Unusual presentation of Coxsackie B Rhabdomyolysis: Case Report and Literature Review

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Introduction: Coxsackie virus infections occur throughout the year, but have an increased in the summer and fall (1). It is often self-limited and resolves with only symptomatic treatment, but the virus has been linked to rhabdomyolysis in case reports. Though the exact mechanism of viral rhabdomyolysis is still unknown, the end result is destruction of myocytes and the release of toxins into the circulation (2, 3). The results of rhabdomyolysis can be limited to myalgia or can be severe enough to require dialysis (2,4). It is therefore important to recognize viral causes
to this diagnosis so as to treat it before the patient has lasting effects. Here, we present the case of an adult male with diffuse myalgia who was diagnosed with rhabdomyolysis with serologically positive Coxsackie B virus.

**Case Report:** Patient is a 36 year old Caucasian male with PMH of Hepatitis C untreated, seizure disorder, and who presented to the University Hospital ED with complaints of progressively worsening diffuse myalgia with nausea/vomiting, pain with urination, and hematuria x 1 week. He came to the ED just a few days earlier with similar complaints and was treated with pain medication for nephrolithiasis per CT that showed a punctate nonobstructing right renal calculus. He described the pain as “being hit by a bat all over,” worsened by activity, and slightly relieved with pain medication. The myalgia had originally been intermittent, but had recently become constant. He also reported having black tarry stool x 1 week and dizziness on standing. He had pain in the center of his chest with coughing and vomiting, palpitations for 3-4 days, chills, night sweats and numbness in his feet for 2 days. He denied fevers. He also reported worsening scrotal and penile pain x 1 week with no associated rash or swelling. He had not had a seizure in many years. Patient had not taken any medications for many months. Patient had recently moved to Columbia from the state of California and had been camping, but denied bites from insects or animals.

On admission, the patient had normal vital signs. On physical exam, the patient was obese and in mild distress due to pain. The exam was significant for diffuse tenderness to palpation of the chest, abdomen, penis, and scrotum. Digital rectal exam showed a boggy and tender prostate.

His complete blood count was within normal limits on both admission and during the course of his admission. Complete metabolic panel was within normal limits, but he had a mildly elevated lipase (66 units/L) with a normal amylase (99 unit/L). Urinalysis was significant for greater than 30 RBC/hpf and an elevated specific gravity at greater than 1.030. Urine drug screen was negative except for opiates, which he had been prescribed in the ER a few days ago. Lactic acid, PSA and TSH were normal. His CT abdomen showed partial small bowel obstruction ileus, sigmoid diverticulosis, right nonobstructing renal calculus, and calcifications within the prostate. Scrotal U/S was significant for nonspecific small bilateral hydroceles and findings suggestive of prior epididymitis.

He remained afebrile for the duration of his inpatient stay. His specific gravity normalized after IV hydration with normal saline. He was started on Levaquin 500mg PO qday x 30 days for prostatitis. On hospital day 4, CK was found to be elevated at 857 unit/L and reached a high of 2700 unit/L. CK-MB was within normal limits (4.8ng/mL). Aldolase was elevated at 10.9 unit/L. The patient was started on IVF, and CK was trended down to 1264 unit/L at discharge. Basic metabolic panels were ordered approximately every other day and all values were within normal limits. He was started on doxycycline 100mg BID for a working diagnosis of tick-borne illness until the return of labs, but the patient had a rash reaction to the drug. Doxycycline was discontinued. During work up of his nonspecific abdominal pain, the patient was found to be negative or within normal limits for all of the following: CMV (IgG and IgM), Lyme disease, Francisella tularensis (IgG and IgM), Leptospira Ab, EBC (IgG and IgM) Erlichia (IgG and IgM), RMSF, HIV, RPR, Gonorrhea and Chlamydia. Patient was positive for elevated titers to Coxsackie virus B 1-5. Urine myoglobin and FOBT were negative. Urine culture had no growth.
concerning for UTI, and blood cultures returned with 1 of 2 positive for Micrococcus luteus/lylae, a contaminant. He was discharged home with pain medication, Levaquin, and tamsulosin with diagnoses of prostatitis and Coxsackie virus rhabdomyolysis. He was lost to follow-up with his primary care doctor for rhabdomyolysis and urology for hematuria work-up/prostatitis.

Discussion:

Rhabdomyolysis in adults is commonly due to illicit drug use, alcohol abuse, medical drugs, muscle disease, trauma, seizures, and immobility. However, it can also be caused by infection, as was the case in our patient. Bacterial, fungal, protozoan, and viral myositis can all lead to rhabdomyolysis if severe (1). Though influenza is the most common cause of rhabdomyolysis, it is not the only virus capable of causing muscle damage (5). Enteroviruses, including Coxsackie and ECHO viruses, have been implicated multiple times in case reports along with HIV, Ebstein-Barr virus, cytomegalovirus, and varicella-zoster virus to name a few (1). Our patient tested positive for Coxsackie virus B 1-5, and his few day history of chills and night sweats before presentation to the ER might have been the prodrome of the infection. He also had the appropriate fourfold increase in titer that suggests acute infection (6). Coxsackie virus has been named a culprit in rhabdomyolysis cases in a wide range of ages. Treatment is geared toward symptom control, and patients often fully recover with aggressive intravenous hydration (3, 5). However, serious complications can arise, and clinicians should be wary. There have been documented cases of rhabdomyolysis severe enough to result in compartment syndrome and acute tubular necrosis requiring hemodialysis (2, 4). Rhabdomyolysis can also result in electrolyte abnormalities and cardiac arrhythmias (3). A recognized clinical condition caused by Coxsackie virus B, in addition to rhabdomyolysis, is pleurodynia syndrome (aka- the Devil’s grip): this infectious myositis syndrome consists of paroxysmal, sharp, thoracic and upper abdominal pain with tender chostochondral muscles (5, 6). Viral myositis does not often progress to rhabdomyolysis, but clinicians should be alert if the myalgia/myositis persists for an extended amount of time or if the severity increases. Our patient had muscular chest and abdominal pain, but the tenderness expanded to just above his thighs. Our patient may have possibly had a component of pleurodynia syndrome, though it is often found in children. This patient also had prostatitis that further complicated his diagnosis. Though the patient denies history of prostatitis, his prostatic calcifications may be an indication of chronic inflammation. Chronic pelvic pain syndrome has been studied in patients with chronic prostatitis, and abdominal pain/pelvic tenderness was noted in half the patients in one study (7).

Conclusion:

Our patient presented with physical exam and lab findings significant for chest, abdominal, and pelvic tenderness, an elevated CK, positive Coxsackie virus B serology, and prostatitis. Overall, rhabdomyolysis is the most likely cause for the patient’s diffuse myalgia, especially when considered in conjunction with his elevated CK, and his prostatitis was an additional, though unrelated, diagnosis. Viral myositis is a known cause of rhabdomyolysis, but it can be easily overlooked in a patient. It is a clinical diagnosis that may not always be confirmed with positive viral serology. The severity of rhabdomyolysis also varies from patient to patient; in some patients, CK values of 250,000 unit/L was enough to cause renal failure, but another case with a
CK of 600,000 unit/L had no renal dysfunction (2, 3). Therefore, viral rhabdomyolysis is a diagnosis that needs to be made early and treated aggressively with intravenous fluids due to its unpredictable nature in causing serious complications.

References:


A Case Series On Fixed Drug Eruptions

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Patient #1: A 60 year old male truck driver with a history of recurrent skin boils presented with painful lesions on the glans penis that started a few days prior. A week ago he was treated with co-trimoxazole for skin abscesses on the left leg. The penile lesions were noted as vesicular eruptions that eventually coalesced and there was absence of discharge, scrotal involvement, or lymphadenopathy. He reported a similar episode one year ago following a course of co-