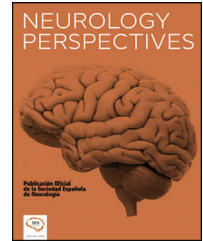




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SCIENTIFIC LETTER

Meningitis due to *Streptococcus infantarius* Meningitis por *Streptococcus infantarius*

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Dear Editor

We present the case of an 84-year-old woman with history of type 2 diabetes mellitus, dyslipidaemia, acute biliary oedematous pancreatitis, fatty liver, left ovarian cystadenoma, and multiple lacunar and vertebrobasilar strokes. The patient was being treated with antiplatelet drugs, an antidiuretic drug, and insulin. She was dependent for activities of daily living and needed a wheelchair. She had a score of 4 on the modified Rankin Scale.

In the morning of the day she was admitted, she presented vomiting and holocranial headache. Several hours later, she presented speech alterations and was taken to the emergency department. The patient had not presented fever or infectious symptoms in the previous days, or any other associated symptom. She had not consumed any non-fermented dairy products or travelled abroad.

The first clinical assessment at the emergency department revealed mild aphasia (predominantly motor), with an acceptable level of consciousness. The patient did not present fever, hypertension, tachycardia, or hyperglycaemia. She subsequently presented a significant neurological deterioration. The second assessment revealed somnolence, mutism, ability to direct gaze without oculocephalic deviation, inability to follow simple or complex instructions, no facial asymmetry, and rabbit-like buccolingual movements; a motor examination revealed generalised weakness with no gross asymmetries, and bilateral flexor plantar reflexes.

Complementary testing included a cranial CT scan revealing gliosis compatible with chronic strokes in the bilateral basal ganglia, left frontal gliosis, right parietal gliosis, and chronic ischaemic leukoencephalopathy. A blood analysis detected a leukocyte count of 19,800 leukocytes with 16,900 neutrophils and C-reactive protein level of 286 mg/dL; a urine analysis yielded normal results. A lumbar puncture performed with the patient in the left lateral decubitus position revealed a cerebrospinal fluid (CSF) opening pressure of 16 cm H₂O; biochemical analysis showed high levels of predominantly polymorphonuclear leukocytes (clotting of the sample prevented counting), glucose levels of 100 mg/dL (251 mg/dL in blood), and protein levels of 610 mg/dL. A multiplex PCR study yielded negative results for the following pathogens: *Escherichia coli*, *Escherichia coli* K1, *Haemophilus influenzae*, *Listeria monocytogenes*, *Neisseria meningitidis*, *Streptococcus agalactiae*, *Streptococcus pneumoniae*, *Cryptococcus neoformans/gattii*, cytomegalovirus, enterovirus, herpes simplex virus 1, herpes simplex virus 2, human herpes virus 6, human parechovirus, and varicella zoster virus. Blood and urine cultures also returned negative results.

The patient was admitted to the neurology department due to suspicion of meningoencephalitis. We started empirical treatment with antibiotics (ceftriaxone and ampicillin) and antiviral drugs (aciclovir), pending results of the culture.

Several complications manifested during admission. We requested a video-EEG, which revealed non-convulsive status epilepticus with bilateral hemispheric involvement, which resolved after the administration of diazepam and two antiepileptic drugs (valproic acid and levetiracetam). The patient

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subsequently presented decompensated heart failure, non-Q-wave myocardial infarction, and respiratory tract infection. Despite multiple treatments for meningoencephalitis and the associated complications, the patient died several days later.

A post-mortem CSF culture revealed presence of *Streptococcus infantarius* subsp. *coli*.

Streptococcus bovis includes three biotypes: *S. bovis* I, corresponding to *Streptococcus gallolyticus* subsp. *gallolyticus*; *S. bovis* II/2, which includes *S. gallolyticus* subsp. *pasteurianus*, and *S. bovis* III/1, which includes *S. infantarius* subsp. *coli*.¹

Some association has been observed between bacteraemia caused by *S. gallolyticus* subsp. *gallolyticus* and endocarditis and/or colon disease, and between presence of *S. gallolyticus* subsp. *pasteurianus* and hepatobiliary disease. Presence of these bacteria has also been associated with pneumonia and meningitis, although this association is less frequent.

Regarding the clinical symptoms of bacteraemia caused by *S. infantarius* subsp. *coli*, no clear association has been established with any particular clinical condition. Isolated cases of endocarditis and colorectal cancer have been reported in African and Asian regions, generally in patients with history of consuming non-fermented dairy products.^{2–4} To date, no cases have been reported of meningitis caused by this bacterium. Therefore, we present this novel association.

Ethical considerations

We declare that we followed our centre's protocols on the publication of patient data.

Conflict of interest

The authors have no conflicts of interest to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.neurop.2021.11.008>.

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