

Listeriosis at a Sushi Restaurant

Public Health – Seattle & King County

In July 2010, Public Health - Seattle & King County (PHSKC) learned that isolates from two listeriosis cases shared the same pulsed field gel electrophoresis (PFGE) pattern: an elderly female King County resident with an illness onset date in June 2010 and an elderly female Pierce County resident with an onset date in July 2010. The two women did not know each other but both reported consuming sushi or sashimi during their exposure periods. Interviews with the cases and their family members revealed that both had consumed sushi and/or sashimi purchased from the same King County restaurant (restaurant A).

The PFGE pattern of these two case isolates was found to also match isolates from two King County listeriosis cases that were reported in 2008: One was an elderly female with bacteremia, the other was a premature newborn (delivered at 32 weeks gestation) with bacteremia.

Investigations of the two cases were reopened. Though neither the elderly woman nor the mother of the infant could confirm that they had eaten sushi during their exposure periods two years ago, when asked if there were any traditional Japanese foods they could have eaten during their exposure periods, both mentioned sushi specifically purchased from restaurant A.

In response, PHSKC investigated restaurant A and found several food handling violations. Special attention was paid to restaurant equipment that was difficult or impossible to sanitize because the items were porous (bamboo mats and wooden bowls), worn (a sushi rice storage receptacle with cracks), or could not be fully dismantled and cleaned (non-restaurant grade mandolin slicers). Environmental specimens were collected for culture from several sites and pieces of equipment at the restaurant. A specimen from a bamboo mat was positive for *Listeria monocytogenes* with the same PFGE pattern as the cases (outbreak strain). PHSKC ordered the restaurant to comply with several corrective actions including replacing the bamboo sushi mats with new ones and using clean plastic wrap as a barrier between the sushi and the bamboo mats. *L. monocytogenes* possesses several qualities that make it a hardy foodborne pathogen. The bacterium is relatively resistant to acids and high salt concentrations. It also grows at low temperatures allowing it to reproduce in refrigerated foods. The bacterium also readily produces a biofilm that helps it survive in the environment for prolonged periods of time. Previously described listeriosis outbreaks have been associated with a variety of contaminated raw, ready to eat foods including cold-smoked fish and raw fish.

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In February, 2011 the PFGE pattern of an isolate from a male Snohomish County listeriosis case was found to match the outbreak strain. Investigation revealed that this case had also eaten sushi purchased from restaurant A during his exposure period. Upon reinspection, PHSKC found that the restaurant was not following recommended cleaning practices and was not consistently using clean plastic wrap as a barrier between sushi and bamboo sushi mats. PHSKC suspended the restaurant's permit and ordered the restaurant closed. Before being allowed to reopen the restaurant was required to hire a professional cleaning company and comply with safe

SOURCE:

2010 Communicable Disease Annual Report, Washington Department of Health, pages 78-79;
<http://www.doh.wa.gov/DataandStatisticalReports/DiseasesandChronicConditions/CommunicableDiseaseSurveillanceData/AnnualCDSurveillanceReports.aspx>