resistant organisms. We did not observe any allergic reactions or an increase in colonization or infection rates of multidrug-resistant organisms. B. germanica cockroaches are nocturnal, cannot fly, are always encountered within human habitations, and have not been associated with human disease or transmission of pathogens. We investigated each outbreak to confirm, West Bengal, India, 2007

To the Editor: In most of India, anthrax is not common, probably because a large proportion of the population is Hindu and does not eat beef. However, sporadic cases and outbreaks have been reported (1–6).

On June 8, 2007, a healthcare facility reported 12 cases of cutaneous anthrax in the Muslim village of Sarkarpura (population 361). On August 4, 2007, another facility 50 km away reported 8 cases from the Muslim village of Charbimpura (population 835). These 2 outbreaks, both in Murshidabad district, West Bengal, were associated with the slaughtering of 4 cows. We investigated each outbreak to confirm diagnosis, estimate magnitude (incidence and severity), and identify risk factors. We conducted house-to-house searches to identify case-patients and collected smears from skin lesions.

From Sarkarpura, we identified 45 cases of cutaneous anthrax and 2

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Cutaneous Anthrax, West Bengal, India, 2007
cases in Sarkarpara village; gray bars, cases in Charbinpara village; white bars, deaths.

Figure. Cases of cutaneous anthrax, Murshidabad district, West Bengal, India, 2007. Dates indicate onset of skin lesion. Arrows indicate dates cattle were slaughtered. Black bars, cases in Sarkarpara village; gray bars, cases in Charbinpara village; white bars, deaths.

To test the hypothesis that exposure to meat of a slaughtered cow was associated with illness, we conducted a retrospective cohort study among families who had handled or eaten beef from cows slaughtered during the week before the outbreak. Through interviews, we collected information about possible exposures, including slaughtering, handling meat or skin, and eating beef.

In Sarkarpara, we enrolled 296 persons from 59 families in the cohort study. Persons who had slaughtered cows and handled meat and skins had a significantly higher risk for illness than those who had not. In Sarkarpara, risk associated with slaughtering cattle was 9.1 (95% confidence interval [CI] 6.0–13.7) and with handling meat 2.6 (95% CI 1.5–4.4) (online Appendix Table). Of the persons who ate beef, anthrax developed in 17% in Sarkarpara and 7% in Charbinpara.

In Charbinpara, we included 687 persons from 118 families in the cohort study. Slaughtering cattle and distributing beef were strongly associated with illness (online Appendix Table). Slaughtering cows or handling meat were common practices and accounted for the largest proportion of cases (PAF 47% [95% CI 46.0–48.0] and 19% [95% CI 17.5–19.4], respectively). In Charbinpara, risk associated with slaughtering was 19.0 (95% CI 11.0–30.0) and with distributing was 11.0 (95% CI 6.8–19.0) (online Appendix Table). Of the persons who ate beef, anthrax developed in 17% in Sarkarpara and 7% in Charbinpara. However, when we restricted the analysis to those who did not handle meat or skin, eating beef was not associated with illness. No person whose sole exposure was eating beef became ill.

Persons who slaughtered cattle were not in the butchering profession; they did not wear gloves or other protective equipment. Their helpers distributed the beef in the village without any protection. Persons involved in skin trading carried the skins to nearby villages to sell. Women in the villages boiled the beef for 30 minutes before serving.

In Sarkarpara, healthcare workers knew the symptoms suggestive of anthrax and that this disease needed to be reported. As a result, this outbreak was reported early. In Charbinpara, healthcare workers knew nothing about the disease and did not report it. As a result, reporting was delayed until the third cluster. Late reporting prevented effective public health action. Because the source of infection in the 2 villages differed (different cattle), we were unable to formally establish a causal link between these 4 clusters.

Because the anthrax outbreak in Murshidabad was associated with slaughtering of ill cows and handling raw meat without taking any protective measures, we propose several recommendations. First, healthcare workers in anthrax-endemic areas need to be educated about promptly recognizing and reporting the disease. Second, persons in the community must be educated about using personal protective equipment during slaughtering of animals and handling of meat and skins. Community education should focus on those at risk, including Muslim communities who eat beef. Because anthrax occurs in only a few districts, India does not have a nationally organized control program (7). However, a focal prevention plan based on these recommendations would ultimately help reduce illness and death in anthrax-endemic districts.

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Cat-to-Human Orthopoxvirus Transmission, Northeast Italy

To the Editor: Kurth et al (1) recently described a cowpoxvirus chain of transmission from rat to human through an elephant in Germany. Zoonotic cowpoxvirus infections are well known in Europe (2,3). This virus can infect many animal species; serologic evidence of infection may approach 10% in cats in western Europe (4,5). Zoonotic orthopoxvirus (OPV) infection has been reported in several European countries, but it is rare south of the Alps, and no extensive description of cases is available for Italy. We describe 2 cases of zoonotic OPV in Friuli, northeastern Italy, in veterinary personnel scratched by cats.

In December 2005, a male veterinary student (patient A) who had been scratched by a cat with multiple cutaneous ulcerated lesions sought care at a local hospital; he had a lesion on his right hand, moderate fever, and malaise. Histopathologic findings from the cat indicated feline poxvirus infection. In July 2007, a female veterinarian (patient B) who lived in a different area of the same region and also had been scratched by a cat, sought care at the same hospital; she had a lesion close to the right sternoclavicular joint.

On the basis of patients’ history of exposure and clinical presentation of the animals’ disease, zoonotic transmission of OPV infection was suspected. Vesicle fluid and, subsequently, crusts from the patients’ lesions, were sent to the virology laboratory of the reference center for poxvirus infections at National Institute for Infectious Diseases in Rome, where OPV diagnosis was based on electron microscopy, virus isolation, and detection of viral nucleic acid. In addition, serial blood samples were sent to the same laboratory for analysis of specific antibodies and cellular immune response.

The viruses were almost identical, according to the partial sequence of the crmB gene (EF612710 and FJ445748) and on the complete sequence of the hemagglutinin gene (EF612709 and FJ445747). The hemagglutinin (Figure) and the partial crmB (not shown) sequences from each isolate formed a distinct cluster within the OPV genus; similar results were obtained from concatenated analysis of both genes (not shown). The identity/similarity scores of the complete nucleotide sequences of crmB and hemagglutinin genes from patient A, in relation to other OPVs, were, respectively, Ectromelia (AF012825), 0.598 and 0.841; cowpox (X94355), 0.933 and 0.927; vaccinia (AY678276), 0.844 and 0.934; camelpox (AY009086), 0.941 and 0.940; monkeypox (DQ011153), 0.909 and 0.914; and variola (DQ437588), 0.922 and 0.906. On the basis of these results, species assignment of the isolated OPVs was not possible. Preliminary sequence data on additional genes (ATI, A27L, and CBP) from patient A’s isolate supported the segregation of these OPVs in Italy from the other known OPV species. However, the available information is still not enough to infer whether the isolates from Italy belong to a novel or known OPV species. More extensive biologic and molecular characterization is in progress.

The 2 cases reported here, occurring >1 year apart, indicate that OPV is circulating in domestic, and possibly wild, local fauna; they underscore the need for physicians and veterinarians to become aware of the risk for OPV zoonoses. A surveillance program has been launched among local veterinary clinics to identify nonvaccinated veterinarians who have been exposed to OPV. A surveillance plan for cats at these clinics has also been started.

References


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Letters

Letters commenting on recent articles as well as letters reporting cases, outbreaks, or original research are welcome. Letters commenting on articles should contain no more than 300 words and 5 references; they are more likely to be published if submitted within 4 weeks of the original article’s publication. Letters reporting cases, outbreaks, or original research should contain no more than 800 words and 10 references. They may have 1 Figure or Table and should not be divided into sections. All letters should contain material not previously published and include a word count.
## Appendix Table. Risk for cutaneous anthrax according to selected exposures, 2 villages, Murshidabad district, West Bengal, India, 2007*

<table>
<thead>
<tr>
<th>Characteristics of persons</th>
<th>Sarkarpura village</th>
<th>Charbinpara village</th>
<th>Association</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Risk among exposed</td>
<td>Risk among unexposed</td>
<td>Risk among exposed</td>
</tr>
<tr>
<td></td>
<td>Total no.</td>
<td>No. (%)</td>
<td>Total no.</td>
</tr>
<tr>
<td>Age &gt;median†</td>
<td>163</td>
<td>30 (18)</td>
<td>133</td>
</tr>
<tr>
<td>Female sex</td>
<td>142</td>
<td>24 (17)</td>
<td>154</td>
</tr>
<tr>
<td>Slaughtered cattle‡</td>
<td>24</td>
<td>20 (83)</td>
<td>272</td>
</tr>
<tr>
<td>Distributed beef‡</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Cleaned beef‡</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Handle raw beef‡</td>
<td>97</td>
<td>25 (20)</td>
<td>199</td>
</tr>
<tr>
<td>Carried animal skins‡</td>
<td>1</td>
<td>1 (100)</td>
<td>295</td>
</tr>
<tr>
<td>Ate beef‡</td>
<td>260</td>
<td>45 (17)</td>
<td>36</td>
</tr>
<tr>
<td>Ate but did not handle beef</td>
<td>142</td>
<td>0</td>
<td>33</td>
</tr>
</tbody>
</table>

*RR, relative risk; CI, confidence interval; –, data not collected.
†Median age 20 years.
‡Involved sick cattle.