RESEARCH NOTE

Fatal *Plesiomonas shigelloides* in a Newborn

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A case of fatal *Plesiomonas shigelloides* meningitis is reported in a newborn. In spite of a course of intravenous ampicillin and gentamicin he died in cardiac arrest. The patient in this case, is the first to be documented in Cuba and the Caribbean region.

P. shigelloides is a member of the family *Vibrionaceae*. The organism is a facultative, anaerobic, polarly flagellated, Gram-negative bacterium (RA Brendan et al. 1988 *Rev Infect Dis 10*: 303-316). Its primary natural reservoirs are surface water and soil, as well as fish and other marine animals (T Arai et al. 1980 *J Hyg 84*: 203-211, LR Van Dame & J Vandepitte 1980 *Appl Environ Microbiol 39*: 475-479). It is not considered to be part of the normal flora of the human intestinal tract (SD Holmberg & JJ Farmer 1984 *Rev Infect Dis 6*: 633-639). In humans infections with *P. shigelloides* can cause a usually mild gastroenteritis, septicemia, cellulitis, arthritis, cholecystitis and osteomyelitis. Some cases in which neonates developed *P. shigelloides* sepsis and meningitis have been described (A Pathak et al. 1981 *Pediatrics 71*: 389-391, C Terpeluk et al. 1992 *Eur J Pediatr*: 499-501).

Case report - A ten day-old newborn infant was admitted at the Carlos Manuel de Céspedes Pedriatric Hospital in Granma, Cuba, with fever (39°C), irritability and anorexia. Physical examination revealed a bulging, tense anterior fontanel; respiratory rate 32 per min with intermittent pauses no reales; heart rate of 140 per min, no murmurs; normal abdominal palpation; nervous central system signs: hypotonia and bilateral mydriasis.

Laboratory tests revealed hemoglobin 13.2 g/l, WBC $6{,}75.10^9$/l. Platelet counts: 170 000/ mm^3, blood glucose 4m mol/l. X rays of thorax was normal. Cerebrospinal fluid (CSF) purulent with predominant polymorphonuclear cells, glucose level of 9 mg/l. Protein concentration 800 mg/l. Gasometry compensated respiratory acidosis (35 mm Hg). Considering the results of the gasometry and the clinical picture the patient was put on intermittent artificial respiration using a Veacker to keep hypocapnia and to treat the brain edema. Intravenous ampicillin (400 mg/kg) body weight every 4 hr was begun as well as intramuscular gentamicin (7 mg/kg) body weight t. i. d. and (20%) mannitol. Gasometry was unchanged after 3 hr with a respiratory rate 100 per min and PO_2 100%. Tonic-clonic seizures started 18 hr after admission and were controlled with phenobarbital (10 mg/kg) body weight. Temperature was 39ºC and blood glucose 5 mmol/l. One hour later the baby died in cardiac arrest.

Autopsy - Macroscopic examination of the brain showed vascular congestion, a yellowish fluid and marked infiltrate in the subarachnoid space; submucouse of the stomach with hemorrhage and ulceronecrotic lesions.

Bacteriology - The CSF obtained before starting the treatment was streaked on 5% sheep blood agar, MacConkey agar and Thayer-Martin; all were incubated at 37ºC. After 24 hr all of the culture yielded pure growth of a Gram-negative fermentative bacterium. Biochemical testing was performed with the API 20E system (Bio Mérieux, France). Positive reactions were observed for catalase, oxidase, L-lysine and L-ornithine decarboxylase, and arginine dihydrolase. Acid was produced from glucose and inositol in oxidation fermentation medium. Negative reactions were noted for citrate, urease, tryptophan deaminase and thiosulfate reductase. Acid was not produced for mannitol, sorbitol, rhamnose, or sucrose. The strains were identified as *P. shigelloides* (J Billiet et al. 1989 *J Infect 19*: 267-271).

The antimicrobial susceptibility of each revealed that this isolate was susceptible to cephalothin, tetracycline, trimethoprim-sulfamethoxazole, cefuroxime, chloramphenicol, imipenen, gentamicin, but was resistant to ampicillin, amikacin, kanamycin (AW Bauer et al. 1966 *Am J Clin Path 36*: 493-496).

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The strain was serotiped according to the International Antigenic Scheme. The isolated strain belonged to serovar O50: H11 (E Aldová et al. 1994 *Ctr Eur J Publ Hlth 2*: 32-36).

Even though septicemia is the most frequently found extraintestinal infection due to *P. shigelloides* a significant number of cases with meningitis as a complication has been described in infant. This may be attributed to the insufficient immunological competence of the neonate and the infant less than six months of age (LJ Dahm & AG Weinberg 1980 *South Med 73*: 393-394).

The infection, in this case, most probably occurred during birth as the mother had suffered from diarrhea with *P. shigelloides* duly recovered, identified in the feces.

As already reported elsewhere, our case confirms the resistance of *P. shigelloides* to ampicillin but it also showed the lack of response to gentamicin in spite of the sensitivity of the organism to the drug *in vitro*. This may explain the fulminate course of the infection in neonates (FS Notte et al. 1988 *J Clin Microbiol 26*: 388-391).

Our description of a neonate suffering from *P. shigelloides* meningoencephalitis is the first in Cuba and the Caribbean region.

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