



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT: ALLIED HEALTH SCIENCES
COURSE NAME: PATHOLOGY

Topic: ENDICARDITIS



CASE SCENARIO



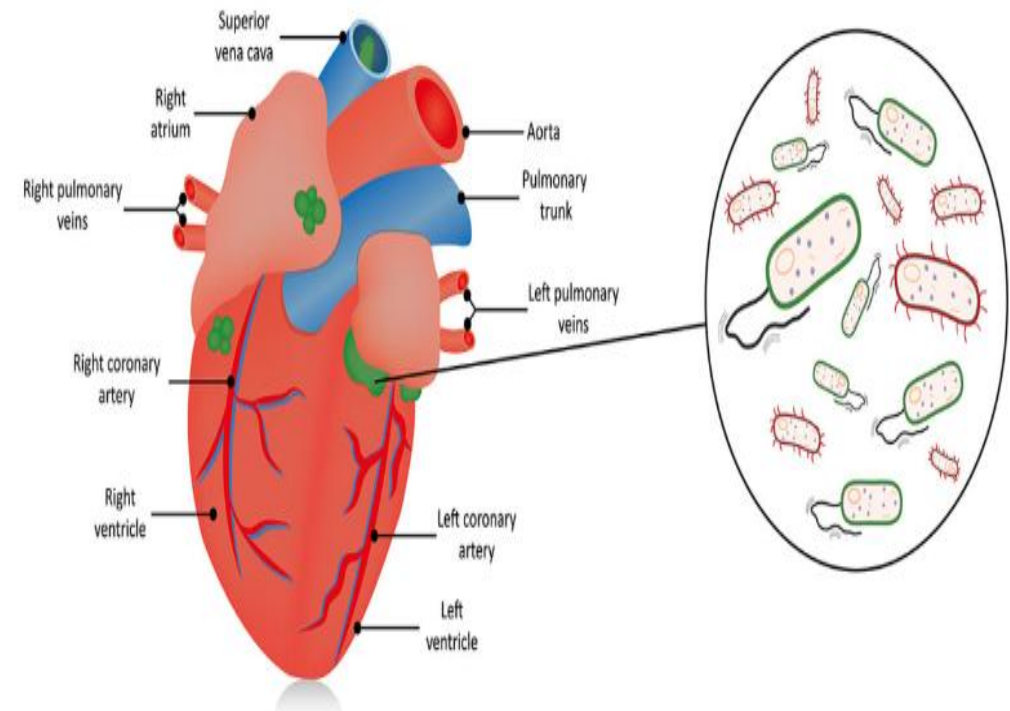
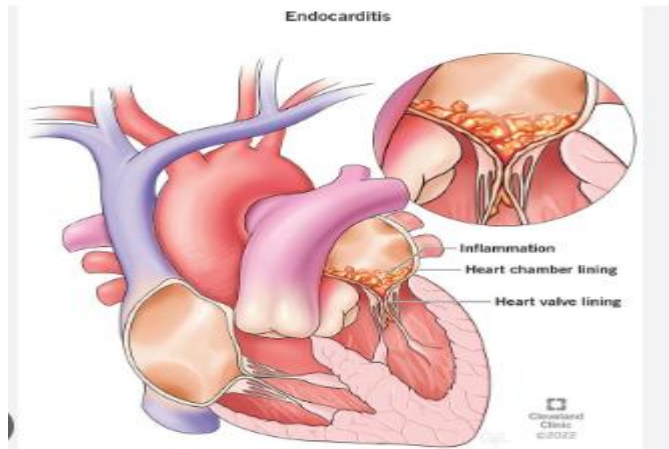
- A 10 year old girl previously healthy presented to the hospital with bacteremia and 2days back she had a symptoms of fever, emesis and fatigue. Blood culture showed positive and transthoracic echocardiogram showed vegetation. Now how will you treat this patient?

Endocarditis

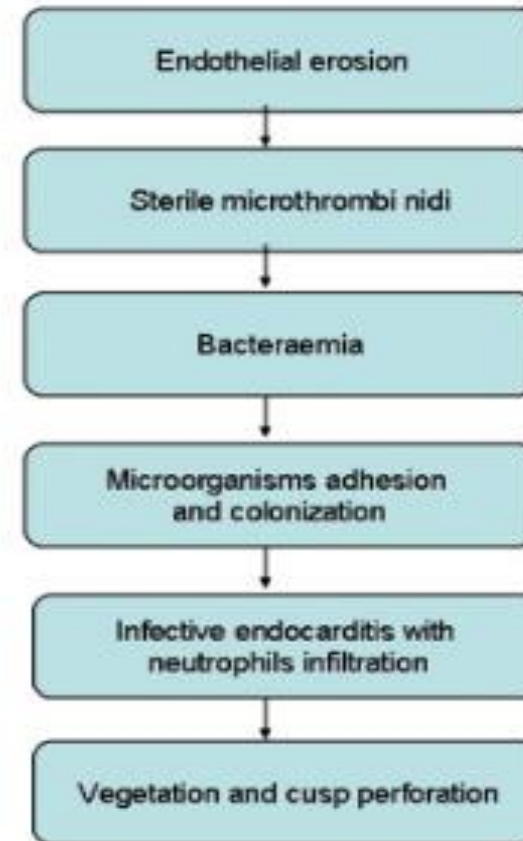
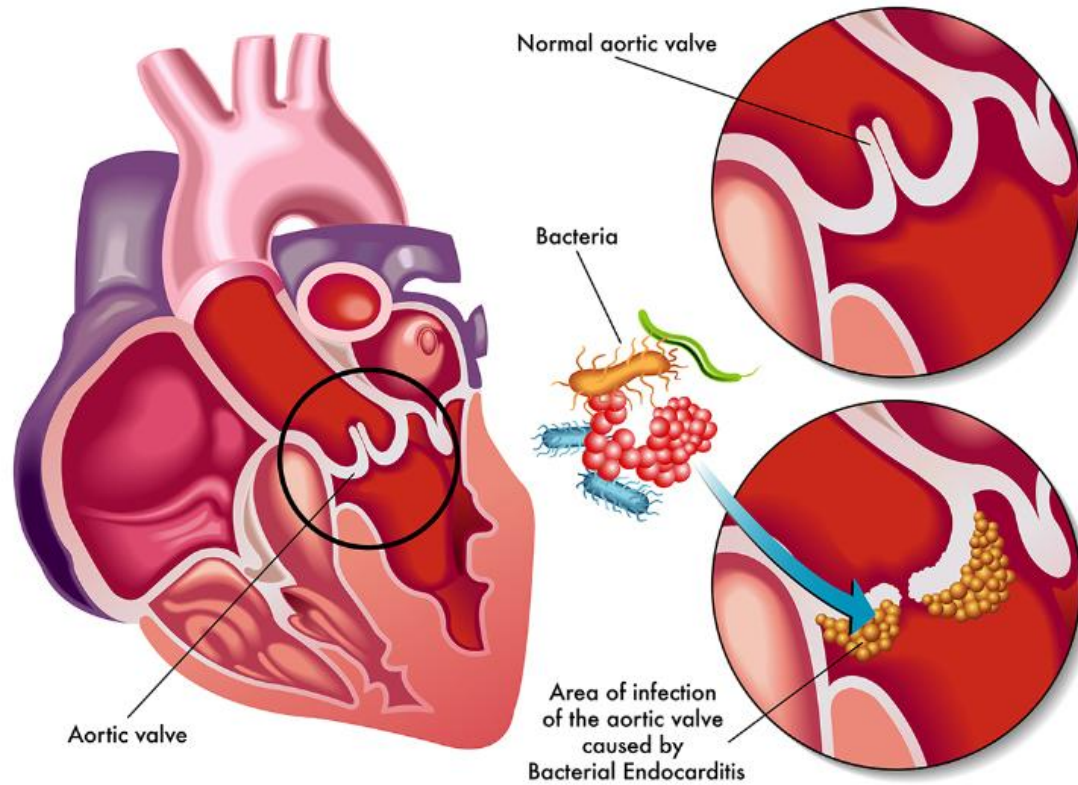
- Endocarditis is a life-threatening inflammation of the inner lining of the heart's chambers and valves. This lining is called the endocardium.

Etiology

- Endocarditis is usually caused by an infection. Bacteria, fungi or other germs get into the bloodstream and attach to damaged areas in the heart.



Pathophysiology





Types of Infective Endocarditis



- **bacterial acute endocarditis**-is usually caused by staphylococcus aureus bacteria and occasionally by the bacterial strains brucella and listeria. This form of infective endocarditis, compared to other forms, is more likely to affect normal heart valves.
- **bacterial subacute endocarditis**-It's an infection that occurs when bacteria enter the bloodstream and attack the lining of the heart valves. This causes growths, called vegetations, on the heart valves
- **prosthetic valvular endocarditis (PVA)**- PVE is usually classified as early PVE (acquired perioperatively) and late PVE (resulting from infections unrelated to the valve operation).
- **Atypical verrucous endocarditis**- Libman-Sacks endocarditis, also known as murant or verrucous endocarditis, is a form of nonbacterial thrombotic endocarditis (NBTE) which involves the presence of sterile vegetations on the cardiac valves
- **Treatment**- anticoagulation therapy
- **Nonbacterial thrombotic endocarditis (NBTE)** is a rare condition that refers to a spectrum of noninfectious lesions of the heart valves that is most commonly seen in advanced malignancy
- **Treatment**-Heparin is more effective than warfarin for hypercoagulability associated with malignancy

Clinical manifestation

- fever (102° – 104°),
- Chills
- fast heart rate
- fatigue, night sweats
- aching joints and muscles
- persistent cough
- or swelling in the feet
- legs or abdomen.

Splinter hemorrhages



Janeway lesions

(painless spots on palms/soles of feet)



Osler's Nodes

(painful nodules in pulp of fingers/toes)



Conjunctival hemorrhages





Risk factors & Complications

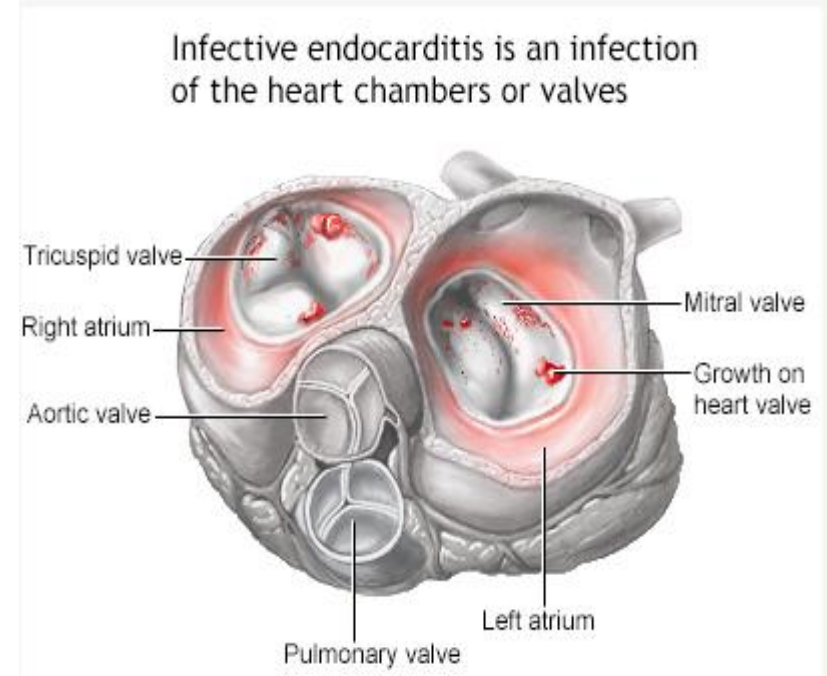


Risk factors

- Older age
- Artificial heart valves
- Congenital heart defects
- Implanted heart device
- Long-term catheter use.

Complications

- Heart failure
- Heart valve damage
- Stroke
- Pockets of collected pus (abscesses) that develop in the heart, brain, lungs and other organs
- pulmonary embolism
- Kidney damage
- Enlarged spleen





Diagnosis



**BETI is Most
Mnemonic: Valuable Person**

- * **B** blood culture positive
- * **E** evidence of endocrine involvement
- * **T** temperature
- * **I** immunological evidence
- * **M** microbiological evidence
- * **V** vascular phenomenon
- * **P** predisposing factors





Diagnosis

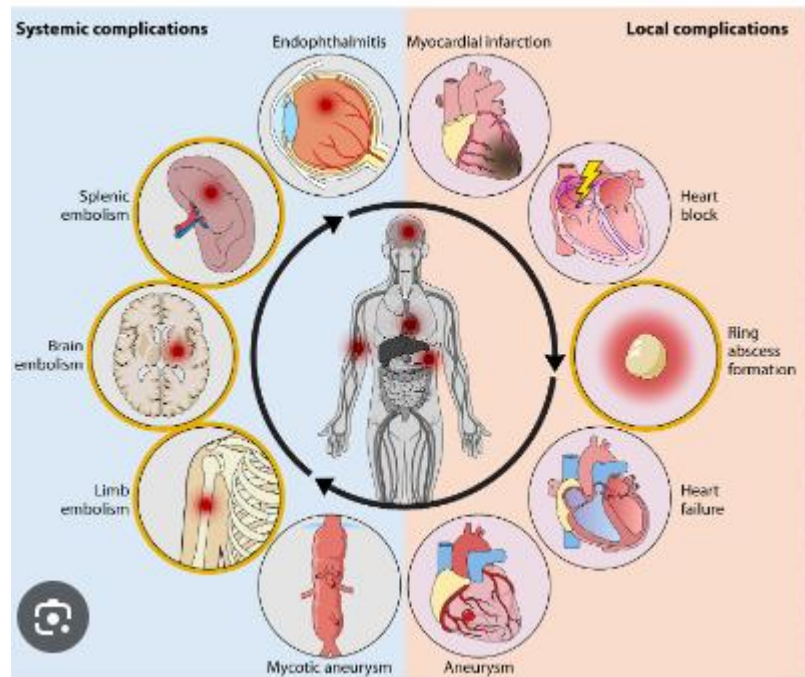


- **History collection**
- **Physical examination**
- **Blood culture test-** to rule out the infection causing microorganisms
- **Complete blood count-** particularly to detect the WBC level in the blood
- **Echocardiogram-** used to find out the abnormalities in structure and function of the heart
- **Transesophageal echocardiogram-** can view the flow obstruction
- **Transthoracic echocardiogram-** dilation of chambers



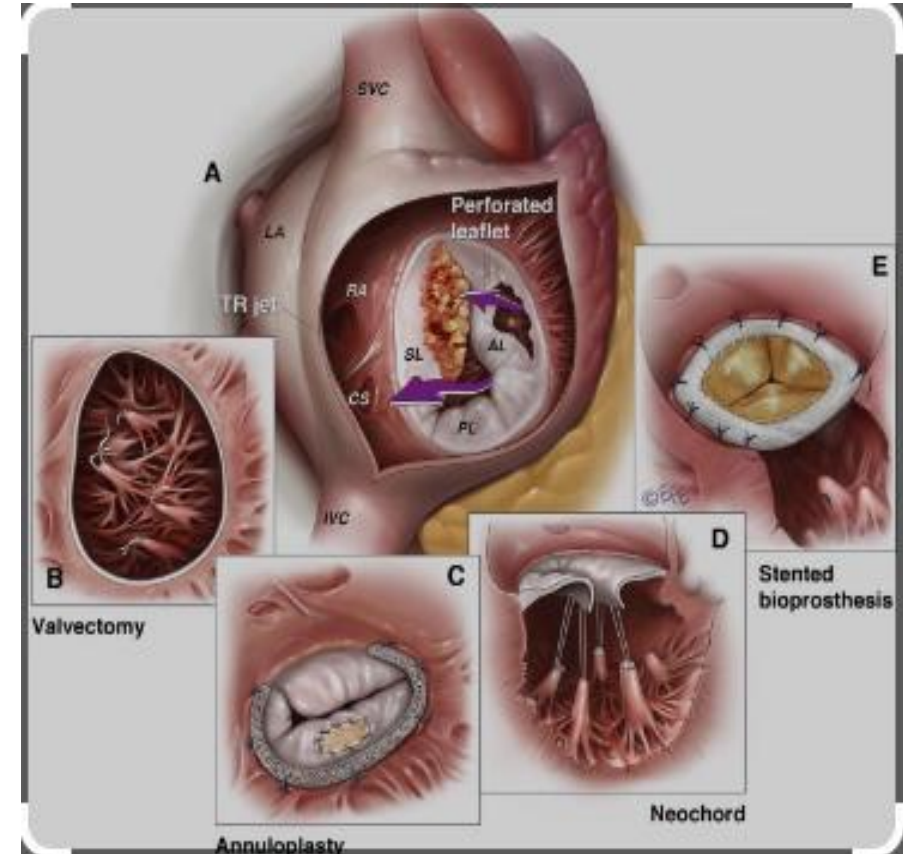
Complication

- Myocardial infarction
- Splenic embolism
- Heart failure
- Aneurysm
- Limb embolism



Treatment

- **Medical management-**Antibiotic therapy for 6weeks penicillins (such as penicillin, amoxicillin and flucloxacillin), gentamicin, glycopeptides (such as vancomycin and teicoplanin) and B-lactams such as meropenem or ceftriaxone.
- **Surgical management-** to remove the dead tissue, scar tissue, fluid buildup, or debris from infected tissue. Surgery may also be done to repair or remove the damaged heart valve, and replace it with either man-made material or animal tissue- Valve replacement therapy.





THANK YOU



References:

- Text book of Pathology author Nithin chawla
- <https://youtu.be/10RaKBTtyeo?si=dS15WvsF1tP7wN1F>