

The First Experience in Central Europe with Video Thoracoscopic SNS Ablation for Complex IST and POTS Syndrome

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OBJECTIVES

This case report aims to present the first documented case in Central Europe utilizing a hybrid Sinoatrial Node (SN) sparing ablation and an EP-Heart-Team approach for the management of a complex presentation involving Inappropriate Sinus Tachycardia (IST) and Postural Orthostatic Tachycardia Syndrome (POTS). The primary objectives were to investigate the feasibility, safety, and effectiveness of this innovative hybrid intervention, as well as to assess the impact on the patient's symptoms, quality of life, and post-procedural complications.

METHODS

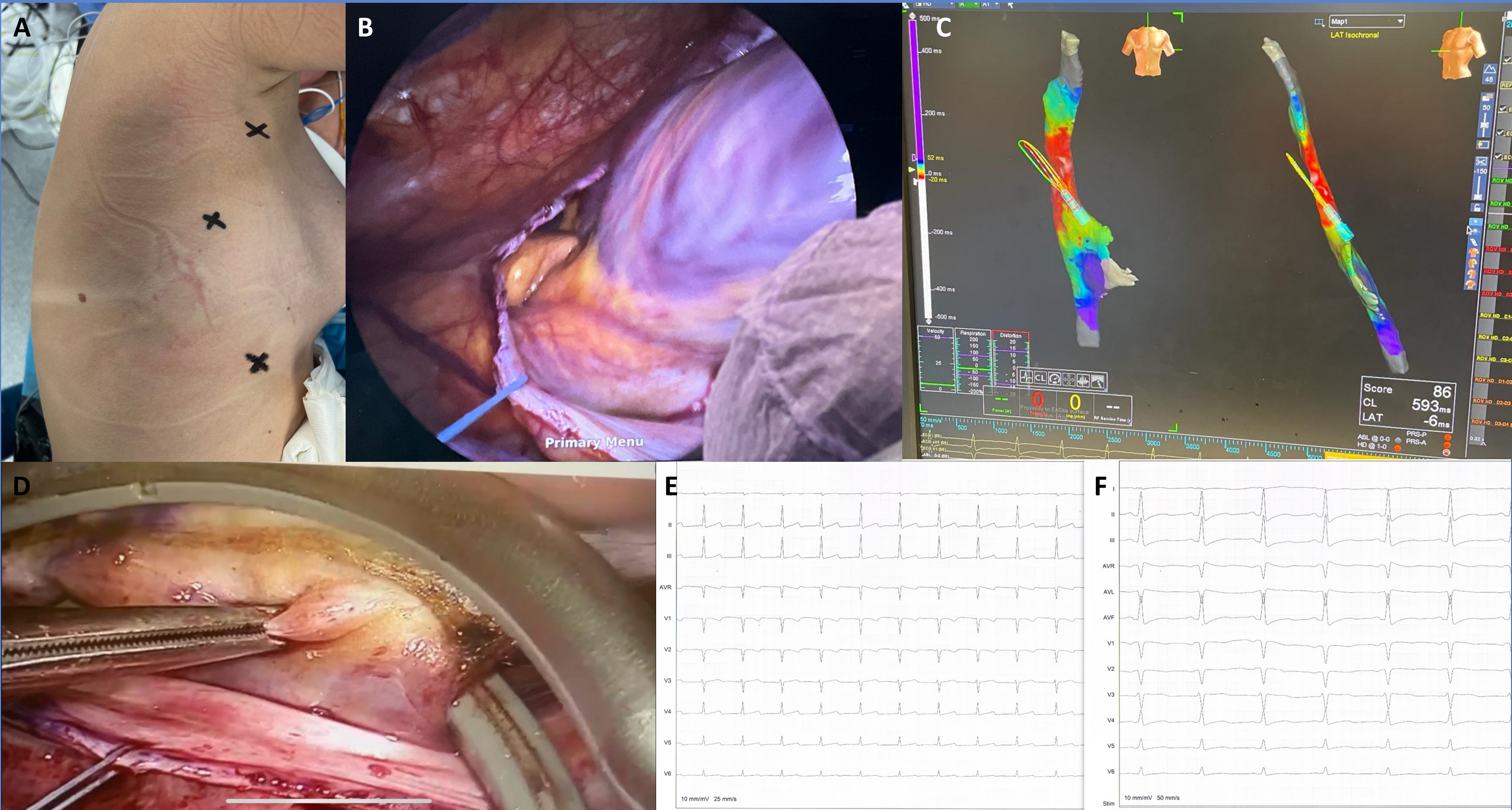
A 19-year-old woman with a four-year history of debilitating symptoms, including dizziness, fatigue, and syncope, underwent comprehensive interdisciplinary examinations. Despite failed non-pharmacological and pharmacological interventions, including beta-blockers and calcium channel blockers, the patient was diagnosed with IST through electrophysiological study. Shared decision-making led to the adoption of a hybrid SN sparing ablation and EP-Heart-Team approach, involving right-sided video-assisted thoracoscopic surgery (VATS) and endocardial and epicardial remapping with a zero-fluoroscopy approach.

RESULTS

The hybrid intervention successfully isolated the superior vena cava, right pulmonary veins, crista terminalis, cavo-tricuspid isthmus, and vena cava inferior line with bidirectional block. Post-procedural cardiac rehabilitation, including a tele-rehabilitation program, demonstrated significant improvement in the patient's quality of life, disappearance of symptoms related to POTS and IST, and maintenance of normal sinus rhythm. However, intermittent asymptomatic pericardial effusion was observed, reaching a maximum of 13 mm between the second and fourth post-procedural weeks.

CONCLUSIONS

This case highlights the potential efficacy of hybrid SN sparing ablation and an EP-Heart-Team approach for treating complex cases of IST/POTS. The procedure, while demonstrating success in improving the patient's symptoms and overall quality of life, requires careful consideration of potential complications, such as pericardial effusion. Further research and development of comprehensive cardiac rehabilitation programs, including tele-rehabilitation, are warranted to optimize outcomes in this unique patient population.



A: patient is put in a supine position with right chest elevated; markings are for thoracoscopic working ports; B: pericardium is opened and the exact location of the sinus node identified guided by EP map (C); D: ablation lines follows strict protocol and include superior and inferior caval vein; right pulmonary veins and crista terminalis [in the forceps]; E,F: sinus tachycardia before and after the procedure;