Classical Swine Fever

Pathological and histopathological findings

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Classical swine fever

- Classical swine fever (CSF), also known as hog cholera, is a highly contagious multisystemic, hemorrhagic, viral disease of swine caused by a PESTIVIRUS of the Flaviviridae family.

- The disease affects domestic and wild pig populations. Severity ranges from mild to severe, causing a large number of deaths in affected herds.

- Clinical signs: fever, redness of the skin, incoordination, diarrhea and pneumonia.
Classical swine fever- forms

• **Acute form**
• Leucopenia and thrombocytopenia
• Widespread petechiae and ecchymoses, especially in the skin, lymph nodes, larynx, bladder, kidney and ileocecal junction
• Multifocal infarction of the margin of the spleen is characteristic but not always present
• Enlarged hemorrhagic lymph nodes
• Encephalomyelitis with perivascular cuffing
Classical swine fever

- **Chronic form**
- Button ulcers in the cecum and large intestine
- Generalised depletion of lymphoid tissue
- Hemorrhagic and inflammatory lesions are often absent
Classical swine fever

- **Congenital form**
  - Central dysmyelogenesis
  - Cerebellar hypoplasia
  - Microencephaly
  - Pulmonary hypoplasia
Classical swine fever

- **Differential diagnosis**
- African swine fever
- Infection with bovine viral diarrhea virus
- Salmonellosis
- Erysipelas
- Acute pasteurellosis
- Other viral encephalomyelitis
- Streptococcossis
- Leptospirosi
- Coumarin or anticoagulant poisoning
Classical swine fever

- **Diagnosis**
  - Pathological and histopathological lesions
  - RT-PCR - positive results available in 24 h
  - Serology (blood antibody tests): takes 24 h for ELISA, 5 days for serum neutralisation test (SNT)
  - Fluorescent antibody test on cryostat sections of autopsy tissues from pigs with clinical signs of CSF (24 h for result)
  - Virus isolation from affected pigs: 3-5 days for result
Recumbant and dead pigs
Congested skin of a affected pig next to a normal pig
Abortions
Multifocal skin hemorrhages
Multifocal skin hemorrhages
Multifocal and ecchymotic skin lesions
Tonsils with purulent exudate
Multifocal hemorrhages on the parietal pleura

Lung congestion and hemorrhage
Lung congestion and coalescing hemorrhages
Multifocal hemorrhages on the diaphragm
Enlarged spleen
Enlarged dark congested mesenteric lymph nodes
Multifocal hemorrhages of a lymph node
Lymph node - petechial and peripheral hemorrhages
Kidney - multifocal cortical peteciae
“turkey egg kidney”
Kidney with multifocal hemorrhages in the cortex
Multifocal necrosis and ulcerations in the small intestine
Button ulcers - internal surface of colon
(photo courtesy of L.D. Sims)
ulcers surrounded by zones of hemorrhage

Photo of Dr. R. Panciera, Oklahoma State University
Tonsils and epiglottis contain multiple tan foci of necrosis
Lung - multifocal hemorrhages
Tonsil - focal necrosis
Lymph node - extensive hemorrhages
Spleen - diffuse hemorrhages
Liver - focal mononuclear infiltrate (present in this case)
Kidney - focal mononuclear infiltrate (present in this case)
Brain - non-suppurative meningoencephalitis
Brain - focal gliosis and vasculitis
Skeletal muscle - perimysial hemorrhages (present in this case)
Perimysial hemorrhages and myofiber necrosis (present in this case)
Myofiber necrosis on cross and longitudinal sectioned muscle (present in this case)