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The Many Faces of Meningococcal Disease

In Alaska, over the last several weeks, illness in four persons illustrates the clinical spectrum of acute meningococcal disease.

Bacteremia without sepsis (Case No. 6)

On 10/4/95 a 9-year old boy from Ketchikan with a history of migraine headaches presented with a headache, maculopapular rash, fever, vomiting and left ankle arthralgia. His neck was supple, and WBC was 17,000 with a marked left shift. He was admitted for IV hydration and was discharged October 5 in good condition. The next day, admission blood cultures were reported as positive for *Neisseria meningitidis*, serogroup B. He was then readmitted for IV antibiotics following a lumbar puncture and unremarkable CSF gram stain, chemistries and cell count. Two household contacts and a playmate who had spent the weekend at the patient's house were provided rifampin prophylaxis.

Meningococcal sepsis without meningitis (Case No. 7)

On 9/22/95 an 18-year old woman from Anchorage presented at a hospital ER at 4:00 AM with a 3 hour history of vomiting and abdominal cramping. Mental status was normal, temperature was 100.7°F, and CBC revealed a WBC of 11,000 with a platelet count of 190,000. Following admission to a hospital outside of Anchorage with a diagnosis of gastroenteritis, petechiae and hemoptysis were noted around 11:30 AM. By 2:00 PM, the patient was increasingly lethargic in the ICU. Repeat CBC revealed a WBC of 2,700 (55S/27B/18L) and a platelet count of 50,000. The patient was airlifted to an Anchorage hospital. She died of sepsis and DIC at 9:00 PM on September 22. Blood cultures were positive for *N. meningitidis*, which the State Laboratory further identified as serogroup C. Rifampin was provided to the patient's one household contact and her boyfriend.

Meningitis (Case No. 8)

On 9/25/95 a 34-year old man from Fairbanks developed fever followed by delirium. He was admitted to the hospital the next day with a temperature of 103°F, WBC of 13,000, and a CSF cell count of 2 WBC. Blood and CSF cultures were positive for *N. meningitidis* which the State Laboratory determined to be non-groupable. The patient recovered without sequelae and was discharged October 2. Rifampin was provided to three household contacts.

Meningoencephalitis (Case No. 9)

On 9/29/95 a 17-year old woman from Metlakatla developed a sore throat for which she received oral antibiotics. On 9/30 at 1:00 AM she began vomiting. By 4:00 AM she had collapsed at home and was unresponsive. She received ceftriaxone and was airlifted to Ketchikan where she remained profoundly obtunded with nuchal rigidity. Her CSF was remarkable for a WBC of 5300 with 97% neutrophils, a protein of 473 mg/100ml, and a gram stain with gram negative diplococci. The patient received mannitol and was airlifted to Seattle where she recovered with only mild retrograde amnesia. Blood and CSF cultures, collected after oral antibiotics and ceftriaxone were given, had no growth. Four household contacts received rifampin prophylaxis.

These four illnesses represent the varied clinical presentations and outcomes of meningococcal disease. While temporally related, the four cases were not related by geography or serogroup. Comparison with the five other cases of meningococcal disease (Table 1) reported to the Section of Epidemiology this year suggests that these nine illnesses represent sporadic occurrence of meningococcal disease rather than an outbreak. Five of the cases occurred in Southeast Alaska around Ketchikan, but the serogroups are not the same, making an outbreak unlikely. No secondary cases of meningococcal disease have occurred.

Recommendations

1. Physicians and other health care providers should have a high index of suspicion for meningococcal disease. Suspected or confirmed invasive meningococcal disease is a public health emergency, and the Section of Epidemiology should be called immediately at 561-4406 weekdays and at 1-800-478-0084 after hours and on weekends.
2. Rifampin prophylaxis should be limited to persons with household, prolonged daycare, or mouth-to-mouth contact with a patient diagnosed with meningococcal disease. The dose for adults is 600mg q12h for 2 days, and for children is 10mg/kg q12h for 2 days.
3. All meningococcal isolates should be sub-cultured and sent to the State Public Health Laboratory in Anchorage for serogroup identification. The referring lab should always maintain the initial culture. There is no cost for this reference service.

Table 1. Cases of meningococcal disease in 1995

Case No.	Age	Onset Date	Residence	Diagnosis	Serogroup
1	4mo	4/28	Fairbanks	Meningitis	*
2	2yr	5/1	Anchorage	Meningitis	C
3	7yr	5/15	Craig	Meningitis	C
4	23mo	5/15	Ketchikan	Meningitis	Non-groupable
5	12yr	7/31	Ketchikan	Meningitis	Non-groupable
6	9yr	10/4	Ketchikan	Bacteremia	B
7	18yr	9/22	Anchorage	Sepsis	C
8	34yr	9/25	Fairbanks	Meningitis	non-groupable
9	17yr	9/29	Metlakatla	Encephalitis	Culture negative

* Sub-culture at the State Laboratory was non-viable.