

Hybrid Revascularization: Simultaneous vs. Staged

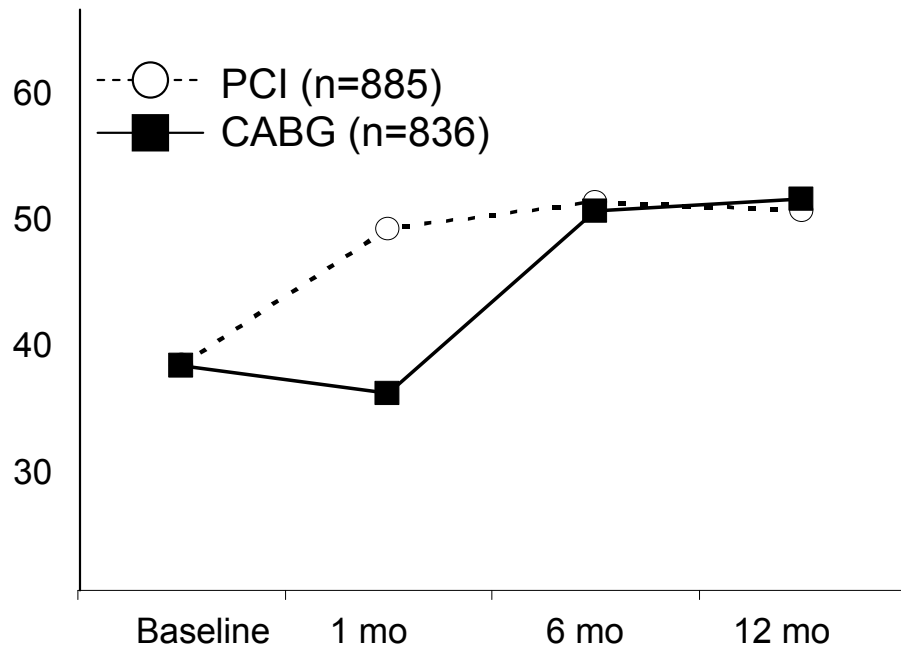
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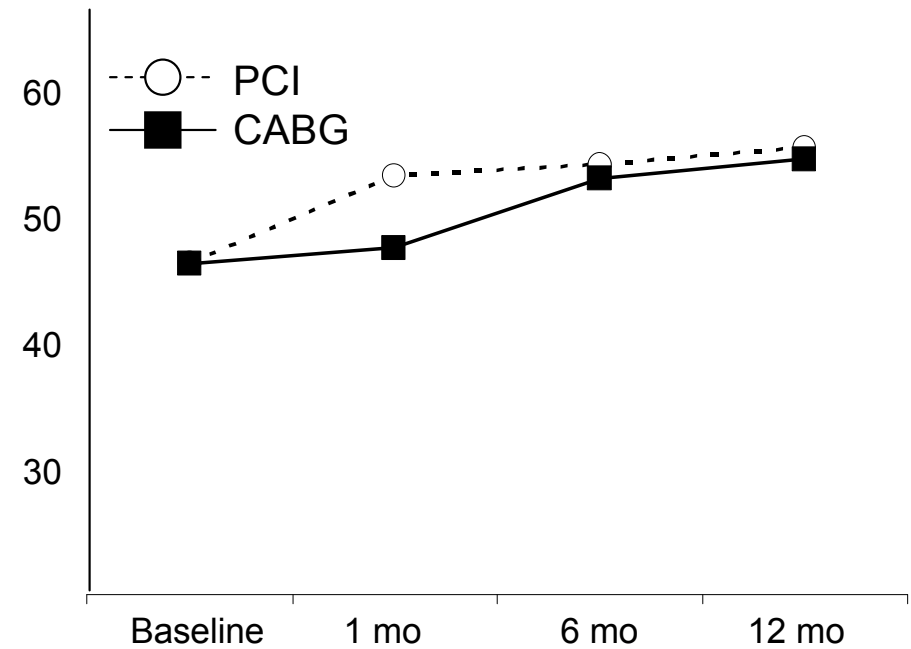


Quality of Life after CABG vs. PCI

Results from the Syntax Trial

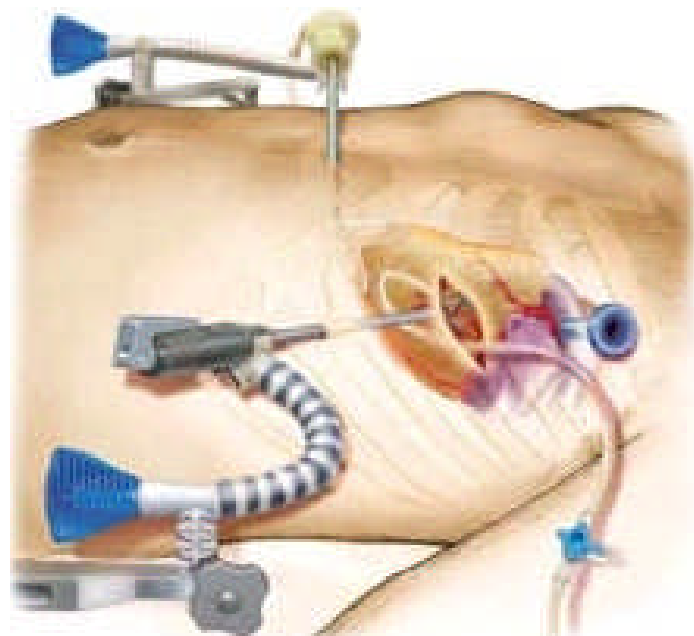


SF-36 – PHYSICAL



SF-36 - MENTAL

Minimally Invasive Surgical Revascularization

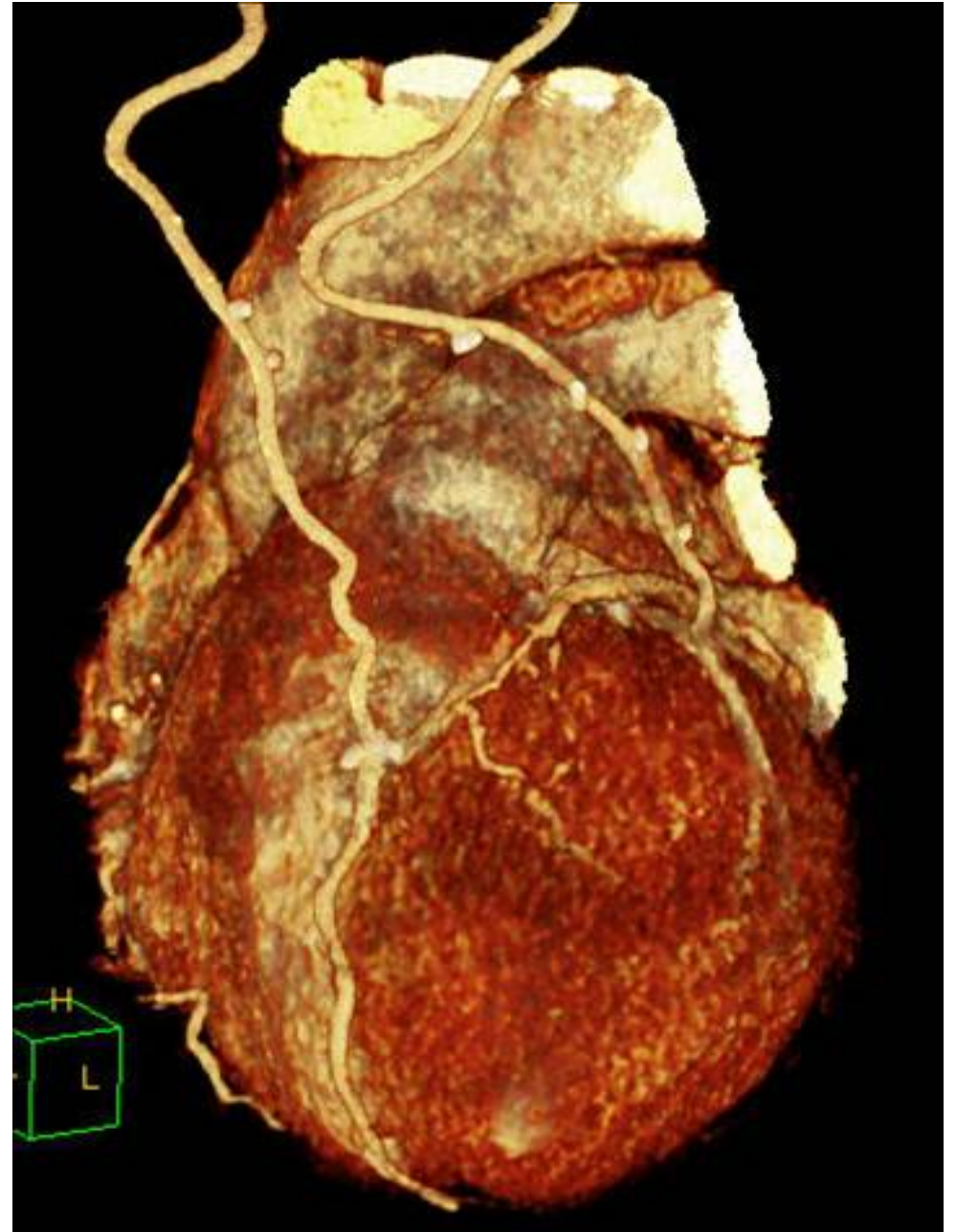


Bilateral IMA grafting without a sternotomy

MVST: Bilateral *In Situ* IMA Grafts



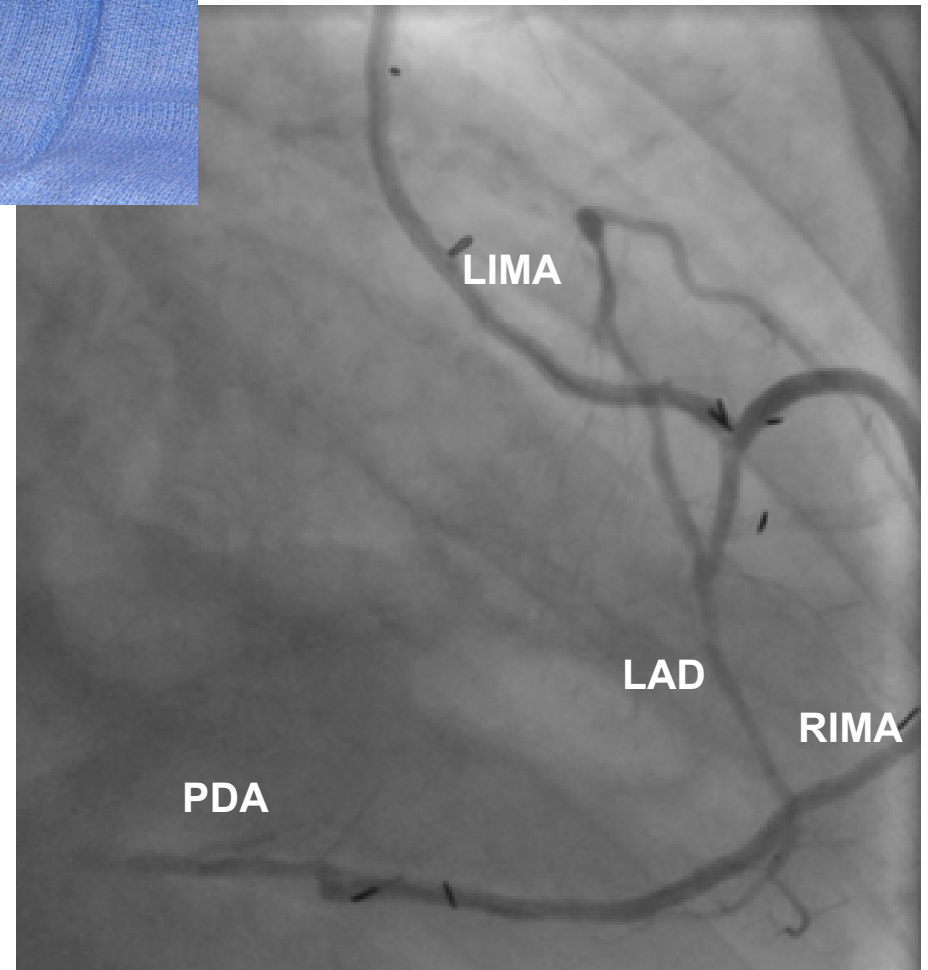
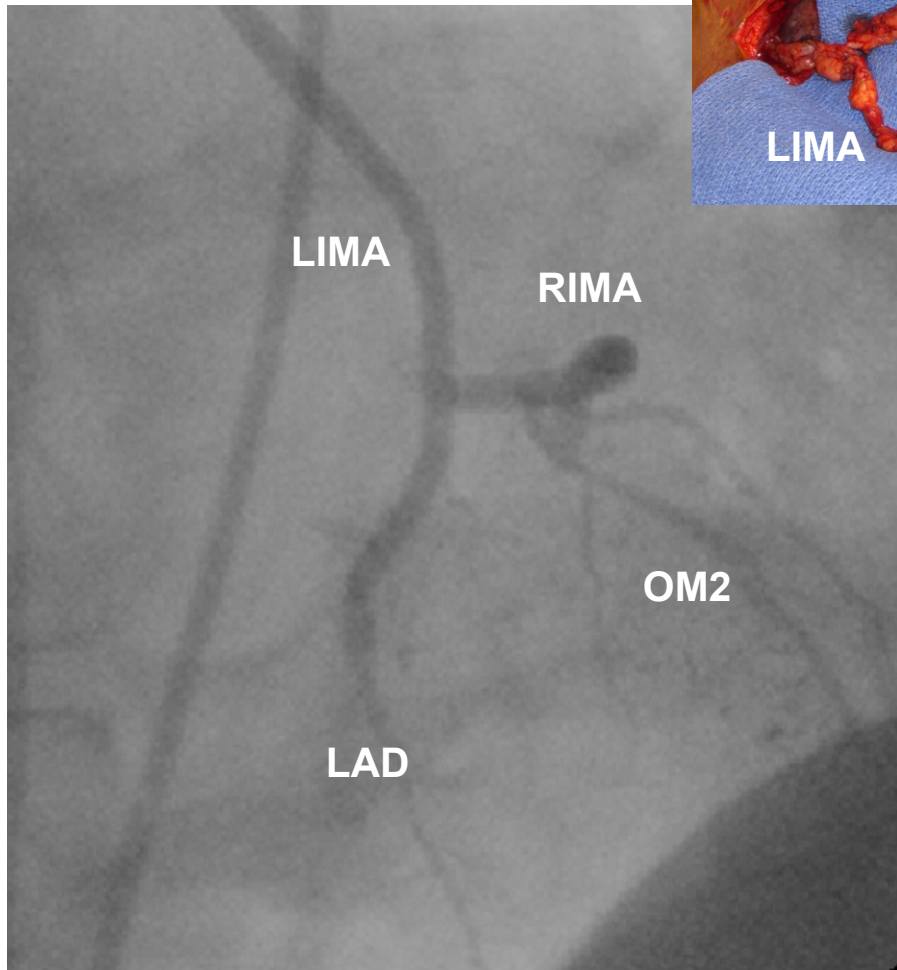
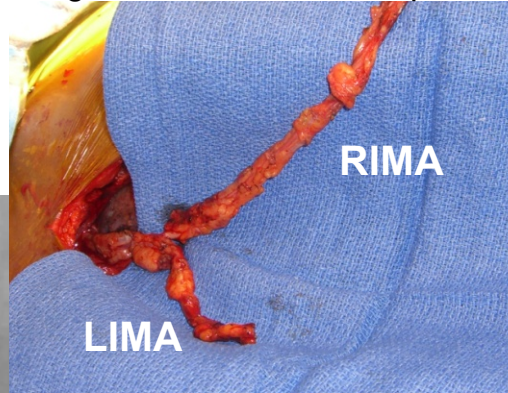
Small thoracotomy



Postoperative angiography

MVST: LIMA-RIMA Composite Graft

Creating the LIMA-radial composite graft



Hybrid Coronary Revascularization: Minimally Invasive CABG + PCI

- “Best of both worlds”: IMA + benefits of minimally invasive

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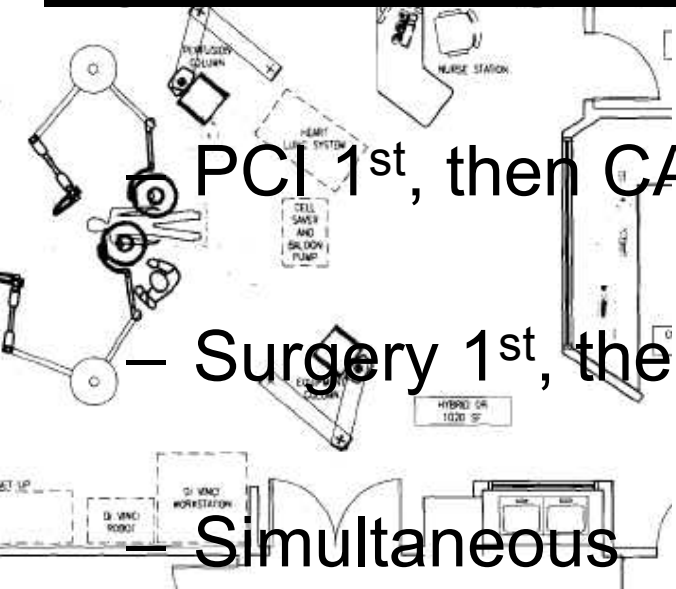
Hybrid Coronary Revascularization: Minimally Invasive CABG + PCI

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- “Best of both worlds”: IMA + benefits of minimally invasive
- Expands minimally invasive CABG
- Expands PCI (e.g. protected LM)
- **Angiographic confirmation of grafts**

Hybrid: Logistics



– PCI 1st, then CABG

– Surgery 1st, then PCI

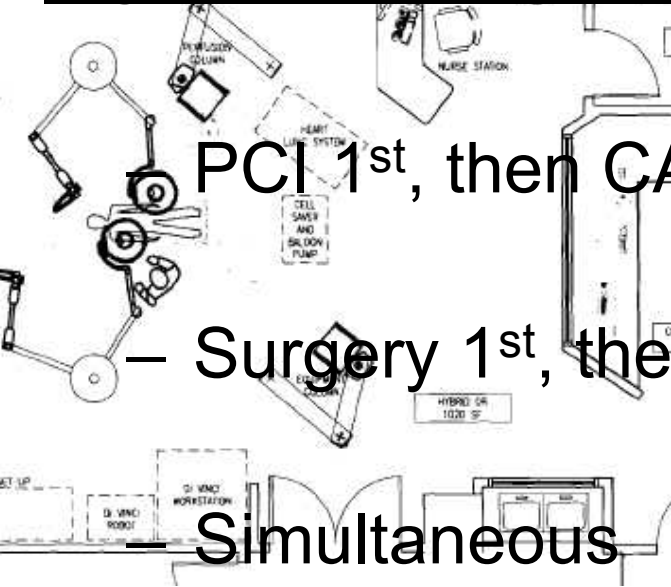
– Simultaneous

- hybrid OR



Hybrid Cath Lab - OR

Hybrid: Logistics



– PCI 1st, then CABG

– Surgery 1st, then PCI

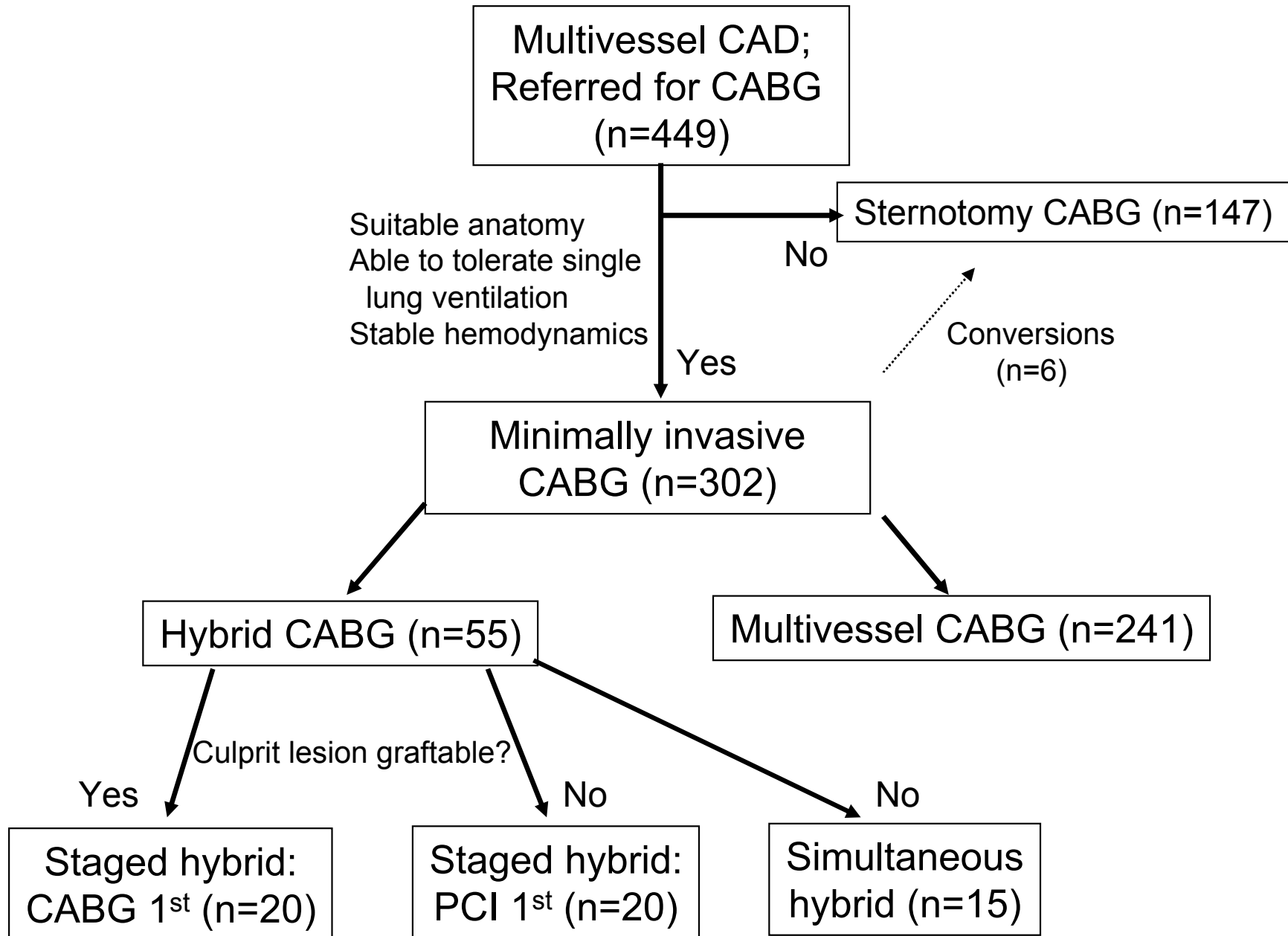
– Simultaneous

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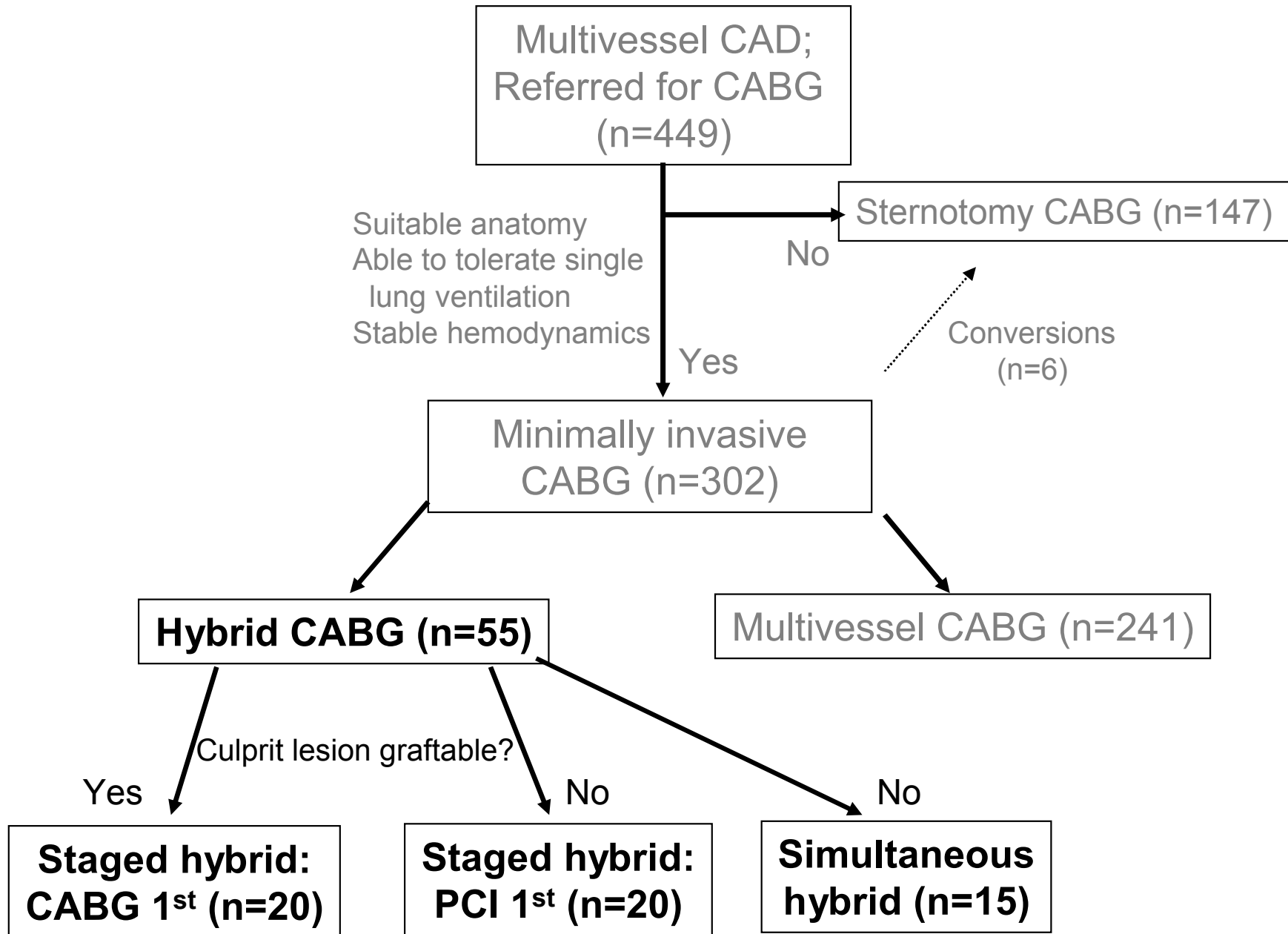


Feasibility, efficacy and safety
of these three approaches

Hybrid Patient Enrollment: 3/1/06 to present



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PATIENT POPULATION

	CABG 1st	PCI 1st	Simultaneous
Age (yr)	62.8 ± 9.1	64.4 ± 10.3	63.9 ± 10.1
Chronic Lung Disease	11%	10%	13%
Diabetes	48%	45%	51%
PVD	28%	26%	25%
Mean LVEF (%)			
Good (>50%)	62%	62%	55%
Moderate (35-50%)	20%	23%	27%
Poor (<35%)	18%	15%	18%
Number of Diseased Vessels	2.8 ± 0.5	2.7 ± 0.4	2.9 ± 0.8
Left Main Disease	39%	33%	43%
Congestive Heart Failure	13%	16%	19%
Logistic EuroSCORE: (%)	7.1 ± 5.2	7.7 ± 5.4	7.2 ± 6.5

REVASCULARIZATION TECHNIQUE

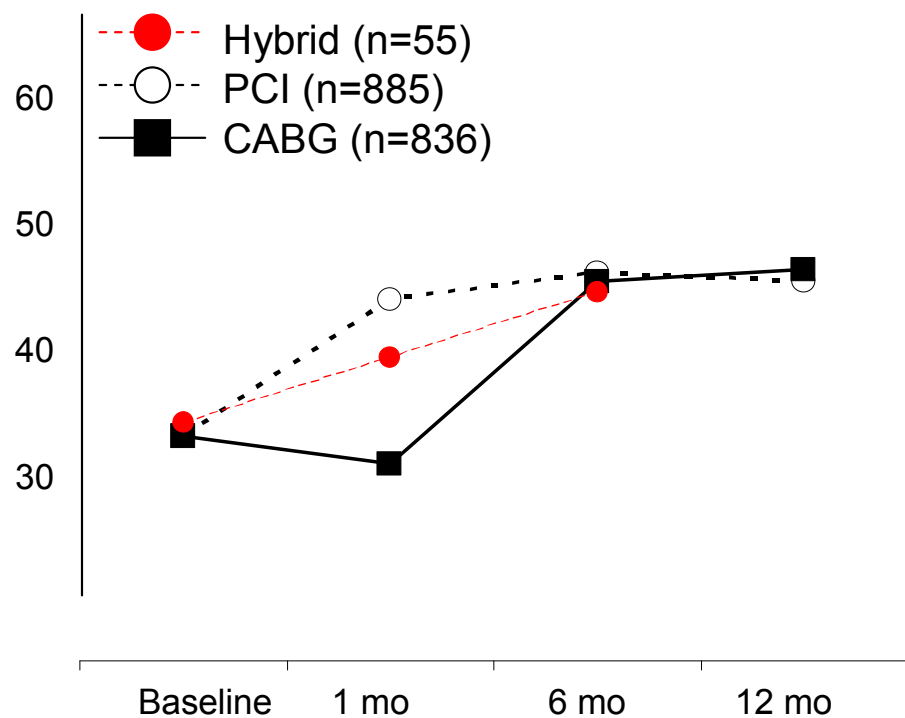
	CABG 1st	PCI 1st	Simultaneous
IMA to LAD (%)	20 (100)	20 (100)	15 (100)
RIMA graft (%)	12 (60)	11 (55)	7 (47)
Coronary stents (#/pt)	1.9	1.7	1.8
SVG	0	0	0

Results – *Perioperative Outcomes*

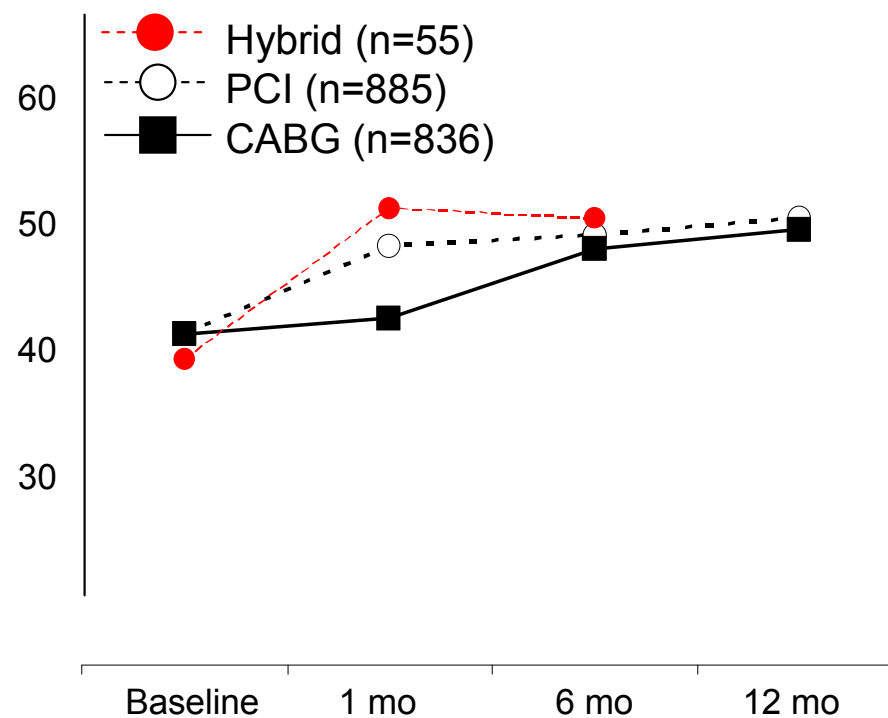
	CABG 1 st	PCI 1 st	Simultaneous
Length of Surgery (hr)	4.8 ± 1.2	4.7 ± 0.9	5.0 ± 1.2
Hospital LOS (day)	3.72 ± 1.5	3.55 ± 2.3	3.67 ± 2.2
ICU LOS (hr)	21.9 ± 7.3	20.6 ± 10.2	24.4 ± 17.3
Intubation Time (hr)	4.80 ± 6.4	5.52 ± 6.3	4.6 ± 8.3
Intraoperative Blood Loss (ml)	347 ± 166	330 ± 145	378 ± 225
PRBC Transfusion (unit)	0.46 ± 0.37	0.67 ± 0.35	0.53 ± 0.35

Quality of Life after CABG vs. PCI

Hybrid Results vs. Syntax Trial



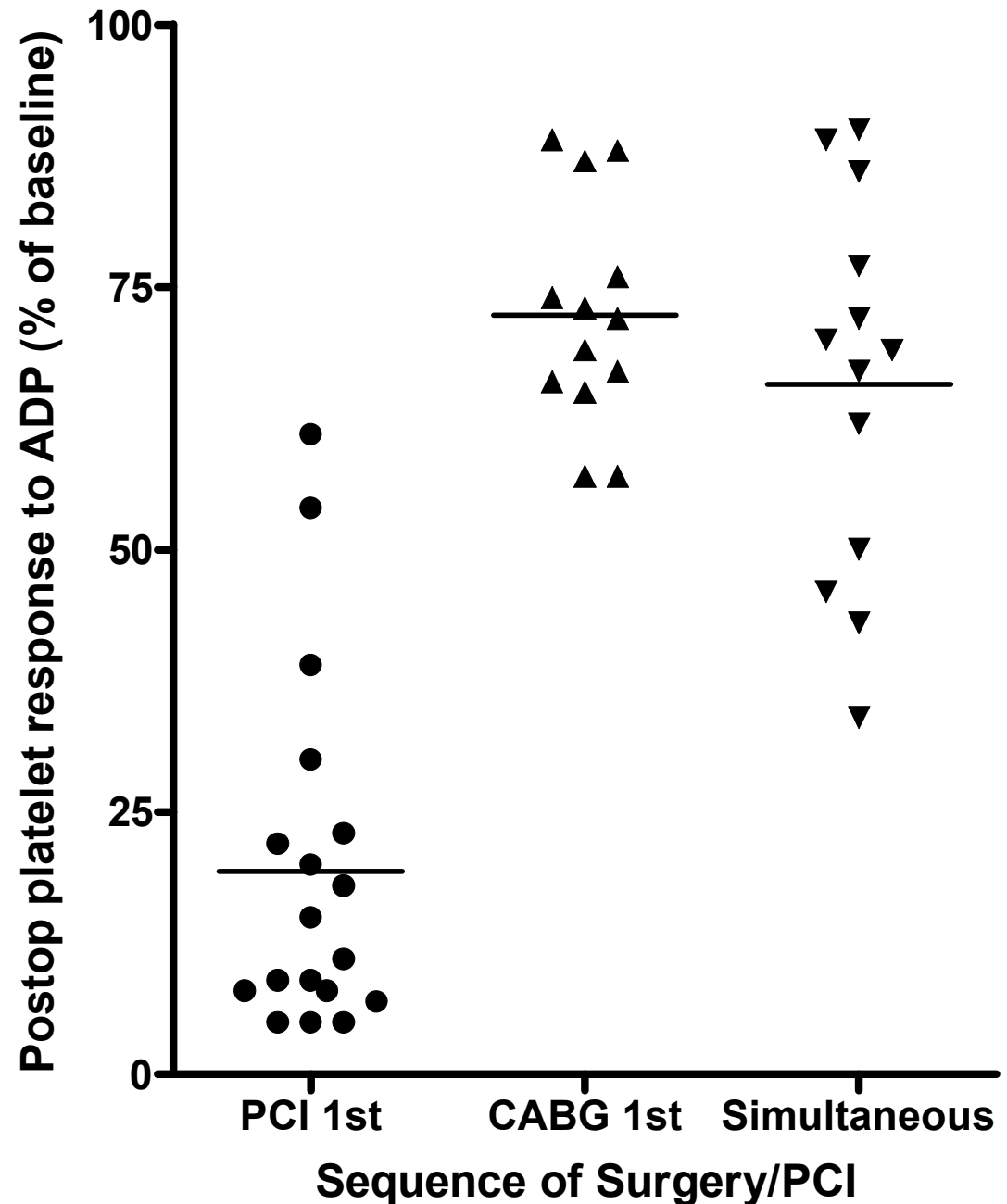
SF-36 – PHYSICAL



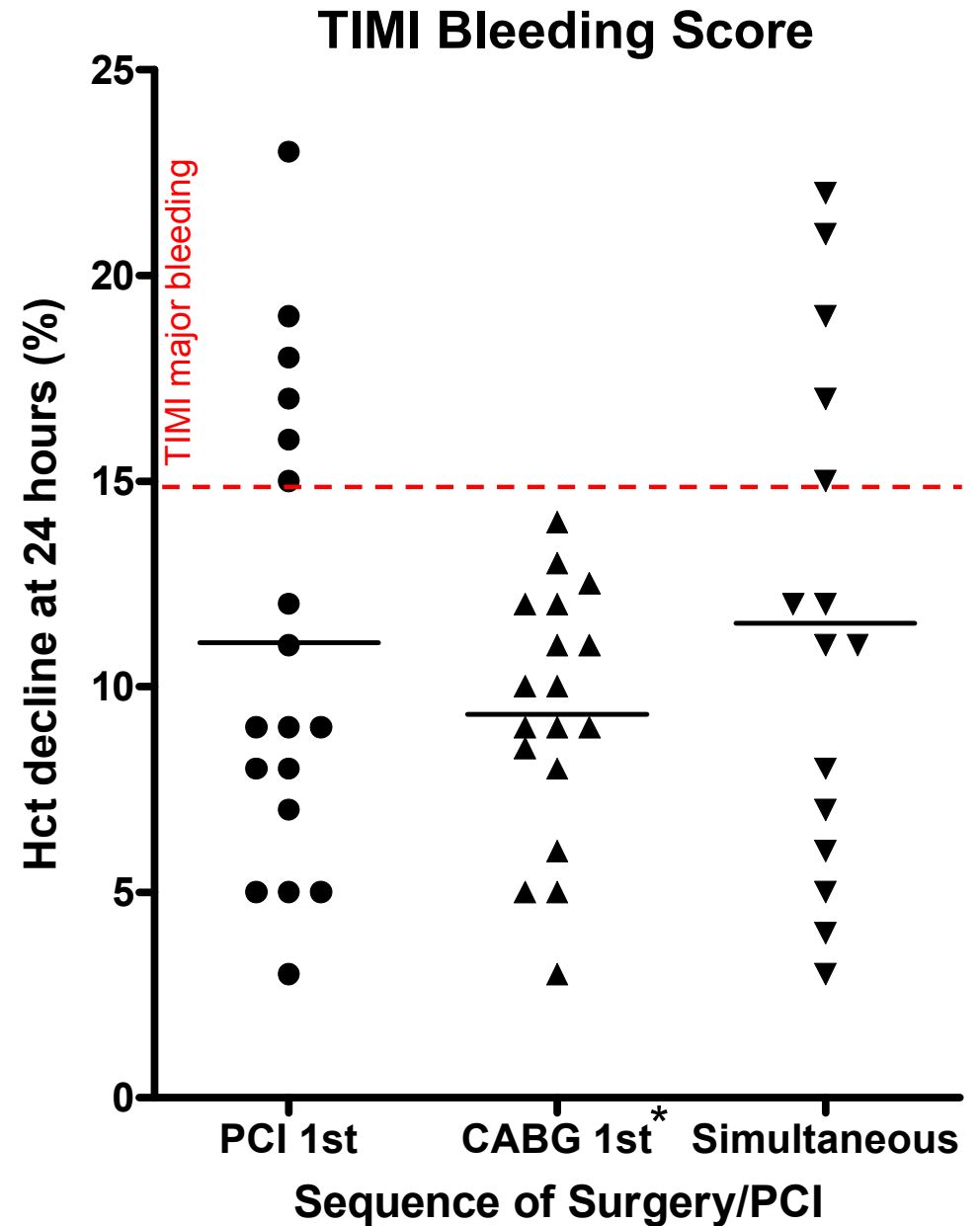
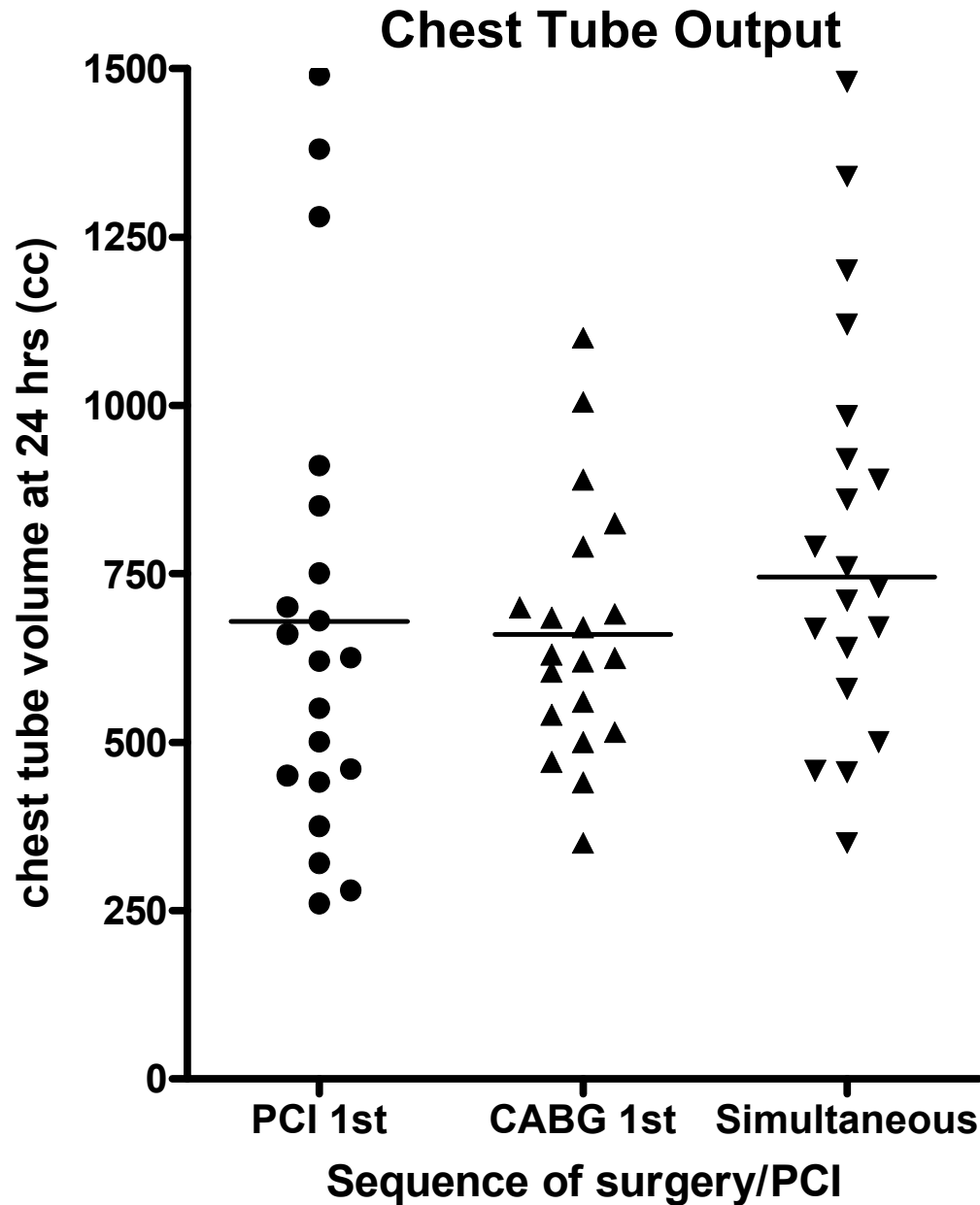
SF-36 - MENTAL

Antithrombotic Management

- **PCI 1st**
 - Plavix 600 mg load, 75 mg/d
 - Aspirin
- **CABG 1st**
 - Aspirin alone
- **Simultaneous**
 - Plavix 300 mg per NGT intraop, 75 mg/d
 - Aspirin

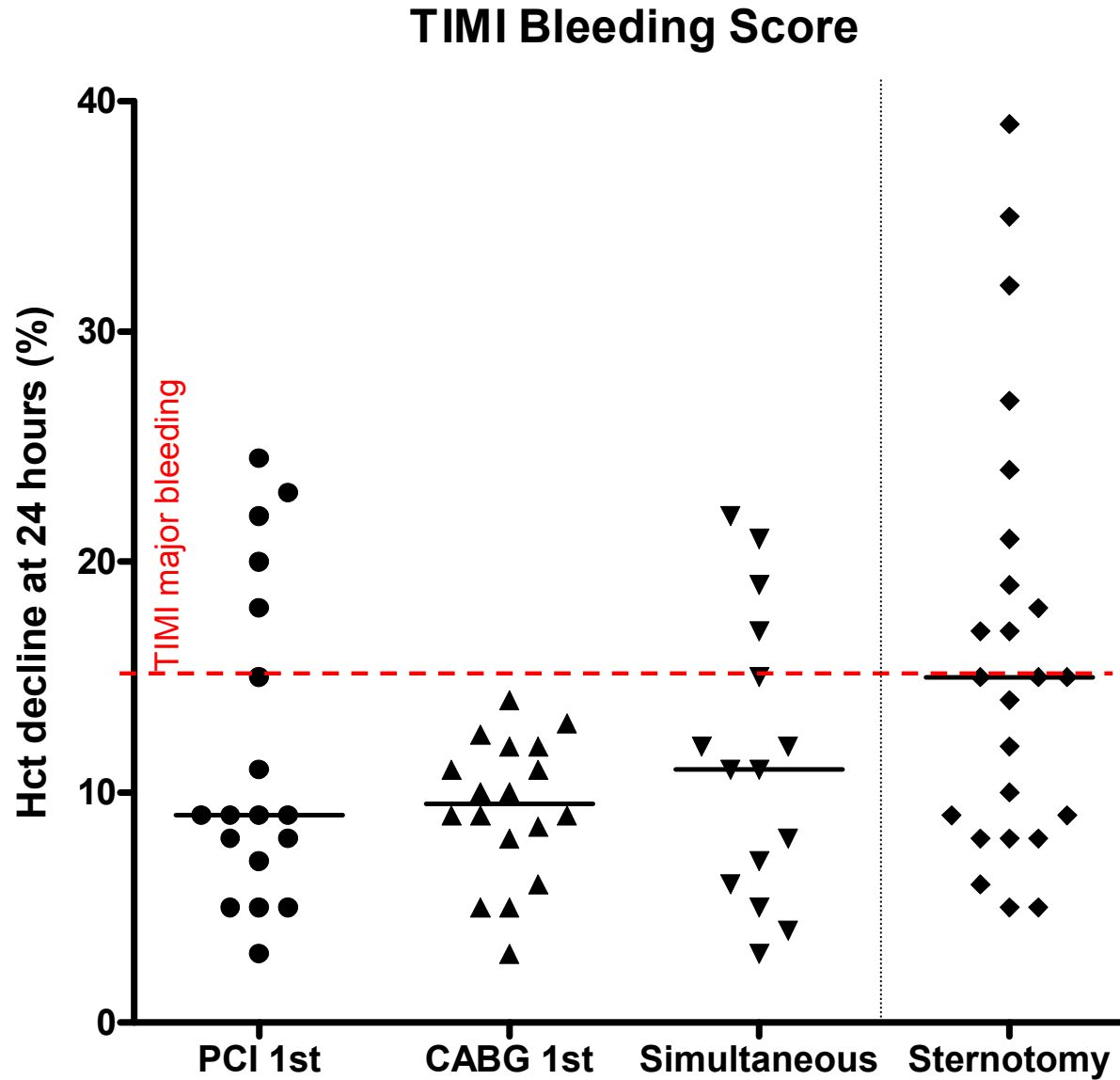


Bleeding After Hybrid



*p<0.05, TIMI Major Bleeding, Fisher exact

Plavix and Bleeding



Conclusions

- **Feasible:** Hybrid revascularization is suitable for typical CABG referrals
- **Effective:** Early recovery of QOL appears favorable
- **Safe:** Bleeding is not influenced by hybrid logistics
 - Surgery 1st, PCI 1st, simultaneous
 - Platelet ADP inhibition increases risk of “outliers”