

Letter to the Editor

Case report: tick-borne encephalitis (TBE) in a Belgian traveller returning from Germany**Sarah Gils, MD¹, Johan Frans, MD¹, Erwin Ho, MD¹, Annick Smismans, MD¹, Patrick Vermylen, MD², Maarten Dewil, MD, PhD², Luc Dejaegher, MD², Leo Heyndrickx, MSc³, Kevin K. Ariën, PhD^{3,4,5}, and Marjan Van Esbroeck, MD^{5*}**

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To the editor-in-chief:

In August 2016, a 45-year-old Belgian woman was admitted to the hospital with a flu-like syndrome that had started two and a half weeks earlier, during a trip to Southern Germany. She also reported nausea, vomiting and rigidity of neck and shoulders, despite initiation of moxifloxacin by her general practitioner.

She had a body temperature of 37.8°C and mild meningeal irritation. During hospitalization, she developed confusion and encephalopathy with dyskinesia of the limbs (tremor) and tongue.

CT and MRI scans of the head were normal.

Inflammatory parameters in blood were only slightly altered. The leucocyte count in cerebrospinal fluid (CSF) was 169 WBC/ μ l with a lymphocytic predominance. CSF glucose was normal, but CSF's lactic acid, protein and albumin were elevated. All initial microbiological testing on CSF remained negative, including bacterial culture, Borrelia serology and a meningitis/encephalitis multiplex PCR panel (FilmArray[®], BioFire Diagnostics, Salt Lake City, USA).

The diagnosis of meningoencephalitis was made and a 10-day course of intravenous ceftriaxone was completed, because a bacterial origin could not be excluded. Under this regimen, the patient's symptoms waned and, on Day 12, she was discharged.

Based on the patient's travel history and disease course, detection of TBEV antibodies was performed in the Belgian National Reference Centre for arboviruses, using an immunofluorescence assay (Flavivirus Profile 2, Euroimmun AG, Lübeck, Germany). Both IgM and IgG antibodies were detected.

A TBEV neutralization test revealing a 90% plaque reduction neutralization titre of >1:320 confirmed the infection. The patient had not been vaccinated against TBEV.

At follow-up, 3 weeks after admission to the hospital, the patient reported some remaining hyperexcitability symptoms. TBEV immunofluorescence and neutralization assay results were unchanged. After 2 months, all symptoms had resolved.

Although seroprevalence studies demonstrated the presence of TBEV antibodies in Belgian dogs, cattle, roe deer and wild boar,¹ human infections are limited to a few imported cases up till now.² In 2016, however, two autochthonous TBEV infections have been described in the Netherlands, at roughly 70 km off the border with Belgium.³

Of particular concern for the Belgian setting is the fact that several large-scale youth summer camps are held in TBE prevalent areas (e.g. Southern Germany, Austria). Participating children and their parents should be adequately informed on preventive measure such as avoidance of tick bites and vaccination,^{4,5} which should be encouraged in a timely manner by the organizers for camps that involve risk activities. Our case of an unvaccinated patient that acquired TBEV in Germany illustrates that pre-travel advice should not be restricted to travellers to exotic destinations.⁵

TBE should be included in the differential diagnosis in case of compatible symptoms even in the absence of a tick bite which is only recognized by 50–60% of TBE patients.⁶

The diagnosis of TBE is usually made by specific antibody detection. The value of RNA detection in CSF and serum is

limited, since the virus has already been cleared from these fluids when neurological symptoms set in.⁶

Authors' contributions

Johan Frans and Marjan Van Esbroeck conceived the idea for the manuscript. Patrick Vermylen, Maarten Dewil and Luc Dejaegher provided patient data. Leo Heyndrickx acquired the TBEV serology data. Kevin K. Ariën and Marjan Van Esbroeck interpreted the TBEV serology data. Sarah Gils wrote the manuscript. All authors revised the manuscript critically for important intellectual content.

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