

for urgent intervention according to the American Heart Association and the American College of Cardiology. Coarctectomy with end-to-end anastomosis has excellent results, and the incidence of late re-interventions is low; however, recoarctation should be considered as a potential long-term complication. (4) Proper management of systemic hypertension is an important aspect to improve survival rate. (5) In our patient, the ACEI was stopped at 3 months of age, with controls of blood pressure within the percentiles for his age. The estimated 10-year survival after repair is >90%, and mortality rate is <1% – which is influenced by age, type of surgery, and associated comorbidities. (6) A detailed physical examination together with fetal echocardiography should be performed, as this will allow early detection and timely corrective management of CoA, thus reducing cardiovascular complications in childhood and adulthood.

Conflicts of interest

None declared.

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Gonococcal Endocarditis: A Rare Complication of an Emerging Disease

Gonorrhea is a sexually transmitted infection (STI) caused by *Neisseria gonorrhoeae*, a fastidious growing Gram-negative diplococcus. It is manifested with urethritis or cervicitis, and its incidence is estimated at 600,000 cases annually in the USA. (1) Disseminated infection occurs in 1–3 % of all gonococcal infections, and it may manifest as polyarthritides, tenosynovitis, septic arthritis, and endocarditis. Endocarditis develops in 1–2 % of these disseminated infections. In 1933, the first case of gonococcal heart valve disease was reported, and between 1939 and 2014, only 70 cases were reported in the literature worldwide. (2)

We present the case of a 32-year-old male patient, immunocompetent host, heterosexual, with risky sexual behaviors, without previous heart valve disease or other relevant history. The patient presented with a self-limited episode of urethral secretion, and after three weeks, asymmetrical, additive polyarthralgias of large and small joints involving his hands. It was interpreted as acute nonspecific tenosynovitis and was therefore treated with corticoids and NSAIDs. After about two weeks, the patient progressed to persistent fever syndrome, subungual splinter lesions, and subconjunctival petechiae associated with systolic murmur in a mitral focus of 3/6 intensity. No edema or other signs of heart failure were present. In view of suspected infective endocarditis, empirical treatment with ampicillin, gentamicin, and ceftriaxone (CTX) was initiated after collecting three blood cultures (BC) by automated method.

Lab test results were the following: WBC 16,220/mm³; ESR 130 mm/1^o h; CRP 15 mg/dL and urine sediment revealed microhematuria.

Transthoracic echocardiography (TTE): Heterogeneous tumor on the atrial side of the mitral valve major leaflet with a broad implantation base over the leaflet and high motility towards both the atrium and the ventricle at end diastole. Diameters were 27 mm x 17 mm. It caused moderate mitral regurgitation, considering the antegrade velocity and the jet that contacts with the atrial posterior wall by color Doppler. Systolic function was preserved.

Transesophageal echocardiography (TEE): Tricuspid aortic valve. In the anterior leaflet of the mitral valve, an attached image was visualized with a wide base of implantation and heterogeneous echogenicity of 2.67 cm x 1.47 cm maximum diameter, which prolapsed towards the left ventricle at end diastole. A smaller image, 0.56 cm x 0.77 cm, was also observed in the posterior leaflet. Both findings were consistent with vegetations. Doppler showed two jets of mitral regurgitation (Figure 1).

Three blood culture samples were collected in Bactec Aerobic/F bottles. Seventeen hours later, 3/3 were positive. A Gram stain revealed gram-negative diplococci. *Neisseria gonorrhoeae* was identified in

culture by manual methods and confirmed by molecular biology (conventional PCR). The patient continued on intravenous treatment with CTX (IV) 2 g/day. No signs of heart failure were observed, but given the size of the vegetation, valve replacement with mechanical prosthesis was performed. No bacterial development was obtained either in control BC or in culture of referred surgical material (vegetation); however, the germ was confirmed by PCR technique in valve tissue, and the coexistence of *Chlamydia trachomatis* was ruled out. The patient completed a six-week course on antibiotics with good clinical progress, and did not present mechanical post-surgical complications. Oral anticoagulation was started due to the mechanical valve replacement.

According to what has been published so far, disseminated infection only occurs in 1–3 % of all gonococcal infections, with scarce genital symptoms and more frequent in women. (2) In contrast, endocarditis is more common in males. The coexistence of *Chlamydia trachomatis* in disseminated forms of the disease is described. According to the literature, the main characteristics of this entity are a median time of 4 weeks from the onset of symptoms to the diagnosis. It affects young male adults, with native and healthy heart valve involvement, mainly the aortic and mitral valves in order of frequency, and is manifested with heart failure of acute evolution. Its onset may be preceded by osteoarticular manifestations (arthritis, myositis). In our case, the patient presented with osteoarticular manifestations consistent with the data in the literature, but differently from other reports, had also symptoms of urethritis a few weeks before the onset. Clinical manifestations of infective endocarditis (IE) do not differ from those caused by common germs, and include fever, heart murmur, tachycardia, embolic phenomena and splenomegaly. Anemia, leukocytosis and increased concentration of reactants in the acute phase can be identified in lab

tests. Echocardiography (TTE and TEE) shows large-sized vegetation associated with valve thickening and dysfunction. Blood cultures are positive in more than 90% of cases, unlike other disseminated forms of gonococcal infection in which it varies between 10% and 30%. Development of disseminated forms occurs in susceptible hosts, including: complement deficiencies, systemic lupus erythematosus (SLE), and HIV infection, among others. Some characteristics of the strains are associated with disseminated forms: absence of surface II protein, which confers resistance to destruction by natural killer cells, and expression of the IA protein, which provides serum resistance and easy membrane crossing. Our patient was treated with glucocorticoids and it could have contributed to the development of this complication. Among the differential diagnoses, infective endocarditis should be considered with other more frequent etiologies and autoimmune rheumatologic diseases such as systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA), among others.

In the preantibiotic era, gonococcal endocarditis caused 11-26% of the total infective endocarditis, and was associated with high mortality rate. (3) Even with the advent of antibiotics, the mortality rate remains high, close to 20%. Nowadays, it is a rare complication, but it should be considered in light of the emergency of sexually transmitted infections. (4) We should consider gonococcal endocarditis as a diagnostic possibility in young adult patients presenting with osteoarticular manifestations and stigmas suggestive of infective endocarditis. It often presents with few genitourinary symptoms and greater osteoarticular repercussion. (5) A high index of suspicion is essential due to the fatal prognosis without proper treatment. In addition, coexistence of *Chlamydia trachomatis* should also be taken into account. Regarding the antibiotic therapy, CTX continues to be the drug of choice according to the sensitivity profiles in Argentina.

Conflicts of interest

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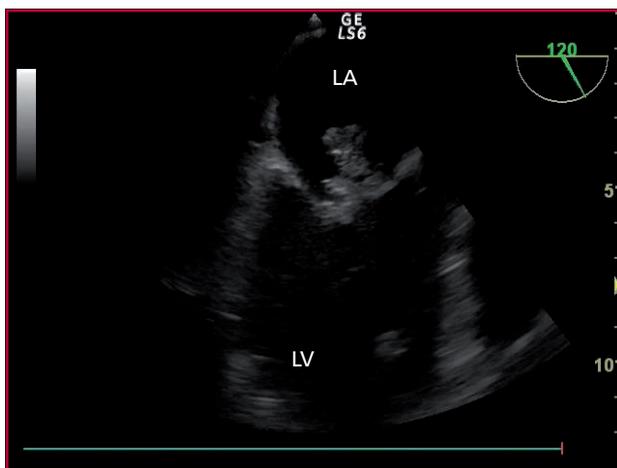


Fig. 1. TEE image showing vegetation. LA: Left atrium. LV: Left ventricle.

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