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Peer Review

Review of: "Syphilis: A Review of the Controversies on Its Origins and Research of Its Arrival in Quebec, Canada"

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This review draws attention to the important fact that, although syphilis has been easily treatable since the discovery of penicillin, it has not gone away. Its incidence is increasing across the world, especially among indigenous people and other marginalised populations. The authors hope that it will change the perception of syphilis as a mostly eradicated or well-contained disease. This is an admirable ambition, but the paper would benefit from some additions and clarifications suggested below.

The paper reviews controversies over where syphilis came from, based mainly on the evidence of archaeological studies looking for evidence of syphilis and other treponemal infections in skeletons, and concludes that it originated in the Americas. This conclusion is based on the hypothesis that bone lesions due to syphilis can be distinguished from those due to yaws and bejel, which is not widely accepted (see Baker BJ et al. Advancing the understanding of treponemal disease in the past and present. *Am J Phys Anthropol*. 2020. doi: 10.1002/ajpa.23988). This limitation should be mentioned in the paper. It would also be helpful to explain the origin of the theory that syphilis was brought to Europe by Columbus and his crew, which can be traced to reports of a new disease among the French army besieging Naples in 1494, the year after Columbus returned.

The authors suggest that a mutation occurred in *Treponema pallidum*, which was causing bejel in the Americas, resulting in a new disease called syphilis. This seems unlikely, given that the few strains of *T. pallidum* that have been sequenced from cases of bejel are at least 99.8% identical to those causing syphilis. Many people believe that, given this fact and the clinical similarities between the diseases, yaws, bejel, and syphilis are essentially the same disease, the only difference between them being the way in which they are transmitted (the so-called unitarian hypothesis. See Hudson EH. A unitarian view of treponematosis. Am J Trop Med Hyg 1946; 26: 135-9). Syphilis is transmitted by sexual contact and from

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mother to child, whereas yaws and bejel are transmitted by skin to skin between children. The authors of this paper state that syphilis is propagated via the blood, which would be very unusual.

This review states that there was no clear evidence of treponematosis in Europe before Columbus travelled to the Americas in 1492, but cites a paper reporting that T. *pallidum* was found in remains from the seventh or eighth century unearthed near Marseille. They do not mention sibbens, a disease that was common in poor children in Scotland in the Middle Ages, the clinical features of which were similar to yaws. They say that Jacques Cartier described a case of syphilis in a member of his team in 1536, but it is not clear how Cartier would have made the diagnosis.

Declarations

Potential competing interests: No potential competing interests to declare.