

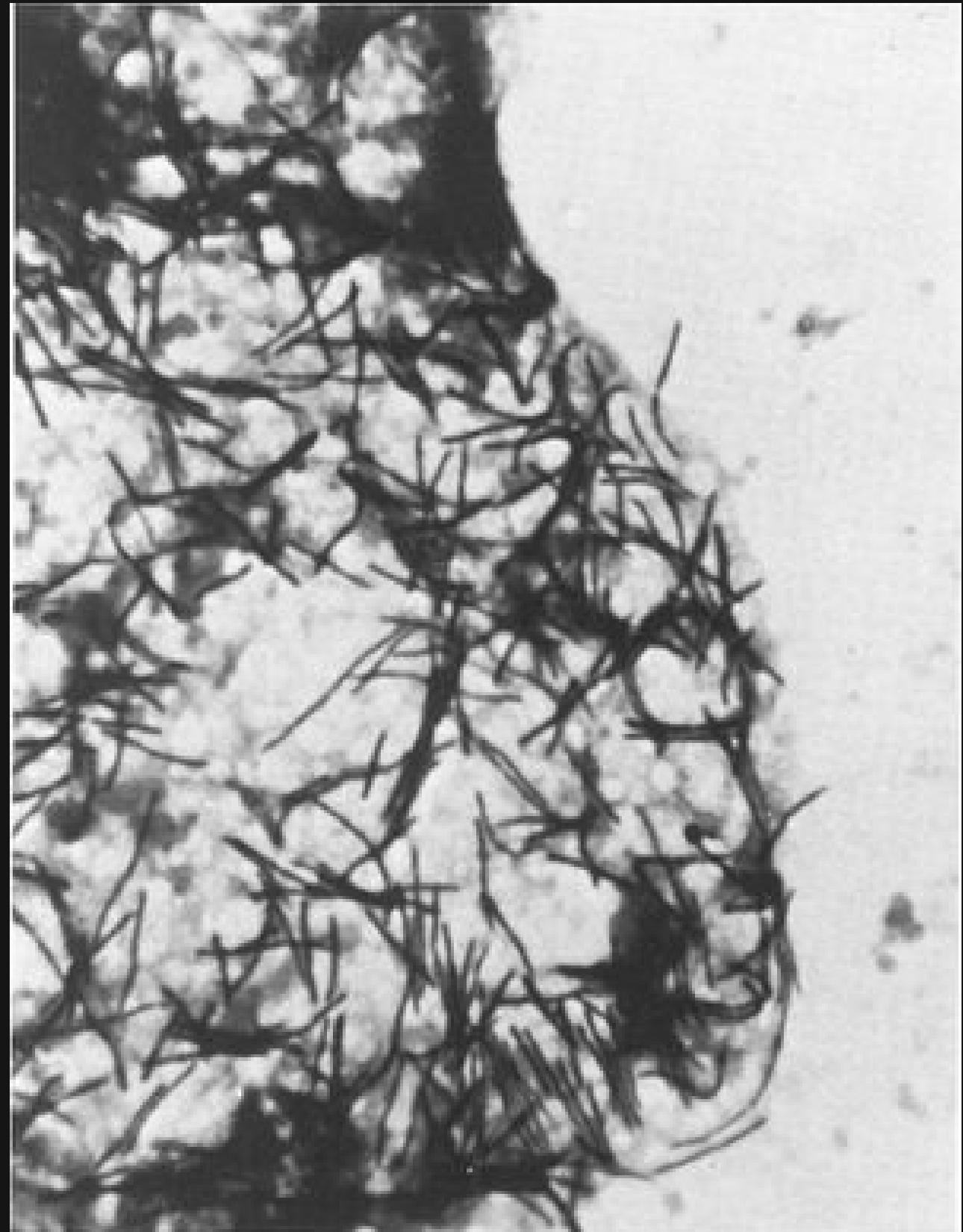
# TYZZERS DISEASE

*Bacillus pilosporus*  
infection

Presented by

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# TYZZERS DISEASE

Tyzzer's disease, caused by *Clostridium piliforme*, is the most common cause of **bacterial hepatitis in foals**. It is confined to foals between 7 and 42 days of age that is manifested as rapidly progressive fatal disease with an average age of 20 days.

- the foals are found acutely dead or with nonspecific signs of enteritis and hepatitis.
  - Can be sporadic or occur in outbreaks
  - Worldwide distribution
    - commonly found in the environment



# CAUSITIVE AGENT

## *Clostridium piliforme*

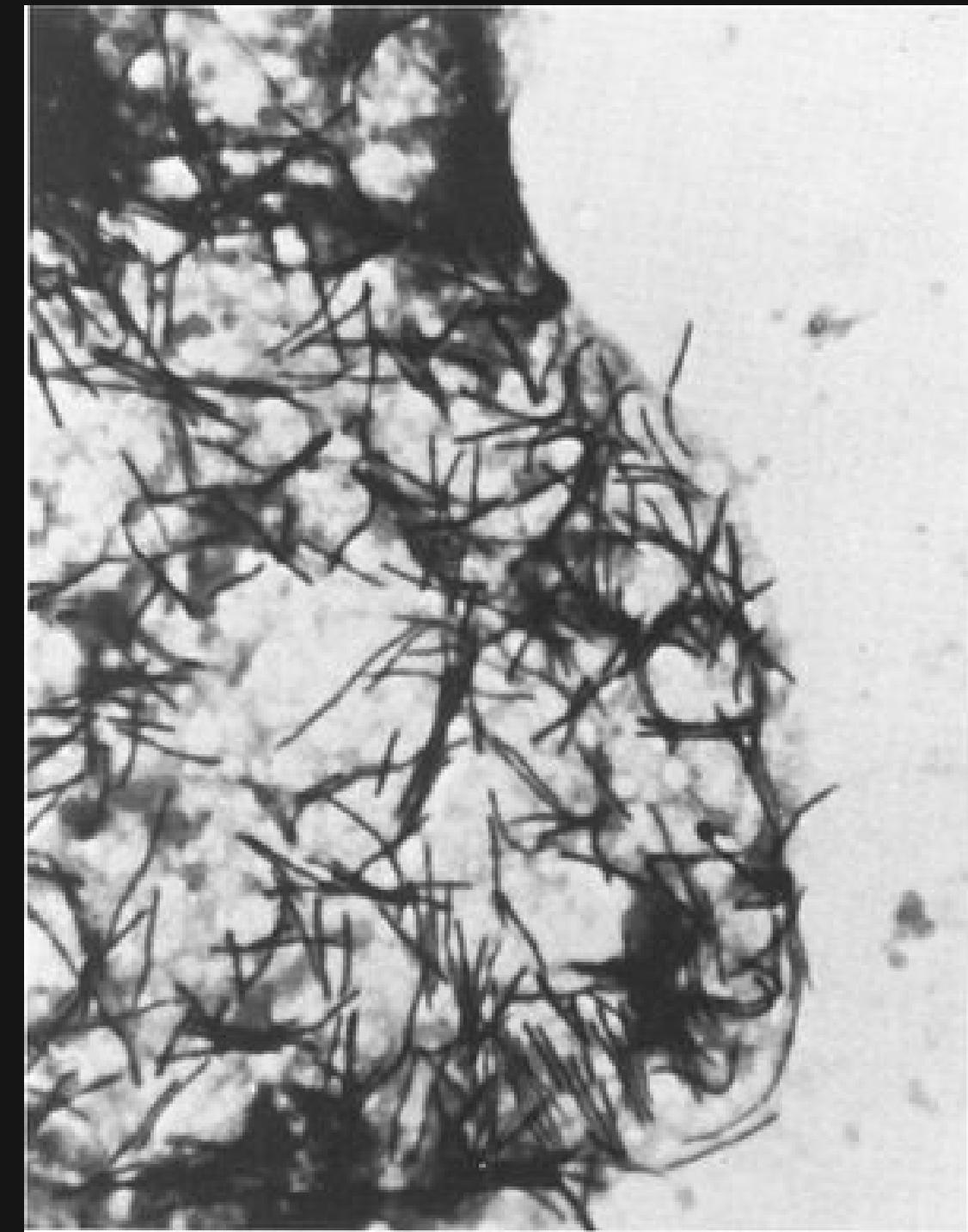
a spore-forming, gram-negative obligate anaerobe and intracellular bacterium with a shape of filamentous rod shaped.

*C. piliforme* is motile in nature and highly pleomorphic.

also known as *bacillus piliformis*

*C piliforme* is found in the feces of healthy adult horses as well as in the environment. Foals are infected by ingesting contaminated **soil or feces**.

Transmission is through **FECAL-ORAL ROUTE**



Vegetative form of *C. piliforme*

# CLINICAL SIGNS

The clinical signs are non-specific but usually manifested as

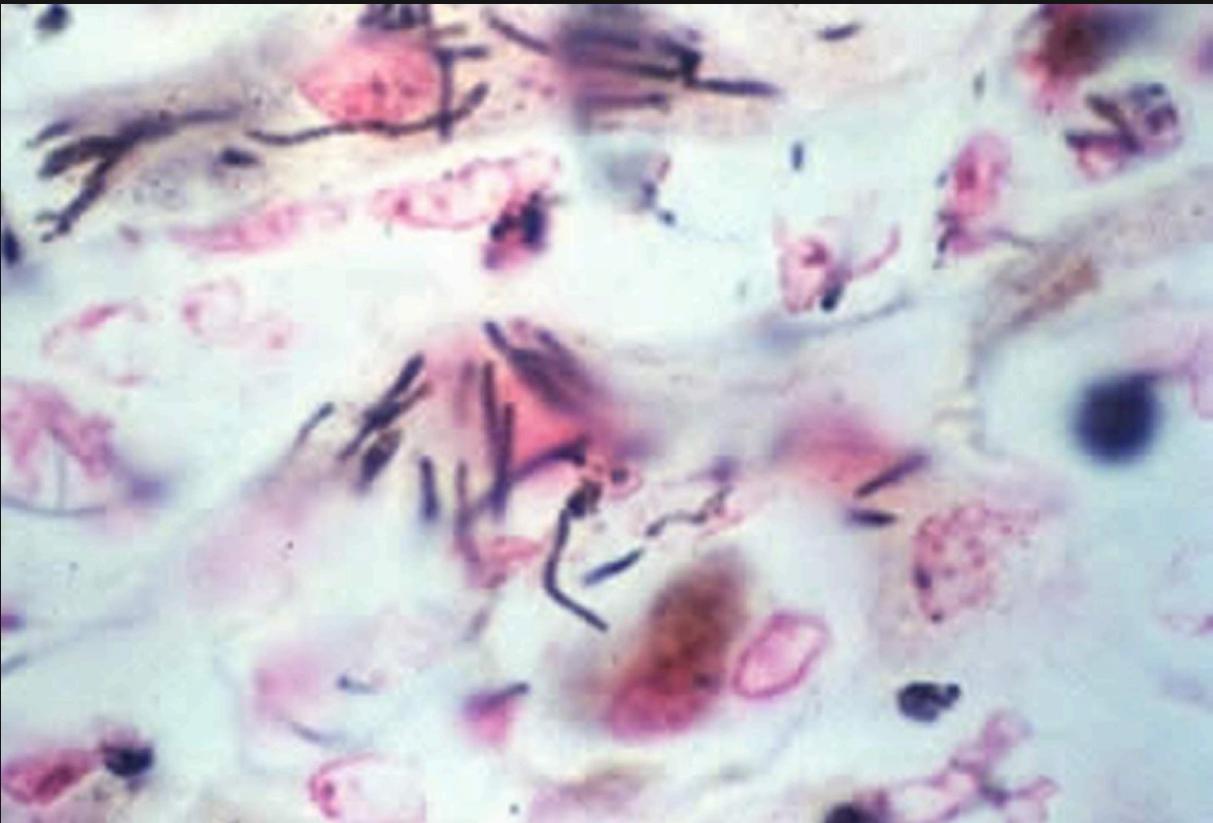
1. loss of a suckle reflex
2. depression progressing to recumbency
3. fever
4. tachypnea
5. tachycardia
6. icterus
7. petechiation
8. diarrhea
9. dehydration
10. shock
11. seizures and coma

**Sudden death** with no symptoms can also happen

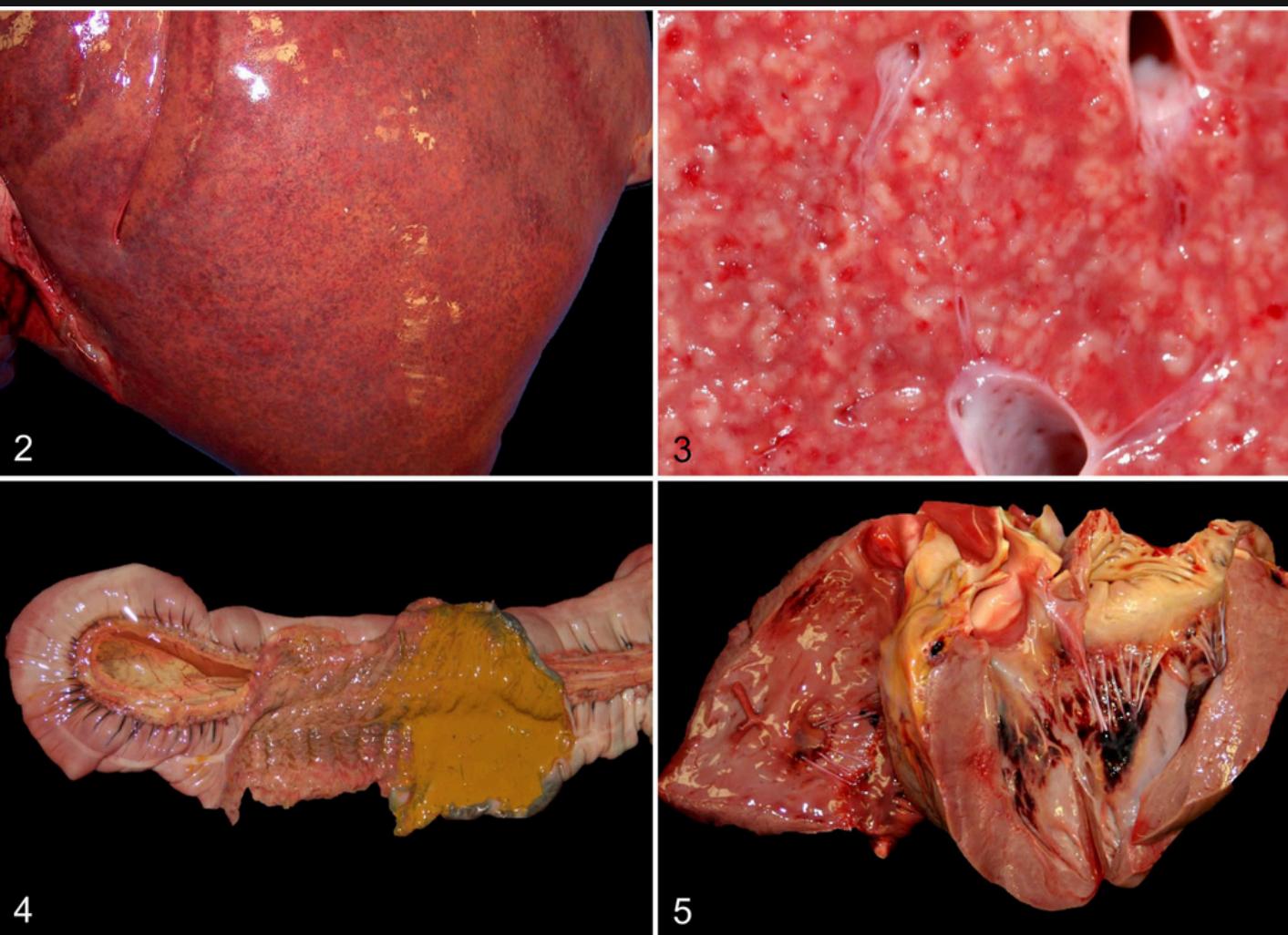
# PATHOLOGIC FINDINGS

*C. piliforme* causes acute multifocal hepatitis, myocarditis, and enteritis.

Grossly, the liver is swollen, with 1- to 5-mm white foci scattered throughout the parenchyma. Tissues are icteric, and petechial hemorrhages are present in many tissues.



Hepatomegaly with coagulative necrosis surrounded by degenerate hepatocytes and neutrophilic(suppurative) inflammatory cell migration



# PATHOLOGIC FINDINGS

In addition to hepatitis, enterocolitis, myositis, pleural effusion, pulmonary congestion and edema, and lymphoid necrosis or depletion may be present.



# DIAGNOSIS

Presumptive diagnosis maybe made on history, physical examination, diagnostic imaging, and clinicopathologic data.

## BIOCHEMISTRY/CBC

### CBC

- Hemoconcentration
- Hyperfibrinogenemia and normal to low leukocyte count

### Biochemistry

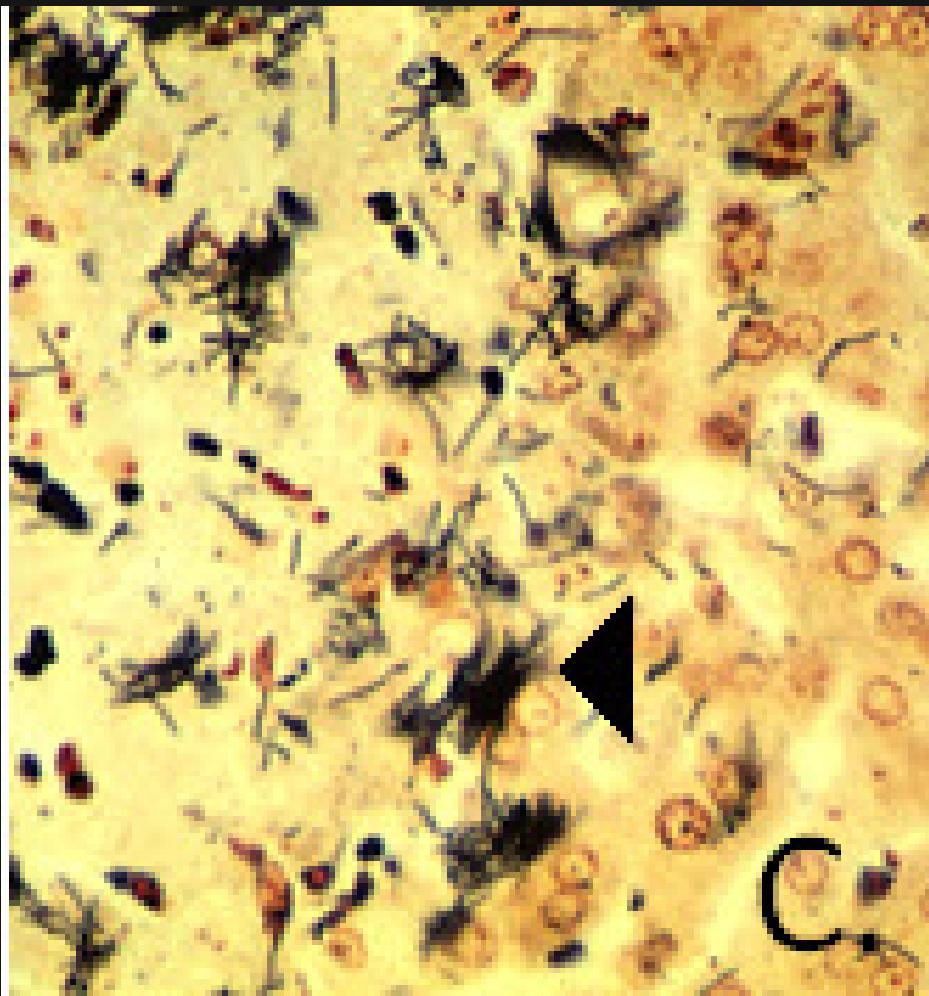
- hypoglycemia
- metabolic acidosis
- Elevated serum sorbitol dehydrogenase
- $\gamma$ -glutamyl transferase
- alkaline phosphatase
- bilirubin

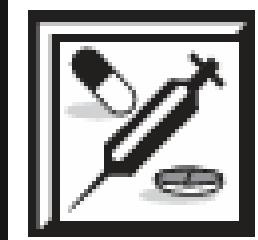
Coagulation profiles and imaging is also can be used.

### Definitive diagnosis is liver biopsy

Confirmation of Tyzzer disease is achieved by histologic demonstration of intracellular interlacing bundles of filamentous bacilli (*C.piliforme*) at the periphery of the lesions within the liver

### *Warthin-Starry or Dietrerie's silver stains*





# Drug of Choice *For* TREATMENT

Broad-spectrum antimicrobials that includes Gram-negative anaerobic

1. Penicillin (22000IU/kg IV every 6h),
2. Tetracycline (10mg/kg IV every 12h)
3. Erythromycin (25mg/kg PO every 6h)
4. Sulfamethoxazole-trimethoprim (15–25mg/kg PO every 12h)
5. Metronidazole (10mg/kg PO every 12h)

Seizure management using

- **diazepam** (0.1–0.4mg/kg IV)
- **ormidazolam** (0.02–0.06mg/kg/hr constant rate infusion)

Anti-inflammatory drugs

- **ketoprofen** (1.1–2.2mg/kg IV every 12h)

To reduce intestinal ammonia production  
**Lactulose** (0.1–0.25mL/kg PO every 6–8h)



## CONTRAINDICATION Barbiturates

should be given with caution  
for seizure management

# DDX

- Neonatal septicemia
- Neonatal isoerythrolysis
- Viral hepatitis
- Toxic Hepatopathy

# PROGNOSIS

## Grave prognosis

- Most foals die within 24h from the onset of clinical signs.