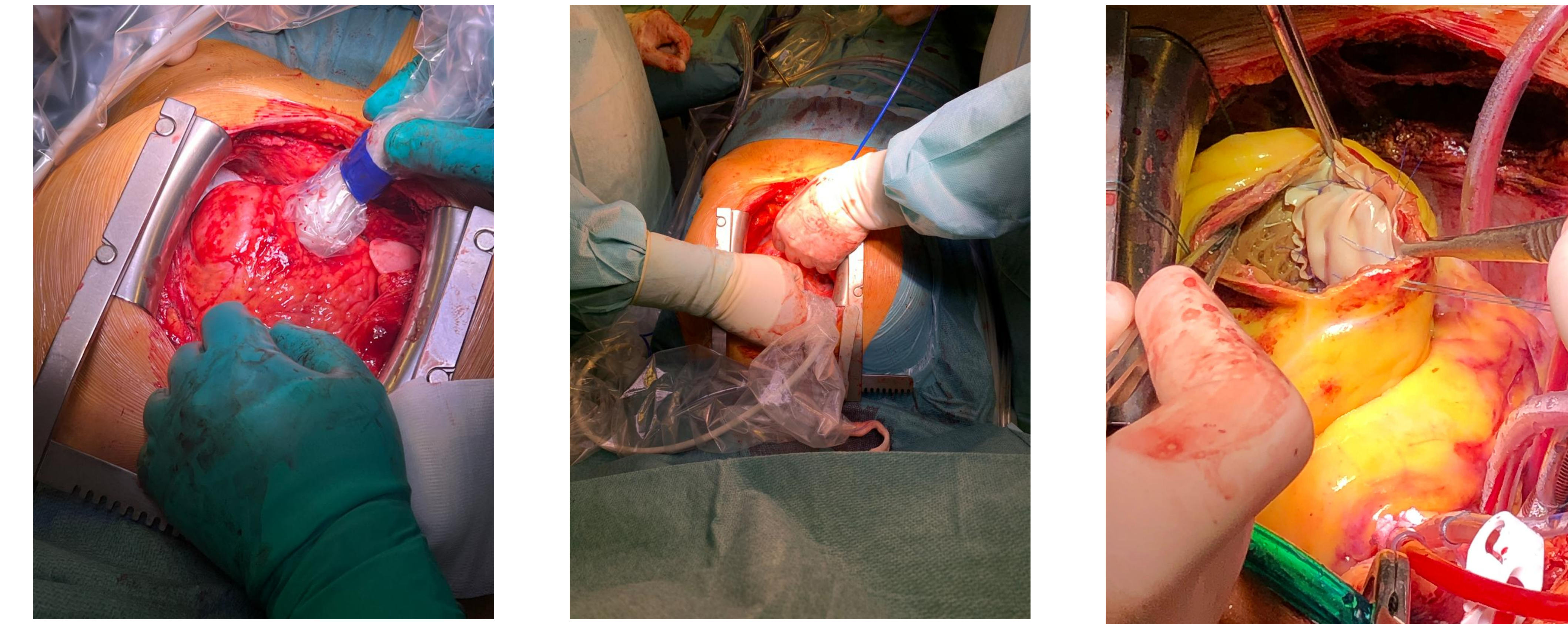
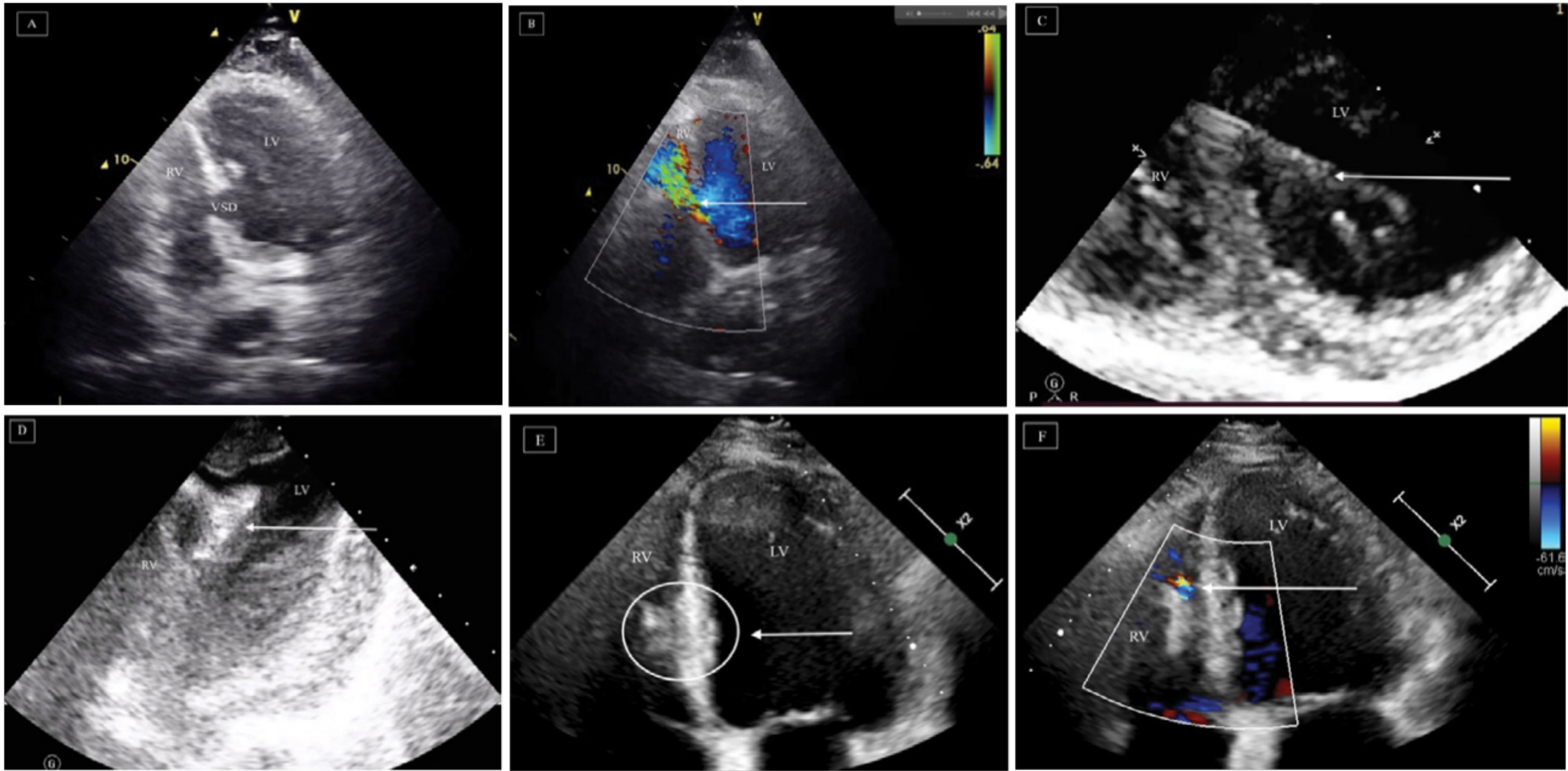


Preoperative mechanical circulatory suport for postinfarction ventricular septal defect followed by hybrid surgical approach

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Background: Treatment of postinfarction ventricular septal defect (VSD) remains a clinical and technical challenge. Delayed surgery with preoperative patient stabilization using venoarterial extracorporeal membrane oxygenation (VA ECMO) and IABP may be associated with improved outcomes. Perventricular device closure (PVDC) of VSD under epicardial echocardiographic guidance is a hybrid approach successfully used in pediatric cardiac surgery and may be another therapeutic option in the armamentarium of a heart team.

Methods: In 2023 5 patients (4 females, 1 male) were referred to our center with postinfarction VSD. Mechanical circulatory support (MCS) with VA ECMO and IABP were used preoperatively in all patients as a bridge to surgery. After sternotomy epicardial echo was used to evaluate puncture of RV with the use of the Amplatzer Muscular VSD Occluder (Abbott) only under epicardial and treansesophageal echo guidance. Placement of the occluder was feasible and successful in 2 patients. Surgical repair with a bovine patch was performed in 3 patients.



Conclusion: Delayed surgery with preoperative use of ECMO/IABP in patients with PIVSD is associated with more favorable treatment outcomes compared to urgent surgery. PVDC with epicardial echocardiographic guidance seems to be a promising therapeutic option in the armamentarium of a heart team. It allows for precise closure of the VSD with minimal traumatization of the myocardium. In the event of failure, classic cardiac surgery can be performed during the same procedure.