CORRESPONDENCE

Cowpox Virus Infection in Pet Rat Owners—Not Always Immediately Recognized

by Dr. med. Christian Becker, Dr. rer. nat. Andreas Kurth, Dr. med. Frank Hessler, Dr. med. Harald Kramp, Prof. Dr. med. Michael Gokel, Dr. med. Rudolf Hoffmann, Dr. med. vet. Annette Kuczka, Dr. rer. nat. Andreas Nitsche
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Human to Human Transmission of Poxviruses Have Been Observed Previously

I read the article by Becker et al, on cowpox infections in owners of pet rats (1), with great interest as I was involved with cowpox through my work from 1970 to 1974.

The authors write that human to human transmission has not been observed so far. However, according to my own experiences, human to human transmission should be classed at least as possible.

Thirty seven years ago I worked in the state vaccination institute in Düsseldorf. A 35 year old woman had received a visit from an 11 month old child. She had held the child in her arms and petted and stroked it. She was not aware that the child had been vaccinated against smallpox 4 weeks previously.

Three days later, the woman developed pea sized efflorescences on her left cheek and her right and left upper arms. These remained in place for 6 days; she consulted a doctor who suspected smallpox and referred her to the university dermatology hospital in M. Specimens were taken and sent to the vaccination institute in Düsseldorf for investigation. Smallpox viruses were found on electron microscopy in two specimens—a clear case of human to human transmission. The then director of the state vaccination institute, Dr Richter, and I reported extensively about the case in the journal *Öffentliches Gesundheits-Wesen* [public health] (2).

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Human to Human Transmission Is Possible in Orthopoxviruses

I wish to congratulate the authors for their clear and well structured case reports and their detailed photographs. This publication will enable more rapid diagnosis of further cases (1). In the meantime, Campe et al have published an article in *Emerging Infectious Diseases* about the transmission of cowpox from rats to humans in the Munich area (2).

Human to human transmission has been described for orthopoxviruses. In 2007, Zafar et al reported nosocomial infections with buffalopox viruses in burns wards in Karachi, Pakistan; a class of virus that also belongs to the genus orthopoxvirus (3).

Zafar et al observed buffalopox for 5 months in 2004–5 in 19 patients from 5 burn units. A health care worker developed an infection on a finger. In all cases, the causative strain was confirmed and typed with support from the Special Pathogens Unit at the National Institute for Communicable Diseases (NICD), Sandringham, South Africa, and the Health Protection Agency (HPA)'s Centre for Emergency Preparedness and Response in Porton Down, Salisbury, United Kingdom.

The authors recommend that patients should be warned about the risk of smear (contact) infections, as it happened at least in patient No 4 (lesions on abdominal skin and eye). Identification of cowpoxviruses in the biopsy specimen from a pulmonary focus proves that pneumonia in patient 6 was caused by the virus.

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Professor Shah has received honoraria for consultancy services and participation in an advisory board from Janssen-Cilag, Pohl-Boskamp, Sanofi-Aventis, Novartis, and the Wissenschaftliche Verlagsgesellschaft (a scientific publishing company that publishes scientific reference books and magazines). He has also received honoraria for speaking/support for conference attendance from the Center for Bio-Medical Communication.

In Reply:

As Padval and Shah point out in their correspondence, human to human transmission of orthopoxviruses is possible in principle. This has been confirmed by several publications for variola and vaccinia viruses ([1, 2]

in Padval's letter), buffalopoxvirus ([3] in Shah's letter), and monkeypox virus (4). However, for the independent species cowpox virus, no human to human transmission has been reported in the literature so far, and we have not observed any cases.

In view of the known transmission potential of other orthopoxvirus species and the well known transmission potential of cowpox viruses in animals of the same species and across the species barrier, as well as of the contact infection we described in our article—from a patient's abdomen to their own eye—we certainly think that human to human transmission of cowpox is possible.

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