

Současné možnosti robotické kardiochirurgie: zaostřeno na HCR

XXXV. WORKSHOP ČAIK

Jan Vojáček

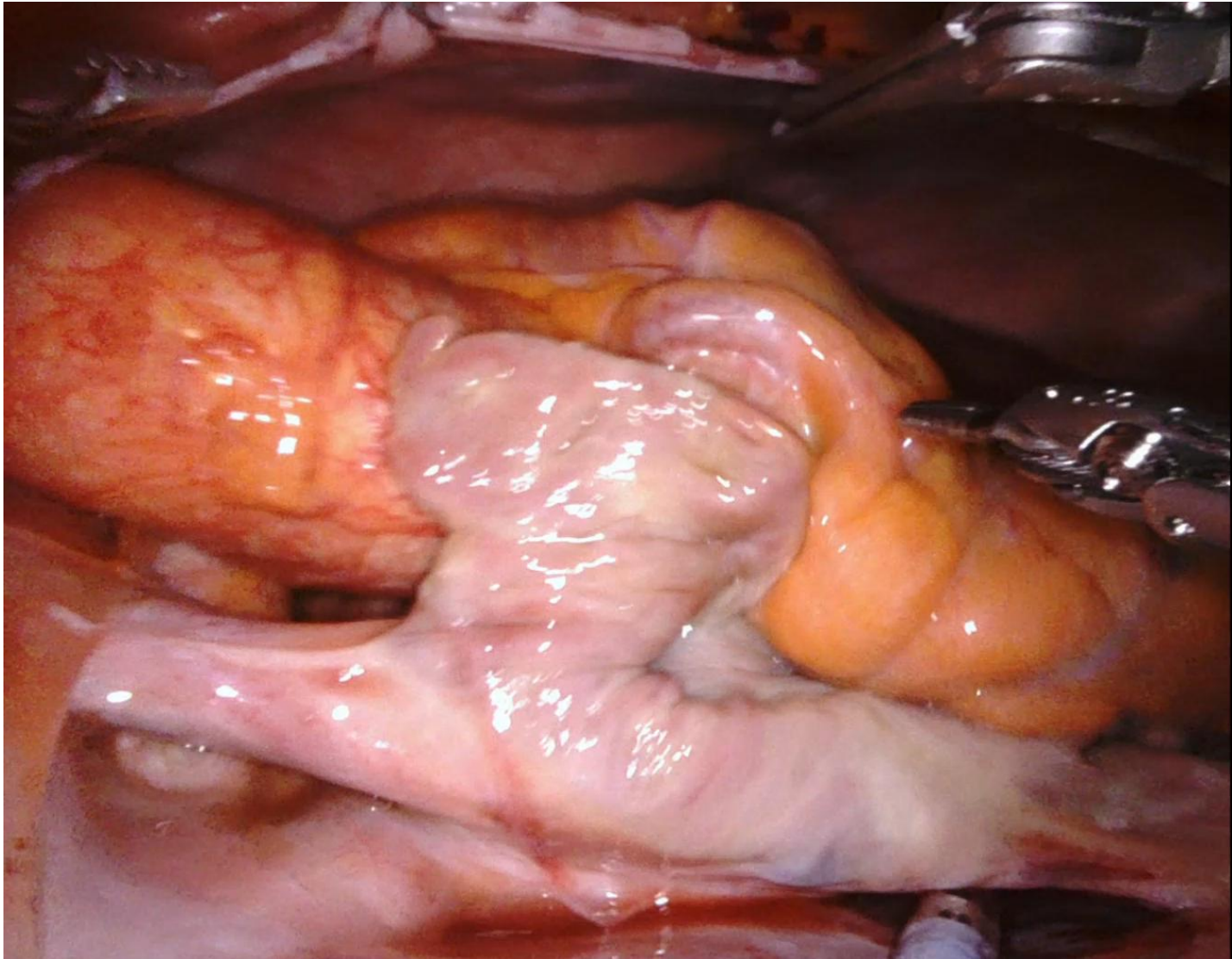
FN a LF v Hradci Králové



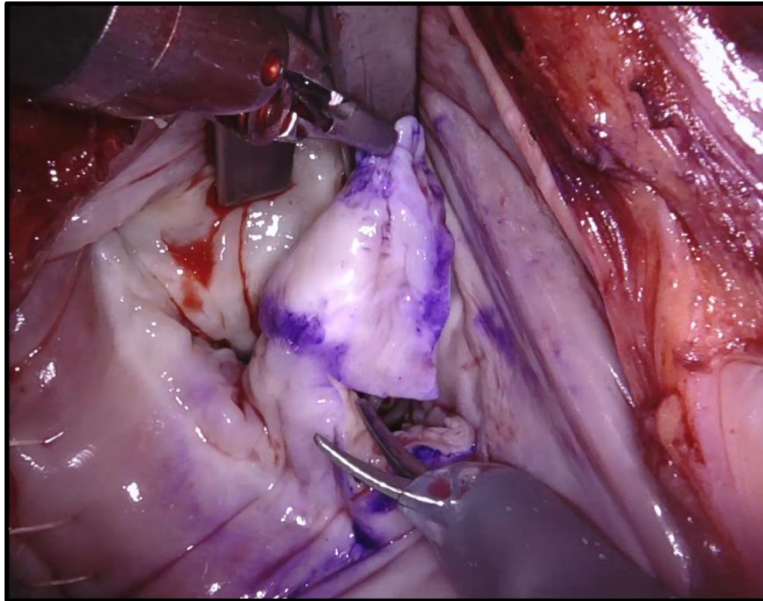
Robotics = Telemanipulation





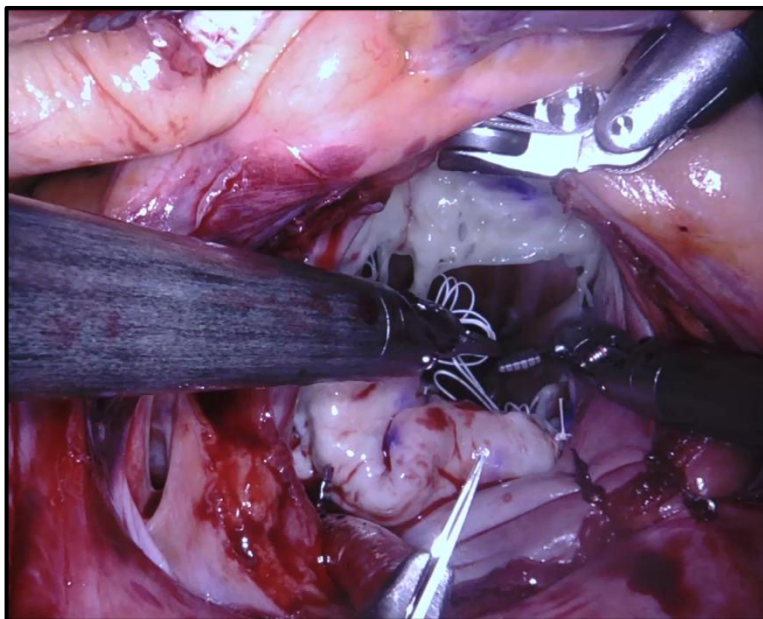
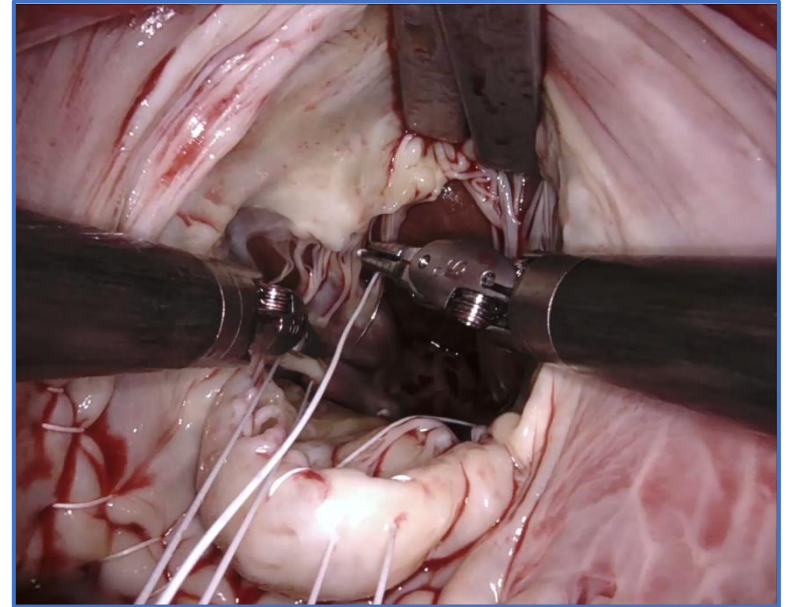


Robotic Mitral Valve Repair



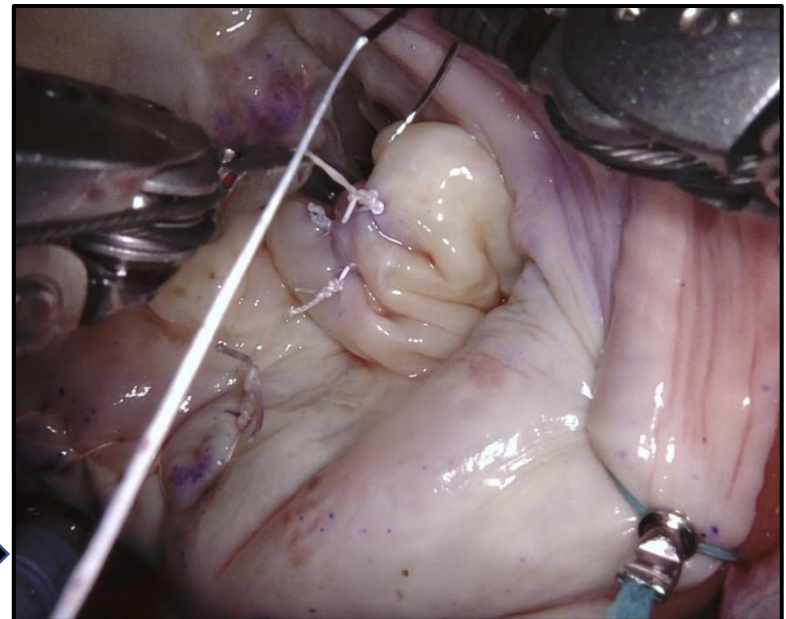
Triangular resection

Artificial Gore-Tex chordae - "David"



Artificial Gore-Tex chordae - „Mohr“

Complex reconstruction



Robotic Coronary Revascularization



ESC

European Society
of Cardiology

European Heart Journal (2019) **40**, 87–165
doi:10.1093/eurheartj/ehy394

ESC/EACTS GUIDELINES

2018 ESC/EACTS Guidelines on myocardial revascularization

Recommendations according to extent of CAD	CABG		PCI	
	Class ^a	Level ^b	Class ^a	Level ^b
One-vessel CAD				
Without proximal LAD stenosis.	IIb	C	I	C
With proximal LAD stenosis. ^{68,101,139–144}	I	A	I	A
Two-vessel CAD				
Without proximal LAD stenosis.	IIb	C	I	C
With proximal LAD stenosis. ^{68,70,73}	I	B	I	C



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on myocardial revascularization**



MIDCAB: Minimally invasive direct CABG

Minimally invasive techniques

Off-pump CABG and preferably no-touch techniques on the ascending aorta, by experienced operators, are recommended in patients with significant atherosclerotic aortic disease [508, 509, 544, 557–559].

I

B

Off-pump CABG should be considered for subgroups of high-risk patients by experienced off-pump teams [525, 557–560].

IIa

B

Where expertise exists, minimally invasive CABG through limited thoracic access should be considered in patients with isolated LAD lesions or in the context of hybrid revascularization [143, 534, 535, 561].

IIa

B

Hybrid procedures, defined as consecutive or combined surgical and percutaneous revascularization, may be considered in specific patient subsets at experienced centres [536, 561–563].

IIb

B



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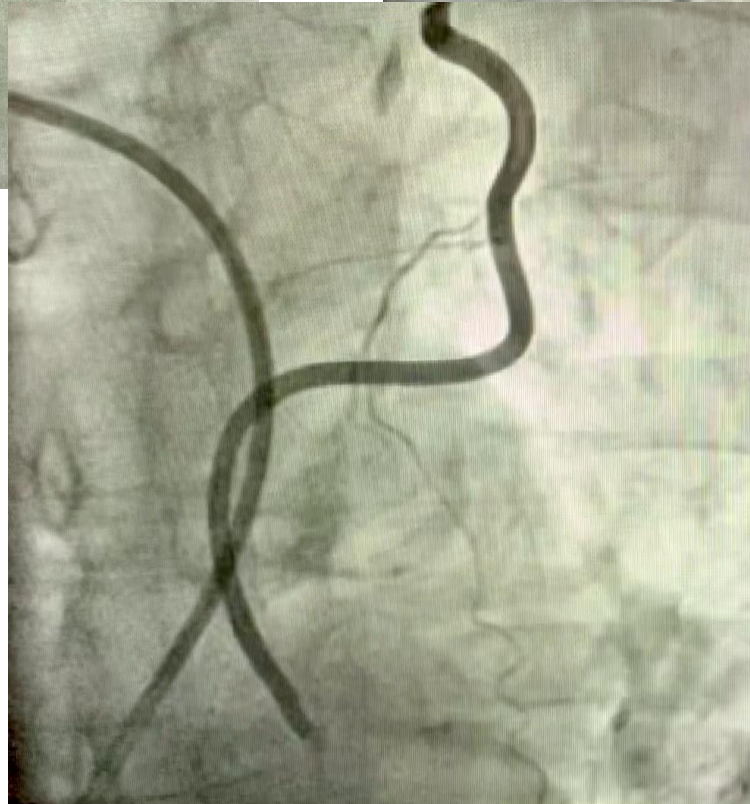
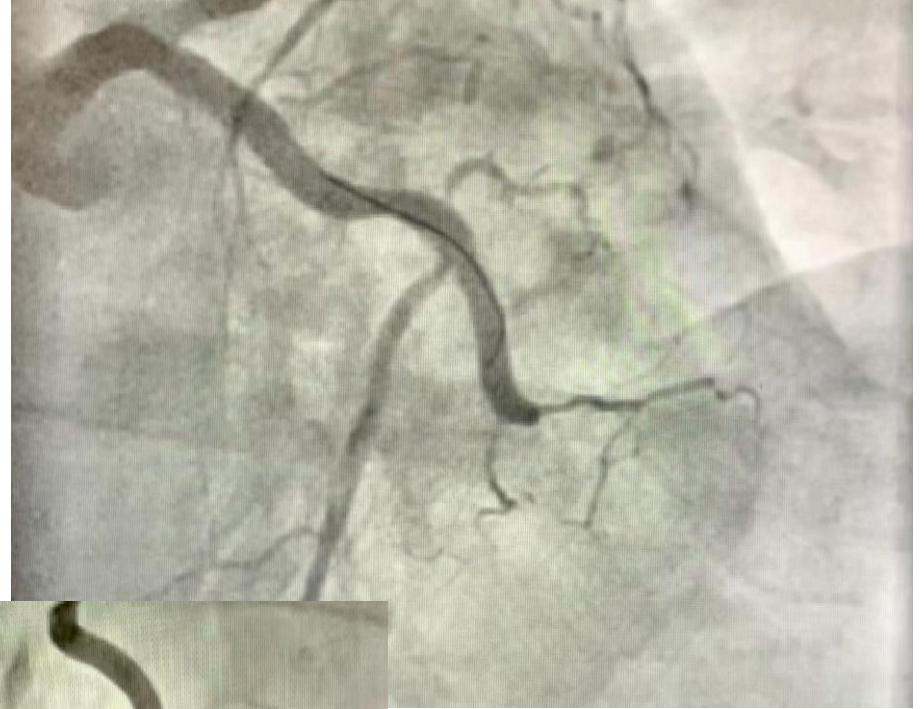
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IIb

B

MIDCAB (TECAB) + PCI

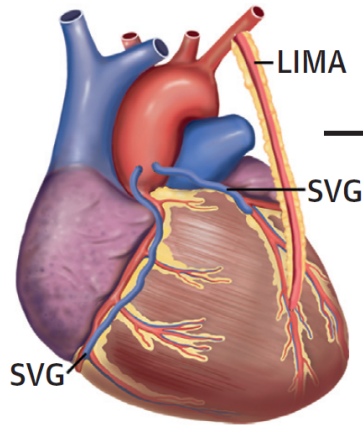
Case report



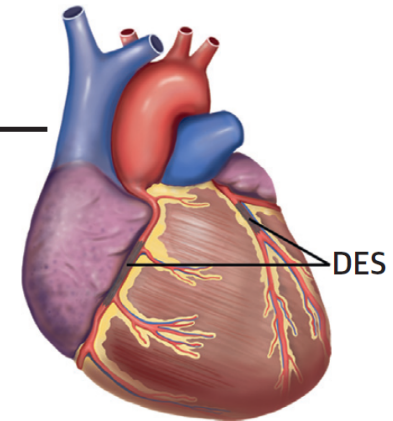
Pursuing Optimal Revascularization in Patients with Multivessel CAD

CABG

Multivessel PCl



Synergistic LIMA-LAD and DES-non-LAD Lesion(s)

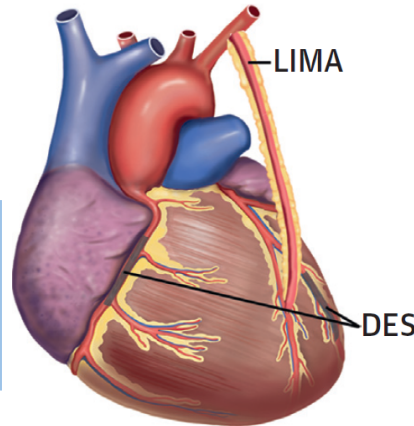


Hybrid Coronary Revascularization

- ↑ 30-day MACCE
- ↑ Length of stay
- ↓ Long-term MACCE*

- ↓ 30-day MACCE
- ↓ Length of stay
- ↑ Patency versus SVGs
- ↑ Long-term MACCE*

- Excellent long-term event-free survival
- Fast recovery
- Short length of stay
- Sternal sparing surgery



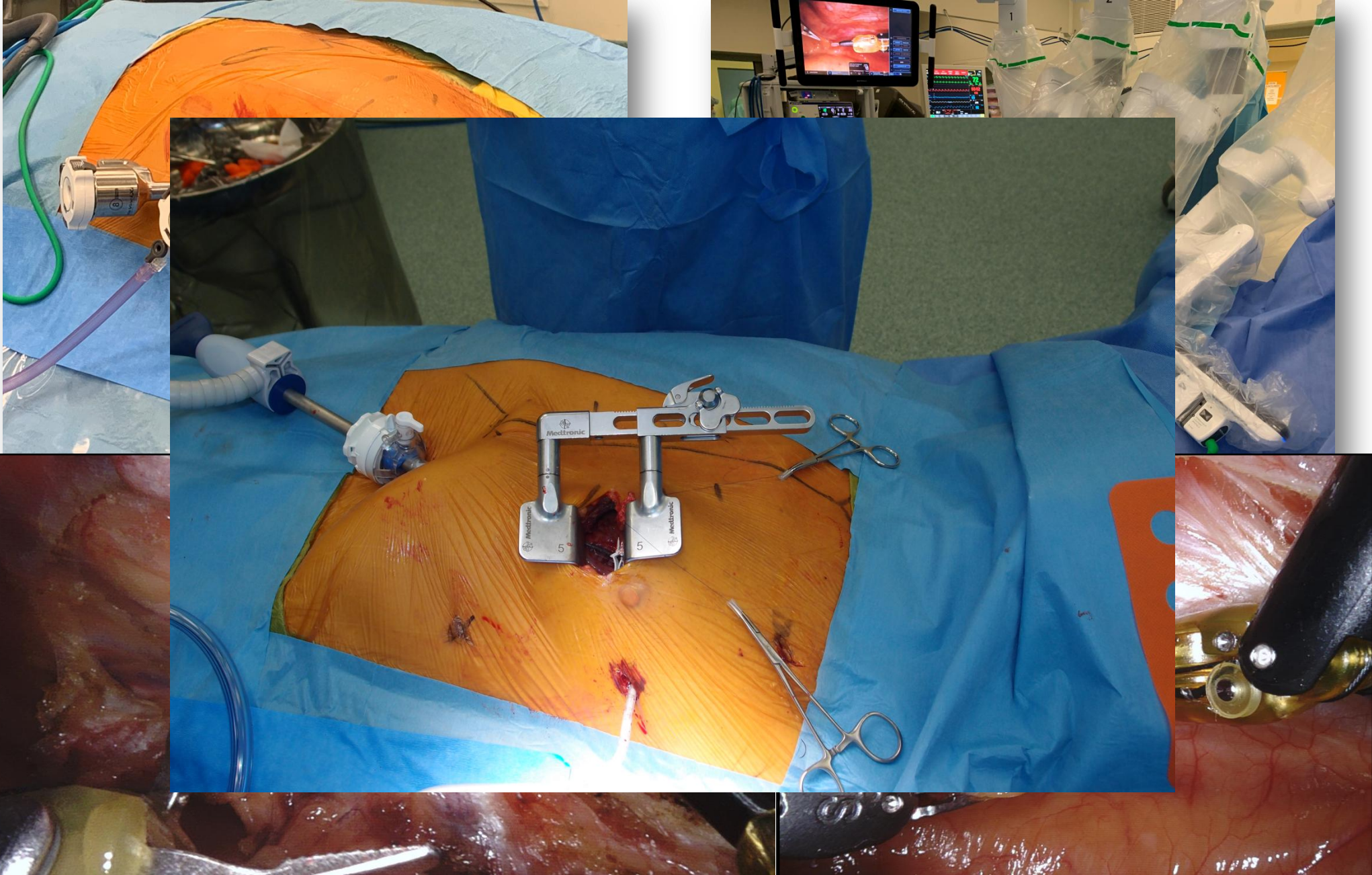
Moreno, P.R. et al. J Am Coll Cardiol. 2020;76(3):321-33.

RA - MIDCAB

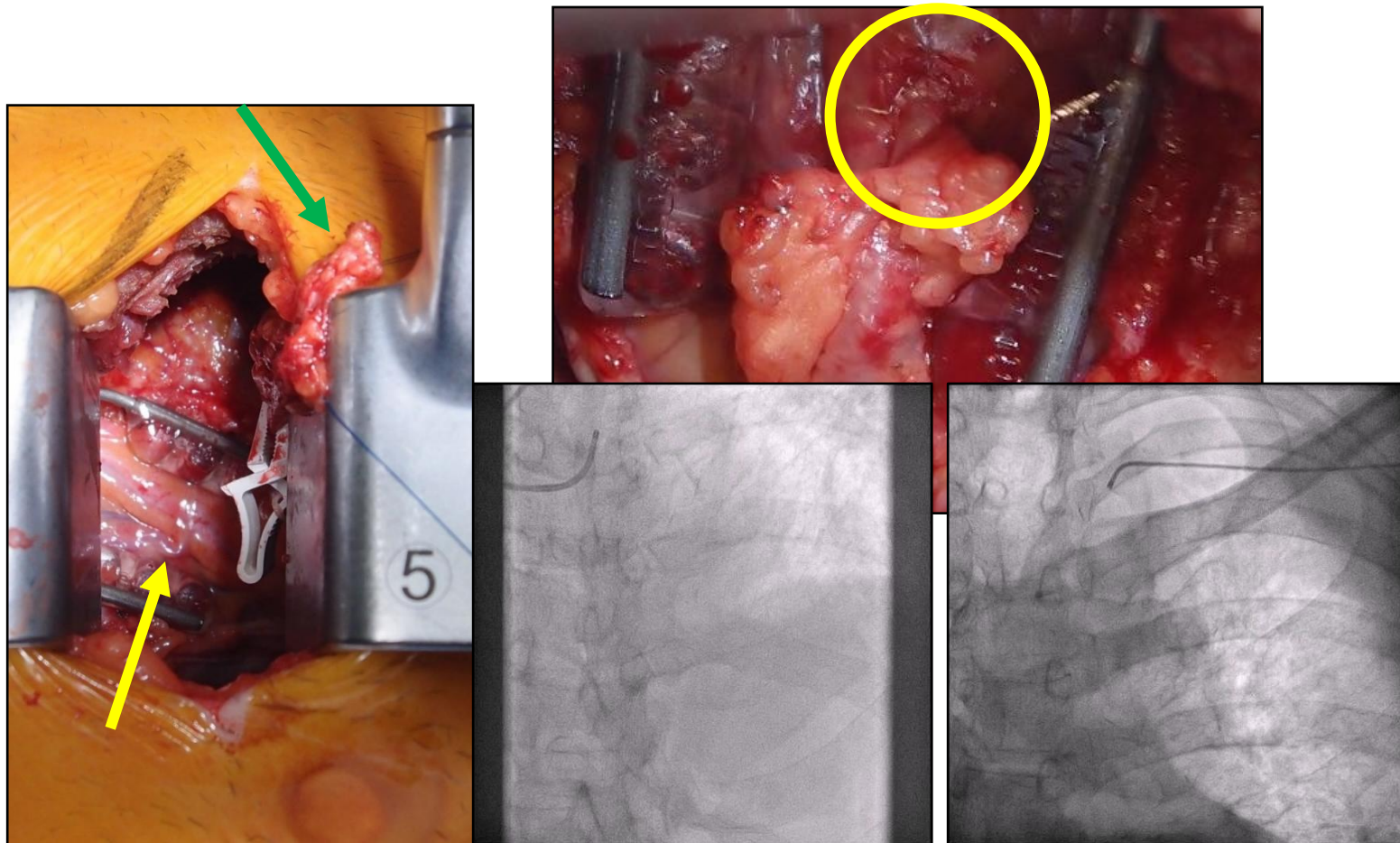
TECAB

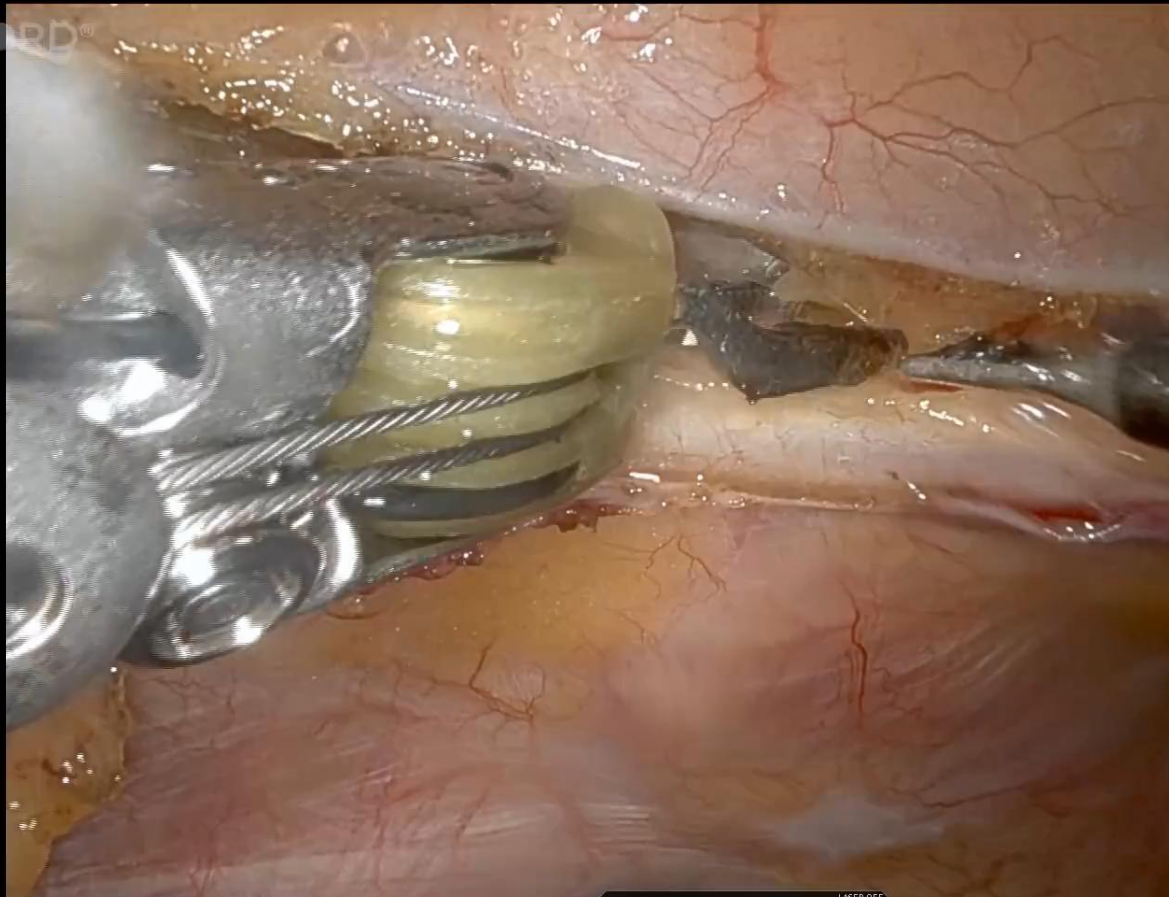
Robotic MIDCAC

SET UP



Robotic MIDCAB





1 ARM STOWED

2 MICRO BIPOLAR FORCEPS

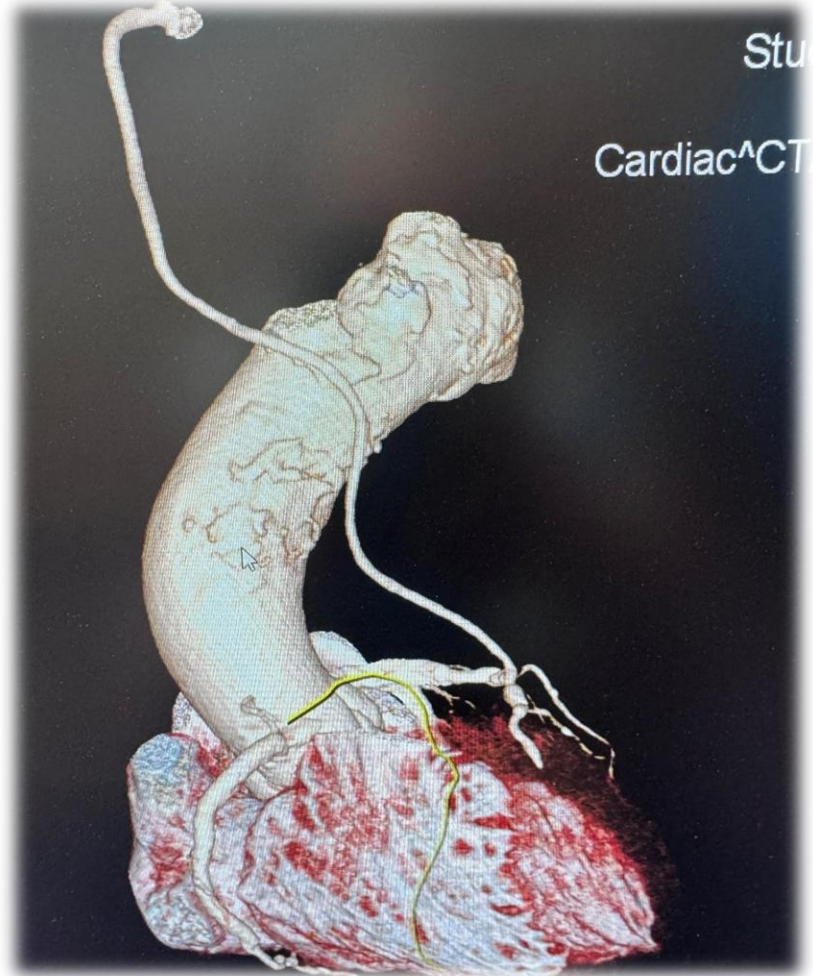
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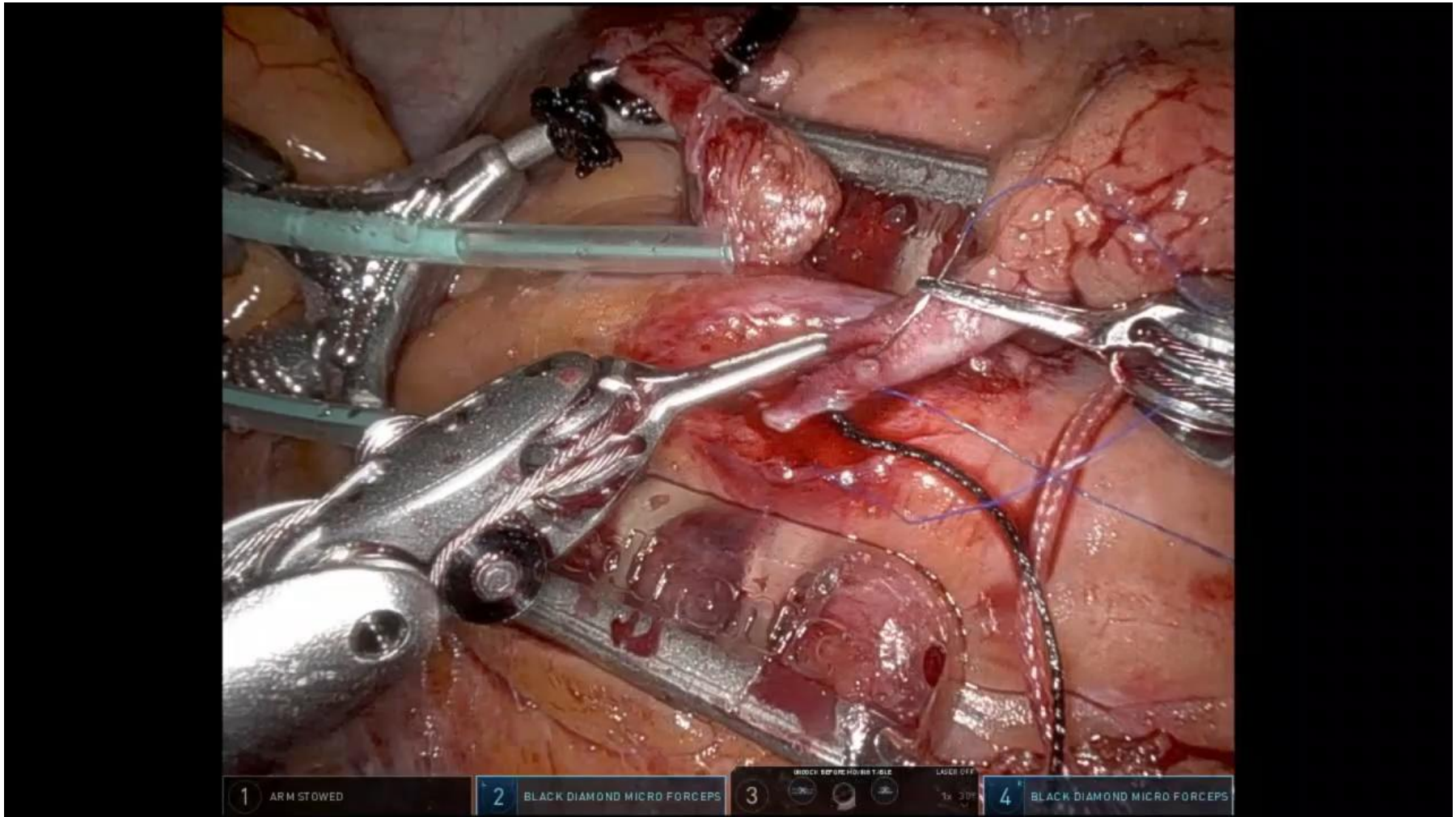
4 PERMANENT CAUTERY SPATULA

LSR OFF

0° 3° R 1x 30°

R CUT R COAG







Future Direction and Gap of knowledge

Development of robotic cardiac surgery

DV5 – further development of TECAB - BIMA

HCR – future direction

National RCT???

Algorithm for integration of HCR in the treatment of coronary artery disease

