Bacterial Endocarditis

Bacterial endocarditis is an infection of the inner surface of the heart or heart valves due to bacteria in the bloodstream, typically introduced via dental or medical procedures in the mouth, intestinal tract or urinary tract. The bacteria can grow on the edges of a heart defect or surface of an abnormal valve and continue to grow producing large particles called vegetations. These particles can then break off and embolize to the lungs, brain, kidneys, and skin. Symptoms and signs of endocarditis vary but include prolonged fever, a new or changing heart murmur and specific vascular and immunologic phenomena. Vascular phenomena include septic emboli, Janeway lesions, splinter hemorrhages and renal and splenic infarcts. Immunologic phenomena include Osler’s nodes and Roth’s spots.



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Signs and Symptoms

Fever
Fever-beaver
Prolonged fever is a common symptom of bacterial endocarditis, occurring in over 95% of individuals. It is also commonly accompanied by malaise and fatigue.

New murmur
Merman
Growth of a vegetation on a heart valve in bacterial endocarditis can cause a new or changing heart murmur.

Janeway Lesions
Jade Palm-tree
Janeway lesions are non tender small erythematous lesions on the palms or soles that are extremely small, only measuring few millimeters in diameter. These lesions are caused by septic emboli with deposition of bacteria. These lesions are typically in distal locations, flat and painless.

Splinter Hemorrhages
Splinters-on-Nail-bed
Splinter hemorrhages are small blood clots found under the nail bed that can be caused by clots that migrate from an affected heart valve in endocarditis to the capillaries under the nail bed. The blood clots tend to run vertically under the nails and are a nonspecific finding of bacterial endocarditis.

Roth spots/round white spots on retina
Rottweiler with Spots and Red-tin-eyes with White Spots
Roth's spots are retinal hemorrhages with white or pale spots caused by immune complex mediated vasculitis. Roth's spots are composed of coagulated fibrin and can be a sign of bacterial endocarditis.

Osler nodes/tender lesions on finger or toe pads
Wizard-of-Os with Knob Finger
These nodes are painful raised red lesions on the fingers or toe pads commonly caused by infective endocarditis. These nodes result from immune complex deposition that activates an inflammatory response. It is important to note that these lesions are painful due to activation of the inflammatory response as opposed to non tender Janeway lesions caused by vascular phenomenon.

Anemia
Anemone
Anemia is a frequent occurrence in bacterial endocarditis although the exact mechanism is poorly understood.

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