Rotura de aneurisma del seno de Valsalva: una causa infrecuente de insuficiencia cardíaca aguda

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Conflicts of interest: None to declare.

Recibido el 7 de julio 2020 / Aceptado 29 de julio 2020.

Rev Chil Cardiol 2020; 39: 270-272

Se presenta el caso clínico de un hombre joven que desarrolla insuficiencia cardíaca de reciente comienzo. Clínicamente lo relevante eran signos de insuficiencia cardíaca derecha y la presencia de un soplo continuo. Por ecocardiografía trans esofágica y Angio TAC, se confirmó la presencia de un aneurisma del seno de Valsalva derecho roto con cortocircuito de

izquierda a derecha. Se procedió al cierre del aneurisma, confirmando se buen resultado, acompañado de una evolución asintomática 3 meses después de la intervención.

Palabras clave: Valsalva, seno; rotura; insuficiencia cardíaca aguda.

Ruptured sinus Valsalva aneurysm – an uncommon cause of new onset heart failure

A young man presented to the emergency room with symptoms of recent onset heart failure. On physical examination he showed signs of right heart failure and a continuous murmur. Transesophageal echocardiography and computed tomography confirmed the diagnosis of a ruptured right sinus of Valsalva aneu-

rysm an left to right shunt. After successful surgical repair the patient became asymptomatic, the shunt disappeared and he is well 3 months after surgery.

Keywords: Valsalva, sinus; rupture; heart failure acute.

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A 29-year-old man presented to our emergency department with a two-week history of dyspnea and orthopnea, with associated increased abdominal perimeter and lower limb edema. He denied fever or recent infection. He had no relevant previous medical history. Positive findings on physical examination included a continuous murmur on cardiac auscultation, basal rales on pulmonary auscultation and peripheral edema with positive hepato-jugular reflex. Point-of-care transthoracic echocardiography revealed pulmonary trunk and right chambers dilation with a high velocity flow in right atrium, with uncertain origin at this point. A transesophageal echocardiogram (TOE)

was performed, showing a ruptured right sinus Valsalva aneurysm with shunt to right atrium (left upper panel – white arrow, right upper panel). Patient was admitted in cardiac intensive care unit for clinical stabilization and procedural planning. A cardiac computed tomography angiography (CTA) was performed and confirmed normal coronary anatomy and no atherosclerotic disease. Right sinus of Valsalva aneurysm's dimension and anatomic relationships were further characterized (left lower panel). Cardiac surgery was performed in the next day. The continuity solution at the level of right coronary sinus had a safe distance from right coronary artery, allowing closu-

re with a patch of heterologous pericardium. As of right atrium, the continuity solution was found just between septal and anterior leaflet of tricuspid valve and an invaginated suture atriorraphy was performed. Postoperative period was uneventful, and the patient was discharged after 4 days. At 3-month follow-up patient was asymptomatic and the cardiac CTA confirmed a good surgical result with no shunt (right lower panel).

Discussion:

New onset heart failure in young individuals, without classic cardiovascular risk factors and/or known exposure to cardiotoxic agents, remains a challenging clinical scenario. In this setting, cardiac auscultation may prove to be crucial, with a continuous murmur rendering a thorough bedside echocardiographic examination to look for rare causes of heart failure. Sinus Valsalva Aneurysms (SVA) are uncommon cardiac anomaly, with an estimated prevalence of 0.01%¹. They originate from the right sinus of Valsalva in up to 85% of cases² and are more frequently found in male and in Asian³ patients. They can

be either congenital (associated mostly with connective tissue disorders and/or congenital aortic valve defects), or acquired (causes comprising infectious diseases, cystic medial necrosis, chest trauma, vasculitic diseases, and iatrogenic injury to the aortic root)⁴. In 80% of patients, the condition is symptomatic, either by compressive effect over the adjacent chamber, coronary artery or the conduction system; or as a consequence of SVA rupture, which occurs in approximately one third of the cases⁵. Severe acute left-to-right shunt resulting from rupture of the right or noncoronary sinuses (which causes a communication between the aorta and the right ventricular outflow tract or the aorta and the right atrium) typically cause mild to severe dyspnoea, with echocardiographic stigmata of right chamber's overload⁶. Ruptured SVA are referred to urgent surgical treatment unless otherwise contraindicated, with low mortality rates over long term follow-up⁷. Successful transcatheter closure, using devices such as septal occluder device⁸, ductal occluder⁹, Amplatzer vascular plug¹⁰, or even Rashkind umbrella¹¹, has been reported.

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