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The historical record is consistent with the recent finding of parvovirus B19 infection of bone marrow in systemic sclerosis patients

Sirs,

Recently Ferri *et al*. have found parvovirus B19 (PVB19) DNA in bone marrow biopsies of 57% of 21 systemic sclerosis (SSc, scleroderma) patients, but 0% of 15 controls (1). This is consistent with their interesting idea (2) that PVB19 may play a role in the etiology of SSc. As Ferri *et al*. note, it is important for other groups to be able to replicate this finding. Until then, and as well, complementary with positive replications, I here point out that the historical record is currently consistent with a role for PVB19 in the pathogenesis of SSc.

The first report of SSc was not until 1753 by Curzio (3) [and even this case has been disputed (4)], and there is a possible case of SS in a 1680 painting (5). Thus, it appears that SSc is a relatively new disease. The absence of evidence is not evidence of absence, of course; in times past there were far fewer patients,physicians, and researchers, and SSc is not a trivial diagnosis. Nevertheless, the relatively late description of this disease is in the very least intriguing. If, in fact, SSc is a new disease, this suggests that at least one of the proposed etiologic agents of SSc (most likely a disease requiring multiple elements to be present for pathogenesis, e.g. genetic + environmental) must also be new. Interestingly, it appears that PVB19 is.

There was no PCR and no Centers for Disease Control in centuries past to track the appearance of a virus but, as I have recently noted (6), the pediatric exanthem erythema infectiosum (EI, "fifth disease"), which is characterized by a "slapped cheek" rash and high infectivity and is now known to be caused by PVB19 (7), can be used to track the antiquity of PVB19. EI, and thus PVB19, appear to be "new" – the first report of a disease consistent with EI did not appear until 1797 (7, 8).

How can a ubiquitous virus such as PVB19 be "new ?" Much work, not without dispute (see ref. 9 and refs. therein), has found that PVB19 may play a role in the pathogenesis of rheumatoid arthritis (RA). From examination of writings, paintings, and the work of Rothschild and colleagues on skeletons (ref. 10 and refs. therein),it appears that RA is quite a new disease in Europe (less than 500 years old), but it has existed in North America for thousands of years. Recently, I have suggested (6) that PVB19 was brought back from the New World to the Old. This time frame for the introduction of PVB19 to Europe (after 1500) is consistent with the current historical record for SSc (and PVB-19).

Besides EI, PVB19 is known to cause aplastic anemia, hydrops fetalis, and fulminant liver failure (11) – more than enough reasons to spur on the development and possible implementation of a PVB19 vaccine. If such a vaccine were put into use, it would help clarify the role of PVB19 in RA and SSc, much as the measles vaccine did for the role of measles in subacute sclerosing panencephalitis. Conversely, further evidence that PVB19 plays an etiologic role in SSc and/or RA would provide increased impetus for vaccine development.

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