# Endocarditis Assessment

Endocarditis is an infection of endocardium affecting the endocardial layer of the heart and cardiac valves. Symptoms include fever, fatigue, and heart murmurs. Other assessment findings include Janeway lesions, Roth spots, splinter hemorrhages, and Osler nodes. Complications that may result from endocarditis include heart failure and embolization. Refer to the Picmonic on "Endocarditis Interventions" for further information.<br />




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**Infection of Inner Layer and Valves**

Infectious-bacteria in Inner Layer and Valves

Endocarditis is an infection of the endocardial layer of the heart and valves of the heart. The aortic and mitral valves are most commonly affected. Although Staphylcoccus aureus and Streptococcus viridans are the most common cause of endocarditis, other possible pathogens include fungi and viruses. Blood turbulence within the heart enables the causative organism to infect endothelial surfaces of the heart or previously damage valves.

## Assessment

**Fever**

Fever-beaver

A majority of patients with endocarditis develop low-grade fever. Other manifestations include chills, weakness, and general malaise. To alleviate symptoms, treatment may include aspirin, acetaminophen, fluids, and rest.

**Fatigue**

Sleepy-guy

Symptoms of endocarditis are generally nonspecific and affect multiple organ systems. Bacterial endocarditis is an infection that increases metabolic demands and oxygen requirements leading to fatigue.

**New or Changed Murmurs**

Merman Changing in New Clothes

The infection may spread throughout the myocardial area and damage surrounding valves and cardiac structures. The aortic and mitral valves are most commonly affected. Since right-sided heart sounds are too low to be heard, murmurs are usually absent in tricuspid endocarditis. Damaged structures lead to dysrhythmias, valve dysfunction, heart block, and heart failure. A majority of patients with endocarditis may develop new or changed heart murmurs caused by cardiac structural changes.

**Roth's Spots**

Rottweiler with spots

Roth's spots are characteristic of endocarditis. These hemorrhagic retinal lesions are found during funduscopic examination.

**Splinter Hemorrhages**

Splinter-on-Nail-bed

Endocarditis decreases the body's ability to deliver sufficient oxygen. Prolonged O2 deficiency may lead to splinter hemorrhages characterized by small red to black longitudinal streaks on the nail beds. Patients with endocarditis commonly experience petechiae and develop tiny purple or red spots on the skin, conjunctiva, and mouth. Petechiae is caused by the fragmentation and microembolization of vegetative lesions.

**Janeway Lesions**

Jade Palm-tree

Painless Janeway lesions are characteristic of endocarditis. These small, flat red spots may be seen on the palms and soles of the patient.

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**Osler's Nodes**

Wizard-of-Os with Knob Finger

Painfully tender Osler's nodes are characteristic of endocarditis. These red or purple, pea-sized lesions may be found on the fingertips or toes.

## Considerations

**Heart Failure**

Dead Heart

Nearly 80% of patients with aortic valve endocarditis will develop heart failure. The infecting pathogen triggers the formation of lesions and causes local valve damage. Lesions may cause left- or right-sided heart failure. Raising the head of the bed may help patients who develop dyspnea caused by heart failure.

**Embolization**

Elmo-embolizing

Patients with endocarditis develop lesions consisting of fibrin, leukocytes, platelets, and microbes. Otherwise known as vegetations, these lesions stick to the surface of heart valves or endocardium. Fragments of vegetations may break off and enter the blood circulation as emboli. Emboli entering the left-side of the heart cause systemic embolization while right-sided heart emboli result in pulmonary embolization.

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