

# Brucellosis

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## Brucellosis

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### Definition

- **Brucellosis**, also known as:
    - **Undulant Fever**
    - **Mediterranean Fever**
    - **Malta Fever**
  - A **zoonotic infection** caused by bacteria of the genus *Brucella*
  - These are **Gram-negative aerobic coccobacilli** infecting both **humans and animals**
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### Epidemiology

- A **widespread infection** affecting:
    - **Cattle**
    - **Sheep**
    - **Goats**
    - **Pigs**
  - **Main causative species:**
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- *Brucella abortus* ? cattle
  - *Brucella melitensis* ? sheep and goats
  - *Brucella suis* ? pigs
  - Human cases are common in:
    - **Mediterranean countries**
    - **Middle East**
    - **Africa**
    - **Asia**
    - **Latin America**
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## Pathophysiology

- Humans acquire infection via:
  - **Ingestion of contaminated milk/dairy products**
  - **Direct contact with infected animals**
- **High-risk occupations:**
  - Veterinarians
  - Farmers
  - Animal handlers
- The organism targets the **reticuloendothelial system**, leading to:

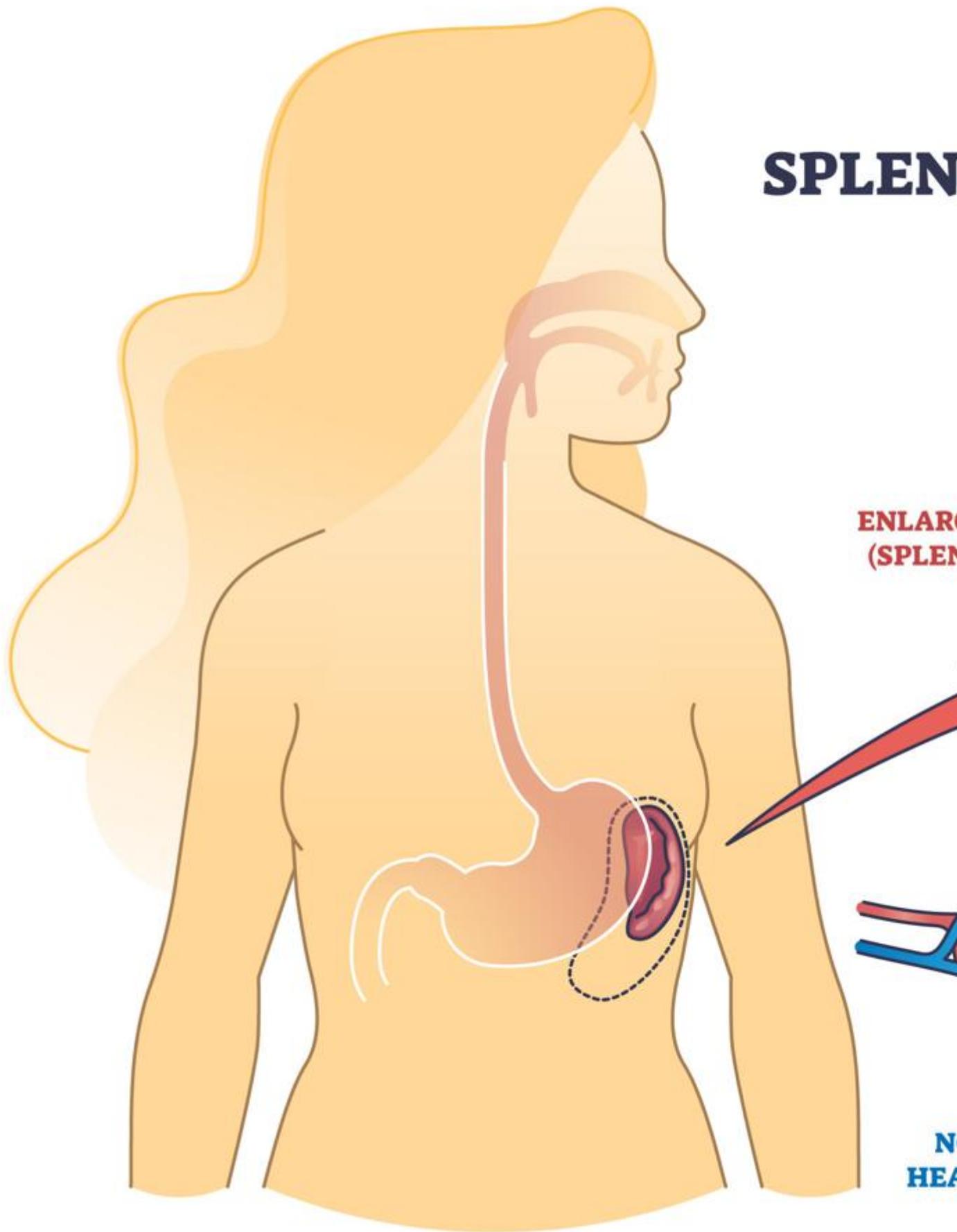
- **Granulomatous tissue response**
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## **Clinical Features**

### **General Systemic Features**

- **Incubation period: 5–30 days**
  - **Symptoms:**
    - **Intermittent (undulating) fever**
    - **Headache**
    - **Backache**
    - **General malaise**
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### **Organ Involvement**



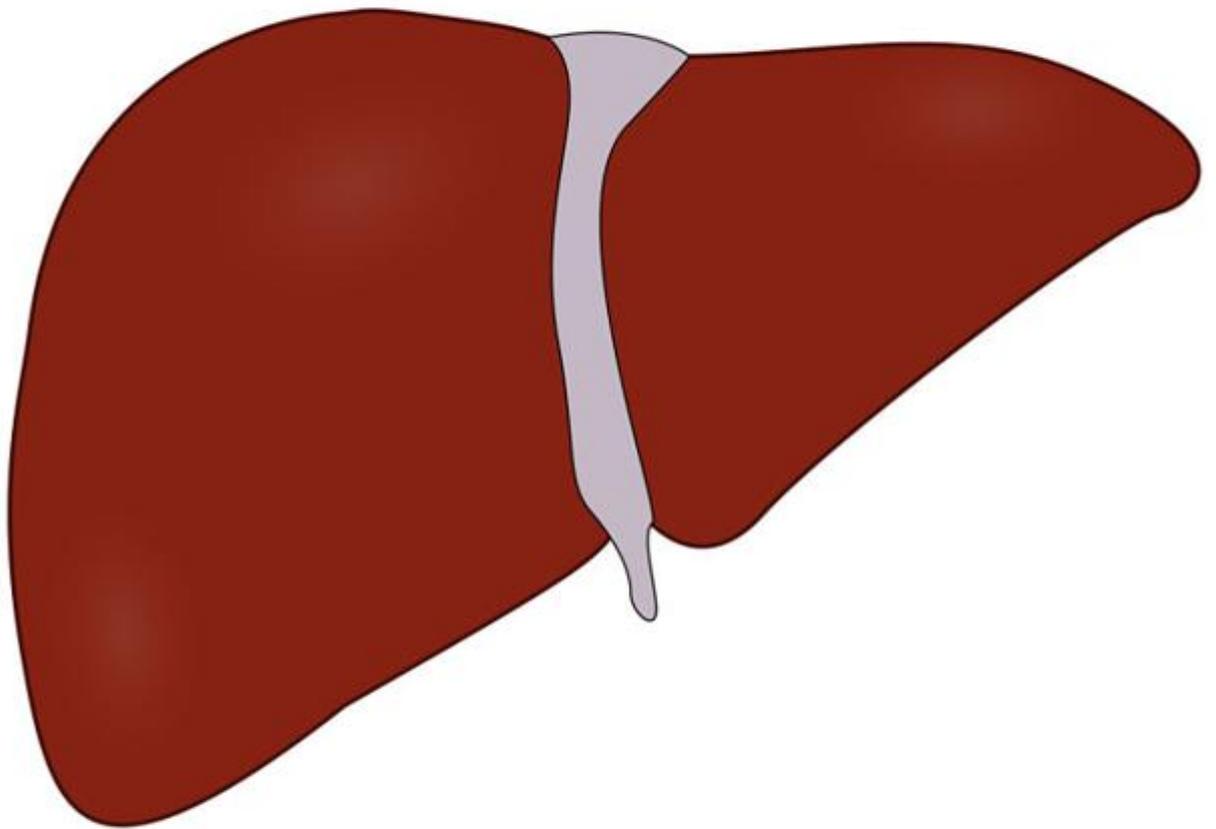
**SPLEEN**

**ENLARGED  
(SPLEEN)**

**N  
HEA**



# HEPAT



Normal Liver



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- **Lymphadenopathy** (~50%)
- **Splenomegaly** (~50%)
- **Hepatomegaly** (~25%)

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### Cutaneous Manifestations

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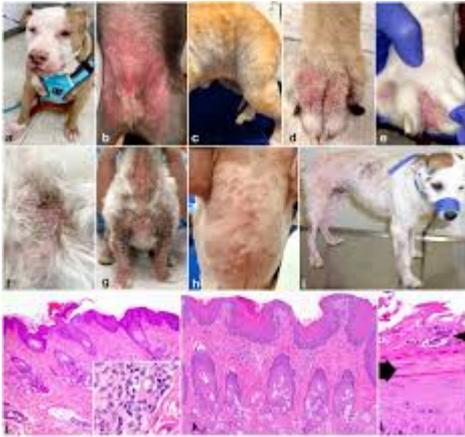
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- Seen in ~5% of cases
  
- Types of lesions:
  - **Morbilliform rash**
  
  - **Scarlatiniform rash**
  
  - **Roseolar exanthem**
  
  - **Papular lesions**
  
  - **Bullous lesions**
  
  - **Hemorrhagic lesions**
  
  - **Erythema multiforme-like nodules** (often on legs)

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## Contact Brucellosis





- Seen in **veterinary surgeons / exposed individuals**
  - Features:
    - **Localized pruritus**
    - **Erythema and wealing**
    - **Follicular papules, vesicles, or pustules**
  - Typically heal within **10–14 days**
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## Differential Diagnosis

- **Fevers of unknown origin (FUO)** ? always consider brucellosis
  - Other conditions:
    - **Herpes simplex / zoster**
    - **Orf virus infection**
    - **Poxvirus infections**
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## Investigations

### Laboratory Diagnosis

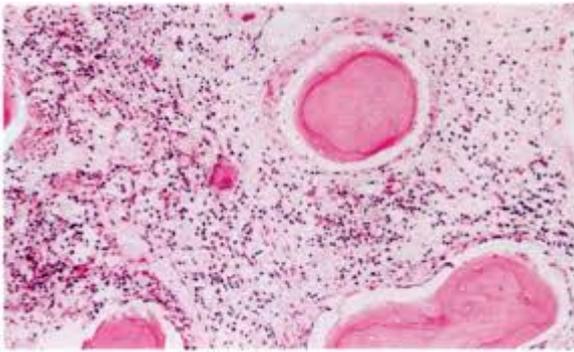
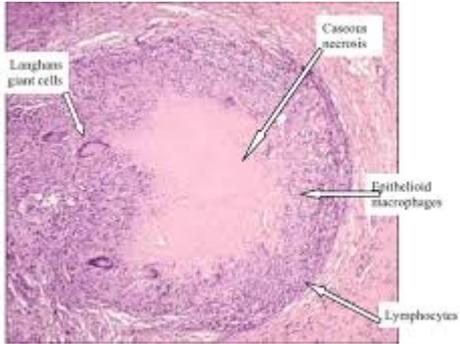
- **Relative lymphocytosis** without leukocytosis
- **Agglutination titres:**
  - ? **1:100** ? suspicious

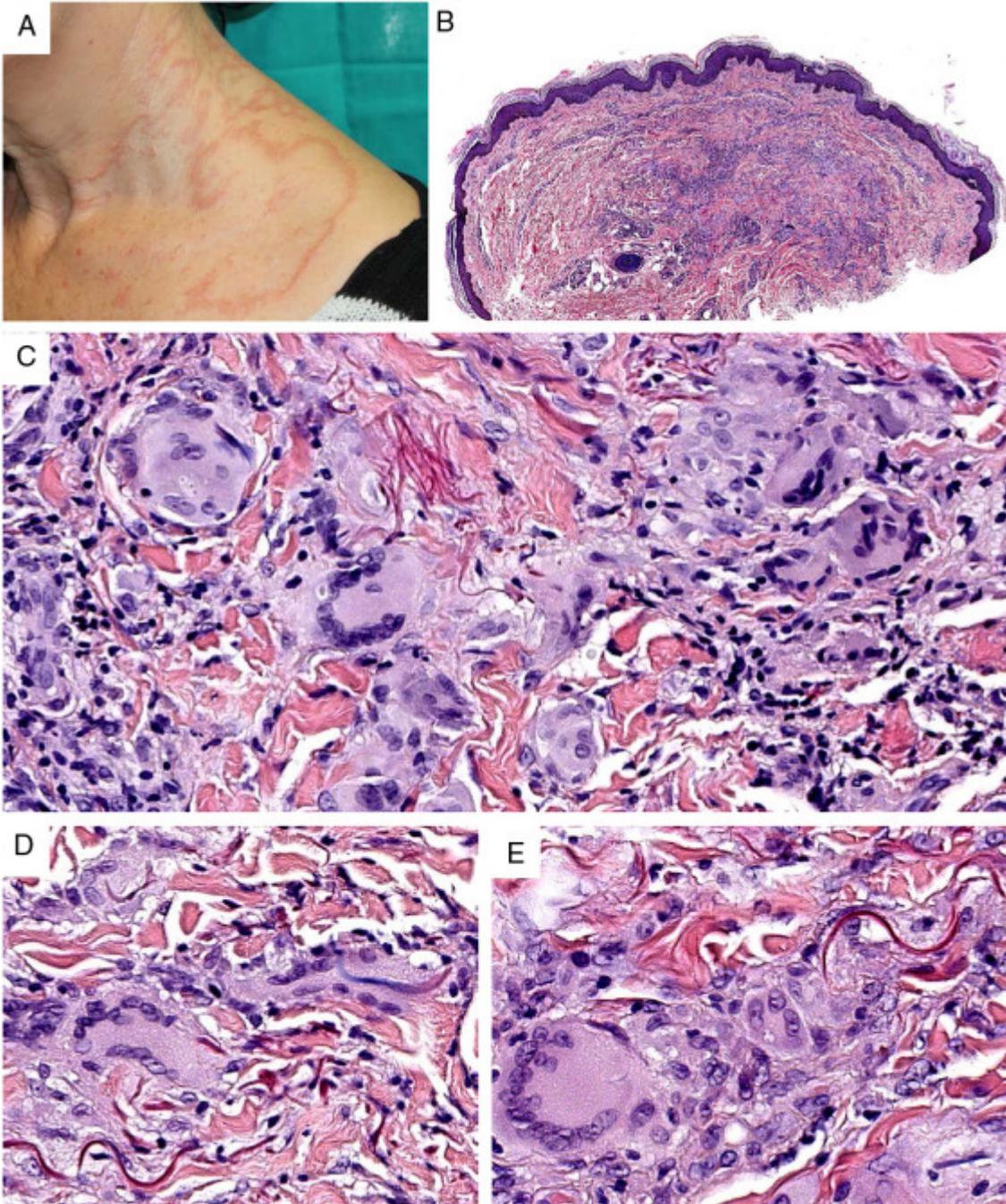
○ ? 1:300 ? diagnostic

- Blood cultures / PCR ? confirm diagnosis

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## Histological Findings





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- Intense inflammatory changes
- May show **granuloma formation**

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## Management

## 1. First-Line Treatment

- **Doxycycline + Rifampicin for 26 weeks**
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## 2. Second-Line Options

- **Co-trimoxazole**
  - **Tetracycline + Streptomycin**
  - **Oxytetracycline + Gentamicin** (children >8 years)
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## 3. Alternative Antibiotics

- **Ciprofloxacin** and others
  - Role still **under evaluation**
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## Treatment Ladder

### First-line

- **Doxycycline**
- **Rifampicin**

### Second-line

- **Co-trimoxazole**
  - **Tetracycline + Streptomycin**
  - **Oxytetracycline + Gentamicin**
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## Prognosis

- **Variable disease course**
    - Typical duration: **3–4 months**
  - Possible outcomes:
    - **Acute fulminant disease**
    - **Chronic persistent infection**
  - **Relapses common** with inadequate therapy
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## Key Point

- ? **Brucellosis is a zoonotic granulomatous infection**
- ? Presents with **undulating fever + systemic + occasional skin manifestations**
- ? Diagnosis: **Serology + culture/PCR**
- ? Requires **prolonged combination antibiotic therapy** for cure