

Hypertension

Types

According to cause

Primary (idiopathic/ essential)
(95%)

Due to:
1. Genetic factors
2. Environmental factors

secondary
(5%)

Most common causes: renal disease or renal artery narrowing (renovascular hypertension)

Benign
(95%)

malignant
(5%)

- also known as accelerated HTN
- rapidly rising blood pressure that, if untreated, leads to death within 1 to 2 years
- systolic pressures > 200 mm Hg or diastolic pressures > 120 mm Hg
- usually superimposed on preexisting benign hypertension (either essential or secondary)
- Complications:
 1. renal failure
 2. retinal hemorrhages
 3. aortic dissection
 4. cardiac hypertrophy and heart failure (hypertensive heart disease)
 5. atherosclerotic coronary heart disease
 6. stroke (CVD) & multiinfarct dementia

According to severity

According to side of circulation

Systolic

diastolic

Definition

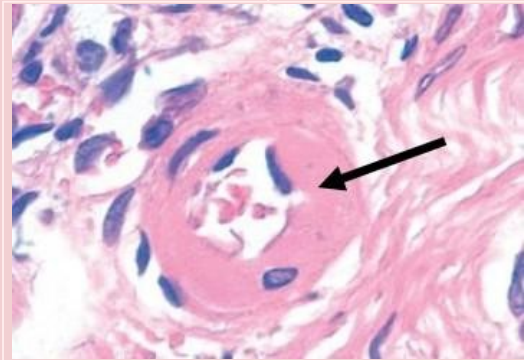
sustained diastolic pressures >80 mm Hg, and/or sustained systolic pressures >130 mm Hg

Blood vessels morphology in HTN

HTN is associated with arteriolosclerosis (small arterial disease).
Two forms of small blood vessel disease are hypertension-related:

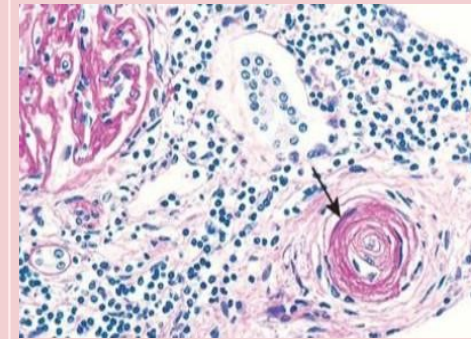
Hyaline arteriolosclerosis

- Ass. with benign hypertension
- homogeneous pink hyaline thickening of arteriolar walls + luminal narrowing
- leakage of plasma components across injured endothelial cells
- increased ECM production by smooth muscle cells in response to chronic hemodynamic stress
- Complications: nephrosclerosis (glomerular scarring)
- Other causes of hyaline arteriolosclerosis:
 - 1- elderly patients (normo-tensive)
 - 2- diabetes mellitus



Hyperplastic arteriolosclerosis

- With severe (malignant) hypertension
- "onionskin" concentric laminated thickening of arteriolar walls + luminal narrowing
- reduplicated basement membrane
- fibrinoid vessel wall necrosis (necrotizing arteriolitis)



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