

Hybrid Treatment Of Persistent Atrial Fibrillation In The Era Of Robotic Cardiac Surgery: Epicardial Surgical Ablation

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Background

- Hybrid treatment of persistent atrial fibrillation (AF) has been shown to be effective in restoring sinus rhythm.
- The use of robotic technology with its features of magnified vision, precision and dexterity may bring advantages in safety and effectiveness.
- The purpose of this study is to evaluate the clinical outcomes of robotic surgical ablation in the context of hybrid treatment of AF.

Material and Methods

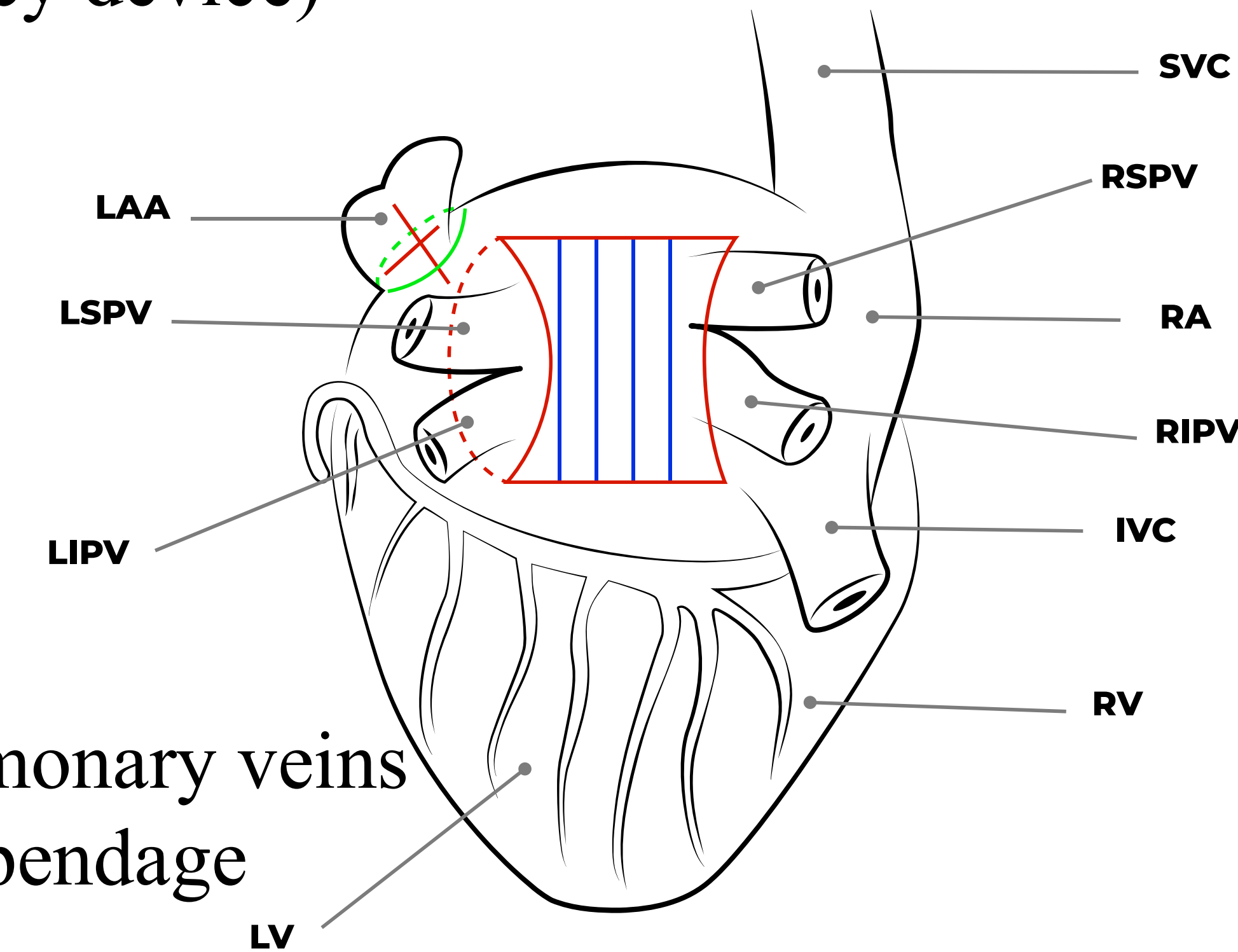
- Between April 2023 and November 2024, 30 patients underwent robotic-assisted epicardial ablation

Age	61.8 ± 6.8
Female sex	16% (5)
Average AF duration (years)	4 ± 1
Previous CVE	73% (22)
Previous PVI transcatheter ablation	50% (15)
Chadvasc-2 score	1.5 ± 1.01
Has-bled score	1.05 ± 0.75
Euro Score II	0.73 ± 0.23
MRI Left Atrial Volume (mL/m2)	63.4 ± 19.0
Mean EF (%)	56.3 ± 3.2

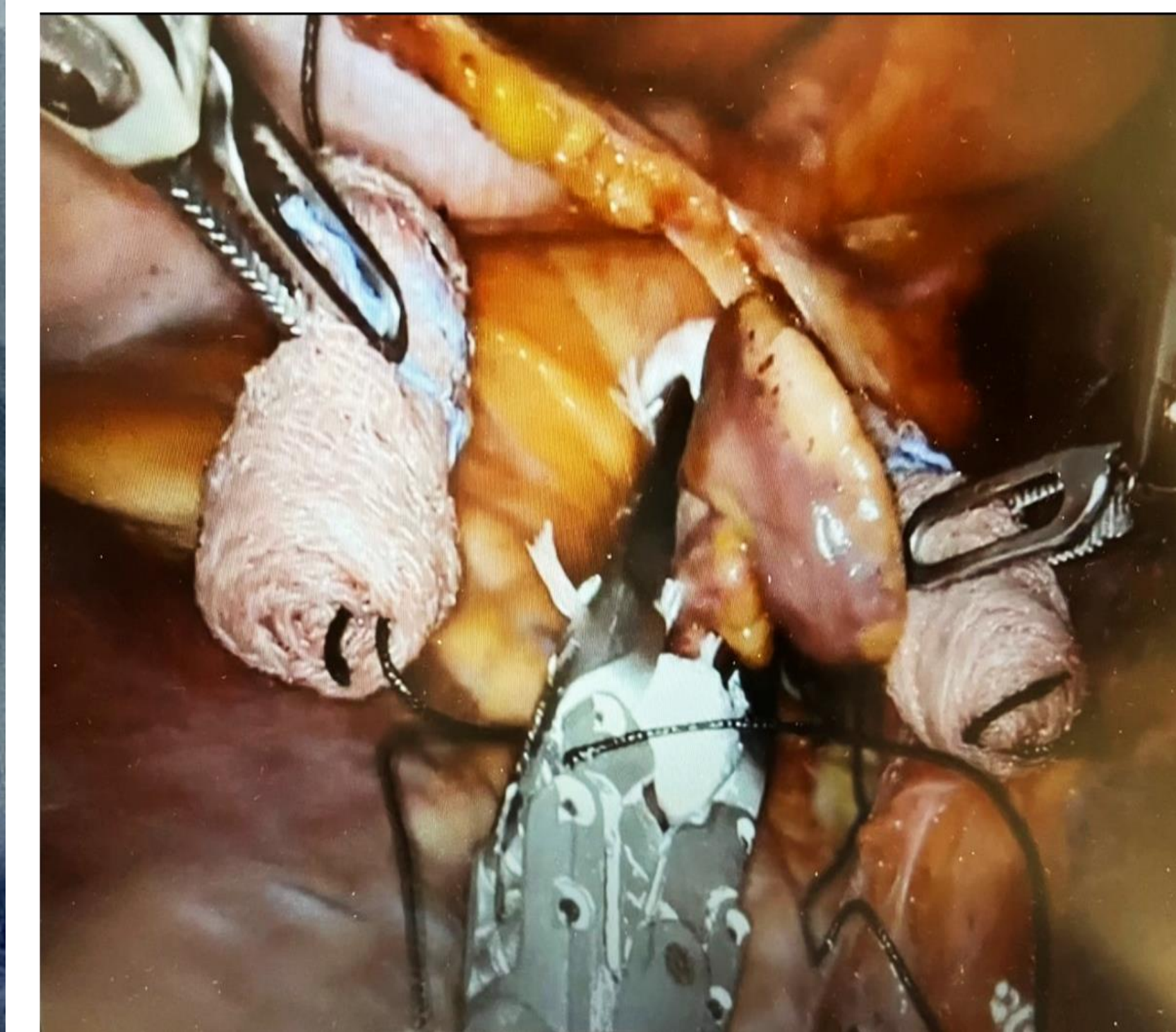
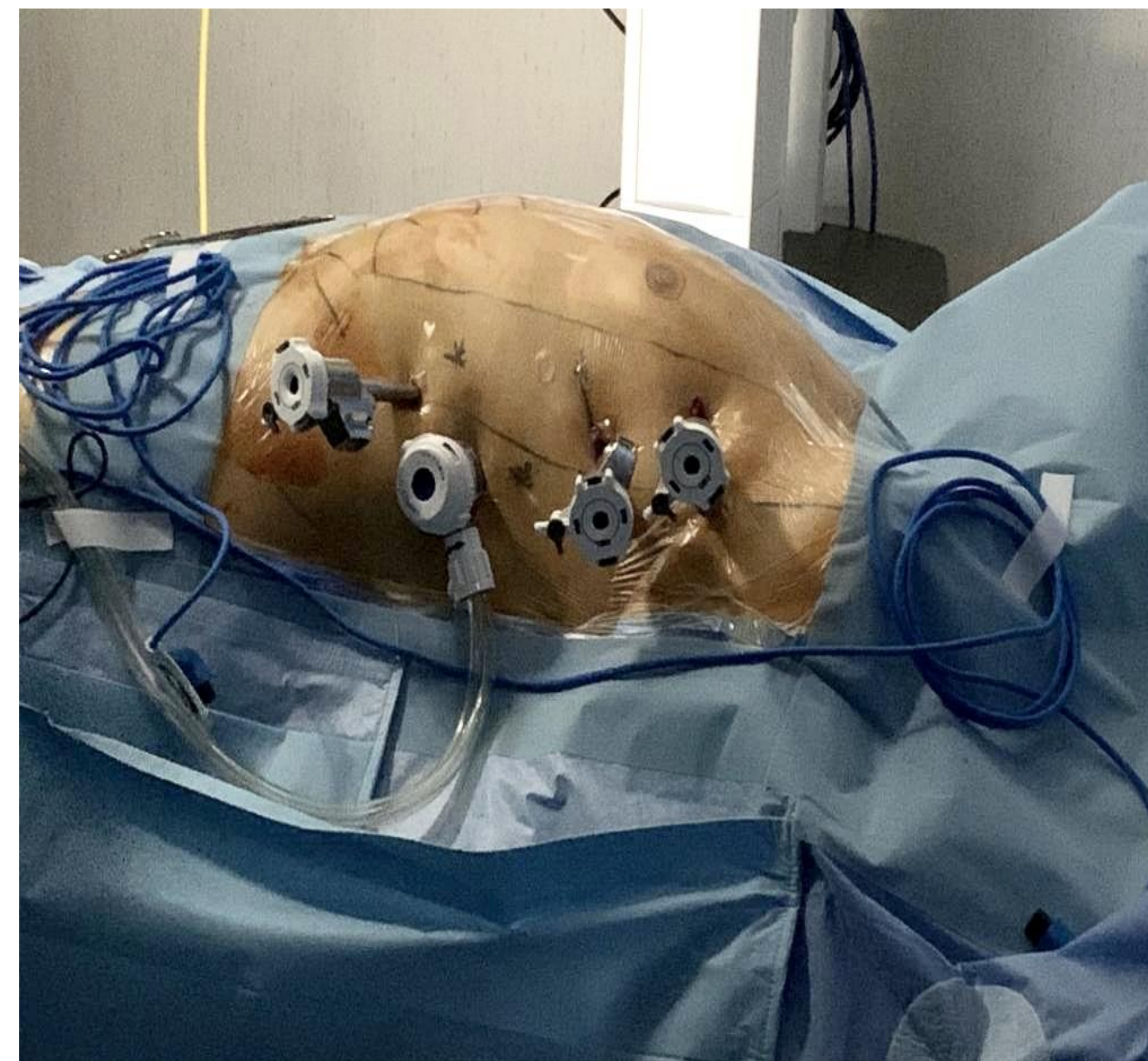
Surgical Technique

- Mono-lateral ventilation with exclusion of the left lung
- Four incision in left chest wall to place the working-port for the robotic instruments/camera and ablation probe (Epi-sense AtriCure radiofrequency device)

- Set of ablation lines:
 - left pulmonary veins,
 - left atrial roof and floor,
 - left atrial posterior wall,
 - median side of right pulmonary veins
 - base of the left atrial appendage



Occlusion of the left atrial appendage with the Atriclip (AtriCure) device.



Results

Procedure was successfully performed in all patients without major complications.

Extubating in operative room	86.7% (26)
Post operative stroke	0
Hospital mortality	0
Mean LOS (days)	3 ± 1
Sinus Rhythm at discharge n (%)	73% (22)

- Endocardial catheter ablation was performed in 70% of pts: the effectiveness of previous lines of surgical ablation was confirmed in all patients and endocardial ablation of the right pulmonary veins and mitral isthmus was complete.
- Six-months follow up was completed in 19 pts, with AF recurrence in only one patient.

Conclusions

Robotic assisted epicardial ablation is proven a safe, feasible and effective technique. Minimizing surgical trauma results in faster patient recovery and shorter hospital stays. The initial results regarding the restoration of sinus rhythm after hybrid ablation are encouraging for the adoption of this strategy.