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Brief Report: Tularemia Associated with a Hamster Bite --- Colorado, 2004

In April 2004, the Colorado Department of Public Health and Environment (CDPHE) was notified about a boy aged 3 years with diagnosed tularemia associated with a hamster bite. Tularemia has not been associated previously with pet hamsters. CDPHE conducted an investigation to determine whether other owners of hamsters were at risk. Clinicians and public health officials should be aware that pet hamsters are a potential source of tularemia.

During January 2--February 8, the boy was exposed to six hamsters that his family had purchased from a pet store in the Denver metropolitan area. Each hamster reportedly died from "wet tail disease" (i.e., diarrhea) within 1 week of purchase. One hamster bit the child on the left ring finger shortly before it died. Seven days later, the child had fever, malaise, painful left axillary lymphadenopathy, and skin sloughing at the bite site. After treatment with amoxicillin clavulanate failed, the patient underwent excisional biopsy of a left axillary lymph node 49 days after symptom onset for persistent painful lymphadenopathy and intermittent fever. Tissue culture yielded a suspected *Francisella tularensis* isolate, which was confirmed by real-time polymerase chain reaction and timed-release fluorescence at the CDPHE laboratory. Convalescent serology was positive at a titer of 4,096, and the isolate was identified by CDC as type B. No other risk factors for tularemia exposure were identified, including no other animal contact, no exposure to game meat, and no known mosquito, tick, or fly bites. The patient improved after treatment with ciprofloxacin.

Workers at the pet store reported an unusual number of deaths among hamsters but not other animals during January--February; no carcasses were available for testing. One of two cats kept as store pets had a positive serologic test for *F. tularensis* at a titer of 256. Neither cat had appeared ill to store employees.

Lists of employees, pet suppliers, and customers who purchased hamsters during December 2003--February 2004 were obtained from the store owner. Fifteen of 18 customers were located and interviewed. Eight of these had hamsters that died within 2 weeks of purchase, but all carcasses had been disposed of and were unavailable for testing. One customer and one employee who had febrile illness after being bitten by hamsters from the store were negative for *F. tularensis* by serologic testing. The same customer's hamster was available, and it was also negative for *F. tularensis* by serology and culture.

Approximately 80% of the 50 hamsters at the pet store came from customers who had pets with unanticipated litters. The other 20% were purchased from two small-pet breeders. These breeders were contacted, and neither reported an unusually high number of deaths of hamsters or other animals. One breeder also supplied animals to two pet stores in Wyoming. The Wyoming Department of Health had not been notified of any tularemia cases linked to these stores.

Confirmation of a hamster as the infectious source was limited by the delay between the patient's illness onset and diagnosis and subsequent lack of availability of implicated hamsters for testing. Nonetheless, the hamster that bit the patient was the most likely cause of infection because no other exposures or risk factors were identified. The positive serologic test for *F. tularensis* in a pet cat at the store suggested that other animals in the store might have been exposed to *F. tularensis*. In addition, the proximity of the onset of the patient's illness to the timing of the hamster bite, reports of illness among hamsters, and the deaths of hamsters at the pet store indicated an infected hamster as the likely source of illness. A possible scenario, similar to an outbreak of tularemia that involved zoo primates (1), is that infected wild rodents infested the store and spread the infection to hamsters by urinating and defecating through metal screens covering hamster cages. The infected cat might have had a subclinical or unrecognized illness after catching or eating an infected wild rodent.

The storeowner was advised to set traps for wild rodents and to inform the state health department of any recurrent animal deaths or reports of ill customers or staff. No other cases have been identified.

Although tularemia has been associated with hamster hunting in Russia (2), it has not been associated previously with pet hamsters in the United States. However, clinicians and public health officials should be aware that pet hamsters might be a potential source of tularemia. Moreover, because *F. tularensis* is a potential agent of biologic terrorism (3), clinicians should have a heightened awareness of tularemia.

Reported by: J Pape, K Gershman, MD, Colorado Dept of Public Health and Environment. J Petersen, PhD, Div of Vector-Borne Infectious Diseases, National Center for Infectious Diseases; DD Ferguson, MD, JE Staples, MD, EIS officers, CDC.

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(抄訳)

ハムスターの咬傷による野兎病症例 — 2004 年、コロラド州

3歳の男児の症例に関する報告。

男児とその家族はペット店で6匹のハムスターを購入し、2004年1月2日から2月8日の間、飼育していた。ハムスターは、wet tail disease (diarrhea) で購入後1週間以内に死んだ。一匹のハムスターが死ぬ少し前に、男児の左薬指を噛んだ。7日後、発熱、筋肉痛、左腋下リンパ節の痛みなどを呈した。リンパ節の痛みと断続的な発熱が続いたので、発症49日後にリンパ節のバイオプシーを実施した結果、野兎病菌が分離された。また、回復期の野兎病菌に対する血清抗体価は、4096倍であった。他のリスク要因（他の動物との接触、ゲームミートの喫食など）は、認められなかった。

このペット店では、2004年1月から2月の間、ハムスターが通常以上に死んでいたが、他の動物に異常は認められなかった。ハムスターの死体は検査に利用できなかった。ペット店にいた2匹の猫のうち1匹が、野兎病菌に対する血清抗体価256倍であった。

このペット店で、2003年12月から2004年2月の間にハムスターを購入した18人に聞き取り調査を実施したところ、8人の購入したハムスターが購入後2週間以内に死んでいた。死体は検査に利用できなかった。この他には関連する野兎病の症例は報告されていない。

野兎病に感染した野生齧歯類がペット店に侵入し、店内のハムスターや猫に野兎病に感染を広げたというシナリオが考えられる。店主は、野生齧歯類に対するトラップを仕掛けること、他の動物の死や、客や従業員が病気になった場合に当局に知らせることを助言された。