Erysipelothrix rhusiopathiae

Exam revision – May 2026

Quick revision

- Zoonotic slender pleomorphic Gram-positive rod (non-sporing)
- Classically linked to fish exposure; reservoir in swine, poultry and fish
- Occupational disease in butchers, fish handlers, abattoir workers, vets
- Human infection usually cutaneous; systemic disease and endocarditis are rare
- Intrinsically vancomycin-resistant but usually

Taxonomy and microbiology

- Family Erysipelotrichaceae; small slender Gram-positive rods
- Non-spore-forming, non-motile, catalase-negative, H2S-positive
- Facultatively anaerobic; forms small alpha-haemolytic colonies after 24–48 h
- Blackening of butt on triple sugar iron agar from H2S production is a useful clue

Epidemiology and risk factors

- Worldwide zoonosis of pigs, poultry, fish and other animals
- Human disease follows direct inoculation through minor trauma
- High-risk occupations: butchers, abattoir workers, farmers, fish handlers, vets
- Fish-handling vignette is commonly tested in exams

Clinical features (overview)

- Spectrum from local erysipeloid to diffuse cutaneous disease and bacteraemia
- Systemic infection uncommon but associated with significant comorbidity
- Underlying cardiac, liver disease, diabetes and alcohol excess predispose
- Virulence mechanisms incompletely defined; survival within macrophages likely important

Localised erysipeloid

- Most common presentation; exam classic
- Violaceous, well-demarcated, non-suppurative plaque with raised edge
- Typically on fingers/hands after handling animals or fish (1–7 days incubation)
- Severe burning or throbbing pain with occasional vesicles; minimal systemic symptoms
- Self-limiting over 2–4 weeks but treatment

Diffuse cutaneous disease

- Extension beyond initial inoculation site with multiple erythematous or violaceous plaques
- May form bullae with fever, malaise, arthralgia and myalgia
- Can mimic erysipelas or toxin-mediated dermatoses
- May precede or accompany bacteraemia

Systemic infection and endocarditis

- Bacteraemia is rare but strongly associated with endocarditis (~90% of cases)
- Classically linked to animal/fish exposure and native valve endocarditis
- Marked predilection for the aortic valve; primarily affects native valves
- High rates of heart failure (~80%) and mortality (~40%)
- Skin lesions may be erysipeloid-like in some

Diagnosis

- Take deep lesion biopsy – organism resides in deeper dermis; avoid superficial swabs
- Send blood cultures in unwell or immunocompromised patients to assess for bacteraemia
- Cultures grow small alpha-haemolytic colonies; Gram-positive slender rods
- Identification by MALDI-TOF MS; molecular methods (16S/PCR) reserved for complex

Key laboratory characteristics

- Gram-positive slender rods; may form filaments in older cultures
- Facultatively anaerobic, catalase-negative, non-motile
- H2S-positive on triple sugar iron agar; esculin hydrolysis negative
- Differentiate from Listeria (catalase-positive, motile, narrow beta-haemolysis)
- Differentiate from Arcanobacterium (beta-

Antimicrobial susceptibility

- Generally susceptible to penicillin and carbapenems (imipenem active)
- Alternative agents: piperacillin, cefotaxime, ciprofloxacin, pefloxacin, clindamycin
- Some strains show resistance to erythromycin, tetracycline and chloramphenicol
- Characteristically resistant to vancomycin, teicoplanin, daptomycin and many aminoglycosides

Treatment – localised erysipeloid

- For uncomplicated localised erysipeloid use oral penicillin (e.g. phenoxymethylpenicillin)
- Amoxicillin 7–10 days is an alternative first-line option
- Cephalexin or clindamycin appropriate for penicillin-allergic patients
- Fluoroquinolones may be used when beta-lactams are contraindicated

Treatment – diffuse or systemic disease

- Diffuse cutaneous infection or systemic disease requires parenteral therapy
- Use intravenous penicillin G or ceftriaxone for 4–6 weeks in endocarditis/ostearticular infection
- Combine with surgical intervention for valve or joint complications where indicated
- Empiric regimens for at-risk patients should include beta-lactam active against

Exam pearls and pitfalls

- Think Erysipelothrix in fish-handlers or butchers with violaceous hand plaque
- Key discriminator: Gram-positive rod that is intrinsically vancomycin-resistant
- Remember deep lesion biopsy rather than surface swab for diagnosis
- Always evaluate for endocarditis if blood cultures are positive