

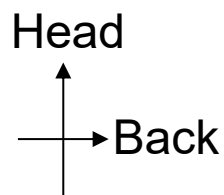
“Initial Experience with the hinotori Surgical Robot System in Thoracic Surgery : A Comparison with the da Vinci System”

Juntendo University School of Medicine

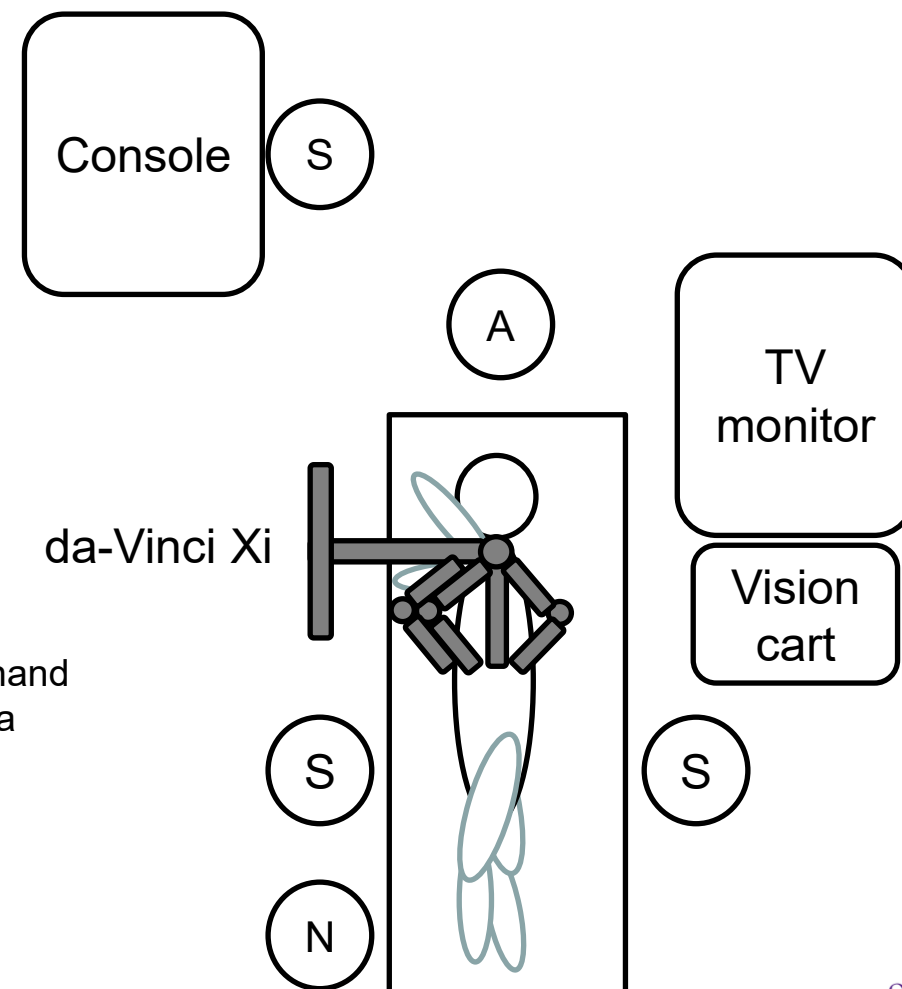
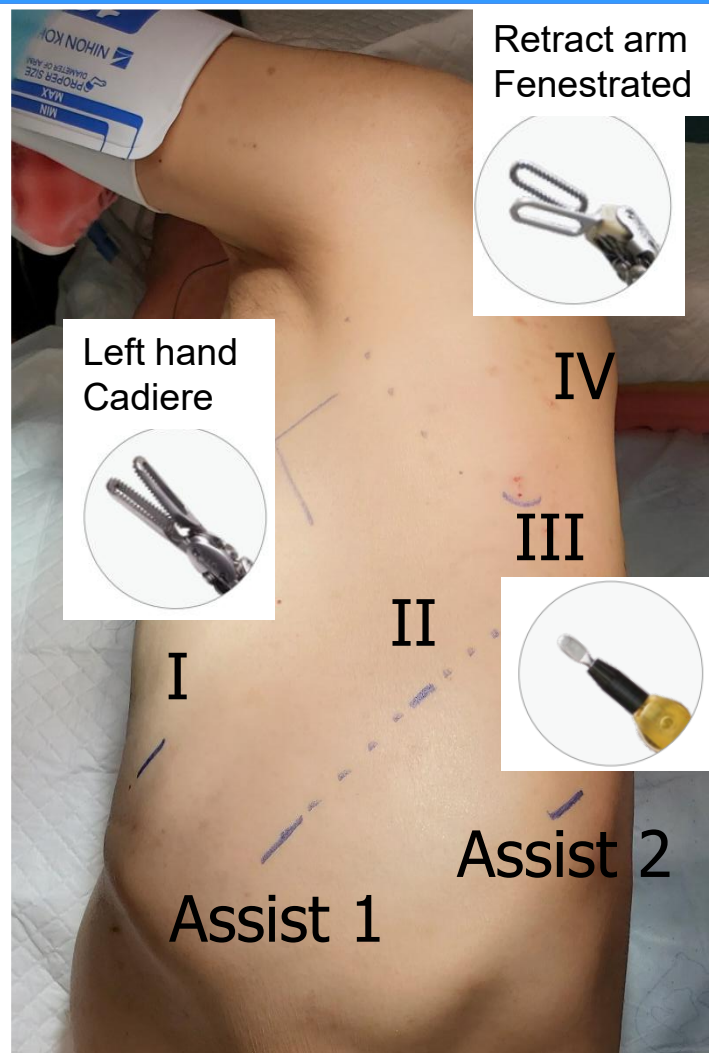
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The author has no conflict of interest to disclose with respect to this presentation.

Port placements and positions @Juntendo



- I: 6th anterior
- II: 8th middle axially line
- III: 8 or 9th posterior axially line
- IV: 7 or 8th paravertebral
- Assist 1: 8th anterior
- Assist 2: 10th posterior



hinotori surgical robot system

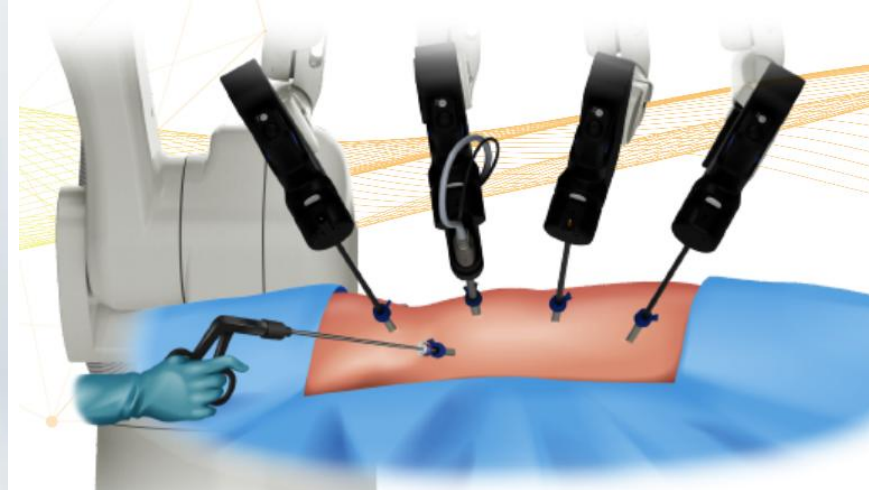


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Background and Methods

Background

- Several robotic platforms are currently used in thoracic surgery; however, there are few clinical reports focusing on system-specific characteristics. The hinotori Surgical Robot System (Medicaroid, Hyogo, Japan) is a novel robotic platform developed in Japan.
- This study aimed to evaluate its initial clinical feasibility and to describe technical characteristics in comparison with the widely used da Vinci Surgical System (Intuitive Surgical, Sunnyvale, California, United States).

Methods

- From 2017 to 2024, 1,538 robot-assisted procedures were performed using the da Vinci system. The hinotori system was introduced in October 2025. Perioperative outcomes, including port placement, setup time, operative time, console time, blood loss, and postoperative hospital stay, were evaluated.
- Surgical techniques and workflow were also analyzed and compared with prior institutional experience using the da Vinci system. A monopolar spatula was used with the da Vinci, whereas monopolar scissors were used with the hinotori.

Comparison of surgical outcomes between da Vinci and hinotori

	da Vinci n=1538	hinotori n=9
Set up time for robotic surgery (min), median (range)	-	23 (15-35)
Operative time (min), median (range)	145 (60-420)	113 (71-178)
Console time (min), median (range)	95 (35-300)	69 (18-134)
Blood loss (ml), median (range)	20 (0-450)	5 (0-10)
Conversion to thoracotomy	12 (0.8%)	0 (0%)
Intraoperative complications	18 (1.2)	0 (0%)
Postoperative hospital stay (days), median (range)	5 (2-45)	4 (2-6)
Postoperative complication (CD grade $\geq$ IIIa)	134 (8.7%)	0 (0%)
Thirty-day mortality	3 (0.2%)	0 (0%)

Conclusions

- For surgeons experienced with the da Vinci system, transitioning to the hinotori platform required only minor adjustments in setup and workflow. Despite limited device availability, effective dissection was achieved using monopolar scissors and assistant-driven stapling. The hinotori system offers potential advantages, including docking-free setup and flexible port configuration, which may improve operative ergonomics and workspace optimization.