.6–1.1 mg/dl), free T4 (0.98 ng/ml; RV, 0.9–1.6 ng/ml), and electrolytes were all normal. Levels of blood

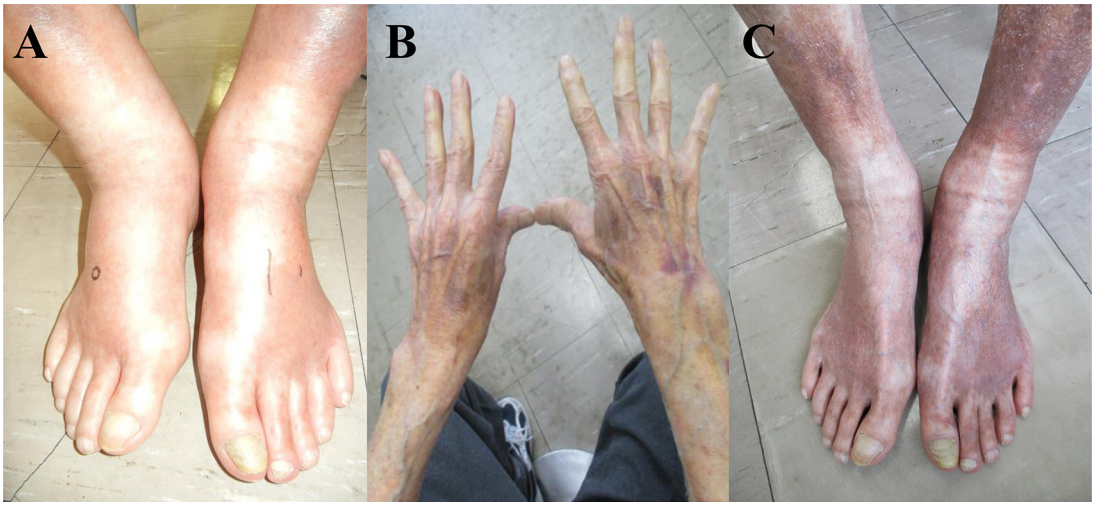

Fig. 1. (A) Image of elderly male patient's swollen, reddened lower legs and joints with markedly pitting edema. (B) Otherwise, pitting edema was not detected in both his hands at admission. (C) Photograph of the lower legs and joints of the same elderly male patient as in (A) after taking low-dose prednisolone for 5 days to ameliorate refractory pitting edema.

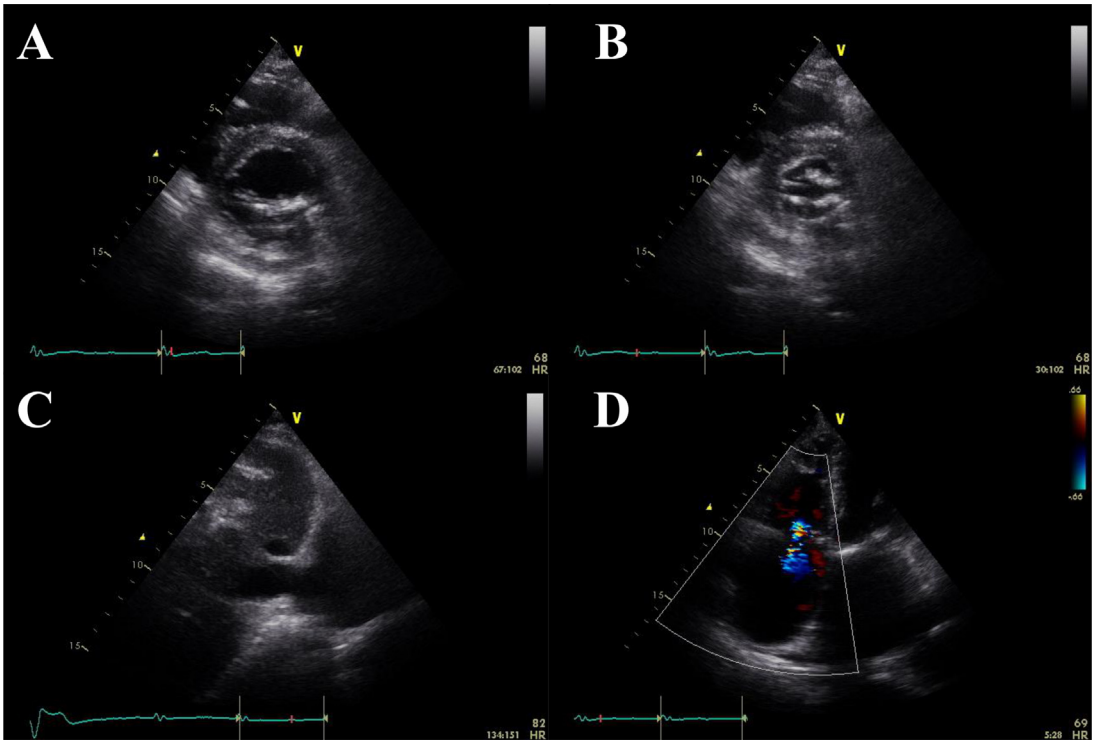

Fig. 2. Transthoracic echocardiogram. (A and B) Parasternal short-axis view in diastole and systole phase showing good left ventricular contraction and opening of the mitral valve. (C) The maximum size of the inferior vena cava was 15 cm and the minimum size of 8 cm with respiratory change. (D) Mild tricuspid regurgitation was observed. The pressure gradient through the tricuspid valve was 22 mmHg.

Please cite this article in press as: Nojima Y, et al. Impact of low-dose prednisolone on refractory pitting edema manifesting remitting seronegative symmetrical synovitis with pitting edema syndrome. J Cardiol Cases (2016), http://dx.doi.org/10.1016/j.jccase.2016.06.006