

I. Ischemic Heart Disease (IHD)

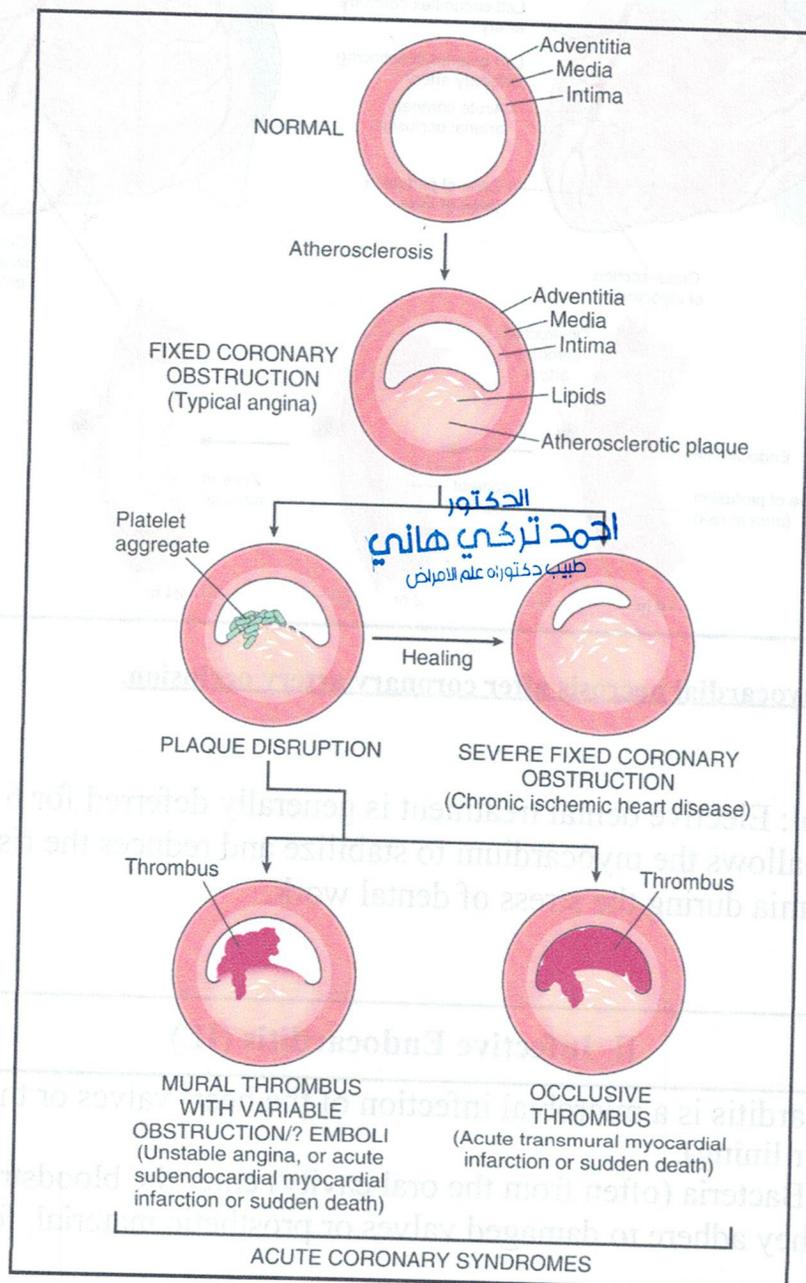
Ischemic Heart Disease occurs when there is an imbalance between myocardial oxygen demand and the blood supply. The most common cause is atherosclerosis of the coronary arteries.

1. Angina Pectoris

Paroxysmal (sudden) chest pain caused by transient myocardial ischemia without actual muscle necrosis.

Stable Angina: Pain occurs predictably during physical exertion or emotional stress and is relieved by rest or nitroglycerin.

Unstable Angina: Pain occurs with progressively less effort or even at rest. It is considered "pre-infarction" angina and represents a clinical emergency.



2. Myocardial Infarction (MI)

Prolonged, severe ischemia leads to coagulative necrosis of the heart muscle.

Clinical Signs: Crushing substernal chest pain, radiating to the left arm or jaw, nausea, and diaphoresis (sweating).

Title

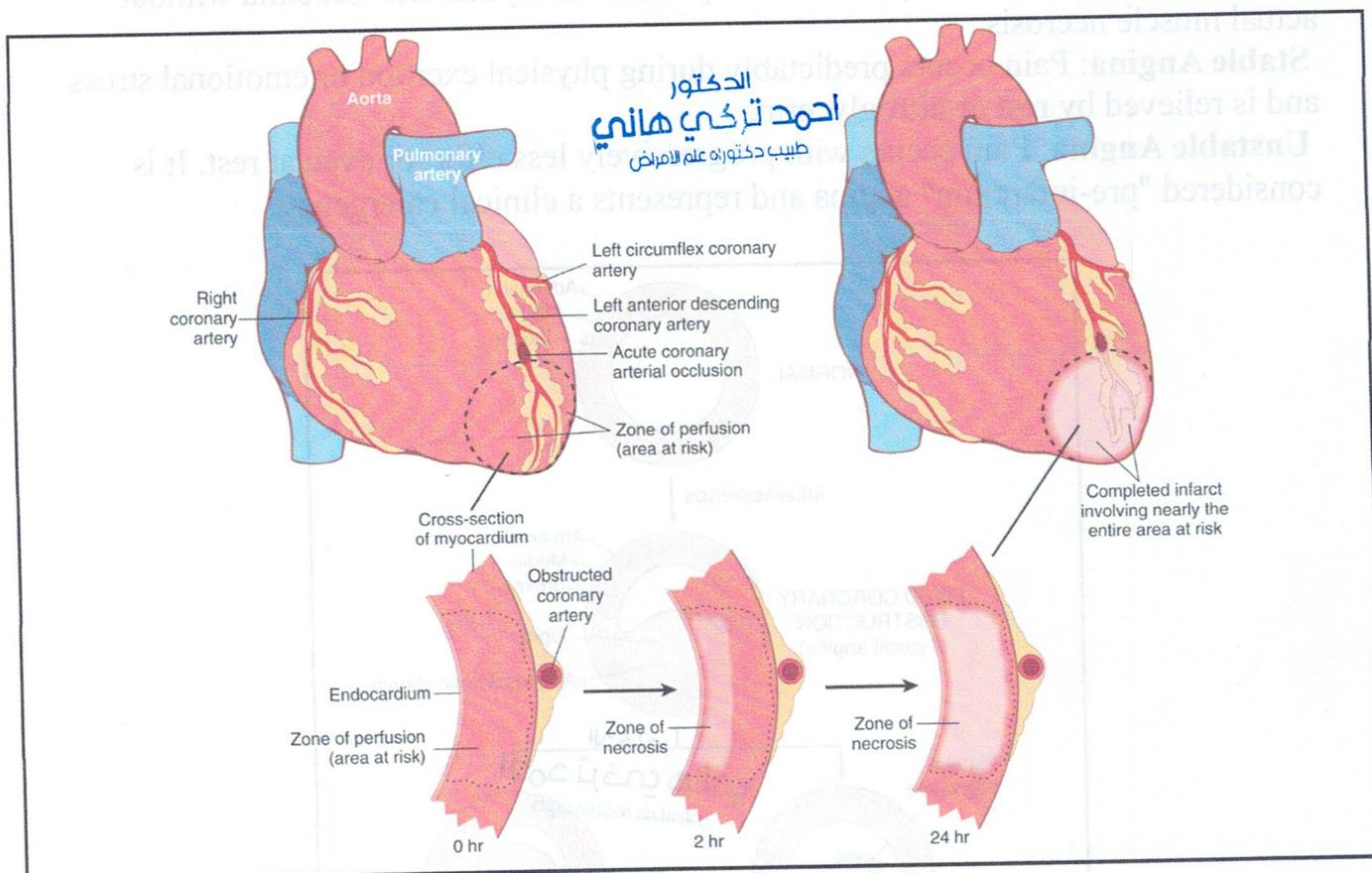


Fig: Progression of myocardial necrosis after coronary artery occlusion.

Dental Protocol: Elective dental treatment is generally deferred for 6 months post-MI. This period allows the myocardium to stabilize and reduces the risk of a repeat event or arrhythmia during the stress of dental work.

II. Infective Endocarditis (IE)

Infective Endocarditis is a microbial infection of the heart valves or the endocardium (the heart's inner lining).

Pathogenesis: Bacteria (often from the oral cavity) enter the bloodstream (bacteremia). They adhere to damaged valves or prosthetic material, forming vegetations.

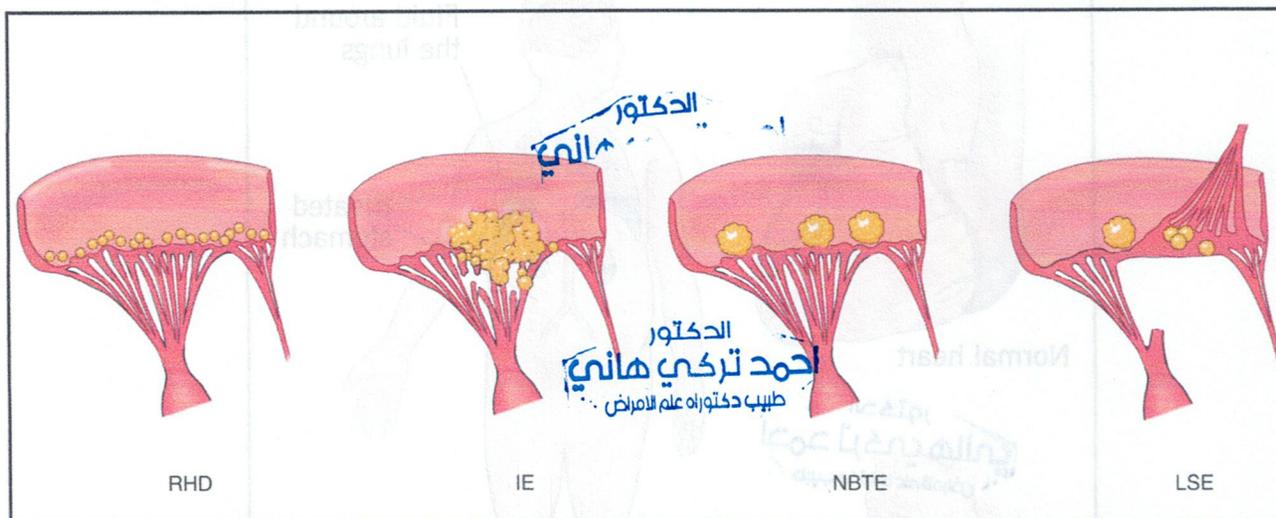


Fig: The major forms of vegetative endocarditis. RHD(Rheumatic heart disease, IE (infective endocarditis), NBTE (non bacterial thrombotic endocarditis), LSE (Libman-Sacks endocarditis).

Vegetations: These are friable masses composed of fibrin, platelets, and colonies of microbes. They can break off (embolize), leading to strokes or organ damage elsewhere.

Dental Significance: High-risk patients (e.g., those with prosthetic valves or a previous history of IE) require Antibiotic Prophylaxis before invasive dental procedures like extractions, scaling, or periodontal surgery.

III. Heart Failure (HF)

Heart failure occurs when the heart is unable to pump sufficient blood to meet the metabolic needs of the body.

1. Left-Sided Heart Failure

The left ventricle fails to pump blood out, causing fluid to back up into the lungs.

Symptoms: Pulmonary edema, shortness of breath (dyspnea), and orthopnea (difficulty breathing when lying flat).

Dental Consideration: Patients with orthopnea cannot tolerate being in a fully supine (flat) position. The dental chair should be kept in a semi-upright position.

2. Right-Sided Heart Failure

The right ventricle fails, usually as a result of long-standing left-sided failure. Blood backs up into the systemic venous system.

Symptoms: Peripheral edema (swollen ankles and feet), jugular venous distension, and "nutmeg liver" (congestive hepatomegaly).

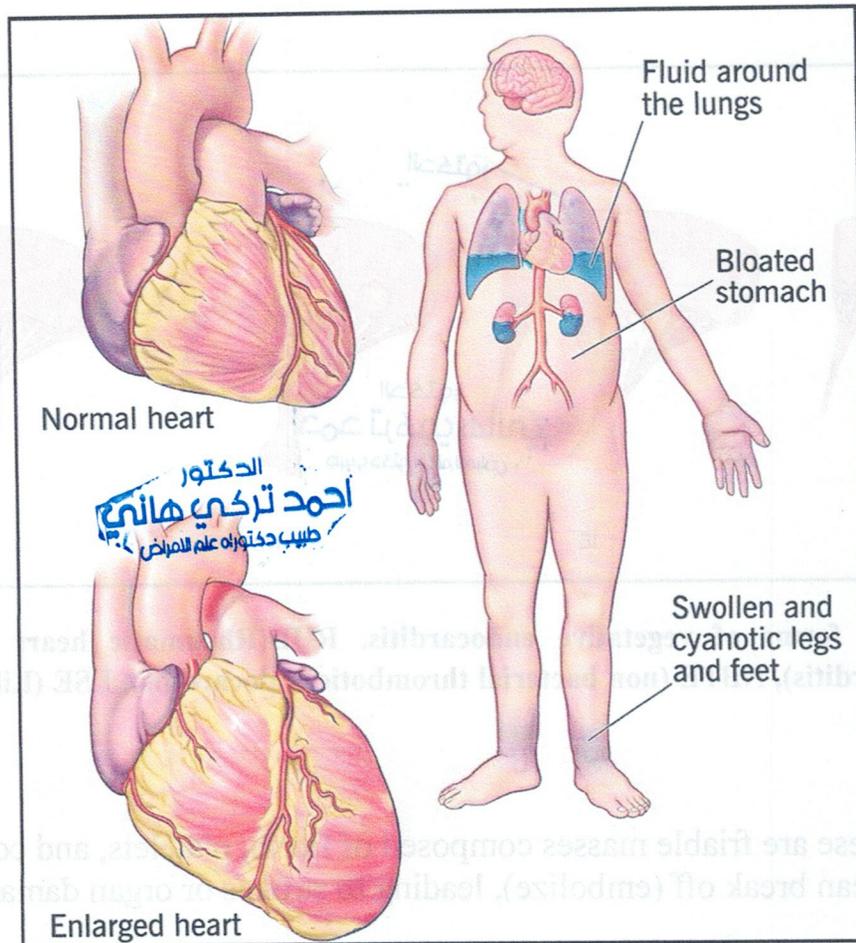


Fig: Congestive heart failure.

IV. Clinical Checklist for the Dental Clinic

Vitals: Always take blood pressure and pulse before starting a procedure.

Positioning: Adjust the chair to the patient's comfort—especially for Heart Failure patients.

Stress Reduction: High anxiety triggers catecholamine release (epinephrine/norepinephrine), which increases myocardial oxygen demand. Consider morning appointments and profound anesthesia.

Medication Review: Check if the patient is on anticoagulants (bleeding risk) or has taken their prescribed pre-medication antibiotics.