A Rare Case of Anomalous Left Coronary Artery from Right Cusp in a Young Athlete

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Introduction

- Anomalous Left Coronary Artery from the Right Cusp (ALCA-R) is a rare congenital anomaly, categorized under Anomalous Aortic Origin of Coronary Arteries (AAOCA).
- AAOCA occurs in around 0.4 to 0.8% of the population.
- ALCA is 3 to 8 times less common than an Anomalous Right Coronary Artery (ARCA).
- Athletes with ALCA-R have a higher risk of sudden cardiac arrest, especially during high-intensity physical activities.
- Early detection through comprehensive cardiac screening in secondary schools is very important, as many affected athletes are seen as asymptomatic without cardiac issues until a critical event occurs.

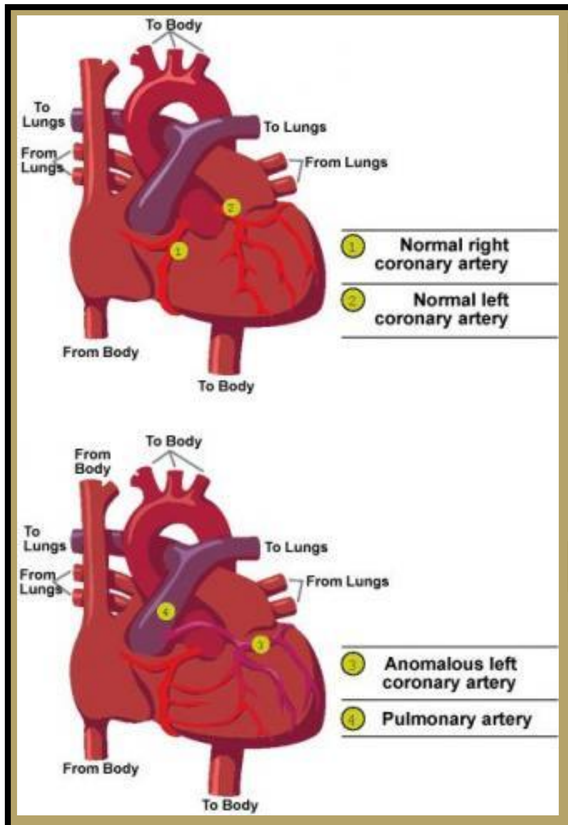
Purpose

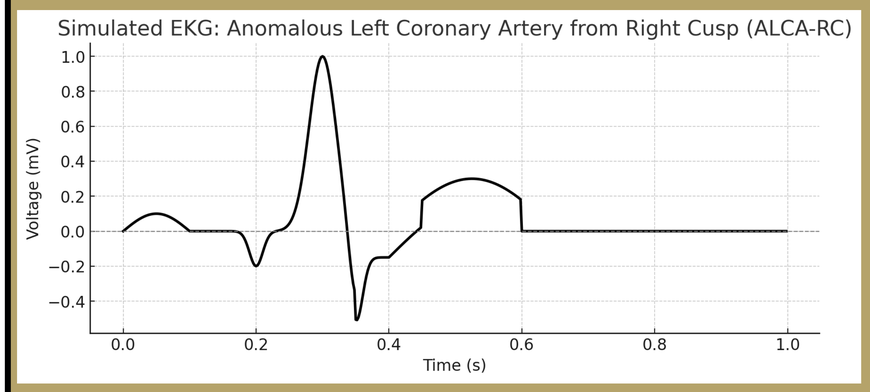
- This case report aims to raise awareness of Anomalous Left Coronary Artery from the Right Cusp through more in-depth preparticipation exams for cardiovascular conditions and highlights the need for further educational studies within the secondary school setting.

Objective Statement

After the information presented listeners will gain:

- An increased awareness of Anomalous Left Coronary Artery from the Right Cusp (ALCA-R).
- Emphasis on limitation regarding the current PPE in place and how standard protocols fail at detecting life-threatening heart conditions.
- The importance of incorporating advanced cardiac assessments into standard screening practices to improve early detection.
- Recommendations for educational outreach and policy changes in secondary schools to support consistent, in-depth cardiovascular evaluations and protect young athletes.





Above is not the athlete's EKG

Statistics

- AAOCA has a prevalence of 0.4 to 0.8%.
- Maron and Brothers calculated the cumulative risk of death for those aged 15 to 35 years old in sports to be 6.3% for L-AAOCA.
- AAOCA has a risk of Sudden Cardiac Arrest (SCA) and ischemia.
- SCA risk is higher in athletes aged 12-22 years old due to sports participation.
- Surgery can be performed to reduce the risk of SCA and ischemic symptoms.
- Hypertrophic Cardiomyopathy (HCM) is the number one common cause of Sudden Cardiac Death (SCD) in young athletes
- Males are more likely involved in SCD

For more information

Please visit:

- C.S. Mott Children's Hospital – Congenital Heart Center
- Children's Hospital of Philadelphia

Links Provided in the references.

Acknowledgements

- I would like to thank the parents, coaches, athletic trainers and secondary school for their vulnerability and contributions to this case study.

References

Outcomes

- The research conducted aims to raise awareness of cardiovascular conditions in young athletes, specifically in the secondary school setting.
- There is a high need to improve evaluation protocols to enhance early detection and prevention of serious cardiac events.
- Despite following the Preparticipation Physical Evaluation (PPE) protocols, gaps in the standard of care still exist in Missouri and other states.
- Allowing chiropractors (DCs) to conduct PPEs can limit the depth of cardiovascular assessments compared to those done by physicians or cardiologists.

Discussion

- This case report emphasizes the need for more comprehensive cardiac screenings in the secondary setting to help identify rare, but serious conditions like AAOCA.
- Collegiate athletes receive more thorough cardiac evaluations due to increased intensity and demands of competition compared to secondary schools.
- The lack of screening practices may leave younger athletes vulnerable to undiagnosed cardiac conditions and sudden cardiac arrest during physical activity.
- Implementing in-depth, standardized cardiac screening protocols in secondary schools could improve early detection, raise awareness and ensure equal care across every sports level.
- EKGs are not currently required during PPEs in secondary schools, unless a cardiac red flag is noted, but EKGs are effective in detecting AAOCA, this highlights the need to make them a standard part of the PPE protocol.

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