Taking a Bite out of Capno

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Learning Objectives

- Recognize the risk of sepsis in an asplenic patient
- Recognize the importance of communication with lab for consideration of fastidious organisms
History

CC: fever and chills

HPI

- 74 year old male with asplenia
- 1 day history
  - Systemic symptoms
  - Headache and neck pain
- 3 days prior had dog exposure
Past Medical History

- CAD with CABG in 1991
- Splenectomy in 1993
  - Due to splenic rupture
- Abdominal aortic aneurysm repair in 2000
- COPD
Other Relevant History

- **Medications**
  - Lisinopril
  - Atenolol
  - Aspirin
  - Niacin

- **Social History**
  - Lives in Birmingham with wife
  - Retired firefighter
  - Current smoker
  - No alcohol

- **Immunizations**
  - Unknown
Physical Exam

- VS T 99.4 BP 88/30 HR 108 RR 24 O2 sat 99%

- Ext - bilateral arms with scratches without cellulitis

- Neuro – no photophobia, no nuchal rigidity, oriented, follows commands, no focal deficits
Labs

- WBC 14
  - 66% Segs
  - 33% Bands
- Platelets 184
- PT 15
- PTT 34

- Cr of 2.4
  - Baseline 1.3
- LFTs normal
- Lactic acid 5.9
Clinical Course

Presentation

Hypotension
Vasopressors
Empiric antibiotics

12 hrs

Intubation

18 hrs

Dialysis

24 hrs

Purpura fulminans
Clinical Course

Presentation

- Hypotension
- Vasopressors
- Empiric antibiotics

12 hrs

18 hrs

Intubation

24 hrs

Dialysis

24 hrs

Purpura fulminans

4 days

GNR from initial blood culture
Post Splenectomy Sepsis (PSS)

- Rapid acute decompensation
  - Hypotension
  - DIC
  - Purpura fulminans

- Due to high grade bacteremia
  - Encapsulated organisms
Microbiology of PSS

- Streptococcus pneumoniae
- Haemophilus influenza
- Neisseria meningitidis
- Capnocytophaga canimorsus
- Other bacteria
  - Escherichia coli
  - Pseudomonas aeruginosa

Capnocytophaga species

- Encapsulated gram negative rod
- Seen in asplenic patients
- Associated with animal exposure
  - Often a dog bite
- Fastidious organism

Peripheral Blood Smear

- Presence of bacteria within neutrophils
- Seen with high grade bacteremia

Image from Up to Date, Inc. 2008
Capnocytophaga Infection

- Septicemia (100 reported cases)
  - 37% Purpura
  - 34% DIC
  - 29% Shock
  - 27% Acute renal failure
  - 17% Respiratory distress
  - 30% Overall mortality

Capnocytophaga Infection

- Meningitis (19 reported cases)
  - 12 blood cultures
    - 2 documented negative
    - 10 positive
      - Average of 6 days before growth revealed

Education

- Counseling on risk of overwhelming infection
  - 50% are unaware of increased risk

- Encourage patients to seek immediate care
  - With fever and systemic symptoms
  - With minor animal bite

Management of Asplenia

- Immunizations
  - Pneumococcal vaccine
  - Meningococcal vaccine
  - Haemophilus B conjugate vaccine

- Antibiotic prophylaxis
  - Standby antibiotics

Further Course

- 2 weeks of antibiotic therapy
- 1 month later
  - Identification of organism as Capnocytophaga species
- Long term complications
  - Distal necrosis of fingers and toes
  - Surgery follow up
    - Amputation of digits
Take Home Points

- Animal bites in asplenic patients may lead to overwhelming sepsis
- Communication with lab may lead to a quicker diagnosis of fastidious organisms