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Arctic Trichinosis

The occurrence of trichinosis among the inhabitants of the Arctic has been described in a number of reports.¹⁻³ Until recently the most common source of human trichinosis had been bear meat². However, since 1975 walrus meat has been implicated as a source of at least five outbreaks of human trichinosis involving 63 people in the villages of Barrow, Hooper Bay, Kivalina, and Point Hope. Possible explanations for this increase in walrus-associated causes include increased use of walrus meat as a food source, lack of knowledge regarding the infestation of walrus with *Trichinella spiralis* and hence inadequate cooking of the meat, and increased medical awareness of this disease.

Trichinosis in the Alaska Native population often occurs as large, common-source outbreaks because of the custom of sharing the hunt with other members of the village. Therefore whenever an initial case is recognized, it is likely that there are more individuals involved.

Human infestation with *T. spiralis* begins with the intestinal stage. Symptoms during this phase include cramping and abdominal pain and protracted diarrhea occurring about one week after eating poorly cooked meat infected with *T. spiralis*. The second stage, muscular invasion, produces symptoms commonly associated with trichinosis. These symptoms occur from 8-30 days after infection and include facial and periorbital edema, moderate to severe myalgia, fever, pruritus, urticaria, conjunctivitis, and signs of myocarditis. Laboratory findings which indicate trichinosis include an eosinophil count of greater than 5 per cent, and a positive or changing bentonite flocculation titer to *T. spiralis*. Treatment for most cases of trichinosis is supportive. Thiabendazole and corticosteroids have also been used for their antihelminthic and anti-inflammatory effects respectively. Studies utilizing these drugs have shown varying degrees of efficacy.

Health professionals in Alaska should be aware that:

1. Bear (polar, black, and brown), and walrus are potential hosts for *T. spiralis*. Other hosts include bearded seal and ringed seal, although rates of infestation in these animals are less than 1 per cent³.
2. Trichinosis can be prevented by cooking meat well, until the meat has turned from pink to gray.
3. The arctic strain of *T. spiralis* is resistant to the freezing recommendations used for pork.⁴

References

1. Margolis HS, Middaugh JP and Burgess RD: Arctic Trichinosis: Two Alaskan outbreaks from walrus meat. *J Infect Dis* 1979; 139:102-105.
2. Maynard JE, Pauls FP: Trichinosis in Alaska. A review and report on two outbreaks due to bear meat with observations on serodiagnosis and skin testing. *Am J Hygiene* 1962; 75:252-261.
3. Rausch RL: Trichinosis in the Arctic. In Gauld SE, ed. *Trichinosis in Man and Animals*. Springfield: Charles C. Thomas, 1970: 355-360.
4. Schantz PM: Personal communication on resistance to freezing of the arctic strain of *T. spiralis*. Parasitic Diseases Division, Bureau of Epidemiology, Center for Disease Control.

Cases of suspected human trichinosis should be reported to John P. Middaugh, M.D., State Epidemiologist, Alaska Department of Health and Social Services, 338 Denali Street, Anchorage, Alaska 99501. Telephone (907) 272-7534.

(Reported by: Alaska Investigations Division, Bureau of Epidemiology, Center for Disease Control.)