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Enzootic Sparganosis in Guangdong, People's Republic of China

To the Editor: Sparganosis is a worldwide parasitic zoonosis caused by infection with spargana, the plerocercoid larvae of various diphyllobothroid tapeworms belonging to the genus *Spirometra* (*1–3*). Sparganosis poses a serious threat to human health; the spargana invade mainly the brain, eye, abdominal cavity, spinal cord, and subcutaneous tissues; can damage local tissues; and can cause blindness, paralysis, and even death (*4*,*5*).

In the People's Republic of China, sparganosis has emerged as an important foodborne parasitic disease, with ≈1,000 human cases reported in 22 provinces during 1927–2007. Guangdong Province has the most cases (*6*). Persons in Guangdong Province eat frog meat and place frog poultices made from raw frog meat on open wounds and lesions, which facilitates human infection with spargana. To assess the risk for human infection with sparganosis in this province and to strengthen public food safety awareness, we conducted a comprehensive investigation of spargana infection in frogs, the second intermediate host of *Spirometra*.

By necropsy we examined for spargana 544 frogs (446 *Rana nigromaculata* and 98 *R. tigrina*) from Yunfu, Maoming, and Zhanjiang in western Guangdong Province during October 2007–October 2008 (*7*). Of these 544 frogs, 455 were wild, and 89 were aquacultured. Spargana were found in 27.3% (124/455) of examined wild frogs; of these, 30.0% (107/357) were *R. nigromaculata*, significantly more ($p<0.05$) than the 17.3% (17/98) that were *R. tigrina*. This finding suggests that *R. nigromaculata* is the main intermediate host of *Spirometra* in western Guangdong Province.

We found 719 spargana in infected wild frogs. The number of worms per frog ranged from 1 to 41, with an average of 5.8 worms per infected frog. No spargana were found in 89 aquacultured *R. nigromaculata* frogs.

The examined wild frogs looked normal and healthy and had no obvious symptoms. During necropsy, we detected local edema, muscle bleeding, and fragile tissues in the tissues invaded by sparganа. We also found cysts in some tissues that contained 1 or a few worms. Spargana dissected from host tissue were flat, white worms, which continuously crept in the normal saline. These worms ranged from 2 mm to 115 mm long and from 1 mm to 2 mm wide.

Frogs are the second intermediate hosts of *Spirometra* spp.; pigs, mice, and humans become infected as paratenic hosts by ingesting *Spirometra* larvae in cyclops or frogs (*8*,*9*). Because persons in Guangdong

Province enjoy eating frog meat, particularly from wild frogs, many frogs have been sold in the market, including a substantial number of wild frogs. The results of our survey show that infection of wild frogs with spargana reached 27.3% in western Guangdong Province; hence, consumption of wild frogs (and use as poultices) poses a high risk for sparganum infection. Therefore, public health officials, epidemiologists, medical practitioners, parasitologists, veterinarians, and the general public should be aware of such risks and should implement strategies to reduce or eliminate them.

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Letters

Letters commenting on recent articles as well as letters reporting cases, outbreaks, or original research are welcome. Letters commenting on articles should contain no more than 300 words and 5 references; they are more likely to be published if submitted within 4 weeks of the original article's publication. Letters reporting cases, outbreaks, or original research should contain no more than 800 words and 10 references. They may have 1 Figure or Table and should not be divided into sections. All letters should contain material not previously published and include a word count.

Human Rhinovirus Group C in Hospitalized Children, Singapore

To the Editor: Human rhinovirus (HRV) is a common etiologic agent of upper respiratory tract infections and is associated with symptoms such as asthma and wheezing. HRV has >100 serotypes, and recently, several groups reported a new HRV group C (HRV-C) in children that is associated with more severe respiratory infections (*1*–*5*). We examined the incidence of respiratory viruses in children hospitalized in Kandang Kerbau Women's and Children's Hospital, Singapore (*6,7*). These studies also identified human metapneumovirus and human bocavirus (HBoV) among children in Singapore. We recently performed a retrospective study by using PCR-based testing (*8*) to identify HRV, in particular HRV-C, in these patients. From October 2005 through March 2007, a total of 500 nasopharyngeal swab specimens from pediatric patients (age range 1 month through 12 years) were collected and tested for HRVs.

PCR-based testing identified HRV with an incidence rate of 12.8% (64/500), the highest incidence rate in Singapore, compared with incidence rates of other respiratory viruses reported in the same study (*7*). Of the HRV-positive patients, 31 (48.4%) of 64 had symptoms of lower respiratory tract infections (LRTIs) and 16 (25%) of 64 had symptoms of upper respiratory tract infections. Ten patients infected with HRV were co-infected with a second respiratory virus, HBoV (8/10) or respiratory syncytial virus (RSV) (2/10).

HRV-C was detected by molecular serotyping as described (*3*). Briefly, the first PCR was performed with the forward primer P1–1 (5′-CAA GCA CTT CTG TYW CCC C-3′) and the reverse primer P3–1 (5′-ACG GAC ACC CAA AGT AG-3′). A second