

# Myalgia and fatigue after Ross River virus disease

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Could this woman's persistent nonspecific symptoms be attributable to possible infection with Ross River virus a year ago?

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## CASE SCENARIO

Diana was a slim, active, 64-year-old woman who had enjoyed excellent health throughout her life. While on a camping holiday in the northwest of Australia, her companion developed a severe viral illness that was subsequently diagnosed as Ross River fever. A week or so later, Diana developed similar symptoms with fevers, fatigue, joint pains and myalgia. She assumed that she too had Ross River fever and did not seek medical confirmation. Diana's companion was completely recovered within one month.

One year later, Diana is still not well. She has daily muscle pains, a constant feeling of heaviness in her limbs and a residual profound fatigue that has a major impact on her usual activities. What has happened to her immune system?

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## COMMENTARY

Ross River virus (RRV) disease is the result of an arthritogenic alphavirus transmitted to humans by a variety of mosquitoes from a background reservoir in small marsupials and birds. The disease is endemic in parts of northern tropical areas of Australia and some nearby islands. RRV belongs to a family of like viruses found around the world. Of particular importance are the Sindbis and Chikungunya viruses, which are found in areas of Europe, Africa and Asia. Both of these viral illnesses have been diagnosed in Australia in travellers who have visited endemic regions.

Symptoms of Ross River virus disease appear from five to 15 days after the mosquito bite. The infection is frequently sub-clinical, and asymptomatic in possibly 75% of cases. Arthritis, which is often pauciarticular and can affect any joints, is accompanied by a nonspecific rash and fever in only about 30% of patients. The condition was first described in NSW in 1928 as 'an unusual epidemic' but it was recognised as an entity by the Australian indigenous population well beforehand.

Clinical mythology supported by a variety of epidemiological studies gave rise to the widely held belief that RRV disease

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is responsible not only for chronic arthralgias but also for repeated episodes of acute arthritis. This was supported by studies of patients with positive serology, in which patients were given telephone questionnaires covering ongoing rheumatic symptoms and their persistence. Such studies suggested that pain, lethargy, tiredness and similar symptoms continued for more than two years as a direct result of the virus infection.

More recently, two prospective longitudinal Australian studies have shown that the symptoms of acute arthritis resolved in the vast majority of cases by three months from symptom onset. These studies used an inception cohort and clinical examination undertaken by a physician tutored in the recognition of the signs of mild rheumatic disease.<sup>1,2</sup> Those patients who had continuing symptoms had another definable cause for joint pain or underlying symptoms of psychological disturbance such as depression.

Other alphavirus diseases have been examined in detail, with similar findings of self-limiting disease on a background of persisting nonspecific symptoms shown not to be associated with the initiating virus infection.<sup>3,4</sup> Recent laboratory research has, however, shown persistence of viral protein in synovial macrophages, well after symptoms have disappeared. The clinical relevance of this observation is still in doubt.<sup>3</sup>

One other observation is the persistence of IgM antibodies to RRV disease or the associated Barmah Forest fever. This has been noted in patients with prolonged arthritis and arthralgia who on further investigation were found to have rheumatoid arthritis with classic IgM rheumatoid factor. This observation is, however, just as likely to be coincidental.

Acute RRV infection is not regularly associated with an acute phase response, such as raised ESR or CRP, but neither the absence or presence is diagnostic.

In the case scenario described above, an otherwise fit patient

has persistent symptoms 12 months after a possible infection with RRV disease. The review offered here would suggest that RRV disease is an unlikely cause. I would recommend taking a full history, making a careful examination and investigating appropriately to define an accurate diagnosis. Could this be fibromyalgia or chronic fatigue or the beginnings of a more definable syndrome?

The query is made as to whether these persisting nonspecific symptoms of pain and weakness are an indication of immune dysfunction. I can see nothing in this patient's history to suggest immunodeficiency, autoimmune disease or seronegative spondyloarthropathy disease. Although these symptoms are seen in patients with immunological disease, they are nonspecific and do not merit further investigation unless the history or examination provides some indication.

It is important to recognise that RRV disease is a public health issue, in terms of time lost from work and costs of investigation and treatment. Exposure to infected mosquitoes is a definite risk and should be avoided whenever possible. MT

## REFERENCES

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