GENERAL PATHOLOGICAL CONDITIONS

Fever (Pyrexia)

Fever is an abnormal elevated body temperature. It may be classified:

- septic
- aseptic

according to the presence or non-presence of an infection.

- In septic fever the infection is caused by viruses, bacteria, bacterial toxins, protozoa and fungi.
- Aseptic fever may be caused by
  a) tissue necrosis as seen in muscle degradation due to intramuscular injection of necrotizing substances, in rapidly growing tumors undergoing necrosis or lyses of burned tissue.
  b) by chemicals or surgery. In former by an administration of drugs and in latter by breakdown of tissue and blood.
  c) During anaphylactic reaction of antibodies to the foreign antigens.

Postmortem findings:

1. Rigor mortis
2. Putrefaction
3. Congestion of subcutaneous blood vessels and carcass
4. Enlarged lymph nodes
5. Evidence of cloudy swelling of liver, heart and kidneys.

Judgment:

Carcass is condemned if fever syndrome is associated with presence of bacteria or bacterial toxins in the blood and/or findings of drugs and antimicrobial substances. If typical signs of fevered carcass are not seen on carcass should be held for 24 hours after slaughter and re-examined.

Septicemia:
Septicemia is a morbid condition caused by the presence of pathogenic bacteria and their associated toxins in the blood. The positive diagnosis of septicemia can only be made by isolation of the causative organism from the blood stream. This is not practiced on routine antemortem examination of animals in abattoirs.

**Judgment:**
- The animal's carcasses, offal and other detached portions of animals affected with septicemia are Condemned
- In borderline cases bacteriological examination should be done wherever possible.

**Toxemia:**
The identification of toxemia presents some difficulties on routine ante mortem and postmortem examination. The gross lesions differ depending on the specific organisms and toxins involved also the clinical signs of toxemia simulate a variety of other pathologic conditions.
Toxemia is defined as the presence and rapid proliferation of exotoxin and endotoxin derived from microorganisms or produced by body cells in the blood-stream. Clinical signs and postmortem findings are similar to those of septicemia.
Toxemia is frequently associated with:
- Gangrenous mastitis
- Metritis
- Aspiration pneumonia
- Old wounds and injuries
- Diffuse peritonitis due to perforation of the reticulum or uterus
**Judgment:**
If there is evidence of septicemia or toxemia the carcass and the viscera should be condemned.

**The primary lesions causing septicemia or toxemia are :**
- mastitis
- pericarditis
- enteritis and others, should be observed and recorded as causes of condemnation..

Melanesia

Course name: Meat Hygiene | Lecture title GENERAL PATHOLOGICAL CONDITIONS | Dr. Iqbal Ali Sultan
Melanesia is an accumulation of melanin in various organs including the kidneys, heart, lungs and liver and other locations such as brain membranes, spinal cord, connective tissue, periosteum etc.

- Melanin is an endogenous brown-black pigment randomly distributed in tissue.
- Melanin deposits in the esophagus and adrenal glands in older sheep are a common finding on postmortem examination.
- Multifocal deposits of melanin in the liver of a calf are known as “Melanosis maculosa”.

**Judgment:**

Carcass showing extensive is condemned. If the condition is localized, only the affected organ or part of the carcass needs to be condemned.

**Jaundice:**

Classification of jaundice

1. Pre-hepatic:

2. Hepatic:

3. Post-hepatic

Prehepatic jaundice occurs following excessive destruction of red blood cells. Tick-borne diseases such as Babesia ovis and Anaplasmosis cause this type of jaundice, which is one of the main causes of carcass condemnation in Southern Africa due to prevalence of these parasites. Over produced blood pigment, which cannot be metabolized in the liver, builds up in the blood (hemoglobinemia). It is excreted by the kidneys into the urine (hemoglobinuria). Normal urine color changes and becomes bright red to dark red.

Hepatic jaundice occurs due to direct damage to liver cells as seen in liver cirrhosis, systemic infections, and in chemical and plant poisoning. In sheep, jaundice may have been caused by photogenic chronic copper poisoning.

Liver function is impaired, and the liver is unable to secrete bile pigments.

Obstructive jaundice occurs:

1. when the drainage of the bile pigment bilirubin is blocked from entry into the intestine. This usually occurs due to the obstruction of the hepatic ducts by a tumor, by parasites such as flukes or by gall stones.
2- Obstruction may also occur due to an inflammation of the bile ducts.

**Judgment:**

Animals suspected to have I citrus should be treated as “suspects” on ante mortem examination. On postmortem examination, the carcass and viscera with hemolytic, toxic I citrus and obstructive I citrus are condemned. Less severe cases are kept in the chiller for 24 hours. Upon re-examination, the carcass may be approved or condemned depending on the absence or presence of pigment in the tissue. If the obstructive I citrus disappears after 24 hours, the carcass and viscera can be passed for human food.

**Bile pigment test:**

Is a simple laboratory test will help to make an objective test for bile pigment I citrus. Two drops of serum are mixed on a white tile with two drops of Fourchettes agent. A blue/green precipitate is positive for bile I citrus.

**Hemorrhage and Hematoma**

Hemorrhage is seen at slaughter in various organs, mucous and serous membranes, skin, subcutaneous tissue and muscles. It may be caused by trauma, acute infectious diseases or septicemia. Hemorrhage is also associated with vitamin C deficiencies, a sudden increase in blood pressure with weakened blood vessels, and improper electric current stunning in pigs and sheep., exposure to stress before slaughter, hot weather and excitement are some of the other factors which contribute to muscle hemorrhage. Hemorrhage caused by improper stunning, there may be a delay between stunning and sticking of the animal. The electrical current used in stunning cause's cardiac muscle stimulation and vasoconstriction of blood vessels. This might induce a rapid rise in blood pressure leading to hemorrhages in the organs and muscle (so called “blood splashing”).

**Judgment :**

A carcass is approved

if the hemorrhage is minor in extent and is due to physical causes. The affected tissue is condemned

A carcass affected with extensive hemorrhage or a hemorrhagic carcass associated with septicemia is condemned.

**Bruises**
Bruises are frequently found on ante mortem and post-mortem examination in food producing animals and poultry.

In cattle bruises caused by transportation or handling are commonly found in the hip, chest and shoulder areas;

in sheep in the hind leg.

Bruises and hemorrhage in the hip joint are caused by rough handling of animals during shackling. Bruises in poultry can be localized or generalized and are frequently associated with bone fractures or ruptured ligament tendons.

**Judgment:**

Bruised animals should be treated as suspects on ante mortem examination. On postmortem examination, carcasses affected with local bruising are approved after being trimmed. Carcasses affected with bruises or injuries associated with inflammatory lesions are also approved. If tissue reaction does not extend beyond the regional lymph nodes affected area should be condemned. When bruises or injuries are associated with systemic change and the wholesomeness of the musculature is lost, the carcass will be condemned. On postmortem examination of bird carcasses affected with bruises and fractures, the following judgment should be observed: (a) the fractures associated with bruises are removed and affected tissue is condemned.

(b) in compound fractures with damaged skin, the fractured site and surrounding tissue are condemned

(c) in simple fractured without bruises and damaged skin, the affected portion may be approved for mechanical and manual boning operations. If the lower part of bone is fractured, the bone may be removed by cutting above the fracture. A carcass affected with extensive bruises is condemned on postmortem examination. A slightly or moderately bruised carcass is approved if no systemic changes are present. Affected tissues are condemned.

**abscess**

An abscess is a localized collection of pus separated from the surrounding tissue by a fibrous capsule. The most common bacteria in liver abscesses include Actinomyces, Corynebacterium, Streptococcus spp, Staphylococcus spp.

**Judgment:**

judgment of animals and carcasses affected with abscesses depends on findings of primary or secondary abscesses in the animal. The portal of entry of pyogenic
organisms into the system is also of importance. The primary abscess is usually situated in tissue which has contact with the digestive tract, respiratory tract, subcutaneous tissue, liver etc.

the secondary abscess is found in tissue where contact with these body systems and organs are via the bloodstream. The brain, bone marrow, spinal cord, renal cortex, ovary and spleen may be affected with secondary abscesses. In judgment of the carcass, the inflammation of the renal medulla and contact infection in the spleen and ovaries must be ruled out. A single huge abscess found in one of the sites of secondary abscesses may cause the condemnation of a carcass if toxemia is present.