



Impact of Aorta No-touch Total Arterial Minimally Invasive Coronary Artery Bypass Grafting

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BACKGROUND: The aorta no-touch total arterial minimally invasive coronary artery bypass grafting (MICS CABG) operation performed via a small thoracotomy (**Figure 1**) has not previously been examined in a direct comparison to aorta no-touch total arterial Coronary artery bypass grafting (CABG) with sternotomy.

METHODS: We matched, according to age, gender, diabetes mellitus, chronic renal failure and left ventricular function, 50 patients who underwent aorta no-touch MICS CABG (MICS group) via small left thoracotomy, and 50 patients who received aorta no-touch CABG with sternotomy (Sternotomy group) (**Figure3**). All patients underwent aorta no-touch CABG with same graft configurations (**Figure2**).

Table 1 shows preoperative patient's Characteristics.

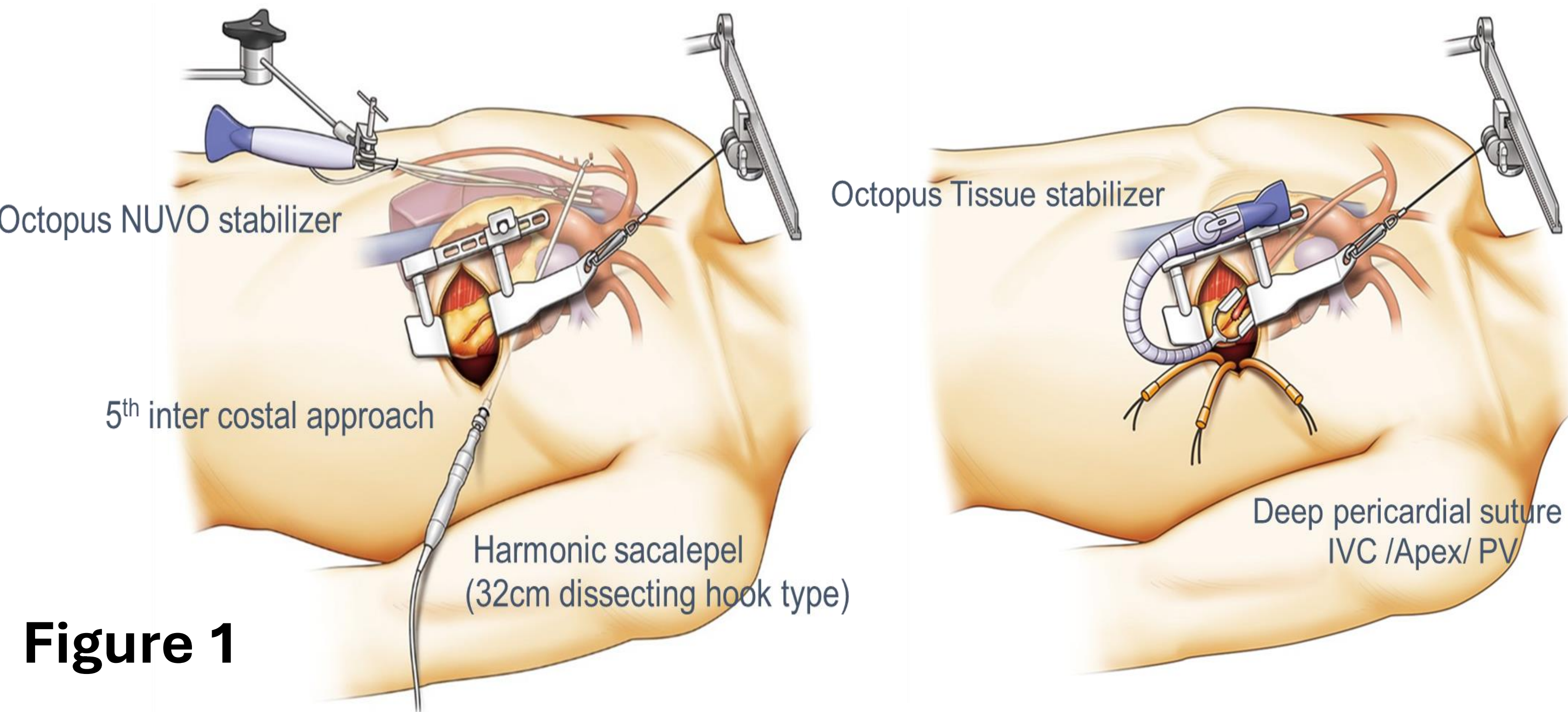


Figure 1

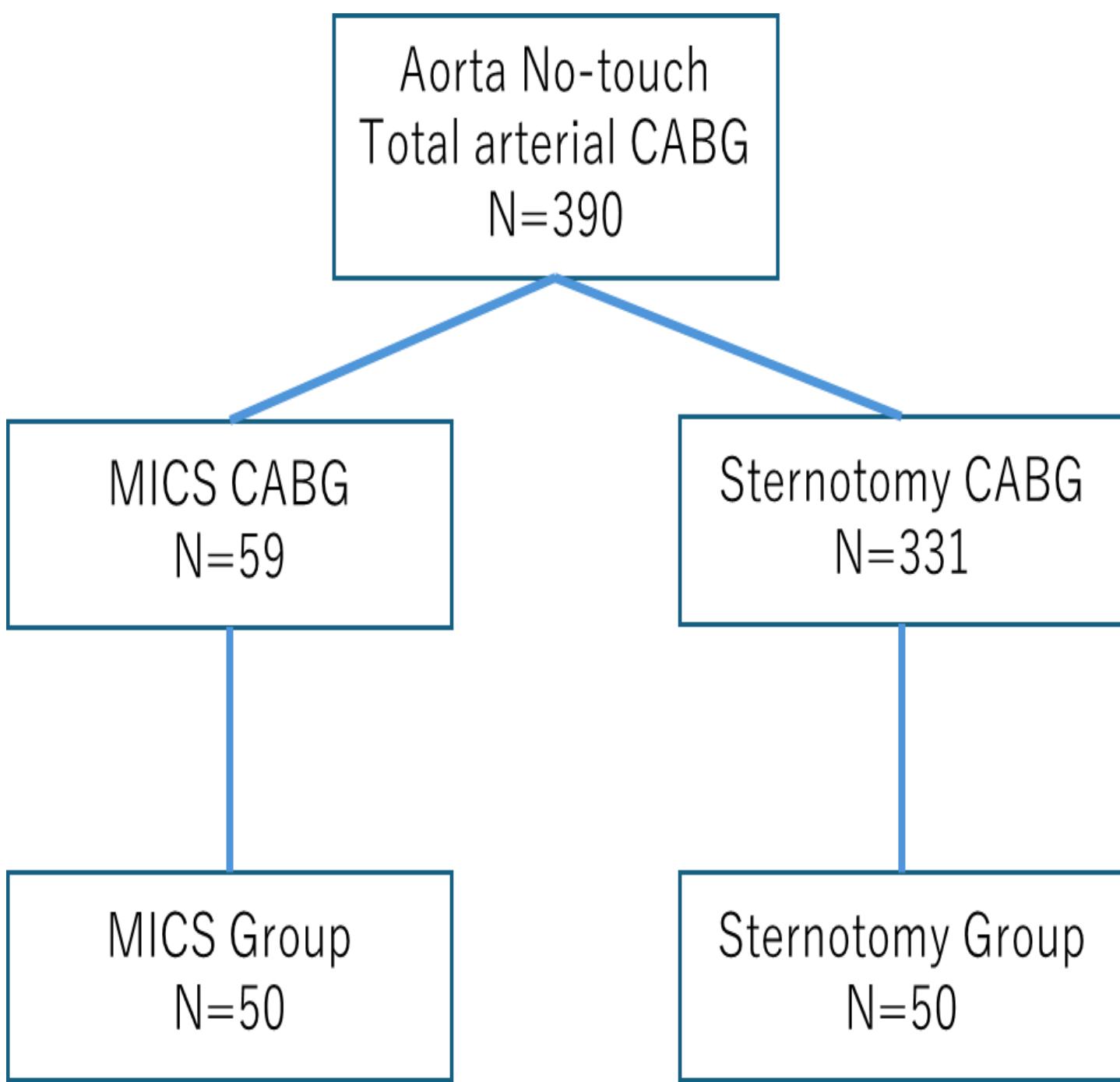


Figure 2

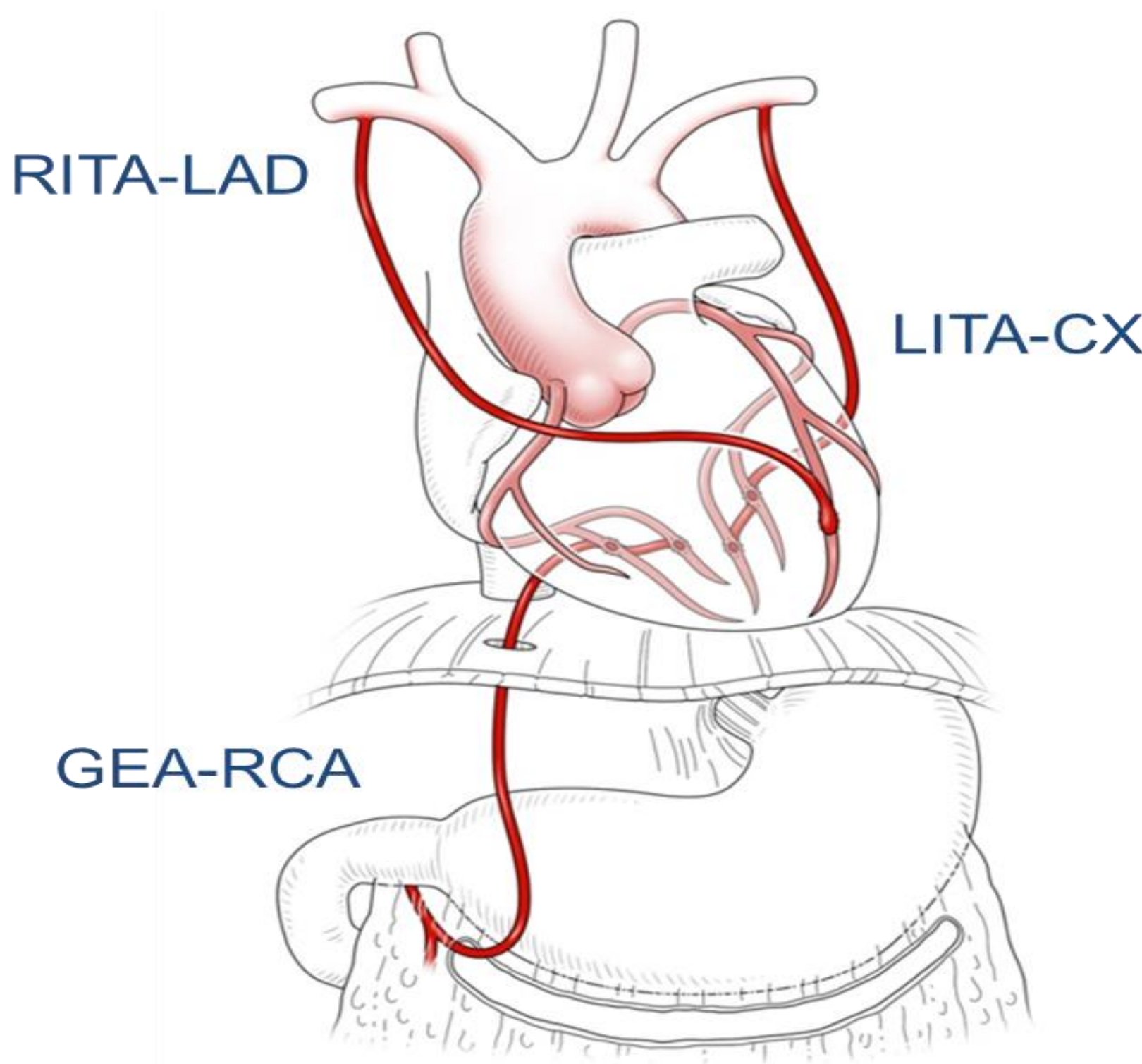


Figure 3

RESULTS: **Table 2** shows the intraoperative outcomes. The average distal anastomosis was 2.4 in MICS group and 3.8 in Sternotomy group (p<0.05). The use of bilateral internal thoracic artery was 58% in MICS group and 78% in Sternotomy group (p<0.01). Total arterial revascularization underwent in 100% in both group. **Table 3** shows the postoperative outcomes. There was no perioperative mortality (0/100). There are 1 (2%) stroke in Sternotomy group, that was developed in late postoperative days. The median length of ICU stay was 1 days for MICS group, and 1.5 days for Sternotomy group. The hospital stay was 10 days in MICS group versus 15 days in Sternotomy group.

	MICS	Sternotomy	P value
n	50	50	
Age	69.7±9.4	69.1±8.4	Ns
Men(%)	46(88.5)	41(81.4)	Ns
DM(%)	23(45.7)	25(50.0)	Ns
CRF(%)	24(48.1)		Ns
HD(%)	1(2.0)	9(25.7)	p<0.01
EF(%)	61.5±9.7	57.3±10.6	Ns
	35(70.4)	34(68.6)	Ns

Table 1

	MICS	Sternotomy	P value
Anastomosis	2.4 (1-5)	2.8 (1-5)	p<0.05
BITA use (%)	29 (58)	39 (78%)	p<0.01
Total arterial	50 (100)	50 (100)	Ns
Operation time (min)	428	345	p<0.01
Bleeding (ml)	930	1085	Ns
Graft patency (%)	97.8	100	Ns
Conversion to On-pump (%)	0	0	Ns
Transfusion (%)	5 (10.4)	11 (21.4)	Ns

Table 2

	MICS	Sternotomy	P value
In hospital mortality (%)	0	0	N.S
Stroke (%)	0	1 (2.0)	N.S
Surgical site infection (%)	0	6 (8.6)	N.S
Mediastinitis(%)	0	1 (2.0)	N.S
ICU stay (days)	1 (1-3)	1.5 (1-5)	N.S
Hospital stay(days)	10 (3-40)	15 (8-125)	p=0.04

Table3

CONCLUSIONS: Aorta no-touch total arterial MICS CABG is a valuable alternative for patients in need of multivessel CABG. The operation appears at least as safe as Aorta no-touch total arterial CABG with sternotomy, and associated with shorter length of ICU stay, and faster postoperative recovery.

