

Poliomyelitis – are Canadians still at risk?

A 14-year-old boy of Indian descent is living with relatives while studying in Canada. On returning from his home country over the winter holidays, he becomes feverish with malaise, anorexia, sore throat and diffuse abdominal pain. He also notices some weakness in his left leg. With rest, acetaminophen and plenty of fluids, he feels better over the next few days. His symptoms recur three weeks later, culminating in a gait problem, constipation and an inability to void over the past 12 h.

On arrival to the emergency department, he is feverish (temperature of 38.5°C), fatigued, nauseated and has a headache. You confirm these findings, and his physical examination reveals a left leg flaccid paralysis with areflexia and absent plantar reflexes. You admit him to

hospital. The cerebrospinal fluid examination shows 100 leukocytes/mm³, predominantly polymorphs with normal glucose and slightly elevated protein levels. Electromyogram studies showed diminished nerve conduction velocity consistent with an anterior horn cell lesion.

In view of the presentation, you consider the possibility of poliomyelitis. This is later confirmed with positive viral culture for poliovirus type I in a stool specimen taken within 14 days of the onset of paralysis. He is treated with rest and physiotherapy and progressively improves. He is discharged home with follow-up by the neurologist. Further questioning reveals an uncertain primary polio immunization.

LEARNING POINTS

- Poliomyelitis is a serious vaccine-preventable disease still crippling children and youth worldwide.
- Maintaining high polio immunization rates is an essential public health activity in the fight to conquer this infection. Special attention should be given to underimmunized individuals or recent travellers to areas where polio viruses are circulating.
- Important chronological polio events include:
 - 1988 – launch of a global polio eradication campaign spearheaded by the World Health Organization, Rotary International, the United States Centers for Disease Control and Prevention, and UNICEF.
 - 1991 – report of the last polio case in the Americas.
 - 1994 – elimination of indigenous wild poliovirus transmission, certified in Canada and in the rest of the American region.
- The global polio eradication strategy has been highly successful. As of July 31, 2007, there have been 337 paralytic polio cases reported worldwide compared with over 350,000 cases in 1988.
- An ongoing risk for the importation of wild poliovirus persists until global eradication of poliomyelitis is achieved.
- Currently, outbreaks of polio are occurring in four remaining endemic countries: Nigeria, India, Pakistan and Afghanistan.
- In July 2007, Australia reported a first imported case of wild polio infection since it was certified a polio-free country in 2000.
- Six other countries have been reinfected this year: the Democratic Republic of the Congo, Myanmar, Somalia, Angola, Niger and Chad
<www.polioeradication.org/casecount.asp>.
- Active surveillance through the Canadian Paediatric Surveillance Program acute flaccid paralysis (AFP) study is an important activity in which paediatricians across Canada maintain vigilance for potential import or import-associated cases of paralytic poliomyelitis <www.cps.ca/English/surveillance/cpsp/Studies/2006Results.pdf>.
- Any cases of suspected wildtype or vaccine-derived poliovirus infection in persons of any age should be immediately reported to public health authorities.
- To maintain its World Health Organization polio-free certification status, Canada has to document sensitive monitoring of AFP cases with promptly conducted appropriate investigations to rule out polio. Therefore, paediatricians are encouraged to monitor for, investigate and report every AFP case to the Canadian Paediatric Surveillance Program.

The Canadian Paediatric Surveillance Program (CPSP) is a joint project of the Canadian Paediatric Society and the Public Health Agency of Canada, which undertakes the surveillance of rare diseases and conditions in children and youth. For more information, visit our Web site at <www.cps.ca/cpsp>.

This article has been peer-reviewed.