Post CABG MI (Case Based)

Sayed M. Abdou, MD, FACC, FSCAI
National Heart Institute
SBCC, KSA

Outlines

- Case presentation
- Clinical outcome of STEMI in prior CABG pts
- Native coronary vs bypass graft PCI & DES vs BMS in SVG PCI
- Early Graft Failure
- Take Home Message
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**Case 1**

**Clinical Data**

- 64 year–old male, HTN, chronic heavy smoker > 40 yrs
- CAD, prior CABG 7 years.
  - LIMA-LAD
  - SVG to diagonal & RCA
- Referred from peripheral hospital with *inferior STEMI*.
- Typical chest pain of 5 hour duration
Case 1

Native vs Bypass Graft Intervention

- Acute presentation of the case (inferior STEMI)
- The complexity of the native vessel lesion (long standing CTO)
**Case 1**

**Bypass Graft Intervention**

Aspiration-Thrombectomy

Inability to Advance the Asp. Catheter across the Anastomotic site

**Case 1**

**Bypass Graft Intervention**

IVUS pullback from PLV to SVG across Anastomotic site
**Case 1** Bypass Graft Intervention

- Direct Stenting
- IV & local GP IIb-IIIa inhibitors

Stenting Across the Anastomotic Site

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**Case 1** Bypass Graft Intervention

Final Angiogram
Outlines

- Case presentation

- **Clinical outcome of STEMI in prior CABG pts.**

- Native coronary vs bypass graft PCI & DES vs BMS in SVG PCI

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- Take Home Message

Do patients with prior CABG behave differently when they develop ST-elevation MI?
Prior Coronary Artery Bypass Graft Patients With ST-Segment Elevation Myocardial Infarction Treated With Primary Percutaneous Coronary Intervention

Angiographic & Revascularization Characteristics
Clinical Outcomes & 90-Day Death

Conclusion

- STEMI patients with prior CABG were older with an increased burden of comorbidities which is consistent with many other reports.

- Those patients were less likely to receive urgent mechanical reperfusion.

- Increased 90-day clinical events including mortality

Welsh et al., 2010

Am Heart J 2001;141:469–77.


**Case 2**

**Clinical Data**

- 72 year–old lady, diabetic, HTN, hypothyroidism
- CAD, CABG one year ago, LIMA-LAD, SVG-OM.
- Presented with Non-STEMI
- ECG: ST-T changes in I, aVL, V4-6

*Image of medical imaging showing occluded SVG-OM*
**Case 2**

Native vs Bypass Graft Intervention

- Clinical stability of the patient
- Feasibility of native coronary PCI

![OM](image1)
![Occluded SVG](image2)

**Case 2**

Native Coronary Intervention

![Final Angiogram](image3)
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- Case presentation
- Clinical outcome of prior CABG pts when they develop STEMI
  - Native coronary vs bypass graft PCI & DES vs BMS in SVG PCI
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Appraising Native Coronary Artery Versus Bypass Graft PCI
Percutaneous Coronary Intervention in Native Coronary Arteries Versus Bypass Grafts in Patients With Prior Coronary Artery Bypass Graft

Brilakis et al., 2016

Brilakis et al., 2016
Baseline Clinical & Lesion Characteristics

Embolic protection devices used in 26.3% of SVG PCIs

use of DES in only 65% of SVGs

Procedure-Related Complications

Brilakis et al., 2016
Long-Term Clinical Outcomes (Native vs Bypass Graft)

**Conclusion**

- Bypass graft PCI was associated with significantly higher mortality & higher risk for MI & repeat revascularization during long-term follow-up.

- Until RCTs are performed, native coronary arteries should be the preferred PCI target vessels, whenever possible.
Outlines

- Case presentation
- Clinical outcome of prior CABG pts when they develop STEMI
- Native coronary vs bypass graft PCI

- Outcomes of DES vs BMS in saphenous venous Graft PCI
- Early Graft Failure
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? Current Evidence Favor DES over BMS for SVG Interventions!!

- Five RCTs
  - 505 pts. DES
  - 480 pts. BMS
- First generation DES
- Mean follow up :1.5 y

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- Native coronary vs bypass graft PCI
- DES vs BMS in saphenous venous Graft PCI

**Early Graft Failure**

- Take Home Message

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**Case 3**

- 66 year old lady.
- HTN, Dyslipidemic, PAD.
- Recurrent SOB (Angina Equivalent)
- Positive MPI (high risk)

Referred for Surgery
30 hours after Surgery

- Significant ischemic ECG abnormalities
  - ST elevation II-III-a VF
- Ventricular arrhythmias: NSVT
- Hemodynamic instability
  - despite high doses of vasoactive medications
- Marked elevation of troponin
  - > 5 times the upper references

Postoperative Echo

Emergent Cardiac Catheterization

PCI of Native coronary Artery
Early SVG occlusion

- Within the 1st 30 days after surgery
- in approximately 5 to 10% of SVGs.
- Early mortality in the range of 9–15%.
- Causes:
  - Generally related to technical problems at the anastomosis.
  - Conduit Injury due to manipulation during harvesting.
  - Poor target quality.

2014 ESC/EACTS Guidelines on myocardial revascularization

Coronary angiography is recommended for patients with:
- symptoms of ischaemia and/or abnormal biomarkers suggestive of perioperative myocardial infarction
- ischaemic ECG changes indicating large area of risk
- new significant wall motion abnormalities
- haemodynamic instability.

It is recommended to make the decision on redo CABG or PCI by ad hoc consultation in the Heart Team and based on feasibility of revascularization, area at risk, comorbidities and clinical status.

PCI should be considered over re-operation in patients with early ischaemia after CABG if technically feasible.
Take Home Message

- Pts with prior CABG represent a high risk group when they develop STEMI
- Compared with native coronary, bypass graft PCI is significantly associated with higher incidence of short & long-term MACE.
- Conflicting data regarding benefits of DES over BMS in SVG PCI
- Emergent cardiac catheterization is recommended for pts developing acute ischemia soon after CABG & PCI is a valuable option.

Thanks