

Case Report

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Antibiotics induced lactase deficiency as cause for abdominal involuntary movements

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Case presentation

A rare condition is temporary but recurrent onset of involuntary motion sequences in the abdominal region. They demands for an extensive diagnostic workup. Therapeutic options are limited. The successful treatment of this spinal myoclonus or abdominal involuntary movements resembling syndrome prompted this report.

At admission, the 52 years old female patient reported onset of "Abdominal Convulsions" for four months. She reported that initially she was diagnosed with a *Helicobacter pylori* infection after complaining a gastrointestinal pain syndrome. Then antibiotic therapy with amoxicillin and clarithromycin was started in combination with the proton pump inhibitor omeprazole. On the second day of this treatment regime, she developed recur-

rent onset of diarrhea and initial temporary spinal myoclonus in the abdominal region. Since that time she also experienced transient "Attacks" with sudden onset of agitation, drowsiness, sweaty and tremulous hands. Following neurologic consultation, a supplementary antidepressant therapy with initially 30 mg mirtazapine and then 10 mg escitalopram was additionally started. Three months later, routine control showed persistent *Helicobacter pylori* infection. Again, she received the same antibiotic therapy regimen. Now abdominal involuntary motions were present during the whole day and mostly during sleep. The patient was desperate, took occasionally the benzodiazepine lorazepam in daily dosages up to 4 mg and was worried about considerable limitations of quality of life. In our department,

MRI scan of the brain and the whole spinal cord and extensive neurophysiologic examinations showed no abnormalities. Only electromyography described an alternating myoclonus like activity in abdominal muscles (Supplementary video part 1). We excluded vitamin deficiency, metabolic and hormonal dysfunction, peripheral and central infection. Oral respectively intravenous application of valproic acid, primidon, piracetam, carbamazepine, gabapentin, tizanidine did not improve her condition. Then she stopped intake of all centrally acting prescribed compounds. She started administration of a commercially available lactase containing compound in combination with a diet for lactose intolerance, which is exclusion of milk essentially. Within days the abdominal involuntary movements stopped (Supplementary video part 2). Additionally she started a cautious intake of probiotic lactose free yoghurt cultures [1]. Within weeks she could reduce and then stop her lactase supplementation. She observed no resurgence of her abdominal motions and “Attacks”, to date.

Antibiotics may damage gastrointestinal membranes, where the enzyme lactase is located on the surface of the cells lining the small intestine [2]. This enzyme splits lactose into glucose and galactose. Lactose is a large sugar molecule that is made up of two smaller sugars, glucose and galactose. In order for lactose to be absorbed from the intestine and into the body, it must first be split into glucose and galactose. Glucose and galactose are then absorbed by the cells lining the small intestine. Lactose intolerance is caused by reduced or absent activity of lactase that prevents the splitting of lactose. This lactase deficiency may occur for one of three reasons, congenital, developmental or secondary for instance as a result of application of antibiotics. Clinical symptoms are mostly nausea, diarrhea, gas, bloating, and abdominal cramps. These symptoms are typically mild in the majority of individuals. However, some patients can experience symptoms that are more severe, dyskinesia like symptoms [3].

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