Acute Infective endocarditis presenting as aortic ring abscess in a native aortic valve: a rare cause of pyrexia of unknown origin (PUO)

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Summary
We present a rare case of aortic ring abscess in a patient of native valve infective endocarditis presenting as pyrexia of unknown origin (PUO).

Keywords: Pyrexia of Unknown Origin, Aortic Regurgitation, Infective endocarditis

Introduction
Infective endocarditis (IE) is defined as an infection of the endocardial surface of the heart, which may include one or more heart valves, the mural endocardium, or a septal defect. Its intracardiac effects include severe valvular insufficiency, which may lead to intractable congestive heart failure and myocardial abscesses. Acute IE is caused typically by Staphylococcus aureus. It presents with marked toxicity and progresses during days to several weeks to valvular destruction and metastatic infection. Subacute IE, usually caused by viridans streptococci, enterococci, coagulase-negative staphylococci, or gram-negative coccobacilli, evolves during weeks to months with only modest toxicity and rarely causes metastatic infection. Paravalvular abscess formation is seen more frequently in prosthetic valve endocarditis than in native valve endocarditis. Clinicians should have a low threshold for suspecting endocarditis in any patient with a prosthetic valve who has fevers or evidence of valvular dysfunction. Abscesses are seen more frequently in patients with staphylococcal endocarditis and more so with aortic valve involvement, although any virulent organism, particularly gram-negative species, may also produce paravalvular abscesses.

Case History
A 25 year old male, of low socio-economic status, with no past history of any chronic illness or drug addiction, presented with high grade fever for one month. Fever was associated with chills and rigours, headache and constitutional symptoms. Clinical examination revealed pallor and mild splenomegaly. Rest of the systemic examination was unremarkable initially. Routine investigations showed TLC = 18500, DLC = P 92 L 8 , ESR = 65 mm 1st hour. Malarial antigen, widal, and skiagram chest were normal. Liver function test showed mild rise in SGOT and SGPT. Serum electrolytes, urea and creatinine were normal. Ultrasonography showed mild splenomegaly. He had already been given various antibiotics, completed a course of antimalarials and treatment on the lines of enteric fever, but there was no relief. Immunological tests for tuberculosis were negative. One week later follow up in outdoor clinic reassessment of clinical
examination revealed faint early diastolic murmur in the aortic area. Patient was advised echocardiography which showed: Collection of fluid on anterior aspect of aortic valve (aortic ring abscess) (image 1, 2) and mild AR [image 3, 4].

Fig. 1 : image 1 and 2 are 2 D images of PLAX and PSAX views at aortic valve levels showing collection of fluid at aortic valve level, image 3 and 4 are colour doppler and CW doppler images showing mild aortic regurgitation

Patient was admitted, intravenous antibiotics were started for aortic root abscess, as per guidelines. Patient was advised surgical treatment but due to financial restraints the family was not ready for surgery.

Discussion
Most patients of acute IE present with high grade fever of unknown origin, they are usually late diagnosed because of financial constraints and/or unavailability of tests.

Colour Doppler echocardiography can reveal the site and size of collection and the dimensions of the affected valve, as well as the severity of lesion, but transoesophageal echocardiography, CT scan and MRI are superior in the identification of details.7

Natural history of bacterial infections of aortic root/valve or aneurysm is of eventual progression1 associated with further expansion and rupture of aneurysm or severe AR and aortic valve damage with IE in aortic valve infections especially with Salmonella and other gram negative infections.5, 6

Prognosis And Treatment
Overall mortality from infected aortic root/valve/aneurysm is over 50% despite advances in therapy.
Management includes intravenous antibiotics for six weeks and replacement of aortic valve as in our case or reconstruction of aorta with prosthetic graft if infected aortic aneurysm is being dealt with\textsuperscript{8,9}.

References

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