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Case Report
Benign acute myositis associated with H1N1 (swine flu)

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Abstract
This case report presents a diagnosis of acute benign viral myositis associated with swine flu in a 16 year old boy. Clinically presenting as acute onset paraparesis with calf muscle and hamstring muscles tenderness, preceded by fever and runny nose 2 days before presentation. Clinical features and laboratory findings were similar to previous reports of benign acute myositis induced by H1N1 as well as seasonal flu. Patient recovered within 4 days without recurrences and discharged.

Keywords: H1N1, Viral myositis, Paraparesis

Introduction
Acute benign viral myositis is a rare presentation of swine flu. It presents as sudden onset weakness of muscles associated with muscle tenderness. It may present in any age group but more common in children. Usually the illness is preceded by constitutional symptoms like runny nose, cough, fever etc. It is usually a self limiting illness having recovery within a period of about one week without the need of any treatment. In the current outbreak of swine flu, acute benign myositis should be suspected in such patients avoiding unnecessary studies.

This process is commonly associated with influenza B and occasionally with Influenza A virus [1,8,9]. Here we report a case of 16 years old boy having benign acute myositis associated with Influenza A virus infection.

Case report
A 16 years old boy presented to our hospital with 1 day history of inability to walk. On examination he was having tenderness of calf muscles. Power in both lower limbs was 2/5. Sensations were absolutely normal. Laboratory investigations revealed Hb, WBCs, platelets, liver and renal functions within normal limits.

Serum CPK (Creatinine phosphokinase) level was 1790.2 U/L (normal limits for males 24-195 U/L at temp 37C). Serum CPK level was repeated after 6 days and found to be 78.2U/L.

Swine flu test on nasopharyngeal swab came to be positive for swine flu (H1N1-Influenza A) by taqman real time polymerase chain reaction.

Patient gives history of fever and coryza 2days before onset of paraparesis.

Patient recovered from the illness within a period of 4 days with normal power and

gait. Patient was discharged from the hospital on 6th day and on follow up examination after 15 days and 6 weeks, no abnormality was found.

Discussion

The first report of "Myalgia Cruris Epidémica" by Lundberg [7] described a clinical entity that affects children, especially boys, with a sudden onset of calf pain that causes difficulty to walk and increased levels of serum CPK. It had rarely been seen in adults and was followed by a rapid and total recovery in the next few weeks. Later on, it was clearly associated with influenza B infection [9], although in a report covering five patients, similar incidence of benign acute myositis has been found in cases associated with influenza B, as well as influenza A virus [1]. During the recent outbreak of a novel variant of influenza A virus (H1N1) we have observed a patient of benign acute myositis. He showed the classical symptoms of painful muscle tenderness specifically localized at the gastrocnemius–soleus muscles and was unable to walk by themselves. The gait was abnormal, but we could not find any of the typical gaits described [8].

Laboratory values matched those of previous reports, showing a transient increase of CPK serum levels.

Although the presence of rhabdomyolysis has been reported in severe cases [3], we have not observed it, and checking myoglobinuria in urine sample of patient by dipstick was ruled out.

We have not performed other studies as electromyography or biopsies in our patient given the typical benign acute myositis symptoms at the onset, the good evolution observed in our patient, and the unspecific findings reported for these studies in similar cases [8]. In our patient, clinical and biochemical controls after the onset revealed a benign course that has allowed managing them safely with a total recovery and without recurrences observed.

Nowadays, the pathogenesis of benign acute myositis remains unclear, but because the H1N1 variant belongs to the influenza virus group [10], it could be hypothesized that they both could share the same pathways to produce myositis. Due to the absence of muscle deposits of immunoglobulin and complement, it has been suggested that myositis may be due to direct muscle viral infection [11]. This hypothesis has been reinforced by the descriptions of myxovirus-like particles that have been observed by electron microscopy in a muscle biopsy from a patient with benign acute myositis [5] and in another muscle biopsy of a patient that was positive for influenza B[4]. Difficulty to recover virus from affected muscles could be related with a non-permissive infection that does not produce progeny virions[2]. However, given their prevalence in children, it could simply reflect an age related response to a viral infection that could be explained by the increased tropism towards immature muscle cells, which has been reported for influenza virus in experimental studies with animals [12]. Furthermore, the possibility that own virus would act as a trigger in children genetically predisposed or with an as-yet unknown underlying metabolic defect [8] has also been emphasized.

As it has been demonstrated, influenza viruses, variant H1N1 as well, can produce a variety of muscle disorders, especially benign acute myositis. That is why, in the current H1N1 influenza virus pandemic, the benign acute myositis diagnosis must be suspected in those children with flu symptoms and difficulty to walk, taking this into account might help avoiding unnecessary studies and therapies.

Further viral studies in future cases may be necessary for a better understanding of the real pathogenesis related to this syndrome.

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