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Probable sexual transmission of Zika virus from a vasectomised man

We report a case of probable sexual transmission of Zika virus from a vasectomised man. A couple (a man aged 53 years, who had a vasectomy in 2007, and a woman aged 51 years) travelled to Maldives on Feb 5, 2016, spending 7 days in a diving-boat and 3 days in a non-resort island (Nilandhoo, central province of Maldives), where they experienced mosquito bites. They returned to Madrid on Feb 18, 2016. The couple reported unprotected sexual intercourse on Feb 28, 2016.

The man's symptoms started with fever (38°C), rash, headache, generalised weakness, and myalgias on Feb 21, 2016. Subsequently, he developed arthritis in his ankles and wrists. All these symptoms disappeared on March 1, 2016. On March 6, 2016, his wife's symptoms started with fever (38·5°C), pruriginous macular skin lesions, red eyes, and weakness. 3 days later, she developed arthritis in her ankles, wrists, and knees. These symptoms disappeared on March 14, 2016. Their primary care physician initially saw both patients.

The patients were referred to our travel clinic on March 29, 2016. We tested blood, urine, and semen samples sequentially (appendix). Testing for Zika virus by RT-PCR was positive in the woman's urine sample on day of illness (DOI) 24 and semen (DOI 47, 69, and 96). IgM/IgG (ELISA) were positive for Zika virus at DOI 24 (woman) and at DOI 47 (man). Neutralisation antibody test was indeterminate for Zika virus in the woman (man not tested). Positive semen samples for Zika virus by RT-PCR on DOI 69 and 96 were inoculated onto Vero cell lines for virus isolation (appendix). Only the semen sample from DOI 69 was culture positive.

Only one case has previously been reported of imported Zika virus disease acquired in Maldives.[1] This possibility is important to highlight for clinicians evaluating returned travellers, since many Europeans choose Maldives as their holiday destination.

Although the woman might have acquired Zika virus by mosquito bite, the incubation period if this is the case (18 days after returning from Maldives) would be exceptionally long,[2] so sexual transmission from her partner is definitely a possibility. Sexual transmission of Zika virus infection from a vasectomised man has not previously been reported.

To the best of our knowledge, our male patient has the most prolonged reported detection (69 days) of infectious Zika virus in semen. A previous report[3] communicated persistence of Zika virus RNA in semen 62 days after onset of illness but culture results were not available. Because we were able to detect Zika virus in semen despite a vasectomy, a distal source for Zika virus such as prostrate, seminal vesicles, proximal or distal bulbourethral glands, and pre-ejaculate secretions is possible. In our case, high loads of infectious virus particles were present 69 days after the onset of illness. Public health recommendations to prevent sexual transmission of Zika virus should take these data into consideration and extend duration of time recommended to use protection during intercourse after travelling to endemic area even if the man has had a vasectomy.

See Online for appendix

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Zika virus in semen: lessons from Ebola

The largest Ebola virus disease epidemic in history, the 2014 west African outbreak, left more than 17 000 survivors. Previously, Ebola virus RNA has been detected in semen by RT-PCR up to 101 days and infectious particles via culture up to 82 days after illness onset.[1] As such, all male survivors of Ebola virus disease were advised to abstain from sex or use condoms for 3 months after recovery. In May 2015, genomic and epidemiological data provided