

# **Case scenario 3**

# **Clinical Breakout Session**

**Smallpox Vaccine Adverse Event  
Workshop**

**January 22-23, 2003**

# CASE #3 – Erythema multiforme

- 22 yo Female previously healthy ER clerk S/P smallpox returns for a take check on day 7 post-vaccination. She complains of 2 days of subjective fever, mild headache, fatigue, myalgias and regional lymphadenopathy. She reports that she has bed-bound due to constitutional symptoms for the preceding 3 days.
- On exam she is mildly ill-appearing.
- Temp 100.7F, B/P 110/70, P112. and delayed cap refill.
- UA: sp grav 1.020, WBC TNTC
- CBC: 12K WBC with left shift
- Urine Cx Pending and Blood Cx Pending

# CASE #3 – Erythema multiforme

- **Assessment:**
  - 1. Pyelonephritis
  - 2. Major reaction s/p smallpox vaccination
- **Plan:**
  - 1. S/P bolus of 1L normal saline
  - 2. Ceftriaxone 1gm IV
  - 3. Sulfa-Trim 500mg BID x 10 days
  - 4. Return to clinic 3 days, sooner for worsening of symptoms

# CASE #3 – Erythema multiforme

- *3 days later she presents for follow-up. Overall she is feeling better but notes new onset pruritic rash x 24 hours for which she has been taking benadryl prn.*
- *Exam reveals a healing vaccination site with early eschar formation. Diffuse symmetrical erythematous macular lesions patches on the trunk, extensor surfaces, palms and soles. Upon closer inspection, the lesions are noted to have a dull red to dusky sharply demarcated wheal, with a central papule and surrounding halo of clearing. Mucosal membranes are intact.*
- *She is diagnosed with Erythema Multiforme, the state health official contacted and a VAERS form filled out.*

# CASE #3 – Erythema multiforme

1. What features in the history and physical support this diagnosis?

- *The hallmark “iris” or “targetoid” lesion.*

2. What do you think was the etiology for the EM?

- *Onset interval of symptom is consistent with post-vaccinial EM (day 10). Drug hypersensitivity, food, systemic disease and infection (e.g., HSV or mycoplasma) are other potential etiologies of EM. Patients presenting with hypersensitivity rashes should be evaluated for non-vaccinial etiologies, as well.*

# Erythema Multiforme

- Variety of lesions include macules, papules, urticaria, and typical bulls-eye (targetoid) lesions
  - Central, dark papule, surrounded by pale zone and a halo of erythema
- Course is extrapolated from other infectious agents (HSV, mycoplasma)
- ~10 days after vaccination
- Occasional Stevens-Johnson syndrome
  - >2 mucosal surfaces / 10% BSA

# EM and SJS

- Hypersensitivity reactions
- Lesions are not thought to contain virus
- Antipruritics
- VIG not indicated
- Supportive care (hospitalize for SJS)
- Role of steroids in SJS controversial
  - Consult immunologist, dermatologist, or infectious disease specialist



# ERYTHEMA MULTIFORME

Photo credit: V. Fulginiti, MD and Logical Images

<http://www.bt.cdc.gov/training/smallpoxvaccine/reactions/default.htm>

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# CASE #3 – Erythema multiforme

- 3) **What is the expected time course from onset to resolution?** *[description of EM following other infectious organisms] The evolution and resolution of individual lesions can last a week. However, lesions may continue to appear in crops for as long as 2-3 weeks. Overall the rash can last less than 4 weeks from initial onset of symptoms to resolution.*
- 4) **What do you want to watch this patient closely for over the next few days?** *Stevens-Johnson (Erythema Multiforme Major): involvement of 2 mucosal surfaces or >10% of body surface area.*
- 5) **How do you treat this illness?** *Supportive care with antipruritics. ~~VIG is not indicated. Consider discontinuation of sulfa drug.~~*

# CASE #3 – Erythema multiforme

6. *What infection control precautions should be used in this case?*
- *Routine care of vaccination site. No special precautions for the generalized rash of EM, because virus is not thought to be present in the lesions.*
7. *Any special considerations for handling the blood and urine cultures that have been obtained?*
- 1 • *No.*

# CASE #3 – Erythema multiforme

- *The vaccinia virus is not viable in media that is used for routine bacterial culture. If, at time of diagnostic evaluation, vaccinia virus is suspected, a viral culture may be obtained. Prior to collecting the viral culture, you must ensure that your laboratory is certified as a BSL 2 (biosafety lab level 2) and that the laboratorians have been appropriately vaccinated with vaccinia.*

# CASE #3 – Erythema multiforme

- *The diagnoses of smallpox vaccine adverse events are based on clinical evaluation and history. Currently diagnostic vaccinia testing is not approved for clinical decision-making.*
- *Check out the following link for instructions on how to collect specimens for vaccinia:*
- *<http://www.bt.cdc.gov/agent/smallpox/vaccination/vaccinia-specimen-collection.asp>*

# CASE #3 – Erythema multiforme

8. *How soon should the VAERS form be submitted?*
- *Within one week. Recall:*
  - *Serious/unexpected requiring CDC consultation or request for VIG/CDV release – DO NOT DELAY IN SEEKING ASSISTANCE. Contact State Health Department or CDC to obtain clinical consultation or to request IND therapeutics. The CDC will assist in filling out a VAERS form*
  - *Serious but does not require CDC consultation / request for IND therapeutics – 48 hours*
  - *All others – within one week*

# CASE #3 – Erythema multiforme

9. *Can she be revaccinated with smallpox vaccine?*
- *According to Goldstein JA, Neff JM, Lane JM, Koplan JP. Smallpox vaccination reactions, prophylaxis, and therapy of complications. Pediatrics 1975;55(3):342-347, this patient would not have had a contraindication to revaccination during the era of routine childhood vaccination.*

*.....revaccination of children with a history of inadvertent inoculation or erythematous or urticarial rashes presents no known or theoretical risk. Revaccination of children who have had eczema vaccinatum is not contraindicated; individuals with a history of post-vaccinial central nervous system disease (PVE/PVEM) should not be revaccinated.*

# CASE #2- Erythema Multiforme

## Discussion and questions