Benign Acute Childhood Myositis (BACM) – Two Incidents in the Same Patient

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In February 2015, an almost 7-year-old-girl suddenly developed severe intense pain in both calf muscles. The pain was so intense that walking was only possible when she walked on her heels, but only for few meters. Few days earlier she had fever (38.5°C), nausea, sore throat and a running nose. She developed erythema infectiosum with characteristic cutaneous manifestations. Creatine kinase (CK) was significantly elevated (CK: 3,197 U/l (33–200 U/l)). Symptoms lasted for 3–4 days and then the symptoms including pain and ability to walk gradually improved and finally normalized. She was diagnosed with benign acute childhood myositis (BACM) induced by Parvovirus infection B19. Approximately 2 years later she developed another incident of BACM. This time she had a positive test for Hemophilus Influenza Type B.

Key words: Wegener's granulomatosis, cutaneous findings, case report, vasculitis, diabetes.

Introduction

Benign acute childhood myositis was first described in the litterature in 1957 by Lundberg as " Myalgia Cruris Epidemica " (1). The condition is primarily seen in childhood, and especially in boys in the first months of the year with sudden development of intense bilateral pain in the calfs followed by difficulty in walking (2). Symptoms will typically disappear within a few days (3), but often causes considerable concern and fear in the family. The aetiological agent is a virus and mostly influenza A and B. In this case report we describe 2 incidents of BACM in the same patient induced by Parvovirus B19 and Hemophilus Influenza B respectively – occurring 2 years apart.

Case Report

An almost 7-year-old-girl, previously healthy, apart from mild atopic dermatitis, suddenly developed severe intense pain in both of her calf. The pain was so intense that walking was only possible when she walked on her heels, and only for a few meters. Few days earlier she had fever (38.5°C), nausea, sore throat and a running nose. The patient developed erythema infectiosum with erythema on the cheeks and perioral paleness lasting approximately 3 days. During the same period of time a truncal reticulate exanthema developed – eventually

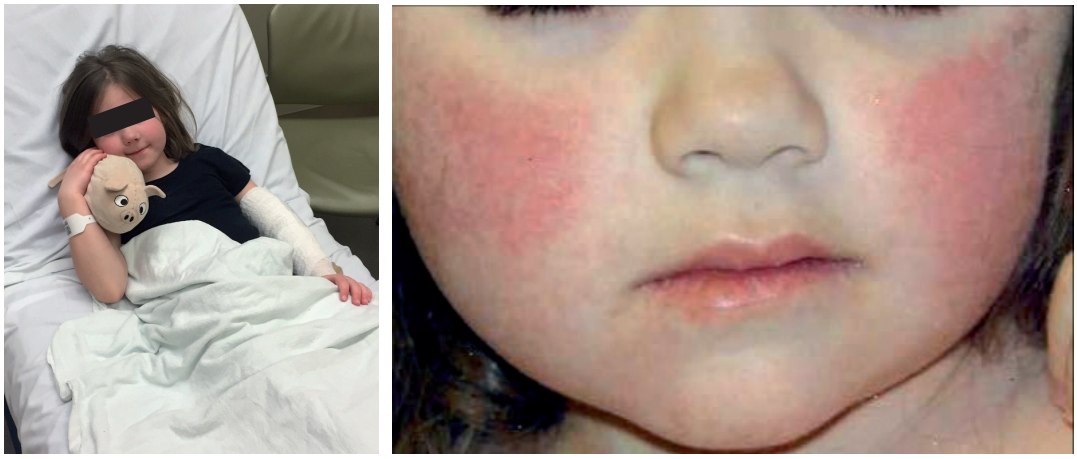

Fig. 1. The patient developed erythema infectiosum with erythema on the cheeks and perioral paleness lasting approximately 3 days.

also affecting the extremities. It disappeared after 2–3 days. The exanthema worsened by heat exposure. The cutaneous manifestations were characteristic for an infection caused by Parvovirus B19. There was no family history of neuromuscular diseases. The child had followed the normal vaccination programme according to the recommendation for children in Denmark. The family was 3 weeks earlier in Dubai and the same year in Israel but without any signs of disease. The child had no previous trauma(-s) and no extremely physical activities or any other symptoms from the lower extremities. There was no history of anuria or discoloration of the urine. The pediatrician who performed the physical examination found no signs of any trauma of the lower extremities. Neurological examination showed normal sensitivity, normal reflexes and normal strength of all muscle groups in the lower extremities. Bilateral pain by palpation of the mm. gastrocnemii and mm solei was found, without any other signs of abnormality. Blood test showed significant elevated creatine kinase (CK): 3,197 U/l (33–200 U/l), but normal myoglobulin. Aspartate aminotransferase (AST) was 179 U/l (15–37 U/l) and C-reactive protein (CRP) normal (<0.20 mg/l). Potassium 5,5 mmol/l (3.5–5.1 mmol/l). Urine analysis normal, especially no myoglobinuria or hematuria. Throat – and nose swabs were normal. Blood tests were negative for Hemophilus Influenza A and B. Tests for adenovirus, enterovirus, RSV-virus and mycoplasma pneumonia were all negative.

The pain in both calfs disappeared completely 3 days after start. The patient was treated with low dosage of NSAID and paracetamol. The child was recommended rest and intake of lots of water. During the whole period the child had normal frequency of urination and no discolouration. Day 3 after the first blood test a reduction of CK (1,550 U/l) was observed.

Two years later, in January 2017, the child developed a new incident of BACM with the same neulogical symptoms and significant increase of CK (3,317 U/l). Myoglobulin was normal. This time she was diagnosed with Influenza type B as being the cause of BACM. In between the two described incidents she had multiple attacks with involuntary tics. Neurological physical examination was normal and EEG showed no abnormality.

Discussion

It is unknown if BACM is caused by a virus itself or by the immunological response to the virus. Maybe the condition develops in early childhood as a age-related response to a virus infection. Why it is more common in boys is unknown. Theories suggest a genetic predisposition or an unknown metabolic defect. The diagnosis of BACM is based on pain in both calf muscles, normal strenght of the muscles, intact reflexes, and increased CK.

The etiology of developing BACM is a virus and most commonly Hemophilus Influenzae A or B. Other infectious agents described in case reports are: Parainfluenza, Enterovirus, Adenovirus, Measles, Parotitis or Mycoplasma Pneumoniae (3). Often the pain develops after resting and sleep. (4). The majority of patients with BACM have significantly increased CK (5). In previous reports we only found a few case reports describing histology showing segmental rhabdomyolysis and/or moderate muscle necrosis with interstitial inflammation (6, 7).

This case report describes a rarely seen Parvovirus B19 induced BACM followed 2 years later by a Hemophilus Influenzae Type B induced BACM in a girl.

Conclusion

BACM is described in literature as a benign rarely seen condition – perhaps it`s not – but just underdiagnosed. Early recognition of the disease avoids unnecessary diagnostic and therapeutic interventions. We suggest that better awareness of this condition (BACM) can ensure an earlier diagnosis and rule out other neurological diseases, which often causes unnecessary concern and fear in the patient and the family.

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