



Abdominal hernia: new ASMBS/IFSO guidelines

Robotic extraperitoneal approach: when and how

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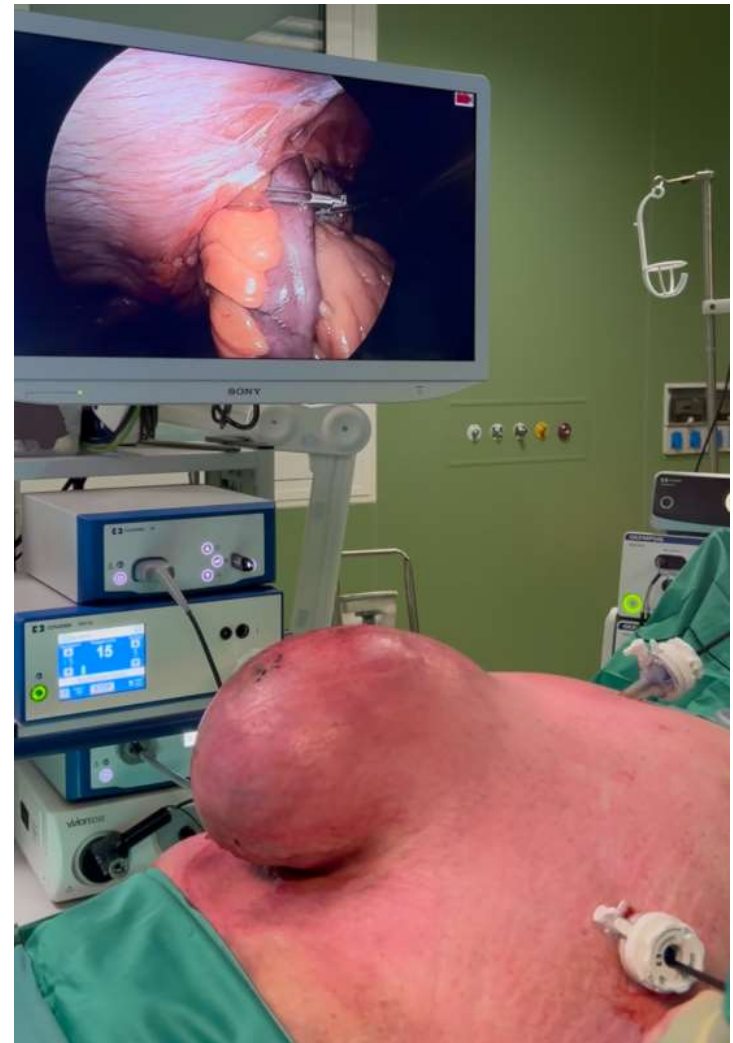
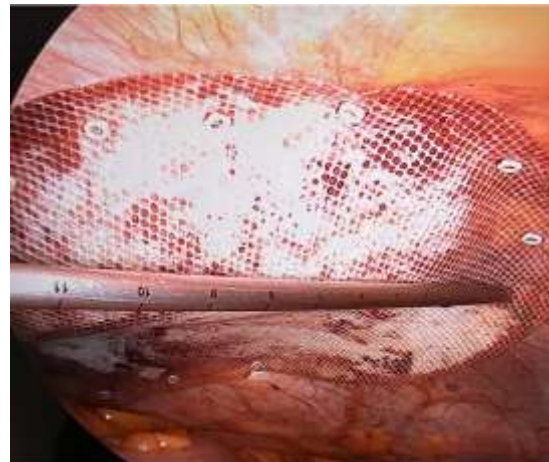
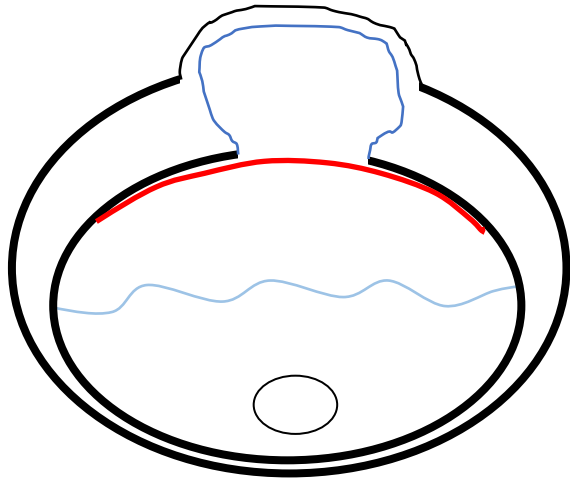


DISCLOSURES

AB MEDICA
MEDTRONIC
GORE

**MIS
IS THE BEST OPTION IN VHR OF
OBESE PATIENTS**

Laparoscopic IPOM /plus





Robotic AWR

- The Robot facilitates minimally invasive VH interventions that require the surgeon to work on the ceiling and in small spaces

r IPOM



Robotic IPOM AVHR

Surg Endosc
DOI 10.1007/s00464-017-5872-7



Robotic ventral hernia repair is not superior to laparoscopic: a national database review

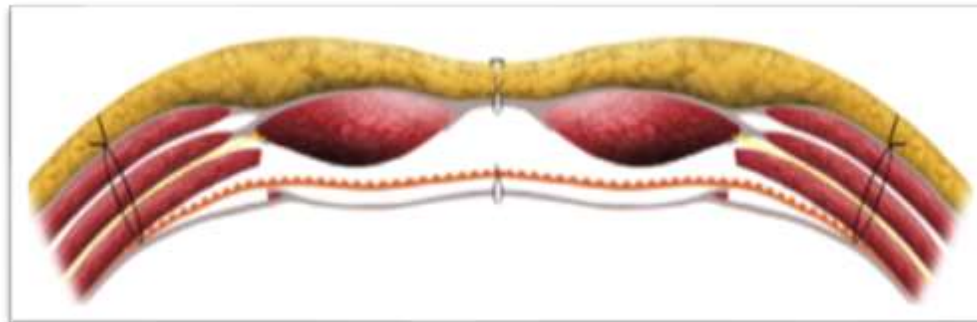
Priscila Armijo¹ · Akshay Pratap² · Yi Wang³ · Valerie Shostrom³ ·
Dmitry Oleynikov^{1,2}

46799 patients

	Open <i>N</i> = 39,505	Laparoscopic <i>N</i> = 6829	Robot <i>N</i> = 465
Overall complications <i>N</i> [%]	4518*# 11.4% CI:[11.1%, 11.75%]	242** 3.5% CI:[3.1%, 4.0%]	34## 7.3% CI:[5.1%, 10.0%]
Mortality <i>N</i> [%]	394* 0.99% CI:[0.90%, 1.1%]	11* 0.16% CI:[0.08%, 0.29%]	2 0.43% CI:[0.05%, 1.54%]
30-day readmission <i>N</i> [%]	2982*# 7.55% CI:[7.29%, 7.81%]	195* 2.86% CI:[2.47%, 3.28%]	18# 3.87% CI:[2.31%, 6.05%]
Postoperative infection <i>N</i> [%]	1118* 2.83% CI:[2.67%, 3.00%]	46** 0.67% CI:[0.49%, 0.90%]	8+ 1.72% CI:[0.75%, 3.36%]
LOS—days (median, IQR)	5 days (3–8)*#	3 days (2–4)*	2 days (1–4)#
Total direct cost—\$ (median, IRQ)	\$9000 (\$6000–\$16,000)*#	\$7000 (\$5000–\$9000)**	\$10,000 (\$7000–\$14,000)##

New Trends and Technical goals in AVHR

- Primary Defect closure
- *Minimizing penetrating mesh fixation without compromising the hernia repair*
- Mesh implantation outside of abdominal cavity



MIDLINE RECONSTRUCTION

Retromuscular Retroperitoneal Mesh Position
(Rives – Stoppa, TAR)

Robotic AWR

- The Robot facilitates minimally invasive VH interventions that require the surgeon to work on the ceiling and in small spaces



Robotic TAPP / eTEP

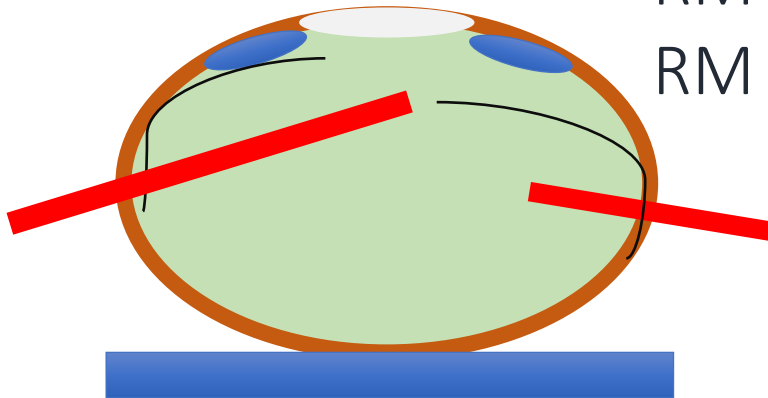
Robotic TAPP - TARM / eTEP AWR

Trans Abdominal

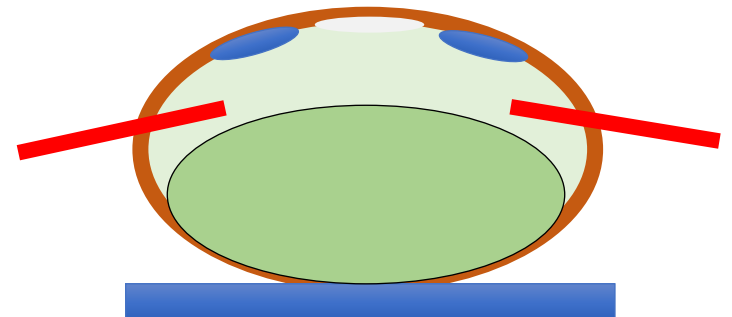
Pre Peritoneal (TAPP)

RM Rives –Stoppa / TARUP

RM TAR



enhanced view Totally ExtraPeritoneal (eTEP)



Robotic eTEP



Surg Endosc
DOI 10.1007/s00464-017-5840-2



A novel approach using the enhanced-view totally extraperitoneal (eTEP) technique for laparoscopic retromuscular hernia repair

Igor Belyansky¹ · Jorge Daes^{2,3} · Victor Gheorghe Radu⁴ · Ramana Balasubramanian⁵ ·
H. Reza Zahiri⁶ · Adam S. Weltz⁶ · Udai S. Sibia⁶ · Adrian Park^{6,7} ·
Yuri Novitsky⁸

- Smaller hernia (< 10 cm W)
- Absence of control on adherence
- Long and difficult learning curve
- Time consuming



Robotic eTEP Rives Stoppa

Laparoscopic eTEP

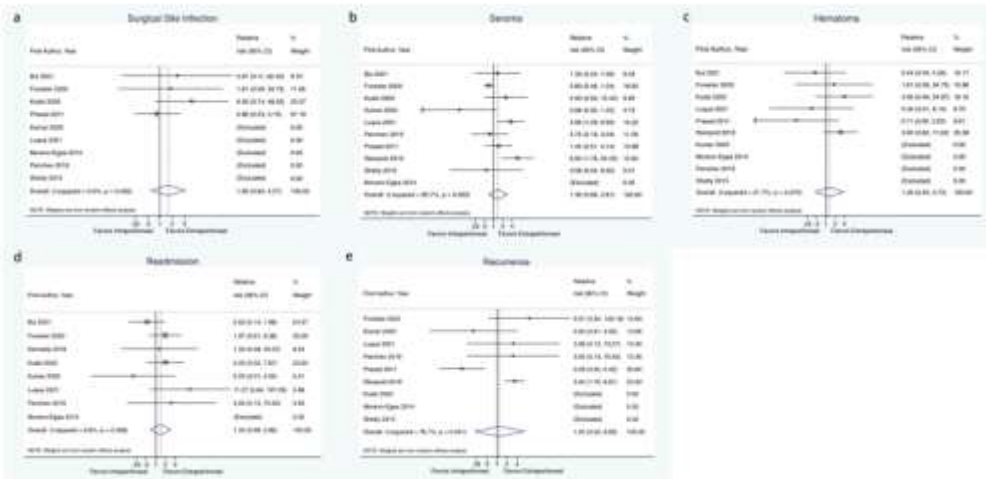
Hernia (2022) 26:533–541
<https://doi.org/10.1007/s10029-021-02530-5>

ORIGINAL ARTICLE



Intraperitoneal versus extraperitoneal mesh in minimally invasive ventral hernia repair: a systematic review and meta-analysis

M. Yeow¹ · S. Wijerathne^{2,3} · D. Lomanto^{2,4}



11 studies , 2320 patients

NO STATISTICALLY SIGNIFICANT DIFFERENCE
between patients who received
intraperitoneal versus extraperitoneal mesh
for outcomes of
SSI, seroma, hematoma, readmission, and
recurrence

Robotic eTEP (M 2-4 Hernia)



Surgical Endoscopy (2023) 37:2143–2153
<https://doi.org/10.1007/s00464-022-09722-9>

ORIGINAL ARTICLE

Check for updates

Robotic eTEP versus IPOM evaluation: the REVEAL multicenter randomized clinical trial

Clayton C. Petro¹ · Katherine C. Montelione¹ · Samuel J. Zolin¹ · David B. Renton² · Jonathan P. Yunis³ · Michael P. Meara² · Adele Costanzo¹ · Kayla Diaz² · Kristen McKenzie³ · Melanie Wilber³ · Tamela Fonseca³ · Chao Tu⁴ · Molly A. Olson⁵ · David M. Krpata¹ · Lucas R. Beffa¹ · Ben K. Poulouse² · Michael J. Rosen¹ · Ajita S. Prabhu¹

**MIDLINE
7 cm**

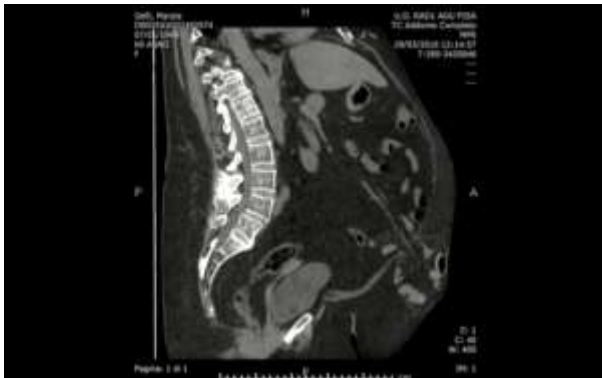
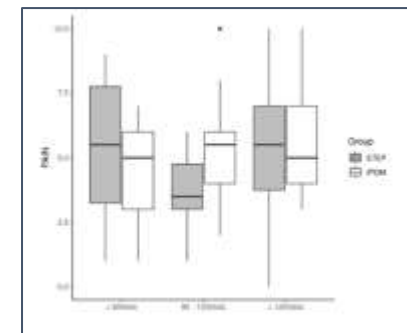


Table 4 clinical OUTCOMES

	Robotic IPOM	Robotic eTEP	p
SSO	0	8	0.004
Seroma	0	7	
Wound cellulitis	0	1	
SSI	0	0	NA
SSOPI	0	0	
Readmission	2	1	0.53
Due to pain	2	0	
GI complication	0	1	
Reoperation	0	1	0.32
Mesh excision	0	1	

Italic value indicates statistically significant ($p < 0.05$)



No differences in postoperative pain, hospital length of stay, opioid consumption, quality of life or cost.

.....the robotic eTEP repair did not reveal a benefit in postoperative pain that would offset the shorter operative time and surgeon workload offered by IPOM....



Robotic eTEP (M1-M5-L Hernia)

Robotic Trans Peritoneal RetroMuscular

r TARUP

**Robotic Transabdominal Retromuscular Umbilical
Prosthetic Hernia Repair**

r TAR +/- Hybrid

Robotic (hybrid) transversus Abdominal Releas

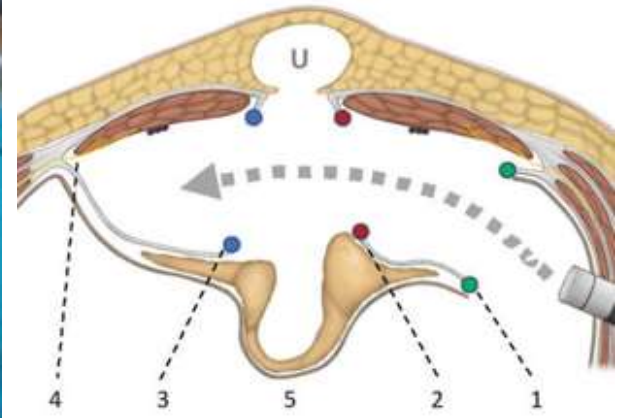


101-1111
.1007/s10029-018-1825-x

ARTICLE

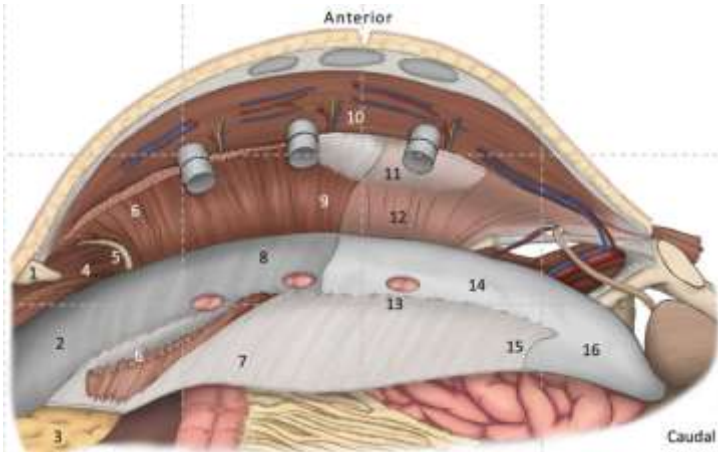
Transabdominal retromuscular umbilical flap (TARUP): observational study on the learning curve

S. Van Cleven¹ · P. Pletinckx¹ · C. Ballecer² · A. Ramaswamy³



rTARUP

r TAR- r Hybrid TAR



Hernia (2021) 25:1471–1480
<https://doi.org/10.1007/s10029-021-02487-5>

REVIEW



Transversus abdominis release (TAR) for ventral hernia repair: open or robotic? Short-term outcomes from a systematic review with meta-analysis

U. Bracale¹ · F. Corcione^{1,2} · D. Neola¹ · S. Castiglioni^{1,3} · G. Cavallaro⁴ · C. Stabilini⁵ · E. Botteri⁶ · M. Sodo² · N. Imperatore⁷ · R. Peltrini^{1,7,8}

- lower risk of complications rate (9.3 vs 20.7%),
- lower risk of developing SSO (5.3 vs 11.5%),
- lower risk of developing systemic complications (6.3 vs 26.5%),
- shorter hospital stay (SMD – 4.409, 95% CI)
- longer operative time (SMD 53.115, 95%).

no statistically significant difference in terms of SSI, SSOPI, readmission, and reoperation rates.

r-TAR INDICATION

Ventral/Incisional hernias with a width of 8–14 cm

Hybrid r TAR for

- **fascial defects greater than 14 cm wide**
- **voluminous hernia sacs,**
- **large pieces of mesh requiring removal**
- **excessive or abnormal overlying skin**



r-TAR CONTRAINDICATION

- **very slim patients,**
- **Combined median and lateral hernia gaps,**
- **after open abdomen therapy with skin mesh graft coverage of the intestinal convolute,**
- **Loss of domain**

CONCLUSIONS

- **Robotic extraperitoneal VHR can be used in Obese patients BEFORE and AFTER Bariatric Surgery**
- **r eTEP appears disadvantageous in MIDLINE hernias smaller than 7 cm but seems the procedure of choice in hernias of the border either in obese and normalweight patients**
- **r TAR is probably the best MIS in obese patients with 8-15 cm VH**
- **More studies are required to evaluate short and long term outcomes** (*Concerns about high cost, long learning curves and new dangerous complication*)