LV abscess-Unusual presentation of endocarditis

Clinical Case Portal

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Case Report

This is an unusual presentation of Staphylococcus aureus endocarditis at previous LV apical vent site with rupture, false aneurysm and abscess cavity formation. A 47 year old man who had 2 previous resections of subaortic membrane with residual moderate subaortic stenosis and aortic regurgitation, presented with 8 weeks history of fever, myalgia and lethargy. He was also an intravenous drug abuser. His blood culture grew Staph aureus and CT scan showed mycotic aneurysm at the left ventricular (LV) apex. During operation there was pus collection in the middle of 2 large teflon pledgets from his previous cardiac surgery extending into a large abscess cavity. He underwent successful resection of the mycotic

aneurysm, drainage of the abscess cavity, resection of subaortic membrane and aortic valve replacement and made an uneventful recovery.

Patient history prior to current observation :A 47 year old man who had 2 previous resections of subaortic membrane with residual moderate subaortic stenosis (LVOT peak gradient of 58mmHg) and moderate aortic regurgitation, presented with 8 weeks history of fever, myalgia and lethargy. He was also an intravenous drug abuser. The patient did not have any recent dental procedures prior to his illness.

Clinical findings on admission, evolution and outcome :

Febrile temperature 38.6, Respiratory rate 22/min
HR 96 Apex bulging, laterally displaced, sustained heave
BP 96/64, pan-systolic murmur grade 3/6, soft diastolic murmur

Relevant investigation findings
Blood Test: Hb 8.2, WCC 16.3, platelet 164
Blood Culture: Positive = Staphylococcus aureus (methicillin sensitive)
Chest X-Ray = See fig. 1
CT chest = See fig. 2
Echo = See fig. 3, fig. 4, fig. 5
Cardiac MR = See fig. 6

Clinical evolution and outcome
The patient was treated with intravenous antibiotics initially and decision was made to repair the aneurysm and drain the abscess cavity. Intra operative trans-oesophageal echocardiogram showed a large aneurysm arising from LV apex with flow into the abscess cavity. The aortic valve was dysplastic with moderately severe aortic regurgitation (AR) and no vegetations. There was also moderate LVOT obstruction from residual subaortic membrane. During the operation, a collection of pus was found in the middle of 2 large Teflon pledgets from his previous LV apical vent site (previous subaortic membrane resection surgery), extending into a large abscess cavity beyond the pericardial and pleural linings. He underwent successful resection of the mycotic aneurysm, evacuation and drainage of the abscess cavity, resection of subaortic membrane and aortic valve replacement (bioprosthetic because of likely non-compliance with warfarin). He completed 4 weeks of antibiotics and made an uneventful recovery. Aortic valve histology subsequently showed severe fibrosis at the edge consistent with AR and no valvular endocarditis.

Discussion

Congenital heart disease is a predisposing factor for infective endocarditis in adult patients (1,2). Persistent or, in this case, residual haemodynamic lesion resulting in flow turbulence can cause damage to the endocardial lining, allowing for subsequent adhesion and proliferation of micro-organisms during transient bacteraemias. Given the patient's past cardiac and social history, he is at high risk of endocarditis in any one of his valves - right sided valves (iv drug abuser) or left sided valves from his residual subaortic membrane and aortic regurgitation. Recent data from Knirsch et al (1) had shown that amongst adult patients with congenital heart disease, those with previous cardiac surgery and foreign material in the heart, had the highest risk for IE. Staphylococcal and streptococcal organisms (1,2) are the 2 most common organisms responsible for IE in the adult patients with underlying congenital heart disease. The surgical findings suggest that the endocarditis most likely originate from the synthetic teflon pledgets at the site of previous LV apical vent which eventually ruptured forming a mycotic aneurysm with extension into a large abscess cavity. There was surprisingly no vegetations or endocarditis involving his heart valves. We are not aware of any previous report of endocarditis at this unusual site.

Conclusion

We present an unusual case of a 47 year old intravenous drug abuser with staphylococcus aureus endocarditis at previous LV apical vent site with rupture, false mycotic aneurysm and abscess cavity formation which required surgical drainage.

References

1. Knirsch W , Haas NA , Uhlemann F , Dietz K , Lange PE . Clinical course and complications of infective endocarditis in patients growing up with congenital heart disease. Int J Cardiol. 2005 May 25;101(2):285-91.

2. Li W, Somerville J. Infective endocarditis in the grown-up congenital heart (GUCH) population. Eur Heart J. 1998 Jan;19(1):166-73.

Fig. 1 :
LV abscess_Chest X-ray

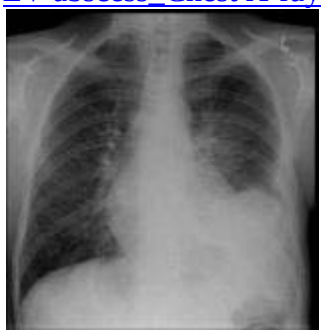
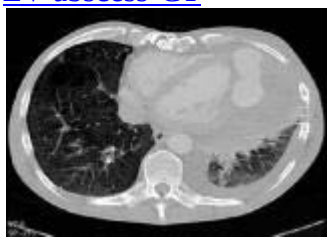
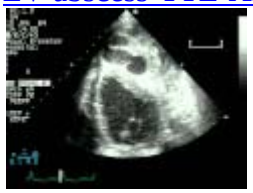


Fig. 2 :
LV abscess-CT



Video 1 :
LV abscess-TTE-AP4C



Video 2 :
LV abscess-TTE-AP4C-CFM

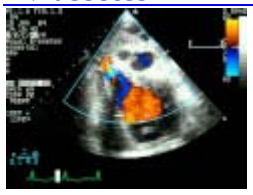
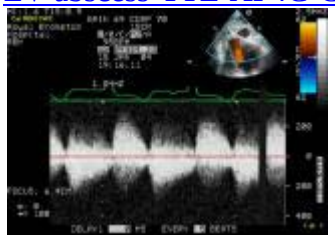


Fig. 3 :
LV abscess-TTE-AP4C-CWD



Video 3 :
LV abscess-MRI