

# Bovine Tuberculosis (TB)

- Etiology
  - Chronic infectious and debilitating granulomatous disease caused by *Mycobacterium bovis*
  - *M. bovis* is a hardy bacterium that persists in the environment
  - *M. bovis* causes a progressive disease in most warm-blooded vertebrates, including humans (zoonotic)

# Bovine Tuberculosis (TB)

- Transmission
  - By inhalation of infected droplets expelled from the lungs
  - Also, by ingestion, particularly contaminated milk
- Species affected
  - Infects predominantly cattle, rarely affects other mammals
  - Humans are quite susceptible to bovine TB
  - Infections in humans occurs through drinking infected raw milk, raw milk products, and through inhalation

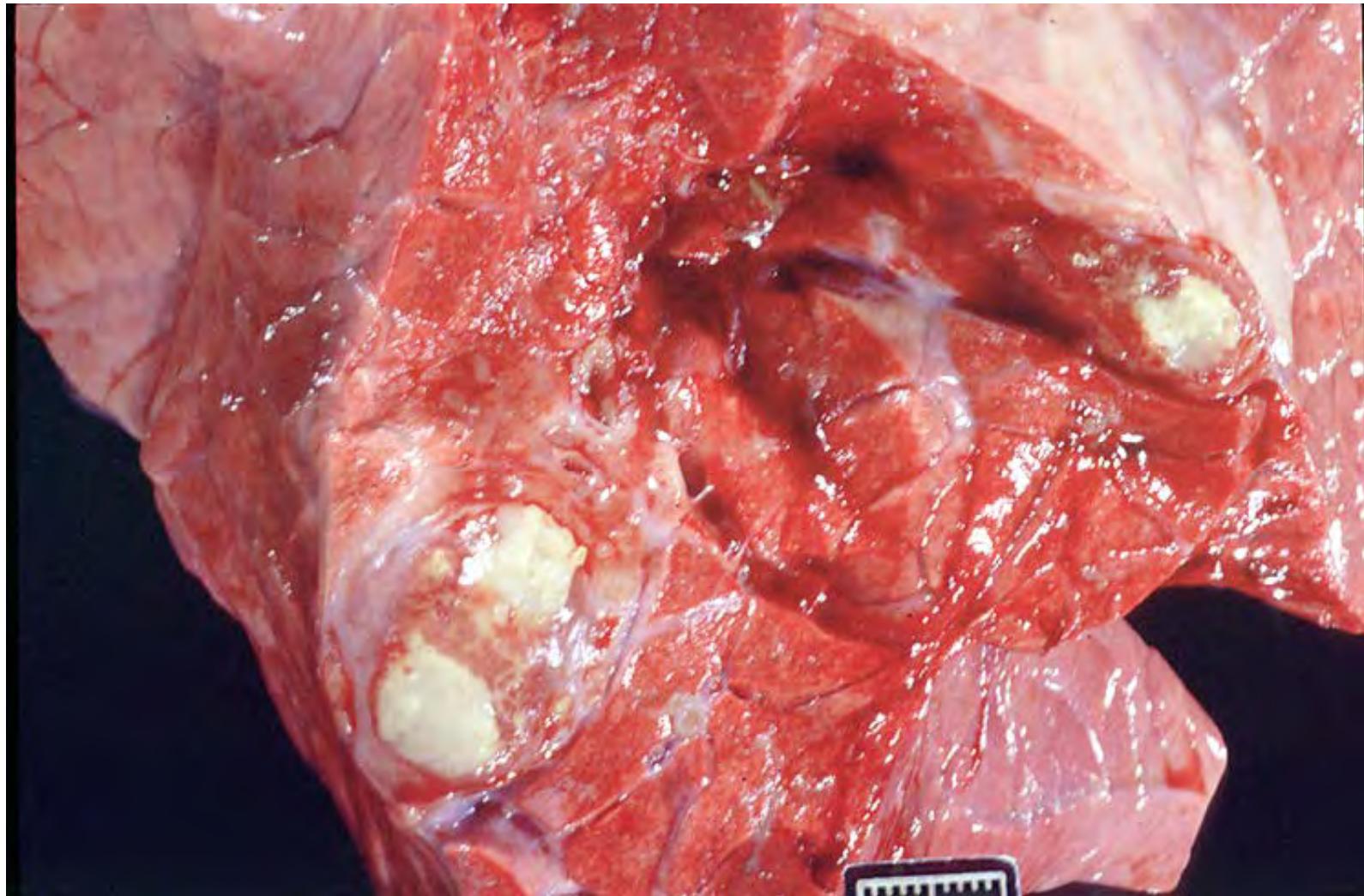
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- Clinical Signs
  - Progressive emaciation, lethargy, weakness, anorexia, and a low-grade, fluctuating fever
  - Respiratory form with bronchopneumonia causes a chronic, intermittent, moist cough with later signs of dyspnea and tachypnea
  - Granulomatous form with bronchopneumonia may detect destructive lesions on auscultation and percussion of the lungs
  - Superficial lymph node enlargement may be a useful diagnostic sign when present
  - Affected deeper lymph nodes cannot always be palpated, but they may cause obstruction of the airways, pharynx, and gut, leading to dyspnea and ruminal tympany

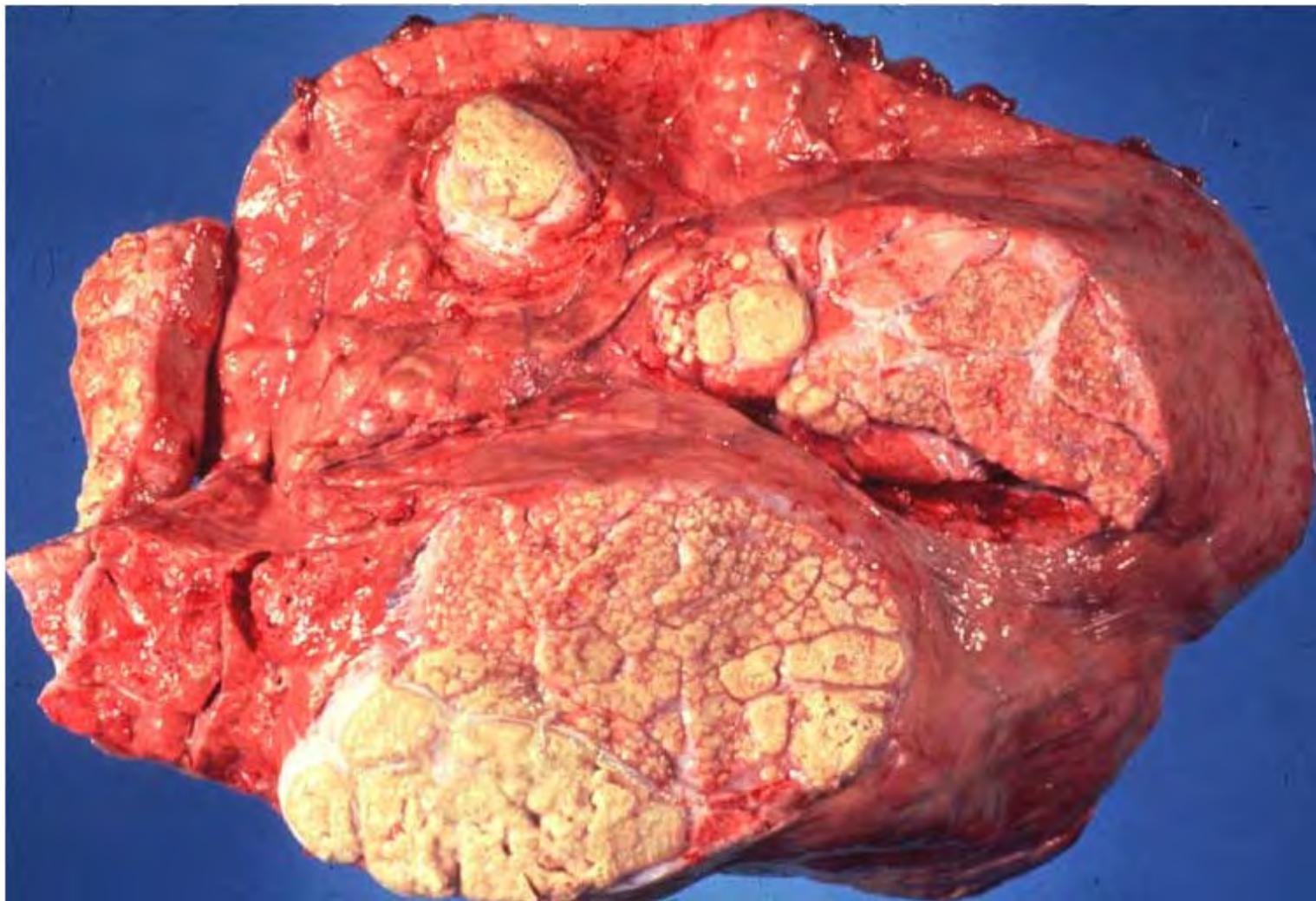
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- Pathologic findings
  - TB granulomas may be found in any of the lymph nodes, particularly in bronchial, retropharyngeal, and mediastinal nodes
  - In the lungs, miliary abscesses may extend to cause a suppurative bronchopneumonia
  - The pus has a characteristic cream to orange color and varies in consistency from thick cream to crumbly cheese
  - TB nodules may appear on the pleura and peritoneum

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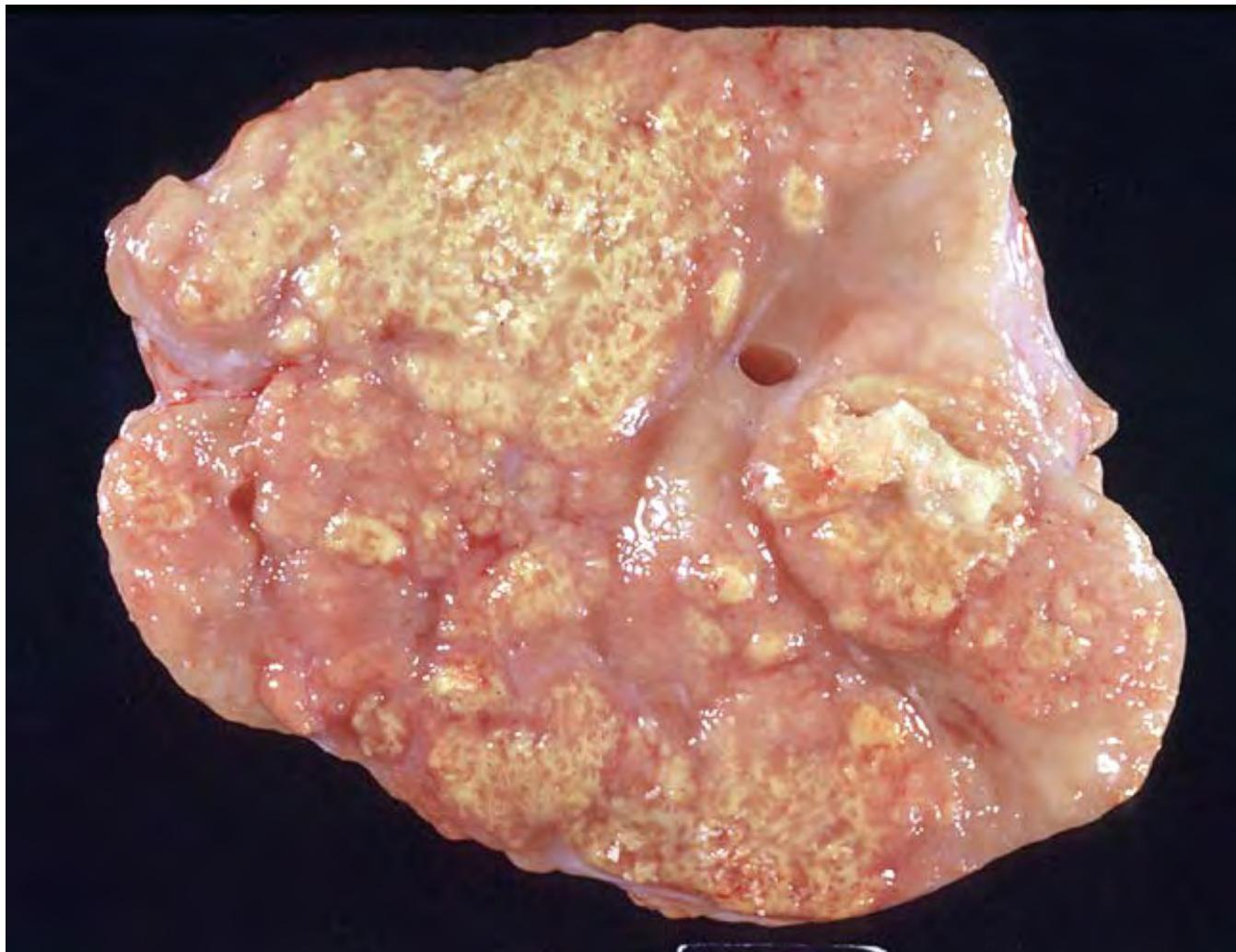
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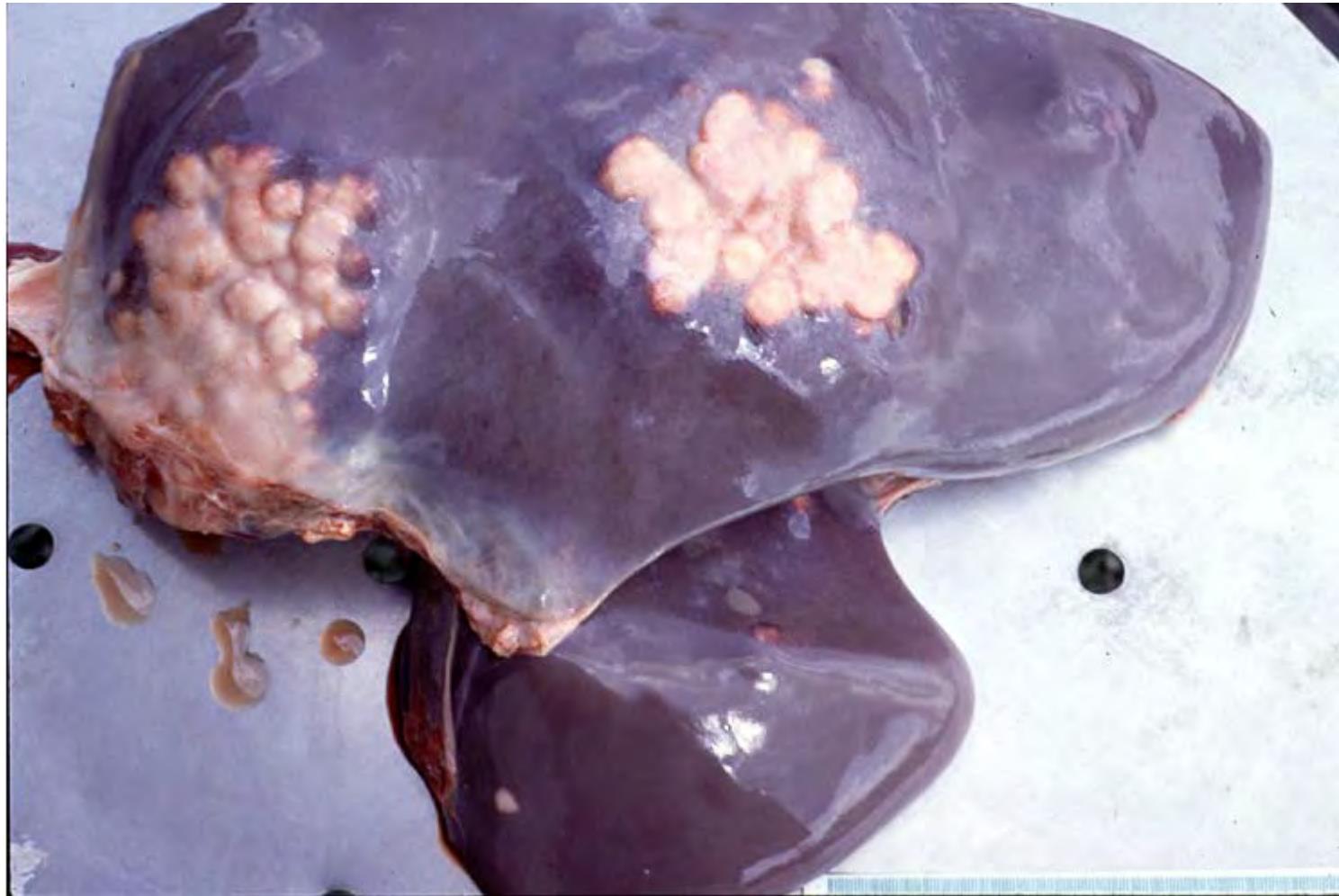
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- Diagnosis
  - Most important diagnostic test: Intradermal tuberculin test
  - Diagnosis by clinical signs alone is very difficult
  - Microscopic exam of sputum and other discharges is sometimes used
  - Necropsy findings include “tuberculous” granulomas
  - Confirmation of diagnosis is by isolation and identification of the organism by culture, usually taking 4-8 weeks, or by PCR, which takes a few days

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- Treatment
  - May be illegal in some countries
  - Destruction of TB positive animals should be attempted due to zoonotic nature of the disease
- Prevention and Control
  - Main reservoir of infection is cattle
  - Test and slaughter policy for eradication
  - Testing every 3 months in an affected herd to get rid of infected individuals
  - Pasteurization of milk reduces incidence of human infection

# Questions???

- And, thank you for your attentiveness
- Email: dana.mcdaniel@us.army.mil