Robotic surgery for CRC National cancer Institute experience

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Robotic surgery in Egypt

- The first colorectal laparoscopic procedure was performed by Jacobs in 1991. Ten years later, in **2001**, the robotic system was applied to colorectal surgery

- *The 1st robotic surgery in Egypt was done in **2011** and the 1st robotic colorectal surgery was performed in **2013** (Zagloul, Ahmed Mostafa).*

Journal of the Egyptian National Cancer Institute (2016) 28, 169–174

Cairo University

Journal of the Egyptian National Cancer Institute

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Full Length Article

Preliminary results of robotic colorectal surgery at the National Cancer Institute, Cairo University

Ashraf Saad Zaghloul, Ahmed Mostafa Mahmoud *

Patients and methods: A case series study which was carried out in surgical department at National Cancer Institute, Cairo University. Ten Egyptian cases of colorectal cancer (age ranged from 30 to 67, 5 males and 5 females) were recruited from the period of April 2013 to April 2014. Robotic surgery was performed to all cases.

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Table 2 Histopathological data.

Variable	Percentage/range
Stage I	3 (30%)
Stage II	5 (50%)
Stage III	2 (20%)
Number of removed LN	10.7 (5–23)
Distal margin (cm)	4.6 (0–15)
Positive circumferential margin	0
Positive distal margin	1 (10%)

Table 4 Morbidity and mortality.

Variable	Number of patients (%)
Intraoperative bleeding (more than 1000 cc)	0
Re-operation	1 (10%)
Postoperative ileus	2 (20%)
Mortality	0

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Table 3 Operative data.

Variable	Percentage/range
Type of operation	
Low anterior resection	3 (30%)
Total proctectomy & colo-anal anastomosis	1 (10%)
APR	1 (10%)
Anterior resection	3 (30%)
Lt hemicoloctomy	1 (10%)
Colostomy	1 (10%)
Docking time (minutes)	39.5 (30–50)
Robotic time (hours)	4.9 (3–7)
Total operative time (min)	333 (215–480)
Blood loss (cc)	340 (300–500)
Hospital stay (days)	7.4 (5–16)
Conversion to open	1 (10%)

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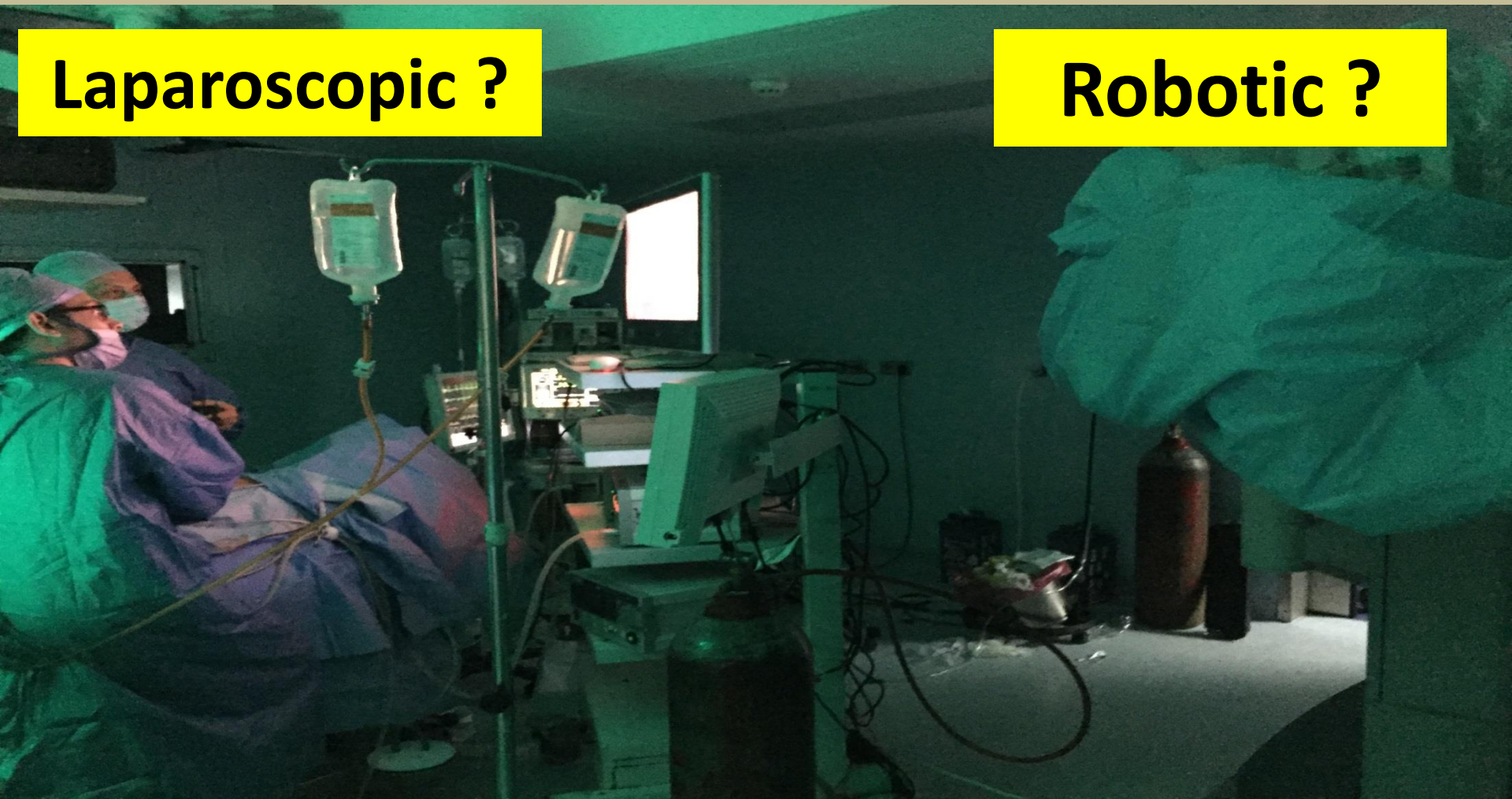
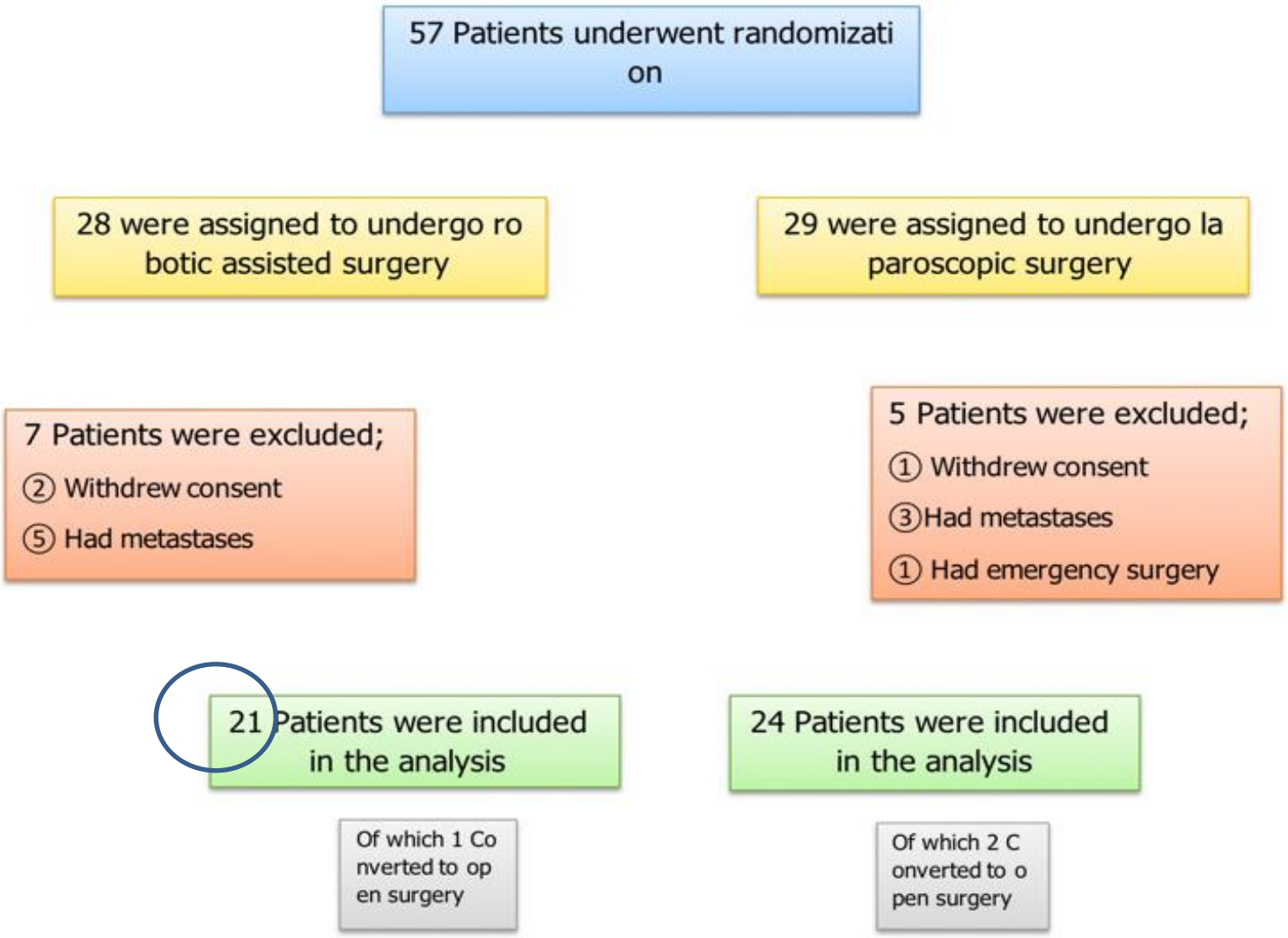
Conclusion

Robotic colorectal surgery is safe and applicable approach in our patients. Colorectal cancer surgeons who lack extensive laparoscopic experience and wish to perform a transition from open to minimally invasive surgery may benefit from this modality. Future studies are necessary to assess the long term oncological outcomes of the robotic colorectal surgery in comparison with open and laparoscopic procedures and thereafter determine the feasibility of its widespread application.

Robotic-assisted Versus Conventional Laparoscopic approach for Rectal Cancer Surgery, First Egyptian Academic Center Robotic Experience




57 Patients underwent randomizati on
28 were assigned to undergo ro botic assisted surgery
29 were assigned to undergo la paroscopic surgery
7 Patients were excluded;
② Withdrew consent
⑤ Had metastases
5 Patients were excluded;
① Withdrew consent
③Had metastases
① Had emergency surgery
21 Patients were included in the analysis
Of which 1 Co nverted to op en surgery
24 Patients were included in the analysis
Of which 2 C onverted to o pen surgery

Intraoperative parameters

	Robotic No. 21	Laparoscopic No. 24	*p* value
Type of operation			
• **Anterior resection**	9 (42.9%)	13 (54.2%)	
• **Low anterior resection (LAR)**	7 (33.3%)	7 (29.1%)	
• **Ultra-LAR**	4 (19%)	1 (4.2%)	
• **APR**	1 (4.8%)	3 (12.5%)	
Median preparation time (min)	55 (39-113)	28 (19-80)	<0.001
Median actual operative time (min)	201 (140-280)	134.5 (110-190)	<0.001
Median estimated blood loss (ml)	200 (50-650)	325 (100-800)	0.050
Convention to open surgery	1 (4.8%)	2 (8.3%)	
Pathological stage			0.203
• **II**	11 (52.4%)	17 (70.8%)	
• **III**	10 (47.6%)	07 (29.2%)	
Median proximal margin (cm)	13 (10-20)	15 (11-23)	0.270
Median distal margin (cm)	2.8 (1.4-4)	1.8 (1-2.8)	<0.001
CRM quality			0.079
• **Complete**	18 (85.7%)	15 (62.5%)	
• **Partly complete**	03 (14.3%)	09 (37.5%)	
Median LN retrieved (no.)	14 (8-20)	13 (9-21)	0.498

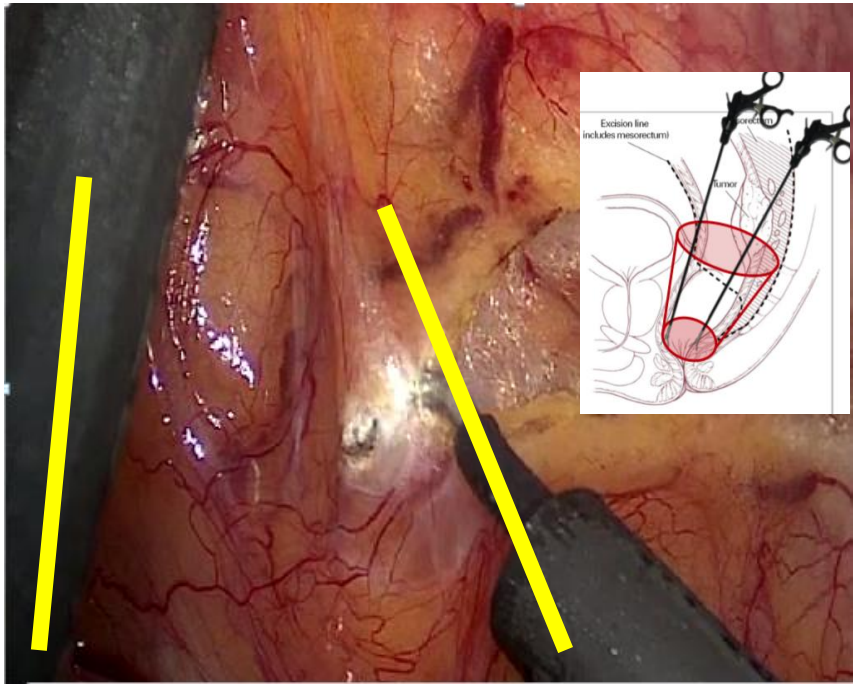
Postoperative parameters

	Robotic No. 21	Laparoscopic No. 24	*p* value
Flatus (median days)	2 (1-4.3)	1.6 (0.5 -5)	0.017
LOS (median days)	3 (2-14)	2 (2-11)	0.116
Complications			
Anastomotic leakage	1 (4.8%)	1 (4.2%)	
Ileus (median days)	2 (9.5%)	3 (12.5%)	
Wound problems	2 (9.5%)	2 (8.3%)	
Others	1 (DVT)	1(erectile dysfunction)	
Reoperation	0	1 (4.2%)	
Readmission	1 (4.8%)	1 (4.2%)	
Death	0	1 (4.2%)	

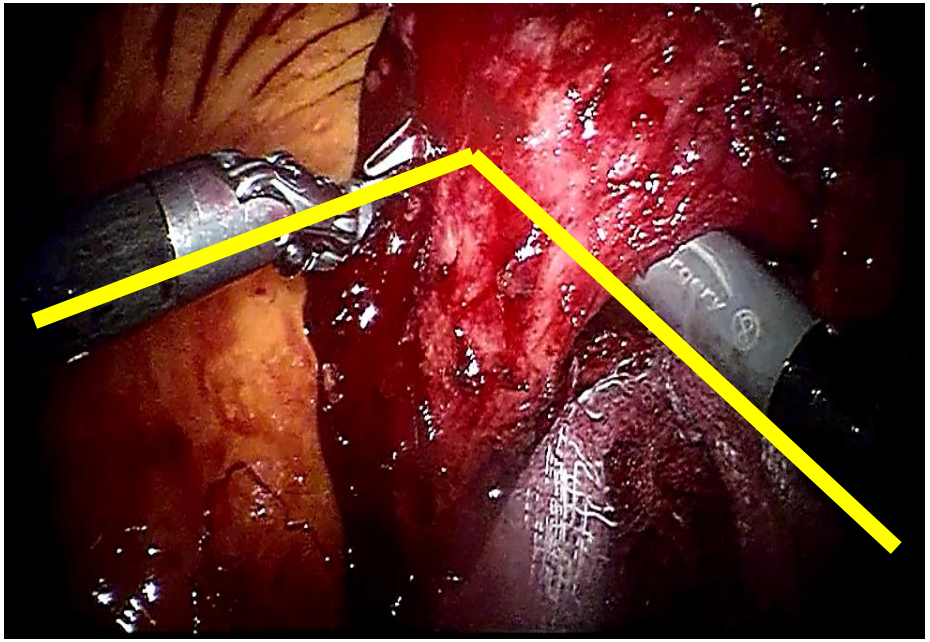
What is the difference ?

Parallelism vs wide articulation

Laparoscopic LAR

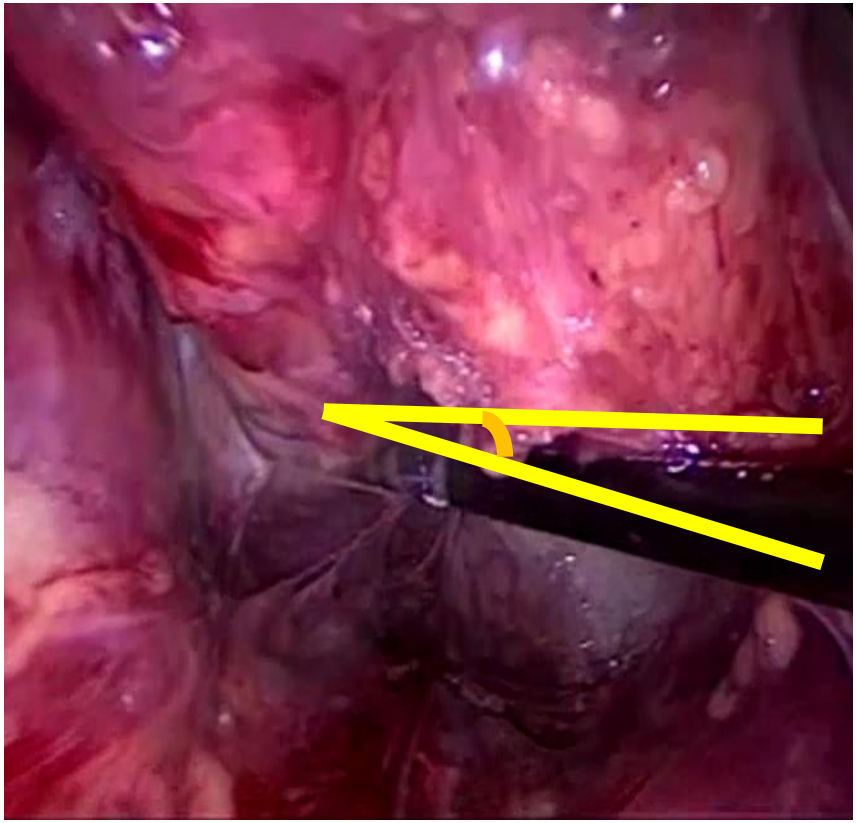


Robotic LAR

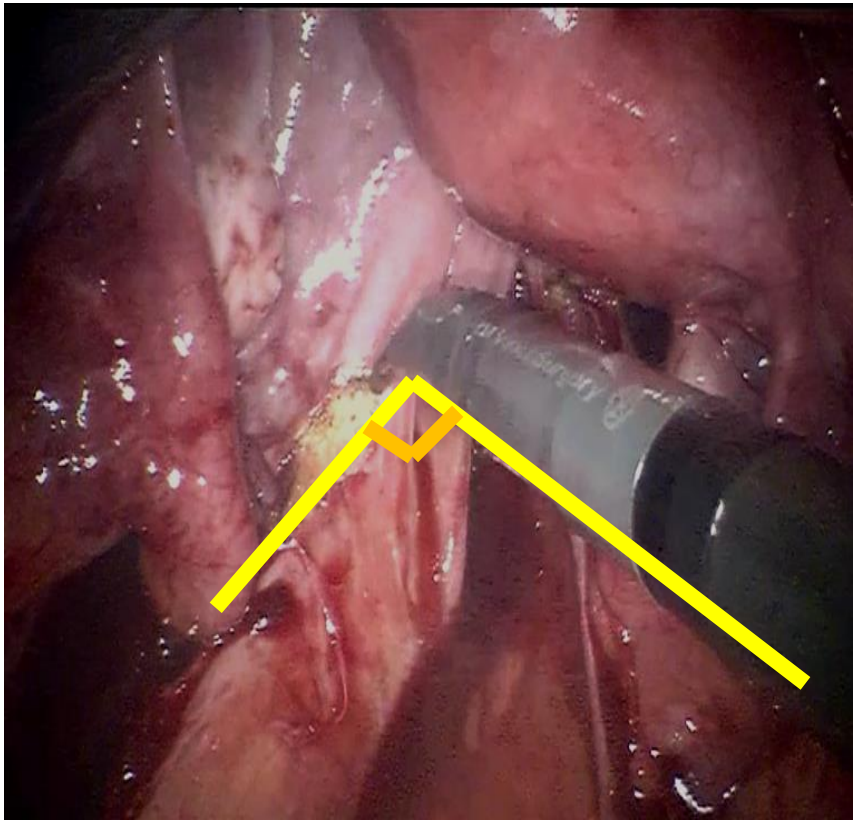


Acute angle vs right angle

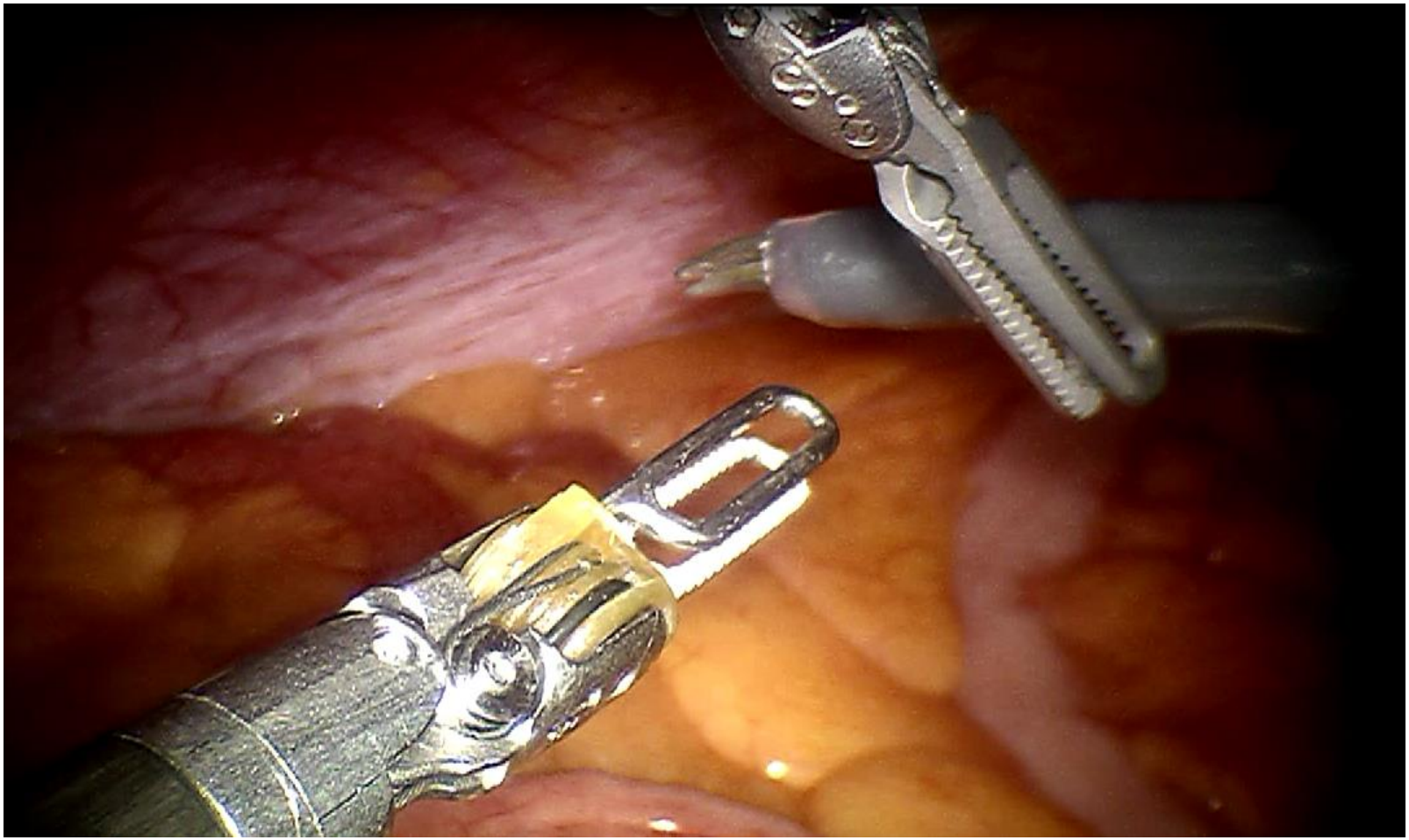
Laparoscopic LAR



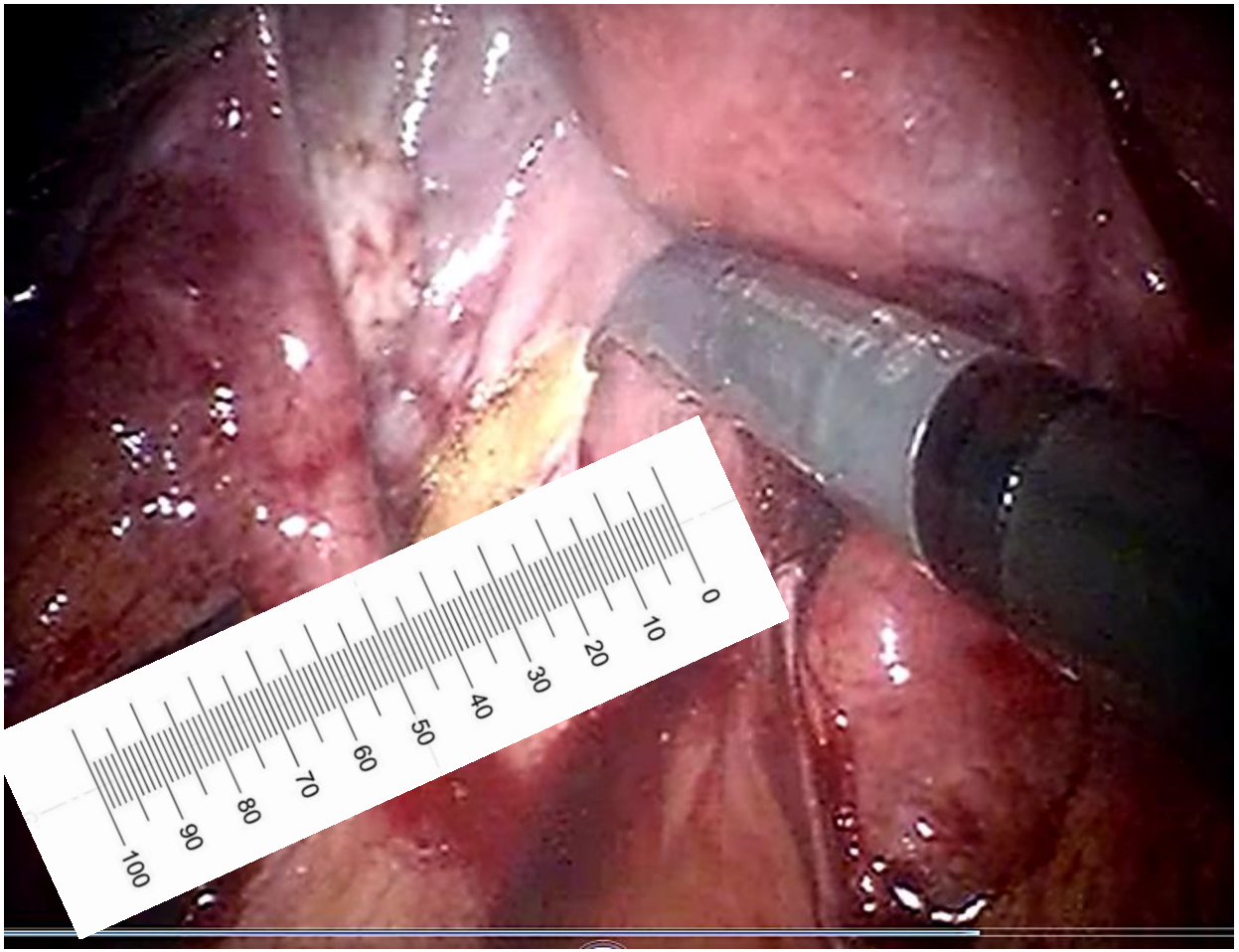
Robotic LAR



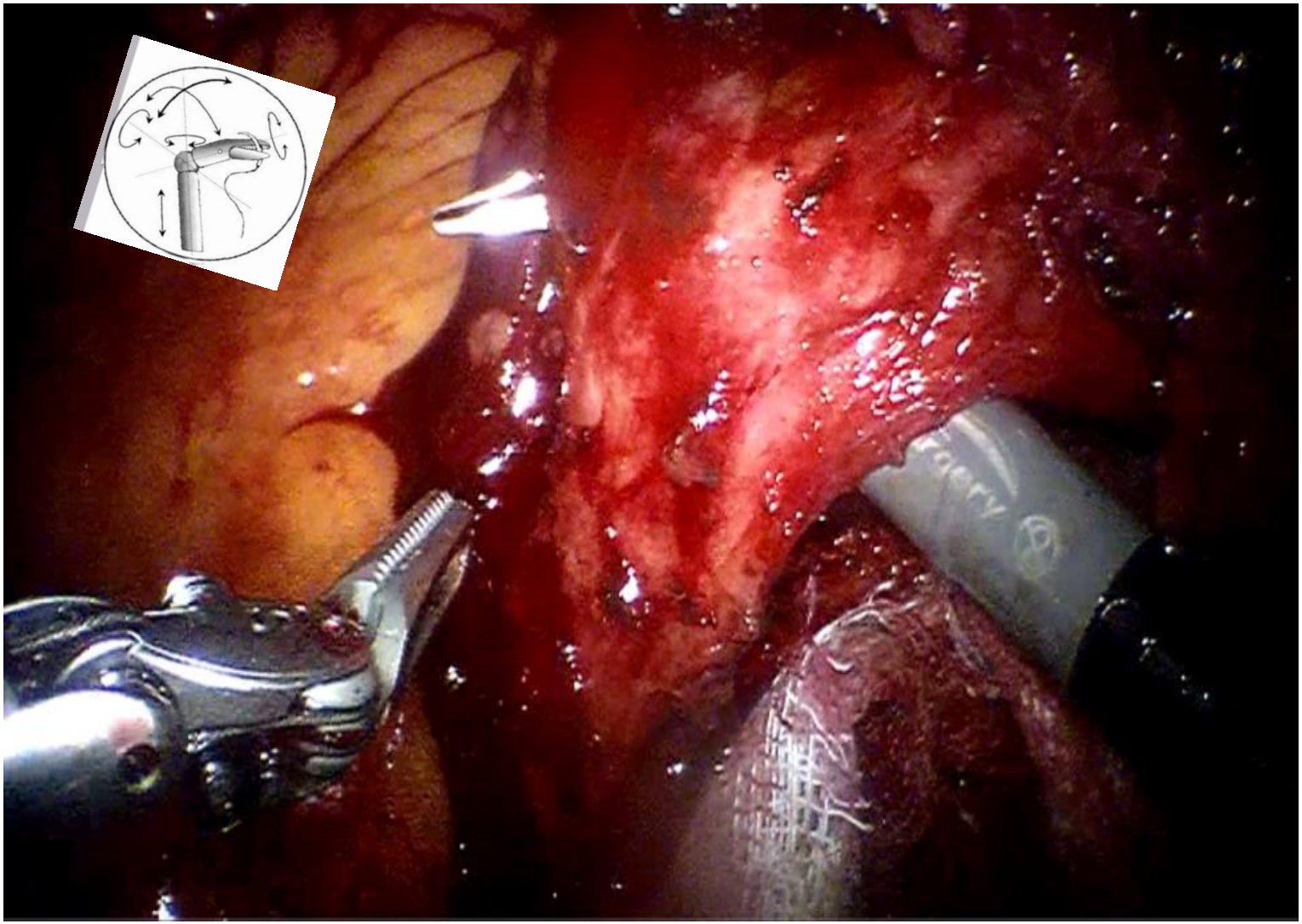
Robotic advantages



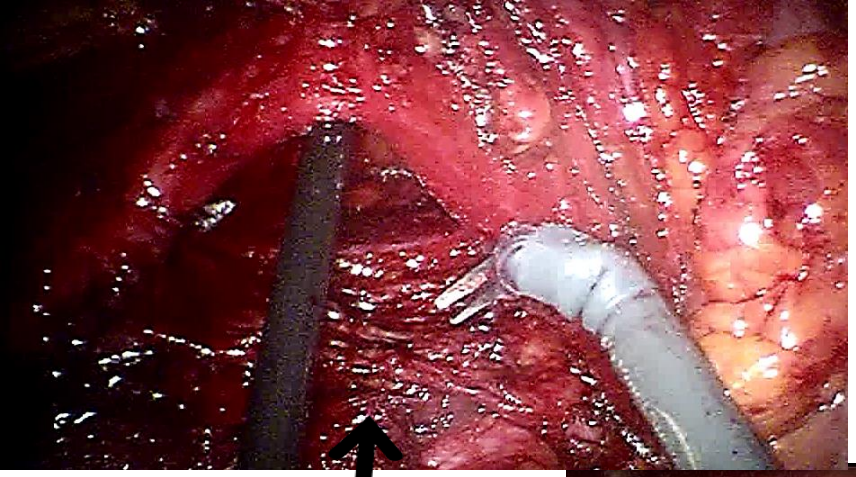
Robotic advantages



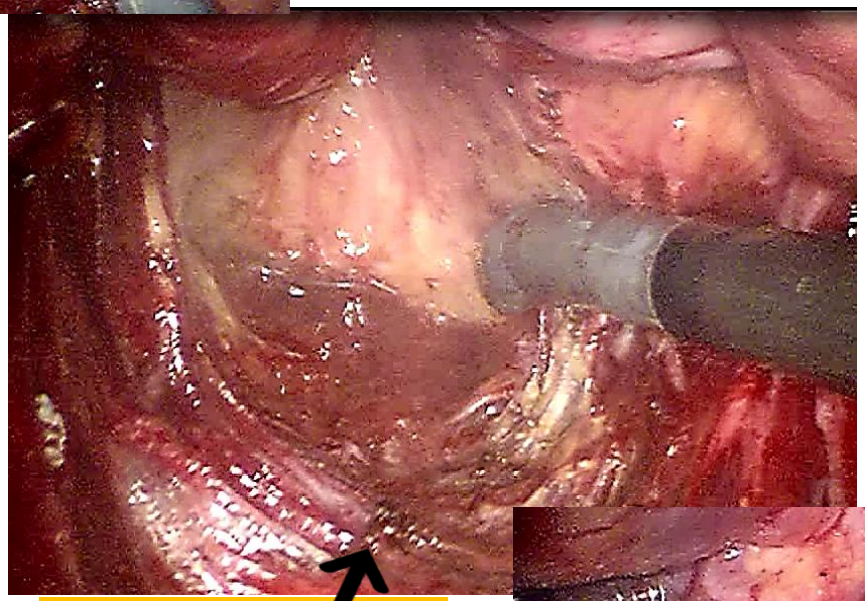
Robotic advantages



Magnified stable 3d vision

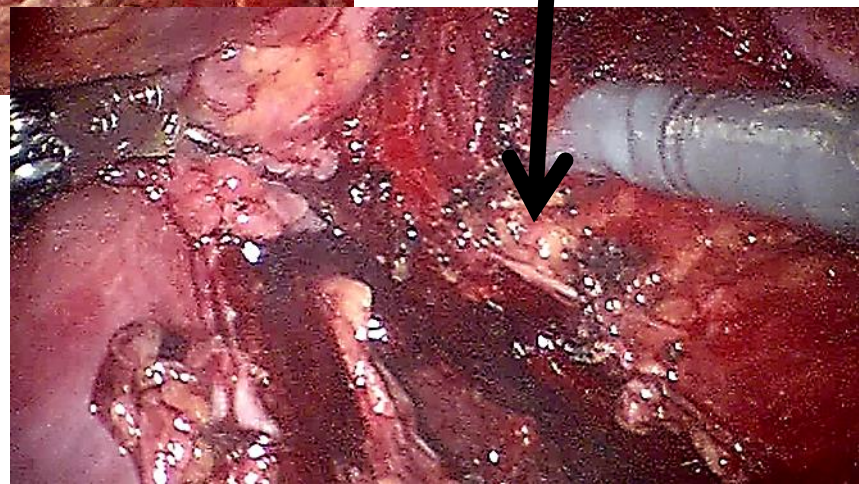


Inferior mesenteric plexus

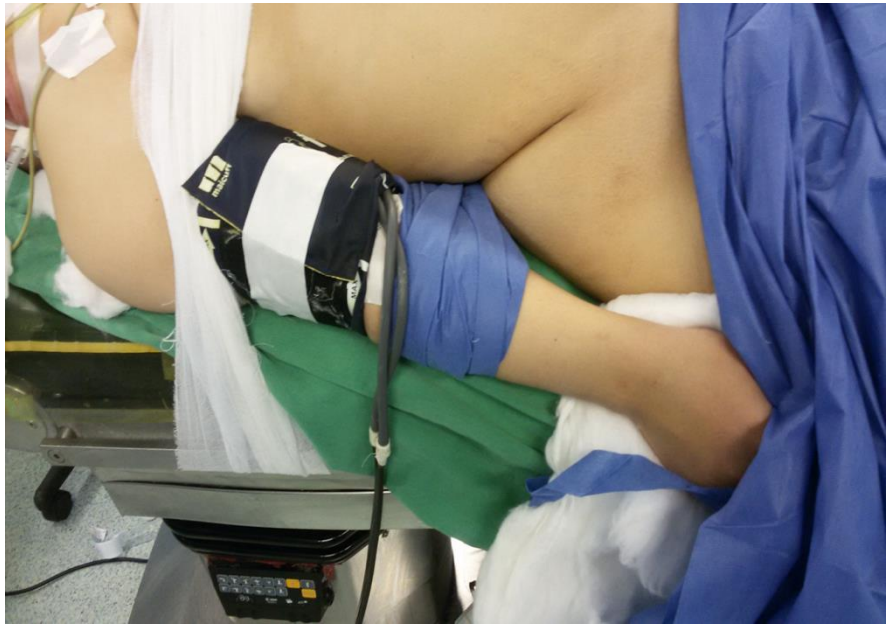


Superior hypogastric plexus and hypogastric nerves

Inferior hypogastric plexus



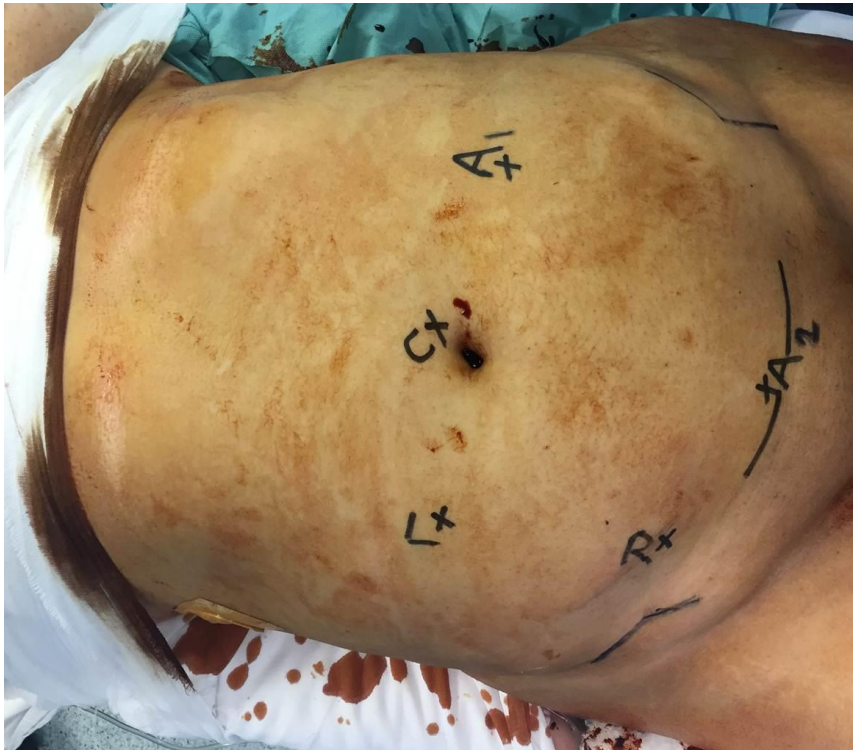
OR-NCI



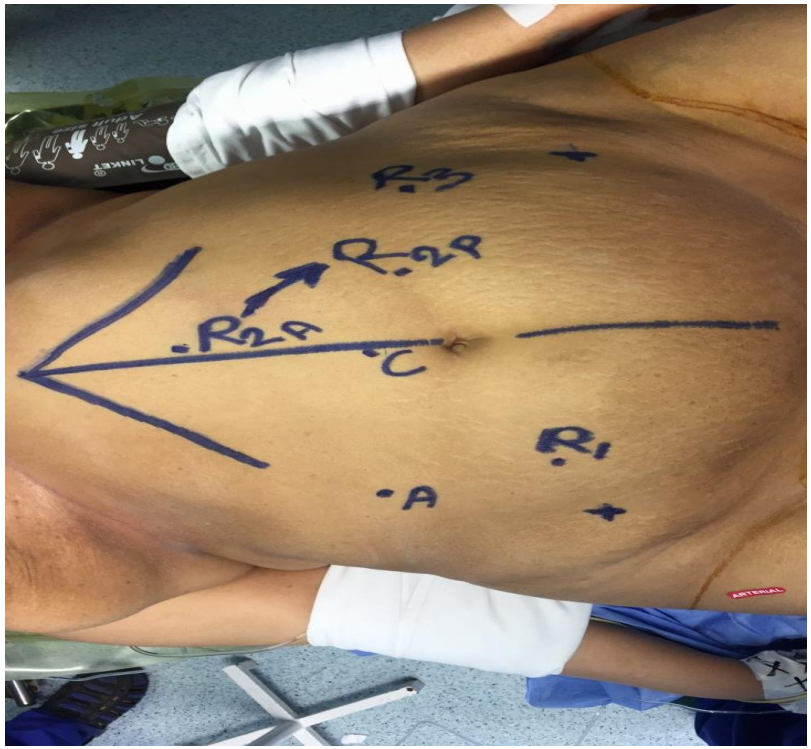
Details are the Secret Of Success

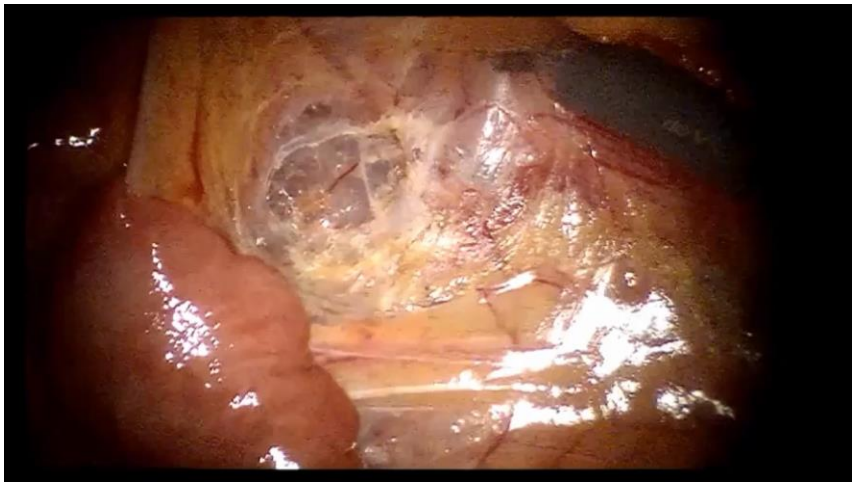
Trocar Site Planning

Laparoscopic LAR



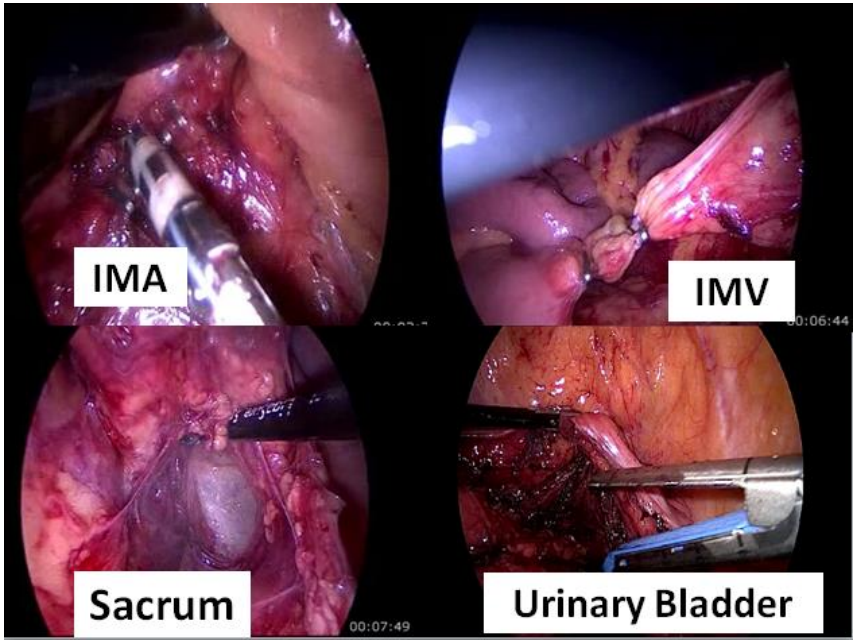
Robotic LAR



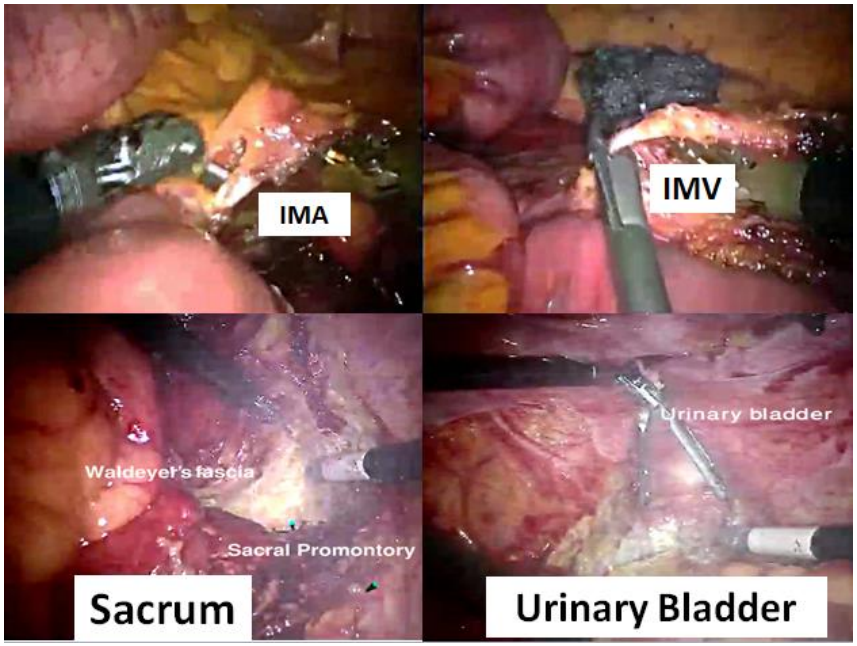


Laparoscopy vs Robotic LAR

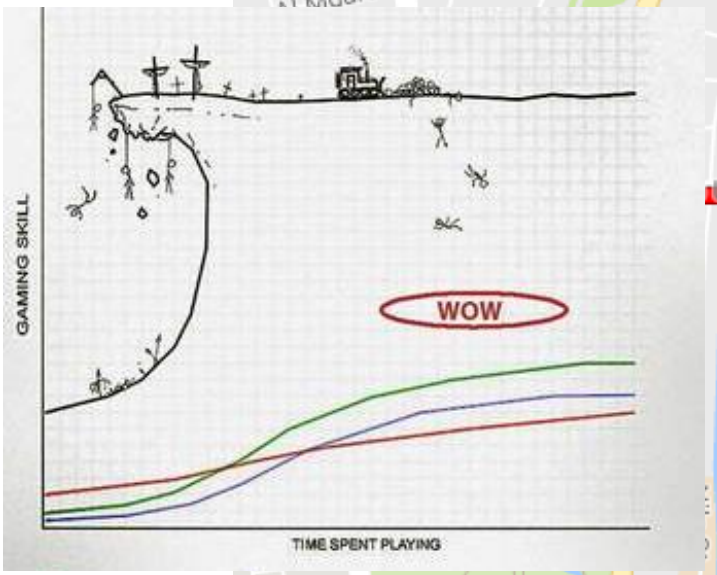
Laparoscopic ?



Robotic ?



Laparoscopy vs Robotic surgery



Thank you