

الكلية : الطب

القسم او الفرع :طب الاطفال وحديثي الولادة

المرحلة: الخامسة

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اسم المادة باللغة العربية : طب الاطفال وحديثي الولادة

اسم المادة باللغة الإنكليزية : طب الاطفال وحديثي الولادة

اسم المحاضرة الأولى باللغة العربية: الالتهاب المعدي لبطانة القلب

اسم المحاضرة الأولى باللغة الإنكليزية: **Infective endocarditis**

Infective endocarditis

Etiology &pathogenesis

is an infection on the endothelial surface of the heart, including the heart valves.

Infectious endothelial lesions, called vegetations,

usually occur on the valve leaflets and are composed of microorganisms trapped in a fibrin mesh that extends into the bloodstream

Causative agents:

Viridans streptococci /are the principal causes in children **with congenital heart diseases without previous surgery.**

Staphylococcus aureus and coagulase-negative staphylococci /are important causes of endocarditis, especially **following cardiac surgery and in the presence of prosthetic cardiac and endovascular materials.**

FUNGI/Candida albicans. Aspergillus

CLINICAL MANIFESTATIONS

is usually a subacute, slowly progressive process

fever,

malaise,

weight loss.

Tachycardia and a new or changed heart murmur are common findings.

sepsis.

Heart failure,

splenomegaly,

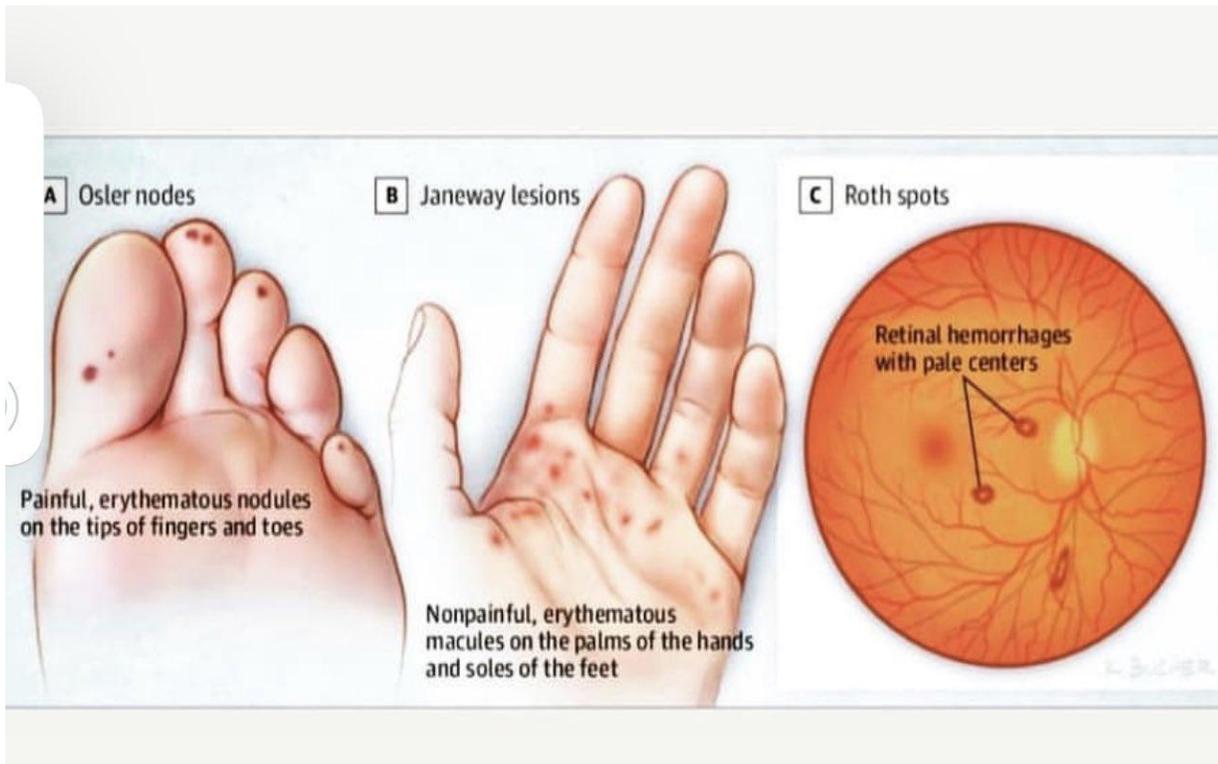
petechiae

Splinter hemorrhages are tiny blood spots that appear underneath the nail caused by microemboli in the capillaries

Osler's nodes are painful, red, raised lesions found on the hands and feet (the fingers and toes) . They are caused by immune complex deposition

Janeway lesions / non-tender, small erythematous nodular lesions on the palms and soles . caused by septic microemboli

Roth Spots (retinal hemorrhage)



Splinter haemorrhages

- Non specific
- Non blanching
- Linear reddish brown



LABORATORY STUDIES AND IMAGING

culturing the blood IS The key to diagnosis . And fore initiating antibiotic therapy. (Three separate venipunctures for blood culture achieve near-maximal sensitivity (about 95%))

Erythrocyte sedimentation rate(ESR)

C-reactive protein are often elevated.

Leukocytosis,

anemia, and hematuria are common

A positive rheumatoid factor

antinuclear antibody may also be seen

Echocardiography visualizes endocardial and valvular vegetations measuring 2 mm or greater

The Duke criteria help in the diagnosis of endocarditis.

Two major criteria ,or one major and three minor, or five minor criteria suggest definite endocarditis

Major criteria ;

(1) positive blood cultures

(2) evidence of endocarditis on echocardiography.

Minor criteria ;

>>> predisposing heart condition or injection drug use

>>>Fever—temperature >38° C (>100.4° F)

>>>Vascular phenomena (major arterial emboli, septic pulmonary infarcts, intracranial hemorrhage, conjunctival hemorrhages, Janeway lesions)

>>>Immunologic phenomena (glomerulonephritis, Osler nodes)

>>>Microbiologic evidence (positive blood culture result, but not meeting major criteria,)

TREATMENT ;

A \ Severely ill patients must be stabilized with supportive therapies for cardiac failure, pulmonary edema, and low cardiac output .

B \ Empirical antibiotic therapy may be started for acutely ill persons after blood cultures obtained. With subacute disease, awaiting results of blood cultures to confirm the diagnosis is recommended to direct therapy according to the susceptibility of the isolate.

Note// Because antibiotics must reach the organisms by passive diffusion through the fibrin mesh, high doses of bactericidal antibiotics are required for an extended period of treatment (4 to 8 weeks)

C \ surgery if indicated.

indication for Surgery ;

medical treatment is unsuccessful,

- persistent bacteremia,
- unusual or difficult to treat pathogen (fungal endocarditis),
- valve annulus or myocardial abscess,
- rupture of a valve leaflet, valvular insufficiency with acute or refractory heart failure, serious embolic complications .

COMPLICATIONS

The major complications of infective endocarditis are

sterile and septic emboli from vegetations

Damage to the heart and heart valves may lead to regurgitation of the valves .

abscess of the valve ring, myocardial abscess.

Cerebral abscesses

aneurysms can cause a stroke-like picture

Splenic abscesses can cause fatal bleeding.

PREVENTION

A / In high-risk patients, prophylactic antibiotics are required before and during all dental procedures as well as invasive procedures of the respiratory tract, infected skin, or muscle.

- oral amoxicillin 50 mg/kg (maximum dose, 2 g) as a single dose taken 30 to 60 minutes before the procedure

□. Clindamycin or azithromycin are indicated for most patients allergic to β -lactams.

B / Improving oral hygiene, vigorous treatment of sepsis and local infections, and careful disinfection during any procedure are very important in reducing the risk of bacteremia & subsequent IE.