

**Progressive Contractile Dysfunction After Norwood Procedure Compared to Biventricular Repair and Isolated Aortopulmonary Shunt.**

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Introduction. Ventricular dysfunction is a common cause of morbidity and mortality after the Norwood operation, but the mechanism is ill defined.

Methods. We used cardiac MRI to contrast changes in mechanical characteristics of the Norwood (NOR) ventricle in 9 patients before, one week (early) and 2 months after operation (late) with age-matched patients undergoing biventricular repair (BVR) (n= 8) and aortopulmonary shunt (APS) (n=7). Systemic ventricle was RV in 8/9 NOR, 0/8 BVR and 1/7 APS.

Results. Systemic ventricle ejection fraction (EF) in NOR was similar to BVR and APS before operation but deteriorated progressively from before to late (p=0.003), and was lower than both groups at late follow-up (Figure 1). Before operation end-systolic radius/thickness (r/T), an index of afterload, was elevated in NOR compared to BVR and was similar to APS (Table). This pattern was unchanged early and late after operation. Blood pressure measurements were not different between groups.

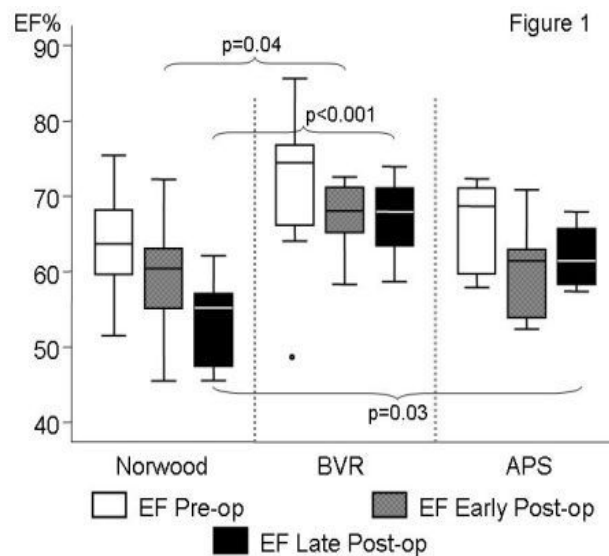


Table	Before			Early			Late		
	NOR	BVR	APS	NOR	BVR	APS	NOR	BVR	APS
r/T	1.9*	1.4	1.7	1.7*	1.2	1.7*	1.9*	1.3	1.6

\*p<0.05 vs. BVR

Conclusion: In the NOR group, progressive deterioration in ventricular function occurs in the context of elevated, but stable afterload. This observation, together with the absence of dysfunction in the APS group despite a similar magnitude of afterload excess, is indicative of myocardial damage and may have important implications for long-term prognosis.