Citation Key
for more information see: http://open.umich.edu/wiki/CitationPolicy

Use + Share + Adapt

{ Content the copyright holder, author, or law permits you to use, share and adapt. }

- Public Domain – Government: Works that are produced by the U.S. Government. (USC 17 § 105)
- Public Domain – Expired: Works that are no longer protected due to an expired copyright term.
- Public Domain – Self Dedicated: Works that a copyright holder has dedicated to the public domain.
- Creative Commons – Zero Waiver
- Creative Commons – Attribution License
- Creative Commons – Attribution Share Alike License
- Creative Commons – Attribution Noncommercial License
- Creative Commons – Attribution Noncommercial Share Alike License
- GNU – Free Documentation License

Make Your Own Assessment

{ Content Open.Michigan believes can be used, shared, and adapted because it is ineligible for copyright. }

- Public Domain – Ineligible: Works that are ineligible for copyright protection in the U.S. (USC 17 § 102(b)) *laws in your jurisdiction may differ

{ Content Open.Michigan has used under a Fair Use determination. }

- Fair Use: Use of works that is determined to be Fair consistent with the U.S. Copyright Act. (USC 17 § 107) *laws in your jurisdiction may differ

Our determination DOES NOT mean that all uses of this 3rd-party content are Fair Uses and we DO NOT guarantee that your use of the content is Fair.

To use this content you should **do your own independent analysis** to determine whether or not your use will be Fair.
Circulatory Derangements I

M1 – Cardiovascular/Respiratory Sequence

Gerald Abrams, MD

Fall 2008
Circulatory Derangements

• I  -Congestion, Edema
• II -Hemorrhage
• III-Thrombosis
• IV-Embolism, Ischemia, Infarction
• V –Atherosclerosis, Ischemic Ht. Disease
CONGESTION
Too much blood in an area

Within the cardiovascular system
(unlike hemorrhage)

Vessels engorged with blood
ACTIVE CONGESTION (hyperemia)
Increased flow into the area
-erythema-

PASSIVE CONGESTION
Decreased outflow from area
-cyanosis-
Normal

Arteriole

Venule

Active Congestion

hyperemia/erythema

Increased Inflow

inflammation *rubor* exercise blush

Passive Congestion
cyanosis/hypoxia

Decreased Outflow

clot in vein tourniquet congestive heart failure
Normal Lung
Congested Lung
Normal Lung
Congested Lung
Congested Lung
Hemorrhage by Diapedesis

G.D. Abrams, University of Michigan Medical School
Congestion
erythrophagocytosis
Early CPC
Advanced CPC
Normal liver
Liver – Outflow Obstruction

G.D. Abrams, University of Michigan Medical School
Liver – Outflow Obstruction
Liver – Outflow Obstruction
Liver
Central Hemorrhagic Necrosis

G.D. Abrams, University of Michigan Medical School
Liver
Central Hemorrhagic Necrosis
Liver
Cardiac Failure
Esophageal Varices
Portal Circulation

Original image here: http://1.bp.blogspot.com/_DJHKI52rMWA/SfaTtEF0jqI/AAAAAAAAADw/6X0s8peMvOo/s320/shared_7303_HM-06.jpg
Liver - Cirrhosis
Esophageal Varices
Esophageal Varices
EDEMA

Accumulation of excess fluid in the interstitial spaces / body cavities
Effusion

Fluid accumulation in a body cavity

Pleural Effusion
Pericardial Effusion
Peritoneal Effusion = Ascites
Anasarca – Generalized edema, a water-logged body
Fluid Collections

- Inflammatory collection = Exudate
- Non-inflammatory collection = Transudate
Edematous Connective Tissue
Peripheral Edema
Pitting Edema (1)
Pitting Edema (2)
Pitting Edema (3)
Chronic Lymphedema
Pulmonary Edema
Pulmonary Edema
Pulmonary Edema
Laryngeal Edema
Cerebral Edema