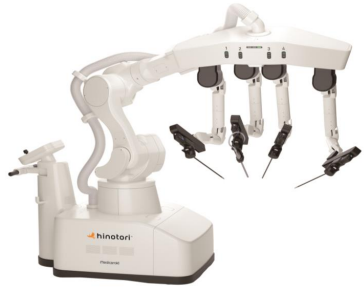


# ASGO Webinar Series #46



Initial experiences & evidence with the new robotic systems  
'Da Vinci、Hugo、hinotori'

Tottori University, JAPAN

**Hiroaki Komatsu**



**ASGO Webinar Series #46**  
**Disclosure of Conflict of Interest**

**Name of first author: Hiroaki Komatsu**

**I have no COI**

**With regard to my presentation.**

# Introduction of robot platform (Tottori University)

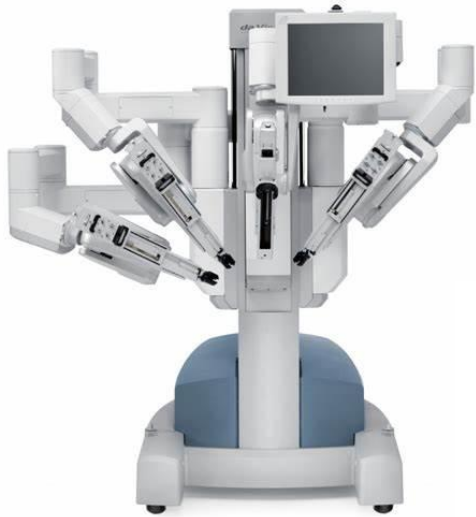
2010.8

2013.3

2018.12

2022.2

2023.3



Da Vinci S



Da Vinci Si



Da Vinci Xi



Da Vinci X



hinotori



Hugo

# Current robotic platform (Tottori University)

## Certificate

**Da Vinci**  
Surgeon : 6  
Assistant : 8

**Hugo**  
Surgeon : 2  
Assistant : 3

**hinotori**  
Surgeon : 2  
Assistant : 2

2018.12

2022.2

2023.3



Da Vinci Xi



hinotori

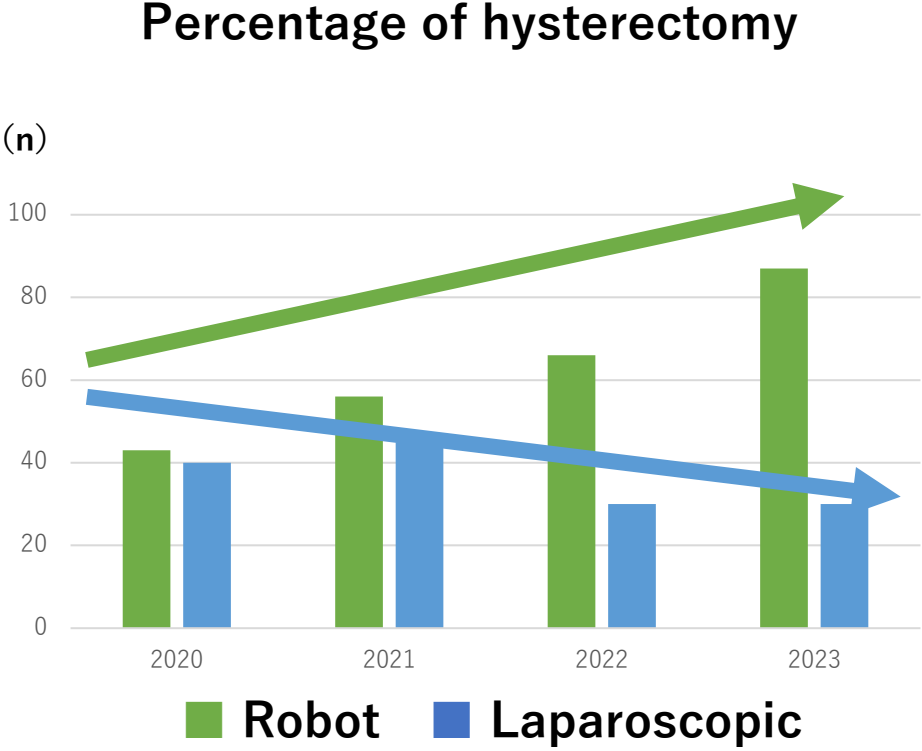
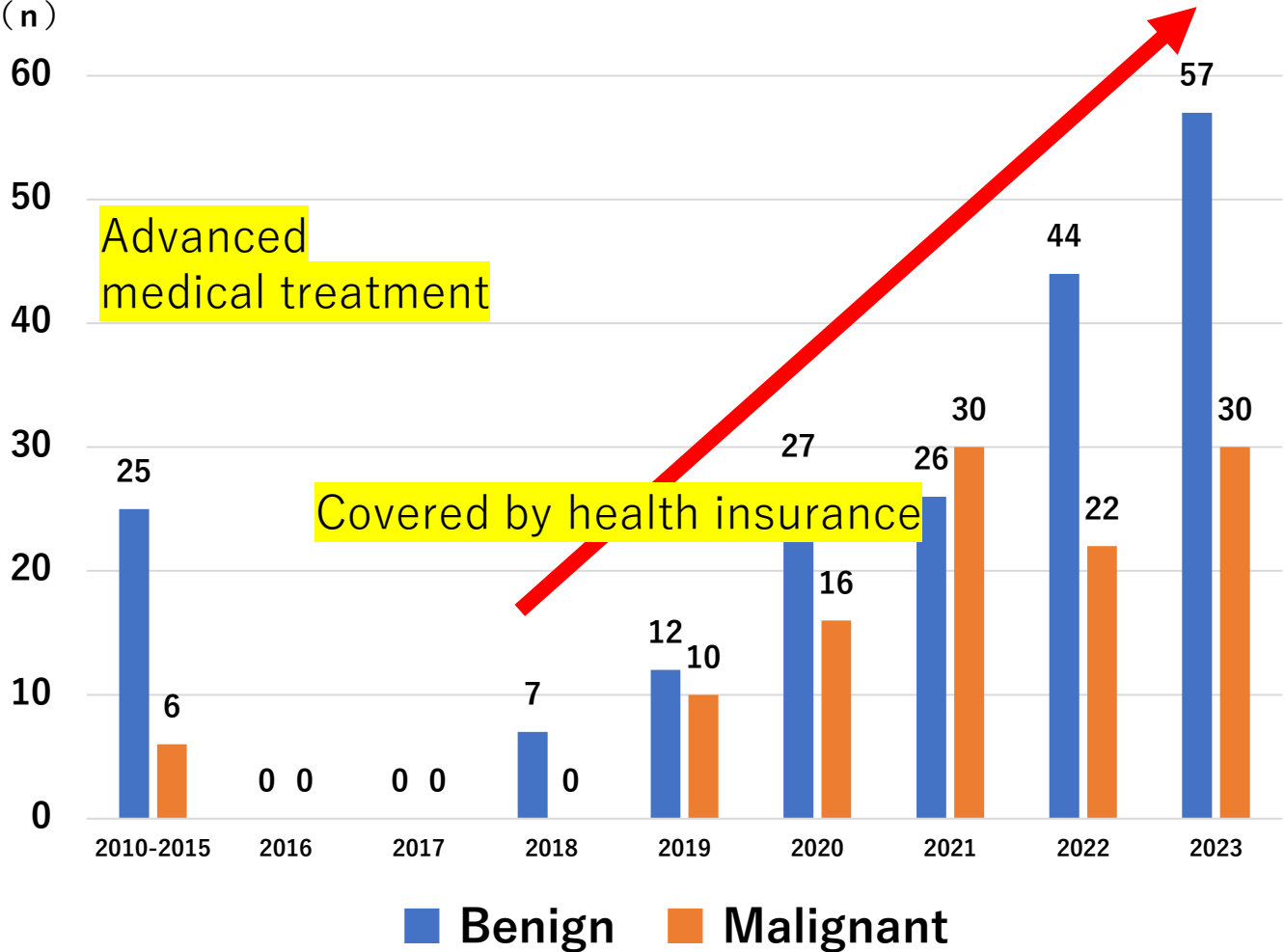


Da Vinci X

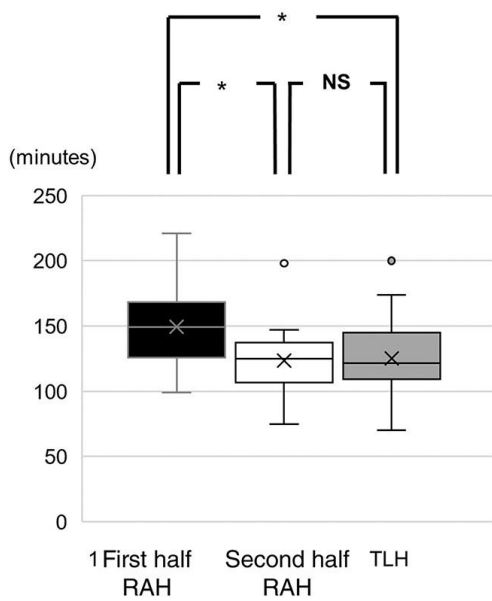


Hugo

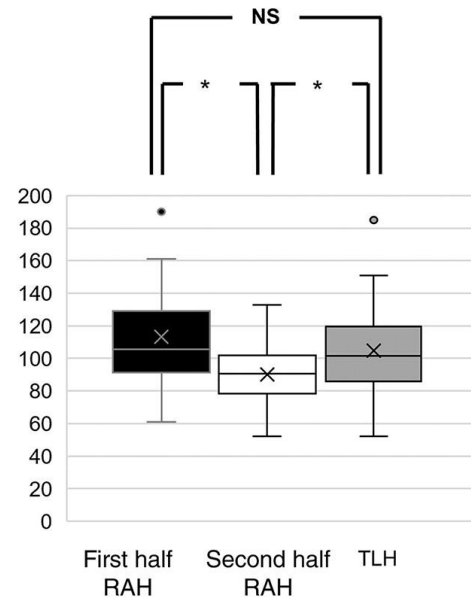
# Hysterectomy for disease in robotic surgery



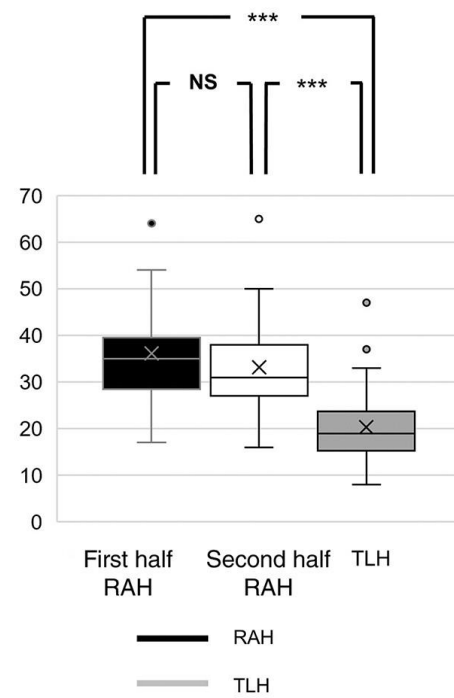
(a) Total operative time



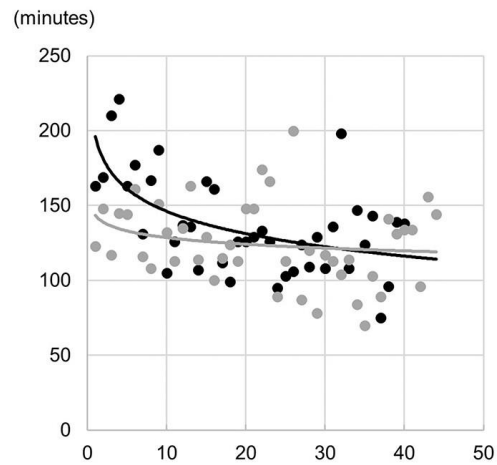
(b) Operative time



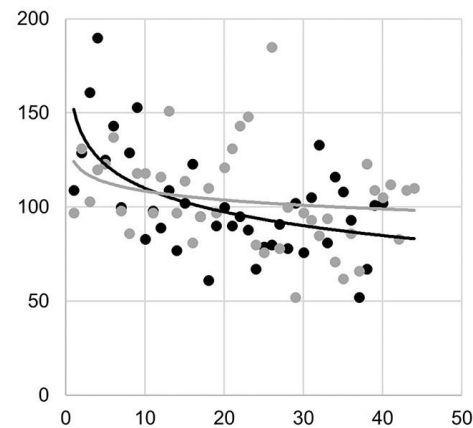
(c) Preparation time



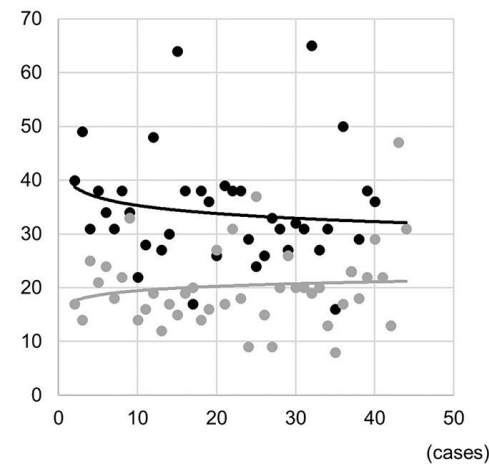
(a) Total operative time



(b) Operative time



(c) Preparation time



# Difference between models (shape)



**One body**



**Independent Arms**

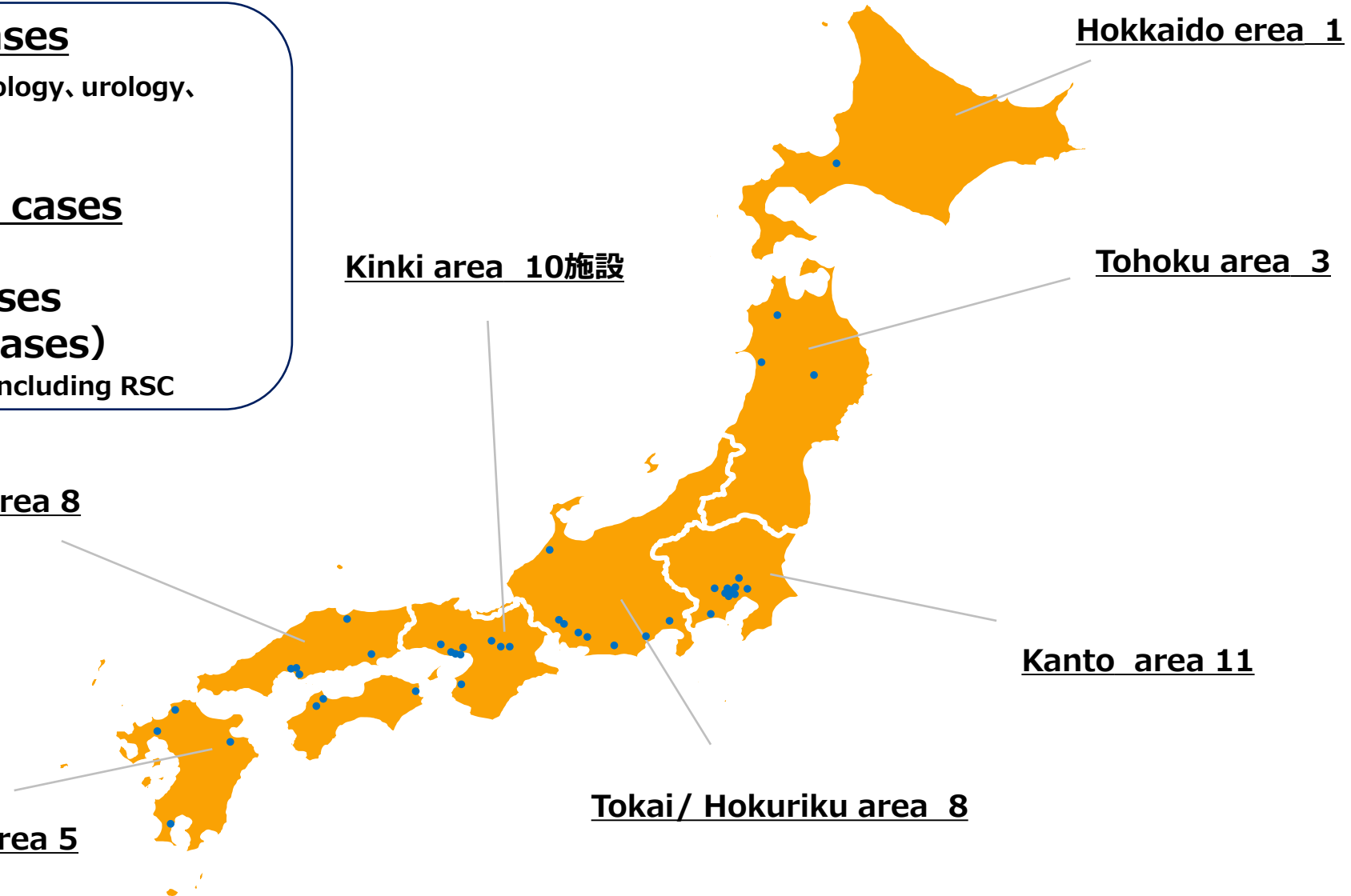
## hinotori™ total cases

**3,918 cases** (gynecology, urology, surgery)

## Gynecology total cases

**397 cases**  
(benign : 286 cases  
malignant : 111 cases)

※benign including RSC





# Future development of Medicaroid



(2020.8)

Increase the types of robotic instruments and devices

Cleaning and sterilization service



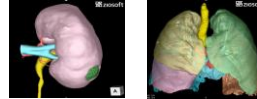
Robot autonomy



Remote surgery



Surgical navigation system



**Enhance product portfolio**

Coordination with surgical operating table



Modular system



**Expand into the global market**

US/Europe market

Asia and other areas

**Expand applicable indication**

Urology

Gastroenterology

Respiratory

Otorhinolaryngology

Gynecology

Cardiovascular

**Expand the function of MINS**

Accumulation of surgical database

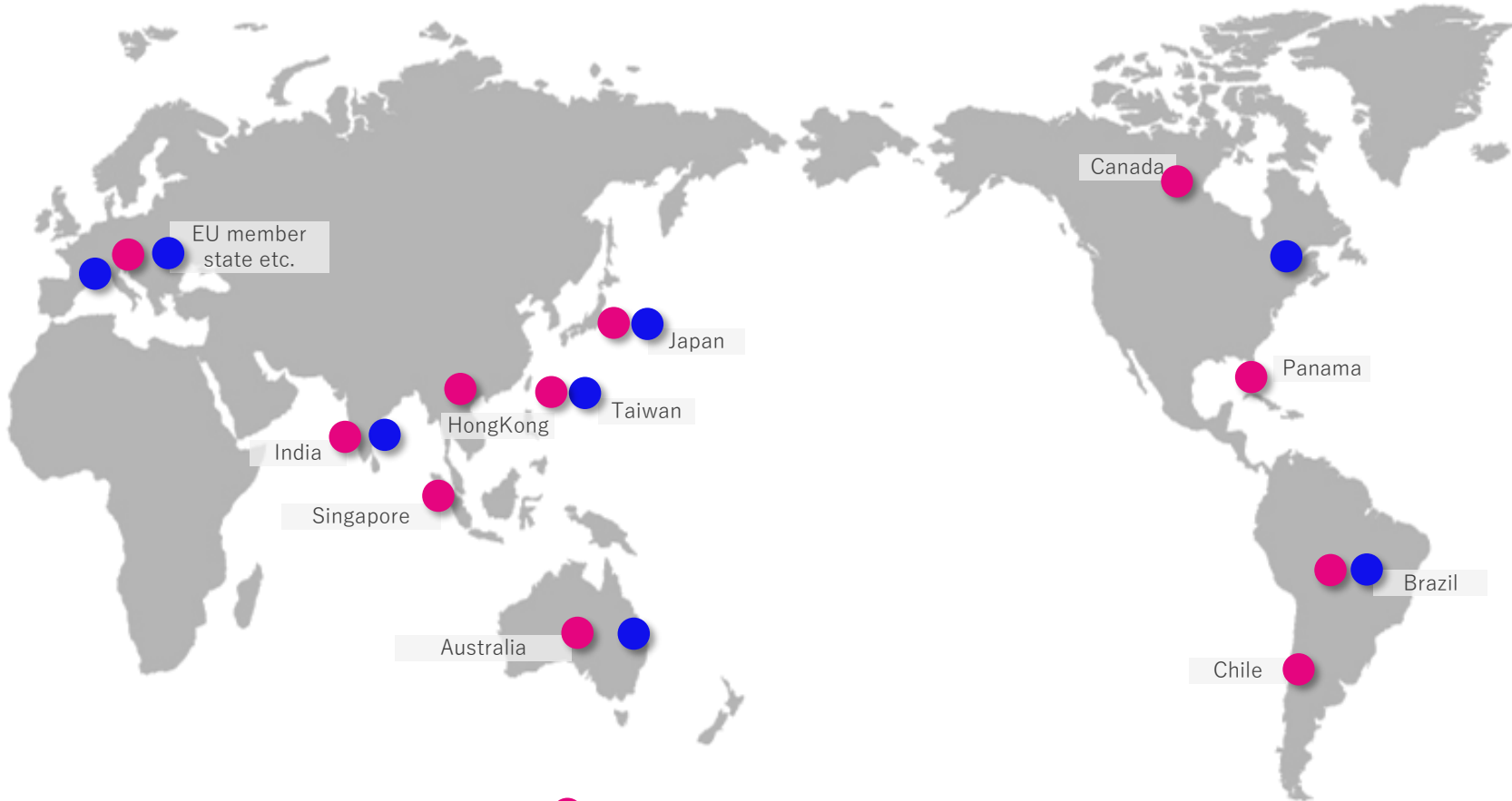


Analyze surgical technique by AI



# Hugo™ RAS System

## Overseas operation



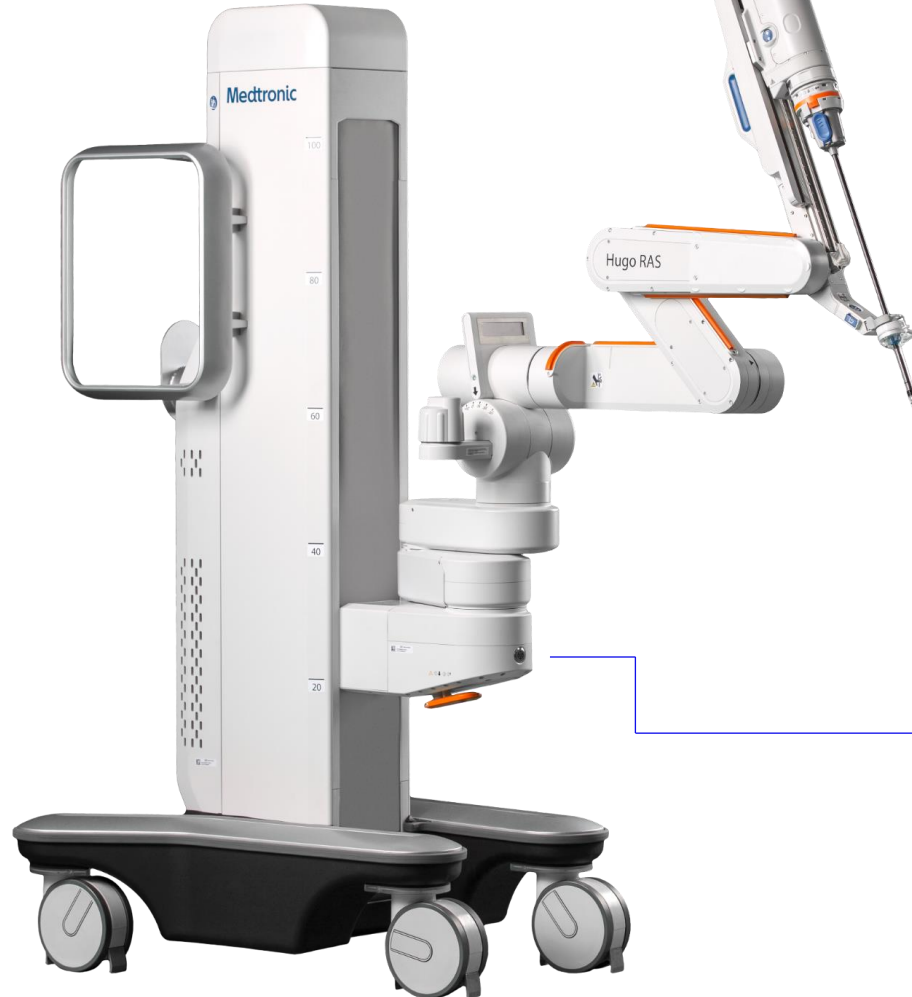
- Countries and regions handling Hugo™
- Medtronic RAS Training Facility

# These arms are meant to flex.

Hugo™ RAS system arm carts can accommodate a wide range of robotic-assisted and laparoscopic cases.

## Modularity for mobility

Easily moved between ORs for use in another case, or to free up space



## Modularity for choice

From the number of arms in use during a case to positioning around the patient.

## Modularity for access

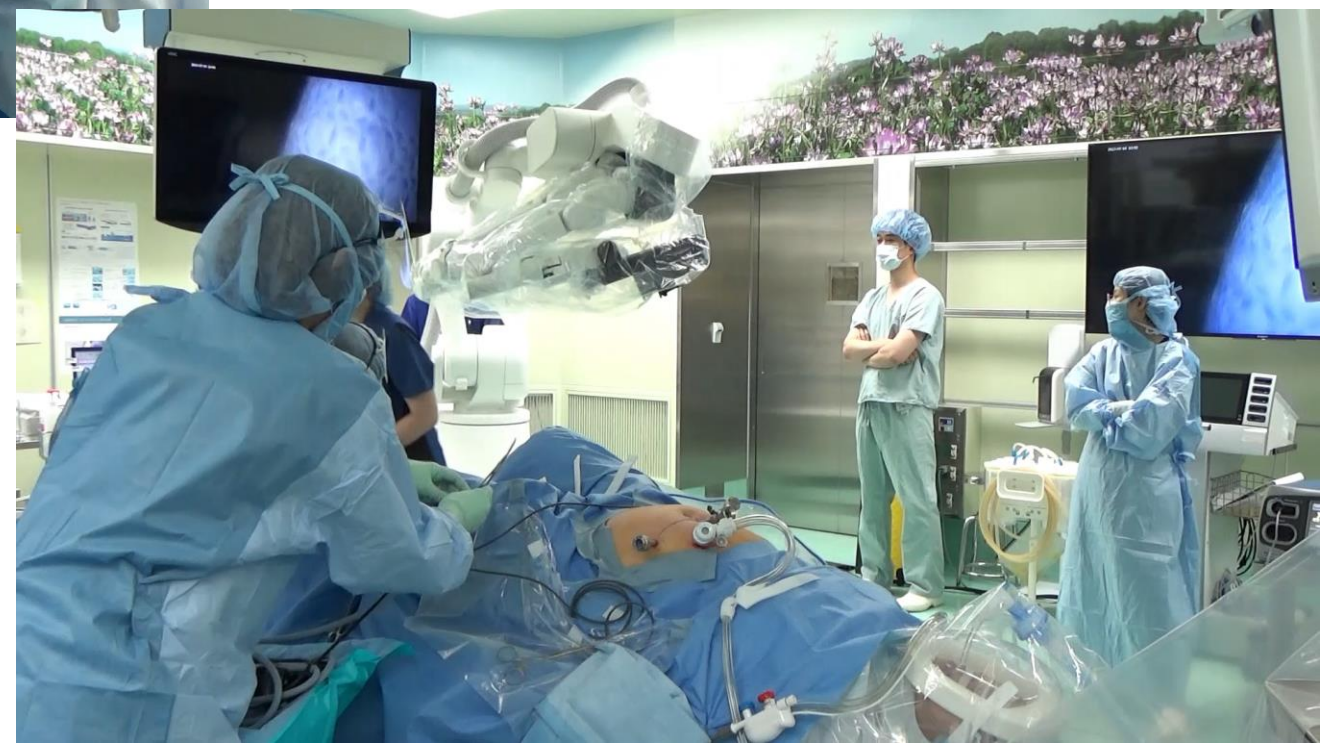
Adjustable height facilitates preferred access to anatomy while eight degrees of freedom for instruments delivers dexterity to reach anatomical targets.

**Medtronic**



**July 4, 2023**  
**hinotori introduced**  
**(12 facilities in JAPAN)**

**March 28, 2023**  
**Hugo introduced**  
**(First case in JAPAN)**



# Difference between models (console)



**Immersive type**



**Open type**

# Difference between models (operation)



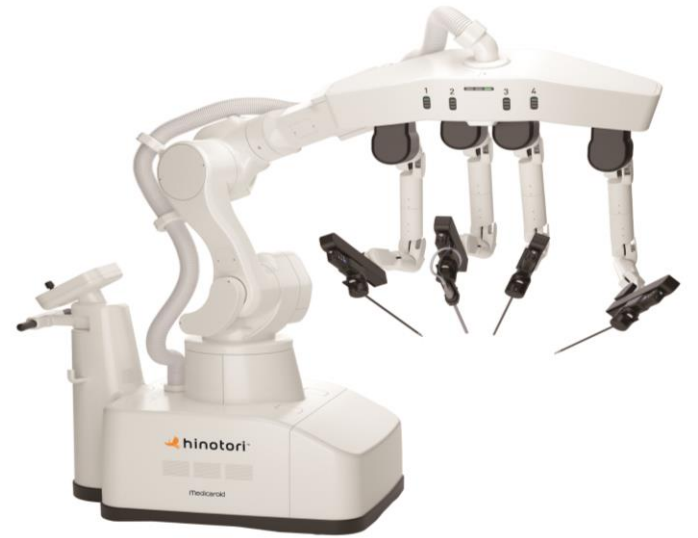
**Finger-type**



**Pistol-type**

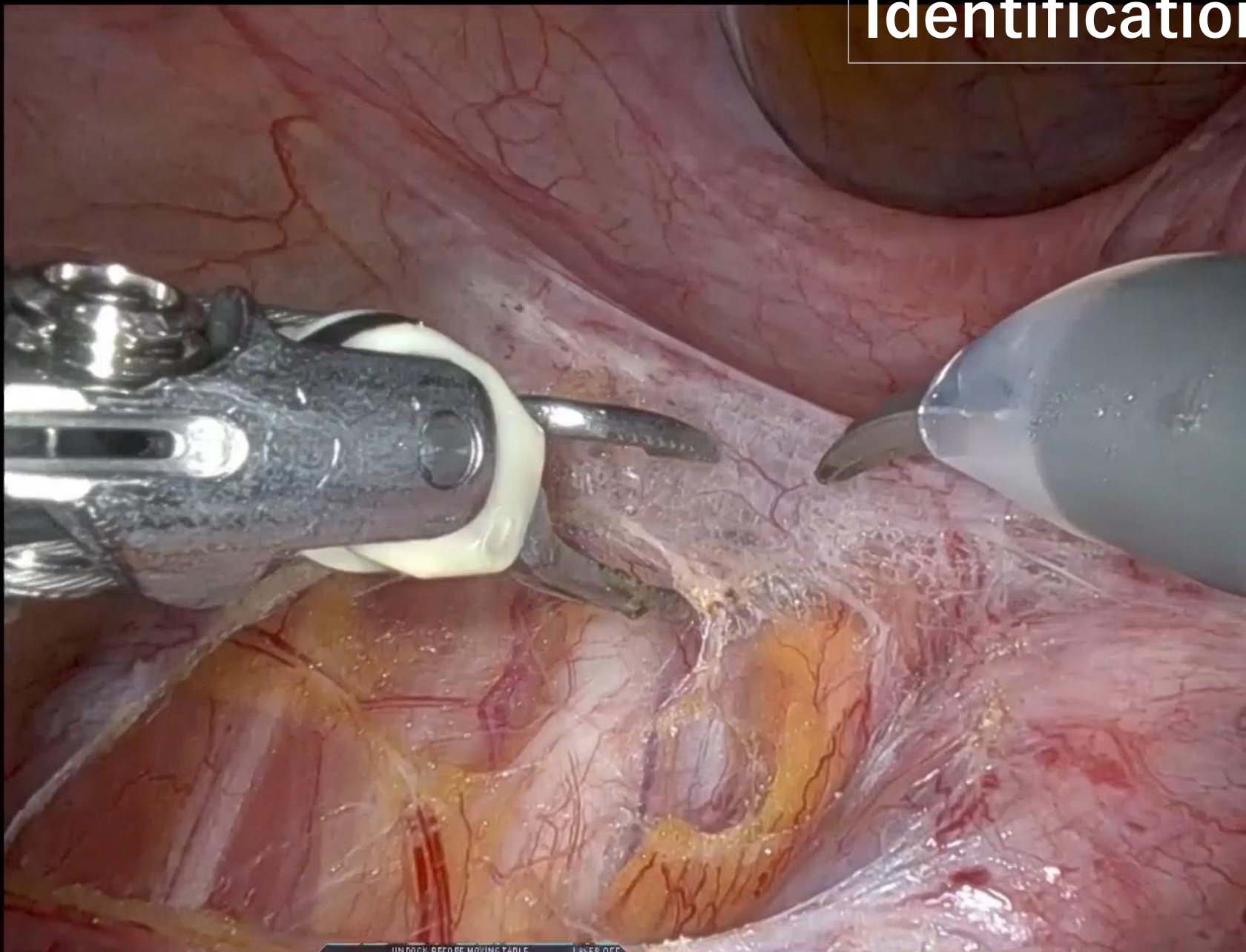








# Identification of ureter



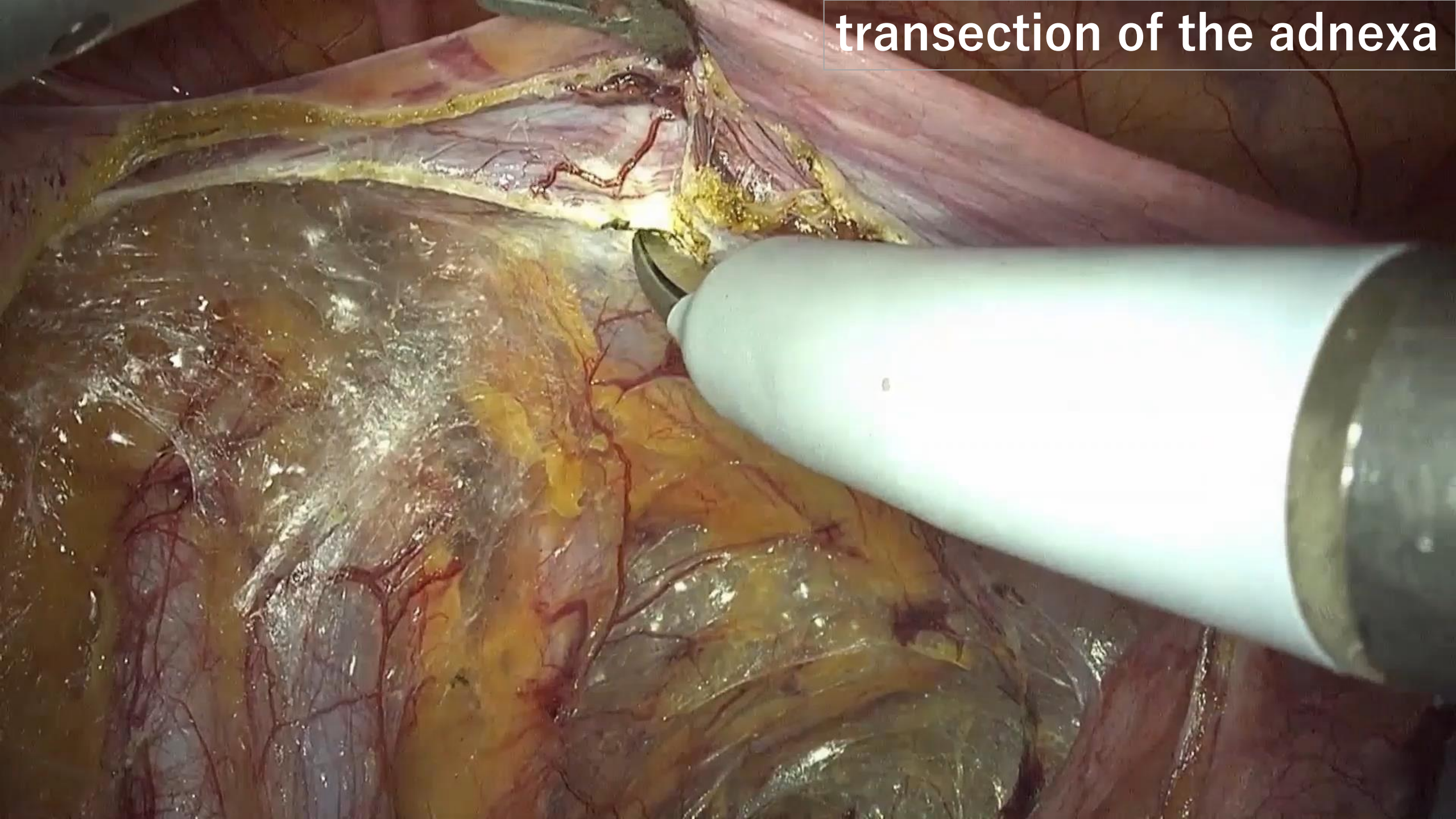
1 MARYLAND BIPOLAR FORCEPS L COAG

2 UNDOCK BEFORE MOVING TABLE 1x 0°

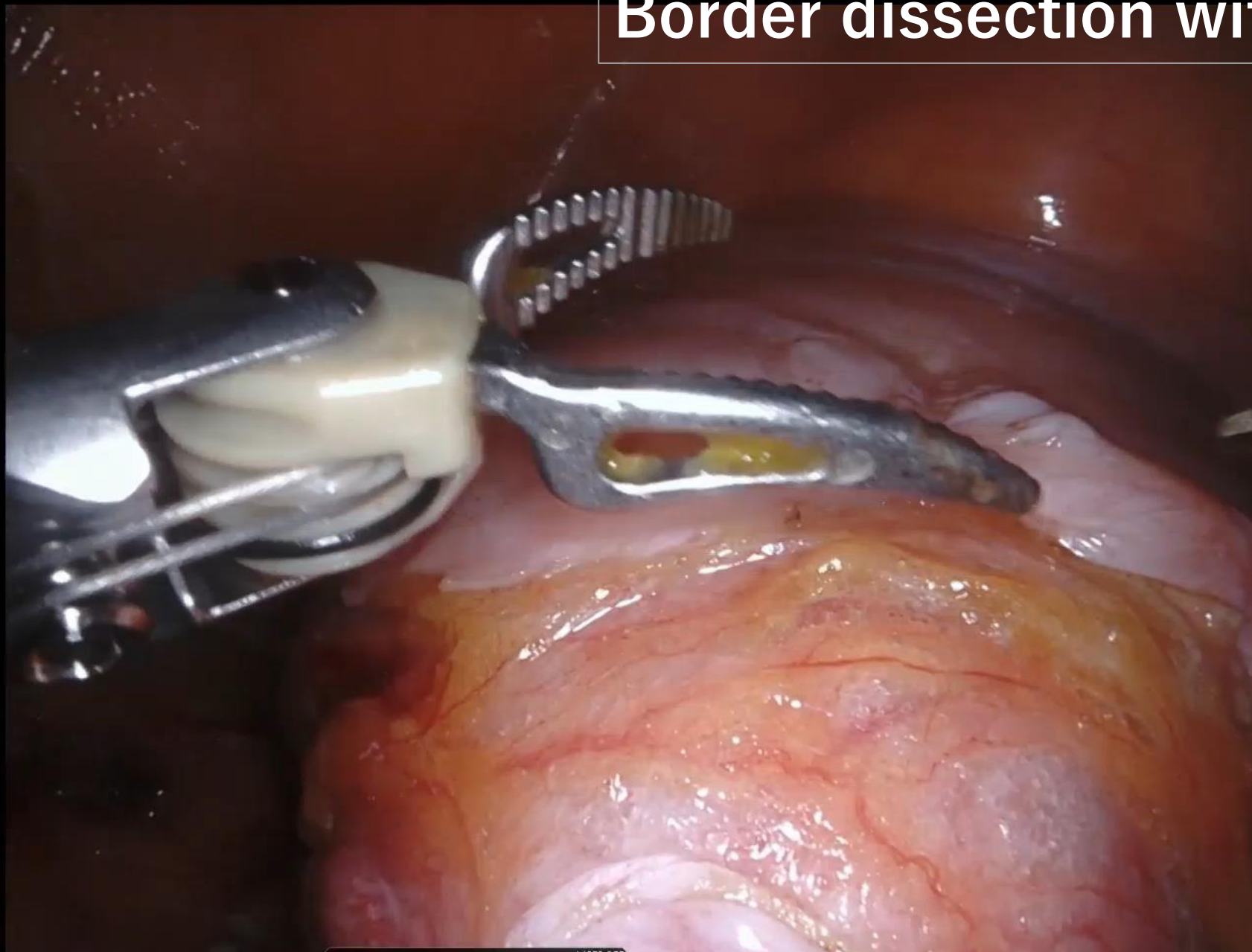
3 MONOPOLAR CURVED SCISSORS R CUT R COAG

4 CADIERE FORCEPS

transection of the adnexa

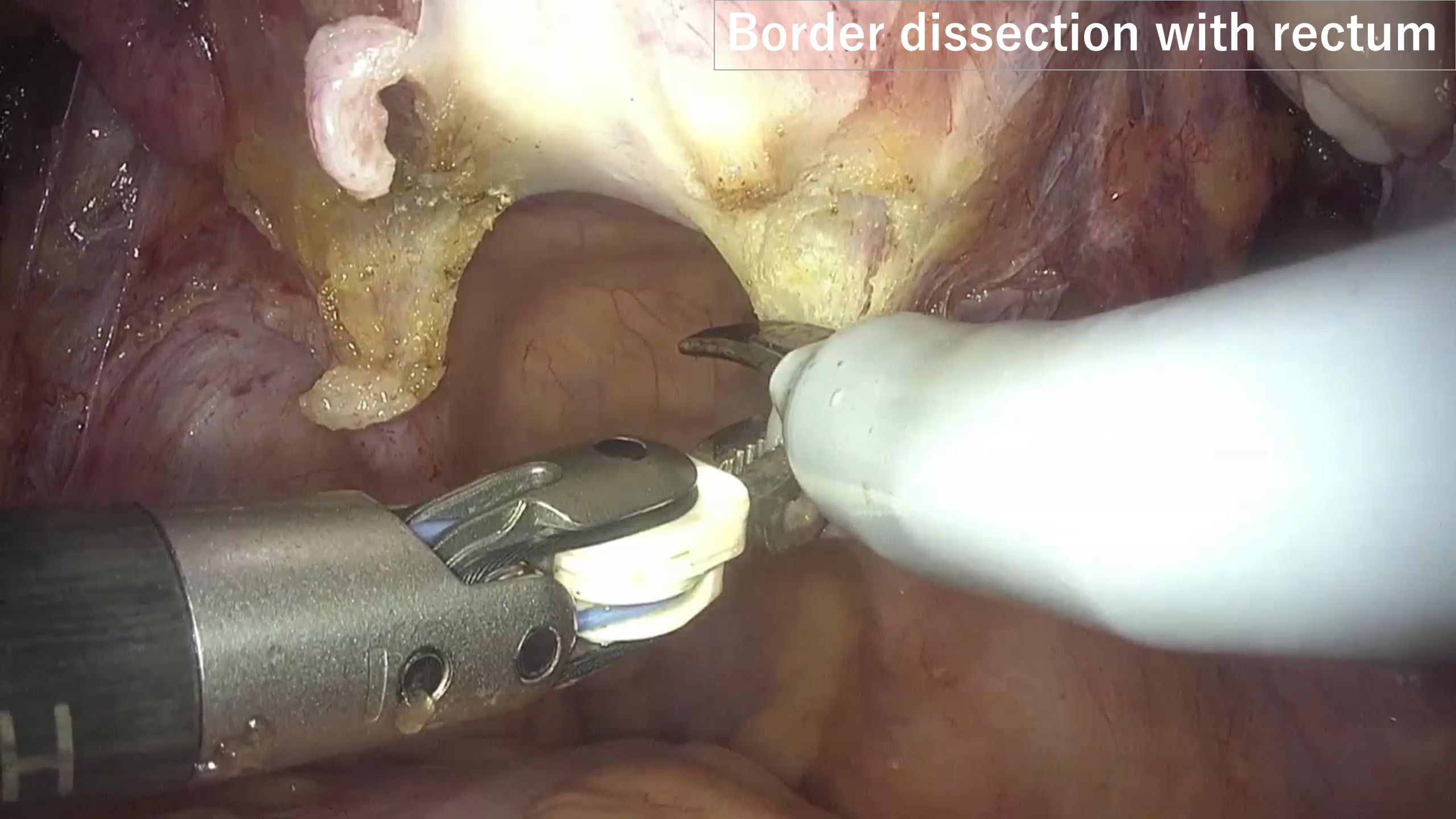


# Border dissection with bladder

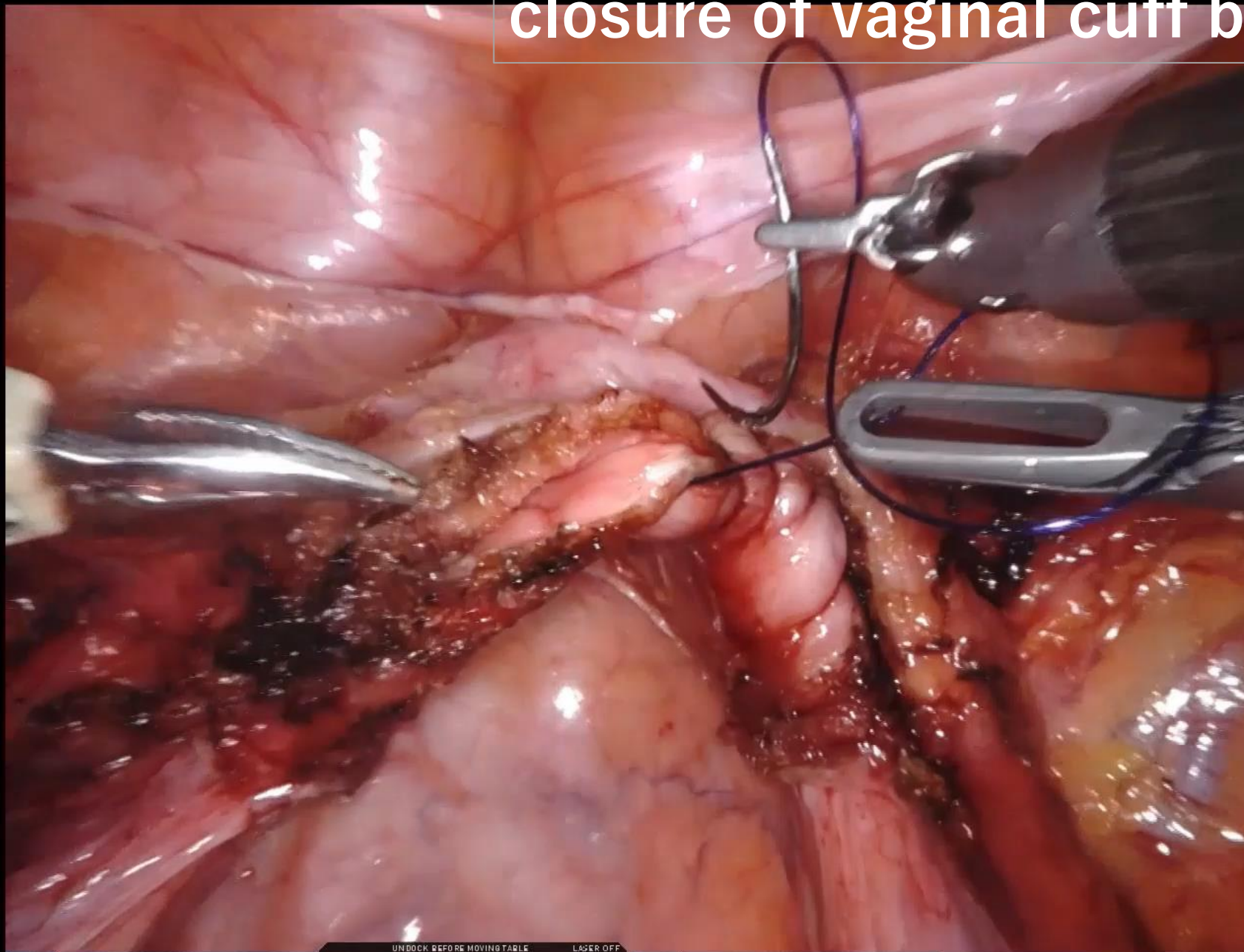


1 MARYLAND BIPOLAR FORCEPS L COAG	2 LASER OFF 24° 0° 1x 0°	3 MONOPOLAR CURVED SCISSORS R CUT R COAG	4 SYNCHROSEAL SYNC COAG
--------------------------------------	-----------------------------	--	-------------------------------

Border dissection with rectum



# closure of vaginal cuff by suturing

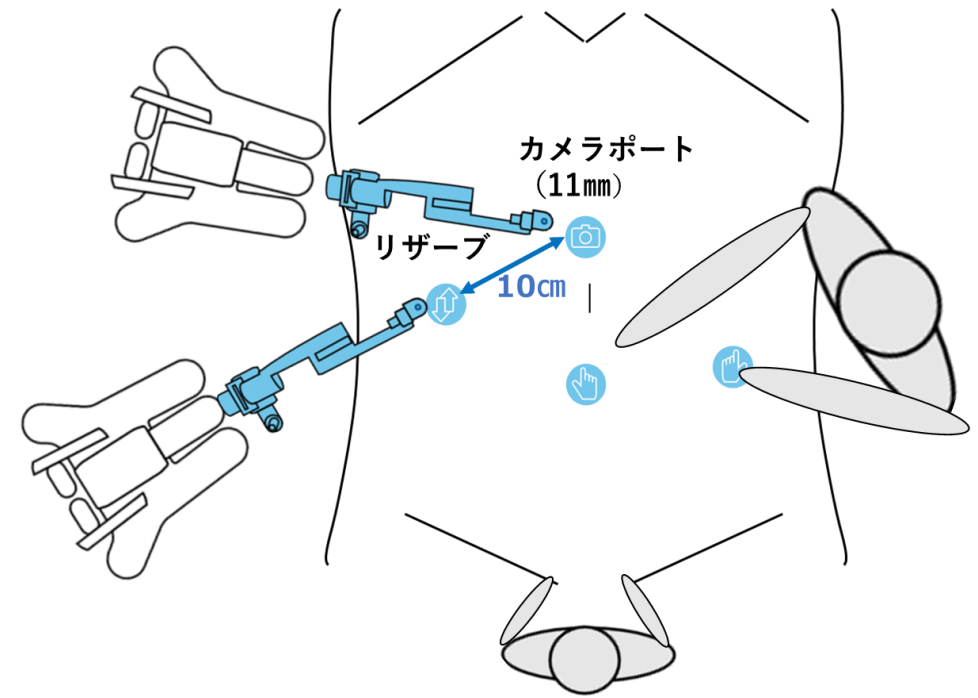
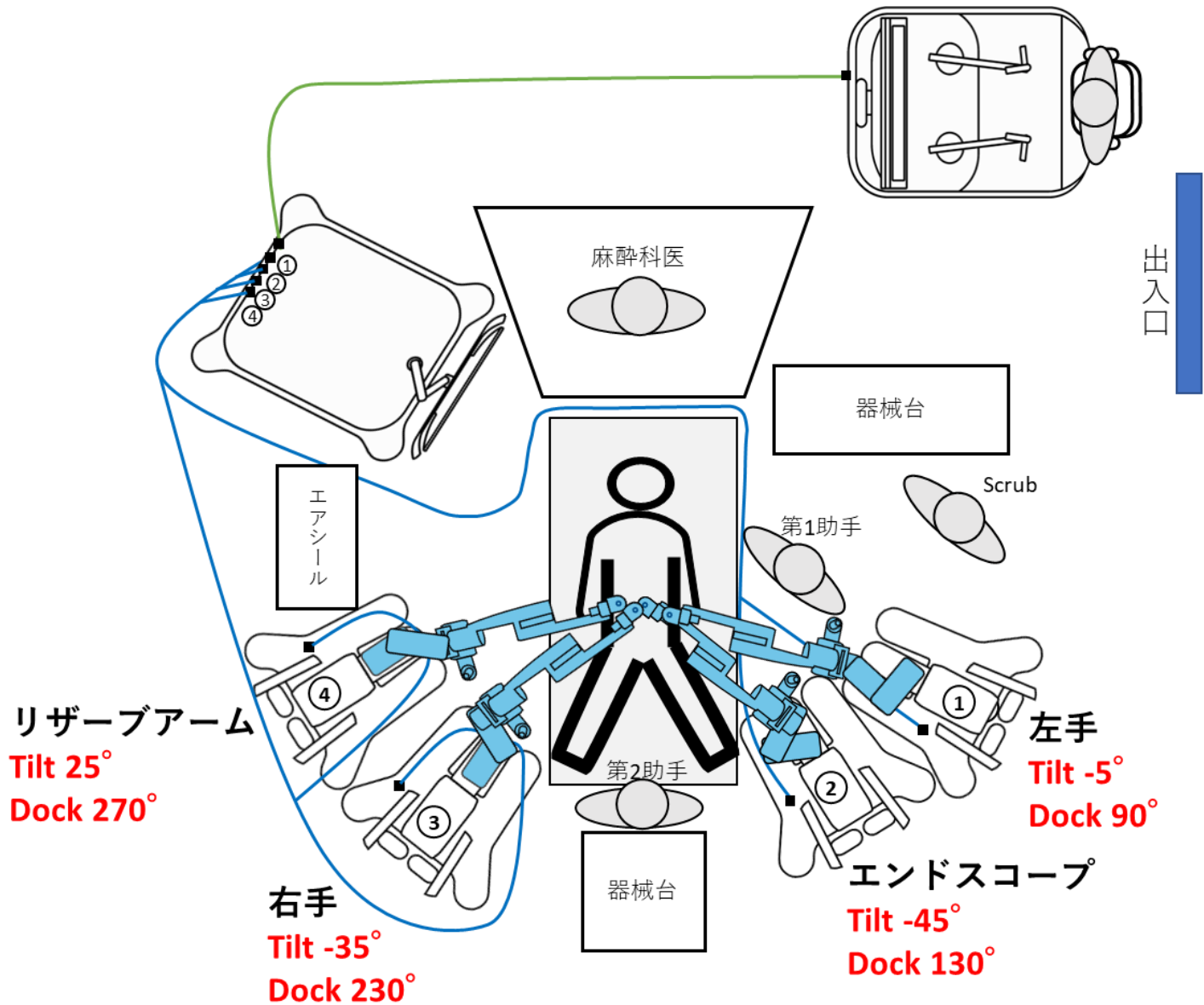


1 MARYLAND BIPOLAR FORCEPS COAG

2 UNDOCK BEFORE MOVING TABLE LASER OFF 1x 0°

3 LARGE NEEDLE DRIVER

4 CADIERE FORCEPS



# Hybrid Hysterectomy

# Comparison of three models

機種	Da Vinci X or Xi (n=116)	Hugo (n=15)	hinotori (n=5)
Type of surgery	Hysterectomy ± BSO (including extend)		
From console time (min)	18 (10-54)	18 (14-32)	23 (17-37)
Console time (min)	94 (46-215)	87 (66-129)	87 (75-103)
From final console to end (min)	13 (7-35)	14 (8-35)	13 (8-19)
Total operation (min)	126 (72-168)	129 (98-177)	127 (102-143)
Blood loss (mL)	10 (5-400)	10 (5-450)	少量
Length of hospital stay from operation (days)	4 (4-7)	4 (4-5)	4 (4-5)

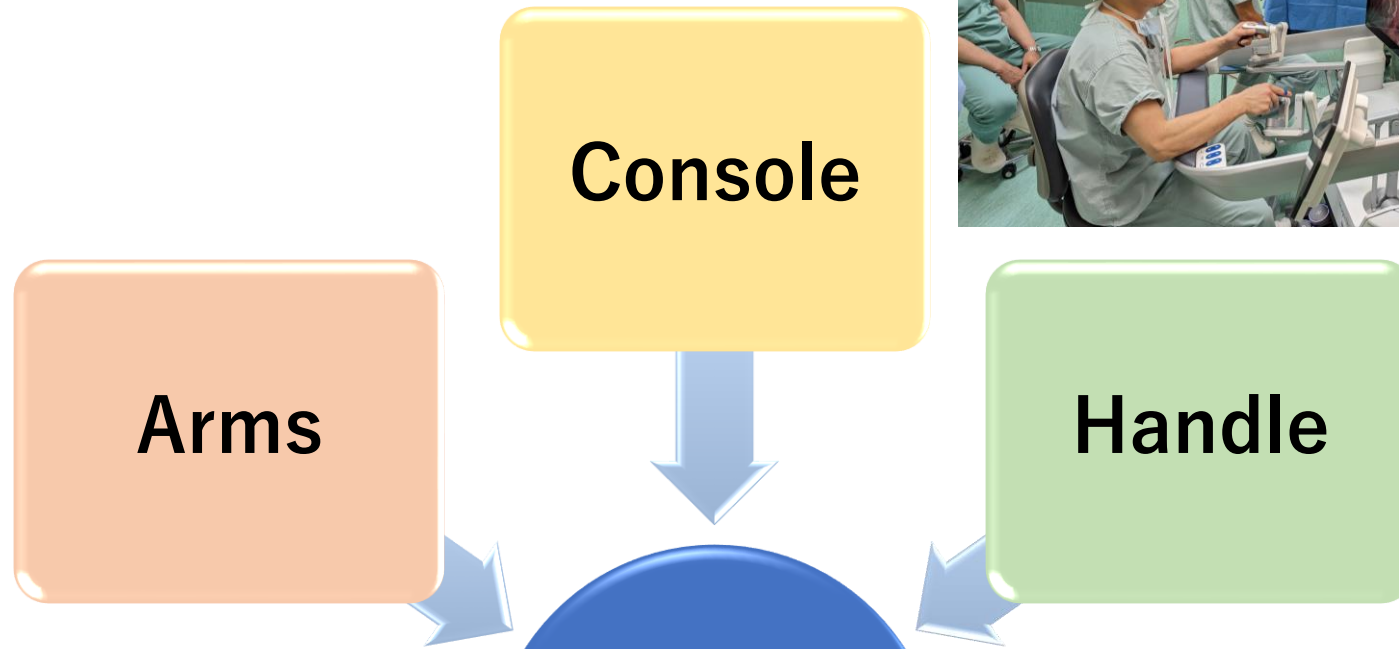
Median

	Da Vinci X or Xi	Hugo	hinotori
Size	Medium	Large	Medium
Docking	Easy	Easy	Somewhat easy
Operability and stability of forceps	Excellent	Good	Good
Device	Good	Excellent	Bad
Monitor/Image	Normal	Excellent	Normal
Forceps exchange	Easy	Bad	Bad
Stability	Stable	Unstable	Stable
Emergency access	Passable	Easy	Easy
Version up	Slow	Slow	Very quick
<b>Overall score</b>	Excellent	Good	Good



	Da Vinci X or Xi	Hugo	hinotori
Size	Medium	Large	Medium
Docking	Easy	Easy	Somewhat easy
Operability and stability of forceps	Excellent	Good	Good
Device	Good	Excellent	Bad
Monitor/Image	Normal	Excellent	Normal
Forceps exchange	Easy	Bad	Bad
Stability	Stable	Unstable	Stable
Emergency access	Passable	Easy	Easy
Version up	Slow	Slow	Very quick
Overall score	Excellent	Good	Good

# What I think after performing three models



How the surgeon uses  
itHow stress is  
perceived

# First Report of Robotic-assisted Total Hysterectomy Using the Hugo™ RAS System



Komatsu H, et al. Update in Surgery. 2024 Jan;76(1):315-318

# First Report of **Hybrid** Laparoscopic Hysterectomy Using the Hugo™ RAS System



Komatsu H, et al. Submitted

# ASGRS 2024

Asian Society for Gynecologic  
Robotic Surgery Congress 2024

*Taking it to the next level*

June 20<sup>th</sup> (Thu) – 22<sup>nd</sup> (Sat), 2024 Grand Hyatt Incheon, Korea



## ASGRS

## 2024

Asian Society for Gynecologic  
Robotic Surgery Congress 2024

*Pre-congress workshop*

June 20, 2024 (Thu) 1 PM – 5 PM

At Intuitive Korea Training Center Seoul



### Information

Abstract submission & Registration open	March 18, 2024
Abstract submission due	June 14, 2024
Online registration due	June 14, 2024
Pre-congress workshop	June 20, 2024
Annual Congress	June 21 – 22, 2024



Dr Aries Joe SpOG  
DMAS.  
Indonesia



Dr. Chung-Hsien Sun  
Taiwan



Dr. Danny Chou  
Australia



Dr. Dong-Hoon Suh  
Korea



Dr. Hiroaki Komatsu  
Japan



Dr. Jiang Tao Fan  
China



Dr. Ka Yu Tse  
Hong Kong



Dr. Ling Zou Dong  
China



Dr. Sa-Ra Lee  
Korea



Dr. Satoru Kyo  
Japan

# Thanks

I would like to thank **Prof. Yoo-Young Lee,**

I would also like to express my gratitude to  
**Professor Jiheum Peak** and  
**Professor Soo Young JEONG**