EXERTIONAL RHABDOMYOLYSIS IN 8 DIVISION I FEMALE LACROSSE ATHLETES
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Objective: To present the unique case of 8 female athletes on the same team (age = 19.38 ± 1.41 years) who were concurrently diagnosed with exertional rhabdomyolysis (ER).

Background: Exertional rhabdomyolysis (ER) is a serious complication of exercise, which may result in death. Most cases of ER in athletes are underreported. The athletes performed 3 sets of 20 biceps curls with a 15-pound load in each hand during the first training session of the year. Twenty-four hours following the workout, athletes reported to the athletic training room complaining of muscle pain, tenderness, slight swelling, and severe tightness of the biceps brachii. The athletes were referred to the team physician for immediate follow-up. Blood tests and urinalyses were performed, with an emphasis on detecting serum creatine kinase (CK) levels, the most reliable diagnostic indicator for ER.

Differential Diagnosis: Exertional rhabdomyolysis, delayed onset muscle soreness, muscle strain

Treatment: Diagnostic testing was carried out and revealed abnormally high maximal levels of CK (13244 ± 9073 U/L), ranging from 4287 to 28247 U/L among the athletes. Normal values for CK typically range from 22 – 198 U/L. The athletes were restricted from participation until their serum CK returned to normal levels. Treatment included aggressive intravenous saline infusions to prevent acute renal complications and restriction from sports participation. After 9 days, all the athletes had returned to physical activity, with close monitoring of their upper-body training regimen. Three weeks post-injury, all 8 athletes had returned to full participation to physical activity and unrestricted weight training. There were no detrimental complications as a result of ER in any of the athletes.

Uniqueness: This case is unique given that 8 athletes on the same team developed ER. As certified athletic trainers, ER is often overlooked or underreported unless it has progressed to a dangerous state. Exertional rhabdomyolysis can be a fatal condition if not immediately recognized or safely managed. Certified athletic trainers must be able to recognize the presentation of ER and be prepared to refer these athletes to the appropriate medical professional for prompt medical follow-up care.

Conclusions: Exertional rhabdomyolysis presents as a harmless side effect of strength training that appears to manifest itself as delayed onset muscle soreness. Exertional rhabdomyolysis may have fatally catastrophic consequences if not appropriately managed.

Keywords: lacrosse injury, muscle soreness, strength training