Children and spinal manipulation therapy: Ask your patients about all the therapies they seek

Liliane Zorzela MD[1], Sunita Vohra MD FRCPC[2]

Two days before his school hockey league finals, a previously healthy eight-year-old boy had a runny nose and low-grade fever. He performed well during the first game with two goals. Afterwards, he complained of difficulties in moving his neck because of pain. To prepare him for the next game, his grandfather, who previously had significant improvement of his back pain with spinal manipulation, booked an appointment with a chiropractor.

The next morning, the boy felt exhausted and was a little sleepier than usual. The chiropractor found his cervical spine difficult to mobilize and recommended a return visit the next day for follow-up. Twelve hours later, the child arrived at the emergency department by ambulance after a generalized tonic-clonic seizure lasting less than 2 min. The initial assessment revealed a Glasgow coma scale of nine, with a rigid neck and normal pupils. His blood sugar and electrolyte levels were normal, and a computed tomography scan of his head was unremarkable. Because of persisting symptoms, a lumbar puncture was performed. An examination of the cerebrospinal fluid showed a white blood cell count of 7×10^6/L with 75% lymphocytes, a low glucose and a protein level of 0.63 g/L. A diagnosis of viral meningitis was confirmed by polymerase chain reaction. After a few days in the hospital, he improved and was discharged home.

LEARNING POINTS

- The National Center for Complementary and Alternative Medicine of the National Institutes of Health defines complementary and alternative medicine (CAM) as a group of diverse medical and health care systems, practices and products that are not generally considered part of conventional medicine (1).
- Approximately 20% to 40% of healthy children and 50% of children with chronic, recurrent or incurable conditions use CAM, almost always in conjunction with conventional care.
- Chiropractic is the most common CAM practice used by Canadian children, for a variety of reasons (eg, health promotion, asthma), but most commonly for musculoskeletal disorders (2-4).
- Spinal manipulation is a manual procedure used for a therapeutic intent. A variety of different care providers (physiotherapists, massage therapists, physicians, osteopaths, naturopaths) may perform spinal manipulation as part of their scope of practice, but it is most frequently performed by chiropractors.
- In adults, spinal manipulation is associated with:
  - minor adverse events (eg, local discomfort) that self-resolve within 24 h in 30% to 55% of patients;
  - rare serious adverse events, such as vertebrobasilar accidents and cauda equina syndrome (3,5,6).
- Among children, spinal manipulation is common, and the rate of paediatric adverse events (minor or otherwise) is not yet known (3).
- Less than 40% of parents inform their doctor about their children's CAM use. Clinicians should inquire about the use of CAM during every medical history.

Given the popular use of CAM therapies and the need to thoroughly investigate their safety, active surveillance of paediatric CAM is presently being conducted by the Canadian Paediatric Surveillance Program. This study is examining both the direct and indirect serious adverse events caused by CAM. Indirect adverse events are those associated with delays in diagnosis and treatment (4). CPSP participants are invited to report any suspected adverse events related to CAM.

REFERENCES

1. National Center for Complementary and Alternative Medicine. <http://nccam.nih.gov/health/whatiscam/> (Version current at July 7, 2009).
2. Goldman RD, Vohra S. Complementary and alternative medicine use by children visiting a pediatric emergency department. Can J Clin Pharmacol 2004;11:e245-56. (Abst)
3. Vohra S, Johnston BC, Cramer K, Humphreys K. Adverse events associated with pediatric spinal manipulation: A systematic review. Pediatrics 2007;119:e275-83.
4. Canadian Paediatric Society, Community Paediatrics Committee [Principal author: L Spigelblatt]. Chiropractic care for children: Controversies and issues. Paediatr Child Health 2002;7:85-9.
5. Haldeman S, Kohlbeck FJ, McGregor M. Unpredictability of cerebrovascular ischemia associated with cervical spine manipulation therapy: A review of sixty-four cases after cervical spine manipulation. Spine 2002;27:49-55.
6. Assendelft WJ, Bouter LM, Knipschild PG. Complications of spinal manipulation: A comprehensive review of the literature. J Fam Pract 1996;42:475-80.

[1]Pediatric Critical Care, Stollery Children's Hospital; [2]Faculty of Medicine and School of Public Health, University of Alberta, Edmonton, Alberta
Correspondence: Canadian Paediatric Surveillance Program, 2305 St Laurent Boulevard, Ottawa, Ontario K1G 4J8. Telephone 613-526-9397 ext 239, fax 613-526-3332, e-mail cpsp@cps.ca
Accepted for publication July 3, 2009

