Polycystic Kidney Disease in a Collegiate Track Athlete: A Case Study

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Purpose

The purpose of this study is to discuss proper diagnosis, treatment, and complications of polycystic kidney disease in a collegiate track athlete. Polycystic kidney disease is an inherited disease which causes a cluster of cysts to form on the kidneys. If left untreated could cause the kidneys to enlarge and lead to failure.

Diagnosis

The original differential diagnosis was possible heart condition or brain involvement. Specific testing ruled out their involvement. Diagnostic imaging concluded the involvement of the kidneys and the present diagnosis of polycystic kidney disease.

Treatment

Treatment was oral medication (Norvasc, 5mg) to manage his blood pressure and dietary changes to slow the progress of the disease.

History

The athlete is a 21-year-old collegiate track runner first experiencing symptoms January 29, 2016. The athlete felt light headedness but thought it was typical post practice fatigue. The athlete was competing in a 400-meter race and felt normal post-race fatigue that escalated to light headedness and tunnel vision. He laid down and 30 minutes post-race he still felt the symptoms. 45 minutes later symptoms were still present with a pulse of 110bpm. The following Monday his blood pressure was taken at rest at 160/90 which led to a referral to the team doctor. A blood screen was ordered with negative results which led to a 2D echocardiogram due to persisting symptoms. Findings were unremarkable which led to an MRI order on February 18. Small white matter lesions in the bifrontal periventricular region were identified. Due to lesions, a neurologist was consulted to rule out brain involvement. Unremarkable findings from the neurologist led to diagnostic ultrasound imaging of the kidneys on March 2. Both kidneys presented with multiple anechoic lesions which is consistent with polycystic kidney disease. His right kidney measured at 11.9cm with a 1.8 cm cyst while the left kidney measured at 11.4cm with a 1.9cm cyst. Due to the findings a nephrologist referral was recommended in November. Until the nephrologist visit, self-monitoring of his blood pressure was recommended to be 140/85 during track preseason. In season his blood pressure inflated to 169/99 which led the nephrologist to prescribe medication to stabilize. No further problems post medication occurred and a follow up appointment in June of 2017 showed no advancement of the condition.

Uniqueness

Polycystic kidney disease is typically a genetic condition. The athletes mother and maternal grandmother are both carriers of the disease as well which increased his chance of obtaining by 50%. The uniqueness is the disease beginning at 19 years of age compared to the average 30-year-old for such a condition.

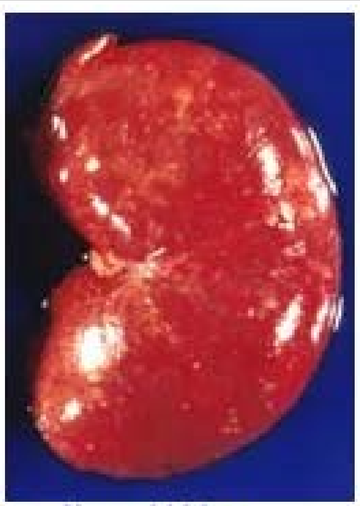
Conclusion

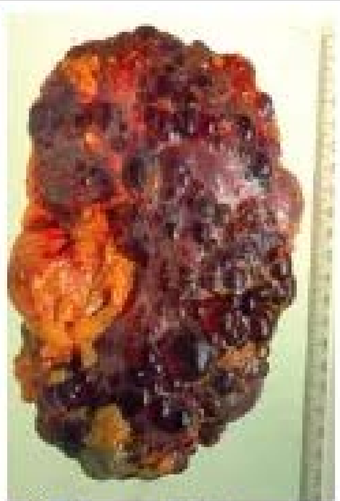
Polycystic kidney disease is a slow progressive disease rarely seen in college aged athletes. Athletic trainers can use this case to aid in the recognition and diagnosis of this condition.

References

Dr. Russell Pikus, MD
Dr. Aaron Watters, MD
Dr. Joseph Mattox, MD
Jordan Redding, MS, LAT, ATC
Jeff Beer, MA, LAT, ATC

Images


Normal kidney


Polycystic kidney