





**CSF**



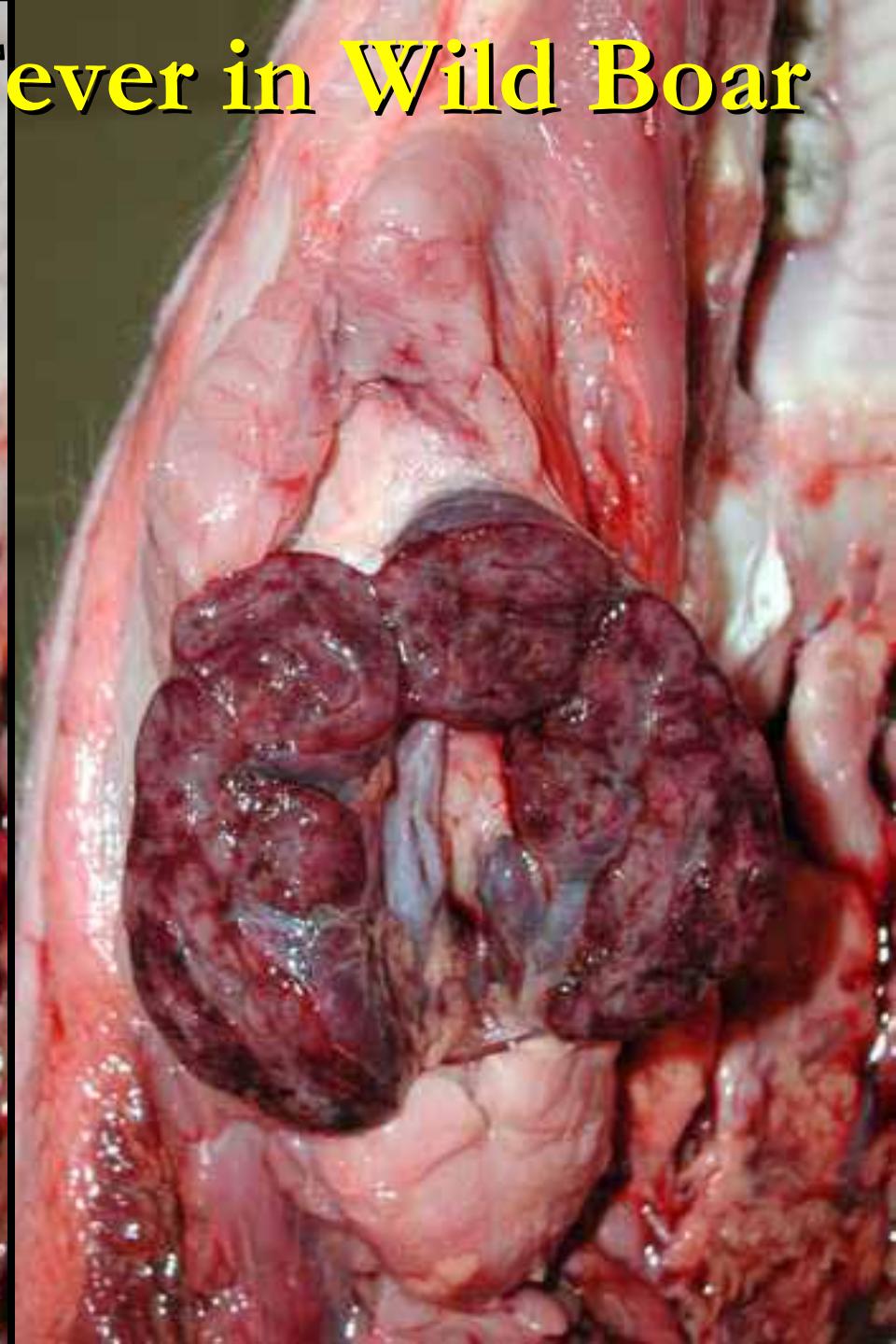
# Classical Swine Fever in Wild Boar



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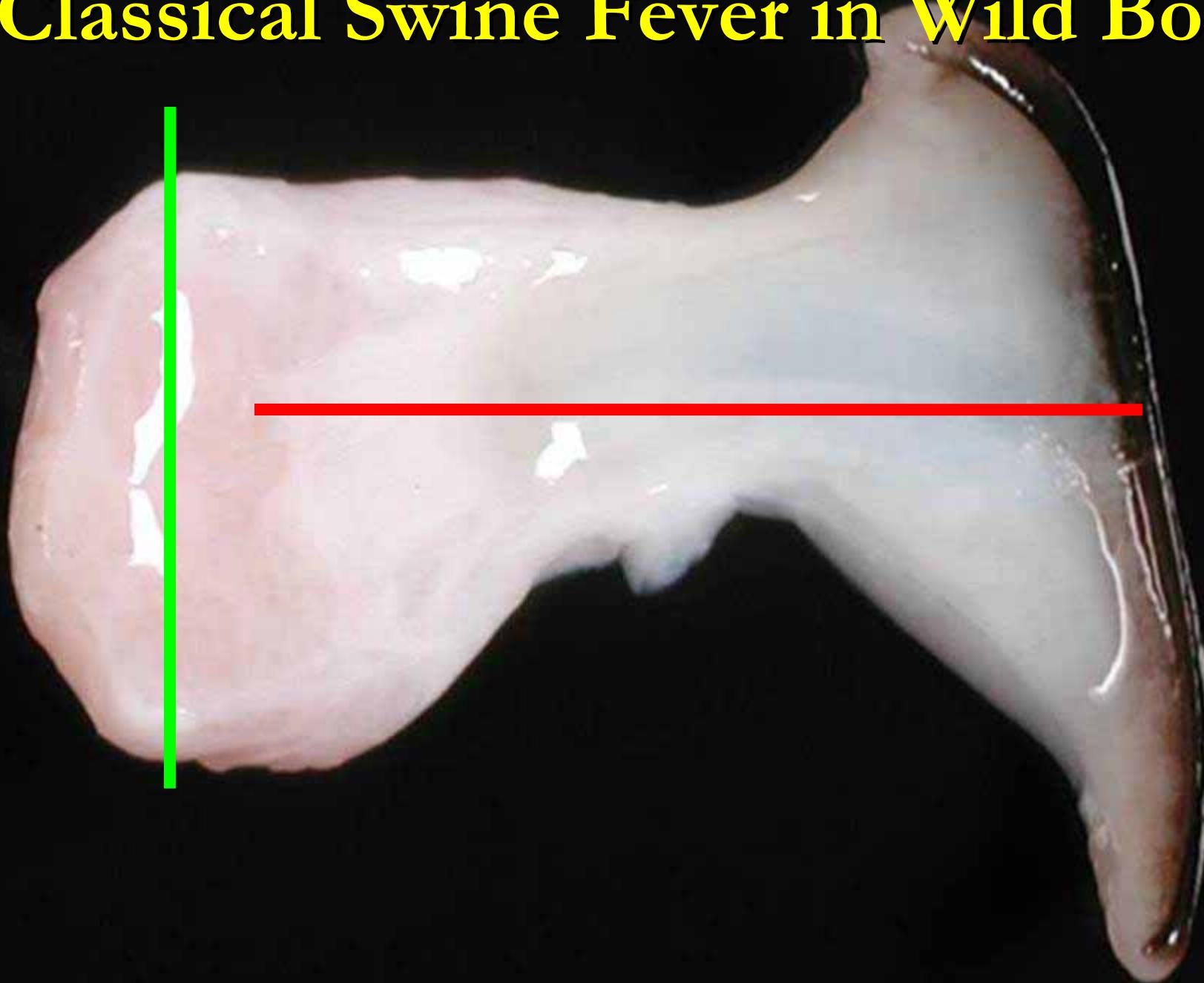
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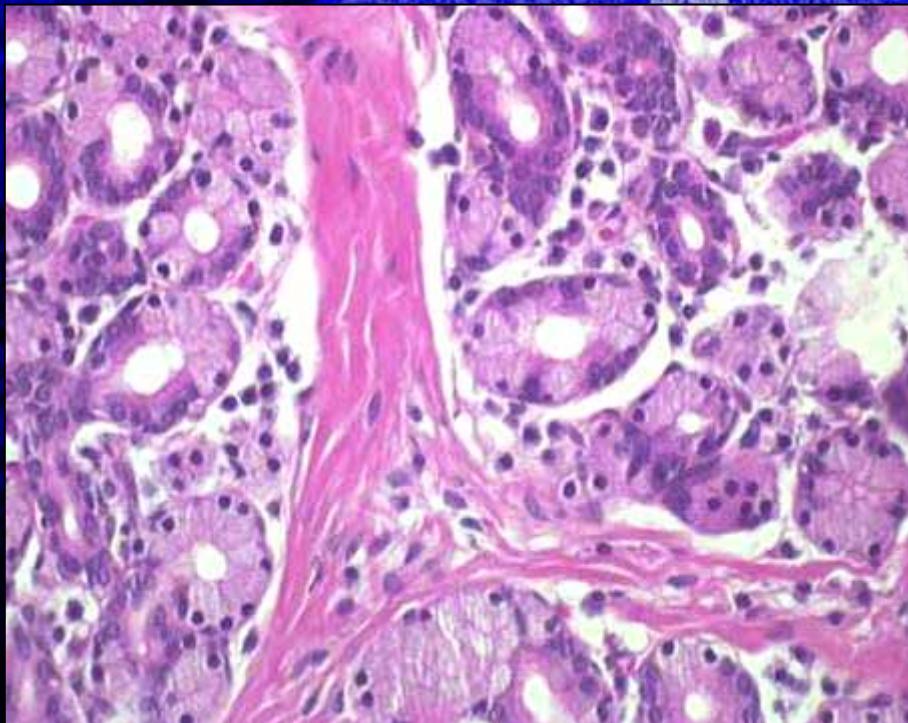
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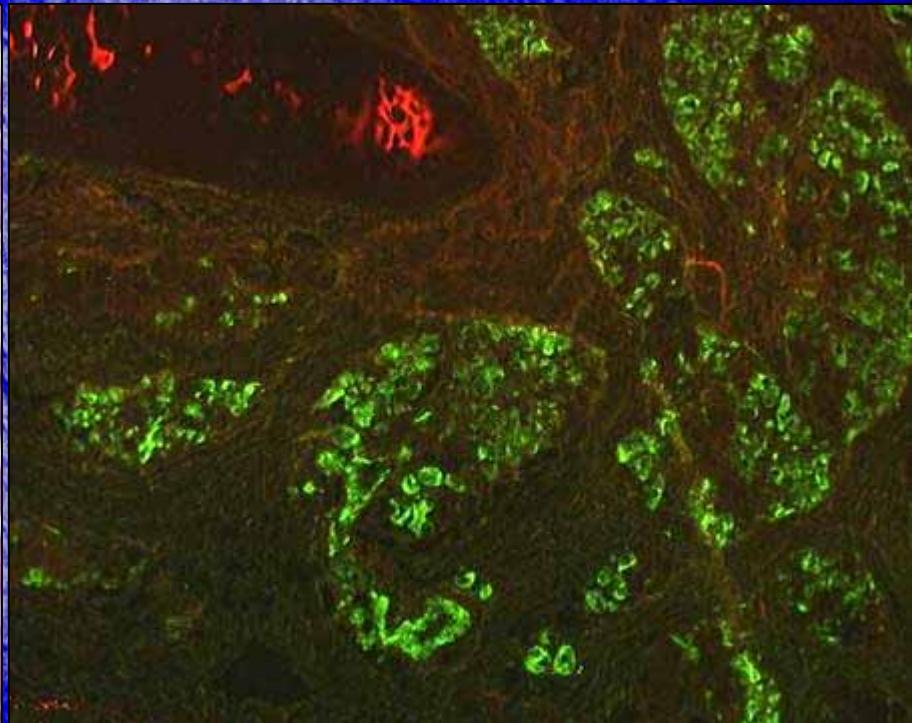
# Classical Swine Fever in Wild Boar



# Classical Swine Fever

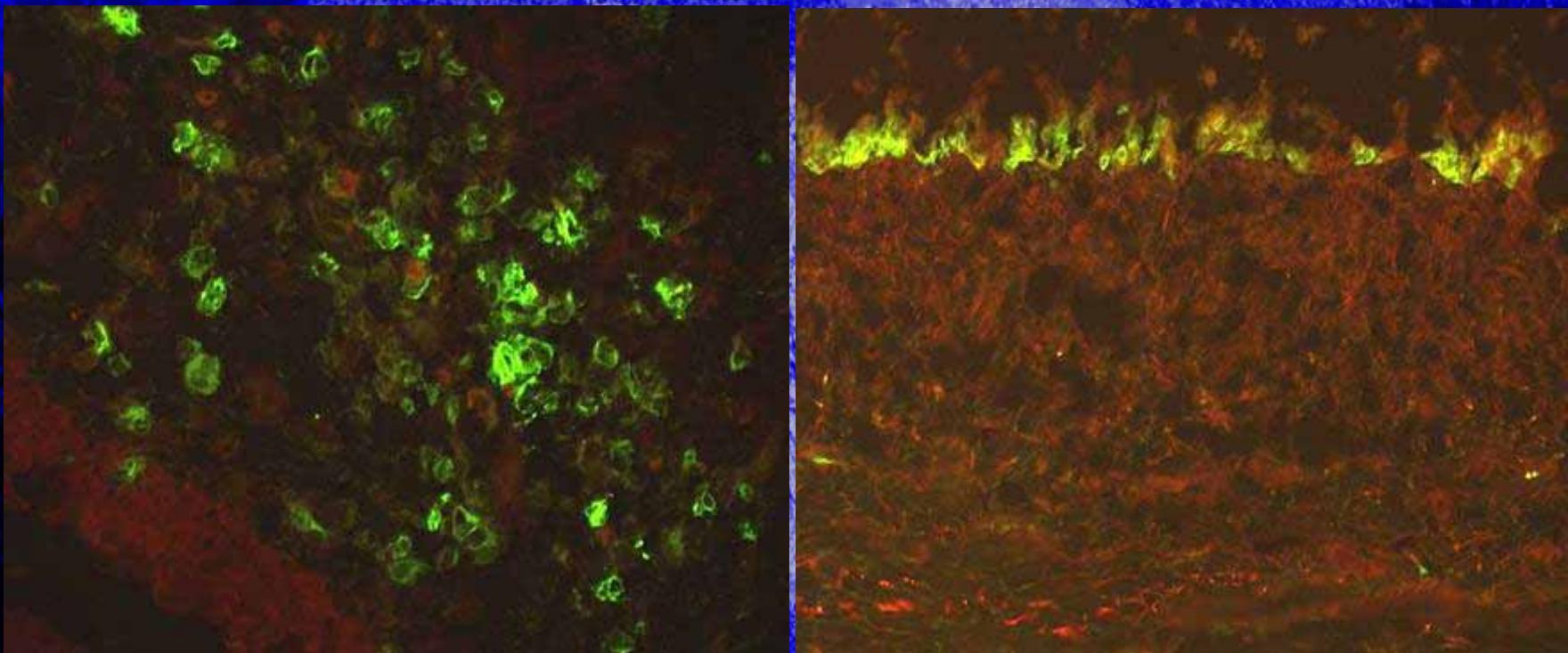


Nictitating membrane: Moderate diffuse infiltration with lymphocytes and plasma cells



A large number of **glandular epithelial** cells with fluorescence specific for CSFV-antigen

# Classical Swine Fever in Wild Boar



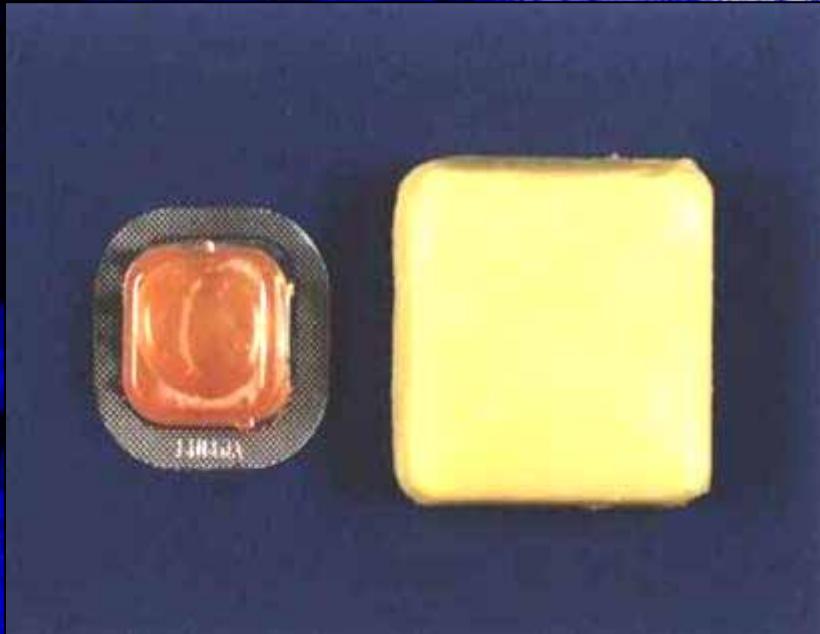
Within **lymphatic follicles** of NM  
a large number of cells shows  
CSFV-specific fluorescence.

Cells of the **surface epithelium**  
are diffusely positive for CSFV-  
antigen. In addition there is  
yellow autofluorescence due to  
necrosis.

# Bait Immunization Against Classical Swine Fever in Wild Boar

**Vaccine**  
attenuated live  
vaccine (C-  
strain)  
1.6 ml per blister

**Bait**  
corn, with chemical  
attractants  
size: 4 x 4 x 1.5 cm



# Bait Immunization Against Classical Swine Fever in Wild Boar

## Vaccine virus strains

### CSFV „C-strain“

- > 100 passages, attenuated live virus (RIEMSER CSF oral vaccine)
- Complete CSFV-genome

### BVDV-CSFV chimera

- BVDV-backbone deleted in E2 with insertion of CSFV E2 „Alfort 187“



# **Classical Swine Fever**

- Structure of pig farming: traditional backyard holdings and outdoor holdings
- Illegal swill feeding, poor hygienic conditions
- Home slaughtering of pigs, illegal marketing of products
- Uncontrolled animal markets and animal movements with intense contact between animals of different sources
- Long high risk periods and silent spread of virus
- Low level of disease awareness



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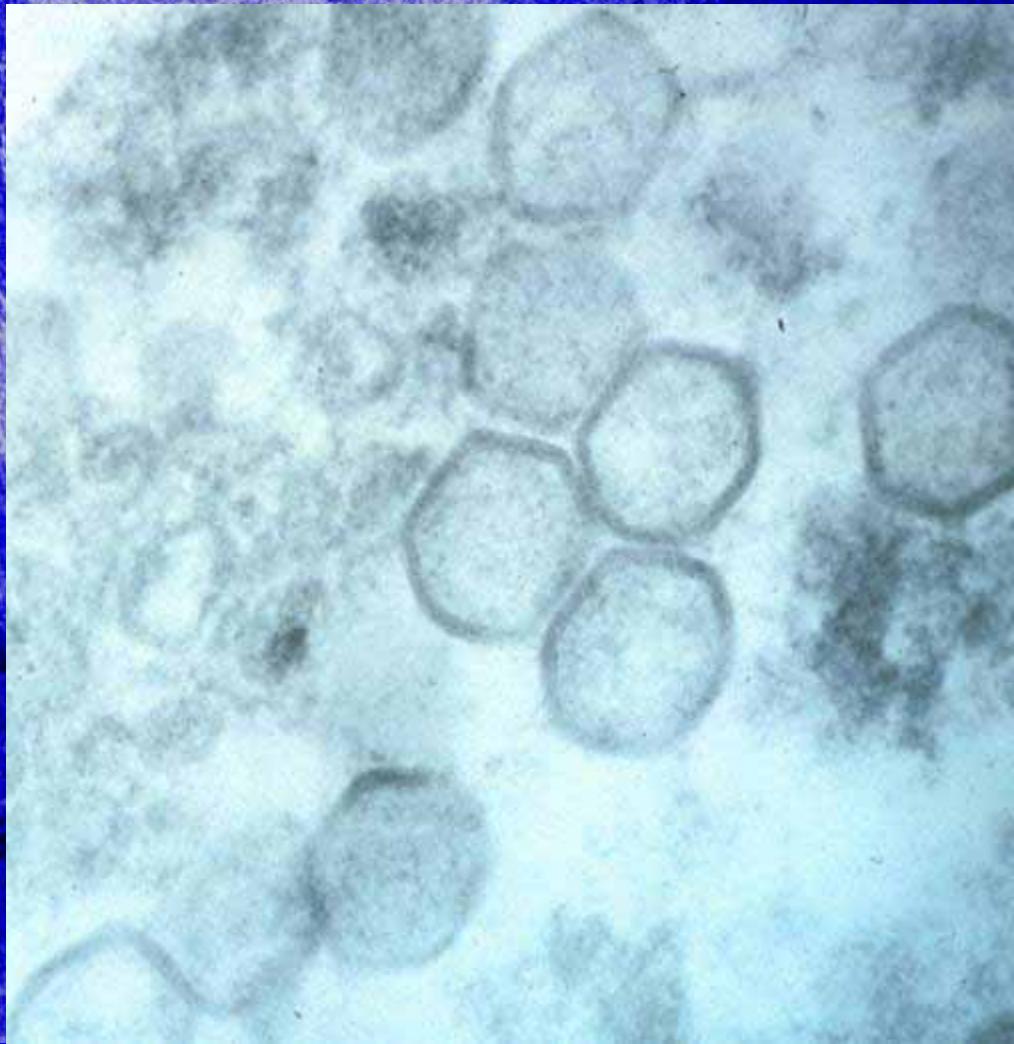


**COMPARISON OF SYMPTOMS AND LESIONS CAUSED BY  
SALMONELLA CHOLERAESUIS (Sc) AND CLASSICAL SWINE FEVER (CSF)**

Symptom or Lesion	Sc	CSF
Fever, lethargy, anorexia, reddening or purpling of skin of ventral abdomen and extremities	+	+
Watery yellow diarrhea, occasional tremors or convulsions	+	+
Conjunctivitis	-	+
Birth of litters composed of mummified, stillborn, malformed, weak or tremoring pigs. Malformations of the head and limbs or cerebellar or pulmonary hypoplasia are common.	-	+
Consistent labored breathing or coughing	+	-
Renal cortical hemorrhages, "marbled" lymph nodes, splenic enlargement and button ulcers in colon	+	+
Severe interstitial pneumonia with hemorrhagic interlobular edema	+	-
Severe fibrinonecrotic enterocolitis and ischemic necrosis of skin on ears	+	-
Splenic infarcts, tonsilar necrosis, mucosal hemorrhages in the urinary bladder	-	+
Characteristic vascular lesions characterized by markedly swollen endothelium, mural edema, fibrinoid necrosis and perivascular hemorrhage and lymphocytic cuffing	-	+
Vascular lesions characterized by endothelial swelling, intimal edema, perivascular accumulations of neutrophils and macrophages	+	-
Multifocal hepatic necrosis	+	-

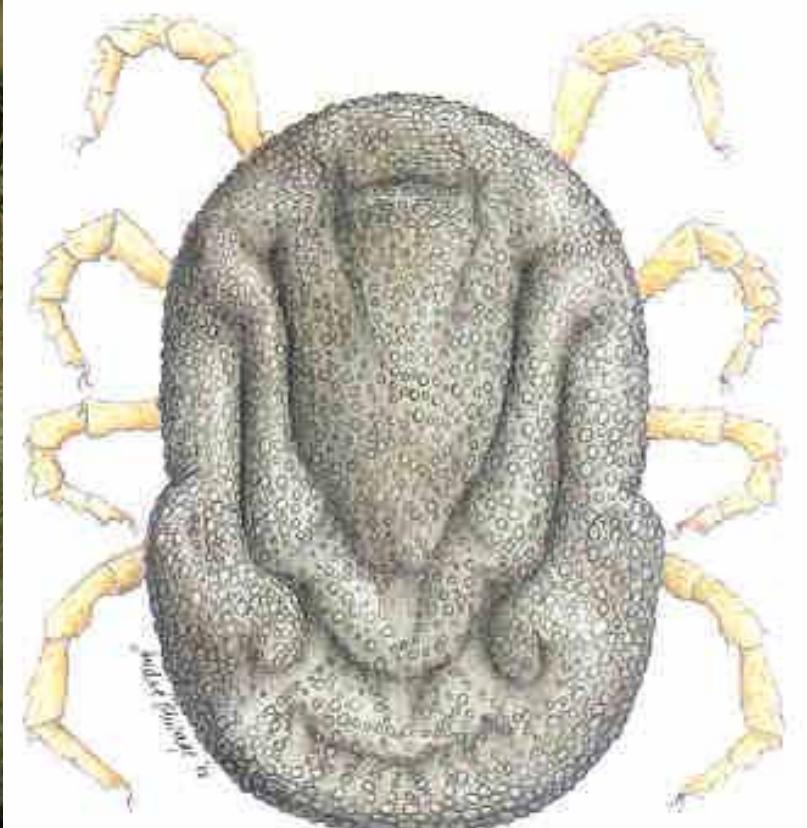
# African Swine Fever

- Icosahedral, enveloped, double-stranded DNA
- Only DNA arbovirus
- 200 nm
- No known serotypes
- Occurs in sub-Saharan Africa, South-West Europe, Caribbean, Brazil
- Eradicated outside of Africa, except Sardinia
- Outbreak in Georgia/Russia in 2008



# Host / Reservoir

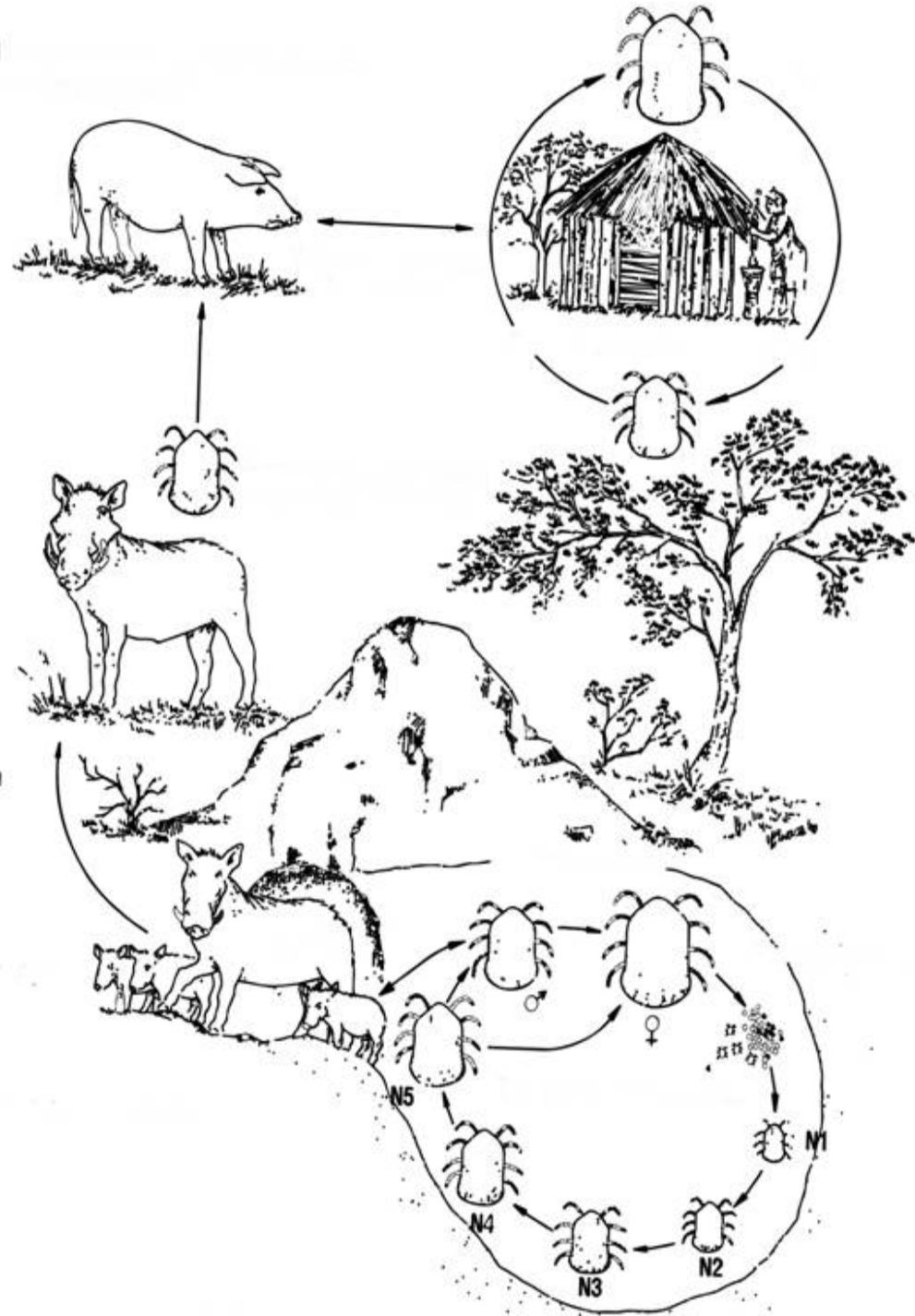
- Affects pigs
- Domestic pigs and warthogs
- Reservoir: ticks  
*(Ornithodoros moubata)*





# Transmission

- Life cycle involving ticks and warthogs
- Infection of neonatal warthogs
- Only mild disease
- Persistent low level viremia (lymph nodes)
- Ticks transported by warthogs
- Transmitted between domestic pigs in secretions and meat
- Iatrogenic spread



# Transmission



Pig 'khola'

# Socio-Economics

- Explosive spread and high mortality can devastate swine industry

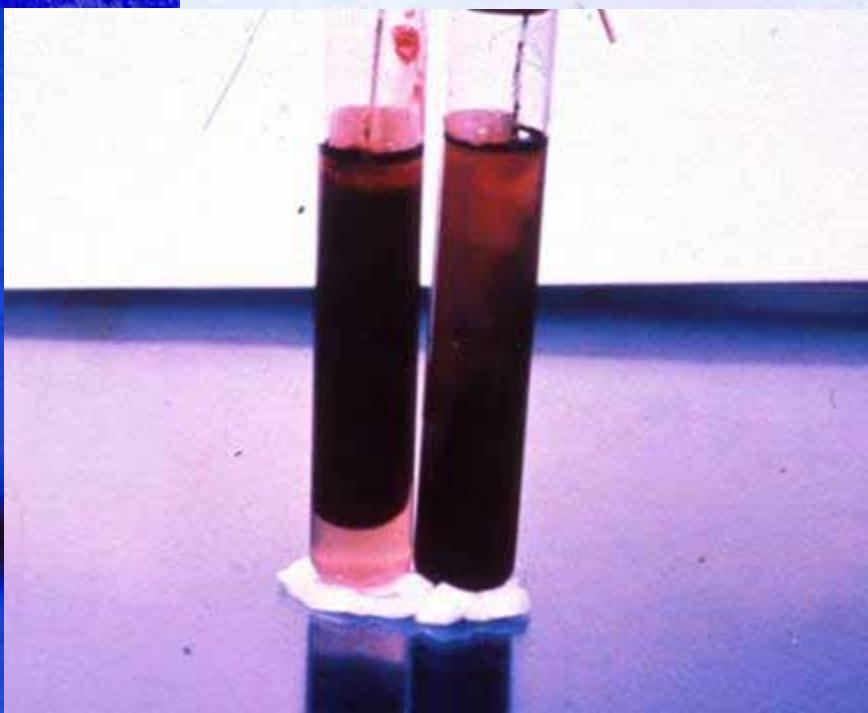
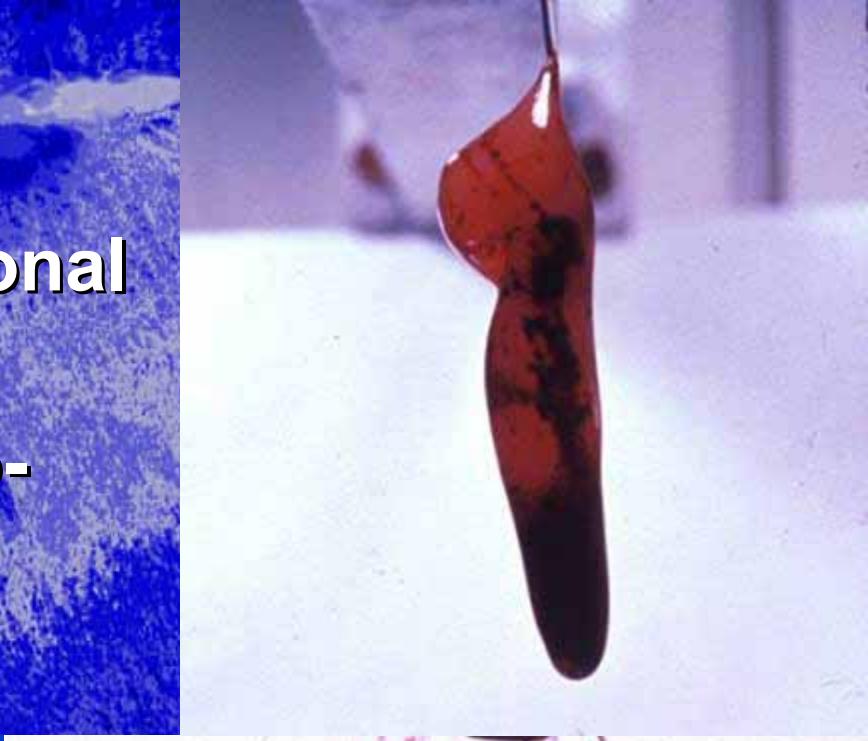


- Stamping-out of disease



# Pathogenesis

- Oro-nasal infection → regional lymph nodes → viremia
- Phagocytic cells of lympho-reticular system: necrosis
- Thrombocytopenia



# African Swine Fever

- Forms: acute, subacute, chronic
- **Acute form:** Incubation period: 5-15 days, rectal temperature - 42 °C, high mortality, fever, listlessness, incoordination, anorexia, convulsions, paresis, cutaneous cyanosis, vomiting, bloody stool, abortion, death within a few days. Consistent lesions include hemorrhage and necrosis of lymphoid organs, hemorrhages on serosal surfaces, renal cortical, medullary and pelvic hemorrhage, hydropericardium and hydrothorax.
- **Subacute form:** Duration: 3-4 weeks, lower mortality, intermittent fever, anorexia, wasting, emaciation, hemorrhagic lymph nodes, spleen and kidneys
- **Chronic form:** Lymphoid hyperplasia, fibrous pleuritis and pneumonia causing coughing, cardiac insufficiency due to pericarditis and hydropericardium, lameness due to swollen joints



**ASF**



**ASF**

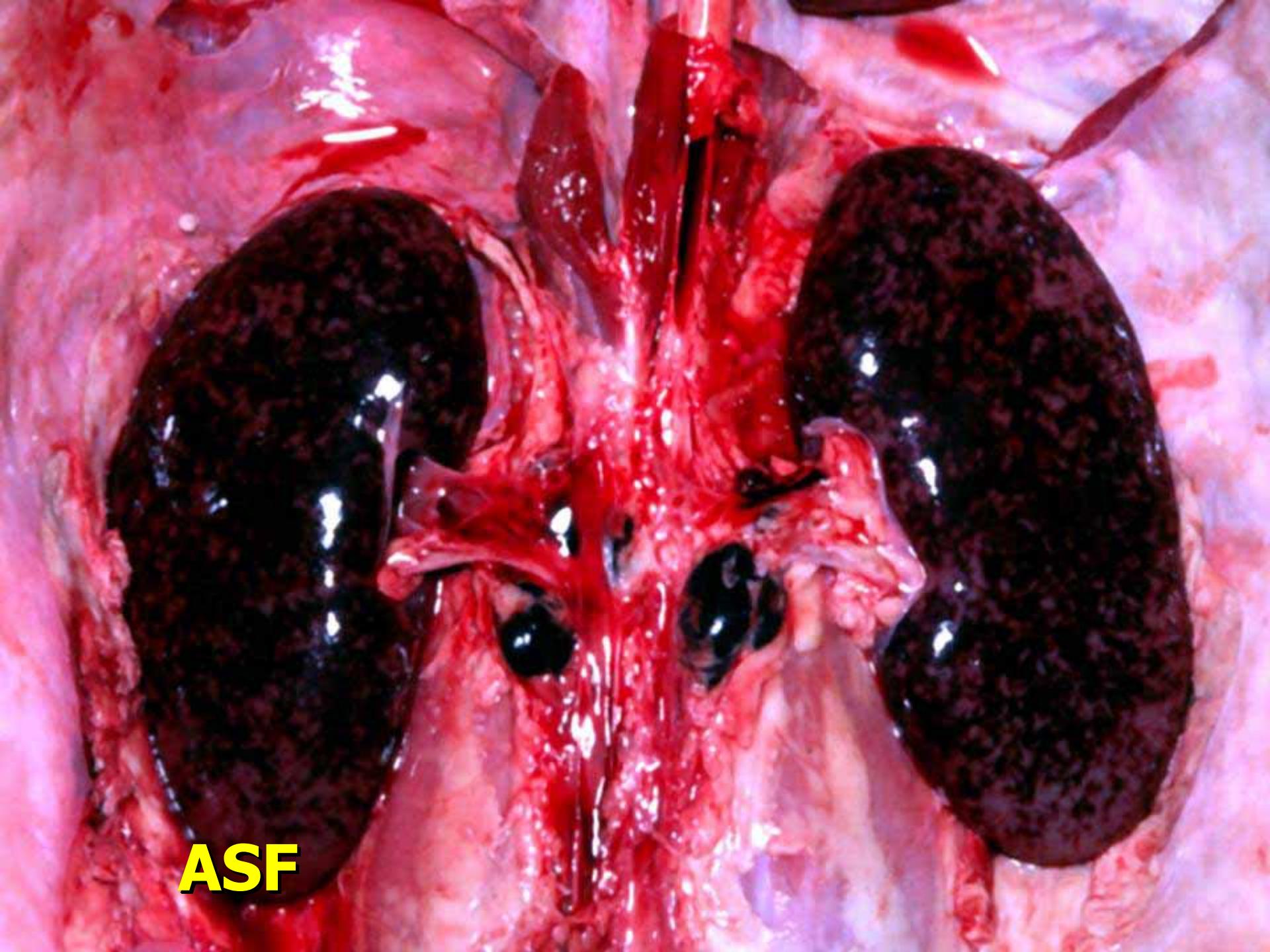


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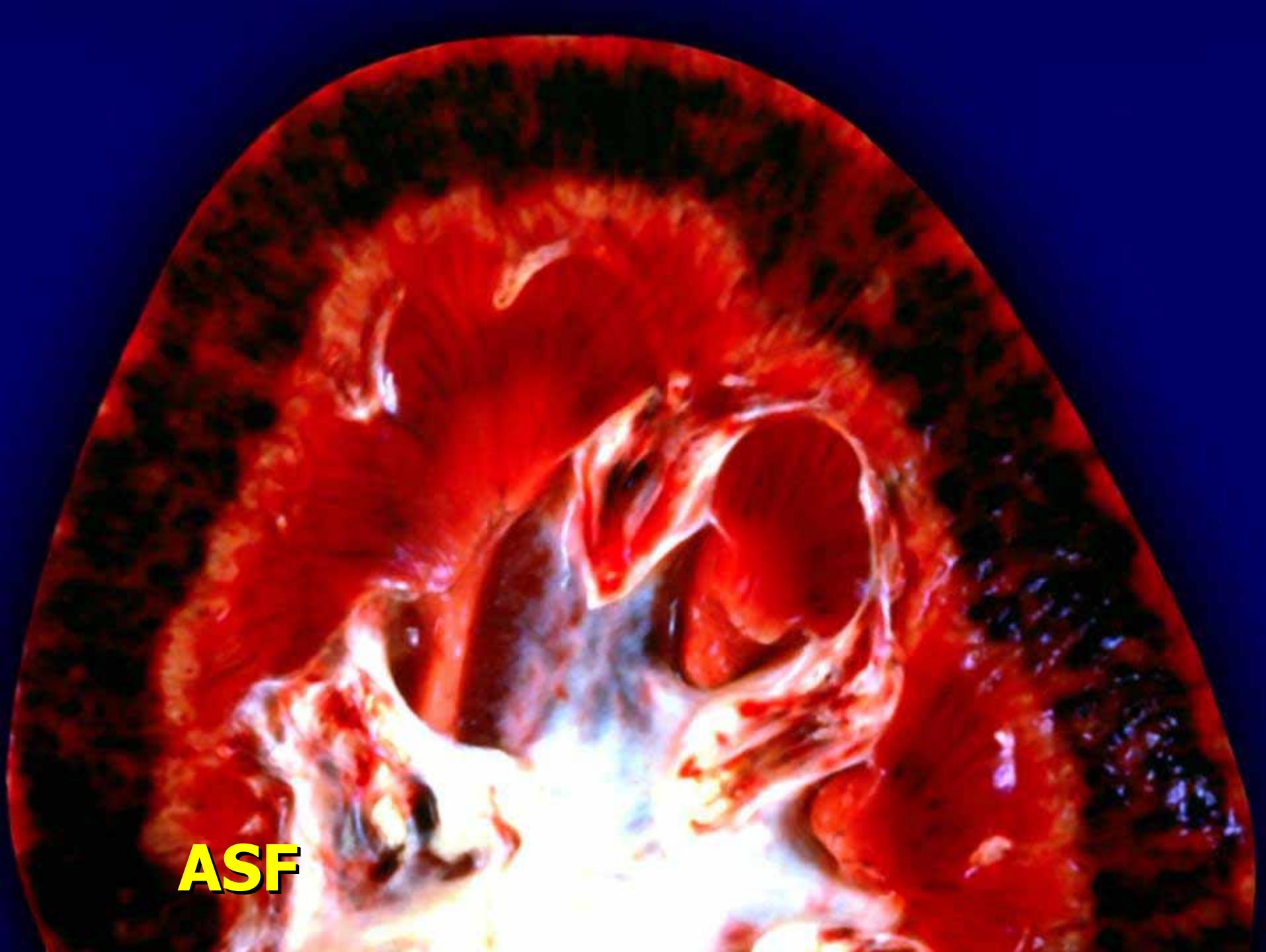
**ASF**

A close-up photograph of a fish, likely a salmon, showing extensive skin lesions. The fish's body is primarily blue with dark spots, but the skin appears severely damaged, particularly along the side and head, revealing underlying tissue and blood. The word "ASF" is overlaid in yellow text at the bottom left.

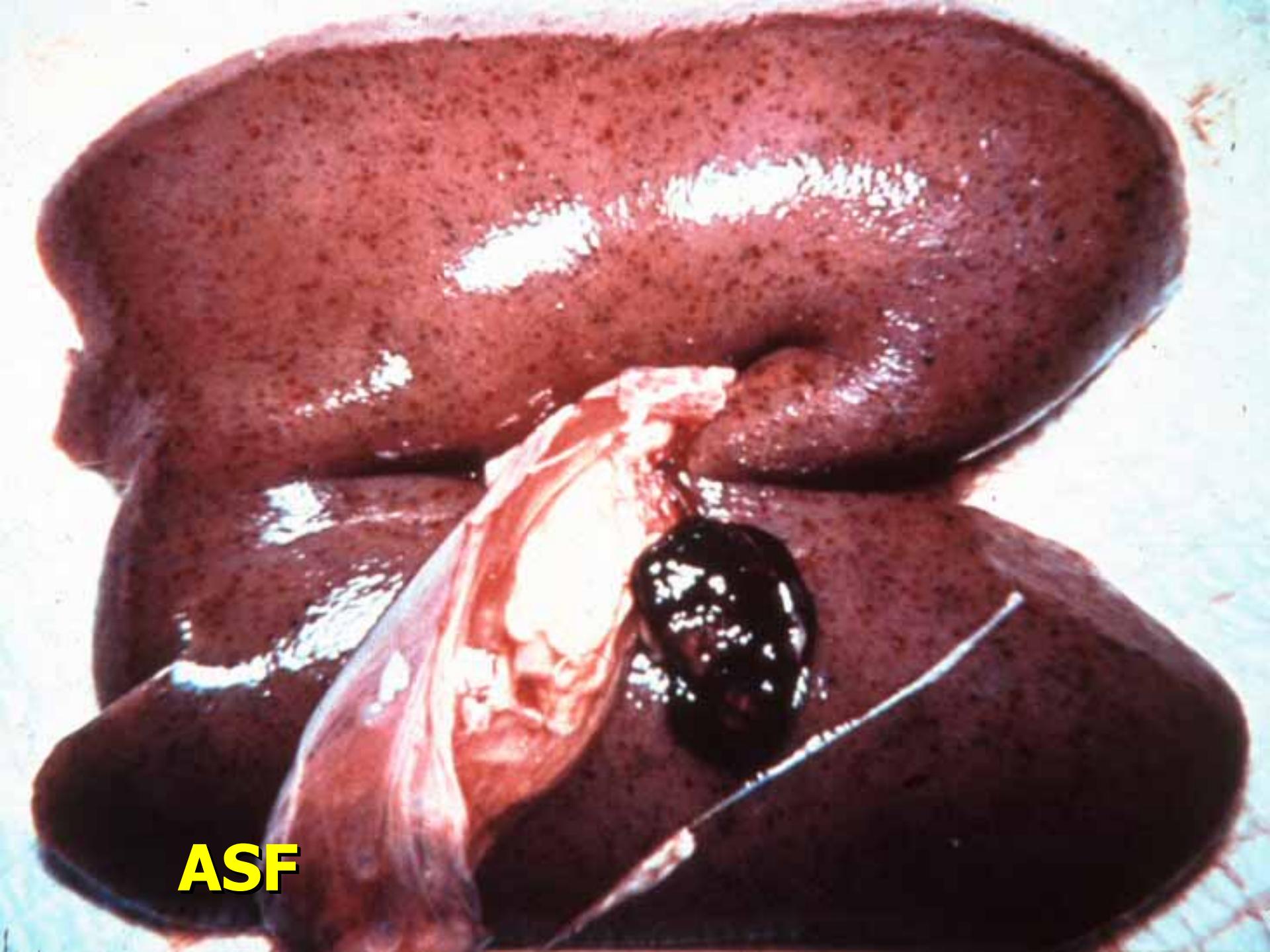
**ASF**



**ASF**



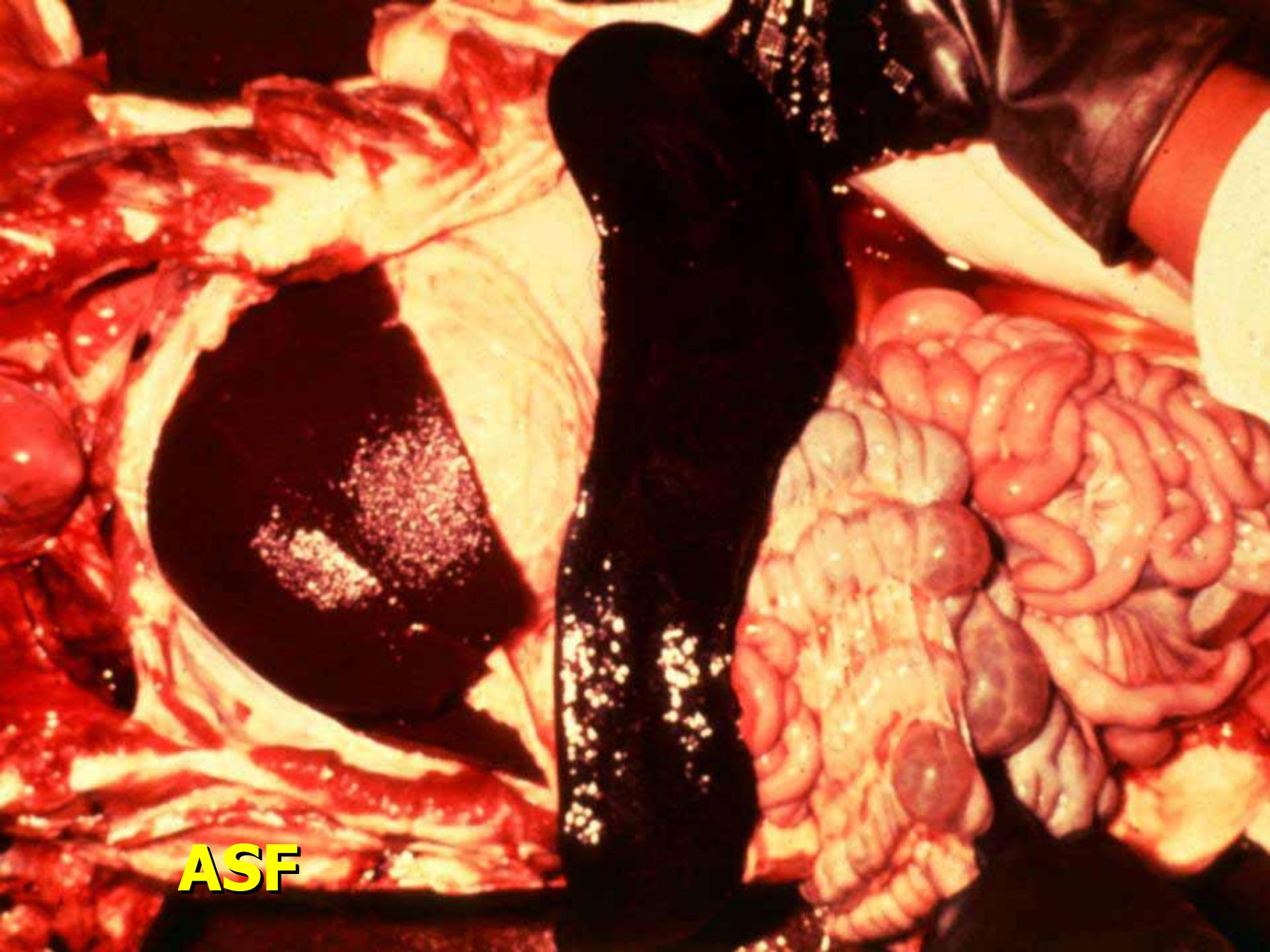
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**ASF**



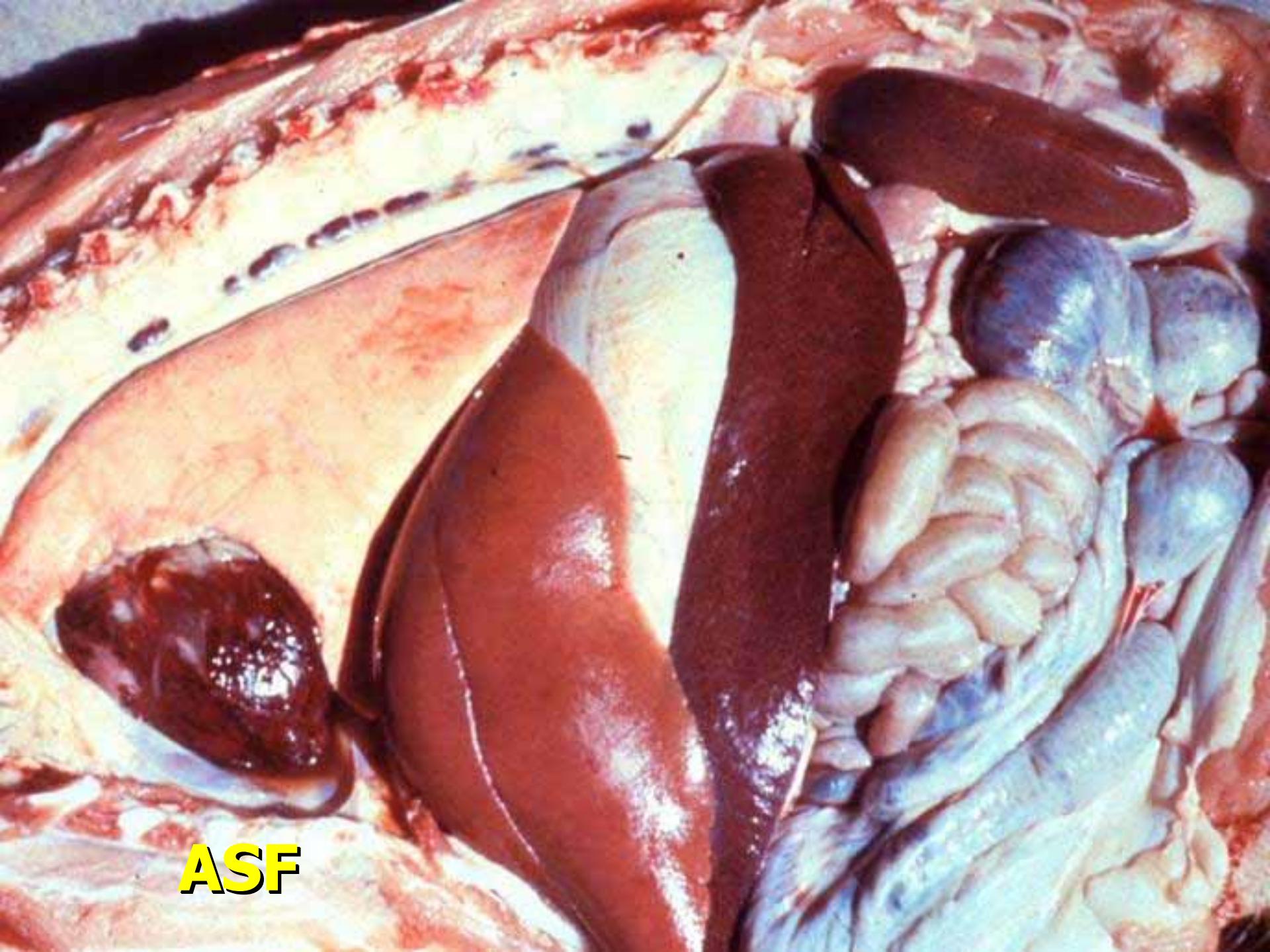
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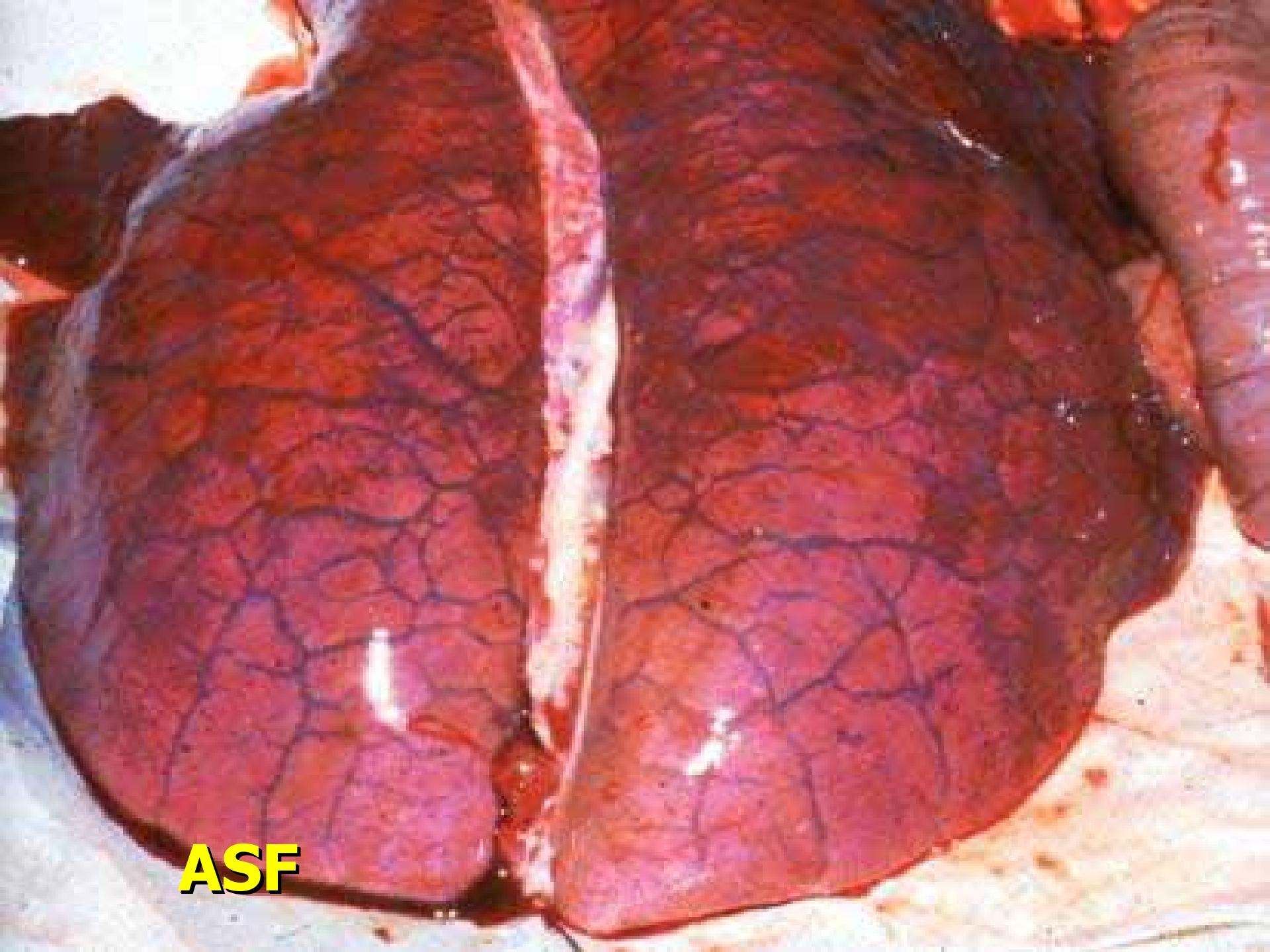
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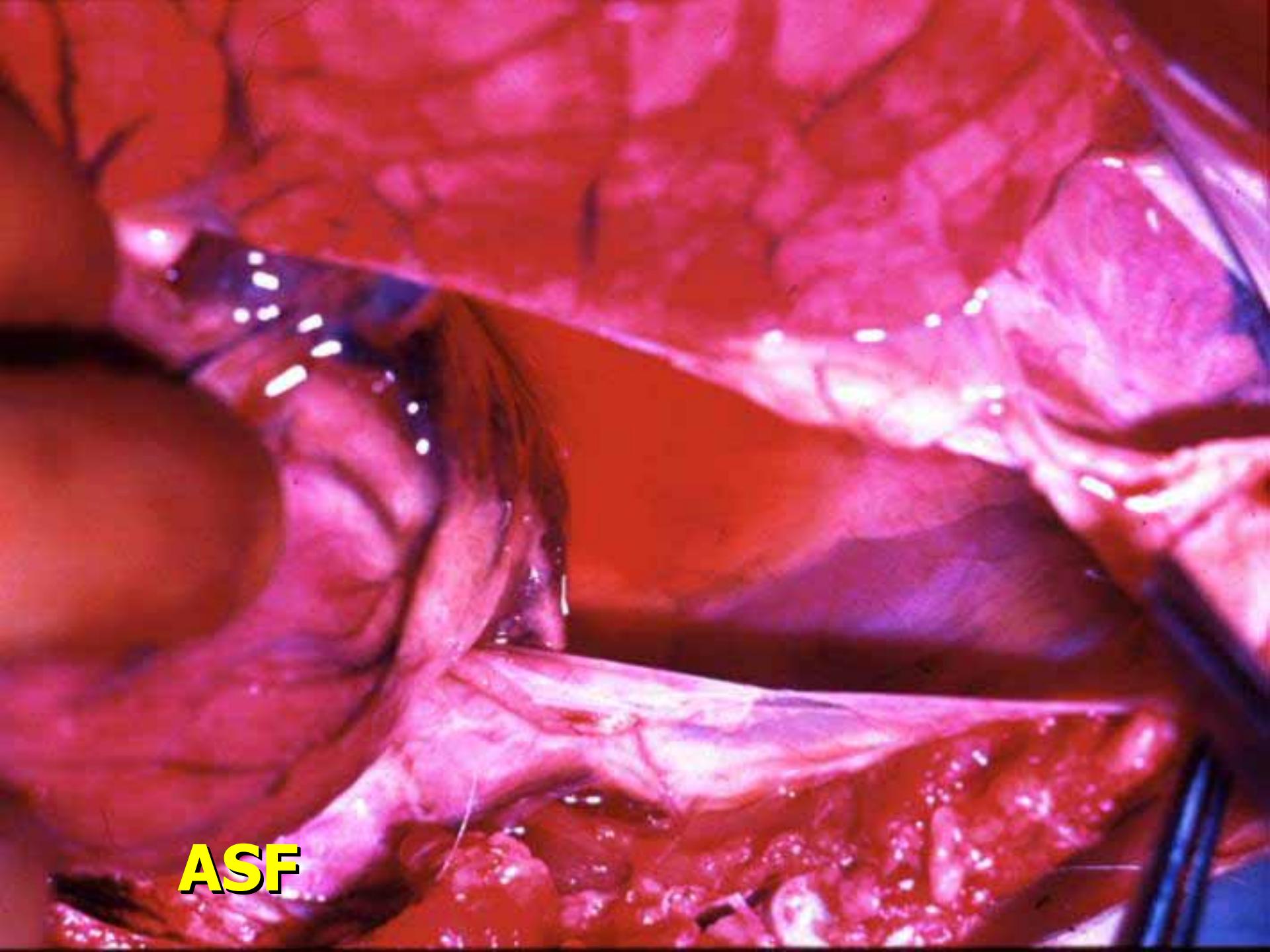
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**ASF**



**ASF**



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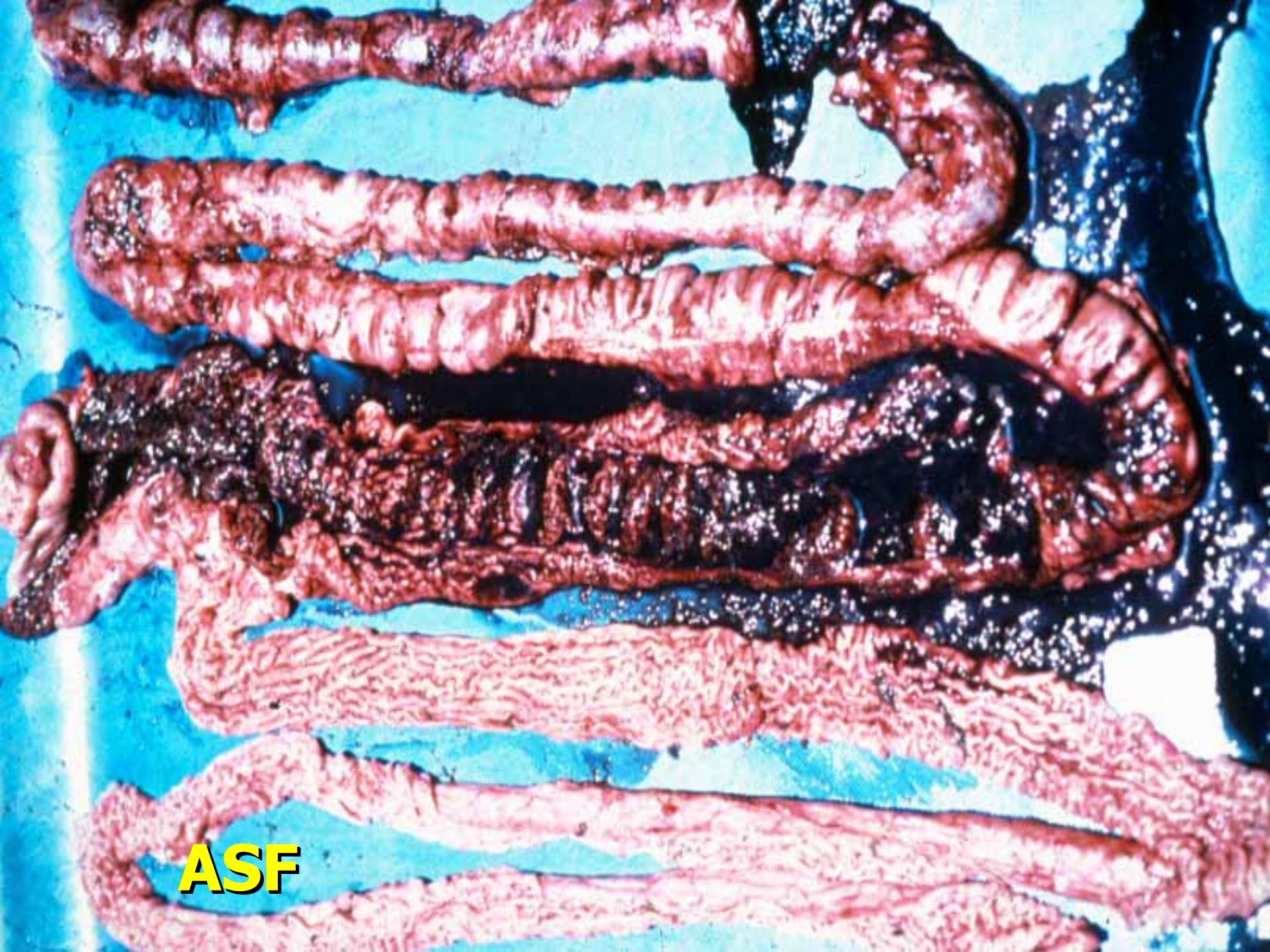


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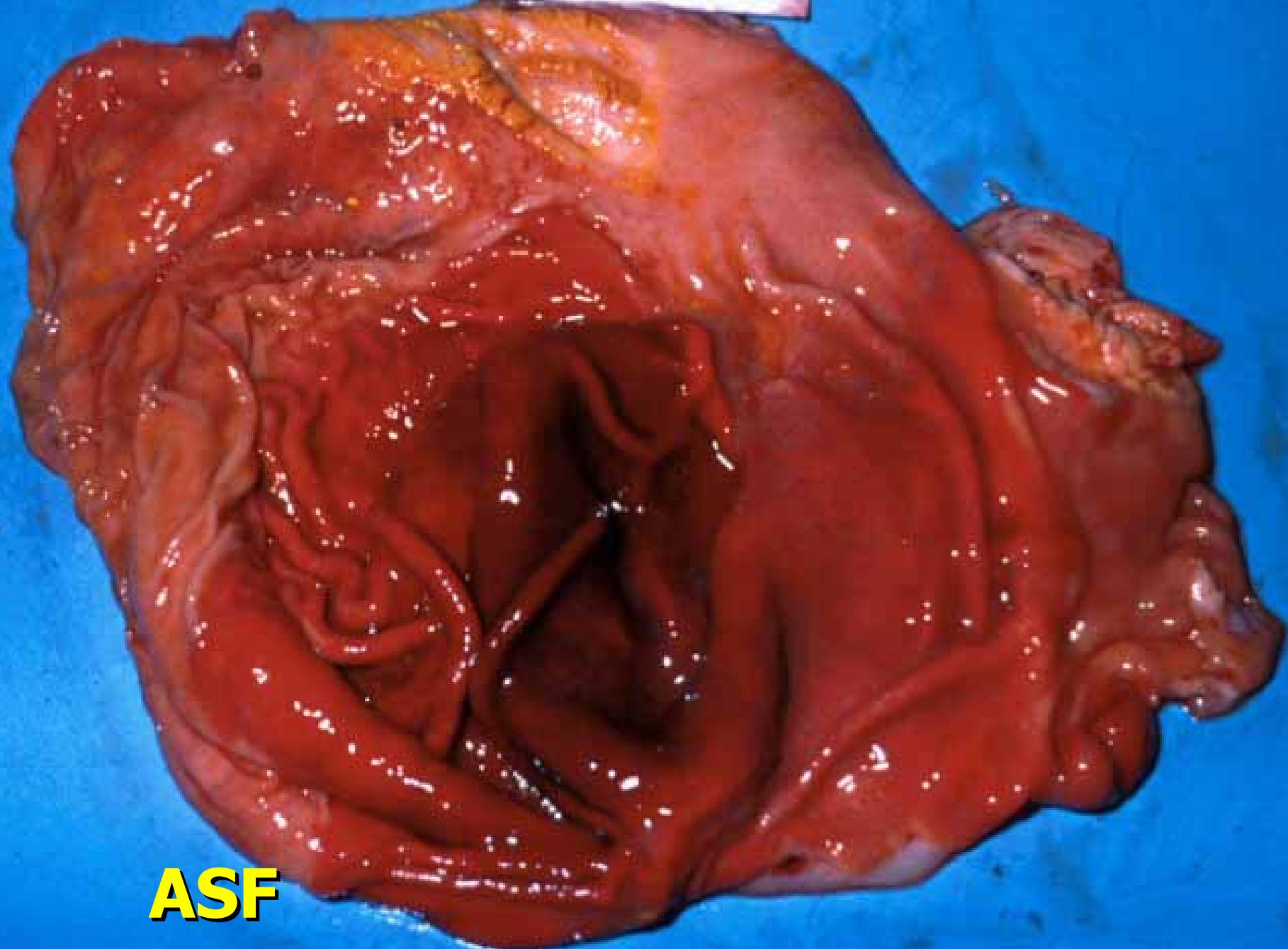
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**ASF**



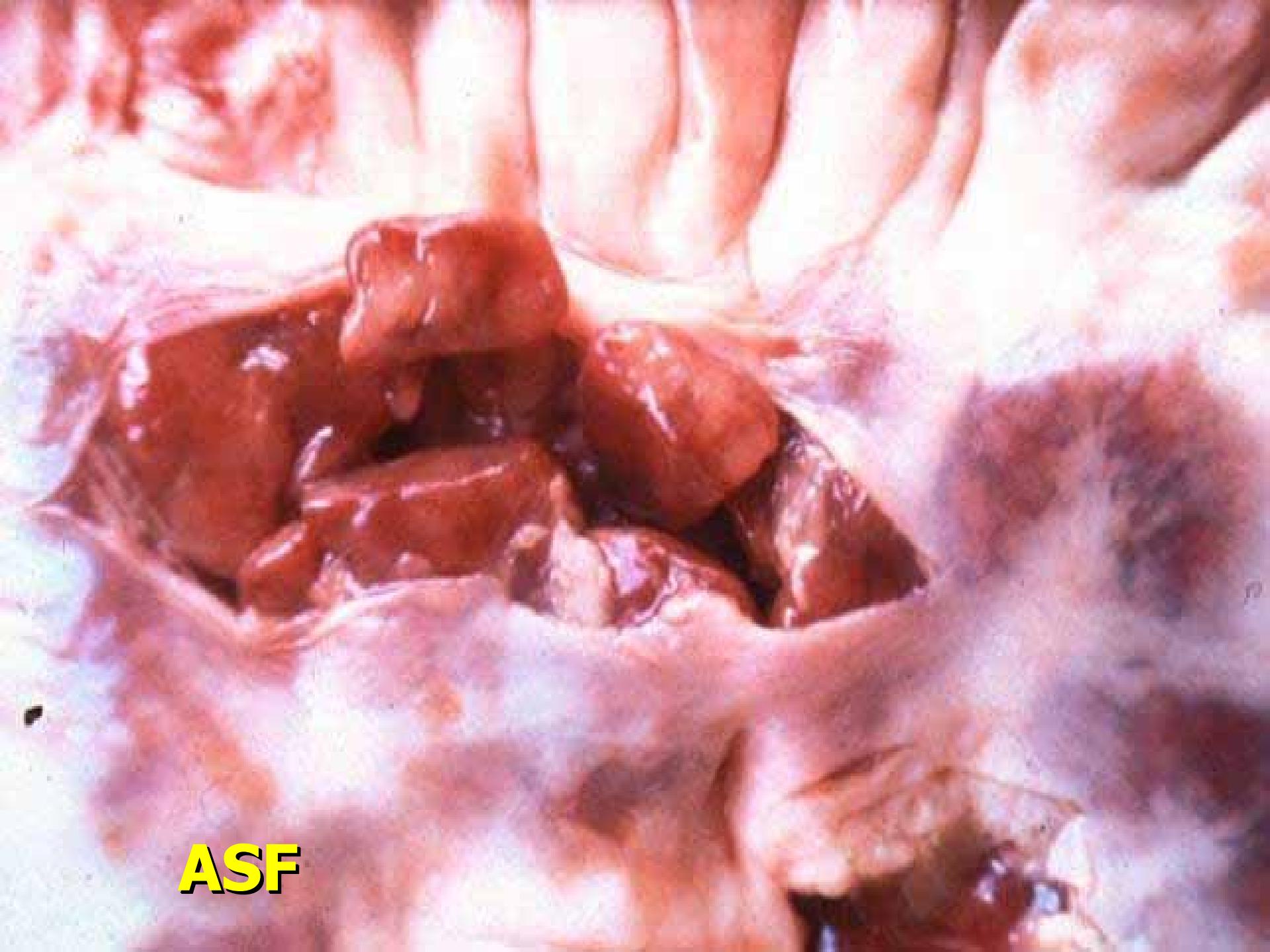
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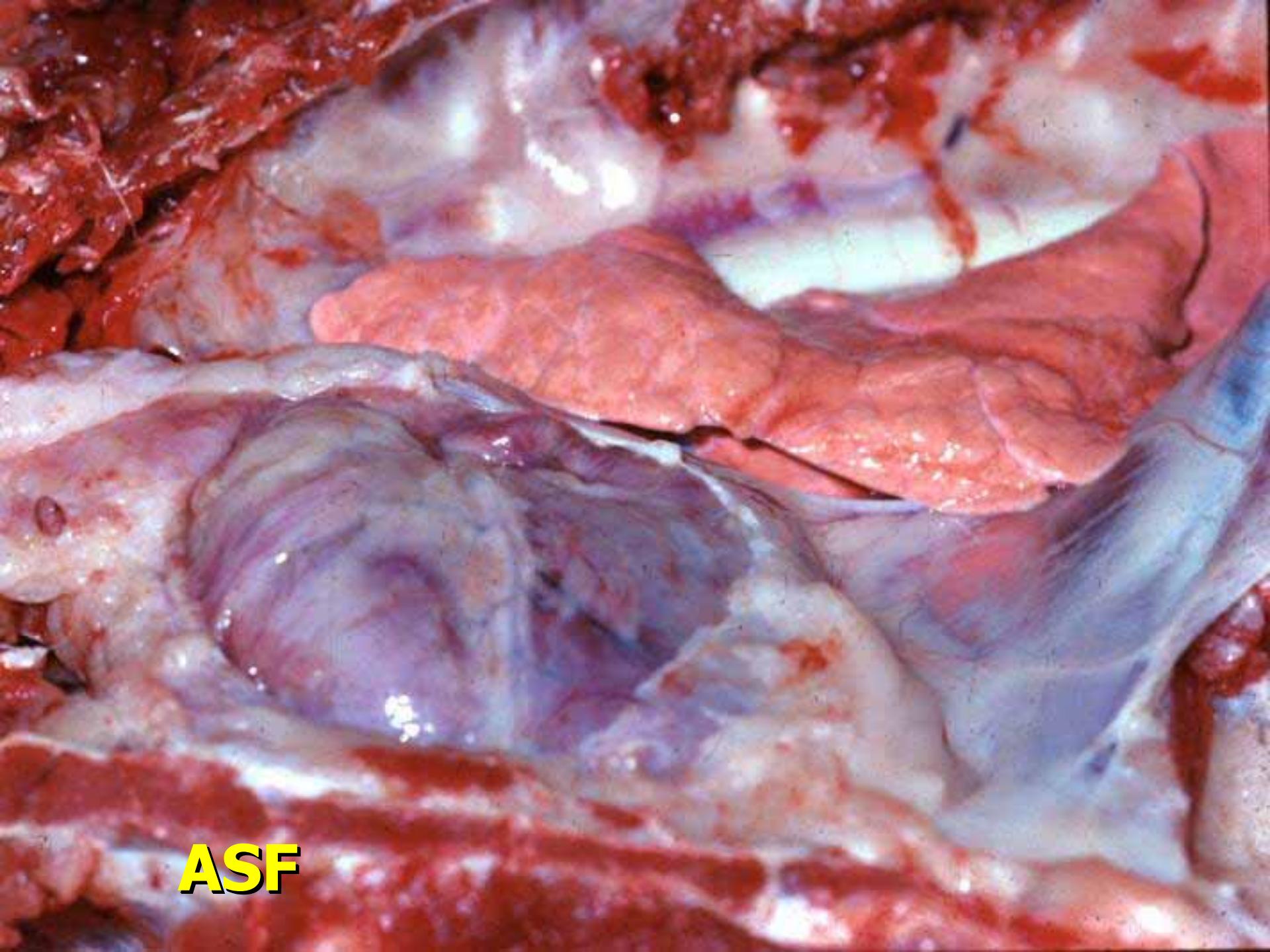
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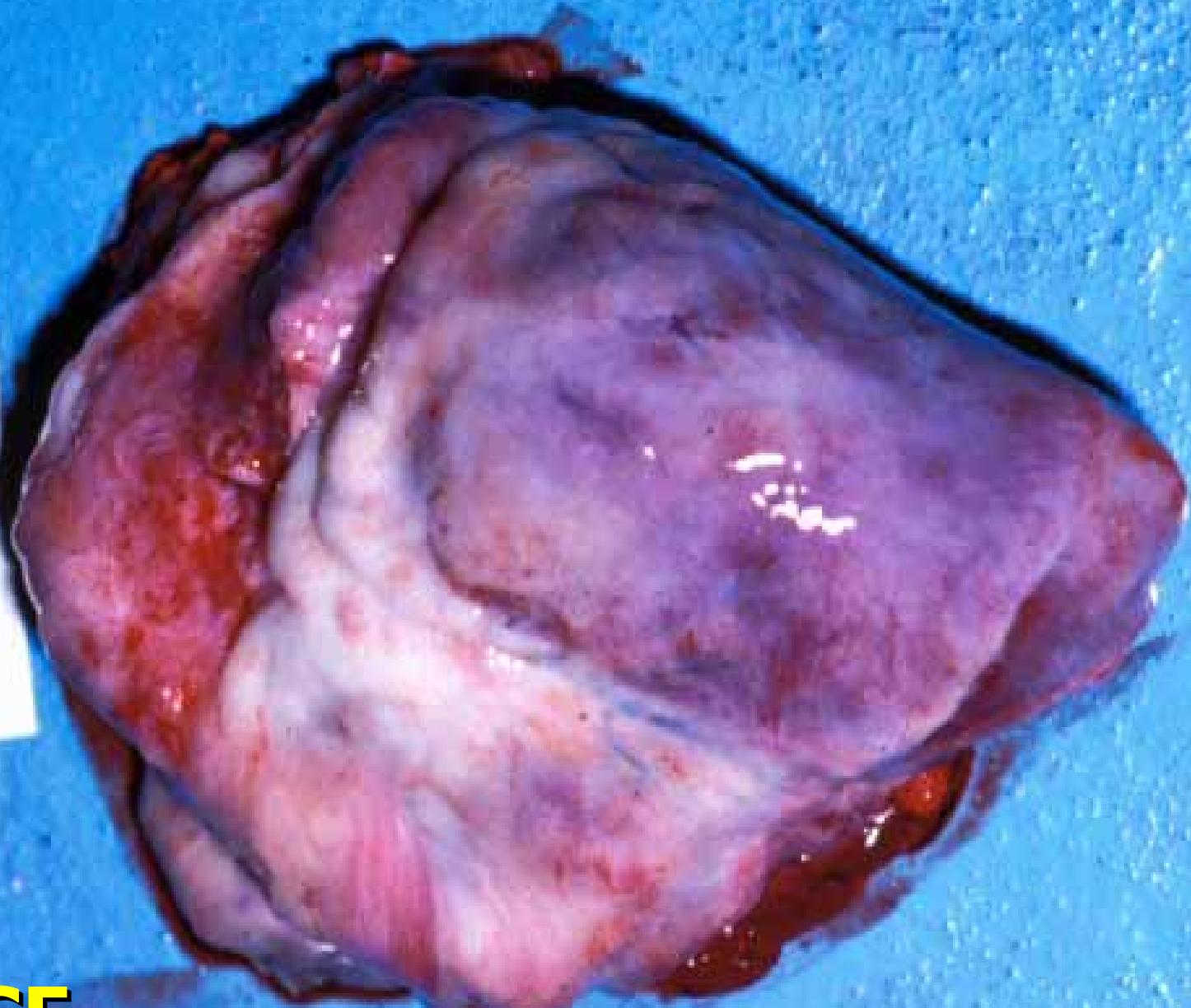
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**ASF**

E3-82-56

**ASF**

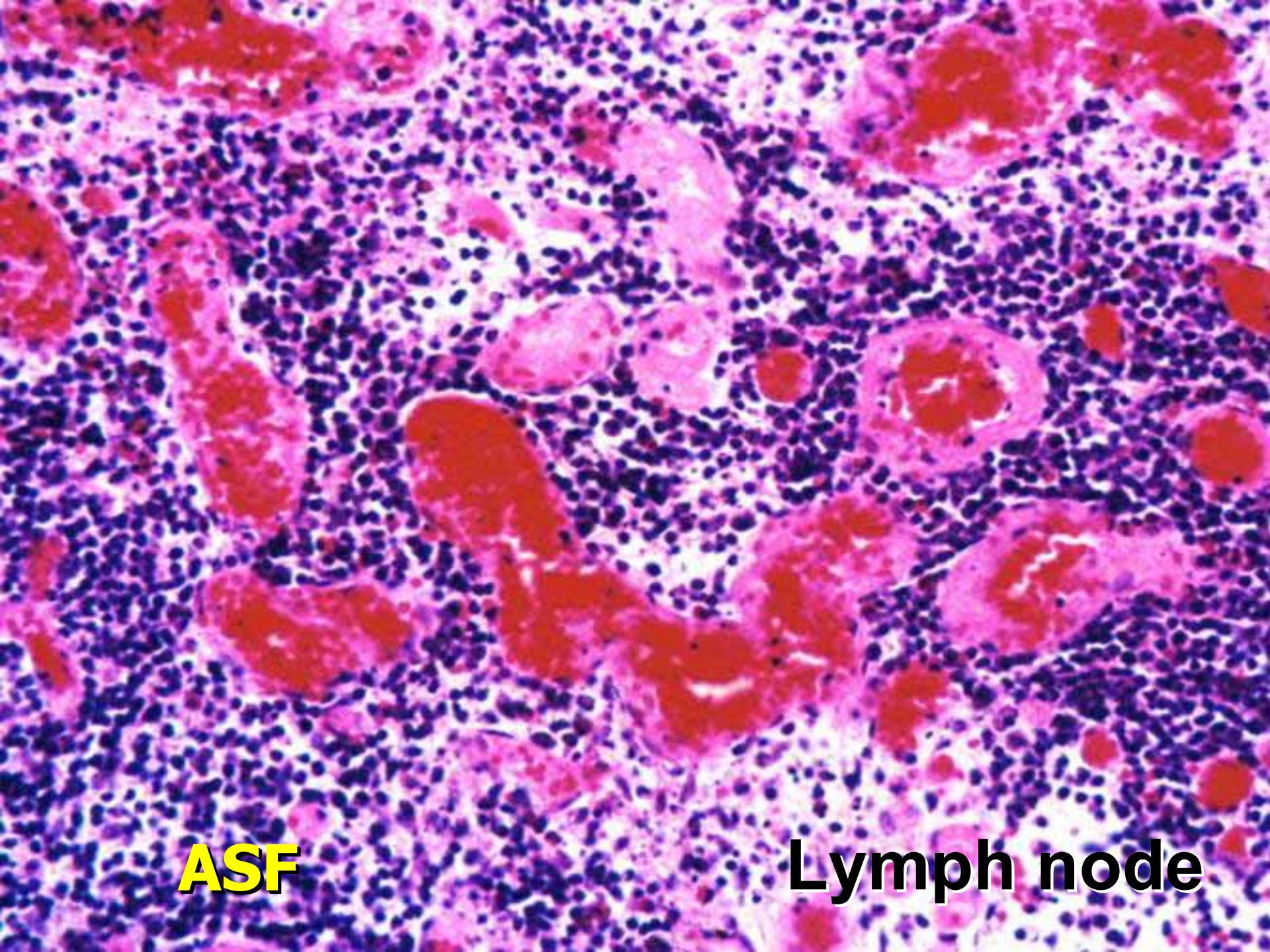




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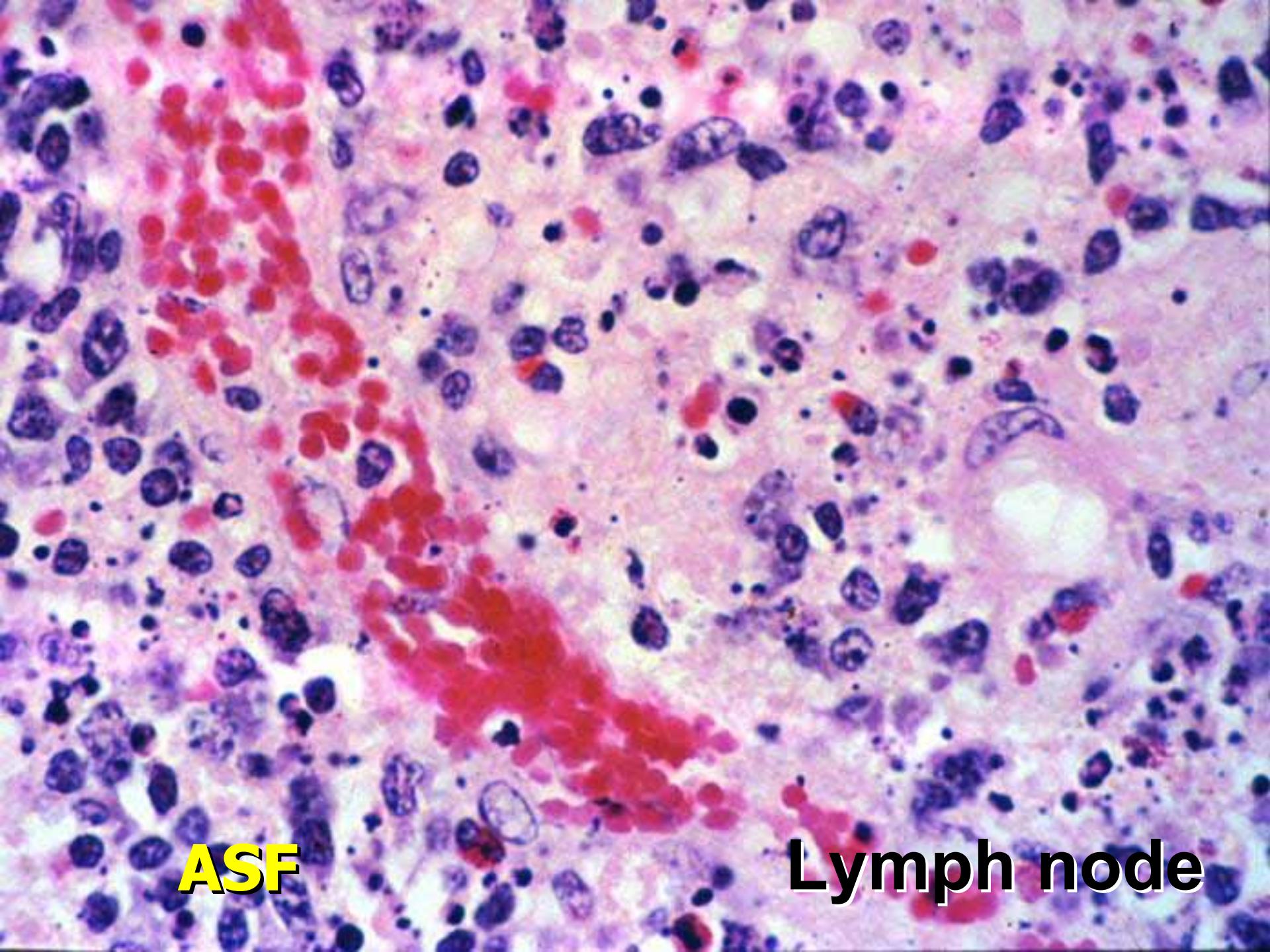
A close-up photograph of a fish fillet, likely salmon, showing significant tissue damage and discoloration. The flesh appears dark red and mottled with white and greyish areas, characteristic of Anisakis (AS) larvae. The skin is partially visible, appearing dark and textured. The overall appearance is that of a severely damaged or rotten fish fillet.

**ASF**



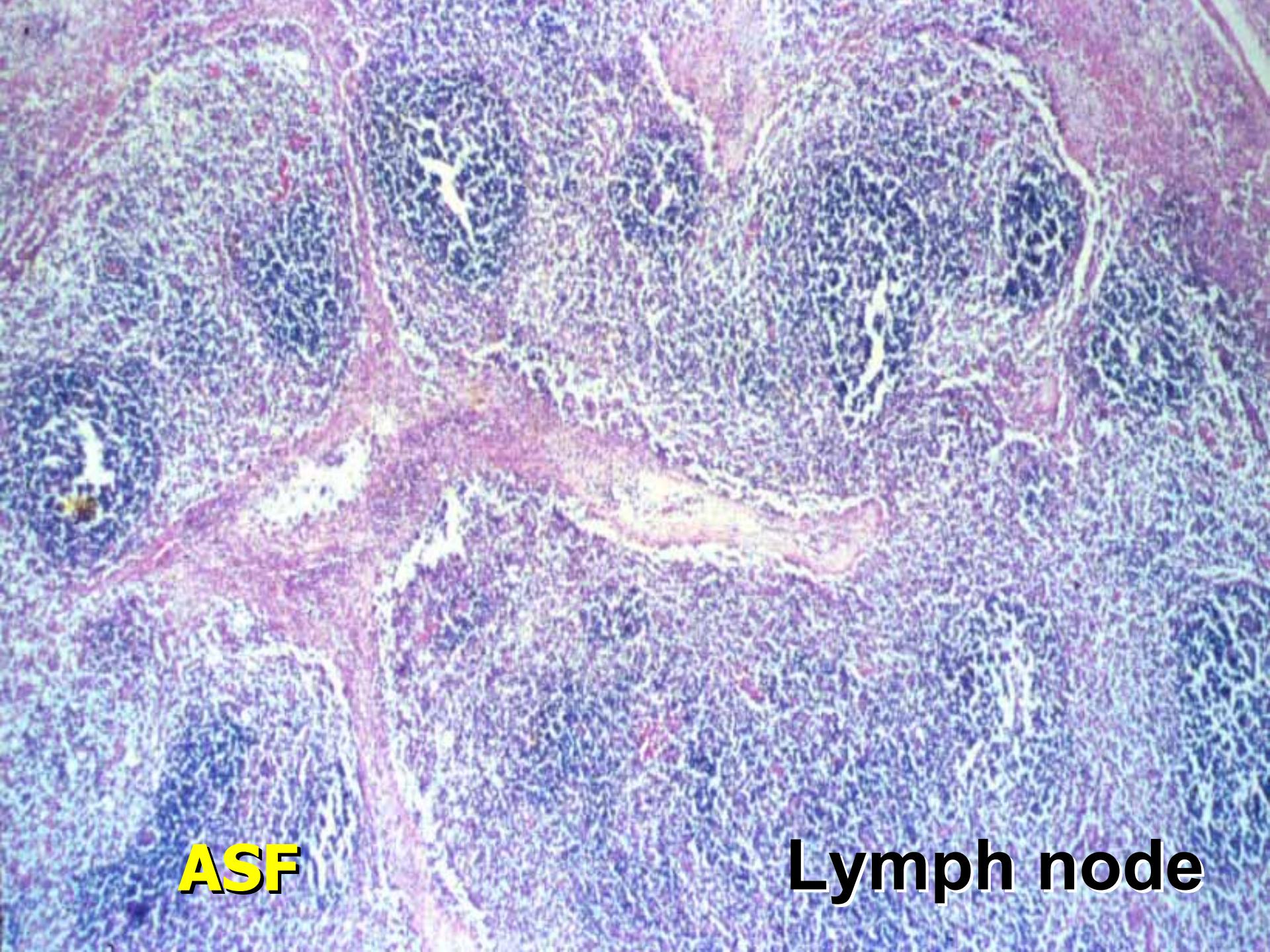
**ASF**

**Lymph node**



**ASF**

**Lymph node**

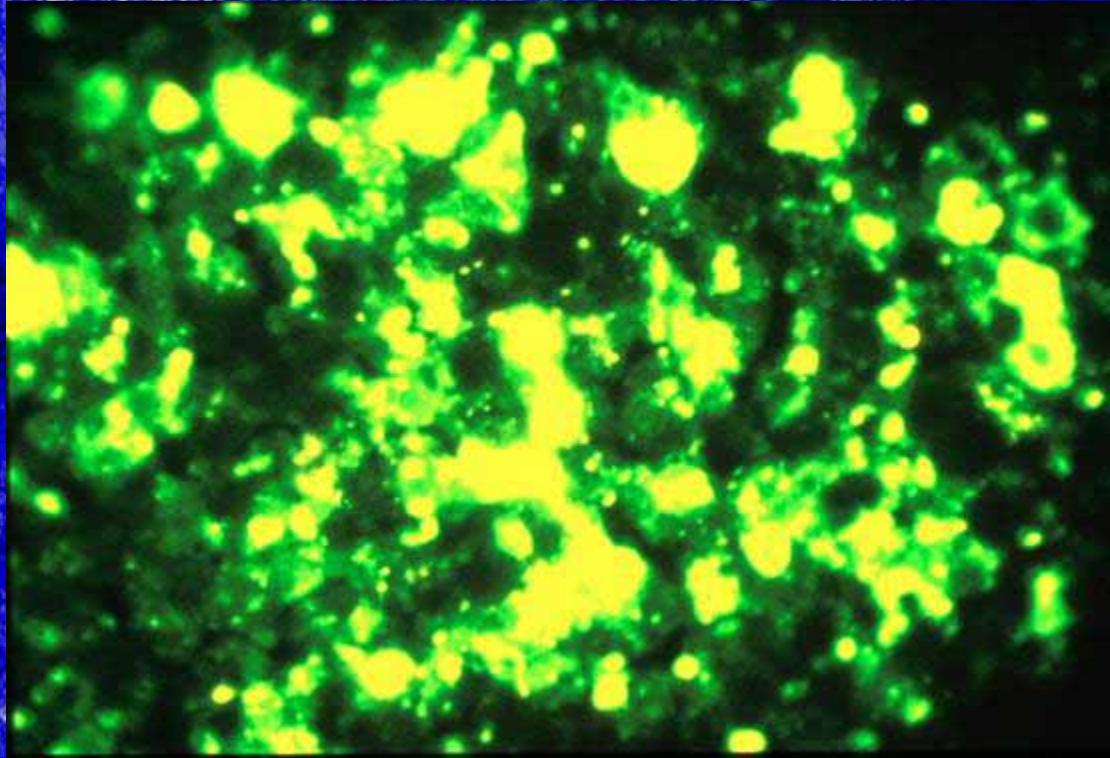


**ASF**

**Lymph node**

# Diagnosis

- Presumptive: epidemiology, clinical signs, gross lesions (**very difficult**)
- Laboratory confirmation:
  - antigen detection: PCR, FA, IHC, immunoblotting
  - virus isolation
  - serology: ELISA
  - histopathology



# Control / Eradication

- No vaccination
- Drastic control measures: stamping-out
- Prevention:
  - no contact with warthogs, tampons
  - strict import regulations
  - no feeding of garbage to pigs





# Eperythrozoonosis

- Haemoplasma
- *Mycoplasma suis*
- Targets red blood cells
- Cell wall-less bacteria
- Consistently pathogenic, but chronic or latent infections
- Worldwide distribution
- Anemia and jaundice in piglets
- Enlarged spleen and icterus
- Giemsa stain of blood smear
- Tetracycline

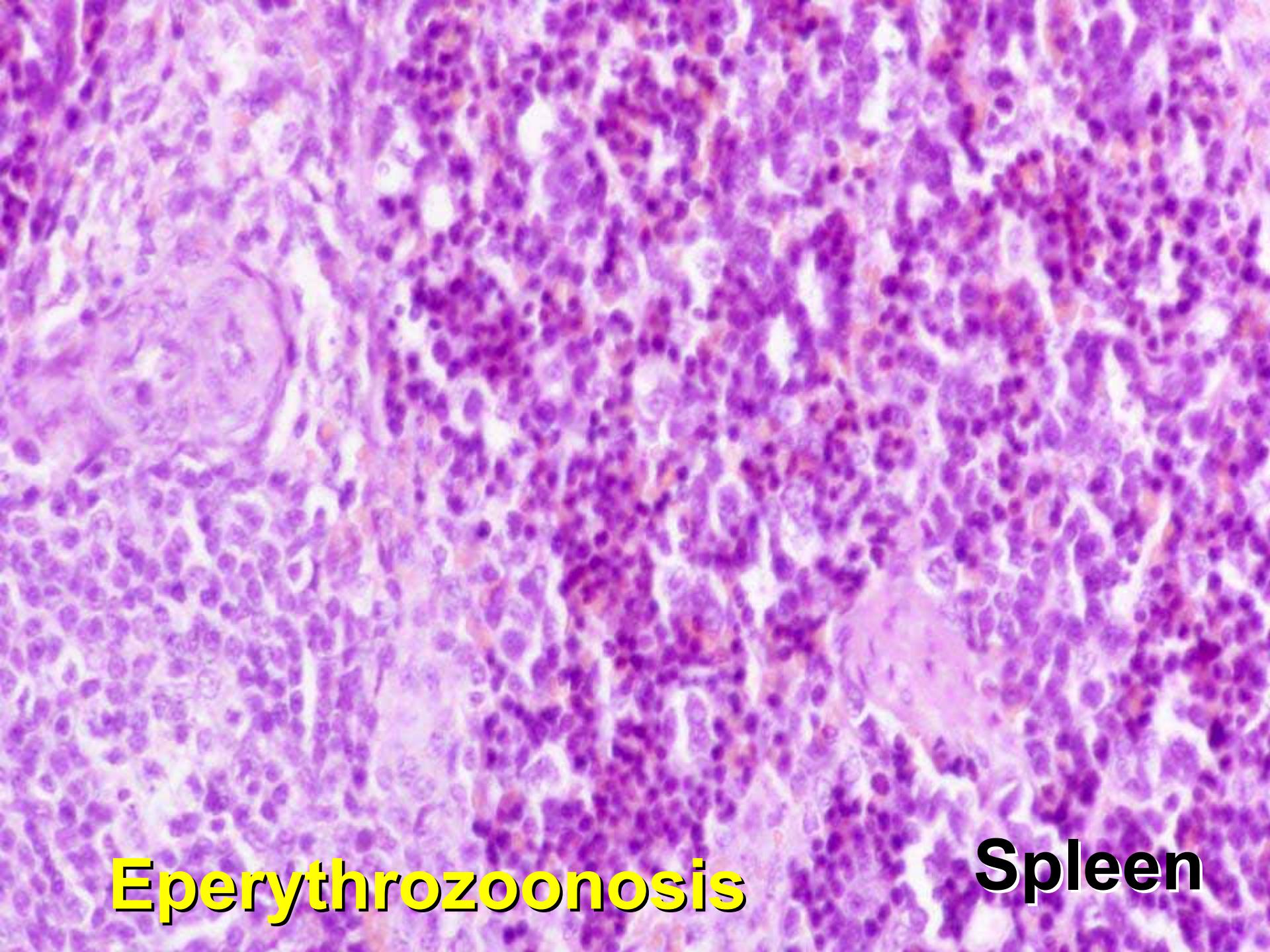


**Eperythrozoonosis**

A light micrograph of a tissue section, likely from a spleen, stained with hematoxylin. The image shows a dense, pinkish-purple background representing connective tissue and cellular components. Scattered throughout are numerous small, dark purple, oval-shaped structures, which are individual erythrocytes. The overall pattern is one of a lymphoid tissue, with some darker, more densely packed areas suggesting higher concentrations of cells or specific tissue types.

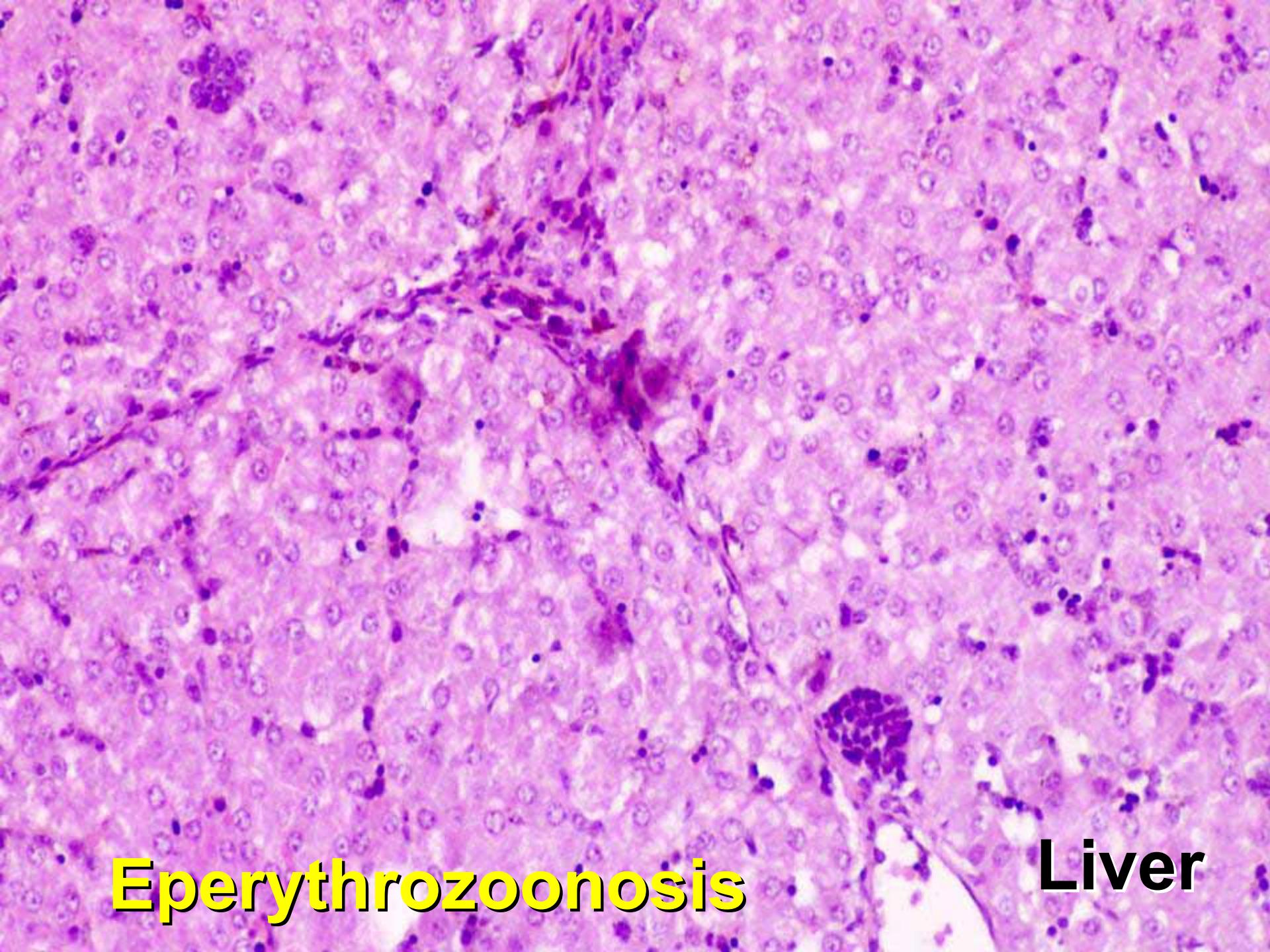
**Eperythrozoonosis**

**Spleen**

A high-magnification light micrograph of a tissue section, likely from a spleen. The image shows a dense arrangement of small, rounded cells with dark purple nuclei, characteristic of lymphocytes. These cells are organized into several parallel, elongated cords or bands that run vertically across the frame. A few larger, more centrally located cells with larger, more prominent nuclei are also visible, possibly representing macrophages or other types of immune cells. The overall pattern is typical of a lymphoid tissue structure.

**Eperythrozoonosis**

**Spleen**

A light micrograph of liver tissue stained with hematoxylin. The image shows a dense cellular arrangement with some architectural disarray. Several large, dark-staining, irregularly shaped cells are scattered throughout the field, which are characteristic of the organism causing Eperythrozoonosis. These cells have a granular or vacuolar appearance.

**Eperythrozoonosis**

**Liver**

A high-magnification light micrograph of a tissue section, likely from a spleen. The image is dominated by numerous small, circular, pinkish-red cells, characteristic of red blood cells. Interspersed among these are larger, more irregularly shaped cells with dark, bluish-purple nuclei, which appear to be lymphocytes or other types of white blood cells. The overall texture is somewhat cellular and somewhat fibrous.

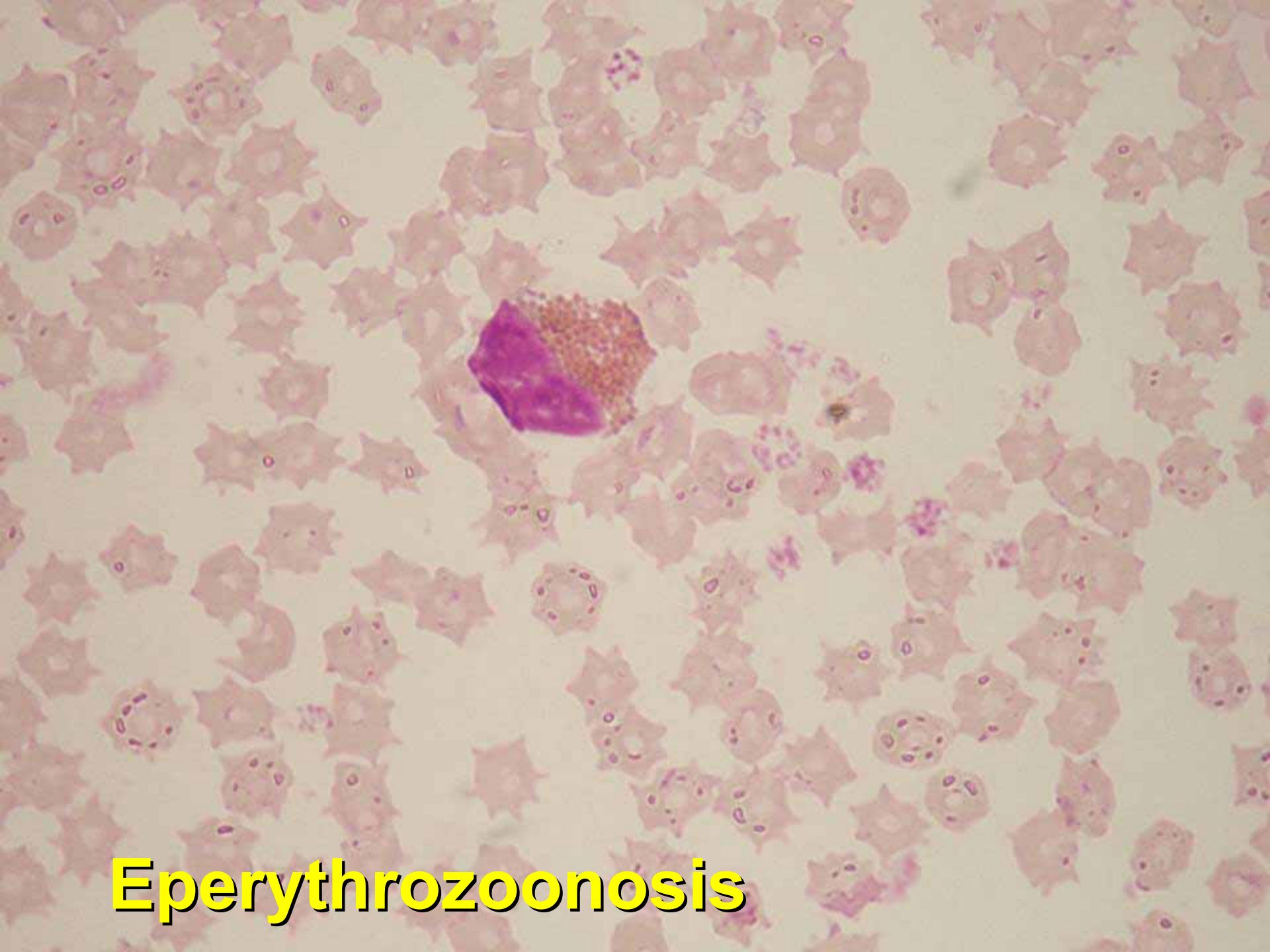
**Eperythrozoonosis**

**Spleen**



**Eperythrozoonosis**

**Spleen**



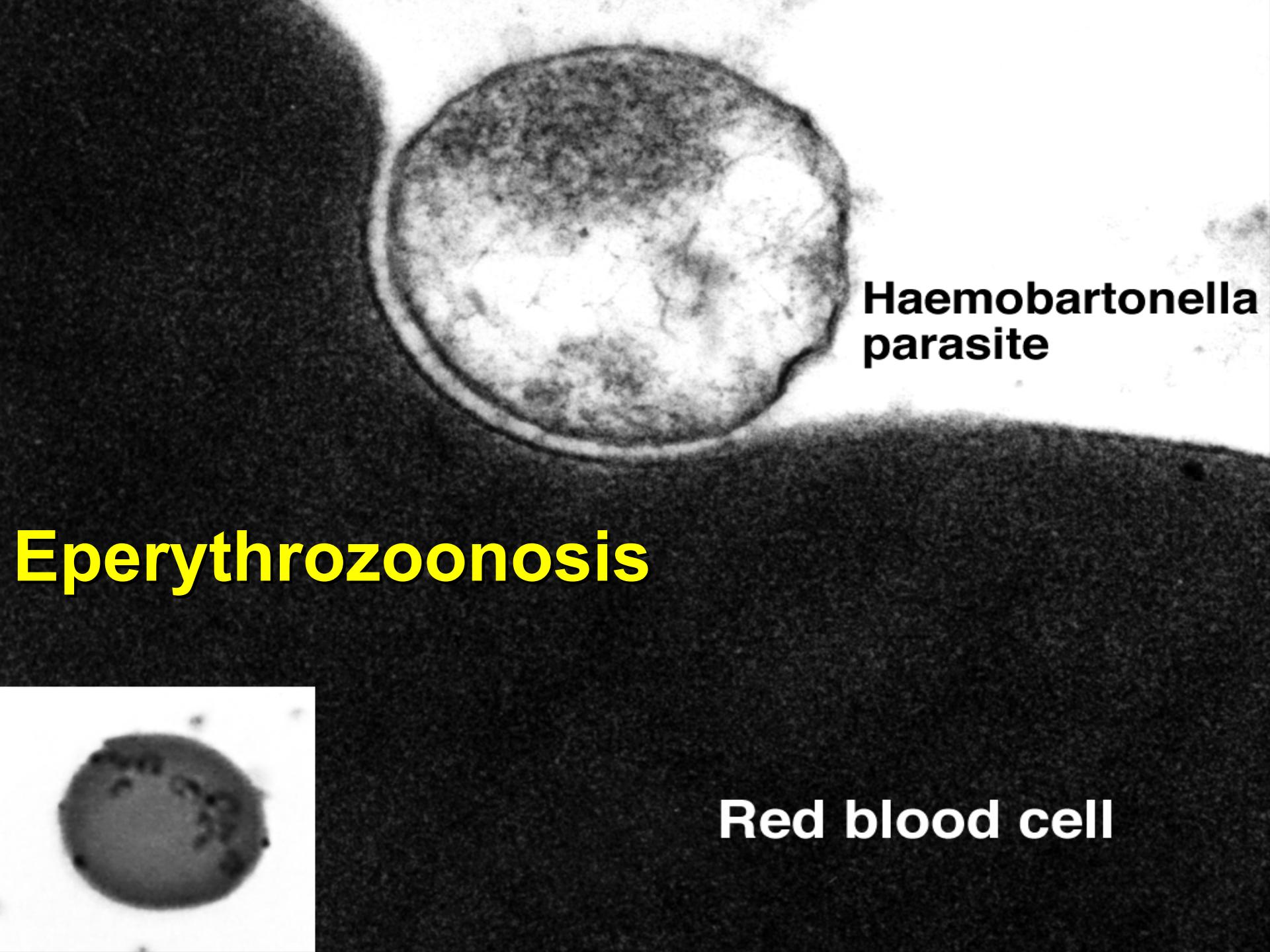
**Eperythrozoonosis**

A microscopic image showing several red blood cells. One cell in the center-right is significantly enlarged and contains numerous dark, granular inclusions, characteristic of eperythrozoonosis. The surrounding cells are normal-sized and pinkish-red.

**Eperythrozoonosis**



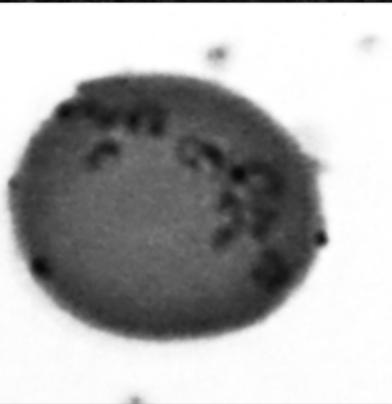
# Eperythrozoonosis



**Haemobartonella  
parasite**

A black and white micrograph showing a circular red blood cell. Inside the cell, there is a darker, more granular area representing the Haemobartonella parasite.

# Eperythrozoonosis



**Red blood cell**