

Acute Native Valve Infective Endocarditis

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Introduction

Endocarditis is a bacterial or fungal infection of the valvular or endocardial surface of the heart. The clinical presentation depends on the infecting organism and the infected valve or valves.

The prototypic lesion of infective endocarditis, the vegetation is a mass of platelets, fibrin, microcolonies of microorganisms and scant inflammatory cells.

Infection most commonly involves heart valves but also may occur on the low-pressure side of a ventricular septal defect and mural endocardium damaged by aberrant jets of blood or foreign bodies or on intracardiac devices.

The analogous process involving arterio-venous shunts, arterio-arterial shunts (PDA) or coarctation of the aorta is called infective endarteritis.

Most virulent organisms, particularly Staph Aureus, tend to produce a more rapidly progressive and destructive infection. Those caused by more virulent organisms often present as an acute febrile illness and are complicated by early embolisation, acute valvular regurgitation and myocardial abscess formation. Strains of streptococci, enterococci, and other bacteria and fungi tend to cause a more sub-acute picture.

Predisposing valvular abnormalities – include rheumatic valve, bicuspid aortic valve, calcific or sclerotic aortic valves- MVP, congenital

heart disorders etc. Others are injection drug users, prosthetic valve endocarditis

Native valve endocarditis is usually caused by S.aureus, viridans streptococcus, enterococci or HACEK organisms.

Streptococcus sanguinis formerly known as streptococcus sanguis is a Gram-positive facultative anaerobic cocci species and a member of the streptococcus viridans group.

Streptococcus Sanquinis is a commensal bacterium that is abundant in the oral biofilm and benefits the human host by protecting against the deleterious effects of another microorganism Streptococcus mutans the pathogen responsible for tooth decay and caries. (Becker et al 2002 Kreth et al 2008)

It is however also well known as a cause of infective endocarditis – comprising between 18-30 % of cases. There is bacteremia following dental procedures as well as after normal oral care such as brushing and mastication due to poor oral health.

59yrs old male working as a contractor reported to GKNM Hospital OP on 30.10.2019 with complaints of fever, chills, and body aches of 2 weeks duration. He had no respiratory, cardiac, GI or Genito urinary complaints. Diabetic for 2 yrs on OHA. No vices or addictions. No recent travel, or dental treatment. Had been evaluated outside.

Outside investigations CBC, TC 10300, N 76, MP negative. Others RFT/RBS/LFT normal.

Chest x-ray normal. USG abdomen splenomegaly. Echo (PSG Hospital) – Aortic stenosis with mild AR. Rest normal. Blood culture no growth. Clinically mild fever, no adenopathy, eschar, neck supple. CVS – NAD, and other general and systemic examination was normal.

Treated with antibiotics, antimalarials and supportive – improved. Came for a follow-up after 5 days as well. Scrub typhus / Brucella Ab negative. He again came to OP on 13.11.19 with complaints of fever, chills x 3 days, shortness of breath on minimal exertion and also orthopnoea of 2 days duration. Clinically mild fever, tachycardia, and tachypnea. CVS – ESM+EDM aortic area + LSB. Chest basal crepitation, SPO2 92% at RA. Was advised admission. Urgent Echo – Severe AR with? Vegetation.

Admitted after sending 3 serial blood culture samples and other investigations treated with Ceftriaxone + Gentamycin. Seen by Cardiologist advised to continue the same. Blood culture all samples of *Streptococcus sanguinis*. Sensitive to ongoing antibiotics.

Repeat Echo after 48 hrs severe AR? Aortic root abscess. CT CAG - 16/11/22 Ruptured sinus of Valsalva aneurysm into LVOT. Urgent cardiothoracic opinion obtained. Discussed with attenders. The patient continued on antibiotics, and high-risk consent was obtained. Underwent AVR (bioprosthetic) on 18.11.2019. Post op period was uneventful. Made rapid recovery. Discharged 25.11.2019 on oral anticoagulants, and other cardiac and diabetic drugs.

During follow-up well. Follow up Echo Good LV function. The prosthetic valve is normal.

09.12.19 - Echo – Bioprosthetic valve movements normal. No significant regurgitation. Adequate LV. No vegetation. 10.12.22 – Echo – Adequate LV. Normal PV movements. No vegetation.

The moral of the story – A good clinical evaluation of the patient by the doctor – is most crucial to patient care.

A patient with a normal native valve presenting with aortic valve infective endocarditis.

“Medicine is learned by the bedside and not in the classroom. See and then reason and compare and control” Sir William Osler (1849-1919)

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