Introduction:

- Aortic valve (AV) infective endocarditis can be complicated by the spread of the infection to its adjacent structures.
- A rare but serious complication of AV endocarditis is the development of aorta-cavity fistula (ACF).
- These abnormal tracts form intracardiac shunts posing a unique challenge.
- Even with prompt recognition and management, ACF has a high mortality rate of around 40%.

Hospital Course:

- A 43-year-old male presented with fever and dyspnea and was found to be in cardiogenic shock.
- Electrocardiogram showed a complete heart block (Figure 1).
- Transthoracic echocardiogram (TTE) revealed an ejection fraction of 60-65%, bicuspid Aortic Valve (AV) with vegetation and severe aortic insufficiency (AI), small ventral septal defect and was suspicious for a fistula from the aorta to the right atrium (Figure 2, 3).
- He was emergently taken to the Operating room for a mechanical AV replacement, reconstruction of the aortic root with obliteration of the abscess cavity, using a bovine pericardial patch, and patch repair of fistula to the RA.
- Sutures had to be placed through friable tissue to heal.
- Two weeks later he was readmitted with worsening dyspnea.

Imaging:

- TTE showed EF of 75-80%, echogenic thickness around annulus suggestive of abscess. Also concerning was recurrent aortic to RA or RV fistula with now worsening L to R shunt, VSD below AV annulus, and PA pressure 118-125 mmHg (Figure 4, 5, & 6).
- Patient initially responded to diuretics and surgical intervention was delayed to allow time for friable tissue to heal.

Discussion:

- Infective endocarditis complicated by ACF accrue a high mortality not only due to the challenging nature of surgical intervention but also because a significant number of these patients develop intracardiac shunts which compounds the difficulty in management (Figure 5-6).
- Thus, clinicians should be attuned to diagnosing IE and seek urgent surgical consultation to try and prevent an abscess from spreading to surrounding tissue structures.
- In patients with ACF, clinicians should be vigilant in monitoring signs of worsening L to R shunting which can lead to life threatening right sided heart failure and hepatic congestion.

References:

2. Diastolic Aorto–Right–Atrial Fistulation in Aortic and Tricuspid Valve Endocarditis. Lukas Frey, Christoph Starck, Volkmar Falk, Simon Sündermann

Contact Info:

1. Faisal.masood@aah.org
2. Khaja.siraj@aah.org
3. Adib.chaus@aah.org