



DIFFICULTIES OF DOING PERCUTANEOUS INTERVENTION ON PATIENT WITH HIGH TAKE OFF RIGHT CORONARY ARTERY ORIGIN.

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ABSTRACT

We here describe 50-year old man presented with sudden onset of left side chest pain associated with diaphoresis and dyspnoea of two days duration. With the impression of inferior wall myocardial infarction (IWMI) electrocardiogram was consistent and Conventional angiograph showed to have high take off right coronary artery from ascending aorta and proximal to mid-99% stenosis. The focus on this report was the challenge to hook and stent high take off right coronary artery origin. So doing interventions in the catheterization laboratory we should be able to do different techniques like hanging type of coronary angiography with different balloons and catheters to overcome this challenge. Patient life was saved and finally discharged with stable condition.

KEYWORDS : Coronary Anomalies, High Take Off, Percutaneous Intervention, Right Coronary Artery

INTRODUCTION:

Angioplasty of RCA is difficult because of the unpredictable nature of proximal segment and origin of RCA. In this case choice of catheter to be used becomes more challenging. Height of RCA varies due to the aortic shapes, degree of orientation of posterior or anterior of aorta and arteries and severity of anomalous but the most important factor which affect the selection of catheter are the origin and the curve angle of RCA¹ as well as take off of the coronary arteries. Kimbiris et al stated in their report that anomalous aortic origin of coronary arteries are reported to be 0.6-1.2% in patient who are referred for coronary angiography².

Paolo Angelini et al. classified coronary artery anomalies into four major groups: Anomalies of origination and course, anomalies of intrinsic coronary artery anatomy, anomalies of coronary termination, and anomalies of collateral vessels.³

We describe here a patient with high take off RCA presented with IWMI managed by technique called hanging type PCI.

Case History:

We here describe 50-year old man presented with sudden onset of left side chest associated with sweating and dyspnoea of two days duration. He was occasional drinker and smoker. He was told to have hypertension two years ago but not on treatment. Otherwise he has no history diabetes and family history of cardiac illness before. On physical exam he was stable. BP-131/87 mmHg, PR -91 beats per minute, oxygen saturation -95 %with room air. On investigations he had normal lab. studies of Complete blood count, RFT, HBSAg, anti HCV-Ab and RVI.

ECG showed ST-elevation on inferior wall with T-inversion of the inferior and lateral leads (**fig -1**). Conventional coronary angiogram showed that there is high take of the right coronary artery from the ascending aorta with difficult to hook. (**fig -2**). showing there is proximal right coronary artery cutoff (completely occluded).

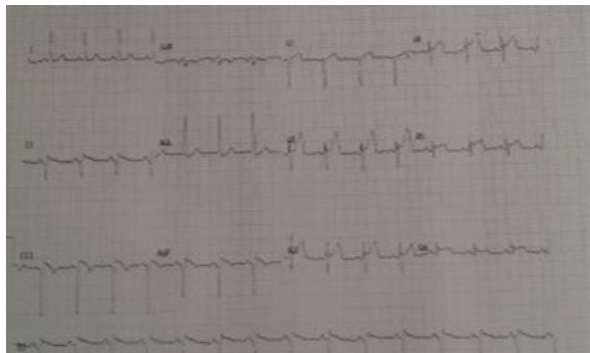


Figure-1

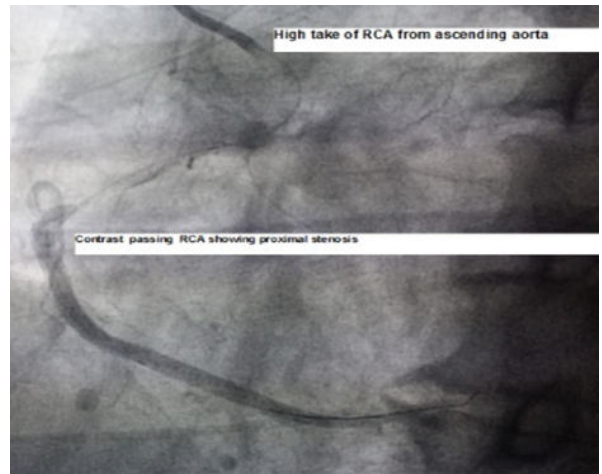


Figure-2

DISCUSSION:

So far there are few case reports describing the difficulty of doing PCI in patient with RCA anomalies. For instance a case reported by Tyagi et al described anomalous RCA with high anterior takeoff, although rare, but can be technically challenging and time consuming. Coaxial engagement, adequate back-up support from a guide catheter is essential for a successful PCI⁽⁴⁾. Coming to our case It was the guiding catheter (**fig-3and 4**) which was thrown to the RCA with careful advancement without hooking or engaging the right coronary cusp. Olympios CD et al in addition stated the use of Left Amplatz I, II Guiding Catheter has been successful for stenting of anomalous right coronary artery.⁽⁵⁾



Figure-3



Figure-4

Others like Lee et al. reported two cases where they used standard 7 Fr Left Judkins catheters, positioned with clockwise torque in order to provide a stable platform for intervening upon complex lesions of anomalous RCA with high anterior takeoff⁽⁶⁾.

Similarly Komatsu et al. also reported the use of DIO Thrombus Aspiration catheter for anomalous right coronary artery with high takeoff, however their patient also had a distal RCA lesion, and they were able to achieve stent delivery only by deeply engaging the catheter to gain extra back-up support⁽⁷⁾. At last recent case reported by Tyagi et al added the use of TIG 4.0 (Heartrail III) guiding catheter, from trans-femoral approach for an anomalous right coronary artery with high anterior takeoff considered as an option of supporting guides in doing such scenario.

In our case we have used 6-french amplatzer guide (6FAP-R) as diagnostic and guide to support. Then direct stenting to the RCA was done. So far there was any report to use this 6FAP-R and with hanging method to stent such high take off RCA origin. Though different literature due attention to think twice there is no standard technique and wire which is recommended to do such challenging cases.

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