

SVG Sculpturing: Revascularization of CTO in Old Grafts

On Topaz, MD

Professor of Medicine and Pathology

McGuire Veterans Affairs Medical
Center

Virginia Commonwealth University

Richmond, VA, USA

TCT ASIA-PACIFIC 2009



SVG Sculpturing:

- Revascularization method for **totally occluded SVGs**.
- In most cases, the corresponding native coronary vessel is occluded as well.
- Clinically these patients experience unstable angina or AMI.



de Feyter P, Serruys P, van den Brand M et al.

Percutaneous transluminal angioplasty of a totally occluded bypass graft: **a challenge that should be resisted.**

Am J Cardio 1989; 64: 88-90



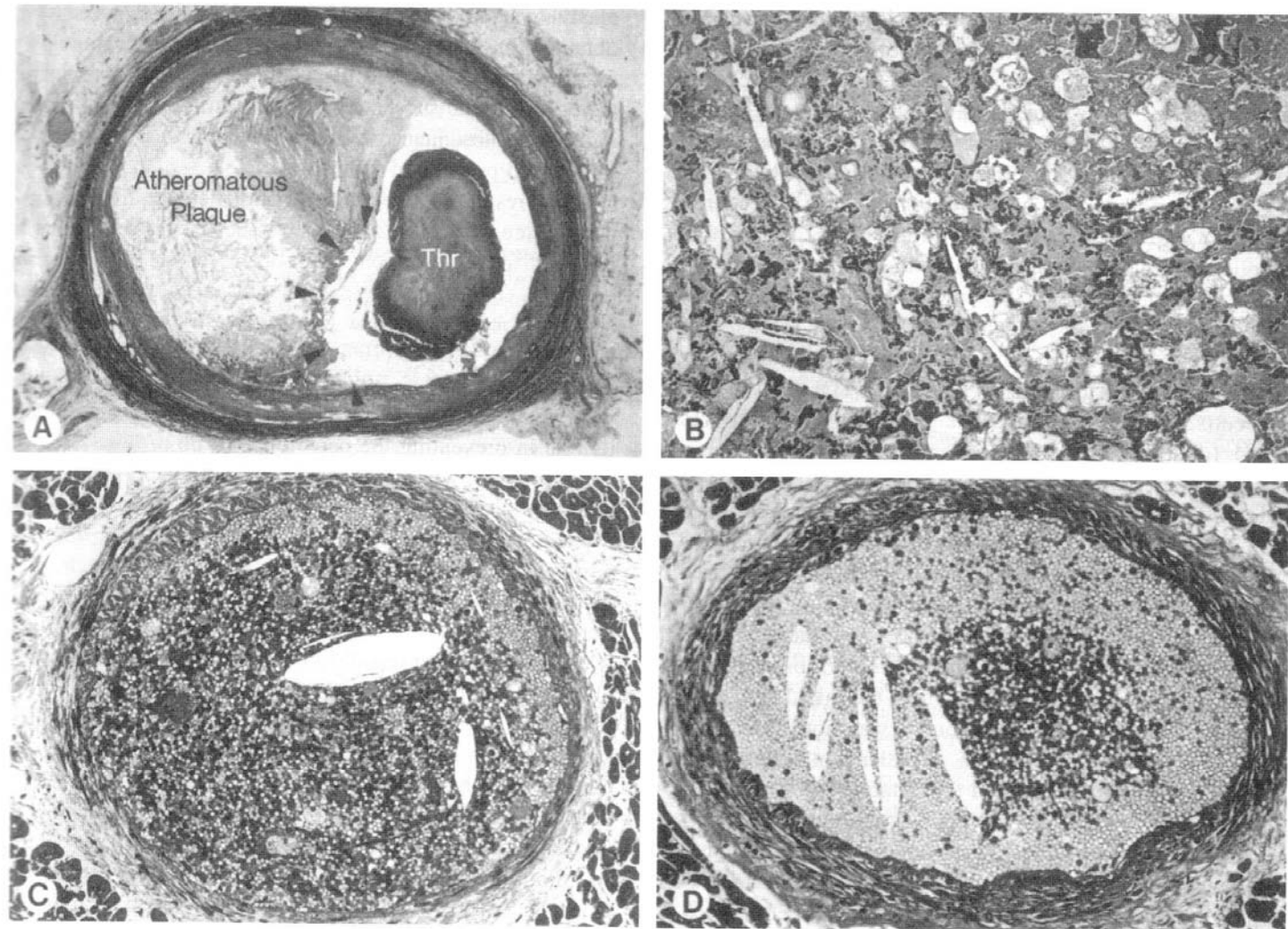
Editorial Comment:

**Totally Occluded Saphenous Vein Graft
Recanalization: A Dangerous Option**

Hugo F. Londero, md
Unidad Cardiovascular,
Servicio de Hemodinamia e Intervenciones
por Cateterismo,
Sanatorio Allende-Cordoba, Argentina

Catheterization & Cardiovascular Interventions 2003; 60: 218-220





Pathological specimens obtained from vein graft (A and B) and native coronary artery downstream from the vein graft insertion (C and D). Thrombus (Thr) and atheromatous plaque are present in the body of the vein graft (A and B). The coronary artery is obstructed with atheromatous emboli and thrombus that originated in the occluded vein graft.

SVG Sculpturing:

- **PCI technique:**
 1. **Engage** the **total SVG occlusion** with a supporting guide & carefully advance a navigating guidewire.
 2. **Enhance** guidewire manipulations with a Quick Cross support / exchange catheter.
 3. **Exchange** initial guidewire for stiff supporting guidewire [PlatinumPlus].
 4. **Apply AngioJet** along the occluded SVG graft in antegrade & retrograde fashion.

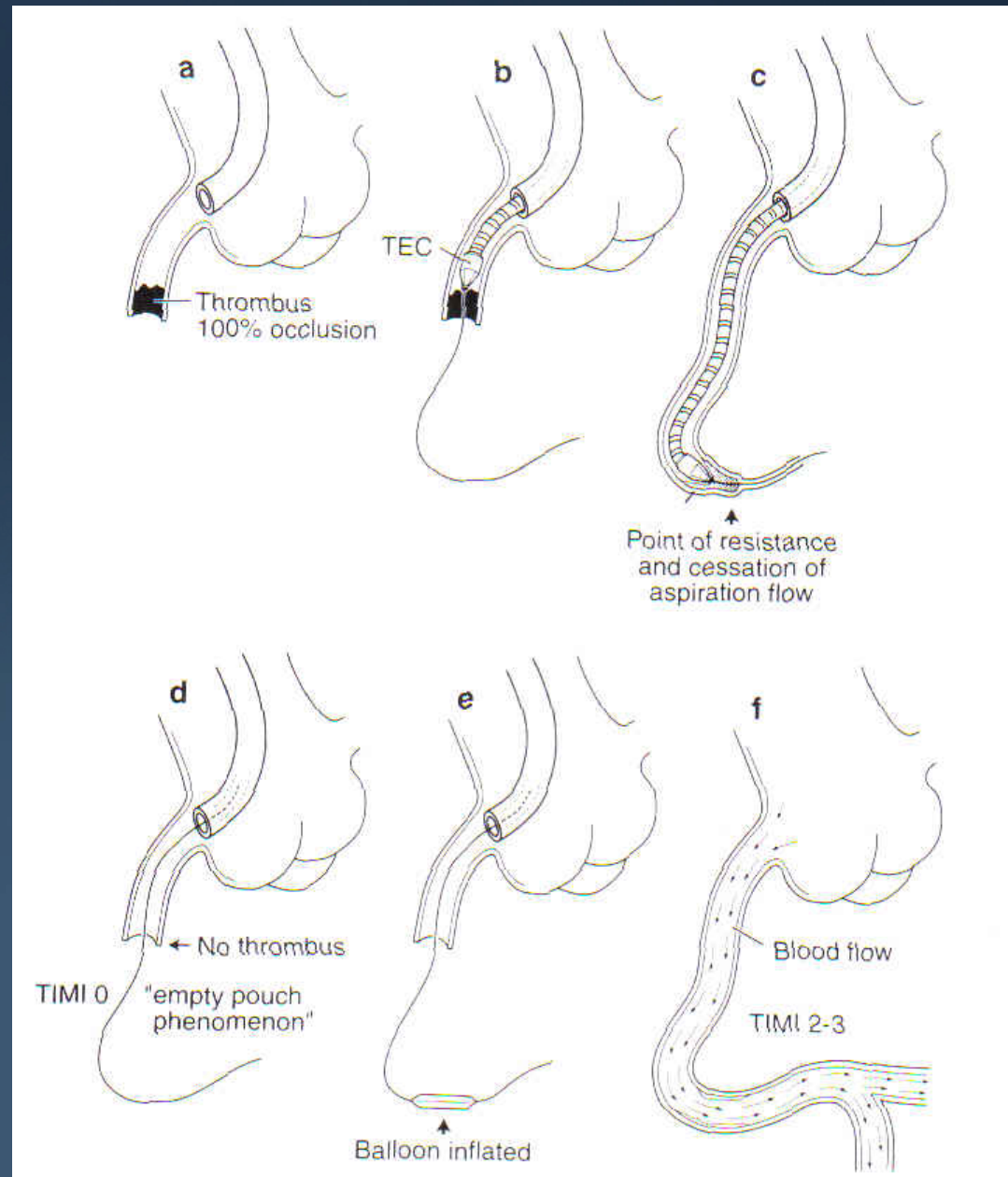


SVG Sculpturing:

- **PCI technique:**
 5. **Assess** exposed residual thrombus burden.
 6. In case of **resistance** and/or “**empty pouch**” phenomenon – inflate a small balloon at distal end of the recanalized graft.

Cont.





Topaz O, et al Acute thrombotic-ischemic coronary syndromes: the usefulness of TEC. CCI 1999; 48: 406-420

SVG Sculpturing:

7. Administer ISVG 10-20 mg t-PA.
8. Repeat AngioJet thrombectomy.
9. Dilate/Stent as indicated.
10. Usually, no need for Protection devices .



SVG Sculpturing:

Adjunct pharmacotherapy:

- ASA, Plavix
- Heparin – low dose 2-3K
- **t-PA** – selective, low dose
10-20 mg.
- 2b/3a inhibitors ?



Combined Distal Embolization Protection and Rheolytic Thrombectomy to Facilitate Percutaneous Revascularization of Totally Occluded Saphenous Vein Grafts

Rajdeep S. Gaitonde, DO, Naveen Sharma, MD, Elisabeth von der Lohe, MD,
and Vijay G. Kalaria,* MD

Totally occluded saphenous vein grafts are difficult to treat percutaneously with a higher likelihood of distal embolization and slow-flow or no-reflow during percutaneous interventions. The PercuSurge system, which utilizes a distal balloon occlusive device, has been shown to improve clinical outcomes during saphenous vein graft (SVG) interventions. This device may not be optimal in the setting of heavy thrombus or debris burden, a situation frequently encountered in totally occluded SVGs. Rheolytic thrombectomy facilitates percutaneous interventions by effectively removing intraluminal thrombus and debris but lacks distal embolization protection. We report our experience with the **synergistic use of balloon-based distal embolization protection** (PercuSurge) and **rheolytic thrombectomy** (AngioJet) to **optimize percutaneous revascularization of totally occluded SVGs.**

20 YEARS OF
INNOVATION
TCT2008

TCT ASIA-PACIFIC 2009

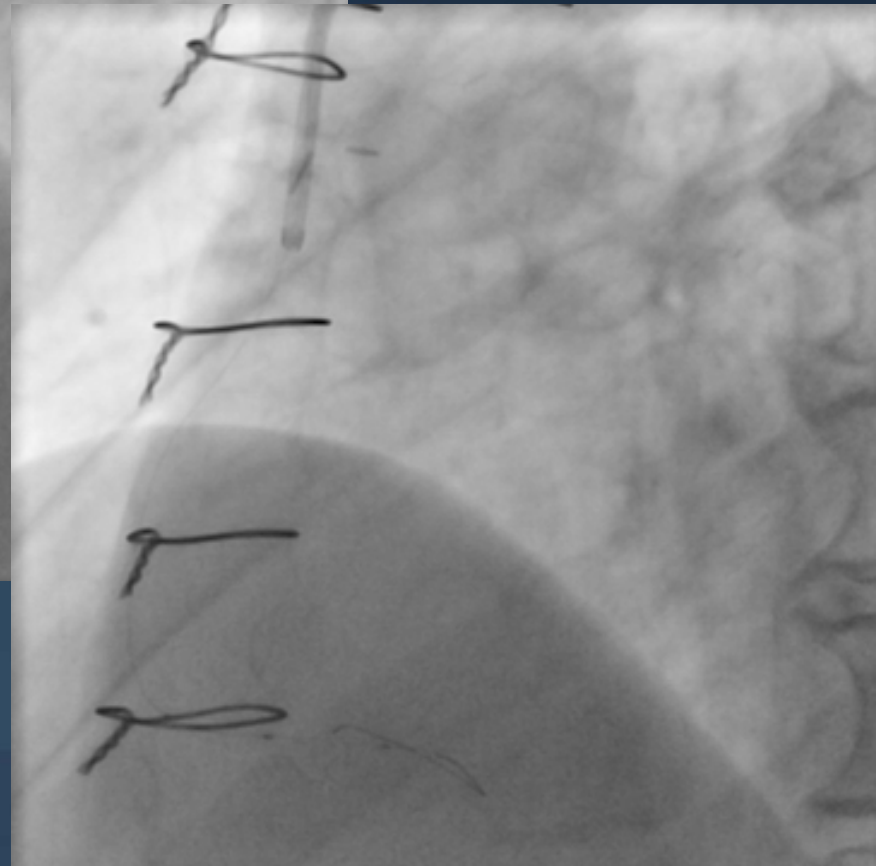
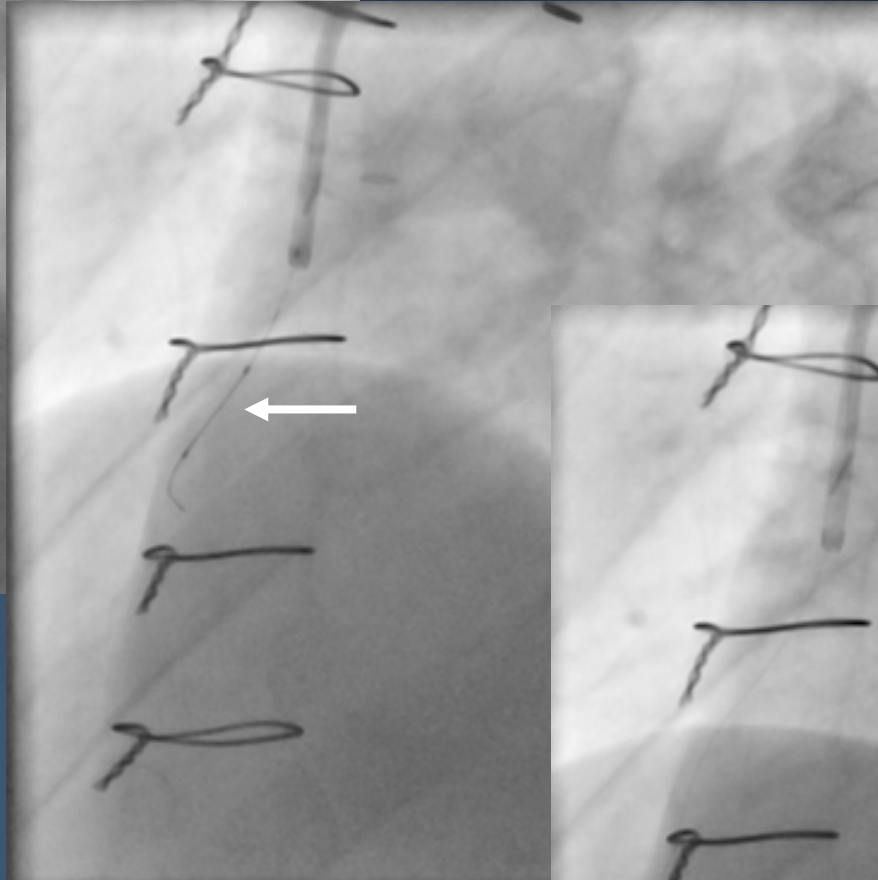
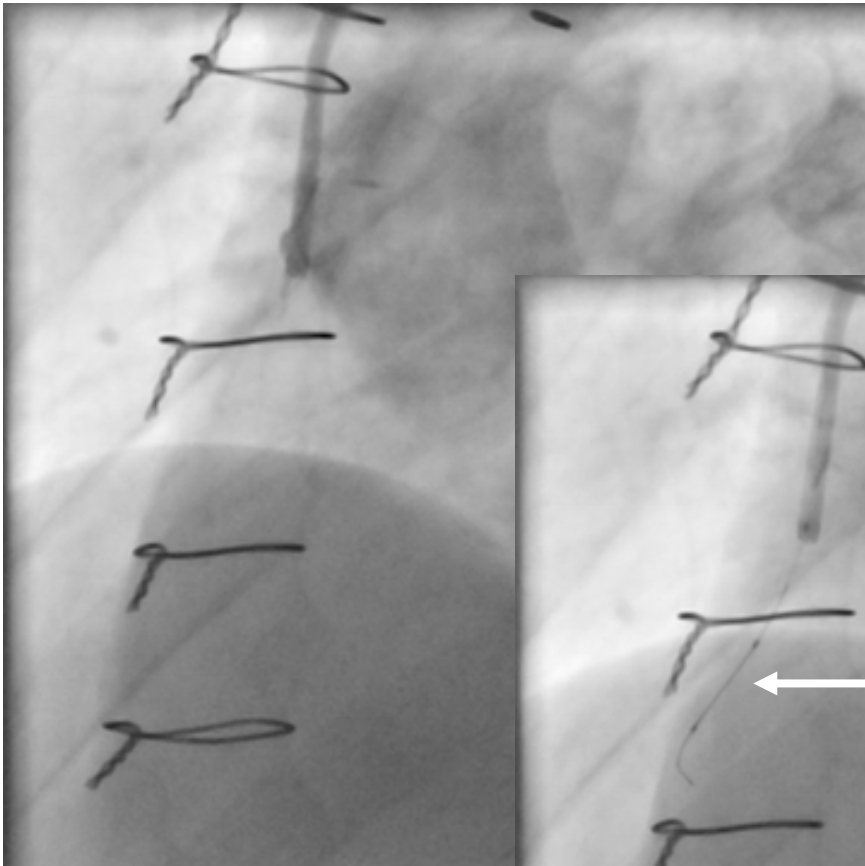
SVG Sculpturing

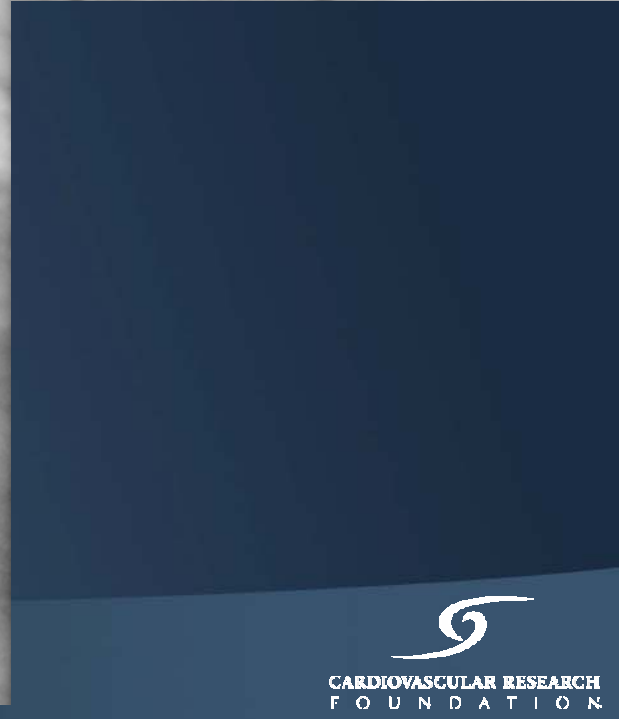
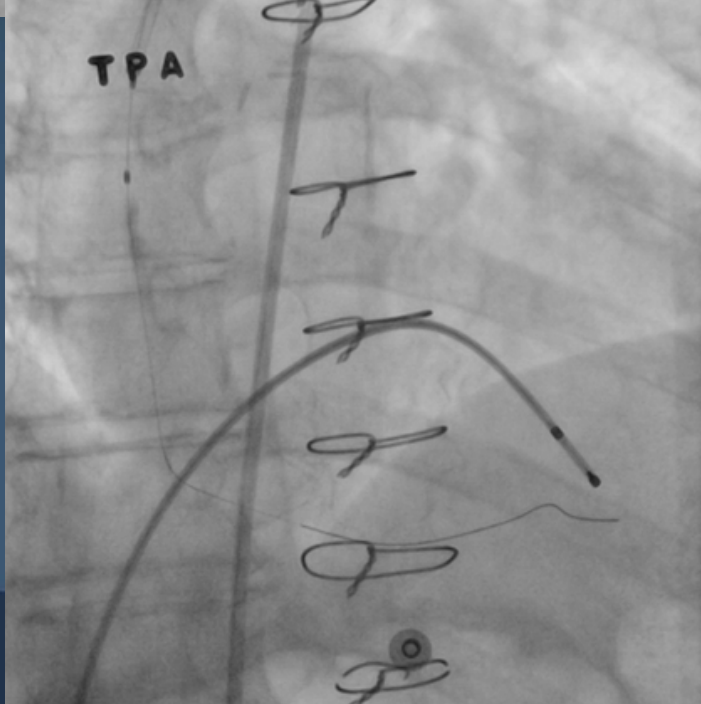
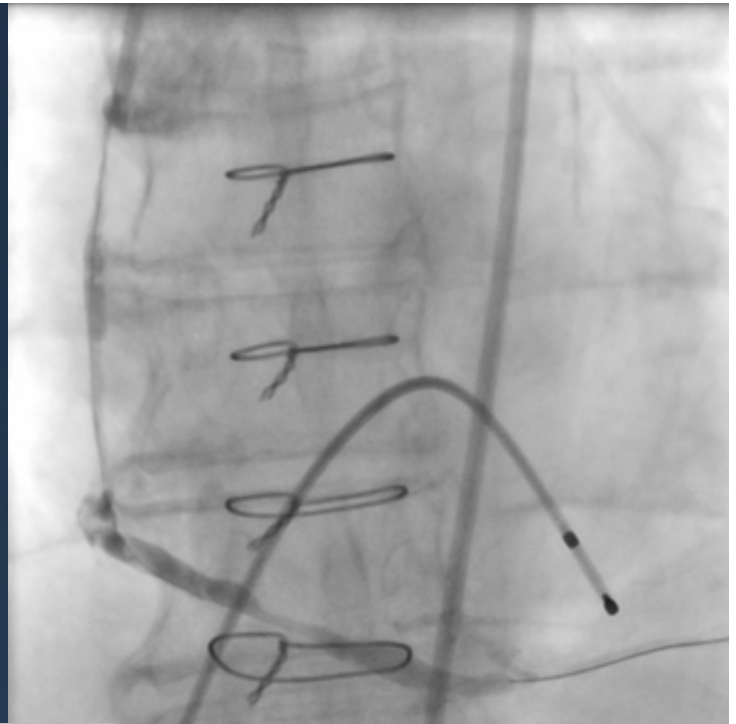
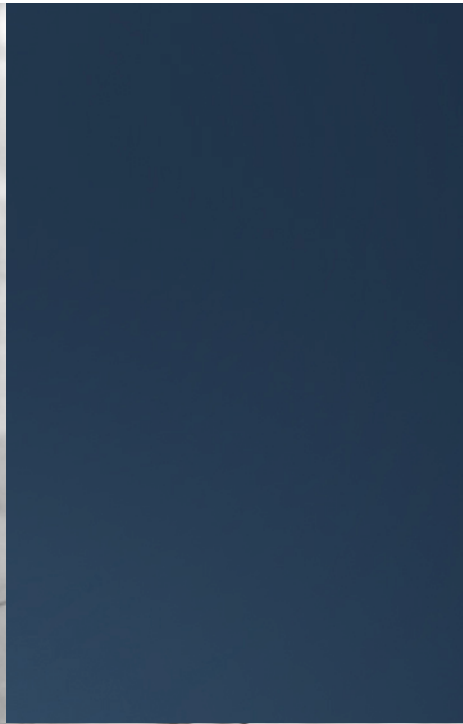
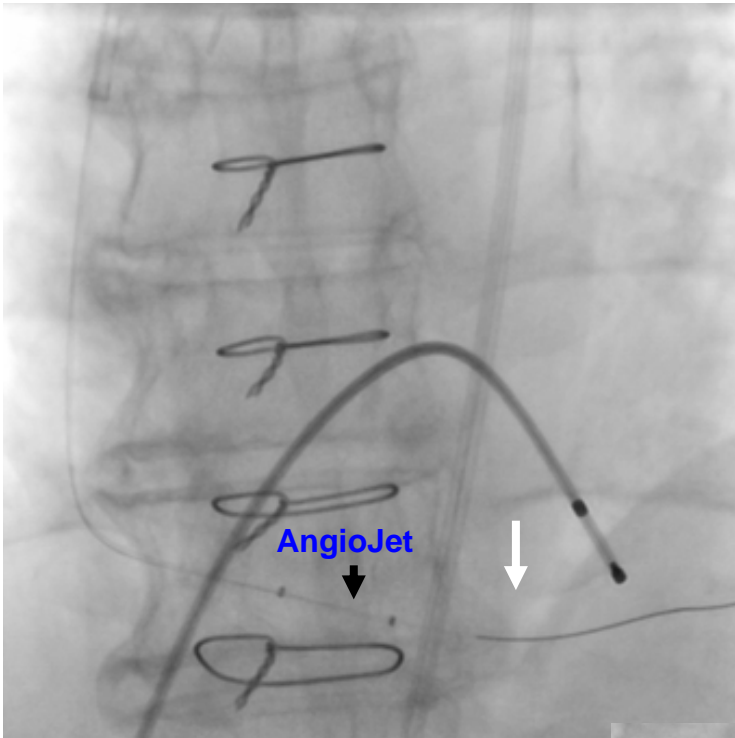
Sample Cases



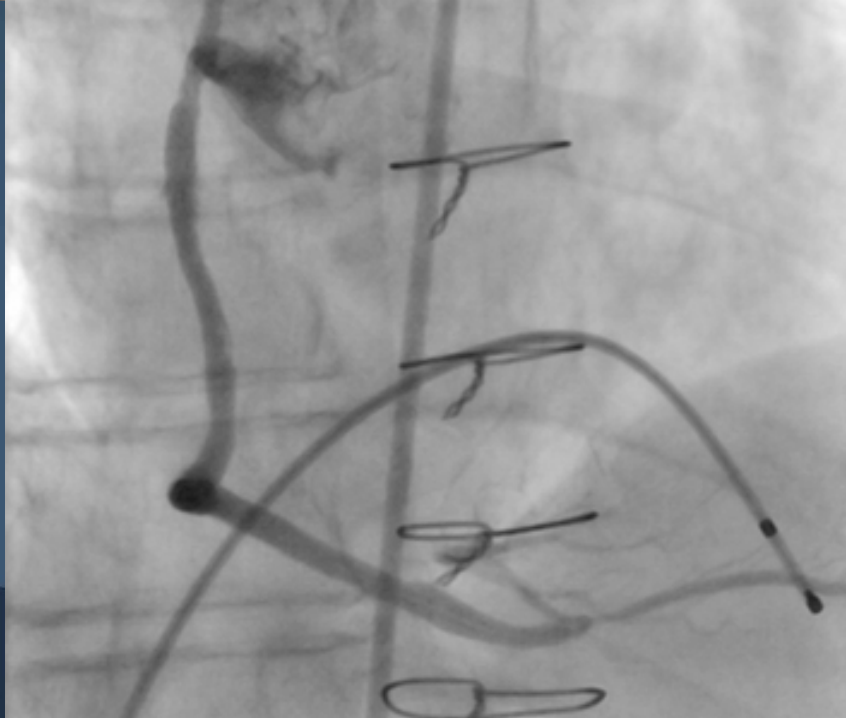
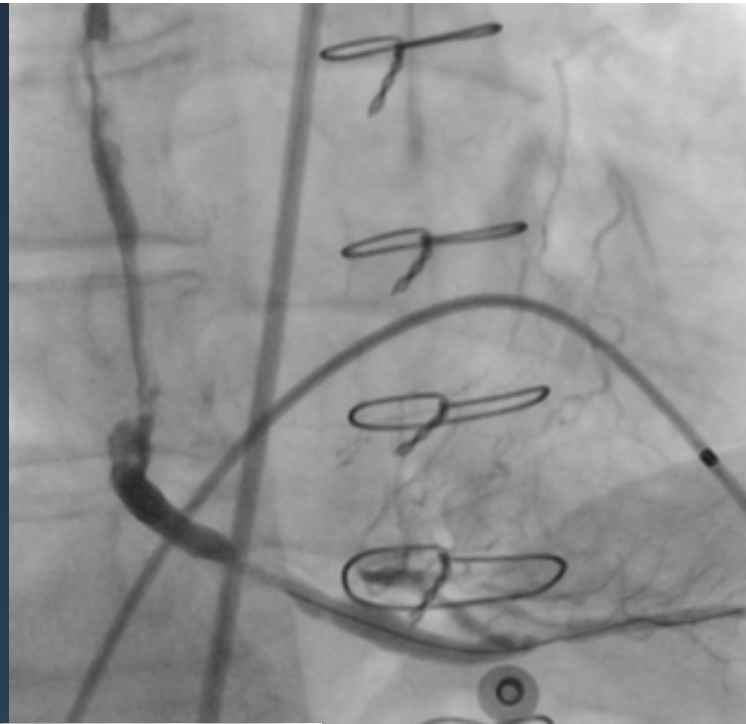
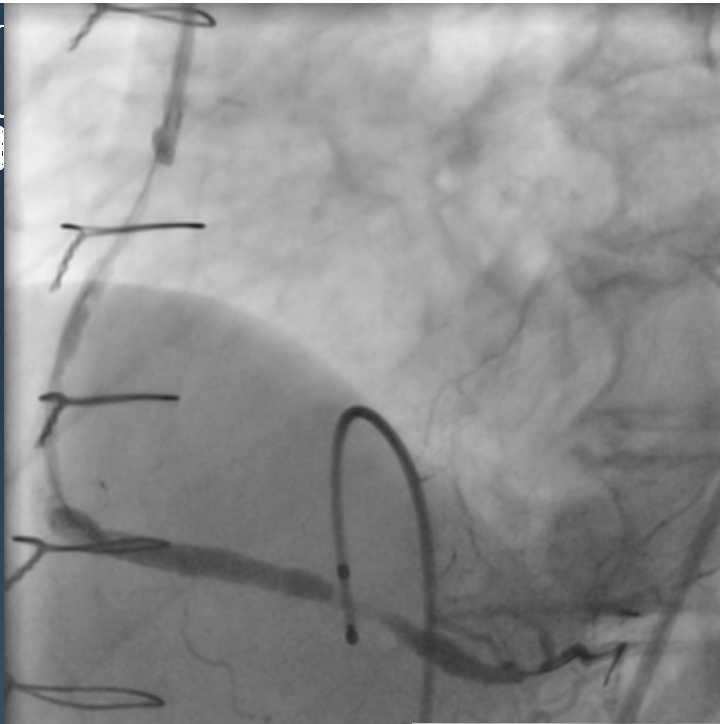
CARDIOVASCULAR RESEARCH
FOUNDATION

Case 1



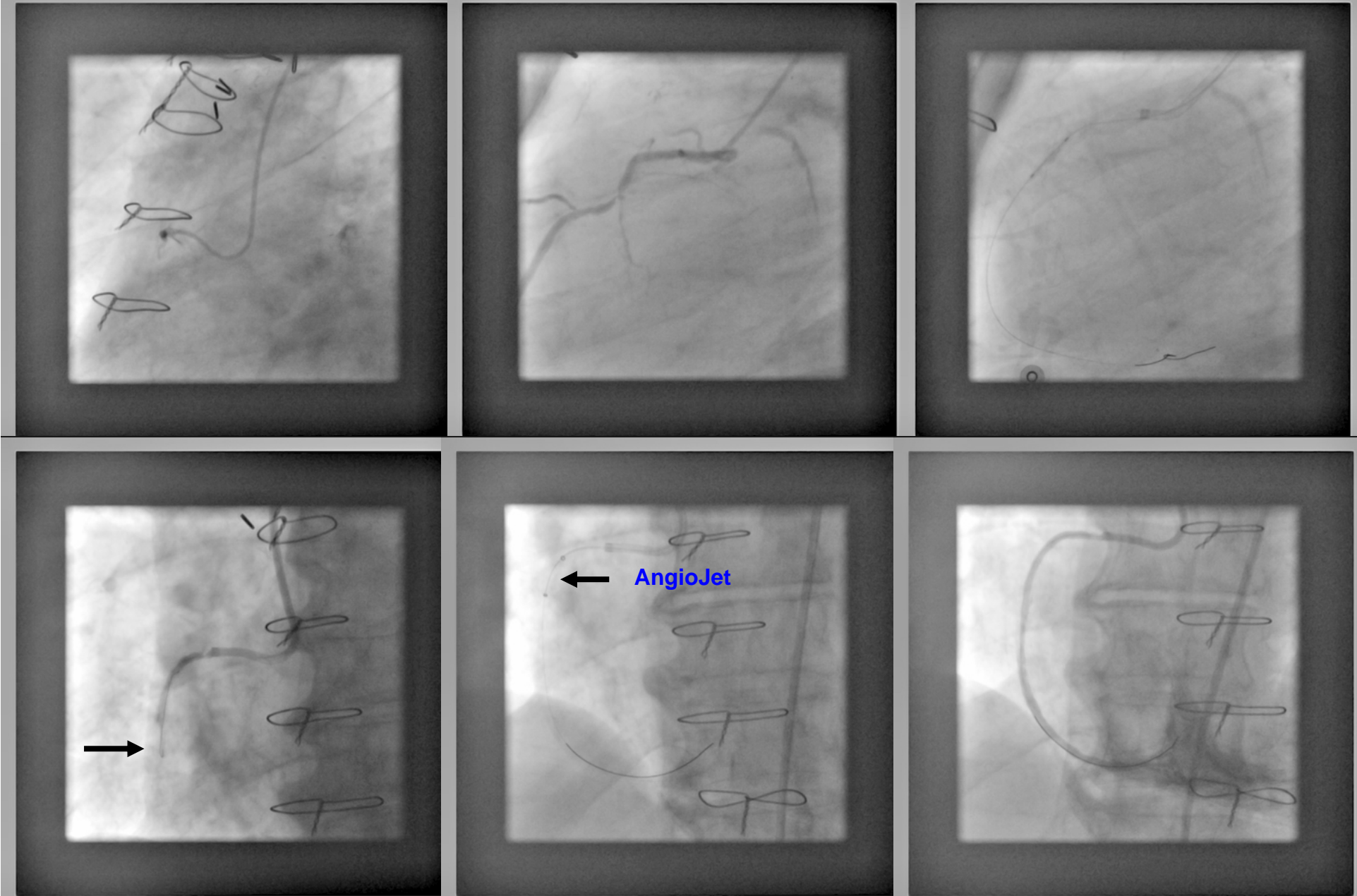


20
TC

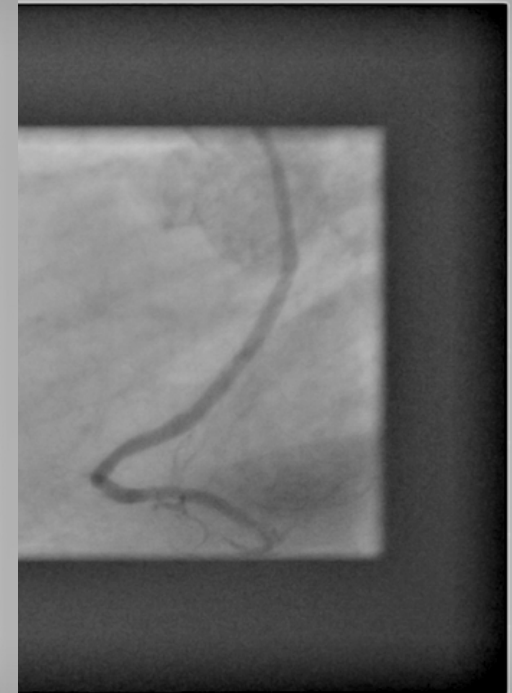
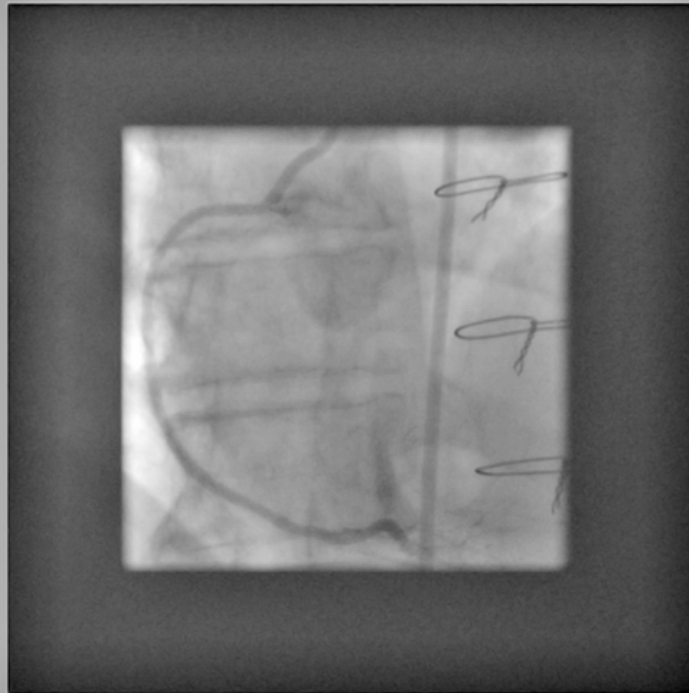
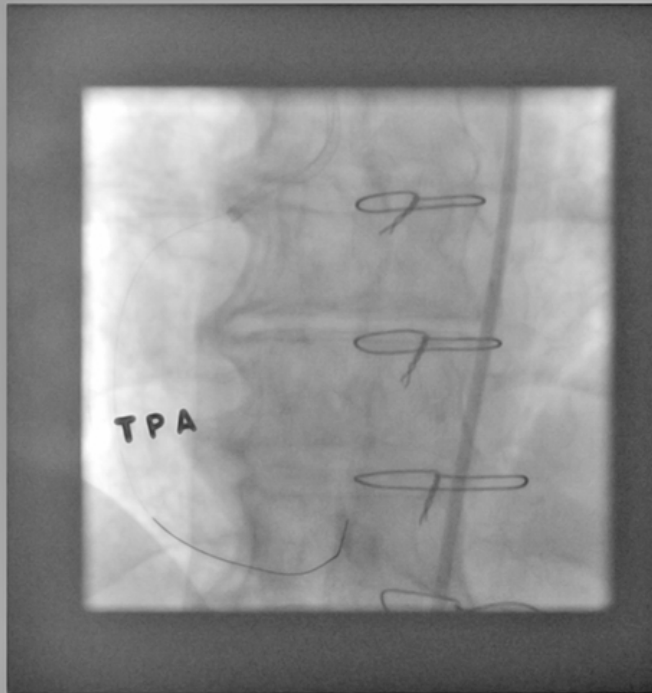


CARDIOVASCULAR RESEARCH
FOUNDATION

Case 2

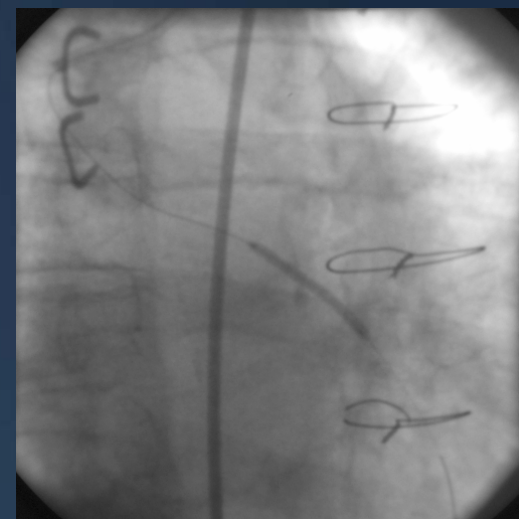
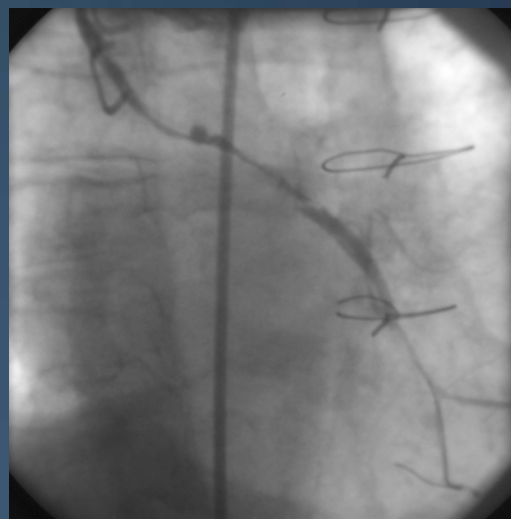
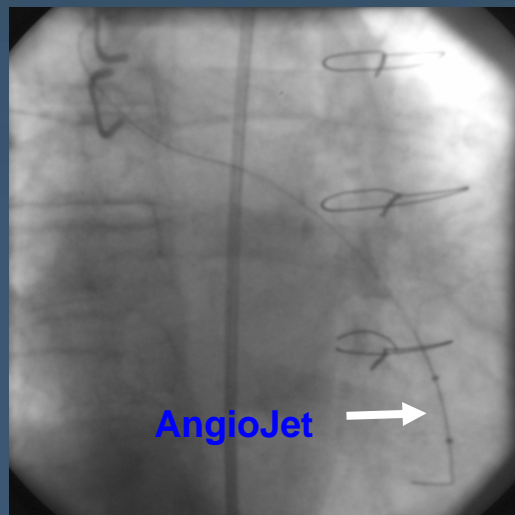
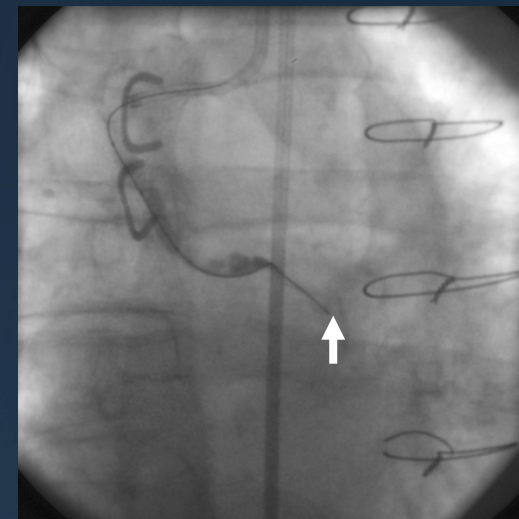
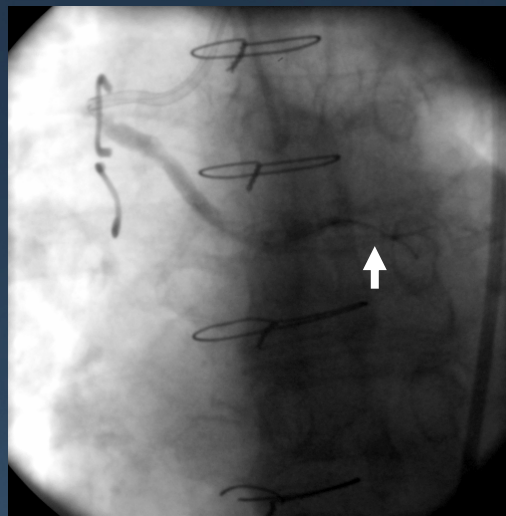
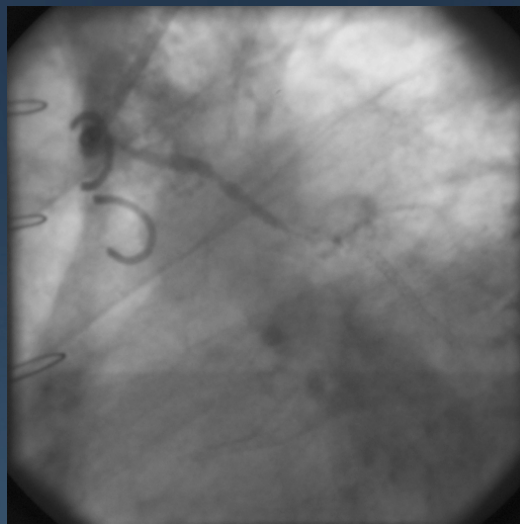


20 YEARS OF
INNOVATION
TCT2008

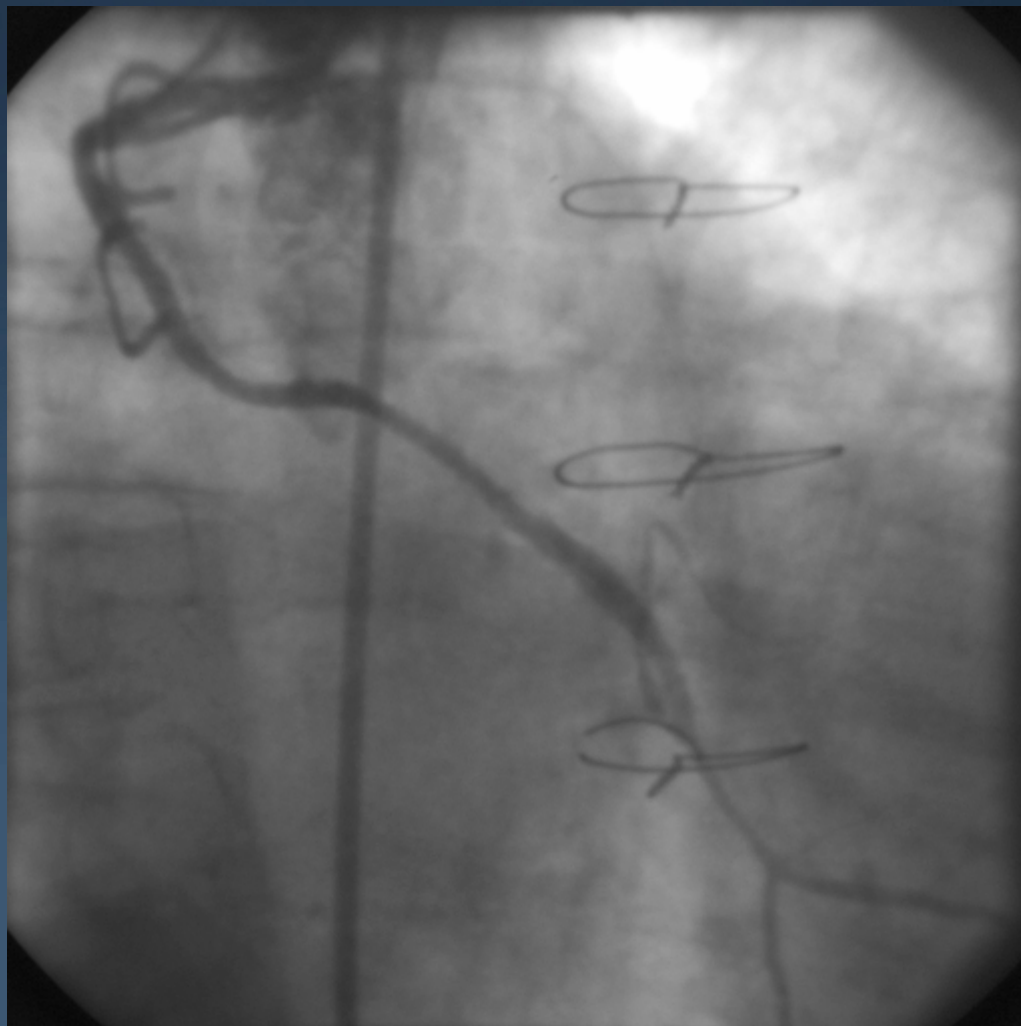


CARDIOVASCULAR RESEARCH
FOUNDATION

Case 3

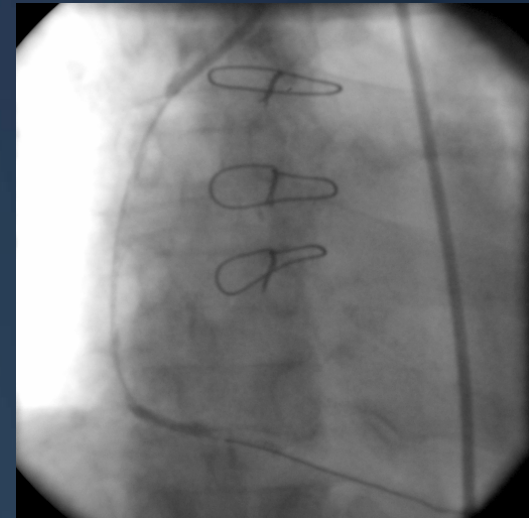
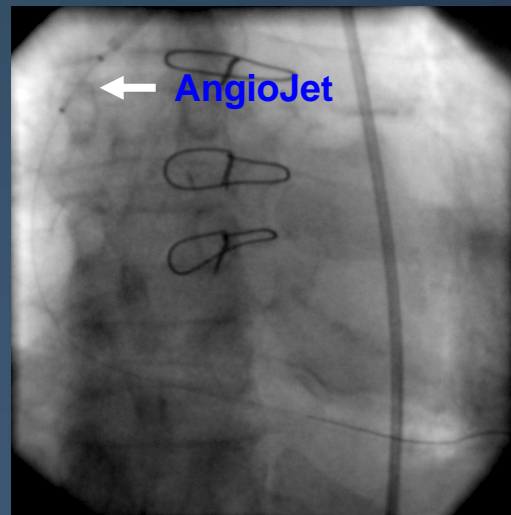
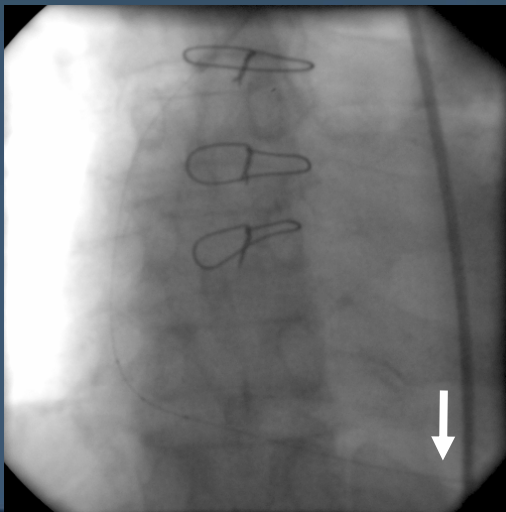
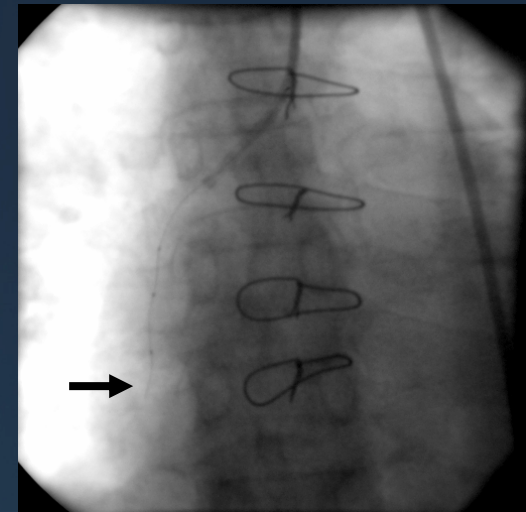
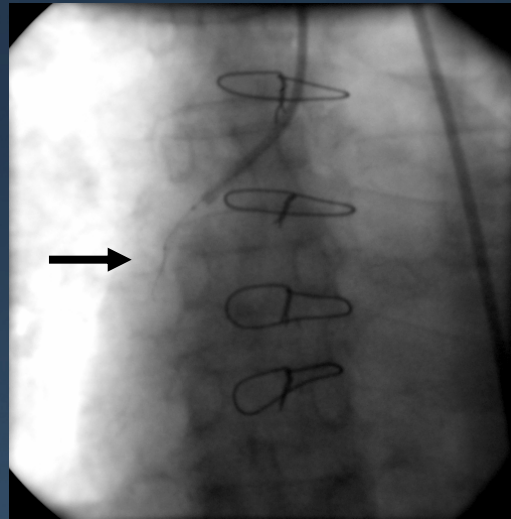
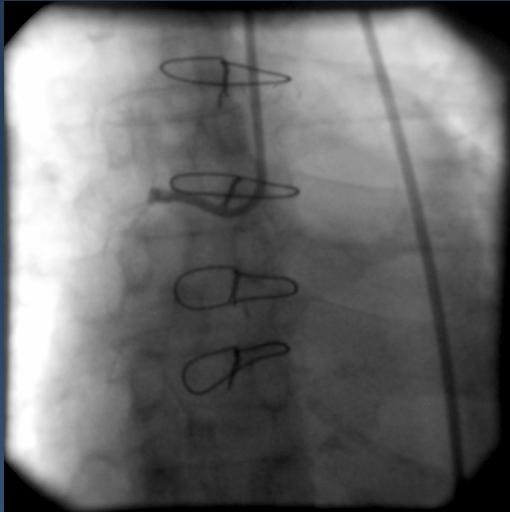


20 YEARS OF
INNOVATION
TCT2008

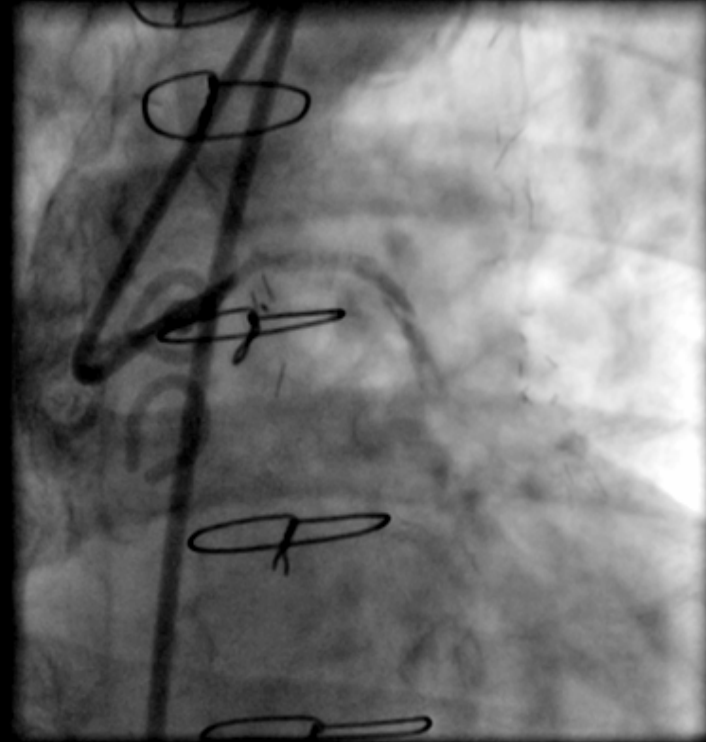
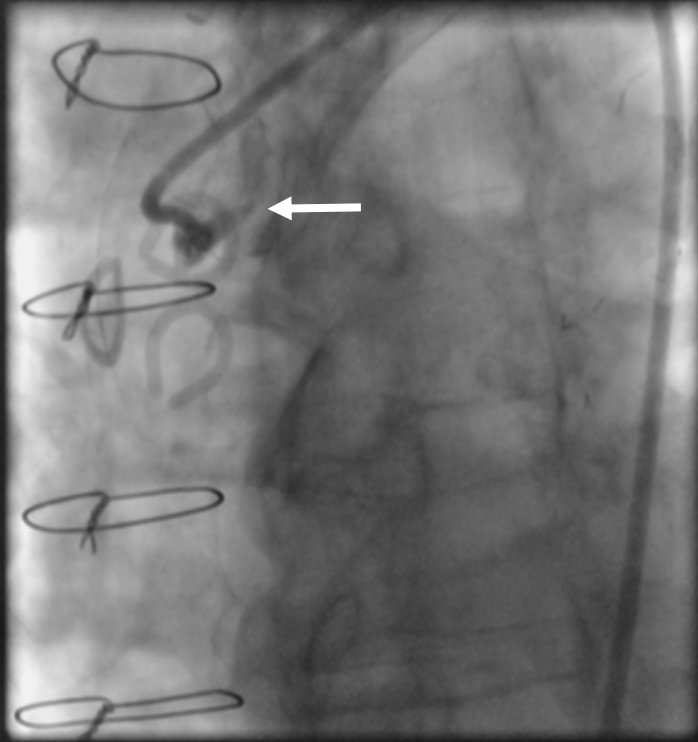


CARDIOVASCULAR RESEARCH
FOUNDATION

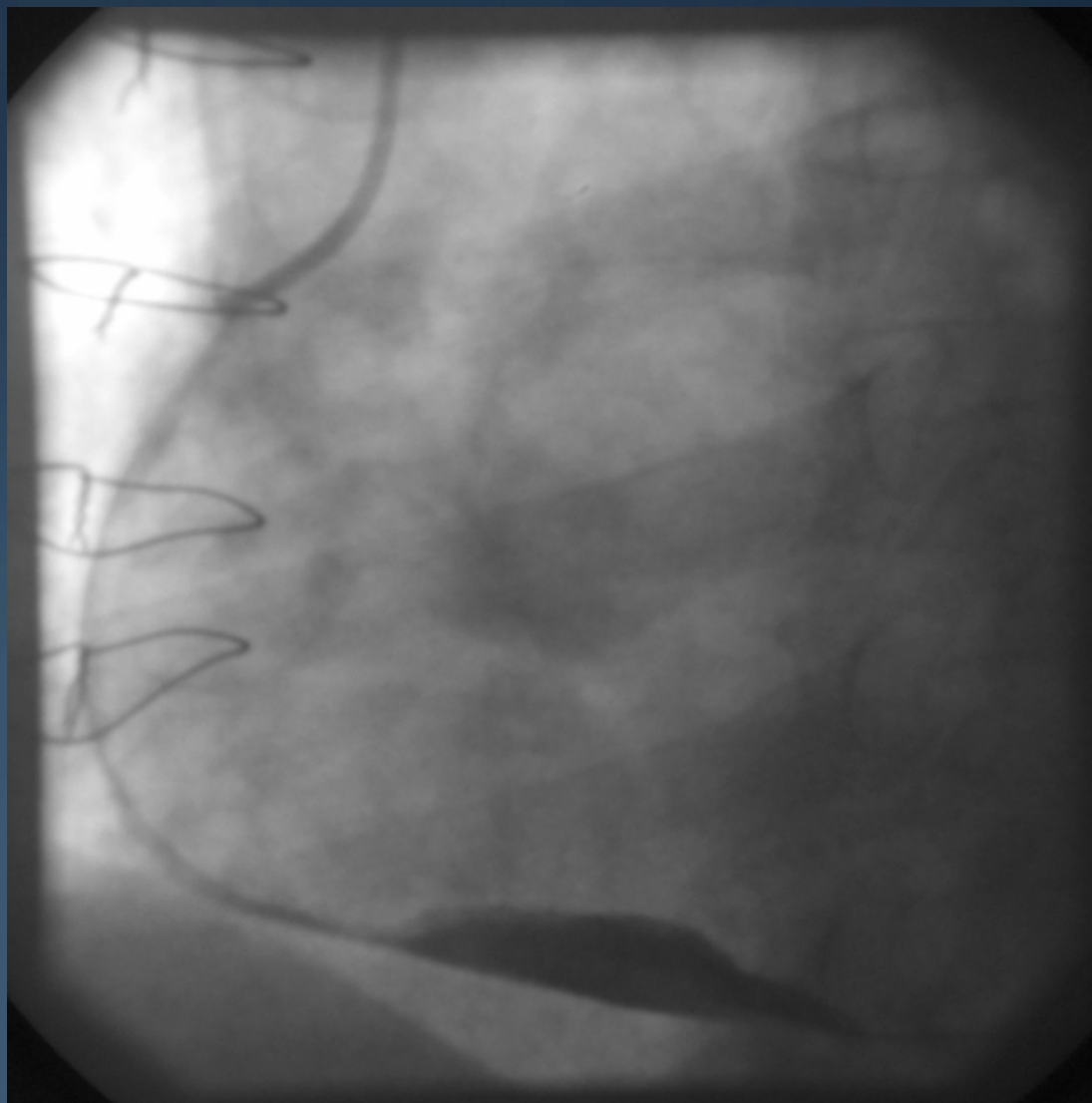
Case 4



Failed SVG Sculpturing



20 YEARS OF
INNOVATION
TCT2008



CARDIOVASCULAR RESEARCH
FOUNDATION

SVG Sculpturing:

Conclusions:

1. **SVG Sculpturing** is a revascularization technique indicated for ischemia caused by **totally occluded SVGs**.
2. Technique essentials: navigate, exchange , AngioJet, t-PA, repeat thrombectomy, dilate/stent.
3. Role of protection devices – unclear.
4. Patience is a virtue !!!

