Acute Coronary Syndrome: STEMI, NSTEMI

(TCTAP C-001 to TCTAP C-022)

TCTAP C-001

At the Crossroad of Primary PCI

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National Institute of Cardiovascular Diseases, Bangladesh

[Clinical Information]

Patient initials or identifier number:
AA, 38773

Relevant clinical history and physical exam:
Mr. X, 40 years old male, smoker, normotensive, incidental diabetic, presented with STEMI (Inf) for 4 hours. Then he was sent into cath-lab and underwent PPCI. He had no history of significant cardiovascular risk factor except smoking & incidental DM.

His vital sign on CCU showed stable state.

Relevant test results prior to catheterization:

His initial ECG showed marked ST segment elevation in lead II, III, aVF. RBS-12mmol/L.

Relevant catheterization findings:
Left coronary artery system normal & right coronary artery 90% mid segment disease.

[Interventional Management]

Procedural step:

Transfemoral.

Guide Cath: JR 3.5 7F

Guide Wire: All star

Balloon Cath: Instent balloon

3.5x20 at 14 ATM
Stent: 3.5x30 BMS at 12 ATM

3.5x20 BMS at 12 ATM

3x19 PTFA covered stent at 22 ATM

Case Summary:
We performed PPCI into RCA mid segment by BMS 3.5x30mm at 14 ATM. However, after immediate deployment type three perforations was happened. Then we inserted stent balloon into perforation site for prolong inflation. Simultaneously, TPM was done and we performed auto perfusion. Then several times in stent balloon inflation no improvement, but immediately, we don’t managed PTFA covered stent. So we put another 3.5x20mm BMS stent at perforation site with the hope to minimize perforation and buy some time. After 90 minutes, we put 3x19mm at 22 ATM covered stent (PTFA). Consequently, we started ionotropic support and continued auto perfusion. Then flow minimized. Then we did post dilatation and established TIMI flow III with nitrates & adenosine. After stabilization of the patient again send into CCU with stable hemodynamic condition.

TCTAP C-002

Rescue Angioplasty After Failed Thrombolysis in a Case of Myocardial Infarction with Large Coronary Aneurysm with Thrombus

Saurab Goel
Cumballa Hill Hospital, India

[Clinical Information]

Patient initials or identifier number:
PK

Relevant clinical history and physical exam:

71 years old male.
Non diabetic, non hypertensive, no history of IHD.

One hour history of acute chest pain with sweating

ECG showed acute anterior MI

Thrombolysed with tenecteplase (metalyse) 7000 i.u

Relevant test results prior to catheterization:

ECG - Hyperacute anterior MI, thrombolysed with tenecteplase, failed thrombolysis with further ST elevation

Relevant catheterization findings:

Large LAD aneurysm with total occlusion, localized RCA aneurysm

[Interventional Management]

Procedural step:

LAD crossed with fielder wire and another wire placed in diagonal

Clot suction done using thrombuster device, antegrade flow estatentiniblished, high grade lesion noted at distal end of aneurysm

Due to reformation of thrombus, intracoronary tiroban administered

Stenting performed with 3.5 X 18 metallic biomerit stent

TIMI III flow achieved in LAD, patient made uneventful recovery

Patient had uneventful post procedure recovery

2d echo showed well preserved myocardial function with lv ejection fraction of 45%

Patient was discharge on oral antiocoagulation with acitrom

Doing well 6 months after procedure with good lv function on 2 d echo and normal treadmill stress test

* Conclusion

This case illustrates an unusual presentation of large lad aneurysm with high grade lesion at distal end and thrombosis causing complex anterior wall myocardial infarction.

Rescue angioplasty was successfully performed after failed thrombolysis.

A large thrombus burden required frequent clot suction.

Reformation of thrombus within the aneurysm was tackle by administering intra-coronary tiroiban.

Due to thrombus burden and large vessel diameter non drug eluting stent was used.

Patient maintained on long term oral antiocoagulation.

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Due to thrombus burden and large vessel diameter non drug eluting stent was used.

Patient maintained on long term oral antiocoagulation.
TCTAP C-003
Five years Follow-up Result of Coronary Artery Aneurysm Treated by a Stent graft

[Akula Raghavender Goud, Seung Woon Rha]
Korea University Guro Hospital, Korea (Republic of)

[Clinical Information]
Patient initials or identifier number: 1475164

Relevant clinical history and physical exam:
A 78 years old female known history of hypertension (HTN) and non-ST elevation myocardial infarction (NSTEMI) and underwent percutaneous coronary intervention (PCI) in the past presented with history of left flank pain and mild fever started since 5 days. She did not seek medical attention for 5-7 days and presented to the emergency room as the flank pain was increasing gradually. Physical examination showed significant tenderness in left costo-vertebral angle.

Relevant test results prior to catheterization:
Her laboratory investigations were normal except for mild hematuria and computed tomography (CT) urography showed left renal infarction. Electrocardiogram showed new onset atrial fibrillation with rapid ventricular rate, 109/min. Two dimensional (2D) echocardiogram showed global hypokinesia with moderate left ventricular systolic dysfunction (ejection fraction, EF=44%), decreased from the previous EF of 55-60% in the previous 2D echocardiogram. Other significant findings noted were increased left atrial dimension (38-45mm), increased tricuspid regurgitation and moderate pulmonary hypertension.

Relevant catheterization findings:
Index coronary angiogram for NSTEMI in 2008 was done and showed severe triple vessel disease and huge single aneurysmal dilatation in proximal left anterior descending artery.

[Interventional Management]
Procedural step:
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Her laboratory investigations were normal except for mild hematuria and computed tomography (CT) urography showed left renal infarction. Electrocardiogram showed new onset atrial fibrillation with rapid ventricular rate, 109/min. Two dimensional (2D) echocardiogram showed global hypokinesia with moderate left ventricular systolic dysfunction (ejection fraction, EF=44%), decreased from the previous EF of 55-60% in the previous 2D echocardiogram. Other significant findings noted were increased left atrial dimension (38-45mm), increased tricuspid regurgitation and moderate pulmonary hypertension. Patient was managed conservatively with antipyretics, analgesics and i.v antibiotics. Patient was started on warfarin as her CHADS2 was 4.

Index coronary angiogram for NSTEMI in 2008 was done and showed severe triple vessel disease and huge single aneurysmal dilatation in proximal left anterior descending artery (LAD, fig A). PCI was done under intravascular ultrasound (IVUS) guidance and prohyplastic intra-aortic balloon pump (IABP) for hemodynamic support. Through right femoral approach, under 7F EBU 3.5 guiding catheter support, SES 3.5X23mm (sirolimus eluting stent, Cypher®) was deployed from left main to proximal LAD and a stent graft 3.5X12mm (Jostent®, Abbott) was deployed in proximal LAD aneurysm (fig B). A PES 2.7X38mm (paclitaxel eluting stent, Taxus®, Boston scientific) was deployed in mid to distal LAD (fig C). Under 7F AL-1 Side hole guiding catheter support, overlapping stenting in proximal RCA (Taxus 3x38mm) and mid RCA (Taxus 2.75x28mm) was done. However, distal RCA Taxus 2.75x32mm stent could not be delivered in-spite of vigorous attempts with parallel wiring. Post procedure angiogram showed mild dissection at the aorto-ostial junction of RCA with preserved antegrade flow. Subsequent follow-up angiograms showed no further complication (fig D&E).

Follow up angiogram showed mild ISR lesions in LAD and RCA in 2009 and patient was kept on medical management. Next follow-up angiogram due to decreased LV function in Dec 2013 showed severe in-stent restenosis (ISR) in the previous stent (Taxus 2.75X38mm) at distal LAD, extended beyond distal edge of the stent (90%, ISR, fig F) and previous stent covering left main was patent (Cypher 3.5X23mm). No ISR was noted in the proximal LAD graft stent (Jo, 3X12mm in the aneurysmal part of LAD). Left circumflex osium, moderate discrete stenosis (50%) but no interval change was observed. Right coronary artery (RCA), showed mild ISR (type 1c) in the previous stents from proximal to distal overlapping stents (proximal RCA: Taxus 3x38mm, mid RCA: Taxus 2.75x28mm).

Through right radial approach 6F EBU 3.5 guide, a ZES 2.5X26mm (zotarolimus eluting stent, Resolute Integrity®, Medtronic, fig H) was deployed in the distal LAD after sequential predilatation with Ikauchi 2X15mm (Kaneka®) and Lacroosse NC 2.75x8mm (Goodman®) balloon (fig G) and further plain old balloon angioplasty (POBA) was done with Lacroosse NC balloon 2.75x8mm in proximal site, at the area of suspicious proximal edge ISR (fig I). Successful final PCI result was achieved (fig J). Renal angiogram showed right renal artery having proximal moderate discrete eccentric stenosis (50%) and left renal artery showed total occlusion at the proximal site (fig K) and managed conservatively.