Coronary Cameral fistula – A rare coronary artery anomaly

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ABSTRACT

A coronary artery fistula involves a sizeable communication between one of the coronary arteries and a cardiac chamber (coronary cameral fistula) or a vein (coronary arteriovenous fistula). Sixty percent of these fistulae arise from the right coronary artery and terminate mostly (90%) in the right side of the heart. The most frequent sites of termination in the descending order are the right ventricle, right atrium, coronary sinus, and the pulmonary vasculature. The majority of these patients presents in adulthood and are usually asymptomatic, often being detected accidentally. The resultant physiologic derangement depends upon the site of origin and termination of the fistula and the size of the connection. We report a case of a 3 year old female child presented to our hospital CCF aneurismal fistulous tract connecting right coronary artery to right atrium for which fistulectomy and repair of terminal opining done.

Keywords: CCF coronary cameral fistula, CAF coronary artery fistula, RCA right coronary artery, RA right atrium.

INTRODUCTION

CCF (coronary-cameral fistula) is an uncommon cardiovascular anomaly characterized by a connection between a coronary artery and a cardiac chamber without an intervening capillary network. It is the result of a defect early in the development of the myocardium, prior to compaction, and leads to the persistence of sinusoids, resulting in a coronary-cameral fistula, whereas a defect at a later stage of development results in a CAF.

CASE REPORT

A 3years 7 months female baby asymptomatic child brought by parents to our hospital for further management as she was diagnosed Congestive Cardiac Failure. Child birth is full term cesarean section and institutional delivery. Child had fever and mild sob after 10days. For this she was referred higher center. On 2d echo small coronary cameral fistula opening to right atrium, normal pulmonary pressures, normal ventricular function found. Child managed medically kept on good follow up for appropriate weight gain. Child has normal growth attained normal mile stones till presentation. Child parents had non consanguineous marriage.

At the time of presentation child was asymptomatic with stable vitals s1 s2 heard no murmurs, 2d echo showed Right coronary artery to right atrium shunting, mildly dilated right atrium and right ventricle , good bi ventricular function, CT angiogram confirmed the diagnosis.

She was scheduled to undergo surgical closure of the fistula.coronary cameral fistula repair under general anesthesia under cardio pulmonary by pass done. Intra op findings 5mm aneurismal fistulous communication between proximal right coronary artery going over the roof to right atrium communicating with lateral right atrial wall with 2mm opening. Right coronary artery continued in right atrioventricular groove beyond the opening as a small branch. The patient's postoperative course was uneventful. At discharge there was no fistula detected on echocardiogram.

Image 1:PRE OP 2D ECHO

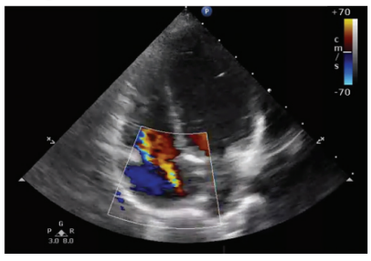


Image 2: CT ANGIO showing CCA

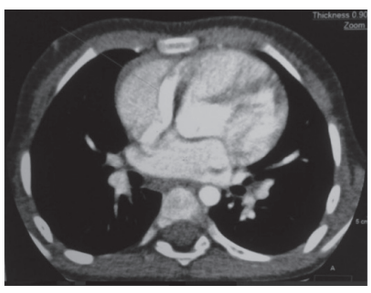


Image 3:INTRA OP SHOWING CCF CONNECTING RIGHT CORONARY ARTERY TO RIGHT ATRIUM

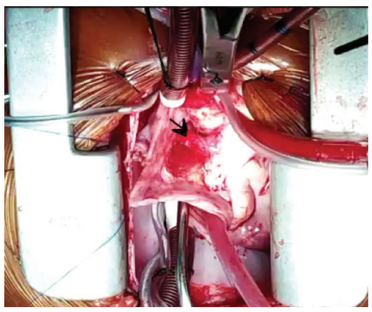
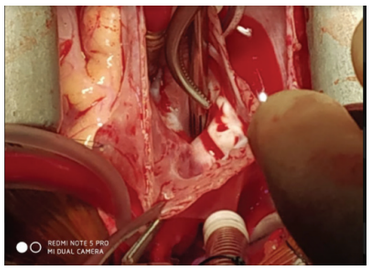


Image 4:CCF INTERNAL OPENING INTRA OP



DISCUSSION

Coronary fistulae account for 0.2 to 0.4% of the congenital cardiac abnormalities, and about 50% of the paediatric coronary vasculature abnormalities.Clinical presentation & differences is based upon age group. Analysis of data published between 1993 and 2004 on patients with CAF, demonstrated that 117/128 (91%) adult patients were symptomatic vs. 105/133 (79%) pediatric patients who were asymptomatic. Chest pain and dyspnea were the most common symptoms (71%), but patients also presented with palpitations (6.5%), fatigue (6.5%), pre-syncope/syncope (5.6%), congestive heart failure (3%), pulmonary hypertension, fistula thrombosis, and rarely rupture or infective endocarditis. An auscultatory finding of a murmur (continuous, systolic or diastolic) was a common physical sign (40%). The fistulas can grow in size over time and result in symptoms if left untreated. Spontaneous closure and infective endocarditis were more common in the pediatric age group, whereas aneurysmal dilation (14%), spontaneous rupture (4%), and co-existing coronary artery disease (19%) were seen mainly in adult patients

The pathophysiological mechanism of coronary fistula is myocardial stealing or reduction in myocardial blood flow distal to the site of connection. The coronary vessel tries to compensate by progressive enlargement of the ostia and the feeding artery.

Small fistulas can usually be left untreated and in some cases have been reported to close spontaneously. Alternatively, patients with intermediate sized CAF can be followed with regular surveillance by echocardiogram or CT angiography, and treated if there is evidence of new-onset symptoms, ischemia or progressive dilation.

In our case a female child presented with CCF a type of CAF, in asymptomatic status diagnosed in neonatal period. It was progressed from mild to moderate congestive heart failure and child had mildly dilated right atrium and right ventricle . To prevent further complications it is necessary to do closure of fistula.

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