Acquired ventricular septal defect in a pediatric patient with infective endocarditis

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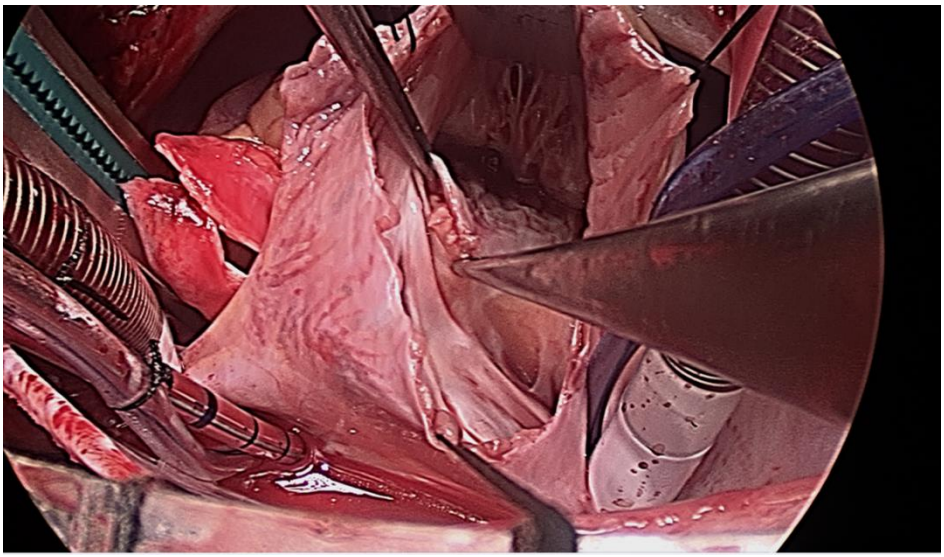
Acquired left to right shunts are rare. Chest trauma and myocardial infection are well known causes of acquired ventricular septal defect (VSD). There have been several case reports describing left ventricle to right atrium (LV to RA) shunt after infective endocarditis (IE). We present a patient found to have an acquired VSD secondary to IE of the aortic and tricuspid valves in the setting of known bicuspid aortic valve. This is the first case reported of acquired VSD in a pediatric patient in the setting of IE.
A 9 year old with known bicuspid aortic valve presented to our institution with culture positive IE with involvement of the tricuspid and aortic valves. One month into treatment, there was a change noted on exam. Echocardiogram showed a new VSD. There was also worsening of her aortic regurgitation and vegetation associated with the septal leaflet of the tricuspid valve. She underwent surgical closure of her VSD and replacement of the tricuspid and aortic valves.

While the mechanism of VSD formation in our patient is unknown, there are two theories regarding its development. Our patient could have had a congenital VSD that spontaneously closed by growth of tricuspid valve tissue, or there could have been a left ventricle to right ventricle subaortic fistula formed as a result of aortic and tricuspid valve involvement.

There is currently no pediatric literature describing VSDs as a complication of IE, and only 3 adult cases reported. Our patient developed a communication from her left ventricle to right ventricle through the anterior commissure of the tricuspid valve into the right atrium. This is not to be confused with a left ventricle to right atrium shunt, given that the defect developed inferior to the tricuspid valve. This has not been previously reported in the pediatric literature regarding IE.



Intraoperative image looking at the tricuspid valve from the right atrial position. The septal leaflet is being held by forceps, and a vegetation is notable in the abscess cavity where the VSD begins.