“Honey moon” meningitis

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Streptococcus agalactiae is a rare cause of meningitis in healthy non-pregnant adults. A case of S. agalactiae meningitis is reported in a previously healthy young woman following sexual intercourse. The vaginal flora was the verified source of infection.

S. agalactiae other than Streptococcus pneumoniae rarely (<2%) cause bacterial meningitis in adults. More than 80% of the reported Group B streptococcal (GBS) meningitis in adults affected pregnant women, or patients with a severe underlying disease.1–3 It was first described in 1942.1

We report a case of S. agalactiae meningitis in a previously healthy young woman. The vaginal flora was the verified source of infection.

CASE REPORT

A 17 year old woman attended our emergency department with fever (39°C), headache, and vomiting that had started four hours earlier. On admission her pulse rate was 113/min, pH 7.57, P CO2 19.8 mm Hg, P O2 112 mm Hg, HCO 3 18.5 mmol/l, SaO2 98%, blood pressure 95/55 mm Hg, and respiratory rate 28/min. On examination she had cervical stiffness and positive Kernig and Brudzinski’s signs, but no other clinical signs. Her previous medical history was unremarkable. Her white blood cell (WBC) count was 9200/μl (95% neutrophils and 4% lymphocytes) and blood glucose level was normal.

As there was a strong suspicion of meningitis, we started treatment with ceftriaxone and vancomycin. Blood and urine samples were sent for culture. We also gave the patient dexamethasone, although its use is controversial.1 Corticosteroids may potentiate ischaemic injury to neurones. Failure of treatment has been reported in adults who received standard doses of vancomycin and adjunctive dexamethasone. However in other studies this treatment improved the outcome in adults with acute bacterial meningitis.3

A brain computed tomography (CT) scan revealed normal findings, and a lumbar puncture was performed. Cerebrospinal fluid (CSF) examination revealed WBC count 18/mm³ (95% neutrophils), protein 28 mg/dl, and glucose 52 mg/dl. Gram staining of CSF revealed many Gram positive cocci in pairs. The patient, who was conscious and haemodynamically stable, was transferred to the intensive care unit (ICU) for monitoring. S. agalactiae was isolated from the cultured CSF. Blood cultures revealed the same isolate, although urine cultures were negative. The isolate in both CSF and blood cultures was sensitive to vancomycin but not to ceftriaxone, which was substituted by penicillin. The organism was susceptible to penicillin, rifampin, clindamycin, lincomycin, and teicoplanin but resistant to cefuroxime and gentamicin. Vancomycin was continued until the detailed antibiogram was available. Adjunctive corticosteroids can reduce the concentration of vancomycin in the CSF. This was of significant concern in the present case because the CSF isolate was resistant to ceftriaxone, and for this reason we stopped the administration of dexamethasone.

We thoroughly investigated the possibility of distant infections that could have been the source of the infection. A meticulous physical examination and both abdominal and cardiac ultrasound examinations revealed normal findings. Adults developing GBS meningitis usually have a severe underlying disease or a defect in their immune system.4 In the present case, an enzyme-linked immunosorbent assay (ELISA) performed for human immunodeficiency virus was negative, and serum levels of complement and immunoglobulins were normal.

An obstetrical consultation was requested during which the patient reported having her first sexual experience two days ago. A vaginal smear culture was positive for the CSF invading organism. CSF, blood, and vaginal isolates had the same antibiogram, proving that they were identical. After 48 hours later the CSF Gram staining and culture were negative. Vancomycin was given for 15 days and the patient had an uneventful recovery.

DISCUSSION

GBS is part of the normal oral and vaginal flora. It has been isolated in adult urinary tract infections, chorioamnionitis, endometritis, skin and soft tissue infections, osteomyelitis, meningitis, bacteraemia without an identifiable focus, and endocarditis.4 This organism is the leading cause of bacterial meningitis and sepsis in neonates, but rarely it is the cause of bacterial meningitis in healthy adults and non-pregnant women. In recently reported cases, the meningitis due to GBS was related to a distant focus of infection or to neurosurgical procedures. There were no differences in the clinical presentation in infections with different streptococci, and bacteraemia was common in meningitis due to GBS.5 7 In a review of 50 GBS cases, 8/50 had no comorbid condition whereas 10/50 had endometritis, 4/50 had endocarditis, and 3/50 had urinary tract infection, which were confirmed distant foci of infection. In most of the cases (30/50) no distant focus was identified. Mortality was 34.4%, but only one of the eight patients without a comorbid condition died.1

In summary, we report a case of purulent meningitis caused by GBS, a rare pathogen in healthy adults. The vagina was the verified source of infection. The microbes entered the blood stream through the vaginal wall, possibly during the patient’s first sexual intercourse and then seeded the meninges. This is exceptionally rare in non-pregnant women and in our review of the literature we did not find any other reported cases of adult GBS meningitis associated with intercourse.

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