Case History Part 1

• 60 year old Caucasian female
• In good health; No meds; Not diabetic; Not hypertensive
• Returns from missionary trip to rural Zimbabwe
• Non-descript, barely visible maculopapular eruption on trunk
• Large tender pustule on leg, which evolves into…..
• Headache and myalgia
• Fever (103°F); BP 178/98; HR 115 beats/min

At Time of Presentation

Challenging Cases #1
Ted Rosen, MD
Professor of Dermatology
Baylor College of Medicine
Houston, Texas

Conflict of Interest Disclosure

DiscLOSure
NONE
Case History: Part 2

- Admitted due to skin lesion/rash/fever/↑BP
- Lab-ogram all normal except WBC 24,000
- Dermatology consulted; eschar differential

<table>
<thead>
<tr>
<th>Disease</th>
<th>Age</th>
<th># Locations</th>
<th>Fever</th>
<th>Notes</th>
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<tbody>
<tr>
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<td>Adults</td>
<td>One area</td>
<td>No</td>
<td>Post-operative</td>
</tr>
<tr>
<td>Embolic</td>
<td>Adults</td>
<td>Few</td>
<td>No</td>
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<td>Mucormycosis</td>
<td>Adults</td>
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<td>Yes</td>
<td>Diabetes</td>
</tr>
<tr>
<td>Candida, Saprophytes</td>
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Key Point

- The eschar is a cutaneous morphologic pattern which may signify serious local or systemic disease, including a host of infections

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Anthrax: Animal (Animal hide contact)

Fever
Eschar
"Rash"
Headache
Myalgia
Tularemia (Animal or Vector contact)
- Fever
- Eschar
- "Rash"
- Headache
- Myalgia

Scrub Typhus: Orientia tsutsugamushi (Chiggers)
- Fever
- Eschar
- "Rash"
- Headache
- Myalgia

Plague (Vector or Animal)
- Fever
- Eschar
- "Rash"
- Headache
- Myalgia

Rickettsia? African Tick Bite Fever (Ticks)
- Fever
- Eschar
- "Rash"
- Headache
- Myalgia

Typical Village in Rural Zimbabwe

Diagnosis based on Differential Dx

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*WHO Atlas of tropical Disease*
### Diagnosis based on Differential Dx

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### Course/Outcome

- Given Doxycycline 100mg BID empirically
- Wound care: Wet-to-dry dressings; Antibiotic ointment
- Gradually healed, Afebrile in two days

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### African Tick Bite Fever: Fast Facts

- Bacterial disease due to Rickettsia africae
- First described 1911; Recognized in Southern Africa 1934
- Tick transmission (primary vector Amblyomma hebraeum)
- Ticks live in high grass, feed on livestock
- Flu-like illness (1-15 days); rare myocarditis, neuropathy
- Skin: One (or more) eschars AND mild MP eruption (~50%)
- Multiple eschars 20-50%
- Travelers to endemic regions easily acquire infection

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**Amblyomma hebreum**

**African Tick Bite Fever: Fast Facts**
- R. africae vector (tick) typical hosts are cattle
- Sheep, horses, donkeys, pigs, giraffes, buffalos, antelopes
- Residents Southern Africa: 70% sero-positive, but acute cases only 50-70/10,000 population
- ATBF recognized more often in visitors
  - Visitors to game reserves (hunters, photo safari)
  - Natives: Soldiers, farmers,
- TOC: doxycycline; Alternate chloramphenicol and fluoroquinolones (eg ciprofloxacin)
- RELATIVELY MILD “spotted fever”

**Messages**
- Travel history important
- Exposure to animals important
- Exposure to vectors important
- Consider diseases common in destination

**CHALLENGING CASES #2**

TED ROSEN, MD
BAYLOR COLLEGE OF MEDICINE
HOUSTON, TEXAS

**CONFLICT OF INTEREST**

None

**HISTORY**

41 year-old female
Long-term alcohol abuse, but otherwise OK
Dog owner x 6 years
Dog, “without provocation” bit her on the face
Only mild pain, minimal bleeding initially
**HISTORY, PART 2**

Three days later, felt ill; Presented to ER

- Fever (102.2°F)
- Tachycardia (140/min) & Tachypnea (30/min)
- Thrombocytopenia (25,200)
- Hypoglycemia (50mg/dl)

**HISTORY, PART 3A**

Facial bite site: Eschar with purpura

Derm consult

**HISTORY, PART 3B**

- Hypotension w/ instability
- Widespread purpura
- Derm Consult
- Labs indicative of DIC
- Required transfusions/FFP
- Renal/Hepatic failure

**HISTORY, PART 3C**

- Multiple blood smears + Gram negative rods
- Culture + (14 days later)
- 16S-RNA gene sequencing definitive

Capnocytophaga canimorsus

Emerg Inf Dis 2006;12:340-42

**DISCUSSION**

Capnocytophaga canimorsus

Endotoxin-producing gram negative rod

- 73% normal dog oral flora (rarely cat oral flora)
- Associated with dramatic infections

Local necrosis; Purpura fulminans, DIC, death


Lancet Inf Dis 2009;8:439-47

Capnocytophaga canimorsus

Mortality: 25-30% due to septic shock and multi-organ failure

Most often in abnormal hosts, particularly:

Asplenic and Alcohol abuse

Vel Microbiol 2010;144:172-76

Lancet Inf Dis 2009;8:439-47
DISCUSSION
Capnocytophaga canimorsus
Incubation period 1-7 days
Initially fever and cellulitis, which may progress to septicemia (or...endocarditis, meningitis, peritonitis)

DISCUSSION: RX
Capnocytophaga canimorsus
Irrigate wound, do not close (heal 2° intention)
Amoxicillin-clavulanate first line therapy (PO)
Doxycycline, Clindamycin, Meropenem (IV)
All antibiotic Rx: 14 days; START EARLY

HISTORY, PART 4
Initial antibiotic Rx: IV amoxicillin-clavulanate plus IV ciprofloxacin
Clinical deterioration: IV clindamycin + IV meropenem
Clinical deterioration; develops cerebral septic emboli
Massive hypotension -> fatal myocardial arrest

LESSONS
Dog bites: usual worry is tissue damage; ?rabies
Dogs carry Capnocytophaga canimorsus in mouth
This organism can be associated with both local necrotic lesions and severe sepsis
Early Dx (PCR) and Rx are required for good outcome