An Outbreak of Trichinellosis Due to Consumption of Bear Meat Infected with *Trichinella nativa*, in 2 Northern Saskatchewan Communities

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In June 2000, bear meat infected with *Trichinella nativa* was consumed by 78 individuals in 2 northern Saskatchewan communities. Interviews and blood collections were performed on exposed individuals at the onset of the outbreak and 7 weeks later. All exposed individuals were treated with mebendazole or albendazole, and symptomatic patients received prednisone. Confirmed cases were more likely to have consumed dried meat, rather than boiled meat (*P < .001*). Seventy-four percent of patients completed the recommended therapy, and 87% of patients who were followed up in August 2000 reported complete resolution of symptoms. This outbreak of trichinellosis was caused by consumption of inadequately cooked bear meat contaminated with *T. nativa*. Apart from clinical symptomatology, blood counts, creatine kinase levels, serology test results, and analysis of the remaining bear meat helped establish the diagnosis. Treatment with antiparasitic drugs and prednisone was beneficial in limiting the severity and duration of the illness.

Trichinellosis is enzootic in the arctic and subarctic areas of North America. Although the incidence of trichinellosis in the more-populated regions has declined with improved meat regulations, outbreaks in the north continue to be an important public health concern. Although most outbreaks reported globally are caused by *Trichinella spiralis* in pork, cases in Canada are primarily caused by a sylvatic species, *T. nativa* [1–8]. In this study, we describe an outbreak of human trichinellosis caused by *T. nativa* from the meat of a black bear (*Ursus americanus*).

SUBJECTS AND METHODS

On 19–20 June 2000, 5 individuals from northern Saskatchewan with a history of fever, periorbital and limb edema, diffuse myalgia, and rash were transferred to Royal University Hospital (RUH) in Saskatoon (figure 1). They were residents of the neighboring communities of Black Lake and Stony Rapids, situated ~100 km south of the 60th parallel. The population of the 2 communities consists predominantly of Dene (First Nations) and Metis peoples. After it had been discovered that, on or about 26 May 2000, all 5 had consumed meat from a single black bear shot by a local hunter, a presumptive diagnosis of trichinellosis was made, and an investigation of the outbreak was initiated.

All exposed individuals were identified and were interviewed at 2 times: first in June 2000 and then 7 weeks later, in August 2000. A questionnaire was developed by use of Epiinfo 6.04 (Centers for Disease Control and Prevention), to record demographic and epidemiologic data. “Acute” blood samples were collected on 19–21 June 2000, for complete blood count (CBC), white
blood cell (WBC) and differential counts, creatine kinase (CK) levels, and *Trichinella* serology testing. In our laboratory, the normal range for blood CK levels is 30–200 U/L, and eosinophilia is defined as an absolute eosinophil count of $>0.6 \times 10^3$/L.

On 9–10 August 2000, patients were reinterviewed, and convalescent blood samples were collected from consenting patients. This follow-up date was chosen to accommodate the availability of both the residents and the health staff in both communities.

*Trichinella* serology testing was performed at the McGill Center for Tropical Diseases’s National Center for Parasitology (Serology), Montreal, by use of an ELISA technique using an excretory-secretory antigen obtained from *Trichinella* larvae [9, 10]. Trichinellosis was confirmed if an individual had any of the following 3 criteria: (1) at least 1 “key symptom” (i.e., diarrhea, edema, myalgia, or rash) compatible with trichinellosis and an acute *Trichinella* serology-test result $>0.35$, (2) a positive acute *Trichinella* serology-test result $>0.35$ and blood eosinophilia ($>0.6 \times 10^3$ cells/L), or (3) a rise in *Trichinella* serology-test result, from <0.3 for the acute sample to $>0.35$ for the convalescent sample (seroconversion). Those who ate bear meat but did not meet any criteria were classified as “non-cases.” For analysis purposes, the noncases were further subdivided into “probable cases” (i.e., individuals who had at least 1 key symptom but who did not fulfill the case definition) and “possible cases” (i.e., asymptomatic individuals).

On 20 June 2000, the regional medical health officer released a health advisory to residents of the communities, recom-
mending that they avoid further consumption of bear meat. Six samples of remaining bear meat were submitted to the Canadian Food Inspection Agency’s Center for Animal Parasitology, in Saskatoon. To detect *Trichinella* larvae, each sample was tested by trichinoscopy and a pepsin-HCl digestion method [11, 12]. The genotypes of 5 larvae were individually determined by multiplex polymerase chain reaction (PCR) [13].

The diagnosis was made ∼14–23 d after consumption of bear meat. Because this was still within 1 incubation period (reported as 5–45 d) of the illness, it was decided that all exposed individuals should be treated [14].

Approval to use albendazole, which is not licensed in Canada, was obtained from Health Canada’s Special Access Programme. Albendazole was preferred because of better oral bioavailability [15, 16]. Adults were prescribed 400 mg of albendazole orally twice daily for 14 d. Children (i.e., persons <15 years old) were prescribed 200 mg of mebendazole orally thrice daily for the first 3 d and then 400 mg thrice daily for another 11 d. Mebendazole was then the recommended anthelmint of choice for pediatric patients, since there was insufficient information about the use of albendazole for treatment of trichinellosis in children. To avoid delay in treatment, mebendazole was provided to all patients from 21 June until the albendazole arrived on 23 June, at which point all adults were switched to albendazole for the remainder of the treatment course. Symptomatic individuals were also prescribed oral prednisone therapy for 2 weeks. Adults were prescribed 60 mg of prednisone orally once daily for 7 d, and then treatment was gradually withdrawn over another 7 d. Children were prescribed 2 mg of prednisone/kg/d in 2 divided doses for 7 d, and then treatment was gradually withdrawn as it had been in adults.

Statistical analysis of comparisons was performed by use of the $\chi^2$ test. Findings were considered statistically significant at $P < .05$.

**RESULTS**

**Epidemiology of the outbreak and clinical findings.** A total of 78 individuals had consumed implicated bear meat; 57 were from Black Lake, 18 were from Stony Rapids, and 3 were from 2 other communities in the region. There were 23 children (median age, 9 years; age range, 1–14 years) and 55 adults (median age, 42 years; age range, 15–91 years): 51 were male, and 27 were female. One 24-year-old woman was 14 weeks pregnant on June 21.

Acute blood samples were obtained from 91% of the exposed individuals. The WBC counts were performed by use of an automated system, which yielded a 3-cell differential (no eosinophils), which precluded any assessment for eosinophilia in the acute blood samples, apart from those from the 5 patients assessed at RUH. These 5 patients all had elevated CK levels, and 3 had eosinophilia. When the remaining bear meat tested positive for *Trichinella* cysts, diagnostic muscle biopsy was not performed on patients. At the August follow-up, 54 patients were available, and convalescent blood samples were obtained from 53 of them.

Overall, 31 of the 78 individuals (attack rate, 40%) met our case definition for trichinellosis (tables 1 and 2). Of these 31, 28 met the first criterion in the case definition, by having positive acute serology-test results and key symptoms. None met the second criterion, of having positive acute serology-test results and blood eosinophilia without compatible symptoms; this may have been due to the inability to ascertain eosinophilia in most of the patients’ acute blood samples. The remaining 3 cases met the third criterion, by demonstrating seroconversion.

Table 1 shows a comparison between frequency and duration of symptoms in confirmed cases and those in noncases. The confirmed cases were more likely (risk ratio [RR], 6.2; 95% confidence interval [CI], 2.1–18.5; $P < .001$) to have had at least 1 key symptom. The epidemic curve for confirmed cases is shown in figure 2. The mean incubation period was 13.6 d (range, 6–20 d).

Acute serology-test results for trichinellosis were positive in 14 (45%) of 31 confirmed cases and in 1 (2%) of 47 noncases (table 2). Seroconversion was demonstrated in 17 patients at the August follow-up. Figure 3 compares the serology-test results of matched acute and convalescent blood samples obtained from the confirmed cases and noncases. Table 2 shows the results of serology tests performed in June and August 2000. The acute blood samples revealed that the confirmed cases were more likely to have elevated total peripheral WBC counts (>12.0 × 10⁹ cells/L), compared with the noncases (RR, 4.1 [95% CI, 2.6–6.4]; $P < .0001$). Eosinophil counts in June were not available, but, in August, 16 (59%) of 27 confirmed cases and 6 (24%) of 25 noncases demonstrated eosinophilia (RR, 2.0 [95% CI, 1.2–3.4]; $P < .01$). The majority (5/6) of the noncases had only borderline-high eosinophil levels (i.e., 0.61–0.65). CK levels in June were more likely to be elevated in confirmed cases than in noncases (RR, 4.7 [95% CI, 2.0–10.9]; $P < .0001$). By August, all patients but 1 had normal CK levels.

Of the 47 noncases, 19 were probable cases, and the remaining 28 were possible cases (table 1). All 19 probable cases had negative acute *Trichinella* serology-test results, and convalescent serology tests were performed on 12 of them (all results were negative). Although 4 probable cases had elevated CK levels (range, 387–1446 U/L) in June, none of them returned for convalescent serology testing, and we were thus unable to determine whether seroconversion had occurred. The remaining 15 probable cases all had normal CK levels in June, and none had positive acute or convalescent serology-test results.

Of the 28 possible cases, 25 were given acute serology tests
Table 1. Demographic and clinical information on confirmed cases of trichinellosis and noncases.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Confirmed cases (n = 31)</th>
<th>Noncases (n = 47)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age, years</td>
<td>27 (32)/31</td>
<td>35</td>
</tr>
<tr>
<td>&lt;15 Years old</td>
<td>10 (32)/31</td>
<td>13 (28)/47</td>
</tr>
<tr>
<td>Males</td>
<td>22</td>
<td>29</td>
</tr>
<tr>
<td>Females</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Type of meat eaten</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried and boiled meat</td>
<td>29 (97)/30</td>
<td>18 (42)/43</td>
</tr>
<tr>
<td>Boiled meat only</td>
<td>1 (3)/30</td>
<td>25 (58)/43</td>
</tr>
<tr>
<td>Clinical symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diarrhea</td>
<td>17 (57)/30</td>
<td>8 (22)/36</td>
</tr>
<tr>
<td>Rash</td>
<td>14 (47)/30</td>
<td>5 (14)/36</td>
</tr>
<tr>
<td>Fever</td>
<td>19 (63)/30</td>
<td>13 (35)/37</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>17 (59)/29</td>
<td>9 (26)/35</td>
</tr>
<tr>
<td>Malaise</td>
<td>20 (67)/30</td>
<td>13 (36)/36</td>
</tr>
<tr>
<td>Myalgia</td>
<td>23 (79)/29</td>
<td>13 (35)/37</td>
</tr>
<tr>
<td>Periorbital swelling</td>
<td>20 (67)/30</td>
<td>7 (19)/37</td>
</tr>
<tr>
<td>Leg swelling</td>
<td>18 (60)/30</td>
<td>5 (14)/36</td>
</tr>
<tr>
<td>Vomiting</td>
<td>15 (50)/30</td>
<td>4 (11)/36</td>
</tr>
<tr>
<td>At least 1 key symptom</td>
<td>28 (90)/31</td>
<td>19 (40)/47</td>
</tr>
</tbody>
</table>

- *P* < .001.
- *P* < .05.
- *P* < .0001.

(out all results were negative), but only 15 returned for convalescent serology testing (all results were negative). Elevated CK levels (range, 241–1454 U/L) were seen in 5 possible cases in June, but convalescent blood tests (which showed negative convalescent *Trichinella* serology-test results, a normal CK level, and no eosinophilia) were performed in only 1 of these 5; convalescent serology testing was not performed in the remaining 4 possible cases with elevated acute CK levels.

Comparing the methods of preparation of the bear meat. The bear meat had been either boiled for 2–4 h or dried/smoked over an open fire for 2–3 d. Confirmed cases were more likely to have consumed dried bear meat (RR, 16.0 [95% CI, 2.3–111.0]; *P* < .0001) (table 1); noncases were more likely to have consumed boiled bear meat only (58% vs. 3%, respectively; *P* < .001). A total of 23 of the confirmed cases and 21 of the noncases were able to estimate the amount of bear meat that they consumed. There was no statistically significant difference between the amount of bear meat consumed by confirmed cases and that consumed by noncases.

Analysis of bear meat. Of the 6 samples submitted, 3 tested positive by the pepsin-HCl digestion method. Trichinoscopy revealed larvae in 2 of the samples (table 3). Figure 4 shows *Trichinella* cysts found in 1 specimen. PCR genotyping revealed the larvae to be *T. nativa*.

Outcome of treatment. All 23 children were prescribed mebendazole, and 5 of them were also prescribed prednisone. Of the 55 adults, 54 were prescribed mebendazole initially and were switched to albendazole 3 d later, and 26 were also prescribed prednisone; 1 adult declined medical treatment.

A total of 14 patients discontinued the treatment prematurely, 7 of them after consultation with a local healer; the remainder gave no reasons for discontinuation. Adults (13/38 [34%]) were more likely than children (1/16 [6%]) to discontinue medical treatment (*P* = .03).

After initiation of medical treatment, the mean time to resolution of key symptoms was 8.7 d (range, 2–30 d). Myalgia, malaise, and leg swelling persisted the longest, with average durations of >10 d (table 1).

A total of 5 adults reported adverse effects due to albendazole (nausea and vomiting in 4 and dizziness in 1); none of the patients, either adult or child, reported adverse effects due to mebendazole. A total of 7 patients, 5 of whom completed the medical therapy, reported ongoing symptoms in August (myalgia in 6, malaise in 3, leg swelling in 1, abdominal pain in 3, and vomiting in 1); these patients were not retreated.

The pregnant patient’s *Trichinella* serology-test result was negative in June, but her convalescent serology-test result was positive. On the advice of an obstetrician, she received alben-
Table 2.  Laboratory results on confirmed cases of trichinellosis and noncases.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Confirmed cases</th>
<th>Noncases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Trichinella serology-test result</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 2000&lt;sup&gt;a&lt;/sup&gt;</td>
<td>14 (45)/31</td>
<td>1 (2)/47</td>
</tr>
<tr>
<td>August 2000&lt;sup&gt;b&lt;/sup&gt;</td>
<td>27 (87)/31</td>
<td>0 (0)/47</td>
</tr>
<tr>
<td>Serocorversion (in convalescent samples)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>17 (55)/31</td>
<td>0 (0)/47</td>
</tr>
<tr>
<td>Proportion with total WBC count &gt;12.0 × 10&lt;sup&gt;9&lt;/sup&gt; cells/L&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 2000&lt;sup&gt;c&lt;/sup&gt;</td>
<td>14 (50)/28</td>
<td>0 (0)/43</td>
</tr>
<tr>
<td>August 2000</td>
<td>1 (4)/27</td>
<td>0 (0)/43</td>
</tr>
<tr>
<td>Proportion with eosinophilia&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>August 2000</td>
<td>16 (59)/27</td>
<td>6 (24)/25</td>
</tr>
<tr>
<td>Proportion with CK &gt;200 U/L&lt;sup&gt;e&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 2000</td>
<td>24 (83)/29</td>
<td>13 (30)/44</td>
</tr>
<tr>
<td>August 2000</td>
<td>0 (0)/27</td>
<td>1 (4)/26</td>
</tr>
</tbody>
</table>

**NOTE.** Data are no. (%)/total. CK, creatine kinase; WBC, white blood cell.

<sup>a</sup> P < .001
<sup>b</sup> Mean WBC counts are 12.6 × 10<sup>9</sup> cells/L (June 2000) and 8.0 × 10<sup>9</sup> cells/L (August 2000), for confirmed cases, and 6.6 × 10<sup>9</sup> cells/L (June 2000) and 7.1 × 10<sup>9</sup> cells/L (August 2000), for noncases.
<sup>c</sup> Mean eosinophil counts are 0.71 × 10<sup>9</sup> cells/L, for confirmed cases, and 0.31 × 10<sup>9</sup> cells/L, for noncases.
<sup>d</sup> P < .05
<sup>e</sup> Mean CK levels are 721 U/L (June 2000) and 103 U/L (August 2000), for confirmed cases, and 232 U/L (June 2000) and 93 U/L (August 2000), for noncases.

Trichinellosis is caused by the intracellular parasitic nematode *Trichinella*, of which there are at least 10 genotypes. Five genotypes have been found in North American wildlife, and each is capable of causing human disease [17]. Trichinellosis appears to be a reemerging disease in many countries. In developing countries, domestic swine is often the main source of infection, whereas, in Canada, most outbreaks of trichinellosis that occurred during the past 3 decades were due to the consumption of meat from wild animals [1–8]. The result from BC is similar to those from Alaska and Montana, where 27% and 5–10% of black bears were found to be infected, respectively [21, 22].

The attack rate, incubation period, and type and duration of symptoms experienced by the patients in this outbreak are similar to those reported for other Canadian outbreaks [1–5, 8]. At present, the largest outbreak reported in Canada occurred in 1987, when 42 of 68 individuals (attack rate, 62%) were found to have trichinellosis after eating meat from a walrus [23].

When encysted *Trichinella* larvae are released in the gut, they mature into adult worms before producing second-generation larvae, which invade the intestinal submucosa, causing diarrhea, nausea, abdominal pain, and vomiting [3, 24, 25]. Gastrointestinal symptoms may last up to 3 weeks. The dissemination of larvae through the bloodstream and invasion of striated muscle and other organs results in an inflammatory response that produces fever, myalgia, muscle weakness, periorbital edema, rash, leukocytosis, and eosinophilia [3, 24, 25].

In this investigation of an outbreak, relying on key symptoms and acute serology-test results (criterion 1 of the case definition) was the most useful method, allowing us to diagnose 28 of the 31 confirmed cases. Only 3 more cases were identified by looking for seroconversion in asymptomatic individuals. Criterion 2 may have yielded more cases for acute samples if eosinophil counts had been available. The case definition that we used did...
not include consideration of elevated CK levels, which appear to be independently useful in this study (table 2) and deserves consideration in further evolutions of the case definition.

When persons were exposed to Trichinella species in the arctic areas of Canada, 2 distinct groups of symptoms occurred [1, 23, 26]. The first consisted of classic, “myopathic” symptoms, with predominance of myalgia and periorbital edema, whereas the second consisted of prolonged diarrhea (5–6 weeks) with only a short period of myalgia and muscle weakness (4–5 d). Initially, it had been theorized that this difference in clinical presentation was due to infection with a different species—that is, T. nativa rather than T. spiralis; however, serology studies subsequently suggested that a more pronounced “enteropathic” response occurs in previously exposed individuals, whereas a more-classic, myopathic clinical presentation occurs in Trichinella-naive patients [24]. In our study, the confirmed cases clearly presented with classic symptoms, since none had a prolonged diarrhea phase, a finding implying no prior exposure to T. nativa in these patients. Human trichinellosis is a reportable disease in Saskatchewan, and records indicate that only 4 cases (3 in 1989 and 1 in 1992) have been reported from the 2 communities in this study; none of these previous cases were involved in the current outbreak.

In this outbreak, it was not possible to completely differentiate confirmed cases from noncases until after the convalescent serology-test result was available. A reporting bias was deemed to be unlikely, since all individuals who had consumed bear meat were offered treatment, not just the symptomatic

<table>
<thead>
<tr>
<th>Sample date, submission, origin</th>
<th>Trichinoscopy, no. of larvae/g</th>
<th>Pepsin-HCl digestion, no. of larvae/100 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 June 2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submission 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hind quarter</td>
<td>240</td>
<td>25,667</td>
</tr>
<tr>
<td>Submission 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left lower forelimb</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Left upper forelimb</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Left shoulder</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>26 June 2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submission 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried meat</td>
<td>250</td>
<td>31,000</td>
</tr>
<tr>
<td>7 July 2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submission 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thigh muscle</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Figure 3. Acute (20 June 2000) and convalescent (10 August 2000) Trichinella serology-test results, in confirmed cases of trichinellosis and noncases.

Individuals. Up to 8 of the noncases (4 of the probable and 4
of the possible cases) had elevated CK levels in acute samples
and would have fulfilled the case definition had convalescent
serology tests been performed and found to be positive. The
addition of these cases would have elevated our calculated at-
tack rate from 40% to 50%. Another possible reason why the
remaining noncases did not satisfy the case definition was that
therapy with mebendazole and/or albendazole either prevented
symptoms and/or reduced the patients’ blood counts, CK levels,
and Trichinella seroconversion rates. Alternatively, noncases
truly may have been uninfected, because they only ate ade-
quately cooked (boiled) bear meat, ate parts of bear meat with
lower Trichinella larval counts (table 3), and/or ate small
amounts of bear meat (not established, because of recall bias).

On occasion, residents of these 2 communities also consume
fish and other wild game, including caribou (eaten by 94% of
those surveyed), beaver, rabbit, and moose; these herbivorous
animals are unlikely sources of trichinellosis [3]. Trichinoscopy
and enzyme digestion, of meat samples, gave different results,
as did sampling from different parts of the same animal. The
results confirm that trichinoscopy of meat with a low parasite
load should not be relied on to declare that meat suspected of
harboring Trichinella is free of larvae and that enzymatic di-
gestion of large portions of meat is the method of choice.

Although guidelines for the dry curing of pork possibly con-
taminated with T. spiralis larvae are available [27], the condi-
tions required to kill sylvatic isolates, such as T. nativa, are not
clear. For prevention of T. spiralis, the Canadian Food Inspec-
tion Agency recommends that meat be sufficiently cooked to
obtain a uniform internal temperature of 77°C before being
consumed [28]. In this outbreak, the confirmed cases were
more likely to have eaten dried bear meat, either by itself or
combined with some boiled bear meat. This contrasts with
consumption by noncases, half of whom indicated that they
ate only boiled bear meat. From the information gathered, it
would appear that the drying process used (over an open fire
for up to 3 d) does not generate enough internal heat to kill
the cysts of T. nativa; however, it is unclear how large the pieces
of bear meat were and how long they had to be boiled to make
them safe for consumption.

In this outbreak, adults’ compliance with medical treatment
was lower than anticipated; a third of the confirmed cases chose
not to complete the recommended therapy. This may have been
due partly to confusion raised by the decision to start with
mebendazole until the supply of albendazole became avail-
able.

The pregnant patient used albendazole and did not report
any adverse effects and has delivered a normal-term infant.
Both mebendazole and albendazole are relatively contra-
indicated in pregnancy; however, the patient consented to treat-
ment because of severe symptomatology and concern that fetal
infection might lead to severe complications [29]. The persis-
tence of symptoms has been reported elsewhere [16]. There
were 7 patients who reported persistence of symptoms at the
August follow-up, 5 of whom were confirmed cases; these 7
patients were not retreated, since, at that late stage, treatment
would have been ineffective [29].

Limitations of our investigation include the following: (1)
the patient interviews were conducted at only 2 times, which
likely affected patient recall of events; (2) the difficulty in com-

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communicating with patients who only spoke Dene may have affected the accuracy of responses, with respect to symptom occurrence and duration, amount of bear meat eaten, and completion of treatment; (3) WBC differential was available from only 5 patients in June; and (4) during the August follow-up, 21 individuals were lost to follow-up.

This outbreak of trichinellosis in northern Saskatchewan resulted from individuals’ consumption of inadequately cooked bear meat infected with *T. nativa*. Hunters who shoot wild game in arctic and subarctic areas of Canada must be made aware of the risks of development of trichinellosis in inadequately cooked meat. For prevention of trichinellosis, boiling the meat appears to be better than drying it. Treatment with antiparasitic drugs and prednisone appeared to be effective in limiting the severity and duration of the illness, but compliance with recommended medical treatment is an issue. The case definition appears to be better than drying it. Treatment with antiparasitic drugs and prednisone appeared to be effective in limiting the severity and duration of the illness, but compliance with recommended medical treatment is an issue. The case definition

### Acknowledgments

We wish to thank the health staff and residents of Black Lake and Stony Rapids, for their help and cooperation; Robin Laskowski, for collection of blood samples during August 2000; SmithKline Beecham Pharma, for supplying the albendazole; Dr. Bruce Reeder (Community Health and Epidemiology, University of Saskatchewan), for his assistance in statistical analysis; and Dr. Larry Forbes (Canadian Food Inspection Agency’s Centre for Animal Parasitology, Saskatoon), for performing the Trichinella tests on bear meat.

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