P-226

Coronary arteries originating from the opposite coronary cusp: diagnosis and long term outcome.

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Coronary arteries originating from the opposite coronary cusp with inter arterial coursing may cause sudden death in children and young adults during exercice..
This study was to review the clinical and echoDoppler data of patients diagnosed with isolated coronary arteries originating from the opposite coronary cusp.
Material and Methods: Functional symptoms, coronary anatomy, treatment and survival were reviewed.
Results: 28 patients, 17 males and 11 females, were included in the study. Age at diagnosis was 3 days to 76.2 years (mean 21.2y , median 11y) : Seven had no symptom (including 1 neonate and 1 heart transplanted patient), 21 experienced symptoms at exercise: ressucited sudden death (1), myocardial necrosis (1), syncopes (2) chest pain episodes (7), chest pain and lipothymia (5), , near-miss (2), pulmonary edema (2), tachycardia (2).
All patients had careful echoDoppler study and colour Doppler analysis was critical to assess coronary artery blood flow and detect interarterial course (first diagnosis was made prior to 2Decho, either by CTscan in 5 cases or angiography in 3): 12 had RCA arising from left coronary sinus, 10 LCA from right coronary sinus, 6 single coronary arteries from R cusp including 2 RV infundibular coursing and 2 coursing anteriorly to PA..Thirteen patients (46%) underwent surgical reimplantation of the coronary artery(12cases), at the mean age of 14.5 years (1month to 55 years, median 20 years) or coronary stenting (RCA:1case) . Fifteen were not operated on because of young age (1), transplanted heart (1), no inter arterial coursing (6) incidental diagnosis (4) or patient refusal (3). One newborn operated at one month of age because of biventricular dysfunction died 3 month later of cardiac failure despite uneventful reposition of an interaterial RCA. Autopsy showed associated non ischemic cardiomyopathy. The others 12 operated patients had no recurrent symptoms at a mean follow up of 7 years (1to18years) Non operated patients are still asymptomatic.(mean FU 3,8years)
Conclusion: EchoDoppler can detect coronary arteries originating from the opposite coronary cusp with inter arterial coursing and allow prompt surgical management in symptomatic patients with favourable outcomes. Surgical treatment remains matter of debate in asymptomatic cases with incidental diagnosis.