



RIGHT TRANS-AXILLARY ENDOSCOPIC AORTIC VALVE REPLACEMENT WITH RAM DEVICE

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BACKGROUND & OBJECTIVES

- ♥ **Totally Endoscopic Cardiac Surgery** offers significant clinical advantages over conventional open-heart surgery and standard minimally invasive approaches.
- ♥ Overcoming spatial constraints requires cutting-edge instrumentation and continuous technological innovation.
- ♥ **The RAM® device** represents one of the latest automated tools designed to facilitate and streamline endoscopic suturing.
- ♥ **Objective:** To describe a novel, reproducible surgical setup for totally endoscopic Aortic Valve Replacement (AVR) using the RAM® device.



SURGICAL METHOD & SETUP

Surgical Access: A small working port (minithorocotomy) is performed at the **3rd Intercostal space** on the anterior axillary line.

Port Placement: * Two ports at the **2nd** and **4th/5th** intercostal spaces for the endoscopic probe, ventricular vent, and CO2 delivery.

Chitwood clamp placed posteriorly in the **3rd** intercostal space.

Suturing Technology: * **RAM® device:** Automated, dual-curved needle annular suturing device (creates a horizontal mattress stitch with a single squeeze).

- **SEW-EASY system:** Used to pass sutures through the prosthetic ring.
- **Cor-Knot:** Used for secure and rapid suture tying

OPERATIVE VIEWS



Fig. 1. SETUP



Fig. 2. RAM positioning



Fig. 3 SEW-EASY system



Fig. 4 Final view

RESULTS & CONCLUSIONS

RESULTS

The described setup demonstrated that **RAM® suture positioning is straightforward** across all types of thoracic anatomy and aortic valve pathologies.

The integration of automated devices significantly made the procedure **faster and easier** for the surgical team.

CONCLUSIONS

Totally endoscopic AVR through a right trans-axillary approach using the RAM® device is an **ideal solution** for surgical AVR with a sutured prosthesis.

This configuration expands the feasibility of totally endoscopic approaches, transforming a complex procedure into a **simpler, quicker, and reproducible routine**.