Is This Rash Measles?
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Case Presentation:

- A 52 yo established pt presents to a Maryland clinic c/o of a dry, red, bleeding, crusting, painful, non-itchy rash.
- Initial symptoms included a cough & sore throat. Now with fatigue, bilateral eye & mastoid pain, frontal headache, sore scalp, & bone pain.
- Rash started right forearm, 3-1/2 days ago & spread to the trunk, face & thighs.
- Pt is immunocompetent.
- No known exposure, no recent changes in soap, detergent, perfume, or medications. No contact with chemcials or plants. No travel but does have contact with young children.
- She had had childhood measles & chickenpox.
- Pt had tried 1-2 oral tetracyclines, off & on, for a couple of days, & topical rubbing alcohol & aloe, without improvement.

Physical Examination:

- Pt was afibrile, 3/10 pain, looked tired and ill, lethargic but not septic.
- The patient had discrete, mostly papular erythematous lesions, some scabbed, some hyperpigmented macules-upper arms, trunk, face/neck, & thighs. No confluence. No lesions palms/soles/feet. (see picture below of similar appearance)
- Scalp was tender but without lesions. No conjunctivitis or light sensitivity, left tympanic membrane dusky, nose occluded, no sinus tenderness. Tongue was grey coated, no tonsillar enlargement, single raised soft palate red lesion. (see picture below of similar appearance)
- Bilateral tender post auricular and sub-mandibular areas without lymphadenopathy.
- Full motion of neck, heart and lungs normal.

Clinical Discussion:

- Exposure to varicella after recover may lead to breakthrough varicella, usually with fewer maculopapular lesions.
- Viral exanthems are common but have drastically decreased since the introduction of vaccines, usually given as 2 doses of MMRV—measles, mumps, rubella, varicella.
- It can be difficult to distinguish between measles, rubella, and primary varicella (chickenpox).

Discussion

- Chickenpox is an extremely contagious airborne infection spread by coughing & sneezing & contact with skin lesions. 90%+ unvaccinated people will become infected during their lifetime.
- Recovery from primary varicella infection usually provides immunity, but re-exposure to wild-type varicella may lead to re-infection (breakthrough varicella), that is usually a milder, short illness with fewer than 50 skin lesions and more likely to be maculopapular than vesicular.
- Presumed immunity includes birth in the US before 1960.

Conclusions

- Vaccines are usually paid by medical insurance. Improving vaccination needs a campaign to help create demand, a way to monitor for outbreaks, & to trace contacts. Those without medical insurance need an easy way to receive free vaccinations.
- Short term goal—decrease the number of unvaccinated/under-vaccinated children.
- Long-term goal—increase herd immunity & decrease the morbidity & mortality caused by outbreaks of these vaccine-preventable diseases.
- Is this a chickenpox outbreak? Not yet, according to the Maryland DOH which uses the CDC’s guidelines, 15 cases related in place & epidemiologically linked within 28 days.
- This cluster may be the first indication for a chickenpox outbreak. Hospitals & clinics receive alerts & establish plans for current infectious diseases—ebola, Zika, measles—but they may also be the first location to see a sentinel case ahead of a new outbreak. Clinicians should be on the lookout for MMV-preventable infections & report expected/confirmed cases, even if reporting is not required.

Laboratory Examination:

- This had elements of measles but looked like chickenpox.
- I doubled rocky mountain spotted fever/varicella or CMV/EBV but checked RPR, HIV, an ASSO test, & VzV/HIV for rubella, rubella, & varicella.

Lab Results

- Varicella IgM titer was positive (IgM 1.96 =0.90), rubella equivocal. There was mild leukocytosis with elevated lymph. No eosinophilia.
- Repeat Rubella was negative 1 week later (1.06, repeat 0.33 [0-0.79]), lesions gone. I cleared the patient for work 9 days after initial presentation.
- I saw another patient with healing chickenpox a week later.

- **Measles** prodrome includes fever, malaise, conjunctivitis, coryza, cough, high fever. Koplik spots (grey-white papules on the buccal mucosa) precede a cefalocaudal rash. Measles is a very contagious, acute respiratory infection, spread through air droplets & contact with infected surfaces. The measles vaccine has drastically reduced morbidity & mortality. It was declared eliminated from the US in 2000 but 23 states have reported 764 measles cases from January to May 2019, including 5 cases in Maryland. Without the vaccine almost everyone will become infected if exposed to the virus. Measles was declared eliminated from the US in 2000. 23 states have reported 764 measles cases from January to May 3, 2019. The Maryland DOH reports five confirmed cases of measles, from January to May 9, 2019, as opposed to one each in all of 2018 and 2017.9

- **Rubella** prodrome includes fever, headache, upper respiratory symptoms, low-grade fever, & arthralgias of wrists, elbows, ankles precede a cefalocaudal nonspecific maculopapular rash (usually fainter than measles). There may be petechial macules on the soft palate (Forchheimer’s spots) & tender lymphadenopathy, particularly head & neck region

- **Chickenpox**, primary varicella zoster virus (VZV), prodrome in adults includes muscle pain, nausea, decreased appetite, & headache precede crops of itchy, diffuse maculopapular rash, vesicles, & scabs in various stages 14th on the trunk & face, usually a mild, self-limiting illness with low-grade fever. There maybe small painful itchy ulcers in the oral cavity which can precede the exanthem by 1-3 days.

- The U.S. saw an increase in mumps with 150 outbreaks (9,200 cases) in 2015-2017. 41 states & DC reported 736 cases of mumps infections January to April 2019.