

From Kitchen To Catastrophe: Necrotising Fasciitis Due To *Vibrio vulnificus* After Crab Handling

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Introduction

- **Necrotizing fasciitis** is a rapidly progressive, potentially fatal infection of fascial planes, usually sparing muscle tissue.
- **Classification:** Type 1 (Polymicrobial); Type 2 (monomicrobial gram positive); Type 3 (monomicrobial gram negatives, often marine related); Type 4 (fungal)
- **Epidemiology:** Rare in developed countries (0.3–1.3/100,000), but higher in Southeast Asia due to occupational and cultural exposures (e.g., handling live seafood without protective measures).
- ***Vibrio vulnificus*:** Halophilic gram-negative bacillus endemic to warm coastal waters; associated with seafood handling.
- **Risk Factors:** Diabetes, chronic liver/kidney disease, hemochromatosis, immunosuppression.
- **Rapid Mortality:** Median time from hospital admission to death is ~15 hours; up to 83% of deaths occur within the first 3 days.

Case Vignette

- A 64-year-old man with poorly controlled diabetes, chronic kidney disease and history of previous hepatitis B presented with rapidly progressive left-hand pain, swelling, and erythema after sustaining a crab pinch injury the previous evening while preparing dinner.
- He was febrile (38.2 °C) and hypotensive (BP 80/50 mmHg). There was haemorrhagic bulla formation extending from MCPJ to forearm, severe pain disproportionate to findings, worsened with passive wrist movement.
- Laboratory findings included leukocytosis ($21 \times 10^9/L$), elevated CRP (134 mg/L) and lactate 6.6 mmol/L; LRINEC score was 2. Blood cultures were negative. Radiographs showed soft tissue swelling but no gas or bony involvement.
- Empirical intravenous benzylpenicillin, clindamycin, and ceftazidime were initiated. Emergency surgical debridement and fasciectomy was performed and intraoperative cultures identified *Vibrio vulnificus*.
- Antibiotics were subsequently adjusted to IV ceftriaxone and oral doxycycline. The patient underwent further debridement and skin grafting, leading to full recovery.

Discussion / Learning Points



Figure 1A and 1B: Pre-debridement
Figure 1C and 1D: Post-debridement

- **Clinical Diagnosis Over Scores:** Necrotizing fasciitis is primarily a clinical diagnosis; LRINEC score is unreliable, especially for *Vibrio vulnificus* (sensitivity 35–68%). Low scores (e.g., 2 in our patient's case) do not exclude severe infection.
- **High-Risk Exposure & Rapid Progression:** Shellfish-related injuries may appear minor but can quickly lead to life-threatening infection; early recognition of pain out of proportion, bullae, and systemic signs is crucial. Imaging may help but should not delay surgery.
- **Early Intervention Saves Lives:** Prompt surgical debridement with a low threshold for exploration is the cornerstone of management.
- **Empirical Antibiotics:** Start broad-spectrum antibiotics early, even with negative blood cultures, until definitive treatment. The percentage of patients with *Vibrio vulnificus* necrotizing fasciitis who have negative blood cultures is approximately 20–25%.

References

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