14. Separated Graft Technique and En Bloc Technique for Arch Vessels Reimplantation During Surgery of the Aortic Arch: A Retrospective Comparative Study

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OBJECTIVE: To compare the results of the separated graft technique and the en bloc technique as a method of arch vessels reimplantation during surgery of the aortic arch. To determine predictive risk factors associated with hospital mortality and adverse neurologic outcome during aortic arch repairs.

METHODS: Between October 1995 and March 2002, 352 patients (mean age 64.9±11.3 years; urgent status: 49/352; 13.9%) underwent surgery of the aortic arch using the separated graft technique (Group A: n=230; 65.3%) and the en bloc technique (Group B: n=122; 34.7%)to reimplant the arch vessels. An aortic arch replacement was performed in 32 patients (9.1%), an ascending aorta and arch replacement in 222 patients (53.1%), an aortic arch and descending aorta replacement in 16 patients (4.5%) and a complete replacement of the thoracic aorta in 82 patients (23.3%). Brain protection was achieved by means of Antegrade Selective Cerebral Perfusion (ASCP) in all cases. The mean Cardio Pulmonary Bypass (CPB) time was 204.8±61.9 minutes (group A: 199.7±57.0 min ; group B: 214.5±69.4 min; p= 0.033), the mean myocardial ischemic time was 121.5±43.2 minutes (group A: 116.7±38.9 min; group B: 130.80±49.4 min; p=0.003), the mean ASCP time was 84.5±36.4 (group A: 91.3±36.3 min; group B: 70.6±32.7 min).

RESULTS: Overall hospital mortality was 6.8% (group A: 6.5%; group B: 7.4%; p=ns). The Permanent Neurological Dysfunction (PND) rate was 3.5% (group A: 4.0%; group B: 2.5%; p=ns). The Transient Neurological Dysfunction (TND) rate was 5.4% (group A: 5.5%; group B: 5.2%, p=ns). Postoperative systemic morbidity was similar in the two groups (table 1). A logistic regression analysis revealed preoperative cardiac tamponade (p=0.035;OR=7.1) to be independent predictor of hospital mortality. None of the analysed preoperative variables were associated with an increased risk of PND. CABG (p=0.001; OR=14.1) and CPB>240 minutes (p=0.013;OR=3.9) were indicated as independent predictors of TND by logistic regression.

Results

	All patients; n(%)	Group A; n(%)	Group B; n(%)	p
Hospital mortality	24(6.8)	15(6.5)	9(7.4)	ns
Permanent neurologic dysfunction	12/345(3.5)	9(4.0)	3(2.5)	ns
Transient neurologic dysfunction	18/333(5.4)	12(5.5)	6(5.2)	ns
Postop dyalisis	16(4.5)	10(4.4)	6(5.0)	ns
Postop respiratory insufficiency	61(17.6)	41(18.1)	20(16.7)	ns
Postop myocardial infarction	4(1.2)	2(0.9)	2(1.7)	ns
Bleeding requiring rethoracotomy	32(9.7)	18(8.3)	14(12.6)	ns

**By Invitation*

CONCLUSIONS: ASCP confirmed to be a safe method of cerebral protection allowing complex aortic arch operations to be performed with acceptable results in terms of hospital mortality and neurologic outcome. The separated graft technique had no adverse impact on hospital mortality and morbidity.

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