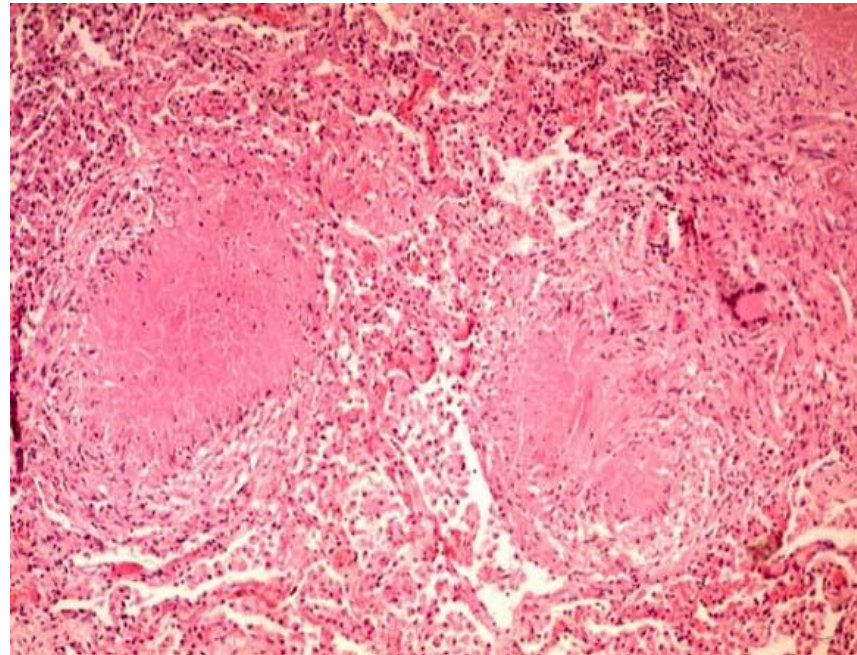


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DEPARTMENT OF VETERINARY PATHOLOGY



Post mortem changes

- ▶ As soon as animal dies certain changes occur known as Post mortem changes. They become advanced with passage of time.

Factors affect rapidity or onset of P.M. changes

- ▶ Environmental temp- Occur faster in increased temp. due to increase rate of enzymatic & bact activity and animal decompose rapidly in higher temp. Carcass can be preserved for longer periods with modern refrigeration
- ▶ Size of animal-Larger the size of animal, P.M. changes rapid as it require more time for heat dissipation from body after death
- ▶ External insulation-Thick cutaneous covering like hair, wool prevent heat dissipation & so PM changes faster
- ▶ Nutritional status of animal-Fatter the animal lower will be loss of heat so more rapid rate of putrifacation
- ▶ Species of animal-In Pig : Flesh is soft, moist contain more fat so decomposition is rapid

In horse: Flesh is dry & firm so PM changes relatively slow

POSTMORTEM CHANGES

- ▶ Autolysis
- ▶ Putrefaction
- ▶ Rigor mortis
- ▶ Algor mortis
- ▶ Livor mortis
- ▶ Hypostatic congestion
- ▶ Pseudomelanosis
- ▶ Imbibition of Hb, bile
- ▶ Post-mortem clotting of blood
- ▶ Post-mortem emphysema
- ▶ Rupture of organs & tissues
- ▶ Displacement of organs

Autolysis- Digestion of tissues after death by their own cellular lysosomal enzymes. Autolysis is prevented if tissues are fixed in fixatives which inactivate these enzymes

Putrefaction- Decomposition of tissues after death by enzymes of saprophytic bacteria. After death bact from dig tract & body surface invade, multiply and digest the tissue.

Rigor mortis- Shortening & contraction of muscles after death lead to stiffness& immobilization of body. It begins from anterior portion of body (eyelids, cheek, muzzle, nose, head, neck, forelimbs, abdomen) & progresses in posterior direction (hind legs, tail) and disappear in the same direction. Usually appear 1-8 hour after death. They are hastened in high temp(summer), violent exercise (racing, fighting, struggling), violent muscular contractions as seen in tetanus, strychnine poisoning. They are retarded in low temp(winter), in weak emaciated animals. They disappear within 20-30 hours & once disappear does not reappear. This is used to determine the time after death in veterolegal cases

Algor mortis - Cooling of body after death .Young animals and weak & lean animals, died due to chronic and wasting diseases- cool rapidly. Cooling is slow in animals which die suddenly during accidents or acute disease or apoplexy. Cooling is slow in large/fat/well nourished animals.

Post mortem clotting of blood- Coagulation of blood in blood vessels after death. Endothelial cells begin to degenerate & liberate thromboplastin which clots blood in heart, arteries & veins. In anthrax -no clotting occurs In anthrax -no clotting occurs because of fibrinolytic property of anthrax organisms which liquefy fibrin. In sweet clover poisoning prothrombin activity is inhibited and blood clotting does not occur.

Two types of blood clot-Red or current jelly & Yellow or chicken fat

Imbibition of Hb- Staining of tissue with hemoglobin. After death hemolysis of RBCs by cellular & bacterial enzymes- Hb is released & diffuses in surrounding tissues &stains them red

Imbibition of bile- Yellowish to greenish coloration due to diffusion of bile pigments from gall bladder in to near by surrounding tissue

- ▶ **Pseudomelanosis** - Greenish or blackish coloration of tissues after death. H_2S during putrefaction combines with Fe to form FeS as black pigment
- ▶ **Hypostatic congestion** - Accumulation of blood in ventral portion of organs and the entire carcass due to influence of gravity
- ▶ **Post mortem emphysema** - Accumulation of gas in tissues as a result of bacterial fermentation
- ▶ **Rupture of organs & tissues**- When gases produced cause progressive distention of body structures until they rupture usually occur in stomach, intestine, diaphragm, ventral abdominal wall
- ▶ **Displacement of organs**- occurs when dead animal is rolled over or moved. The intestine is usually displaced and do not show passive hyperemia.

Post mortem clotting
of blood

