

Cardiac Tamponade in Systemic Lupus Erythematosus. Report of Four Cases

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Objective – To report and assess the incidence of cardiac tamponade in systemic lupus erythematosus as a cardiac manifestation of the disease.

Methods – We reviewed the medical records of 325 patients diagnosed with systemic lupus erythematosus according to the American Rheumatism Association and their complementary laboratory tests compatible with cardiac tamponade.

Results – In the 325 medical records reviewed, we found 108 patients with pericardial effusions corresponding to 33.2% of the total and 54% of the patients studied in the active phase of the disease. Clinical assessment and transthoracic echocardiogram allowed the clinical diagnosis of cardiac tamponade in only 4 (1.23%) patients, 3 of whom were females, white, with ages ranging from 25 to 44 years. The pericardial fluid was hemorrhagic or serosanguineous with high levels of FAN and positivity for LE cells. In the treatment, we successfully used pericardicentesis associated with high doses of corticosteroids. In clinical and laboratory follow-up performed for a period of 3 years, neither recrudescence of the pericardial effusion nor evolution to constriction occurred.

Conclusion – Even though rare (1.23%), cardiac tamponade in patients with systemic lupus erythematosus has a benign evolution when properly treated, according to our experience.

Keywords: cardiac tamponade, systemic lupus erythematosus, pericardial effusion

Systemic lupus erythematosus is a collagen disease that often involves the heart, the pericardium being the most commonly affected site, resulting in clinical¹⁻⁹ and anatomopathological¹⁰⁻¹⁴ manifestations. This involvement is usually pericardial effusion, most of the time of mild intensity^{6,7,15-17}. In a few patients, pericardial involvement may be the initial form of presentation of systemic lupus erythematosus⁵⁻⁷. Cardiac tamponade is a rare clinical manifestation¹⁵, and very few cases are reported as the first manifestation of the disease¹⁸⁻²⁰.

Our study aims to assess the frequency of cardiac tamponade in patients with systemic lupus erythematosus being followed up in a specialized sector of a tertiary hospital.

Methods

We reviewed 325 medical records of patients with systemic lupus erythematosus, who were being followed up in the Sector of Collagen Diseases of the Rheumatology Service of HUPE – UERJ, during the period from March '91 to October '98. The diagnosis of systemic lupus erythematosus met the criteria adopted by the American Rheumatism Association (ARA)²¹. To characterize disease activity, we used the criteria of SLEDAI (Systemic Lupus Erythematosus Disease Activity Index)²². All patients studied had at least one transthoracic echocardiography that was performed independently from the presence of cardiovascular signals or symptoms, or both, because of the development of several study protocols.

The echocardiographies were performed with Toshiba SSH-65^A and Apogee CX 200 devices, which provided single-dimensional and two-dimensional recordings and flow study with Doppler and color mapping. The echocardiographic measurements were obtained according to the guidelines of the American Society of Echocardiography²³. Once the presence of pericardial effusion was detected, it was classified as mild, moderate, or severe²⁴. We assessed the presence of signals that could indicate increase in intrapericardial pressure, such as respiratory variations of the

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right ventricular dimensions^{25,26}, collapse of the right atrial wall during diastole²⁷, and diastolic invagination of the right ventricular anterior wall²⁸. On Doppler echocardiography, we assessed a drop in mitral and aortic flows during inspiration²⁹.

For the diagnosis of cardiac tamponade, we used data from clinical examinations, such as paradoxical pulse associated or not with reduction in intensity of the cardiac sounds, pathological jugular venous distension, and arterial hypotension. These data supported by echocardiographic findings of pericardial effusion associated with signals of increase in the intrapericardial pressure established the definitive diagnosis of cardiac tamponade.

Results

We reviewed 325 medical records and found 108 patients with pericardial effusion, corresponding to 33.2% of the total number of patients and to 54% of the patients studied in the active phase of the disease. Only 4 (1.23%) patients met the criteria for the diagnosis of cardiac tamponade. Three of these 4 patients were females, white, with ages ranging from 25 to 44 years (mean = 32.25 years), had a previous diagnosis of systemic lupus erythematosus, and underwent pericardicentesis.

We were able to perform echocardiography during and immediately after the procedure in 3 patients (fig. 1). The analysis of the pericardial fluid revealed a hemorrhagic aspect in 2 patients and a serosanguineous aspect in the other 2. In all patients LE cells were present, the search for ANF was positive (levels ranging from 1/32 to 1/128), and cultures for microorganisms were negative. Later, other causes of pericardial effusion, such as hypothyroidism, uremia, and tuberculosis were discarded through laboratory tests. Disease activity was confirmed in all patients.

In addition to pericardicentesis, the treatment included high doses of corticosteroids (2-3 mg/kg of prednisone or equivalent) with control of disease activity. The patients were followed up with serial echocardiographic studies during a period from 9 to 60 months (mean = 27 months). We detected neither recrudescence of pericardial effusion nor evolution to the constrictive form.

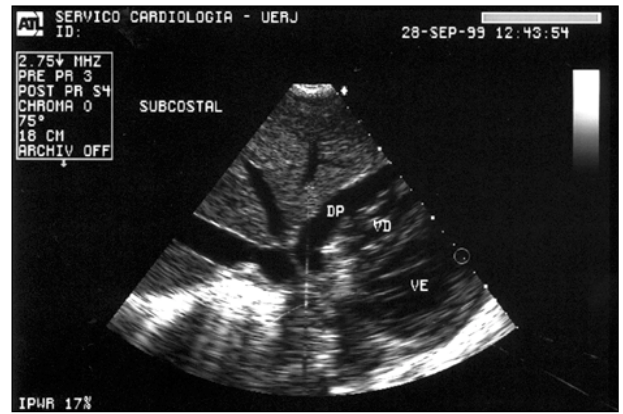


Fig. 1 – Echocardiogram performed immediately after pericardicentesis with immediate relief of symptoms showing residual pericardial effusion

Discussion

Even though pericarditis in systemic lupus erythematosus has already been well described in regard to its clinical¹⁻⁹, anatomicopathological¹⁰⁻¹⁴ and echocardiographic characteristics³⁰⁻³⁶, occurrence of cardiac tamponade is rare, with 12 cases reported until 1986³⁷. To establish the differential diagnosis with other etiologies, it is important to know the characteristics of the fluid, which may have a hemorrhagic aspect, low levels of complement, high levels of ANF, and the presence of LE cells^{38,39}.

Several isolated cases have been reported⁴⁰⁻⁴⁴, and in some of these cardiac tamponade was the initial manifestation of the rheumatic disease. All our patients had a previous diagnosis of systemic lupus erythematosus, which certainly made the clinical diagnosis easier. An isolated case of cardiac tamponade with associated polyarteritis has been reported, in which the patient died because of the clinical severity of both diseases⁴⁵. In our experience, even though the initial findings indicated great instability, we had a very good response to high doses of corticosteroids initiated after pericardial effusion withdrawal. These patients were followed up during a period from 9 to 60 months, and neither new pericardial effusion nor evolution to constriction was detected with echocardiography.

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