Right Myocardial Bridge on CT Coronary Angiography

M Kulkarni, Aparna Sodani, Rosita, C Puranik, Sunita Sullere, B Saha

Abstract
Myocardial bridging is a condition where the coronary artery traverses through the myocardium. Although it is not an uncommon finding in left anterior descending coronary artery (LAD), recently we came across a very rare case of right coronary artery (RCA) traversing through the right myocardium on CT coronary angiography.

INTRODUCTION
The coronary arteries and their branches lie on the surface of the myocardium. However, they may traverse through the myocardium for a short or long segment, which is called as myocardial bridging. The reported frequency on angiography is “between” 0.5% to 1.6%, and it is more severe and frequent in the patients with hypertrophic cardiomyopathies. The clinical symptoms in the myocardial bridging are chest pain, exertional dyspnoea and myocardial infarction, which can occur during exercise. Usually bridging occurs in the mid and distal parts of LAD. But in this case RCA was traversing through the right ventricular wall on CT coronary angiography.

CASE REPORT
Forty three year old male patient having atypical chest pain, Non-smoker, non-diabetic, was screened for coronary artery disease on CT scan. Previous ECG was within normal limits, the stress test was negative. ECG gated CT coronary angiography was performed on Siemens Somatom Sensation 16 Scanner with 0.42 seconds rotation time. 100 ml of nonionic contrast with 40 ml of saline was injected through the antecubital vein with the help of pressure injector at a rate of 4 ml/sec. Using 120kv with effective mAs of 500, slice collimation 0.75mm, slice width 1.0 mm reconstruction increment of 0.7 mm, table feed rotation 2.8 mm, the scan was performed in 20 seconds. This was followed by computed reconstruction.

The mid RCA was seen traversing through ventricular wall on axial sections (Fig. 1). Reformatted images showed a long segment of mid RCA traversing through the right ventricular wall (Figs. 2 and 3). The distal RCA showed normal course over the surface of myocardium.
DISCUSSION

Myocardial bridging is also described as systolic compression of the coronary arteries by the overlying myocardial tissue. It can be seen as an incidental finding on coronary angiography and can have benign course. However it may cause myocardial ischemia, infarction and sudden cardiac death. The systolic compression is more severe in patients with hypertrophic cardiomyopathy.

The condition is almost always confined to mid and distal LAD. Only few cases of RCA bridging are reported. Most of the cases are reported at autopsy or conventional catheter angiography.

On conventional catheter angiography the bridging can be detected by systolic compression of the coronary arteries. The CT coronary angiography has an advantage that it can directly demonstrate the course of artery through myocardium as in this case (Fig. 1 and Fig. 2). Also multiplaner reconstruction capability of the CT coronary angiography can give better visualization and the length of the segment of intramyocardial course of coronary artery.

Acknowledgement

We are indebted to Dr Rajesh Kasliwal, Director, Vishesh Diagnostic Solutions, Dr Ajay Thakkar and Dr Hemant Telkar-Jupiter Heart Scan, Mumbai for their cooperation and encouragement. We also thank Chaitanya, Shekhar, Siraz and S Gupta for technical assistance.

REFERENCES


---

**Announcement**

**Mid Annual APGCON 2004 of Association of Physician of Gujarat** to be held at Treat Resort, Silvassa, Dadra and Nagar Haveli. (U. T.) 396230 on 11th and 12th September, 2004.

For further details please contact: **Dr. Mukul A Vyas** (Organising Secretary), Yogi Hospital, Silvassa, D and N. H. (U. T.), Ph. No. : (0260) 2642301, 2642302, E-mail : yogi123hosp@yahoo.com, Website : www.midapgcon2004.com;

**Dr. Devang Desai** (Organising Secretary), Riddhi Siddhi Aptt., Mullavadi, Valsad. Ph. No. : (02632) 243833.

**Announcement**

**National Sumit on Cardiology, Diabetology and Electrocardiology, 4th-5th Sept. 2004, Bhopal.**

**Venue** : Hotel Jehan Numa Palace, Shamla Hills, Bhopal (MP).

Under Auspices of ICP, ICC, ISCP, API MP, API CH, WC Railways and IMA Bhopal.

For any information please contact : **Dr. PC Manoria**, Organizing Chairman, CDE Summit - 04, E-5/103, Arera Colony, Bhopal-462016. Tel. : 0755-2422299; Mobile : 9827074602; E-mail : pmanoria@rediffmail.com