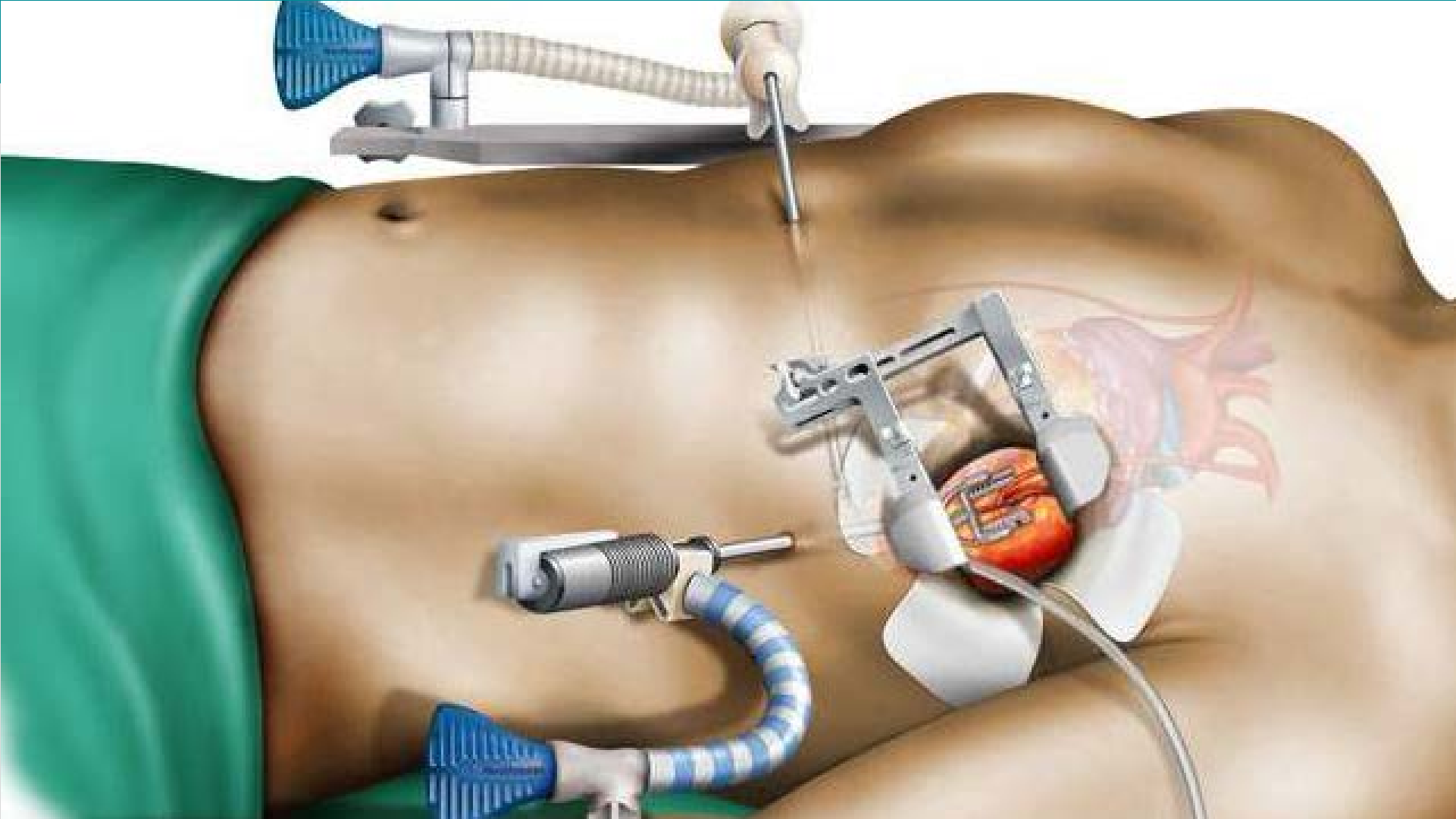


Adopting a MICS Platform

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Thoracic Surgery*

*Professor of Cardiovascular and Thoracic Surgery Atrium
Healthcare*



- Versatile
- Same strategy as the sternotomy
- Regular instruments
- Direct Vision



“Because of its all-comers design, SYNTAX is undoubtedly the most definitive and compelling of all the trials of CABG versus PCI. The investigators² estimate that currently about two-thirds of patients with complex coronary artery disease are best treated with CABG.”

“Despite the joint assessment of patients by the heart team, more than four times as many CABG patients withdrew consent to participate in the study compared with PCI patients (50 vs 11, respectively)”

“...probably because patients were concerned about the greater invasiveness of CABG.”

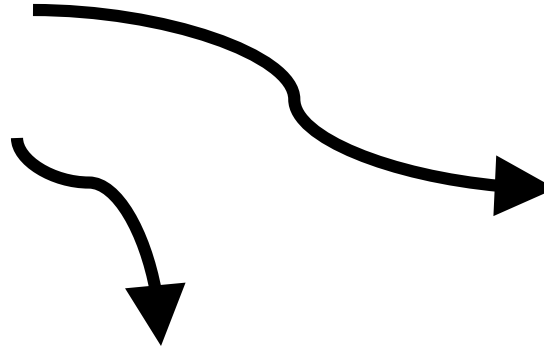
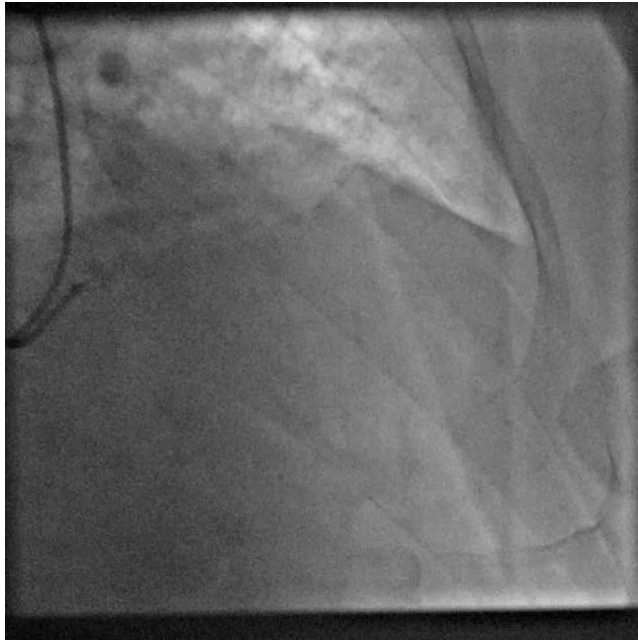
Physician driven (MACCE)

Patient driven

Pain

Quality of life

Society willing to accept suboptimal results to avoid major surgery.



The Answer

- Individual approach to each patient
- Individual approach to each artery
- Hybrid

Patient Selection

Those who want it!

- Priority to resume normal activity

Those who need it!

- Steroid dependent
- Elderly
- Deconditioned
- Debilitated

Major Relative Contra-indications

- Obesity
- Peripheral Vascular Disease
- Advanced Diffuse Coronary disease

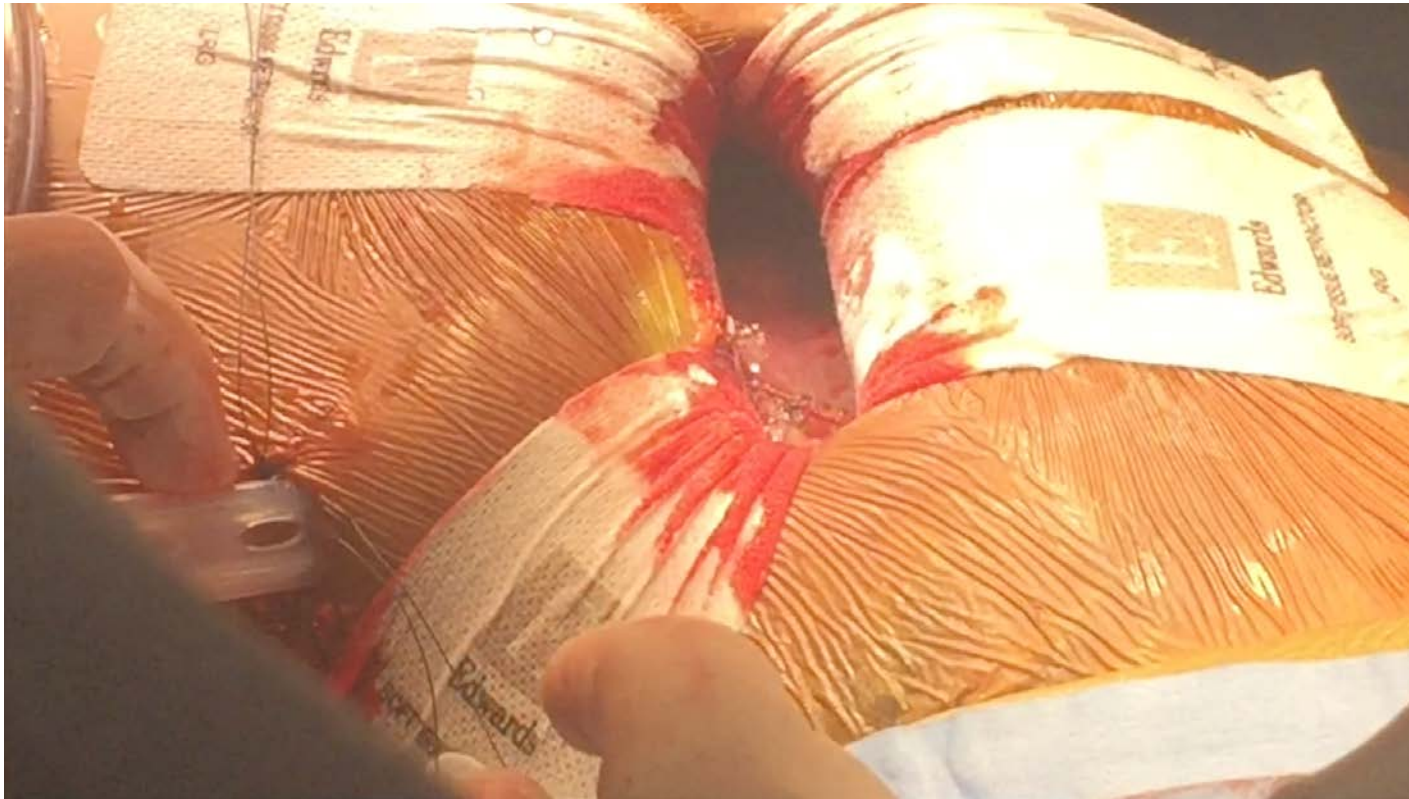
Right Lateral Decubitus Tilt 30-35°



S: Starfish® NS T: Thoracotomy O: Octopus® NS-TE



Pain Control



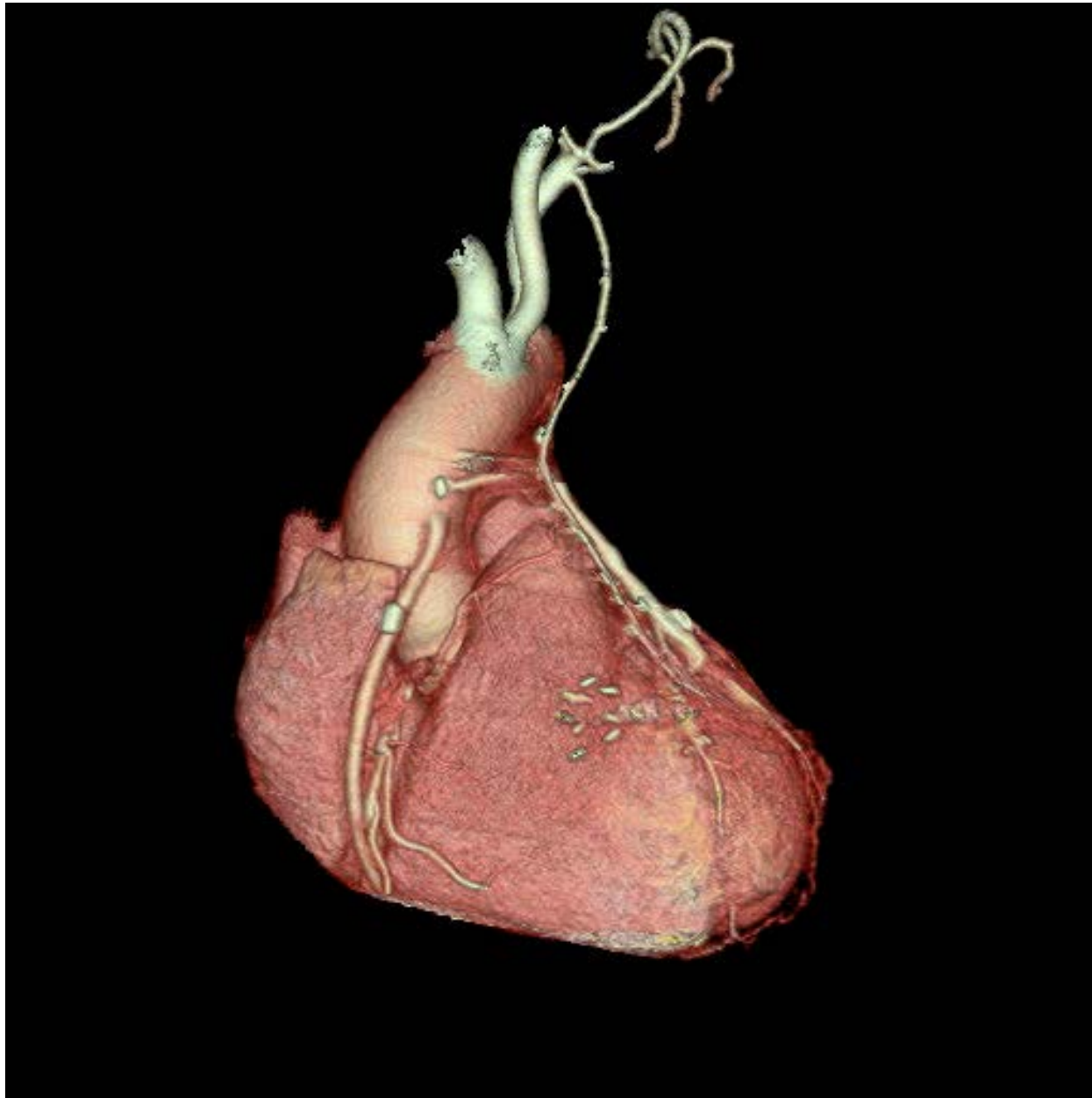
Release intercostal muscles

Avoid Rib Fx

Nerve Root Ablation

Elaine:





Results of the minimally invasive coronary artery bypass grafting angiographic patency study

Marc Ruel, MD, MPH,^a Masood A. Shariff, MD,^b Harry Lapierre, MD,^a Nikhil Goyal, MD,^b Carole Dennie, MD,^a Scott M. Sadel, MD,^b Benjamin Sohmer, MD,^a and Joseph T. McGinn Jr, MD^b

Objective: Minimally invasive coronary artery bypass grafting is safe and widely applicable, and may be associated with fewer transfusions and infections, and better recovery than standard coronary artery bypass grafting. **Methods:** Minimally Invasive Coronary Artery Bypass Grafting (MICA) was performed in 70 patients. The median length of hospital stay was 4 days, and all patients were followed to 6 months, with no mortality or major adverse cardiovascular events. Six-month computed tomography angiographic graft patency was 92% for all grafts and 100% for left internal thoracic artery grafts. **Results:** The mean age of patients was 64 ± 8 years, the mean ejection fraction was $51\% \pm 11\%$, and there were 10 female patients (11%) in the study. Surgeries were performed entirely off-pump in 68 patients (76%). Complete revascularization was achieved in all patients, and the median number of grafts was 3. There was

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Operative Data

Indication for Surgery

Elective 330 (31.8)

Urgent 683 (65.8)

Emergent 4 (0.4)

Total Vessels (LIMA + Vein) 2.2 ± 0.9

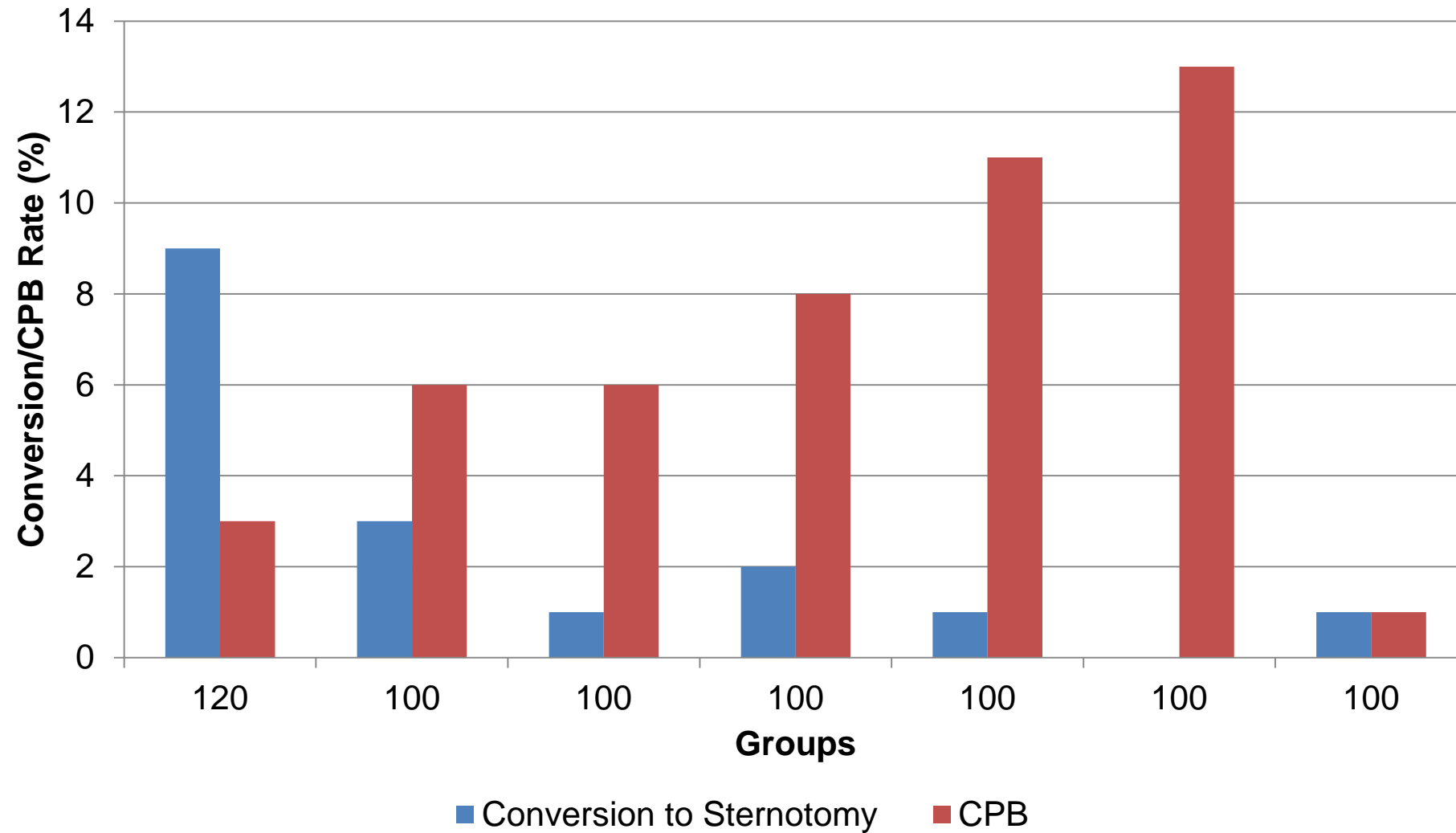
Cardiopulmonary Bypass Use 111 (10.7)

LIMA Use 1009 (97.2)

Cardiopulmonary Bypass Time 91.4 ± 51.9

Estimated Blood Loss 481.0 ± 384.9

Conversion To Sternotomy 26 (2.6)



Surgical Complications

Re-Operation for bleeding	30 (2.9)
<i>Deep Wound Infection</i>	<i>1 (0.0)</i>
Leg Wound Infection	5 (0.5)
Septicemia	10 (1.0)
Myocardial Infarction, New Q Waves	0 (0)
Pneumonia	44 (4.3)
Postoperative Atrial Fibrillation	215 (20.7)
Pulmonary Effusion	524 (50.4)
Length Of Stay	5.9 ± 5.9
Postoperative Mortality	9 (0.9)

Conclusions

- MICS CABG is safe
- Durable
- Requires minimal expenditures
- Need to improve diffusion
 - Better training
 - Improved technology
 - Acceptance by surgeons