The Boy with the “Snake” in his Chest

BY CHARLES OBERG, M.D., M.P.H.

A 9-year-old Cambodian boy was brought by his mother to our pediatric clinic at Hennepin County Medical Center for evaluation. The chief complaint, as described through an interpreter, was that in the evening, a “snake” came out of the skin on his chest only to retreat into his body by morning. He was otherwise well with no other complaints. History indicated that this had been happening for several weeks. The boy had no other symptoms except for some burning in an area of the chest where the “snake” had emerged.

One week earlier, his mother had brought the child to the emergency department (ED), and a 1-cm eschar with a slightly inflamed ridge was observed on his chest. It appeared to be an impetigo rash. A topical antibiotic was prescribed and the mother was instructed to wash the area and then apply the ointment twice a day. No “snake” was present. Review of systems done in the ED revealed that all other organ systems were normal. The family and social history revealed that the mother and her son had fled the Khmer Rouge and that all other family members had died in the “Killing Fields” prior to their coming to the United States. They had been in the United States and Minnesota for slightly less than a year. During the ED visit, the treating physician had thought it might be a case of post-traumatic stress disorder (PTSD) triggered by the loss of family members. In addition to giving the mother the topical treatment for the child’s skin lesion, she also received a mental health referral.

Examination in the clinic revealed a well-nourished child in no distress. His vital signs were normal. The only positive sign on examination was the 1-cm lesion on his anterior chest. The mother was adamant that if left untreated, the “snake” would return that evening. The mother was encouraged to continue with the topical treatment and to follow up with the mental health referral. She also was told to return to the clinic or emergency room if the “snake” re-emerged.

The mother did return with the child later that evening. Examination showed a “snake” was indeed protruding from the eschar. In reality, it was a nematode worm that protruded about 3 cm from the boy’s anterior chest wall. It was light in color and only 3 mm in diameter. Using a small forceps and gentle pressure, the worm was removed; it measured about 18 cm in length. The specimen was placed in a sterile container and sent to the laboratory, where it was identified as guinea worm or Dracunculus medinensis.

Discussion

Dracunculiasis is an example of the typical infectious triad of agent, vector and host. The infectious agent is the nematode, the vector is a copped (a small crustacean water flea) and the host is the human. The mature worm typically emerges from the human and releases immature larva into a water supply. The water flea consumes the larva where it goes through several molts. The water flea is then ingested by a human. The gastric acid in the stomach destroys the water flea releasing the guinea worm larva, which penetrates the stomach and intestinal wall. The larva mature and reproduce, and the female nematode migrates through to the surface of the skin to emerge once again. There is no treatment besides slow extraction of the mature worm. Dracunculiasis can only be prevented through the filtration of the water supply to remove the water fleas, thus breaking the life cycle of the guinea worm.

At the time of this episode (about 30 years ago), there were estimated to be more than 35 million cases of dracunculiasis in 20 endemic nations predominantly in Asia and Africa. Since 1986, the Carter Center, the World Health Organization (WHO), UNICEF and the Gates Foundation have been involved in an eradication campaign involving village-based surveillance and filtration of the drinking water supply in endemic areas. By the turn of this century, the WHO declared that it had been eradicated in India and Southeast Asia. According to the WHO, there were 148 cases in 2013. As of June 30, 2014, the WHO had received reports of 27 cases compared with 92 cases for the same period in 2013, representing a decrease of 70% in the number of reported cases.

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REFERENCE


Learning point

• With the continued influx of refugees and immigrants from all over the world, it’s possible to see conditions that wouldn’t normally occur in the U.S.-born population.