26292 - EPIAORTIC SCANNING MODIFIES SURGICAL MANAGEMENT DURING CABG SURGERY

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INTRODUCTION: Atherosclerosis of the ascending aorta and the aortic arch is one of the most significant risk factors for perioperative stroke.(1-6) The purpose of this study was to determine the role of epiaortic scanning of the proximal thoracic aorta in reducing cerebral embolic load in patients undergoing high risk from neurological injury coronary artery bypass graft (CABG) surgery.

METHODS: After REB approval, informed consent was obtained from 113 patients > 70 years who were scheduled for elective CABG surgery. Patients were randomized to either Epiaortic group (aortic manipulation of the proximal thoracic aorta was guided by epiaortic scanning) or Control group (guided by transesophageal echocardiography and manual palpation by the operating surgeon). Aortic atheroma was graded on a four-point scale, normal (Grade 0), mild (Grade 1), moderate (Grade 2), or severe (Grade 3).(6) The real-time echocardiographic findings were communicated to the operating surgeons who were free to modify the operating technique and apply ultrasound guidance for any intended aortic manipulation. Transcranial Doppler (TCD) was used to monitor middle cerebral artery. Patients' neurological assessment was conducted utilizing the NIH stroke scale and NEECHAM confusion scale. Statistical analysis was conducted with the MINITAB computer software.

RESULTS: There were no differences with respect to the baseline demographic data and surgical characteristics between the Epiaortic (n = 55) and Control (n = 58) groups. Grade 1 atheroma of the ascending aorta was detected more commonly in Epiaortic group when compared to Control group (13% vs 5%, $p=0.03$). 7 patients from Control group crossed over to Epiaortic group prior to aortic cannulation. Intraoperative surgical management was changed in 16 patients in the Epiaortic group and 7 patients in the Control group, $p=0.025$.(Table) There was no significant difference with respect to TCD embolic count, NIH stroke scale scores, or perioperative morbidity and mortality between the two groups. Compared to baseline, the NEECHAM scores were considerably worse during the first three postoperative days in both groups of patients.

DISCUSSION: This study provides Level I evidence that epiaortic scanning results in modification of aortic cannulation sites and alterations in intraoperative surgical management in elderly patients from high risk of neurological injury undergoing CABG surgery.

REFERENCES:1. Stroke 1994; 25: 2010-2016 2. Ann Thorac Surg 2000; 70: 1565-70 3. J Am Coll Cardiol 2001; 38: 131-135 4. J Am Coll Cardiol 1992; 20: 70-7 5. J Am Coll Cardiol 2000; 35: 545-54 6. Stroke 2004; 35: e356-8

Table. Comparison of Changes in Planned Intraoperative Surgical Management. Data expressed as number of patients (%). OPCAB, off-pump coronary revascularization surgery.

	Epiaortic Group (n = 55)	Control Group (n = 58)	P value
OPCAB surgery	1 (1.8)	1(1.7)	.95
Distal arch cannulation	3 (5.4)	1 (1.7)	.28
Fibrillatory arrest (no cross-clamp)	2 (3.6)	1 (1.7)	.53
Adjustments to cannulation site in the ascending aorta	10 (18)	4 (6.9)	.07
Total	16 (29)	7 (12)	.025