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Clinical features and analysis of the misdiagnosis of anomalous origin of the left coronary artery from the pulmonary artery in children

Background

Anomalous left coronary artery from the pulmonary artery(ALCAPA) is a rare congenital cardiovascular malformation. The main manifestations are non-specific and prone to misdiagnose. Without active treatment, the prognosis is poor. The study summarized the clinical characteristics of ALCAPA in children, analyzed the causes of misdiagnosis, and aimed to improve the rate of accurate initial diagnosis.

Methods

We retrospectively analyzed 19 children diagnosed with ALCAPA at the Children's Hospital of Chongqing Medical University between December 2012 and July 2022. Diagnosed was established by color Doppler echocardiography, digital subtraction angiography(DSA), or confirmed intraoperatively. Patients were categorized into infant(≤ 1 year) and child(>1 year) groups. Clinical characteristics, and causes of misdiagnosis were summarized and analyzed.

Results

Fourteen of the 19 patients(73.68%) were misdiagnosed at their initial echocardiographic examination. The correct diagnosis was subsequently confirmed through repeat echocardiography or DSA. Clinical features differed between infant and child groups.

Conclusion

Electrocardiogram can provide valuable diagnostic clues for ALCAPA. Echocardiography remains a primary diagnostic tool, but it is also the most frequent source of misdiagnosis. Comprehensively evaluation combining clinical manifestations with multiple auxiliary examinations is essential to reduce misdiagnosis errors and improve the accuracy of first-time diagnosis.

Keywords: Anomalous origin of the left coronary artery from the pulmonary artery, electrocardiogram, echocardiography, misdiagnosis