

Endoscopic Mitral Valve Replacement In A Corrected Atrioventricular Septal Defect

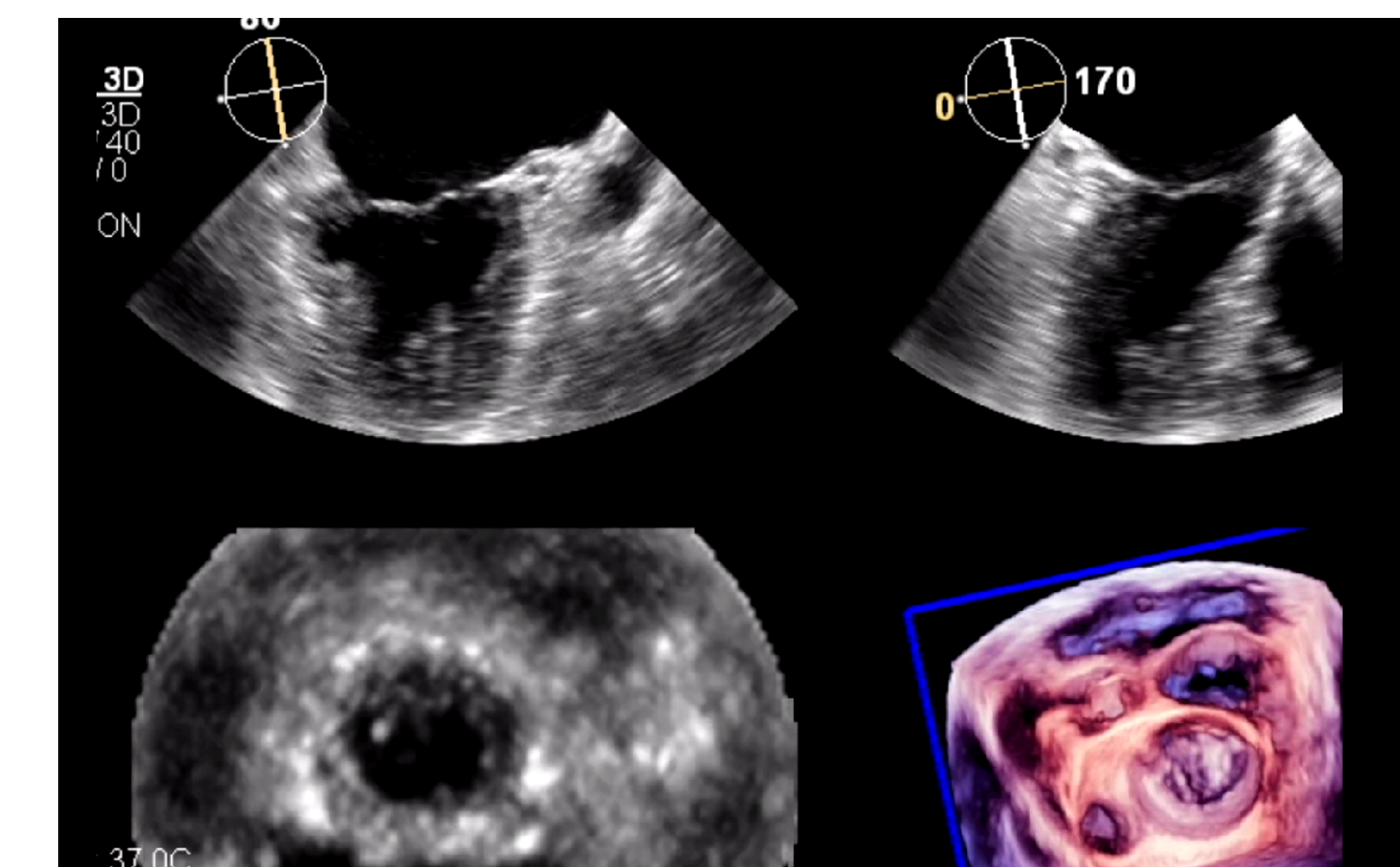
Giacomo Bianchi¹, , Rosa Giusti¹, Marco Solinas¹

¹ Ospedale del Cuore - Fondazione Toscana “G. Monasterio”, Massa, ITALY



BACKGROUND

Mitral valve reoperation following complete atrioventricular septal defect (AVSD) repair presents significant technical challenges. While minimally invasive approaches have shown promising results in primary mitral valve surgery, their application in complex reoperative scenarios remains limited. This video presentation aims to demonstrate the technical feasibility of endoscopic right axillary minithoracotomy approach for mechanical valve replacement in this challenging subset of patients.



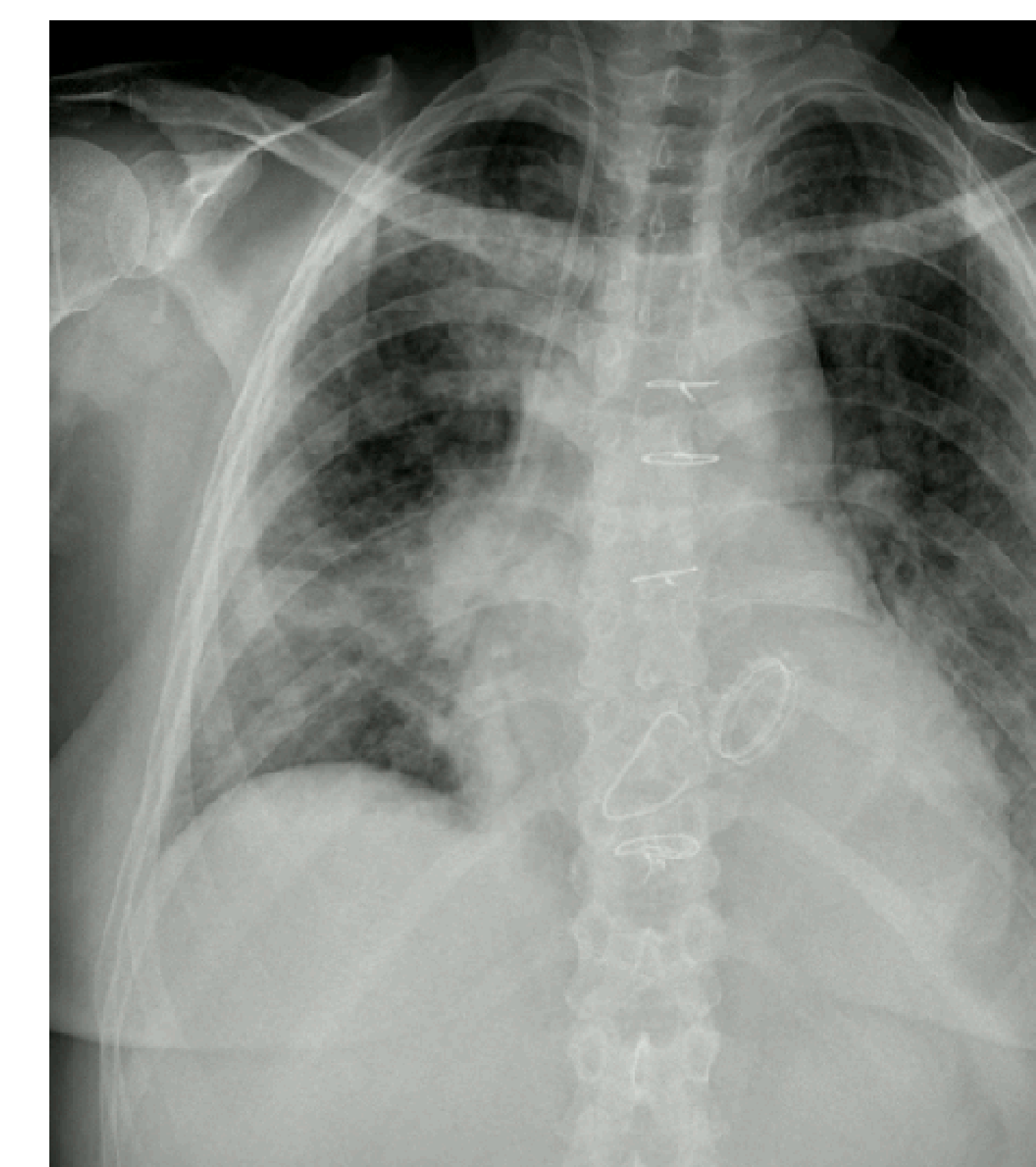
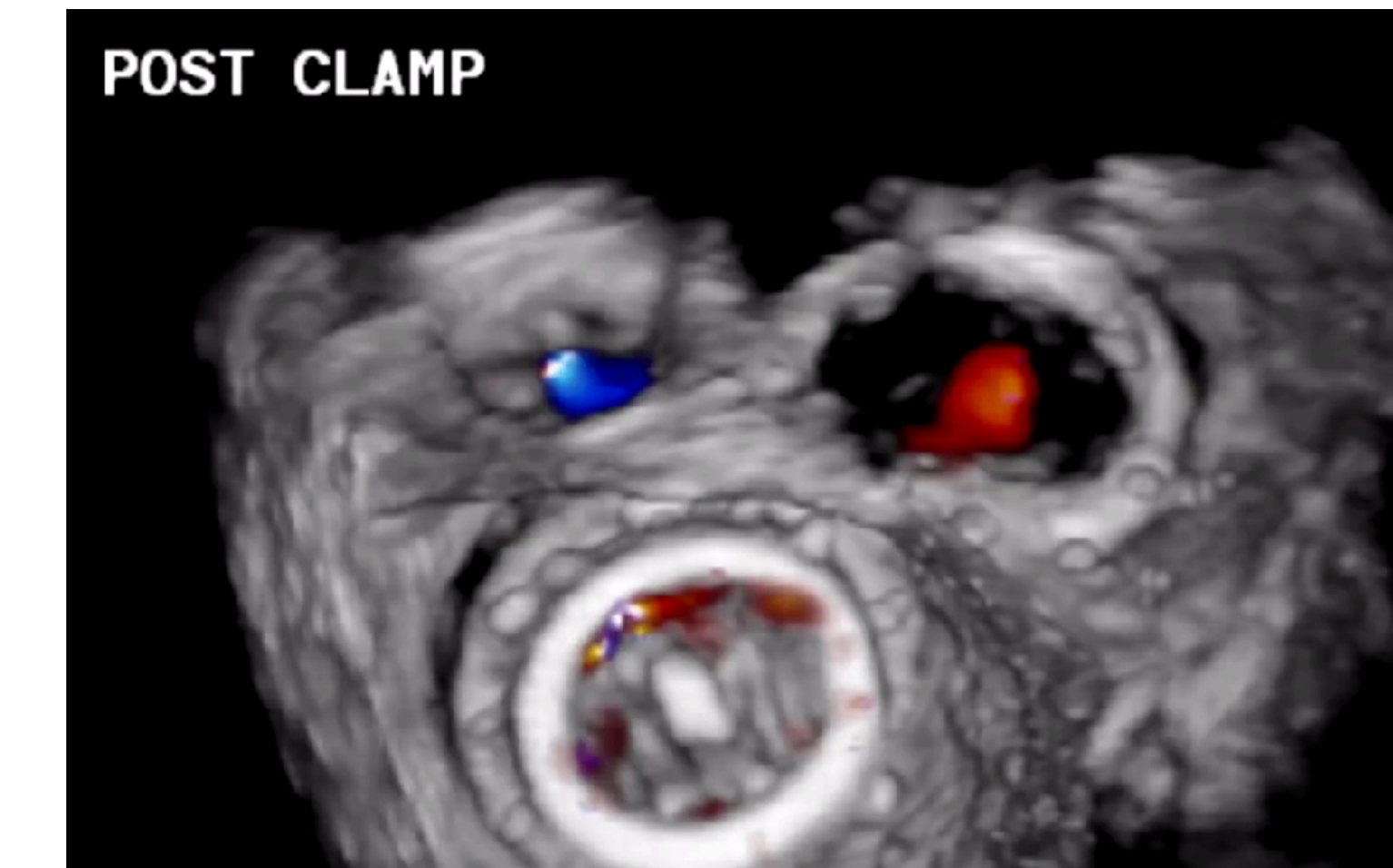
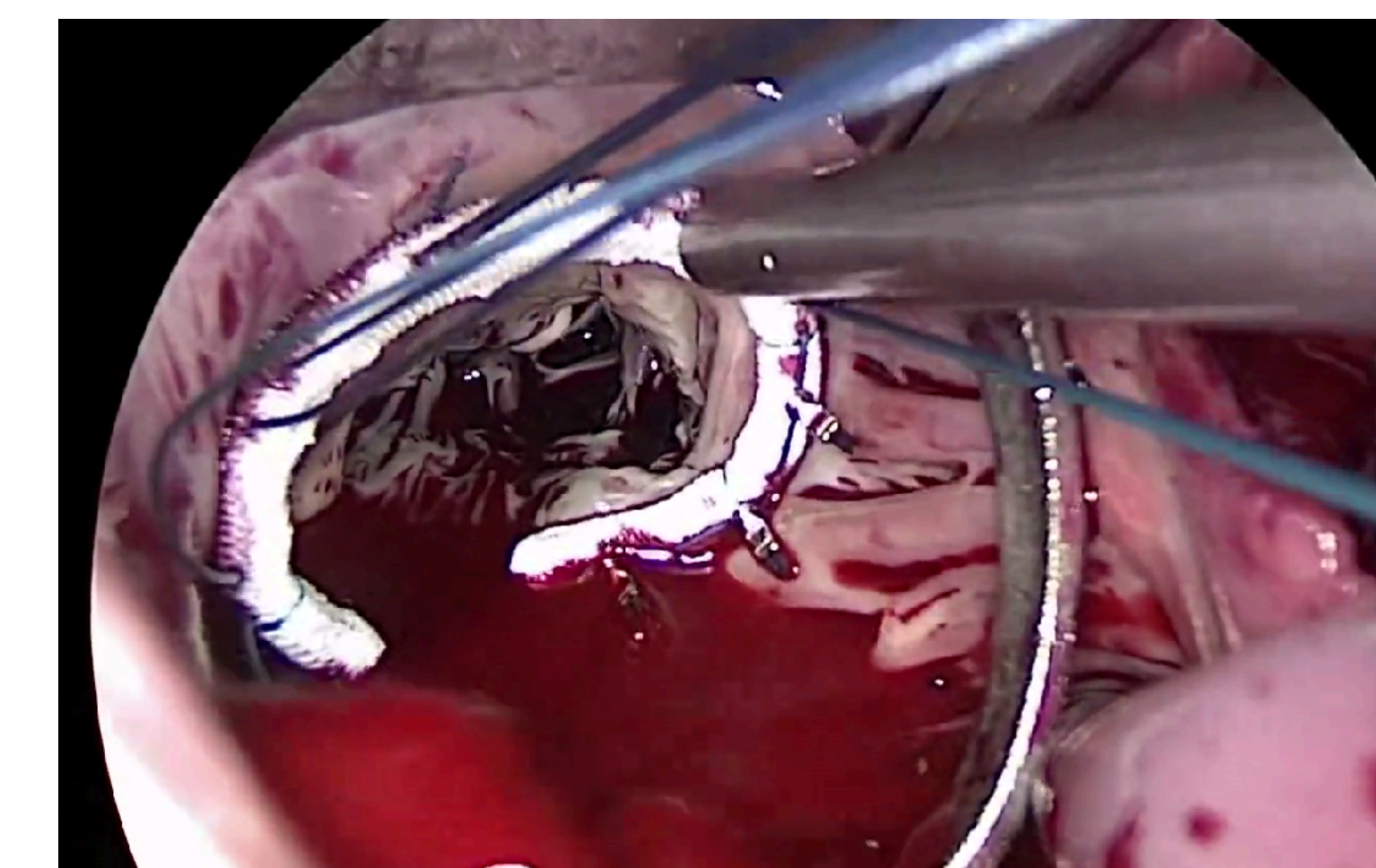
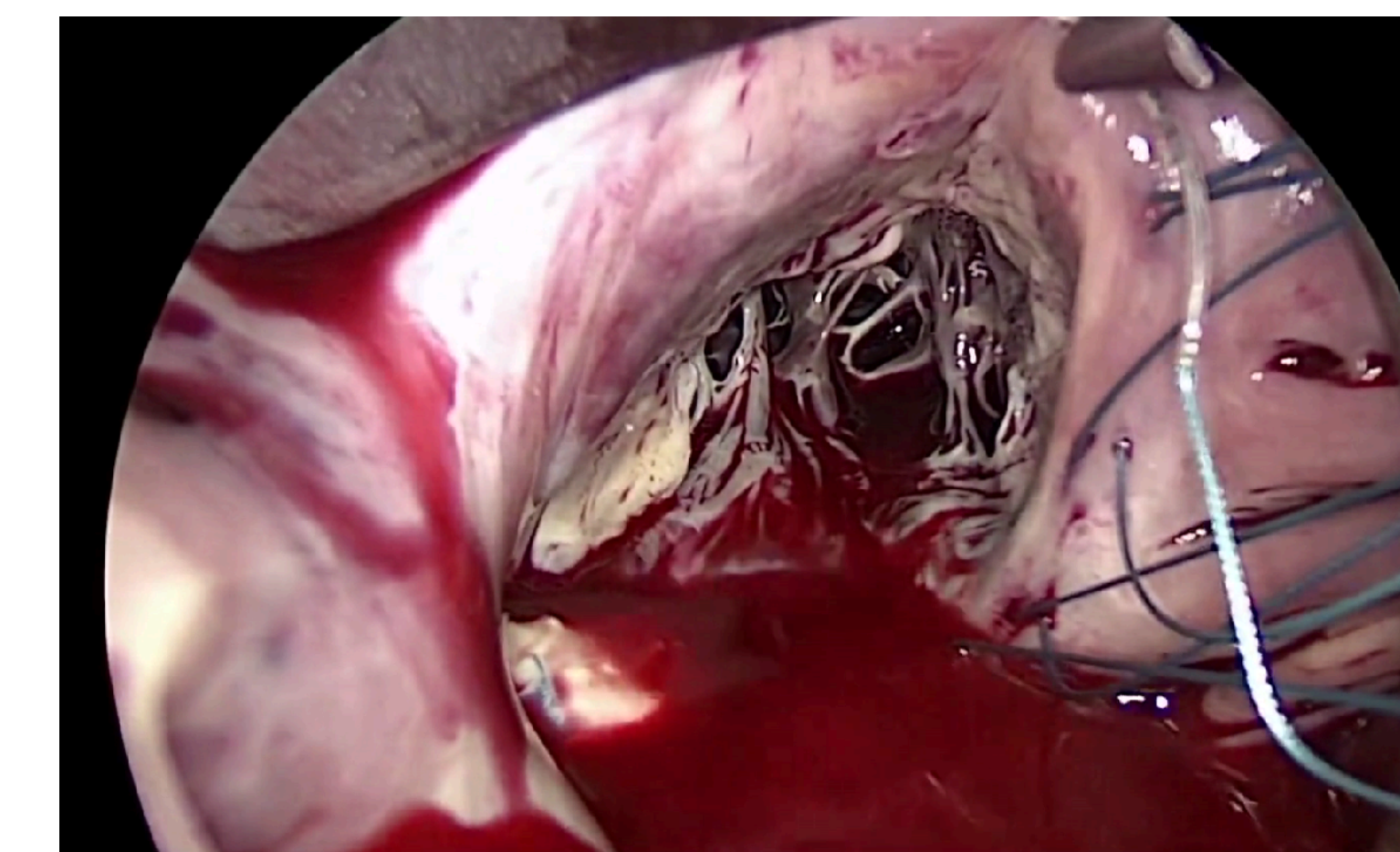
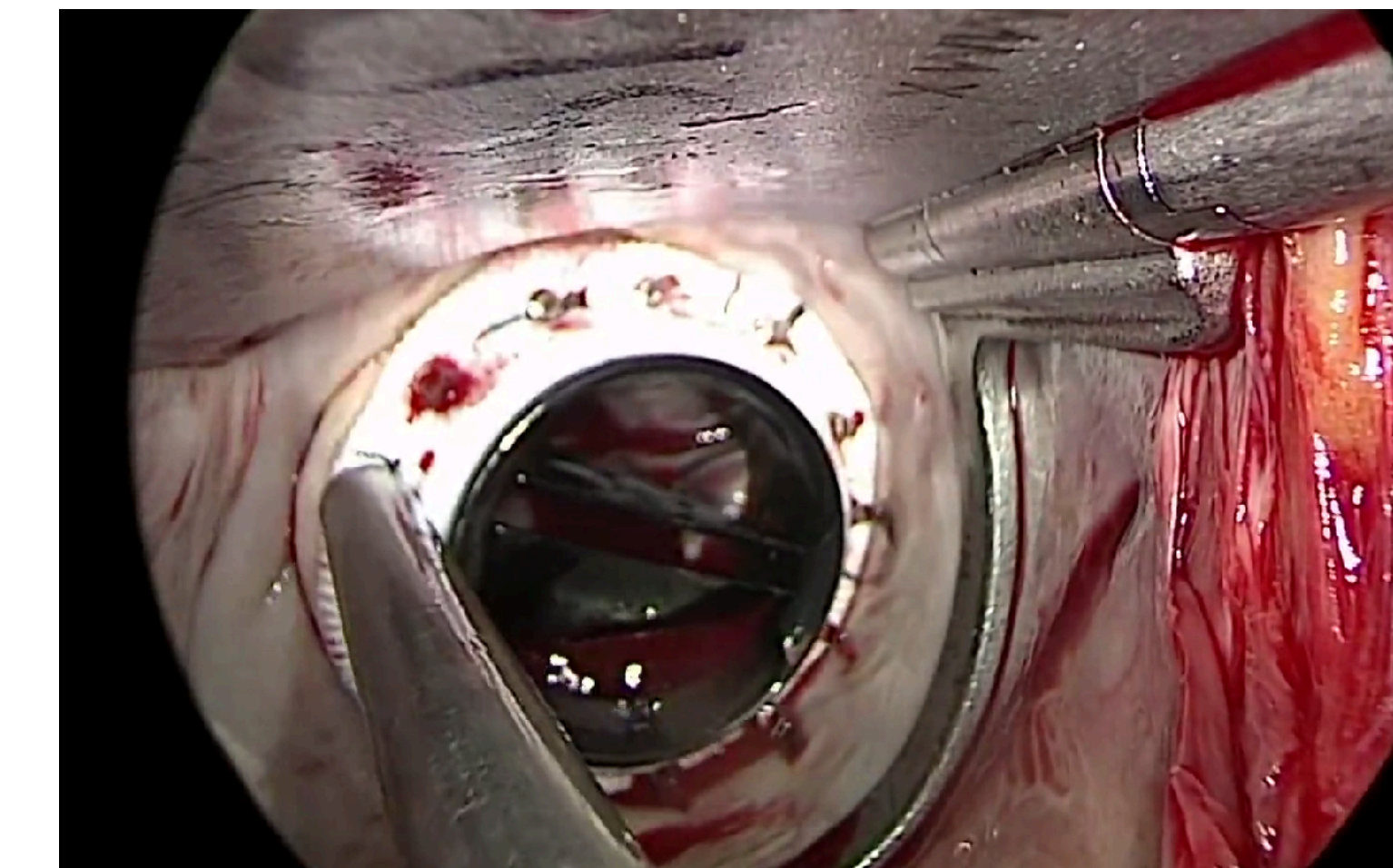
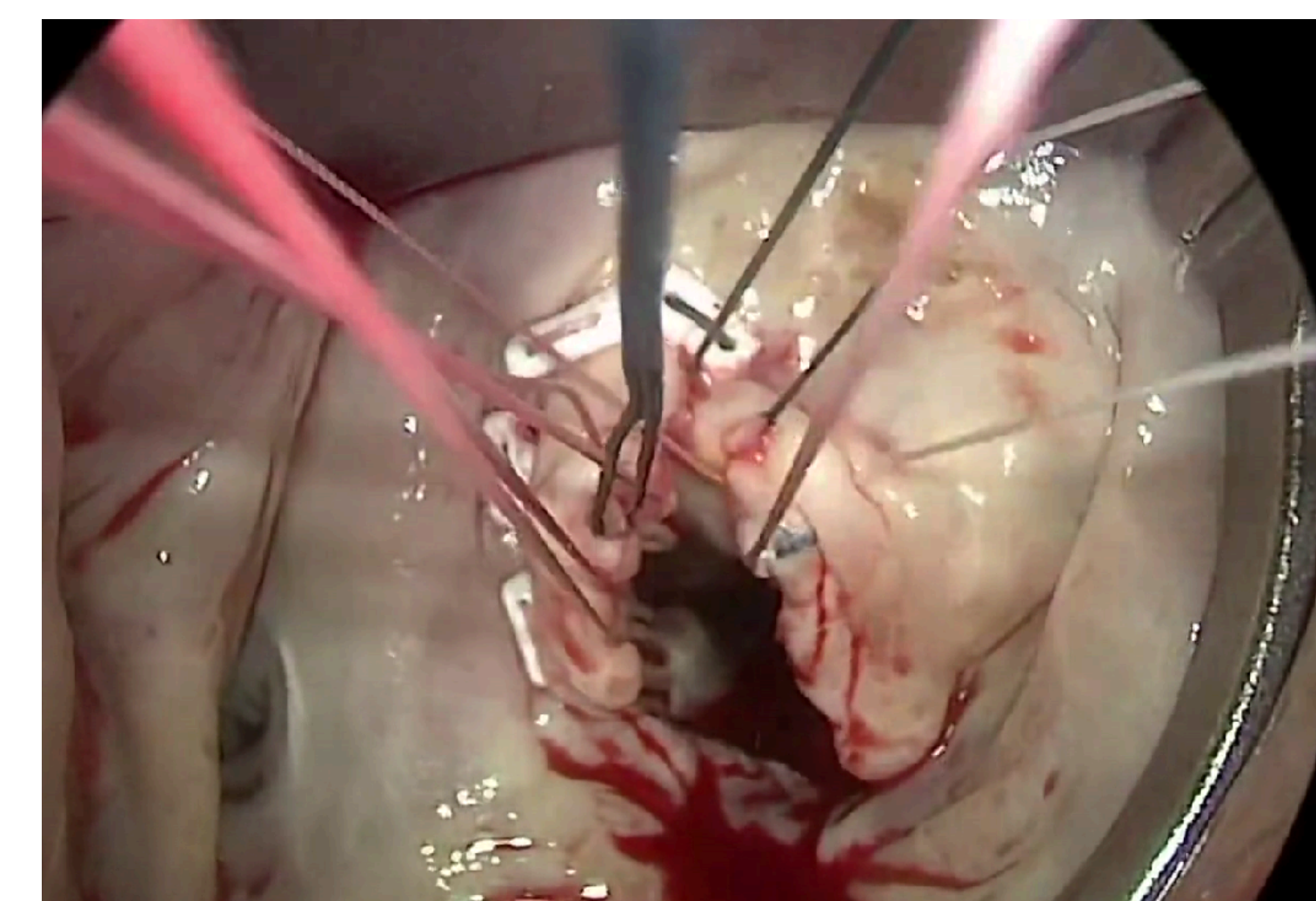
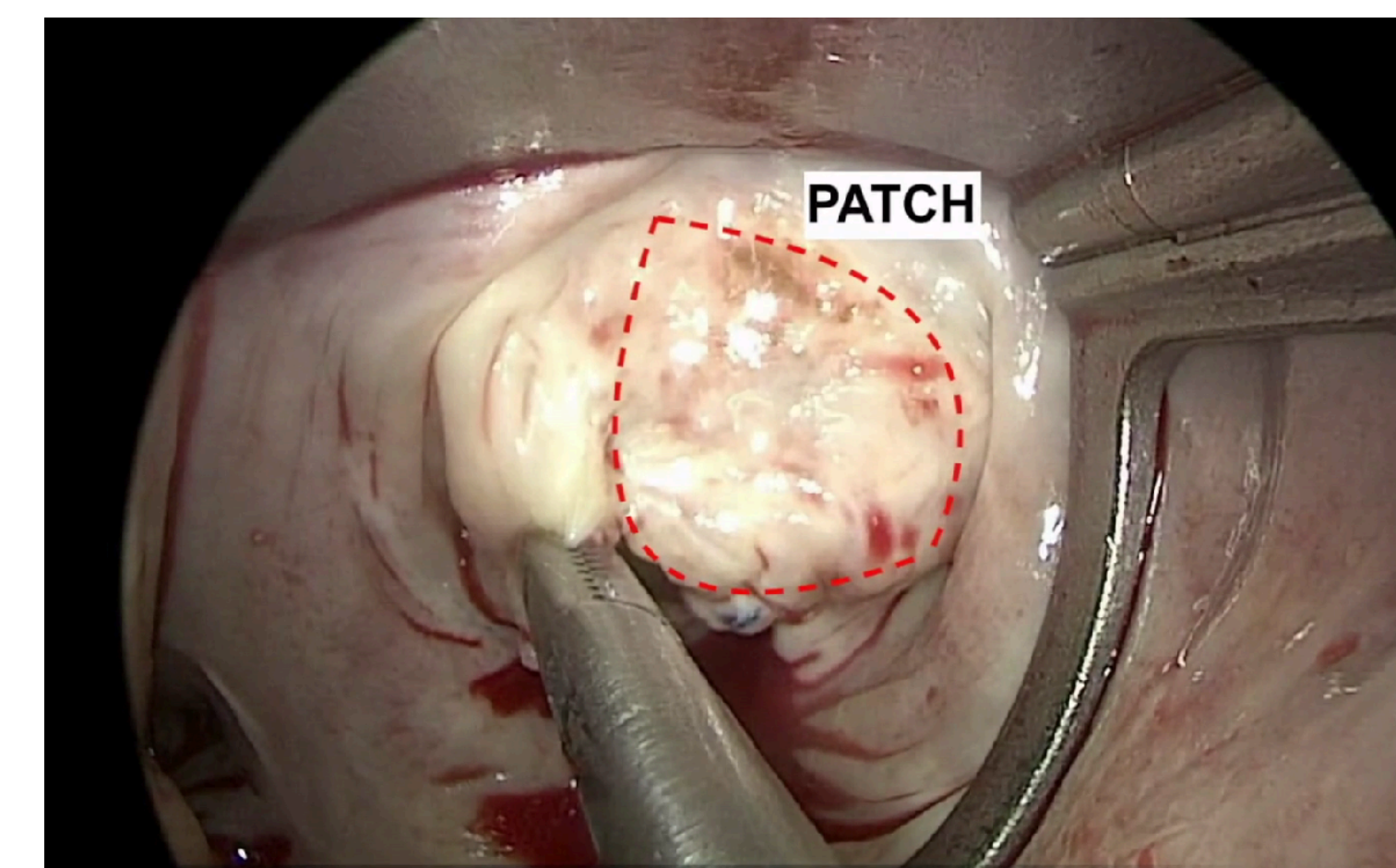
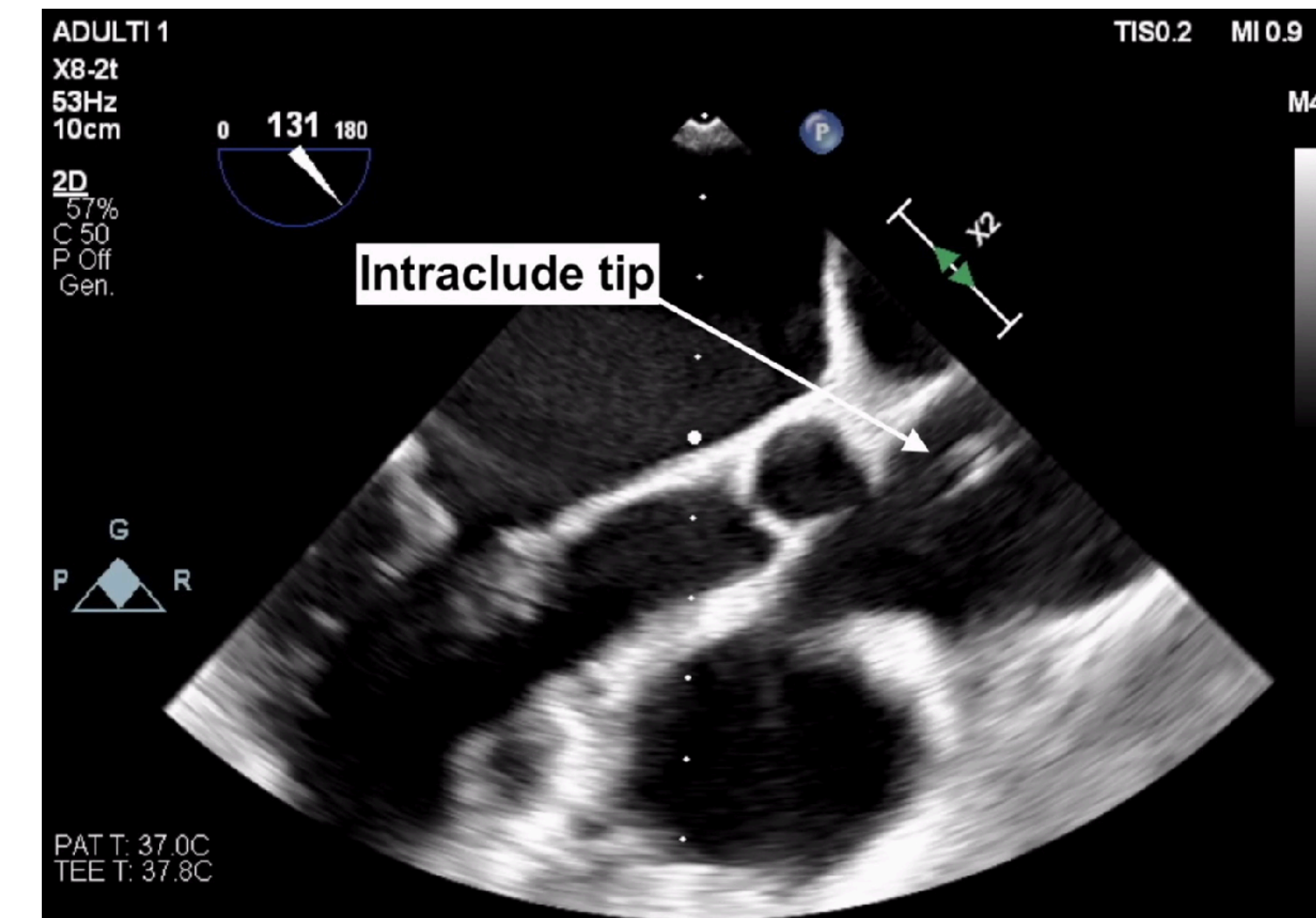
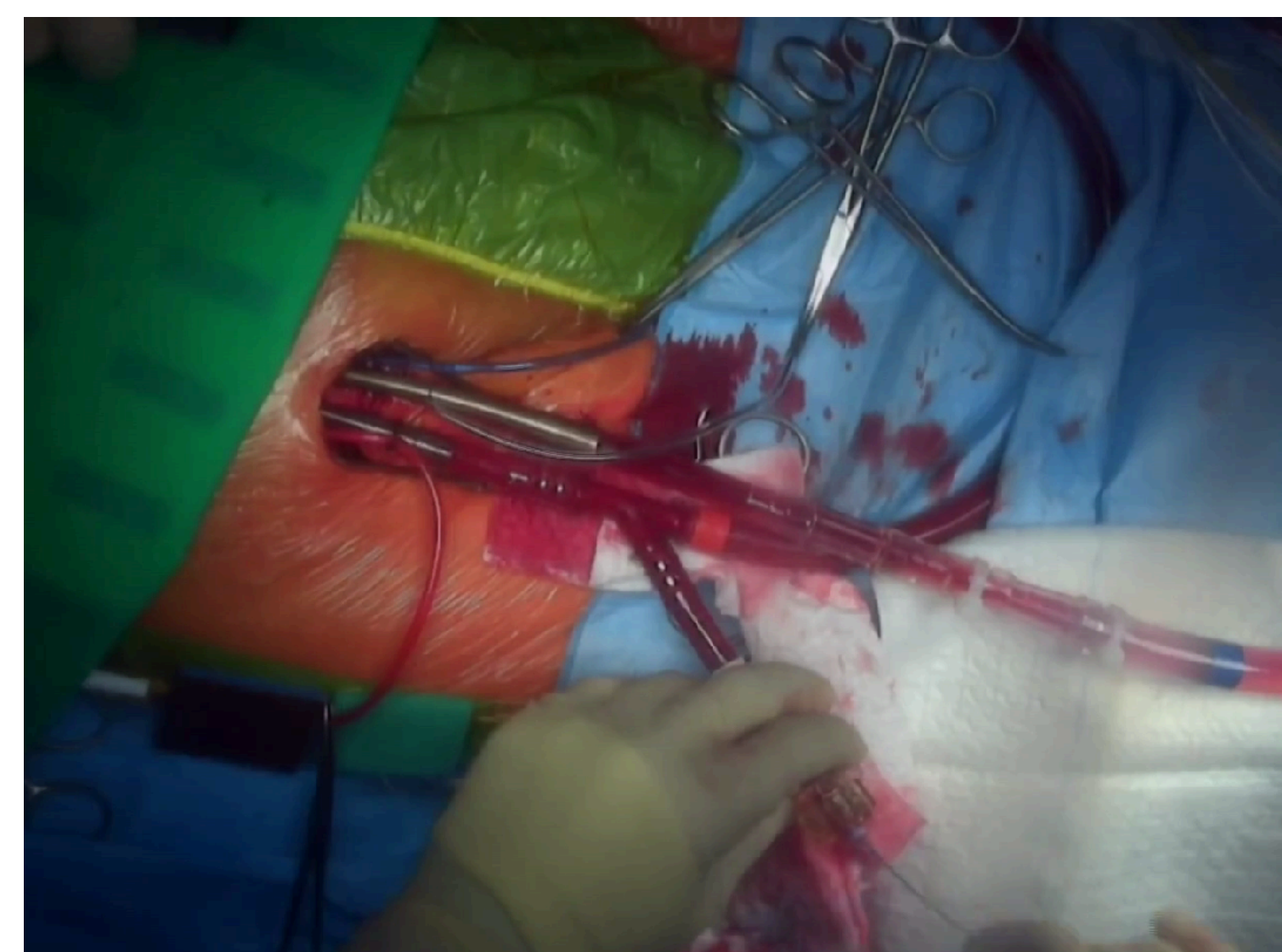
METHODS

We present a case of an adult patient with severe mitral regurgitation following previous complete AVSD repair. The procedure was performed through a right axillary minithoracotomy using endoscopic visualization. Cardiopulmonary bypass was established using an endoreturn cannula with intraclode balloon for aortic occlusion. A mechanical valve replacement (On-X 25/33) was performed with

preservation of the subvalvular apparatus. Also Tricuspid Valve repair was performed

RESULTS

Cardiopulmonary bypass was established via femoro-femoral cannulation using a 25 Fr venous cannula and a 23 Fr endoreturn cannula with intraclode balloon for aortic occlusion; no adenosine was used to stop the heart, instead we induced ventricular fibrillation with dedicated pad. The procedure was successfully completed with a cross-clamp time of 62 minutes and total cardiopulmonary bypass time of 90 minutes. The minimally invasive approach provided excellent visualization and access to the mitral valve, facilitating precise prosthesis implantation despite the complex anatomical setting of previous AVSD repair. The patient demonstrated an uncomplicated postoperative course and was discharged home on postoperative day 6. No major complications were observed during the hospital stay.



CONCLUSIONS

This case demonstrates that minimally invasive mitral valve replacement through right axillary minithoracotomy is technically feasible and safe in patients with previous AVSD repair. The approach offers potential advantages including improved visualization and reduced surgical trauma. Further studies with larger

patient cohorts are needed to validate these findings and establish the long-term outcomes of this technique in reoperative congenital heart surgery.

Aknowledgements

We thank Cecilia Bianchi MD, cardio-anesthesiologist, for the anesthesia, intraoperative TEE guidance, and 3D images.

Please Scan the QR code to access the full video on YouTube

