Longitudinal annular displacement by M-mode (MAPSE and TAPSE) in twin-to-twin transfusion syndrome before and after laser surgery.

To evaluate mitral and tricuspid annular plane systolic excursion (MAPSE and TAPSE) in fetuses with twin-to-twin transfusion syndrome (TTTS) before and after laser therapy. A prospective study in 24 fetal pairs with TTTS evaluated 24 h before and within 48 h after fetoscopy and 13 gestational age-matched normal monochorionic fetal pairs. MAPSE and TAPSE were measured in an apical or basal four-chamber view by placing the M-mode cursor at the lateral valve ring. Mean preoperative MAPSE (controls 3.6 ± 1.3 mm vs. donors 2.7 ± 0.8 mm vs. recipients 2.8 mm ± 0.9; P < 0.001) and TAPSE (controls 4.4 ± 1.5 mm vs. donors 3.3 ± 1 mm vs. recipients 3.6 ± 1.1 mm; P < 0.001) values were significantly reduced in both TTTS fetuses. When subdividing according to TTTS stages, changes were significant in both stage I-II and III-IV subgroups, although differences were more pronounced in the latter. All observations remained unchanged 48 h post-fetoscopy. Both recipient and donor fetuses had decreased global longitudinal motion, even in early TTTS stages.