We investigated 62 arterial switch survivors at a median postoperative follow-up time of 105 (84-180) month. All patients were in NYHA class I. The median age and weight at operation were 14 (3-1230) days and 3.4 (1.6-15.5) kg. No patient had been re-operated during follow-up. Median grade of neoaortic insufficiency was 0 (0 -2), which was unrelated to annular size (p= .99). Median RV to neopulmonary gradient was 10 (0-50). Echocardiographic measurements of the neoaortic annulus diameter were used to calculate Z-scores (diameter- mean normal diameter/standard deviation of mean). When data for normal aortic valve were used as the standard, a mean Z-score of $2.60 \pm 1.71$ was obtained. However, if measurements were standardized to normal pulmonary valves, the mean Z-score fell to $0.87 \pm 1.35$ (p<.00001).

Using multivariate analysis, neither age at operation, weight at operation, follow-up time, nor intracardiac anatomy were predictive of Z-score ($r^2 = .002, .006, .034$ and .001). Z-scores for the neoaortic sinus and ascending aorta were $2.7 \pm 1.61$ and $3.06 \pm 2.30$. Similar measurements of the neopulmonary artery annulus suggest a mean Z-score of $0.33 \pm 2.05$ compared to a normal pulmonary artery but $1.9 \pm 2.70$ compared to a normal aorta.

These data suggest that the late neoaortic annular “dilation” observed following the ASO may actually approximate growth of the normal pulmonary valve, and may not be the main causative factor for neoaortic insufficiency.