

## CONGESTION, EDEMA, SHOCK

### Hyperemia /blood engorgement/

<u>Active</u>	<u>Passive (stagnation, congestion)</u>
<ul style="list-style-type: none"><li>- loss of sympathetic effects</li><li>- vasoactive compounds</li></ul> <p>↓</p> <p>vasodilatation</p> <p>inflammation (rubor, calor) – NO, PGE2</p> <p>physical activity, meal</p> <p>neural effects (blushing)</p> <p>menopause</p> <p>carcinoid flush</p> <p>reperfusion</p> <p>medicinal drugs</p>	<p>impaired venous outflow, venous hypertension</p> <p>a) local causes:</p> <ul style="list-style-type: none"><li>- venous thrombus</li><li>- venous insufficiency</li><li>- venous compression (v. cava sup. syndrome)</li><li>- torsion</li><li>- invagination</li></ul> <p>b) systemic causes:</p> <ul style="list-style-type: none"><li>- right sided heart failure</li><li>decompensated chr. cor pulm..</li></ul>

### Right sided heart failure

cyanosis

visceromegaly (hepatomegaly, splenomegaly)

bilateral hydrothorax

hydropericardium

ascites

nutmeg-liver

kidney: dilated stellate veins, livid pyramids

„congestive gastritis”

anasarca

### Consequences of the longstanding congestion

fatty degeneration (liver)

hemosiderin-deposition

induration (liver, spleen, lung, skin)

atrophy (skin)

necrosis (small bowel, testicle)

edema

### Edema

Extravasal accumulation of transudate

Low protein content

Specific gravity: < 1,012

- in the interstitial tissues
- freely in the body cavities

Background: disturbed balance in the microcirculation unit

Determining factors of edema formation

- decreased colloid osmotic pressure in the blood
  - increased capillary permeability
- increased hydrostatic pressure in the venous system
  - compromised lymphatic system
  - Na-and water retention

**EDEMA**

<u>localized</u>	<u>generalized</u>
<ul style="list-style-type: none"><li>- inflammation</li><li>- impaired venous outflow</li><li>- impaired lymphatic circulation</li><li>- hypoxia</li><li>- allergy</li><li>- cerebral space occupying lesions</li></ul>	<ul style="list-style-type: none"><li>- hypalbuminemia</li><li>- right sided insufficiency</li><li>- Rh (ABO) incompatibility</li><li>-infections</li></ul>

**Shock**

- Acute circulatory catastrophe, inadequate blood circulation, generalized tissue hypoxia, complex multiorgan insufficiency
  - Stereotype reaction
- Extremely increased sympathetic activity (constriction in arterioles + in venules), capillary stasis, hypoxia, acidosis
- Striking arterial hypotension, oliguria, cerebral functional disturbance

Hypovolemic  
Traumatic  
Anaphylactic  
Cardiogenic  
Septic  
Toxic (TSS-1)