

Vaccinia Virus Infections in a Martial Arts Gym

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[Tanya Johnson] Hello. I'm Tanya Johnson. With me today is Christine Hughes, a Health Scientist with the Poxvirus and Rabies Branch, here at CDC, and co-author of a paper in the April 2011 issue of CDC's journal, Emerging Infectious Diseases. This paper looks at a vaccinia virus outbreak in a martial arts gym in Maryland in 2008. Welcome, Christine.

[Christine Hughes] Thanks.

[Tanya Johnson] Christine, what is a vaccinia virus?

[Christine Hughes] Vaccinia is a virus within the poxvirus family of viruses. Variola, which causes smallpox, is closely related to vaccinia, but vaccinia is far less dangerous. By vaccinating a person with vaccinia, smallpox can be prevented. In its vaccine form, vaccinia is given somewhat differently than most other vaccines, which typically come as a shot to the arm. Smallpox vaccine is instead given as a few jabs to the skin, just enough to draw a little blood. Afterward the virus begins to grow, just a bit, until a person's own immune response develops. Because smallpox vaccine uses live vaccinia virus, it's possible that virus can be transferred from someone who has been recently vaccinated to another person. Vaccinia virus infections can cause rash, fever, and head and body aches, and can cause severe complications in people with weakened immune systems.

[Tanya Johnson] Tell us about what happened in the martial arts gym.

[Christine Hughes] A man who attended a martial arts gym in Maryland went to see his doctor after he developed a rash and fever. Samples from his rash were tested and were positive for vaccinia virus. One of his recent sparring partners at the gym also reported a rash starting around the same time and testing confirmed him to have a vaccinia virus infection as well. However, neither of these men had been vaccinated for smallpox in the past. Other gym members were asked, by way of a survey, if they had had a recent rash or if they were recently vaccinated. Two additional vaccinia virus infections were identified, however neither of these additional cases had recent smallpox vaccination. An investigation was done to try and identify the person the virus came from. While several gym members had reported receiving smallpox vaccination in the past, none had been vaccinated recently enough to have been the cause of the outbreak. We were ultimately unable to identify who it was that in all likelihood started the outbreak.

[Tanya Johnson] Should people be concerned about catching the vaccinia virus?

[Christine Hughes] Probably not, but anytime you get a bad skin lesion or rash you should go to the doctor and have them take a look at it. And if you know you've been in contact with a person who has been recently vaccinated, tell your doctor.

[Tanya Johnson] Christine, if smallpox has been eradicated, why do some people still get this vaccine?

[Christine Hughes] There are a couple of reasons people still get the smallpox vaccine even though smallpox has been eradicated. The Advisory Committee on Immunization Practices recommends the use of the smallpox vaccine to protect laboratory workers from possible infection while working with orthopoxviruses, such as vaccinia or monkeypox. In addition, smallpox vaccinations are given to some military and emergency response personnel based on the concern that smallpox could be used in a bioterrorism attack.

[Tanya Johnson] What can people do to protect themselves from being infected?

[Christine Hughes] There are precautions that should be taken by people who have been vaccinated to prevent spread to others. The vaccination site should be covered at all times until the scab caused by the vaccine falls off. In addition, materials such as towels and bedding used by the person vaccinated should not be shared with others until the scab falls off.

[Tanya Johnson] Thanks, Christine. I've been talking with CDC's Christine Hughes about a paper that appears in the April 2011 issue of CDC's journal, Emerging Infectious Diseases. You can see the entire article online at www.cdc.gov/eid. If you'd like to comment on this podcast, send an email to eideditor@cdc.gov. That's e-i-d editor – one word - at-c-d-c dot gov. I'm Tanya Johnson, for Emerging Infectious Diseases.

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