EPI-LOG

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Wound Botulism Case in King County

On October 16, 2007, a possible case of botulism in a 54-year-old heroin injection drug user (IDU) was reported to Public Health. The patient was hospitalized on October 9, 2007, after surgical repair of a hip fracture sustained in a fall. After initial recovery from surgery, the patient developed acute respiratory failure and was intubated. Two days after intubation the patient was noted to have ptosis and bilateral weakness in the upper body and upper extremities. Physical examination of the skin revealed old injection sites but no apparent wound or abscess.

On October 19, laboratory testing of serum identified *Clostridium botulinum* toxin type A. The positive serum test, combined with negative stool studies for *C. botulinum* toxin and *C. botulinum* culture, confirmed the diagnosis of wound botulism. On October 19, 2007, the patient received botulinum antitoxin, facilitated by the CDC in conjunction with Public Health and the patient's health care provider. Public Health also distributed a brochure on wound botulism to clients at Needle Exchange sites in King County (online at www.metrokc.gov/health/apu/harmred/wound-botulism.htm). As of the end of October, the patient's strength and cranial nerve impairment were improving but mechanical ventilation was still required.

The last case of wound botulism reported in King County was in November 2004, in a black tar heroin IDU, with laboratory confirmed *C. botulinum* toxin type A in serum (summary at www.metrokc.gov/health/epilog/vol4411.pdf). In November 2003, Washington State Department of Health issued an alert regarding two probable cases of wound botulism among injecting users of black tar heroin in Pierce and Yakima counties. Wound botulism is transmitted via inoculation of *C. botulinum* spores during trauma, or via intramuscular injection or snorting of drugs, particularly black tar heroin.

Clinical hallmarks of botulism include ptosis, blurred vision and the 'four Ds': diplopia, dysarthria, dysphonia, and dysphagia. These symptoms are followed by symmetric, descending weakness and paralysis. If botulism is suspected, a thorough physical exam for evidence of cellulitis and abscesses, as well as examination of the paranasal sinuses, should be performed. A history of injecting or inhaling black tar heroin should be determined, as well as a diet history to assess the possibility of foodborne botulism. CSF protein is normal in botulism; EMG may help differentiate causes of paralysis. Imaging tests should be completed to rule out other causes of acute neurologic disease, including stroke or hemorrhage. Initiation of treatment with antitoxin should be based on the clinical diagnosis and should not await laboratory confirmation. Because antitoxin can prevent, but not reverse neuromuscular blockade due to botulinum toxin, early treatment with antitoxin is important to prevent progression to respiratory failure, the most frequent cause of death. Wounds suspected of being contaminated with *C. botulinum* should be widely debrided and irrigated, ideally after the administration of botulinum antitoxin. Anaerobic cultures should be obtained. Mechanical ventilation is the main supportive therapy for severe cases of botulism.

Report suspected cases to Public Health immediately at 206-296-4774. We will: 1) facilitate laboratory confirmation, 2) assist in obtaining antitoxin from the CDC, 3) investigate and when possible remove likely sources of infection, and 4) identify other persons at risk.

Puzzler of the Month

An adult male in his 40's was hospitalized with fever, chills, and shortness of breath. His past medical history was significant for congenital heart disease that led to a prosthetic valve replacement several years ago. In the weeks before admission he experienced fatigue and swollen ankles. Three days before admission he had chills, shortness of breath, and "felt feverish" for a day. Additionally, he had left, lower extremity pain. The day of admission he saw his cardiologist who performed an echocardiogram that revealed thickening of the prosthetic valve. A Doppler ultrasound also showed evidence suggestive of an embolic event to his left posterior tibial artery. He was hospitalized for intravenous antibiotics for endocarditis. Repeated blood cultures were negative.

The patient worked for a local company in a technical field. His travel history was remarkable in that he'd spent many years in rural Australia, as well as short stays in Canada, New Zealand, and Fiji. While in Australia he hunted camels and kangaroos, and once participated in butchering cattle. He did not recall having any flu-like febrile illness while in Australia. A few years ago he returned to the United States. There was no history of tick bites or consuming unpasteurized milk products.

An infectious disease specialist was consulted, and a serologic diagnosis of chronic Q fever was made. Phase I and phase II antibodies for *Coxiella burnetii* were highly elevated.

Q fever was named by a medical officer in Australia investigating an outbreak of a febrile illness among meat processors in Brisbane–suspecting that the illness was a new pathogen, he named the disease "Q" for "query." Q fever is caused by *C. burnetii*, a gram-negative pleomorphic coccobacillus of the *Rickettsiaceae* family

that infects mammals and birds, in addition to humans. Ticks are responsible for transmitting the disease among its reservoir animal hosts. Humans typically become infected through exposure to the aerosolized organisms from the urine, feces, and birth fluids of infected sheep, goats, and cattle. *C. burnetii* spores can survive months in dust and hay. Outbreaks have been documented in which cases were found miles downwind of the probable infection source, and among residents living along dusty roads on which infected animals were transported.

Half of individuals infected with *C. burnetii* have no symptoms. Those with symptoms most often present with acute Q fever, a flu-like illness that can last 1 to 2 weeks and is rarely fatal. More insidious is chronic Q fever, manifesting itself 1 to 20 years after the initial infection in the form of osteomyelitis, hepatitis, or as in this case, endocarditis. The mortality rate with chronic Q fever is high; up 65% of persons with chronic infection will die from the disease. Diagnosis is often by serology, which is complicated by the organism's "phase change" during infection. In acute Q fever, phase II antibodies are more elevated than phase I antibodies; in chronic Q fever, phase I antibodies are at the same or higher titer than phase II.

Acute Q fever is treated with doxycycline for 15 to 21 days, while chronic Q fever is treated with an extended course (1.5 to 3 years) of doxycycline plus either a fluoroquinolone or hydroxychloroquine. Cases of Q fever are reportable to Public Health at 206-296-4774.

CDC Training: Epidemiology and Prevention of Vaccine Preventable Diseases

The CDC training on the Epidemiology and Prevention of Vaccine Preventable Diseases is a comprehensive overview of the principles of vaccination and information about vaccine-preventable diseases and vaccines. This series will be available spring 2008 as a DVD and on the internet at www.cdc.gov/vaccines/ed/broadcasts.htm#1.

Influenza Monthly Update

During the week ending 12/15/2007, 15% (2/13) of specimens submitted by King County influenza sentinel providers tested positive for influenza A (H1). Since the beginning of October 2007, sentinel providers have submitted 69 specimens from patients with influenza-like illness (ILI) for viral culture; five have tested positive for influenza A [four influenza A (H1), one influenza A (H3)]. No specimens have tested positive for influenza B. The University of Washington Clinical Virology lab has reported an increase in respiratory syncytial virus (RSV) over the past three weeks, from 6% (7/118) to 32% (50/158) for the week ending 12/15/2007.

King county syndromic surveillance reports ending 12/15/2007 show that fever-related visits to emergency departments (ED) have increased while visits for ILI have remained steady. This year, as well as in the past 3 flu seasons, the proportion of ED visits due to ILI complaints has been highest among children under 2 years of age. More information about influenza activity locally and nationally is on the Public Health website.[1]

The CDC continues to recommend against the use of amantadine and rimantidine for the treatment or chemoprophylaxis of influenza A because of resistance to these antivirals. Oseltamivir or zanamivir can be prescribed if antiviral treatment of influenza is indicated. Oseltamivir is approved for influenza A treatment or chemoprophylaxis in persons >1 year of age. Zanamivir is approved for influenza A treatment in persons >7 years of age, and for influenza A chemoprophylaxis of persons >5 years of age.

Vaccination is the primary strategy to prevent complications of influenza. This year, over 130 million doses of influenza vaccine were produced. Vaccine supplies are plentiful and influenza activity has not yet peaked, so continue to vaccinate anyone who wants protection from influenza, particularly high risk patients and their household contacts

Disease Reporting

AIDS/HIV..... (206) 296-4645
STDs..... (206) 744-3954
TB ..... (206) 744-4579
All Other Notifiable Communicable Diseases (24 hours a day) .... (206) 296-4774
Automated reporting line for conditions not immediately notifiable..... (206) 296-4782

Hotlines

Communicable Disease ..... (206) 296-4949
HIV/STD..... (206) 205-STDS

Public Health-Seattle & King County

Online Resources

Home Page: www.metrokc.gov/health/
The *EPI-LOG*: www.metrokc.gov/health/providers
Communicable Disease listserv (PHSKC INFO-X) at:
mailman.u.washington.edu/mailman/listinfo/phskc-info-x

[1]Influenza Surveillance Updates:
www.metrokc.gov/health/immunization/fluactivity.htm

Reported Cases of Selected Diseases, Seattle & King County 2007

	Cases Reported in November		Cases Reported Through November	
	2007	2006	2007	2006
Campylobacteriosis	29	21	238	247
Cryptosporidiosis	3	2	41	38
Chlamydial infections	591	552	5363	4822
Enterohemorrhagic *E. coli* (non-O157)	0	0	5	2
***E. coli* O157: H7**	1	1	38	36
Giardiasis	13	9	140	109
Gonorrhea	111	173	1368	1,810
***Haemophilus influenzae* (cases <6 years of age)**	0	0	2	3
Hepatitis A	1	1	17	17
Hepatitis B (acute)	0	4	21	21
Hepatitis B (chronic)	76	64	759	841
Hepatitis C (acute)	1	0	6	6
Hepatitis C (chronic, confirmed/probable)	114	101	1243	1384
Hepatitis C (chronic, possible)	29	18	309	235
Herpes, genital (primary)	42	65	573	716
HIV and AIDS (including simultaneous diagnoses with AIDS)	37	18	343	241
Measles	0	0	1	0
Meningococcal Disease	0	1	5	10
Mumps	0	0	4	2
Pertussis	16	7	85	101
Rubella	0	0	0	0
Rubella, congenital	0	0	0	0
Salmonellosis	14	12	229	189
Shigellosis	1	4	48	51
Syphilis	24	13	156	189
Syphilis, congenital	0	0	0	0
Syphilis, late	6	6	64	71
Tuberculosis	7	10	133	129

The *EPI-LOG* is available in alternate formats upon request.