



Short Communication

Clinical outcome of various management strategies in coronary artery ectasia



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ARTICLE INFO

Article history:

Received 12 September 2016

Accepted 25 April 2017

Available online 4 May 2017

Introduction

Coronary artery ectasia (CAE) was first described by Bourgon in 1812, but the term “Ectasia” was coined by Bjork in 1966.^{1,2} Markis et al. proposed the following classification system for CAE.³ Type I: diffuse CAE involving two or more vessels (Fig. 1), Type II: diffusely involving one vessel and localized ectasia involving another, Type III: diffusely involving one vessel only, Type IV: localized or segmental ectasia only. Optimal Percutaneous Coronary Intervention (PCI) of true ectatic segment is difficult. Coronary artery bypass grafting (CABG) is a good treatment option for obstructive CAE.⁴ To our knowledge no prospective studies are available to compare the outcome of various management strategies and hence we conducted such study.

Methods

In this single centre prospective longitudinal observational study, all patients who underwent Coronary Angiogram (CAG) from January 2013 to December 2013 and showed CAE by quantitative coronary angiographic (QCA) analysis as per standard criteria were included. Those who underwent PCI or CABG previously were excluded. The management strategy (medical management, PCI or CABG), techniques and hardware were decided at physician discretion. The patients were followed up for 2 years for MACCE outcome. Statistical analysis was done using SPSS 17 software. Pearson chi square test was used to compare the outcome of various management strategies in each CAE type.

Results

A total of 2539 Coronary angiograms (CAG) were done during the period of study. The prevalence of CAE was 1.22% (N=31). Baseline characteristics are shown in Table 1. Only two of them (6.45%) were present as acute coronary syndrome, rests were presented as chronic stable angina. Trans radial access was used in 29% (N=9) of coronary angiogram. LCA was engaged commonly with 64.6% Judkins left and RCA was engaged commonly with non torque right catheter in 38.7%. One patient had dilatation of ascending aorta along with LAD ectasia and underwent Bentall's procedure. Management plan for various types of CAE was shown in Table 2. Procedural success was 100% in both PCI and CBAG groups. Transfemoral route was used for all the 5 cases of PCI. At the end of 2 years follow up there were no MAACE events in all the three groups. None of the patients developed contrast induced acute kidney injury.

Discussion

The prevalence of CAE was 1.22% in our study was comparable with the older studies.⁵ The gender difference was partially attributed to the lower incidence of coronary artery disease in women.⁵ There is strong negative association of smoking (67.7%) with CAE in our study. This may be because of negative remodeling of plaques in smokers. 61.3% had MI and LV dysfunction which indicates the need for aggressive management of CAE as most often it can present with MI. In this study non obstructive CAE was managed with optimal medical management alone where as obstructive lesions required revascularisation with either PCI or CABG. Even though the literature showed mortality benefit through trans radial intervention, in our study all the PCI were done through trans femoral route as per physician discretion.⁶ There were no contrast induced acute kidney injury as only 6.25% of them presented as acute coronary syndrome.⁷ The Limitations of this study are non randomization and low number of patients.

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Table 1
Baseline Characteristics.

	Medical (n = 12) management	PCI (n = 5)	CABG (n = 13)
Mean Age (years)	62	65.2	59.1
Sex (Male)	53.8% (n = 7)	40% (n = 2)	100% (n = 13)
mean weight (kg)	63.12	63	68.35
mean Height (cm)	160.25	157.80	165.30
mean B.S.A (m ²)	1.9	1.65	1.77
smoker	16.66% (n = 2)	0% (n = 0)	46.15% (n = 6)
DM	33.3% (n = 5)	20% (n = 3)	46.7% (n = 7)
HT	29.4% (n = 5)	11.8% (n = 2)	58.8% (n = 10)
LV Function			
Good	50% (n = 6)	40% (n = 2)	15.4% (n = 2)
Mild	33.33% (n = 4)	–	53.8% (n = 7)
Moderate	8.33% (n = 1)	60% (n = 3)	23.1% (n = 3)
Severe	8.33% (n = 1)	–	7.7% (n = 1)
mean LDL (mg/dl)	89.33	74.4	80.46
No of vessel			
SVD	33.3% (n = 4)	40% (n = 2)	100% (n = 1)
DVD	50% (n = 6)	60% (n = 3)	0% (n = 0)
TVD	16.7% (n = 2)	0% (n = 0)	0% (n = 0)
LAD Ectasia	42.9% (n = 12)	14.3% (n = 4)	42.9% (n = 12)
RCA Ectasia	33.3% (n = 5)	20% (n = 3)	46.7% (n = 7)
LCX Ectasia	42.9% (n = 3)	0% (n = 0)	57.1% (n = 4)

B.S.A – Body Surface Area, DM – Diabetes mellitus, DVD – Double vessel disease, HT – Hypertension, LAD – Left anterior descending coronary artery, LCX – Left circumflex artery, LDL – Low density Lipoprotein, LV- left ventricle, RCA- Right coronary artery, SVD – Single vessel disease, TVD – Triple vessel disease.

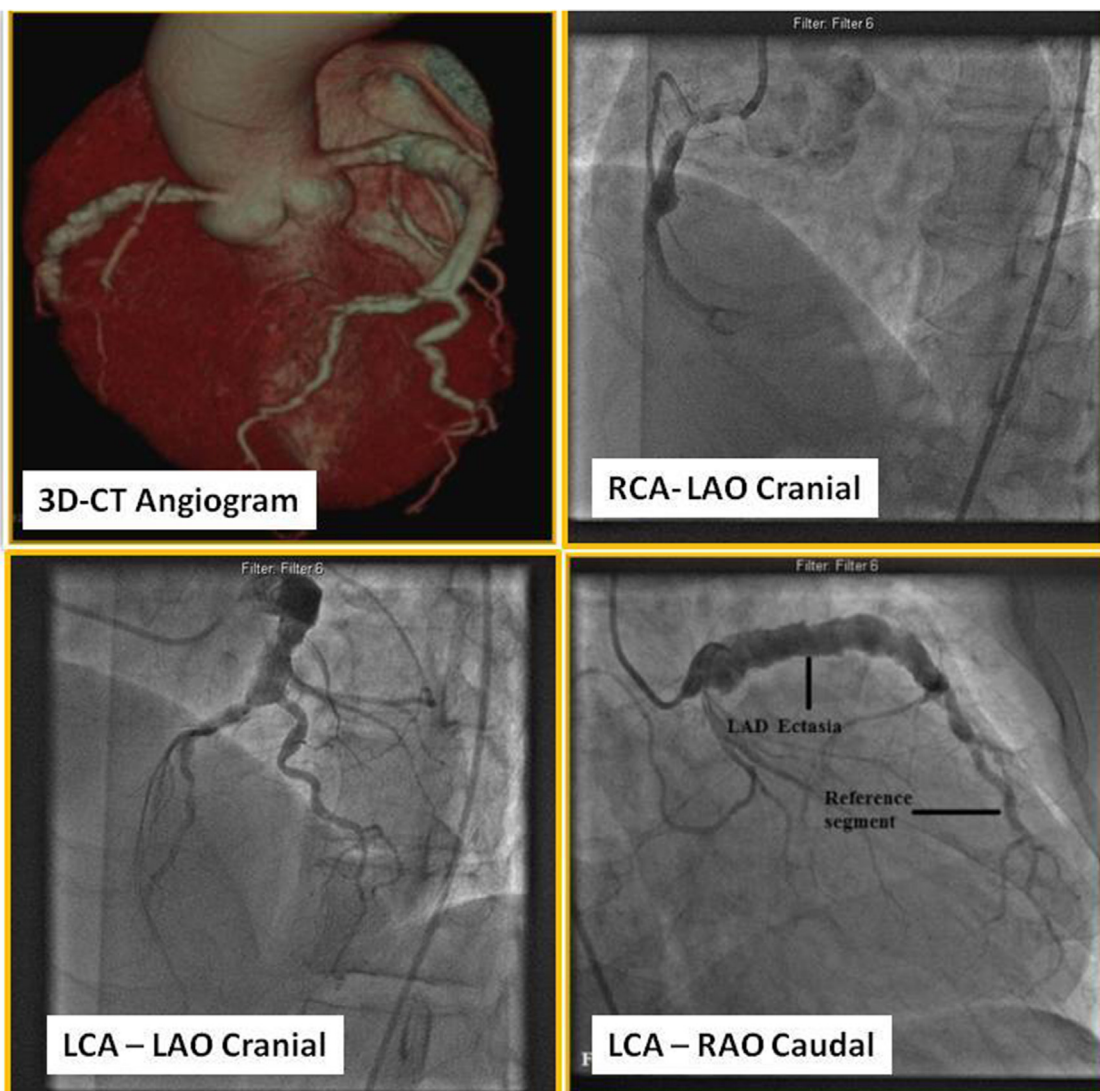


Fig. 1. 3D – CT angiogram & Coronary angiogram of RCA & LCA.

Table 2
Management plan of CAE types.

		Plan of management (% within Plan of management)				Total	Pearson Chi Square
		Medical management	PCI	CABG	Bentalls		
Ectasia type	I	4(33.3%)	1(20%)	5(38.5%)	0(0%)	10(32.3%)	P = 0.861 (>0.05)
	II	2(16.7%)	1(20%)	1(7.7%)	0(0%)		
	III	3(25%)	2(40%)	2(15.4%)	0(0%)		
	IV	3(25%)	1(20%)	5(38.5%)	1(100%)		
Total		12(100%)	5(100%)	13(100%)	1(100%)	31(100%)	

CABG – Coronary artery bypass surgery, CAE – Coronary artery ectasia, PCI – Percutaneous coronary intervention,

Conclusion

The obstructive CAE patients who underwent CABG or PCI did well at 2 years without MAACE. Non-obstructive CAE did well on medical management alone.

Acknowledgement

Dr. Latchumanadhas Kalidoss, Dr. Ulhas M Pandurangi, Dr. Ezhilan Janakiraman, Dr. Jaishankar Krishnamoorthy, Dr. Ramkumar Soli Rajaram, Dr. Vijayakumar Subban, Dr. Kalaichelvan Uthayakumaran, Dr. Balaji Pakshirajan, Dr. Suma Malini Victor

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