



Coronary Artery Fistulas: A case series of surgical results and clinical characteristics in Iranian population

Presenter : Sarvenaz Salahi, Shahid Rajaei Hospital, Tehran, Iran

Corresponding author:Alireza A. Ghavidel

Sarvenaz Salahi, Zahra Azizi, Saeed Hosseini, Maziar Gholampour, Bahador Baharestani, Alireza Yaghoubi, Alireza A. Ghavidel



1

7th Iranian joint cardiovascular congress

The study outline



This single-center case series consist of 24 patients with coronary artery fistula (CAFs) who were referred to our tertiary center Rajaei Cardiovascular, Medical & Research Center from 2004 for surgical treatment.

Study Objective: The aim of this study is to evaluate the surgical results other than clinical characteristics of patients with CAF in Iranian population.

There were 41 patients who had at least one -month follow- up

- ✗ Dissatisfaction of patients for entering the study
- ✗ Missing Values more than 15%

Finally: 24 patients remained

Coronary artery fistulas:

- These congenital cardiac anomalies are rare.
- Prevalence of CAFs : 0.002% of general population.
- Patients are mostly asymptomatic specifically in the first two decades.
Symptoms representation : older age
 - Gold standard for diagnosis:
Coronary angiography
- **Referral indications for surgery:**
 - The most prevalent reason for referral : asymptomatic and continuous murmurs over the precordium.
 - Large or progressive left to right shunt, left ventricle dysfunction or volume overload, myocardial ischemia, congestive heart failure, atrial fibrillation, pulmonary hypertension, rupture, thrombosis, venous obstruction and endocarditis

Coronary artery fistulas: Method and materials

- This case-series consists of 24 patients with coronary artery fistula
- referred to Rajaei Cardiovascular, Medical & Research Center: from 2004 for surgical treatment
- Mean of follow up : 62 months (1-132)

Surgical treatment : Median sternotomy approach with continuous monitoring by trans-esophageal electrocardiography and cardiopulmonary bypass

This study was approved by ethics committee of Iran University of medical sciences.

Patients descriptive data analysis

	Mean +/- SD
Age (years)	35.56±25
CPB time	110.25±42.17(41-220)
AOX time	62±30.5
ICU stay	2.9±1.5 (3-24)
Male	11(45.8%)
Female	13(54.2%)
Concomitant Pathology	
CAD	6(25%)
Hypertension	3(12.5%)
Valve disease	19(79.2%)

The most common concomitant surgery :

CABG : 8(33.3%)

ASD_VSD repair: 4(16.7%)

Two patients had concomitant aneurysmal surgery

The most common complication of surgery :

The need for reoperation:

4(16.7%)

MACCE:

1 (4.2%)

Perioperation MI

Postoperative Inotropic usage:

2(8.3%)

Mechanical support:

1(4.2%)

Results : Signs and Symptoms

Symptom and Physical exam	overall	NO CAD	CAD	P-value
Asymptomatic	11(45.8%)	7(29.2%)	4(16.7%)	0.39
Palpitation	2(8.3%)	1(4.2%)	1(4.2%)	0.9
Dyspnea on Exertion	7(29.2%)	4(16.7%)	3(12.5%)	0.85
Chest pain	8(33.3%)	3(12.5%)	5(20.8%)	0.24
Early Fatigue	1(4.2%)	0	1(4.2%)	0.26
PND	1(4.2%)	1(4.2%)	0	0.34
Muffle Heart sound	1(4.2%)	0	1(4.2%)	0.26
Murmur	14(58.3%)	8(33.3%)	6(25%)	0.72
Cyanosis	1(4.2%)	1(4.2%)	0	0.34
Lung rales	2(8.3%)	0	2(8.3%)	0.1
High JVP	1(4.2%)	0	1(4.2%)	0.26

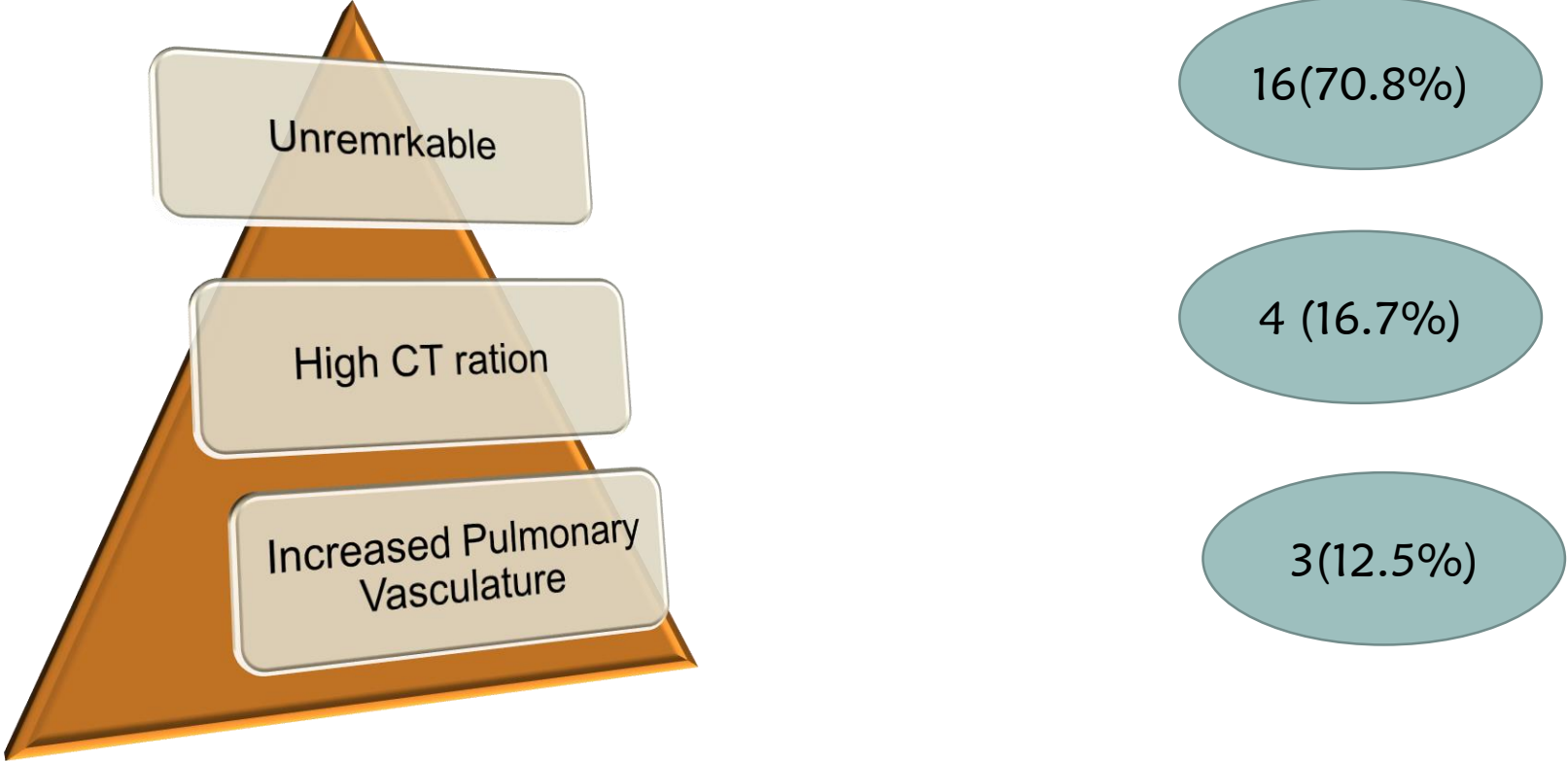
There is not any significant difference between the sign & symptoms of patients with coronary artery disease(CAD) and patients without CAD.

Result: CAD doesn't have any effect on signs and symptoms .

lots of patients (11(45.8%)) were asymptomatic with continuous murmur found on examination.



CXR Finding





Origin of Coronary AV fistula

Coronary Artery involvement	NO (%)
LAD	6 (25%)
LCX	3 (12.5%)
RCA	6 (25%)

One patient had 2 simultaneous fistulas in LCX and coronary sinus

The most common origin of fistulas were LAD and RCA in 6 (25%) patients .



Fistula drainage

The most common origin of fistulas were LAD and RCA in 6 (25%) patients .



The most common fistula drainage location were main pulmonary artery in 10(41.7%)patients and right ventricle 5(20.8%)



LAD was the most prevalent coronary artery that had concurrent coronary artery disease 6_(25%).

Two patients had concomitant aneurism and fistula in RCA and one patient had concomitant aneurism and fistula in LCX

Results : Echocardiography

	Pre - operative	Post- operative
LVEF:	49.52±13.5 (25-70)	49.47±15.57 (15-82)
Pericardial effusion:	0	5 (20.8%)
Valve disorders:	19(79.2%)	7(29.2%)

Results : Surgery outcomes

* Surgery:

Five (20.8%) patients had morbidity after operation.

Concomitant CABG was performed on 8 (33.3%) patients.

There was no hospital or later mortality in no patients



Coronary artery fistulas: Summary of results

LAD and RCA : the most common origin of fistulas (25%)

pulmonary artery : the most common location of drainage (41.7%).

Chest pain in patients with CAD---
dyspnea in patients without CAD

LAD was the most prevalent coronary artery that had simultaneous coronary artery disease (25%).

Valve disorders : 79.2% of patients

Coronary artery fistulas: Discussion

Tanja et al.:

- 1) 10 patients : chest pain the most common predominant symptom in 60% of patients.
- 2) 20% of patients : systolic continuous murmur
- 3) LAD : most common origin of fistulas

Canga et. Al:

- 1) The most common signs and symptoms: dyspnea
- 2) The most common origin of CAF: LAD
- 3) The most common drainage location: pulmonary artery
- 4) MI: 11 patients
impact of fistulas with proximal origins of coronary artery on the likelihood of myocardial infarctions

Abdolmoneim et al:

- 1) LAD: the most common origin
- 2) Main pulmonary artery : the most common drainage
- 3) The most common symptoms : chest pain, dyspnea

Our study:

- 1) Etiology : 4 (16.7%) patients had previous history of cardiovascular surgery

Other

Etiology : iatrogenic



Conclusion:

- Chest pain and DOE were the most common symptoms in our study.
- Moreover our study showed LAD and RCA as the most common origin of fistulas and Pulmonary artery as the most common location of its drainage.
- All patients underwent surgery for closing the fistulas in the origin and drainage sites.
- There was no hospitalization or later mortality in no patients.



**THANK YOU
FOR
YOUR
ATTENTION!
ANY QUESTIONS?**