

Infarct

Infarction is a focus of ischemic necrosis in an organ or tissue that is caused by the occlusion of a supply artery. It is the most severe form of ischemia. In the vast majority of cases, a heart attack is caused by the blockage of an artery by a thrombus or embolus. It is rarely caused by bleeding into the atherosclerotic plaque with its subsequent sudden enlargement, e.g. in *a. coronaria*.

Morphology

The typical macroscopic appearance does not develop until 48 hours after arterial occlusion. Most infarcts are wedge-shaped with the artery closed at the tip and with the base directed to the periphery of the organ.

According to color, we divide into:

1. **Light, anemic** - arise in stiffer tissues of a solid consistency (myocardium, kidneys, spleen) and in the brain. Often its cause is the closure of terminal arteries that have no anastomoses.
2. **Red, hemorrhagic** - the dark red color is conditioned by the bleeding of necrotic tissue. They arise in thinner tissues where there are abundant anastomosing vascular branches (lungs, intestine).
3. **Mixed** - white infarct with extensive hemorrhagic rim.

Microscopic image

- **Coagulative necrosis** - is the most common, occurs in the lungs.
- **Collivation Necrosis** - in the brain.
- **Gangrene** - often in the lower limbs, typically in patients with [[diabetes mellitus|diabetes].

If the occlusion is caused by an **infected embolus**" or if the necrotic tissue is **secondarily infected from the surrounding area, the infarction turns into an abscess - a so-called festering infarction**. Furthermore, a red infarct can also become discolored, during which the erythrocytes break down, releasing hemosiderin and bilirubin into the environment. Macroscopically, a local icterus develops. Infarcts are generally healed by granulation tissue and later by **scar** (e.g. retraction of the surface of the kidney, chronic aneurysm in the LV of the heart). The exception is in the brain, where a post-malacia pseudocyst remains, which is a cavity filled with collimated necrotic tissue.

 For more information see *Necrosis*.

 For more information see *Gangrene*.

Clinical Significance

Heart attacks are among the most frequent and serious clinical disorders. In developed countries, myocardial infarction causes **20% of deaths**, the next most common cause of death is brain infarction - so-called **encephalomalacia**'. Pulmonary infarctions complicate about 10% of all cases of pulmonary embolization. Intestinal infarctions, which have a high mortality rate, are less common. Ischemic necrosis is a frequent complication in diabetics - it has the character of wet or dry gangrene.

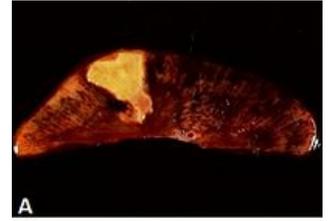
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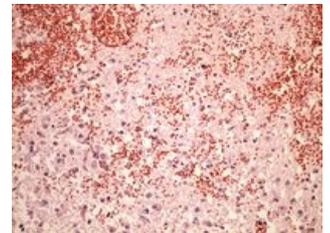
References

- PROMOTED, Ctibor - ŠTEINER, Ivo - DUŠEK, Paul. *General Pathology*. 1. edition. Prague : Galen, 2011. 290 pp. ISBN 978-80-7262-773-8.

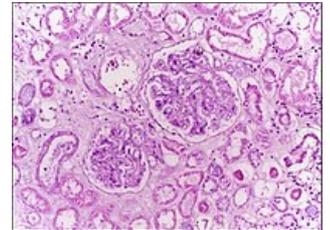


Coagulative necrosis in kidney tissue

Wedge-shaped necrosis in kidney



Coagulative necrosis



Coagulative necrosis in the renal cortex