

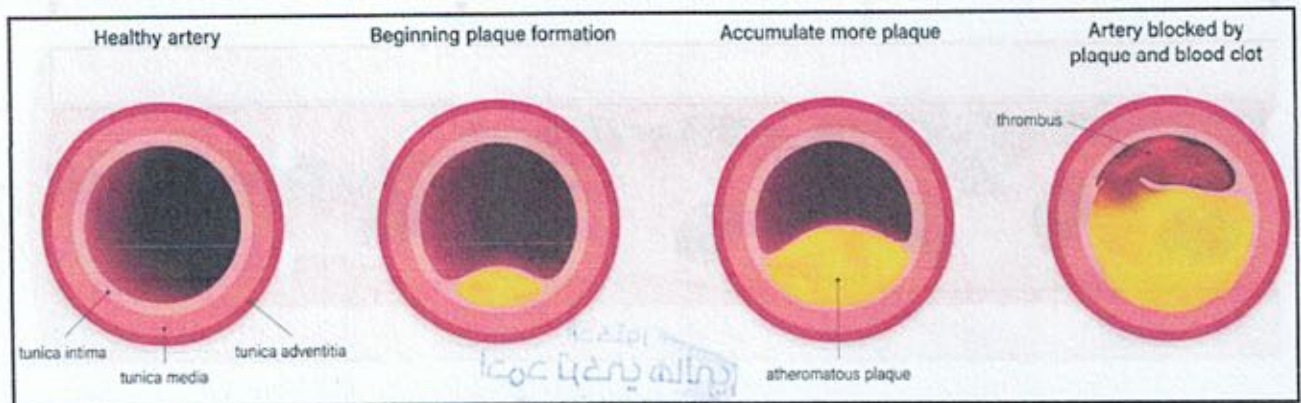
## I. Arteriosclerosis & Atherosclerosis

Arteriosclerosis is a general term for the thickening and loss of elasticity of arterial walls ("hardening of the arteries"). There are several patterns, but Atherosclerosis is the most clinically significant.

### Atherosclerosis

This is a disease of medium and large arteries characterized by the formation of atheromas (intimal-based plaques).

### Atherosclerosis

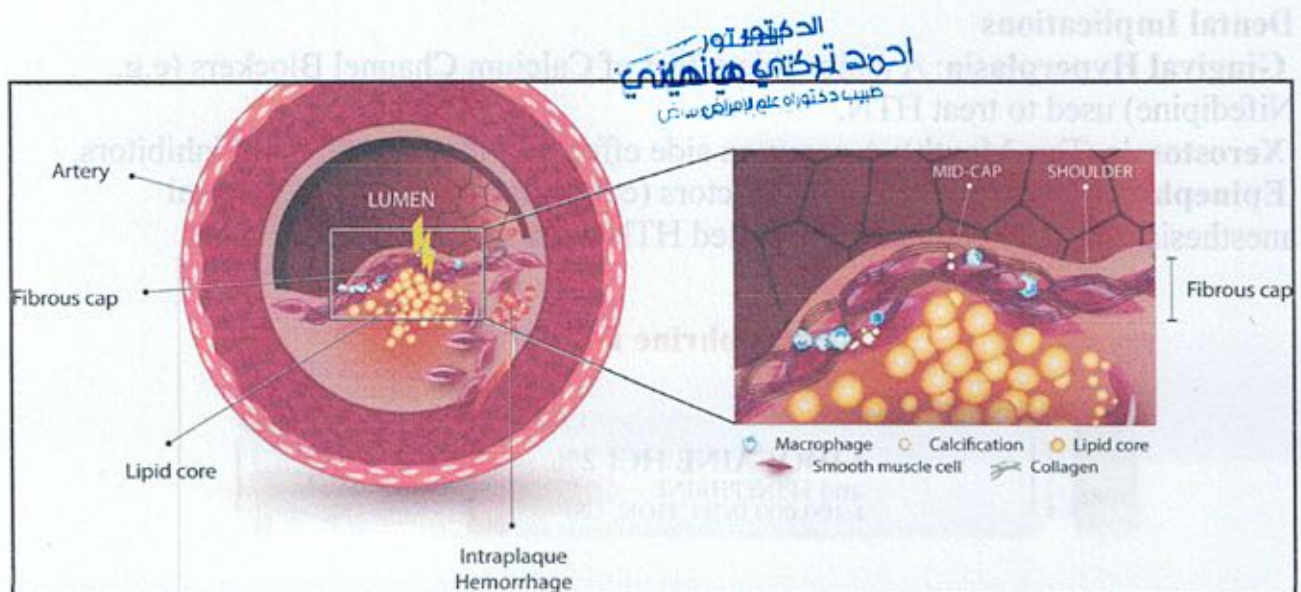


### Plaque Components:

**Fibrous Cap:** Composed of smooth muscle cells and dense collagen.

**Necrotic Core:** Contains lipid (mostly cholesterol), foam cells (macrophages stuffed with lipids), and debris.

**Complications:** Plaque rupture can lead to thrombosis, myocardial infarction, or stroke.

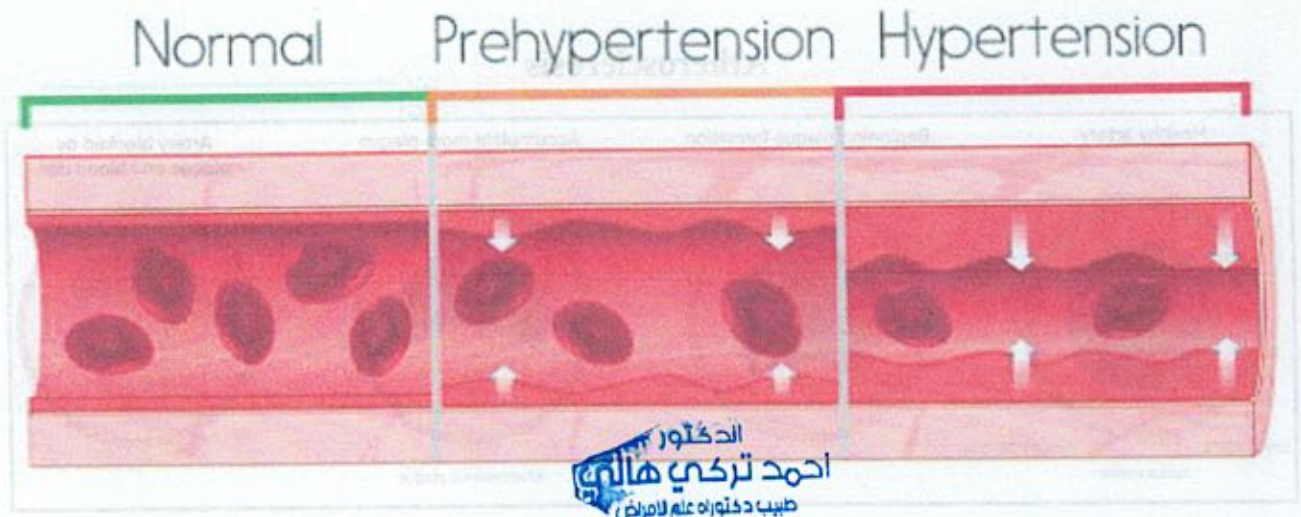




**Dental Significance:** Many patients are on antiplatelet (Aspirin) or anticoagulant (Warfarin) therapy to prevent clot formation on plaques. This increases the risk of prolonged post-operative bleeding after extractions.

## II. Hypertension (HTN)

Hypertension is defined as a sustained blood pressure  $> 140/90$  mmHg. It is often asymptomatic but causes profound damage to the vasculature over time.



### Patterns of Vascular Change

**Hyaline Arteriosclerosis:** Occurs in "benign" (stable) HTN. Characterized by a pink, glass-like thickening of the walls of small arteries, leading to narrowed lumens.

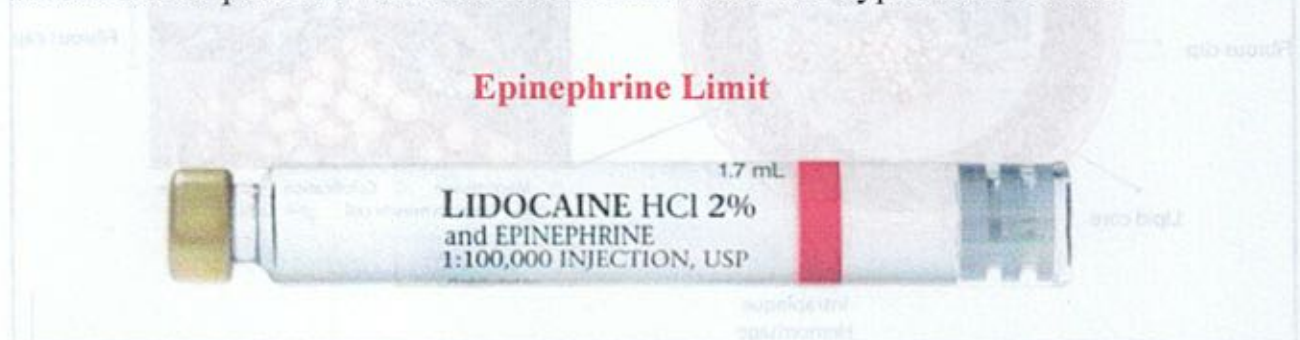
**Hyperplastic Arteriosclerosis:** Occurs in "malignant" or severe HTN. Characterized by "onion-skin" concentric thickening of the vessel walls due to smooth muscle cell proliferation and basement membrane duplication.

### Dental Implications

**Gingival Hyperplasia:** A major side effect of Calcium Channel Blockers (e.g., Nifedipine) used to treat HTN.

**Xerostomia (Dry Mouth):** A common side effect of diuretics and ACE inhibitors.

**Epinephrine Limit:** Use vasoconstrictors (epinephrine) cautiously in local anesthesia for patients with uncontrolled HTN to avoid hypertensive crisis.





### III. Vasculitis (Vessel Inflammation)

Vasculitis is an inflammatory destruction of blood vessels, often immune-mediated.

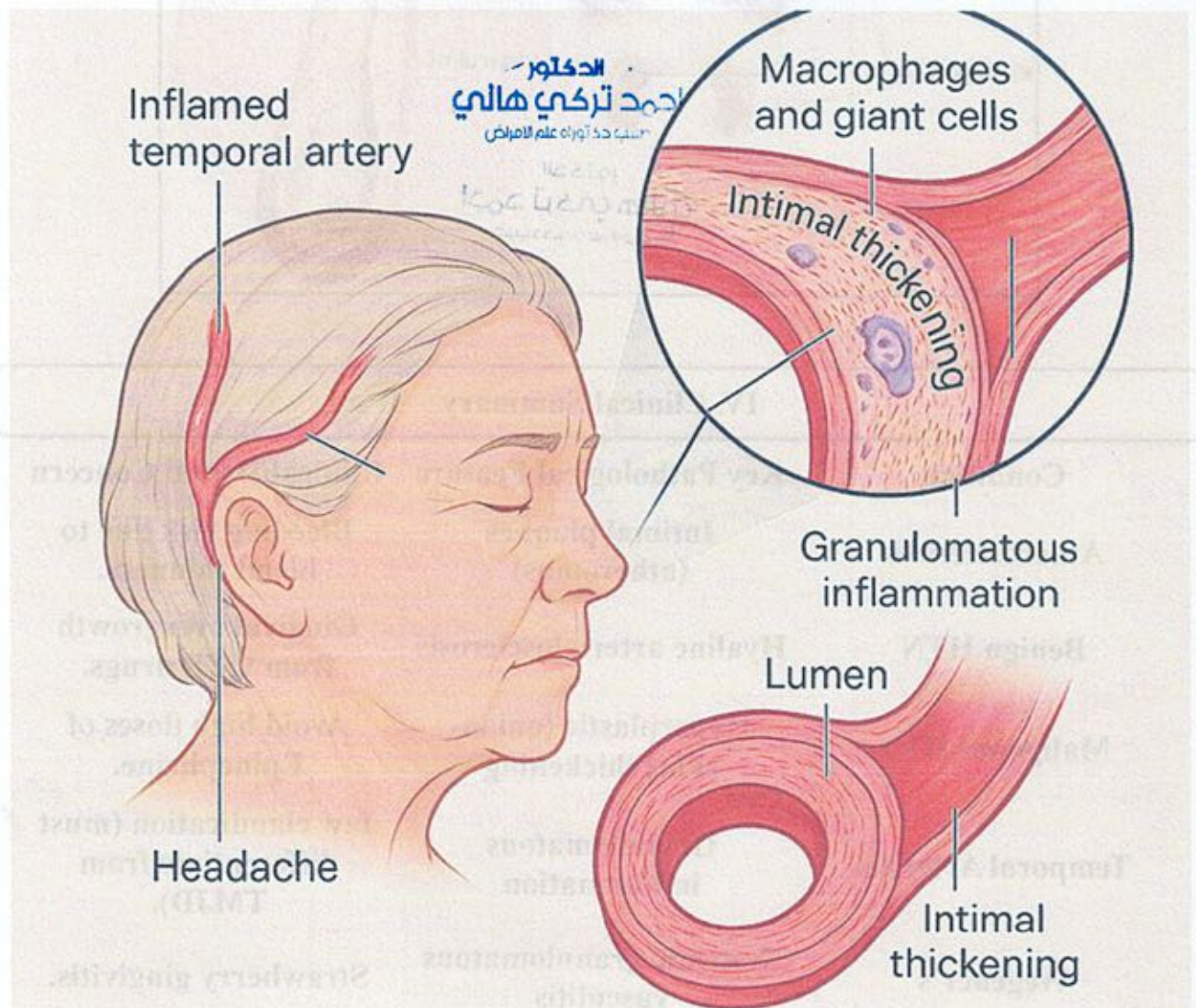
#### Giant Cell (Temporal) Arteritis

This is the most common vasculitis in elderly patients. It primarily affects branches of the carotid artery.

**Clinical Presentation:** Severe headache, scalp tenderness, and jaw claudication (pain due to ischemia in the jaw muscles while chewing).

**Danger:** If the ophthalmic artery is involved, it can lead to sudden, permanent blindness. This is a medical emergency.

#### Giant Cell (Temporal) Arteritis

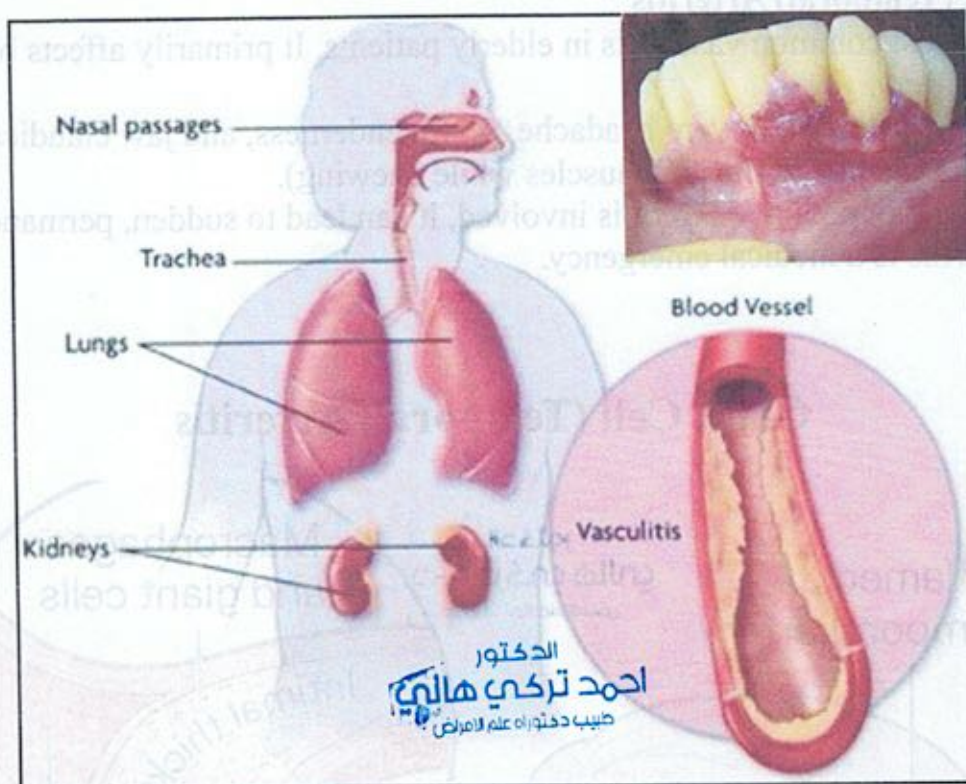




**Granulomatosis with Polyangiitis (Wegener's)**

A systemic vasculitis that affects the lungs, kidneys, and upper respiratory tract.

**Oral Hallmark:** "Strawberry Gingivitis"—the gingiva appears erythematous, granular, and hyperplastic, resembling the surface of a strawberry.

**IV. Clinical Summary**

| Condition          | Key Pathological Feature             | Clinical/Dental Concern                          |
|--------------------|--------------------------------------|--|
| Atherosclerosis    | Intimal plaques (atheromas)          | Bleeding risk due to blood thinners.             |
| Benign HTN         | Hyaline arteriolosclerosis           | Gingival overgrowth from CCB drugs.              |
| Malignant HTN      | Hyperplastic (onion-skin) thickening | Avoid high doses of Epinephrine.                 |
| Temporal Arteritis | Granulomatous inflammation           | Jaw claudication (must differentiate from TMJD). |
| Wegener's          | Systemic granulomatous vasculitis    | Strawberry gingivitis.                           |