



Figure: Methodology generated to study embryonic development of congenital heart defects. Top 2 pictures shows a control embryo and a left atrial ligation (LAL) performed embryo. Scale bar is 1 mm. Bottom two pictures shows B-mode and doppler ultrasound recordings for a 4 day control embryo. Arrow shows blood flow direction. Ultrasound recordings are used to analyze flow velocity and cardiac output levels that helps to identify shear stress and cardiac performance after flow perturbations. Right column are micro-computed tomography generated 3 dimensional geometries for a 7 day control, left atrial ligated (LAL) and a right atrial ligated (RAL) embryo. Here LA is left atria, RA is right atria, LV is left ventricle and RV is right ventricle. Underdevelopment of LA and LV (shown with red) can be seen on the LAL embryo compared to control and underdevelopment of RA only (shown with red) can be seen on the RAL embryo compared to control. Scale bar is 5 mm.