

Intracoronary Thrombolysis in Patients with STEMI and a Large Thrombotic Burden

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Disclosure Statement of Financial Interest

I, Miha Cercek DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.



Population: \approx 2 million

CathLabs: 5

24/7 On-Call CathLabs: 2

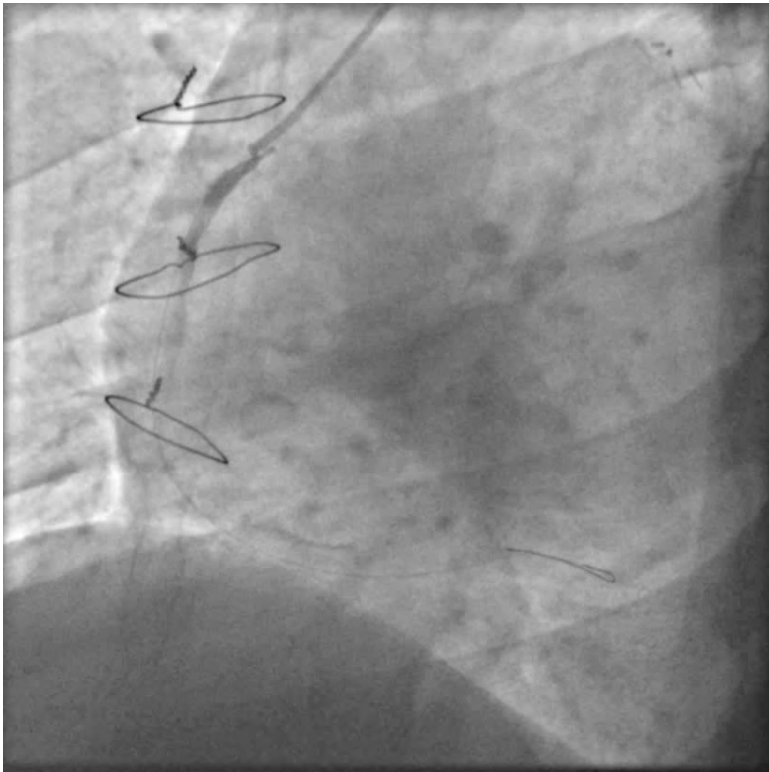
UMC Ljubljana:

>5000 cases/year

\approx 800 STEMI pts/year

Source: Wikimedia Commons

STEMI, large thrombotic burden



What to do when

- thrombus aspiration (through guiding and/or aspiration catheter) is not effective
- thrombectomy device is not effective
- GP IIb/IIIa inh. doesn't help

Intracoronary thrombolysis

Experimental studies confirmed the feasibility and safety of IC thrombolysis and the technique was applied within 3 hours of onset of pain in 29 patients with STEMI. **Lysis of clot was achieved** in 27 of 29 patients.

Ganz W et al. Am Heart J. 1981;102:1145-9.

Recently, a small registry (N=30) data were published, showing intracoronary thrombolysis **improved TIMI flow grade** from 0/1 at baseline to ≥ 2 in most patients (97%). **No major bleeding** events were observed.

Boscarelli D et al. Eur Heart J Acute Cardiovasc Care. 2014;3:229-36.

Registry at UMC Ljubljana 2011-2016: 10 pts.

SEX	AGE	DIAGNOSIS	DEVICE for ICT
M	73	NSTEMI - SVG RCA	Guiding catheter
M	69	NSTEMI - LCX	Microcatheter
M	23	STEMI - LAD	Microcatheter
M	62	STEMI - SVG RCA	Microcatheter
M	68	NSTEMI - SVG RCA	Aspiration catheter
M	73	NSTEMI - SVG LAD	Microcatheter
F	73	NSTEMI - SVG OM	Microcatheter
M	34	STEMI - LAD	Microcatheter
M	66	NSTEMI - SVG RCA	Guiding catheter
M	63	NSTEMI - SVG OM	Microcatheter

Case: patient with STEMI presenting with massive intraluminal thrombus and failed aspiration

General: M.S., 62, male.

Presentation:

Admission due to inferior STEMI.

Past medical history:

Inferolateral MI in 1993, CABG surgery in 1995 (SVG to LAD, OM, RCA).

Type 2 diabetes mellitus on insulin therapy, Arterial hypertension, Hypercholesterolemia, Past smoker.

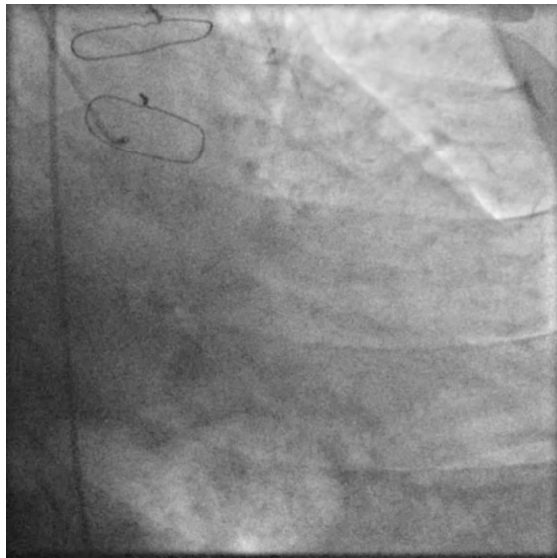
Clinical status on admission: BP 150/85mmHg, Killip class I.

Baseline Angiogram

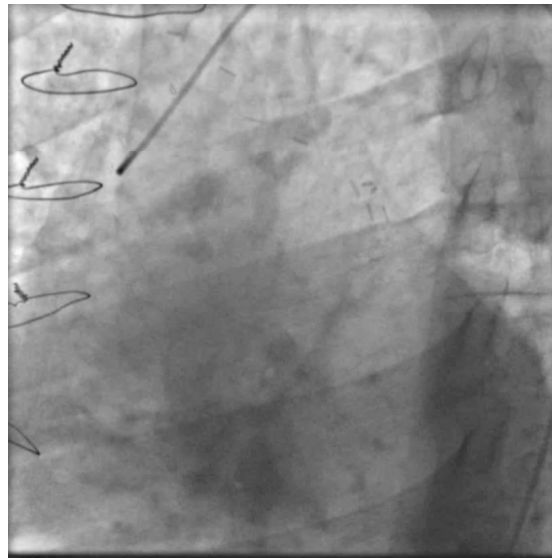
Vascular access: AFC dex.

Left Coronary Artery

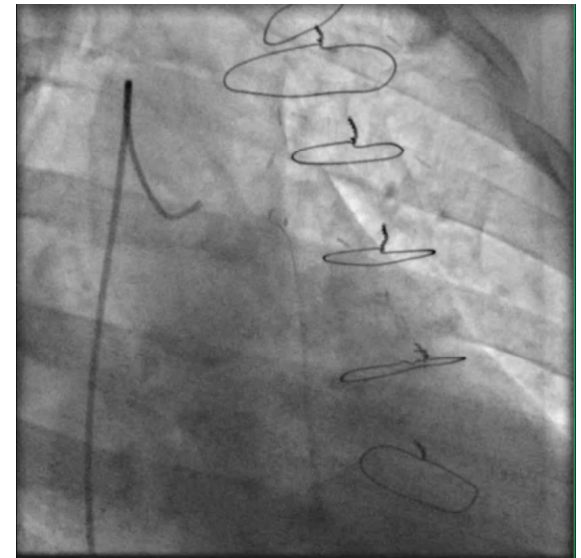
Native LCA



SVG-LAD



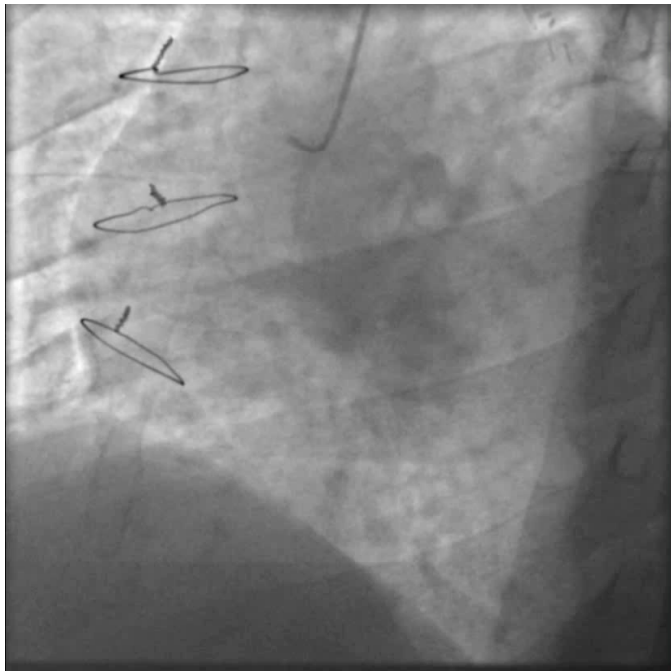
SVG-OM



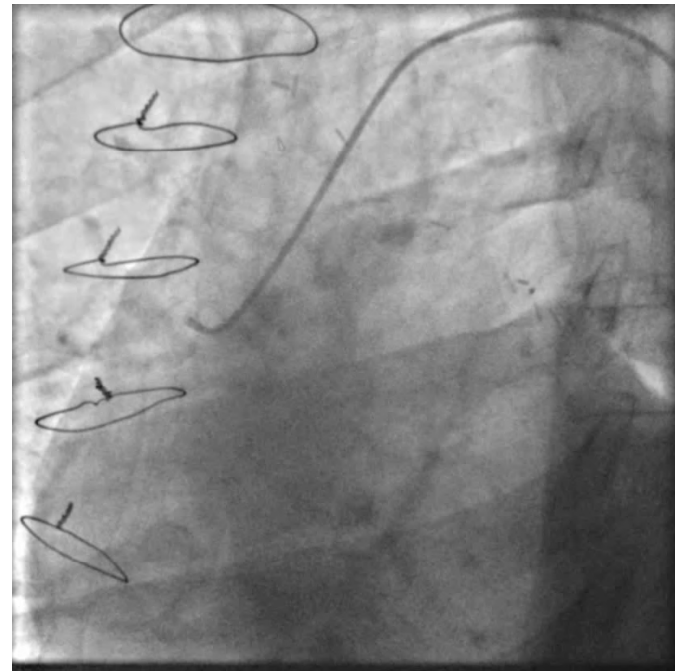
Baseline Angiogram

Right Coronary Artery

Native RCA



SVG-RCA



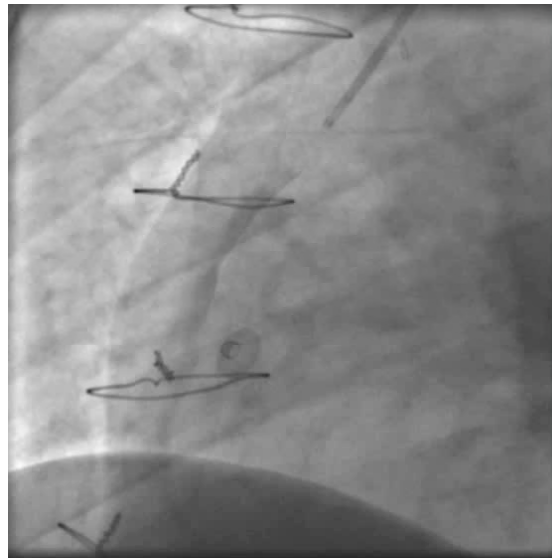
PPCI SVG-RCA

Guiding catheter - MP F7; Floppy guide wire.

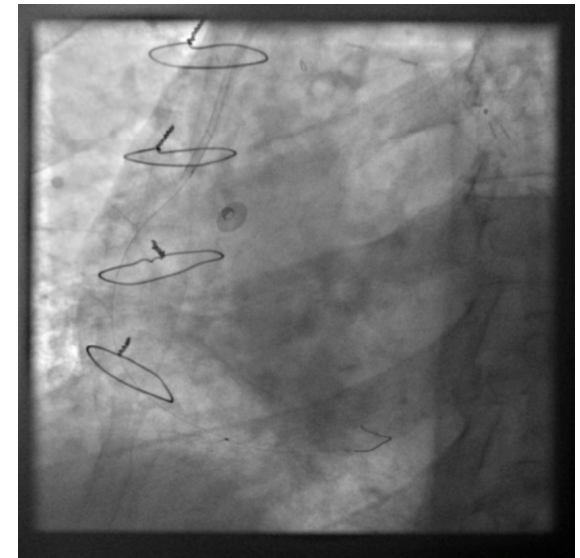
Adjunctive therapy: UFH 70 IU/kg iv bolus; GP IIb/IIIa inh. (eptifibatide) 2x iv bolus + infusion

SVG RCA remains occluded after several attempts of thrombus removal.

Manual aspiration through guiding catheter



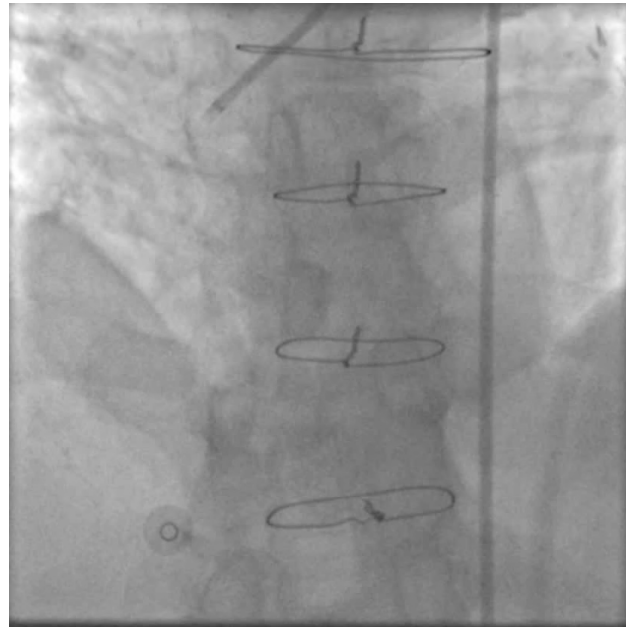
Microcatheter insertion



I.C. Thrombolysis

- Guiding catheter - MP F7; microcatheter with the tip in the thrombotic occlusion
- Alteplase (rt-PA) bolus (5mg) and i.c. infusion 1mg/h for 24 hours
- Concomitant therapy: ASA 500mg, clopidogrel 600mg, UFH i.v. infusion 1000 IU/h

Control angiography after i.c. thrombolysis:



Follow-up

Further hospital stay was uneventful.

The patient was discharged 5 days after the procedure.

At the 6-month follow-up visit he complained of angina on strenuous exertion and is being treated medically.

Registry at UMC Ljubljana - Outcome

SEX	AGE	Final TIMI Flow	Bleeding Complication	Catheter Thrombosis
M	73	2	No	No
M	69	3	No	No
M	23	2	No	Yes
M	62	3	No	No
M	68	3	No	No
M	73	UNK	Yes	No
F	73	3	No	No
M	34	3	No	No
M	66	2	No	No
M	63	3	No	No

Conclusions

- Intracoronary thrombolysis is an effective treatment option in patients with massive intraluminal thrombus and failed aspiration.
- Even prolonged intracoronary thrombolysis (24 hours) can be safely performed under careful monitoring in the CCU.



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