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Parvovirus B19 infection and myofasciitis

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Introduction

The main clinical feature of human parvovirus B19 (B19) infection in infants is erythema infectiosum [1]. However, the association of B19 with connective tissue diseases has been reported with increasing frequency in both adults and children [2]. We describe here a patient with myofasciitis that occurred following acute B19 infection.

Case report

A 36-year-old man was admitted to our hospital on 20 April 2002 with severe myalgia and weakness of both lower extremities. His 6-year-old son had been diagnosed as having erythema infectiosum and treated as an outpatient a month before. His wife also presented with a febrile illness and rash at the same time. Ten days before admission he developed a skin rash and myalgia of the lower extremities which was rapidly worsening. On admission he could not walk by himself owing to the myalgia and muscle weakness in both legs. On presentation, he was afebrile without lymphadenopathy or hepatosplenomegaly. Neither joint swelling nor skin eruptions were observed. The muscles of both his lower extremities were swollen and tender. Neurological examination was unremarkable except for the muscle weakness in both legs due to the severe pain. Magnetic resonance imaging (MRI) on admission showed an increased signal in the muscles and fascia of both soleus and gastrocnemius muscles (Fig. 1). Laboratory data on admission showed no abnormal findings except slightly elevated levels of CRP (0.98 mg/dl). Serum levels of CPK (70U/l) and aldolase (3.6U/l) were normal and antinuclear and anti-Jo-1 antibodies were not detected. Parvovirus B19 IgM antibodies were markedly elevated

(3.3 EIU/ml, <0.80). The association of acute B19 infection with focal myofasciitis was strongly suggested. After admission, his myalgia was improved with the use of NSAIDs (loxoprofen sodium 180 mg 3 times/day) and bed rest for 2 weeks. Two months later the elevated IgM antibodies to B19 had declined to within normal levels.

Discussion

Acute B19 infection in childhood is classically associated with a variety of clinical syndromes, including erythema infectiosum, arthropathy, and hemolytic anemia [1]. In adults, evidence indicating B19 virus in the causation of rheumatic diseases has been conflicting; however, a significant number of reports have suggested that B19 infection triggers the onset of rheumatic diseases [2]. The history and laboratory findings of this patient demonstrated that acute B19 infection preceded the symptomatic onset of myofasciitis. Muscle involvement is occasionally seen in acute B19 infection, and cases of juvenile dermatomyositis and SLE overlapping myositis after B19 infection have been reported [3, 4]. The association of B19 infection and vasculitis has also been demonstrated previously [5]. The presentation of muscle weakness in the lower extremities and gait disturbance in this case resembles the symptoms of polymyositis and vasculitis. In our case, clinical manifestations and serological findings indicated that muscle enzymes were not elevated and that there was no evidence of SLE, dermatomyositis or vasculitis. Also, no additional features of these diseases were seen and no specific autoantibody was detected in this patient. Although the definite autoimmune mechanism was not identified, B19 infection-mediated aberrant host responses seem to be responsible for the pathogenic role of myofasciitis in this case. It has been shown that B19 non-structural proteins induce cytopathic effects on the infected cells [6] and inflammatory cytokine production [7]. It is probable that the muscle damage was not only directly caused by the parvovirus, but also by a yet-undefined aberrant host immune response triggered by parvovirus. This case illustrates that parvovirus B19 infection should be added

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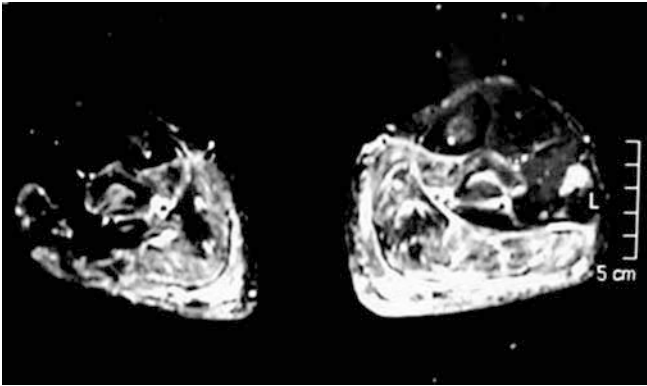


Fig. 1 MRI (T₂-weighted image) findings of the lower leg muscles on admission. Both lower leg muscles showed an increased signal around soleus and gastrocnemius muscles, and the swelling of the fascia of these muscles

to the differential diagnosis of patients having myofasciitis with unusual features. Further investigation is needed to elucidate the mechanisms leading to the altered responses to B19 infection and myofasciitis in a part of the infected host.

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