“You Can Call Me Spider Man”

Laurie Wolf MLS(ASCP)SBB
University of Kansas Hospital
A 20 y/o male presents to the ER at another facility.

Patient explains that the previous day he thinks he was bitten by a spider while putting on an old coat.

Complains:
- Nausea
- Vomiting
- Pain at site
- Red urine
Lab Values 2–6–2013

- **Hematology**
  - WBC 18.7
  - Hgb 14.8

- **Urinalysis**
  - Large bilirubin

- **Chemistry**
  - Elevated liver function tests
  - Positive EBV IgM
Diagnosis and Treatment
2–6–2013

- **Diagnosis**
  - Cellulitis of the arm presumably due to a spider bite
  - Infectious mononucleosis

- **Treatment**
  - Admitted for observation
  - Cephalexin regimen
  - Ibuprofen as needed

- **Discharged on 2–10–13**
  - Hgb 11.1
  - Bilirubin 6
Comes back to the ER complaining of weakness

Lab Values

- Hgb 5.8
- Hpt <10
- Bili 18.6
- UA
  - Large blood, moderate bilirubin, light yellow in color
Blood Bank Serology
- DAT weakly positive with anti-IgG and anti-complement reagents
- Negative eluate

Diagnosis
- Hemolysis
- Cellulitis
- Discontinue cephalaxin

Transfer to KUMC
Confused, lethargic

Lab Values
- Hgb 3.3
- Hpt 5.0
- Bili 13.8
- UA
  - Brown, large blood, bilirubin

Deteriorated quickly, required ventilation, admitted to the ICU, Infectious Disease and Hematology consulted
Causes of the hemolysis

- Autoantibody?
  - BB serology
  - Previous hospital found DAT +

- Drug induced hemolytic anemia?
  - Cephalexin, ibuprofen

- Infectious mono?
  - Transient, potent anti-i

- Undiagnosed sickle cell anemia?
  - No sickle cells noted on peripheral smear

- Spider bite?
  - Most probable
# Blood Bank Serology

## Special Report Worksheet

### SPIDERMAN

## THE UNIVERSITY OF KANSAS HOSPITAL

### Antibody Detection

<table>
<thead>
<tr>
<th>Cell</th>
<th>Echo</th>
<th>Gel</th>
<th>Last WB</th>
<th>Result</th>
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### Direct Antiglobulin

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<th>Saline</th>
<th>Result</th>
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### Other Cell Typings

- Phenotype: [Additional information]

### Antibody Identification

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<th>Phase</th>
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### Diagnosis

[Additional information]

### Transfusion Rx/Medications

[Additional information]

### Report

[Additional information]

### Additional Billing: AABI ___ AGIS ___ Other ___

### Antibody Registry: FND □ NFND □ Entered □

### Tech:

### Date: 2/12/13

### Reviewed by: ______________________ Date: ___________
Summary of Serology

- No alloantibodies to common blood group antigens detected
- Pos DAT with anti-IgG and anti-complement reagents
- Negative eluate
  - No warm autoantibody
- Cold reactive autoantibody that was equally reactive with regards to I/i antigens
  - EBV most likely not a cause of hemolysis
- Patient received 6 rbcs over the next 36 hours
Drug Induced Possibility

Hemoglobin

Cephalaxin IBU started
Cephalaxin IBU ended
Post 3 rbcs
Post 2 rbcs
Post 1 rbcs

2/6 2/9 2/11 2/11 2/11 2/13 2/14
0700 1543 1656 0335 0550

Hemoglobin
Drug Induced Possibility

- Unless drug testing is performed, never know for sure

- However, most likely not the cause
  - Patient noted red urine prior to administration of cephalexin or NSAIDS

- Hemolysis persisted following the discontinuation of the drugs
  - Supported with transfusion
And The Winner Is? Most Likely This Guy!!

http://www.desertusa.com/desert-animals/brown_spider.html
Loxosceles species

- Found globally, especially South and North America

- At least six *Loxosceles* species are known to cause numerous incidents
  - Common culprit is *L. reclusa*—brown recluse

- *Loxosceles* spiders emit only a few tenths of microliters of venom
  - Venom contains an important enzyme, sphingomyelinase D
    - Dermonecrotic lesions
    - Massive inflammatory response
    - Increased susceptibility to complement-mediated hemolysis
Cutaneous manifestations
- Pain, edema and plaque which later develops into a necrotic scar

Systemic manifestations—16%
- Hematuria and hemoglobinuria are always observed
- DIC
- Intravascular hemolysis, complement mediated
  - Cases reviewed include positive DAT with anti–complement reagents and usually anti–IgG reagents, negative eluates
  - FVP raises the question of sphingomyelinase D perhaps alters the RBC membrane such that IgG binds nonspecifically.
    - Supported by work done by Beck and Hardman in 1983
Suspected Loxoscelism given the patient history
- Hemolytic anemia secondary to bite
- No evidence of animal exposure
- No travel for endemic disease exposure
- No GI symptoms suggestive of enterohemorrhagic *E. coli*
- Couldn’t rule out Staph or Strep toxic shock but highly unlikely
Treatment

- Patient was in ICU on a ventilator for one day
- 6 units of RBCs due to hemolysis
- Aztreonam
- Vancomycin
- Discharged on 2–17–2013
  - Hgb 9.1
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References


References


Frederick V Plapp, email.
References
