



Innovations in Transanal Surgery: **TAMIS & TaTME**

مستشفى
الملك حمد
الجامعة
KING HAMAD
UNIVERSITY HOSPITAL

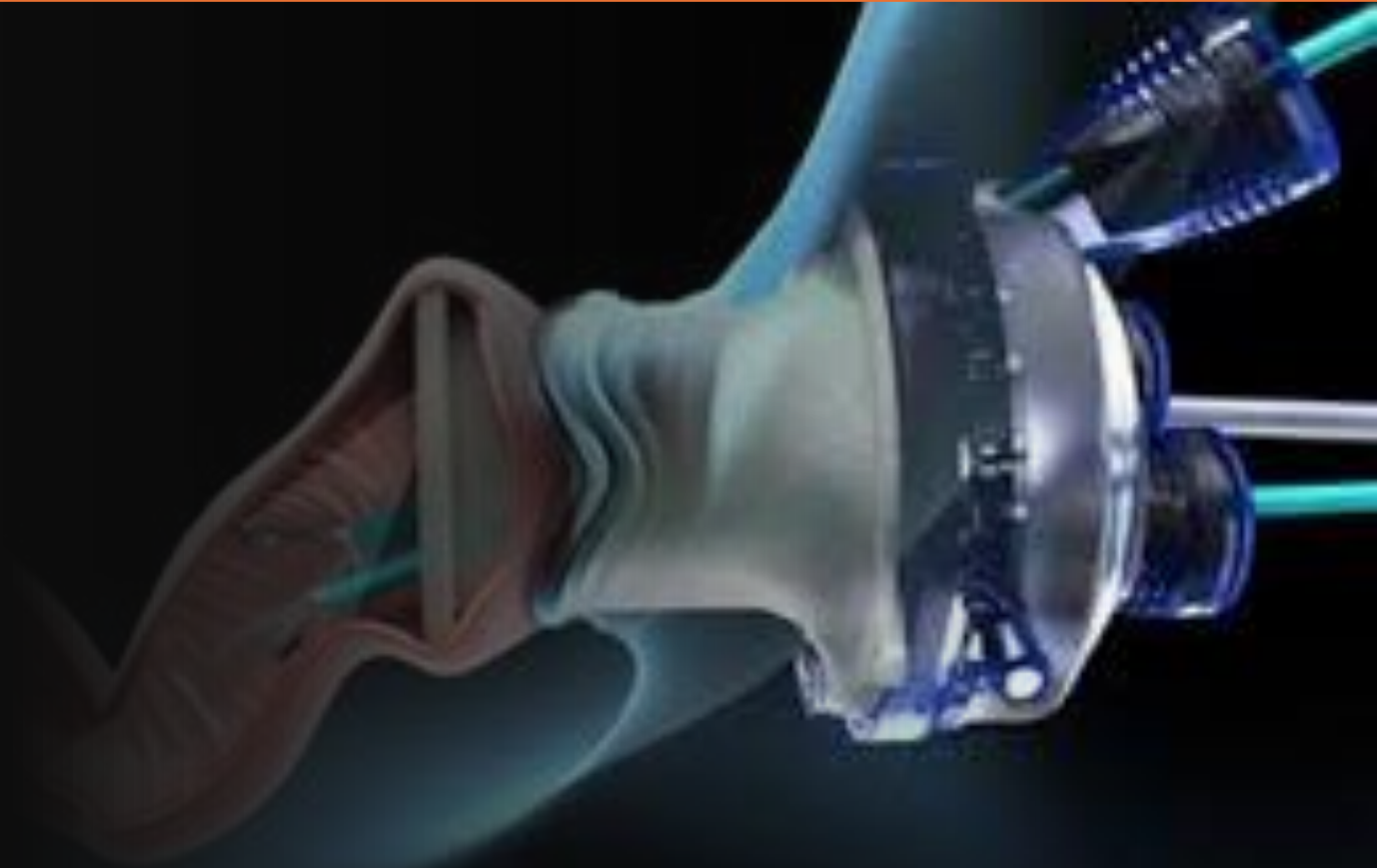


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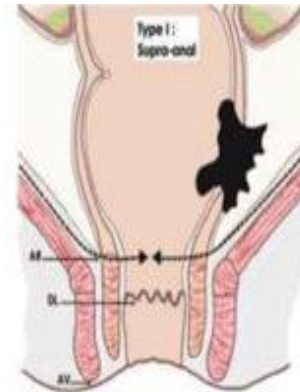
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University Hospital – Bahrain .



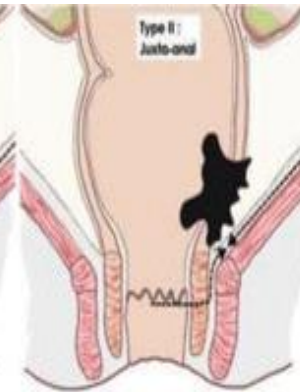


RULLIER ET AL. CLASSIFICATION N 2013

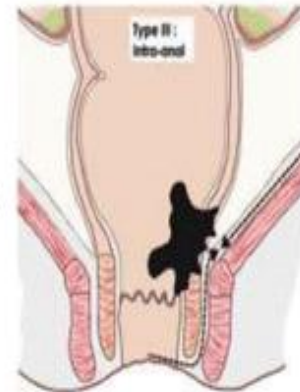
Type I
Supra anal tumor
(distal margin < 1-2 cm)
Colo-Anal Anastomosis



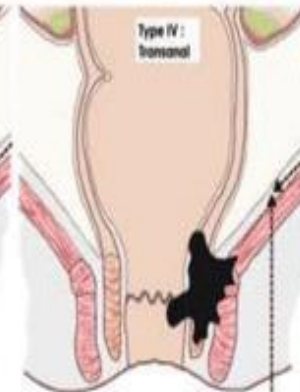
Type II
Juxta anal tumor
(distal margin = 0 cm)
Partial Intersphincteric Resection



Type III
Intra anal tumor
(infiltration of the internal sphincter)
Total Intersphincteric Resection



Type IV
Trans anal tumor
(infiltration of the external sphincter)
Abdominoperineal Resection





TaTME

- It's a procedure to resect lower rectal (mid&low) cancers with better distal resected margin and better ergonomics.
- 2010 first TaTME
- 2009 first TAMIS
- 2013 first RTaTME
- 2012 first RTAMIS

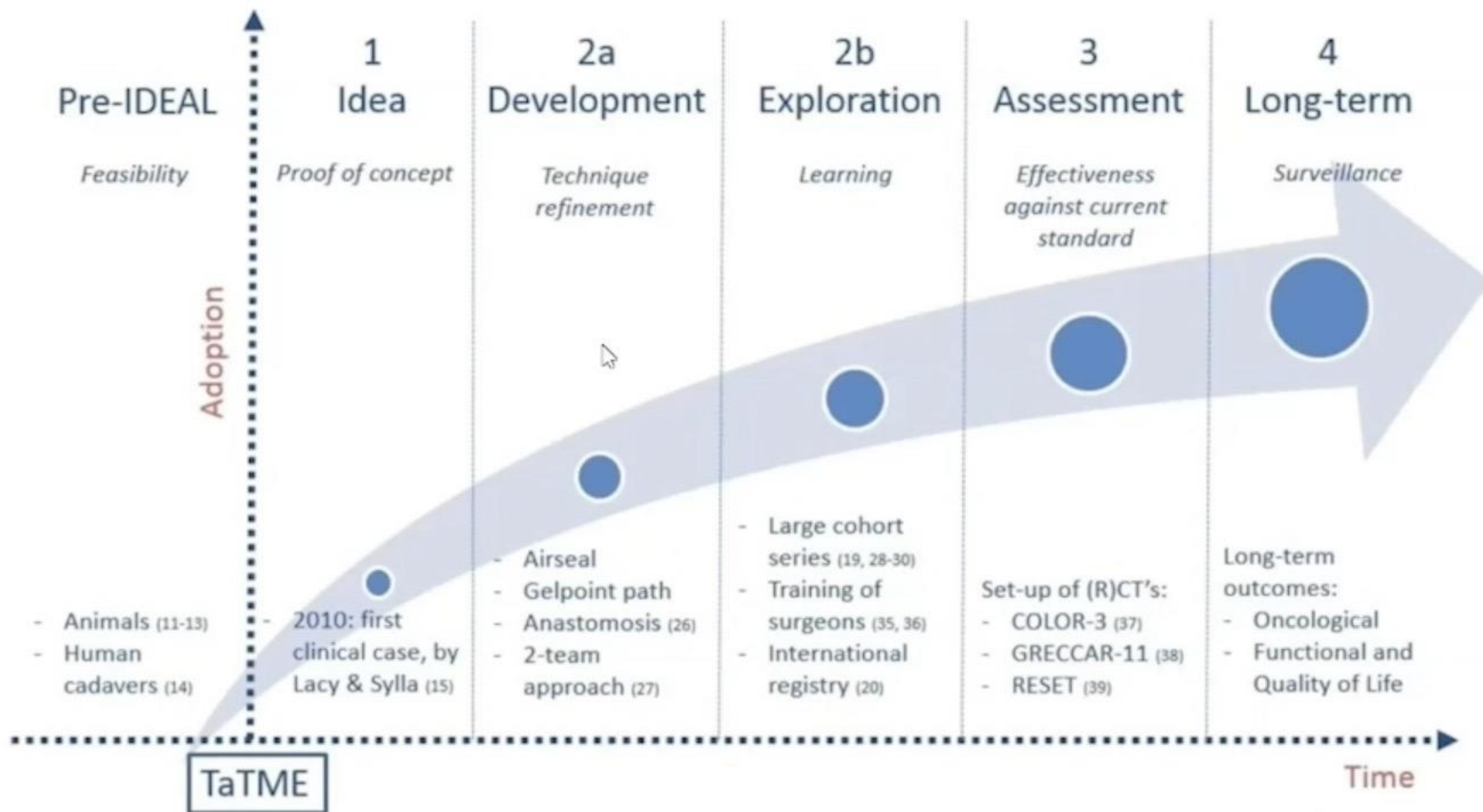
TaTME for rectal cancer

The problem

- Indicated for low rectal cancer (the difficult tumors)
- Bottom up view causes anatomical disorientation
- Procedure specific complications
 - Uretra & bladder
 - Pelvic sidewall (nerves, ureter,)
 - CO2 emboli
- Oncologic outcomes to be awaited
 - multifocal recurrence
- Long learning curve



Introduction of TaTME





What might TaTME in potential bring us?

- Decrease in conversion
- Superior pathologic specimens
- Better low anastomosis
- More restorative surgery
- Two team approach
- Oncologic outcomes



- morbidity, oncologic outcomes
- Less local recurrence
- Leak rates, stoma's, sinus
- Less low Hartmann's and AP's
- Surgical quality, OR time
- Same or less LR, disease free SR



We should not throw the baby out with the bathwater





DO'S AND DON'T IN TATME SURGERY

- Cadaveric Courses First
- Followship And Proctoring Is The Key
- Consider Learning Curve
- To Be Delivered In Expert Center
- Centralization Of Low Rectal Cancer



Even Every Experienced
Colorectal Surgeons
Who Performed
TaTME Procedures had
**Unsuccessful
Outcomes**

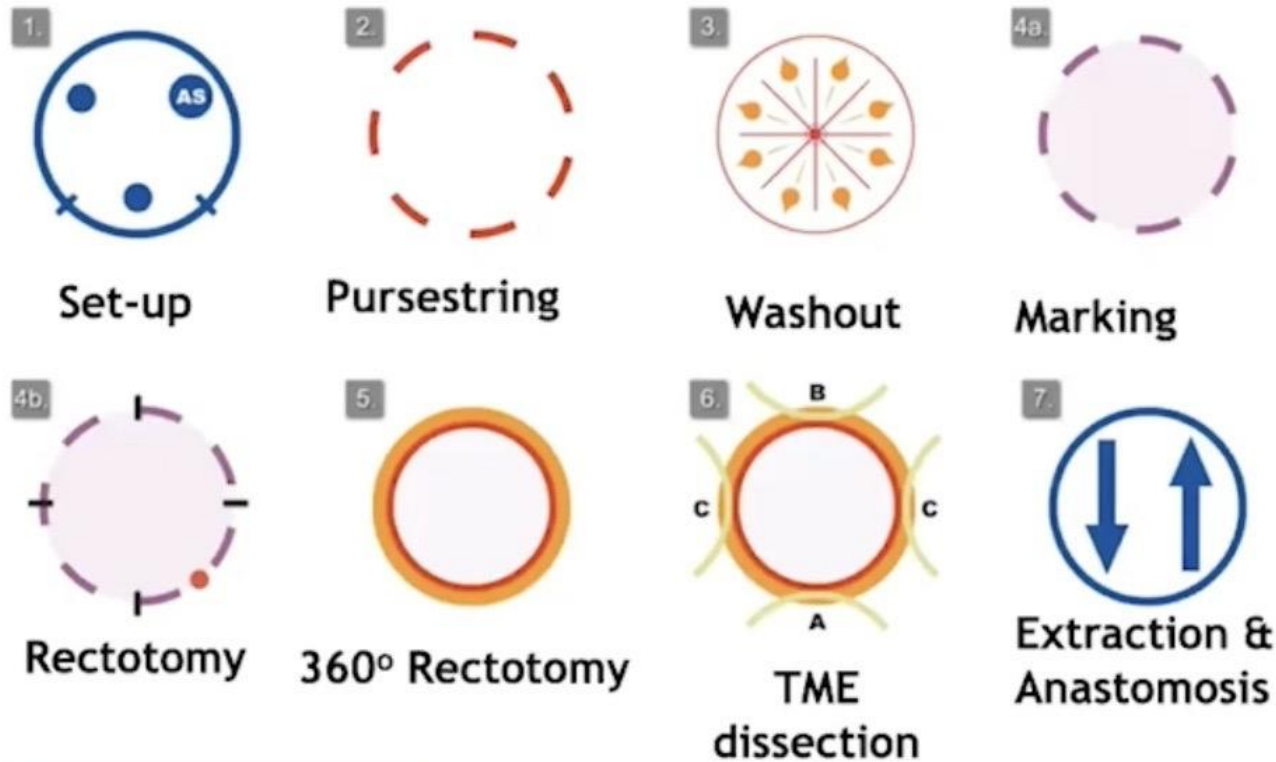
Learning Curve 30-35 cases

Start with :

- Benign surgery
- Women
- Not too thin , not too fat
- Small tumors , not too close to the Anus
- Not anterior tumor



Difficulties of implementation new technology



Bad pursestring:

- Local recurrence

Wrong dissection

- Uretra/bladder lesions
- Pelvic side wall
- Bleeding & CO2 emboli
- Perforation & Spill → LR

Double purse string anastomosis

- leaks

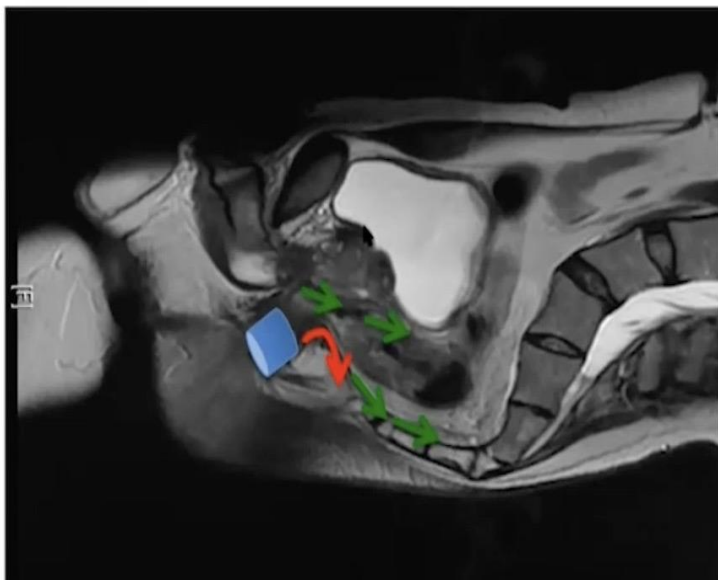


LEARNING CURVE ...

DON'TS

Get into the wrong plane

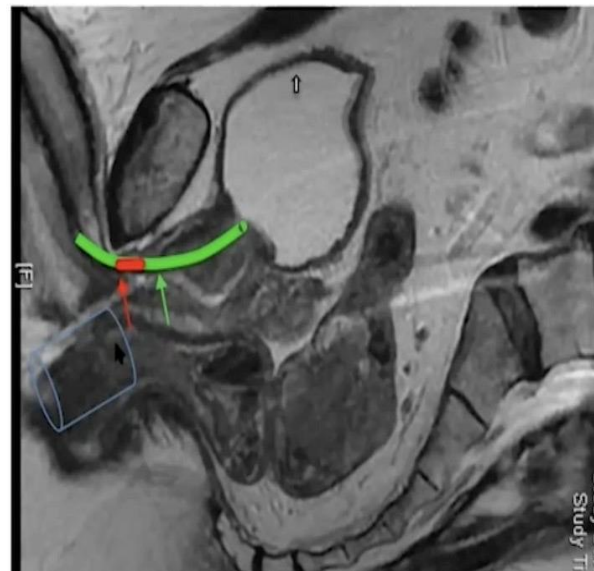
- Start **posteriorly** and find the levator muscle

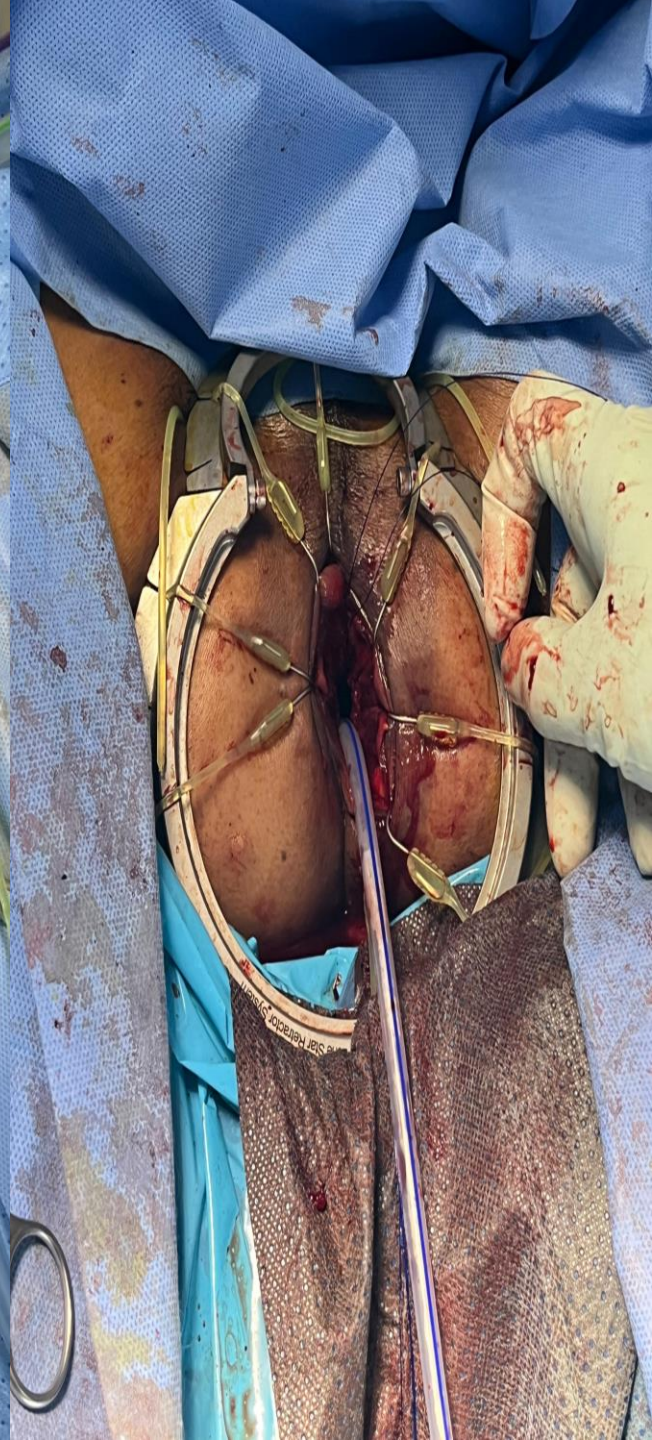
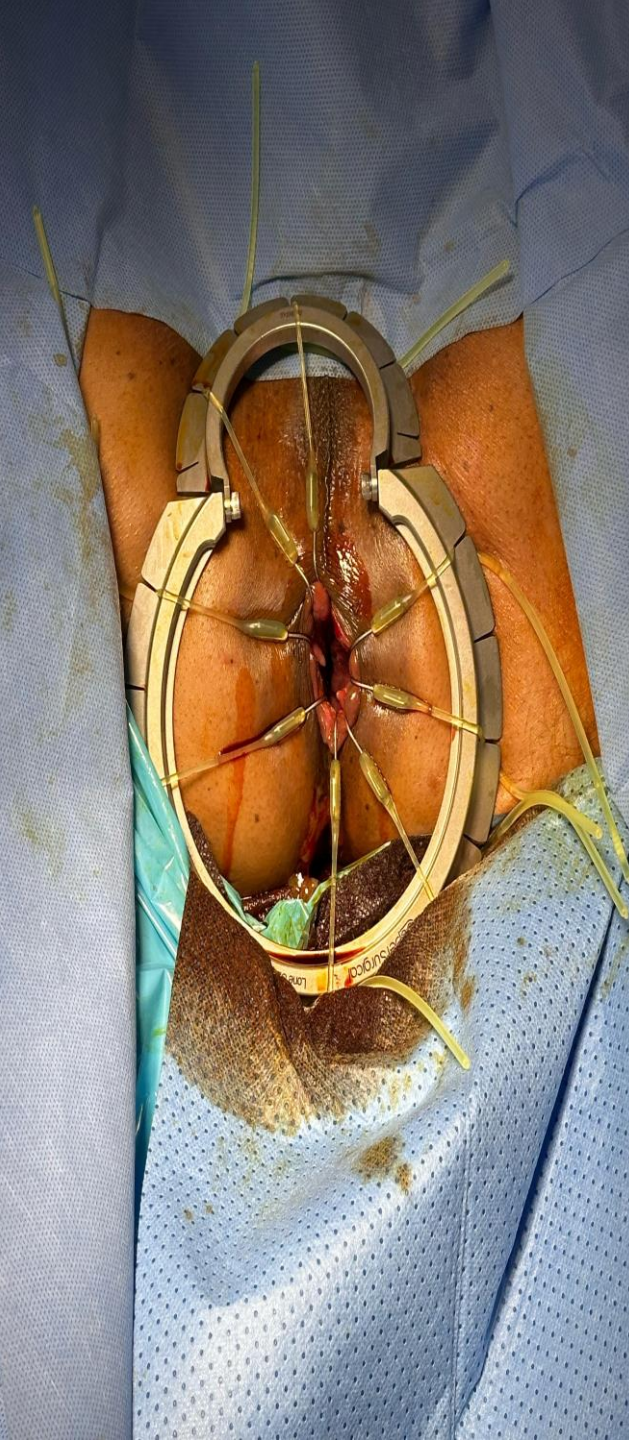
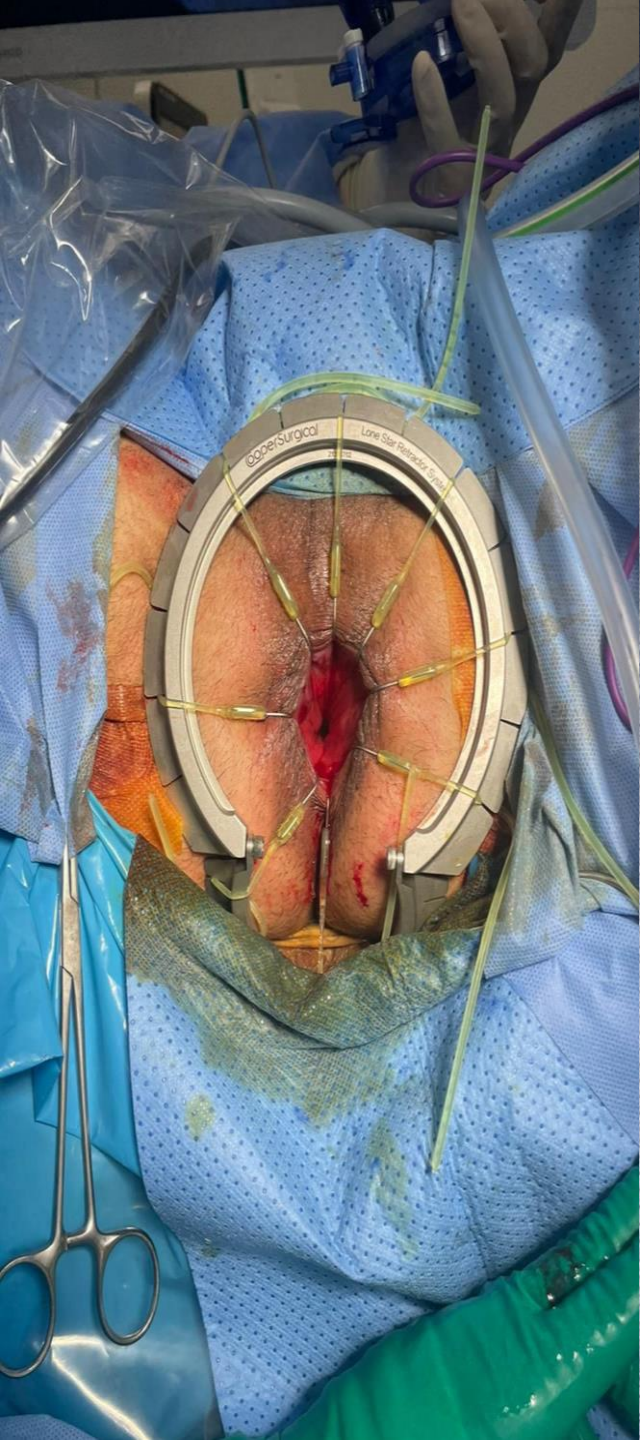


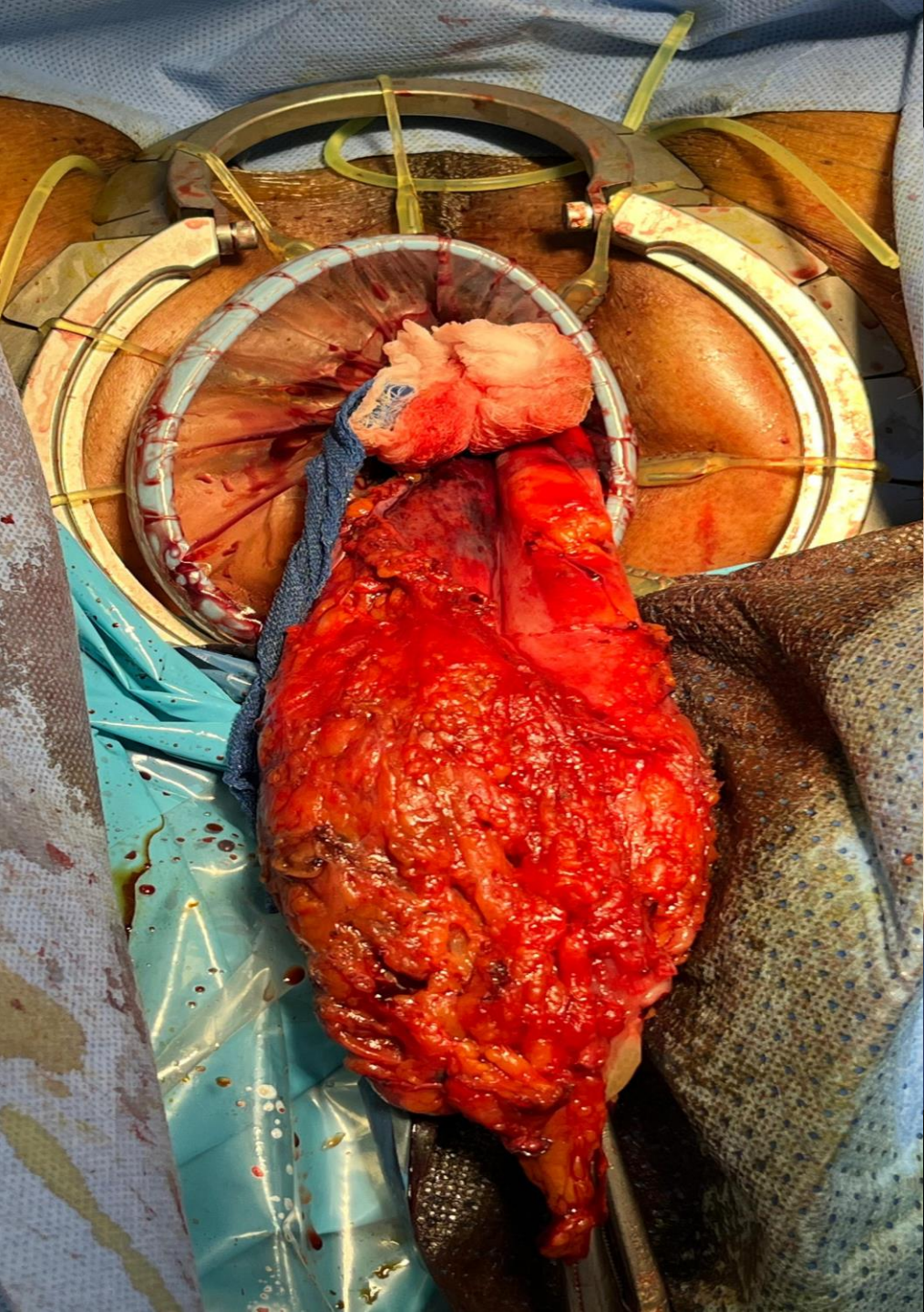
DON'TS

Get into the wrong plane

- Rectotomy not too distal to avoid uretra (if possible)









ORIGINAL ARTICLE – COLORECTAL CANCER

Laparoscopic Versus Robot-Assisted Versus Transanal Low Anterior Resection: 3-Year Oncologic Results for a Population-Based Cohort in Experienced Centers

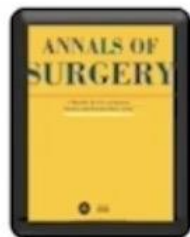
T. A. Burghgraef, MD^{1,2} , J. C. Hol, MD^{3,4}, M. L. Rutgers, MD⁵, R. M. P. H. Crolla, MD⁶, A. A. W. van Geloven, MD, PhD⁷, R. Hompes, MD, PhD⁸, J. W. A. Leijtens, MD, PhD⁸, F. Polat, MD, PhD¹², A. Pronk, MD, PhD⁹, A. B. Smits, MD, PhD¹⁰, J. B. Tuynman, MD, PhD⁴, E. G. G. Verdaasdonk, MD, PhD¹¹, P. M. Verheijen, MD, PhD¹, C. Sietses, MD, PhD³, and E. C. J. Consten, MD, PhD^{1,2}

3 years DFS rate was 78.8% for TaTME ,Vs 75.8% for RTaTME Vs 77.8 % for LapTaTME.

3 years OS rate : 87.6% TaTME Vs 90.4% RTaTME Vs 90% in LapTaTME .

3 years Local recurrence : 5.7% in TaTME Vs 6.4% in RTaTME Vs 6.1% in LapTaTME

More leak in TaTME 16.2% Vs 16% RTaTME Vs 11.9% in LapTaTME.



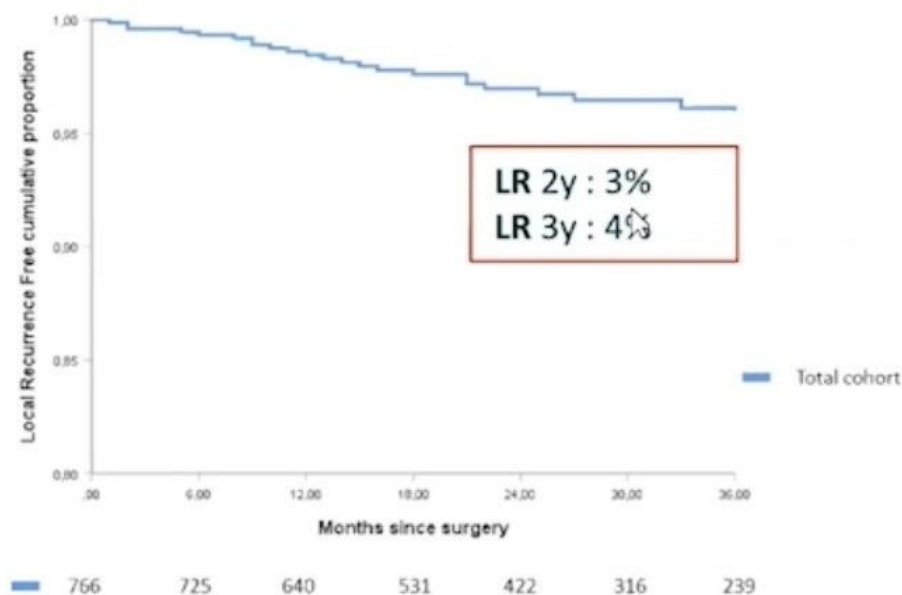
Local Recurrence After Transanal Total Mesorectal Excision for Rectal Cancer

A Multicenter Cohort Study

Six centres, n=767

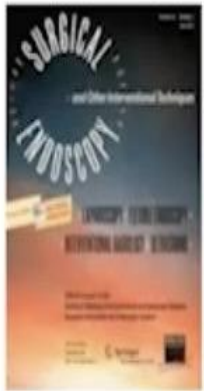
- Consecutive TaTME cases from 1st case (2013-2018)
- Early adopters – Tertiary referral centres
- Prospective kept databases
- 70% male
- 30% tumor ≤ 1 cm ARJ, 60% anterior, 40% mrCRM+
- 70% neo-adjuvant therapy
- Distance to ARJ median 3 cm

- Median FU 25 mnths
- CRM+ 6.3%
- Optimal pathology 86%



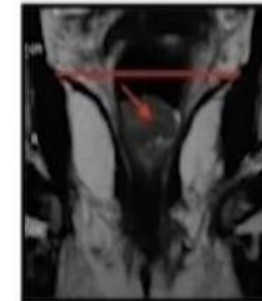


Anastomotic leakages



Transanal total mesorectal excision (TaTME) versus laparoscopic TME for MRI-defined low rectal cancer: a propensity score-matched analysis of oncological outcomes

n = 2 x 41 (> 2013)



TaTME **17.9%** vs LapTME **14.8%**



OTHER STUDIES FOR COMPARATIVE OF CRM POSITIVITY



Three-year nationwide experience with TaTME for rectal cancer in the Netherlands: a propensity score matched comparison with conventional laparoscopic TME

n = 2 x 396 (2015-2017) TaTME **4.3%** vs LapTME **4.0%**



EDITORIAL

The Impact of Transanal Total Mesorectal Excision on Functional Outcomes: A Future Standard?

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CONCLUSION !!

- Better Long Term Sexual and Urinary and Sphincter Function for Low Tumors in Narrow Pelvis
- Better Quality of Life

Introduction

Rectal cancer is one of the most commonly diagnosed malignancies and the burden of the disease is expected to increase by more than half in 2030.¹ Total mesorectal excision (TME) was originally performed as an open procedure; however, over time the laparoscopic approach to the TME (LaTME) has become more prevalent, and in some cases, preferred.² This approach has been demonstrated to have better short-term results and similar long-term outcomes to the open approach.³ However, the laparoscopic approach remains limited in its value due to several key challenges.² The LaTME is particularly challenging in patients with a narrow pelvis, which is commonly observed in those with high body mass index, low rectal cancer or bulky cancer, or in males.^{3,4} In these cases, there is a high probability of leaving behind a positive circumferential resection margin and/or conversion to open, particularly for relatively inexperienced surgeons.^{2,5}

A new approach—transanal total mesorectal excision (TaTME)—was developed in 2010 to address some of these limitations.⁶ The TaTME was designed to improve outcomes in TME individuals with mid-low rectal cancer, or those with unfavorable patient characteristics, such as a narrow pelvis. For instance, in the TaTME, the obstacle of a narrow pelvis was overcome by approaching the dissection from the distal end or the “bottom up”.⁵ This enables a more accurate assessment of the resection plane through

better visualization and an opportunity to protect the distal margin with a purse-string suture, as opposed to cross stapling and “dog ears” associated with the laparoscopic approach.

This new approach (TaTME) reduces the risk of anastomotic leakage, decreases mini laparotomy and wound complications, increases the rate of sphincter preservation, and may possibly improve nerve preservation, which leads to less morbidity and improved long-term urinary and sexual function.⁵

⁷⁻⁹ Despite all these advantages, one of the greatest concerns in the transanal approach is its impact on long-term functional outcomes, which has only been briefly examined.¹⁰ This impact could be affected by several factors, such as the close proximity of the anastomosis to the anal sphincter compared to a laparoscopic approach, the prolonged dilatation of the sphincter, and the radical resection in the lower pelvis. These factors can lead to a loss of innervation and functional integrity.⁹ The majority of studies conducted on the TaTME, focus exclusively on oncological outcomes by briefly mentioning or forgetting, altogether, the impact of the procedure on the functional outcomes. Although the available data on the functional outcomes following TaTME is scarce, it will be reviewed in more detail in the following section.

Functional Outcomes

The main functional and morbidity outcomes pertaining to surgical resection of rectal cancer, include anorectal function, urinary function, sexual



Did TaTME deliver to its expectations?

- | | |
|---------------------------------|--------|
| ➤ Decrease in conversion | YES |
| ➤ Superior pathologic specimens | YES |
| ➤ Better low anastomosis | YES/NO |
| ➤ More restorative surgery | YES |
| ➤ Two team approach | YES |
| ➤ Oncologic outcome | YES/NO |



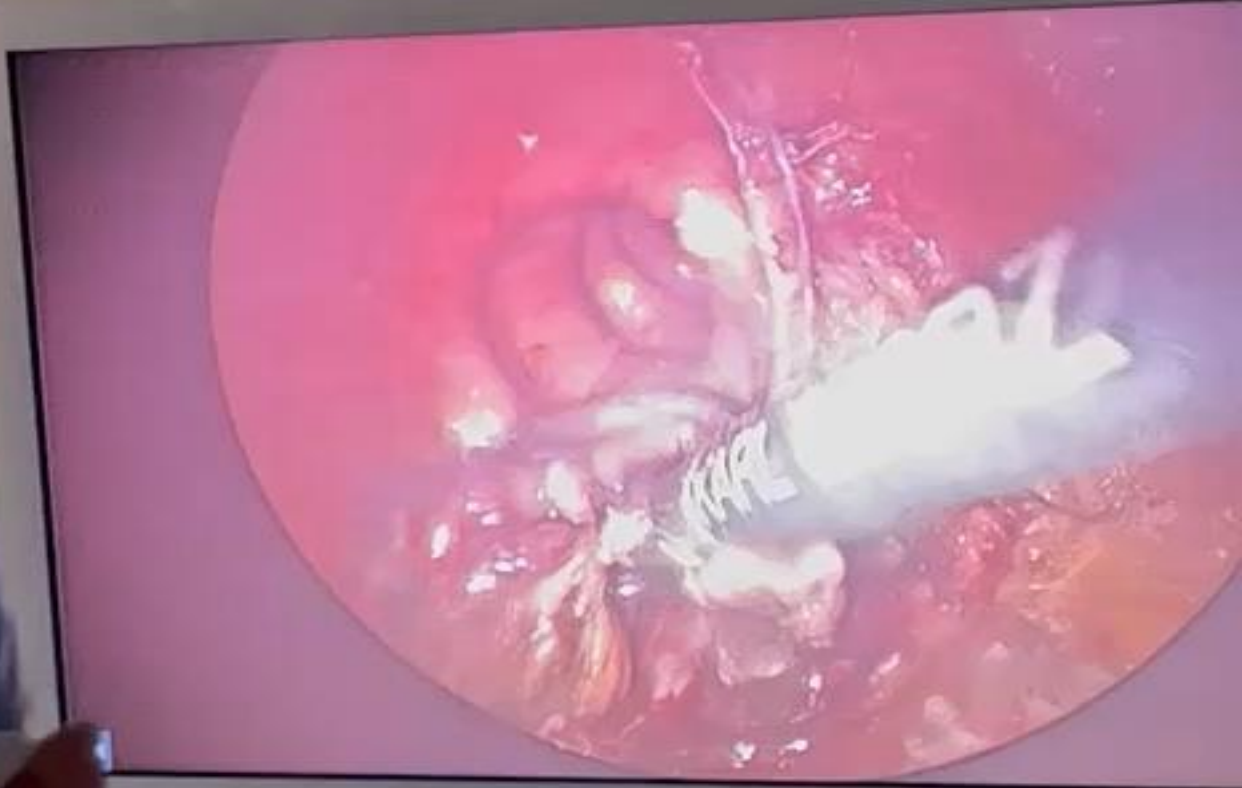
CHALLENGES ...

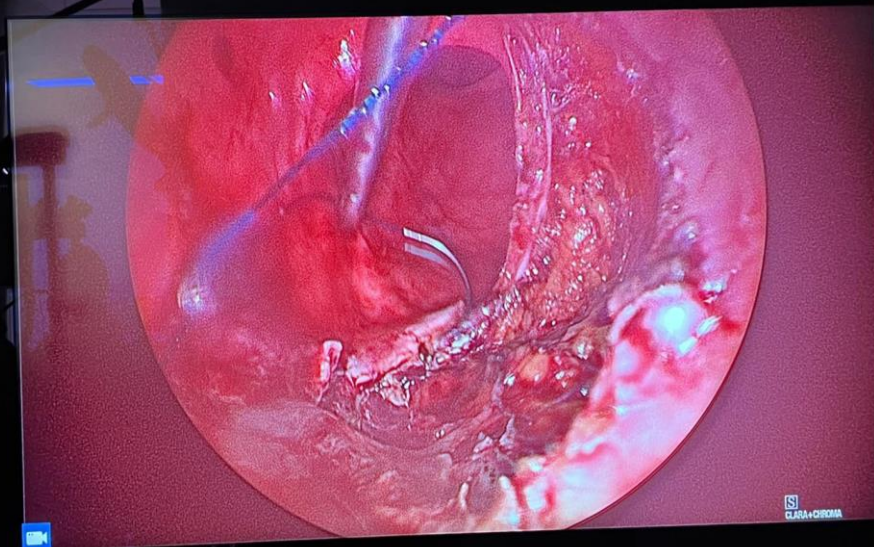
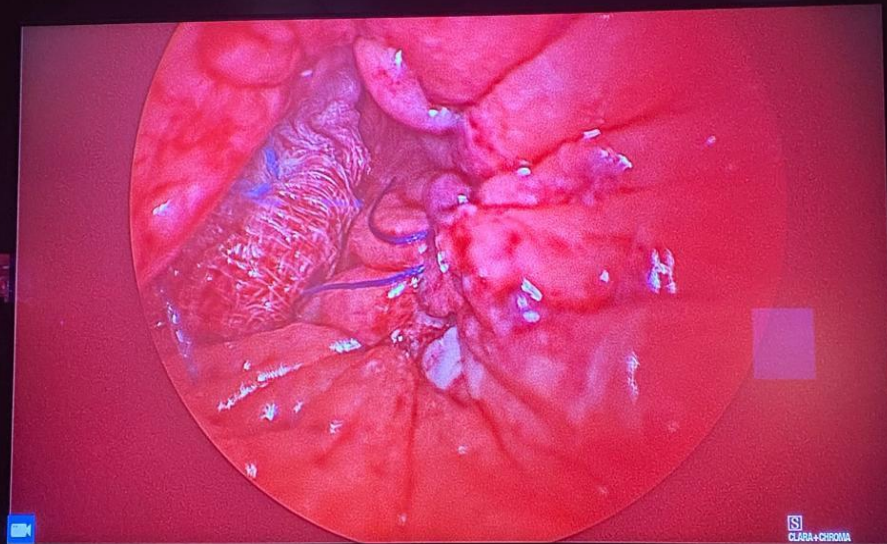
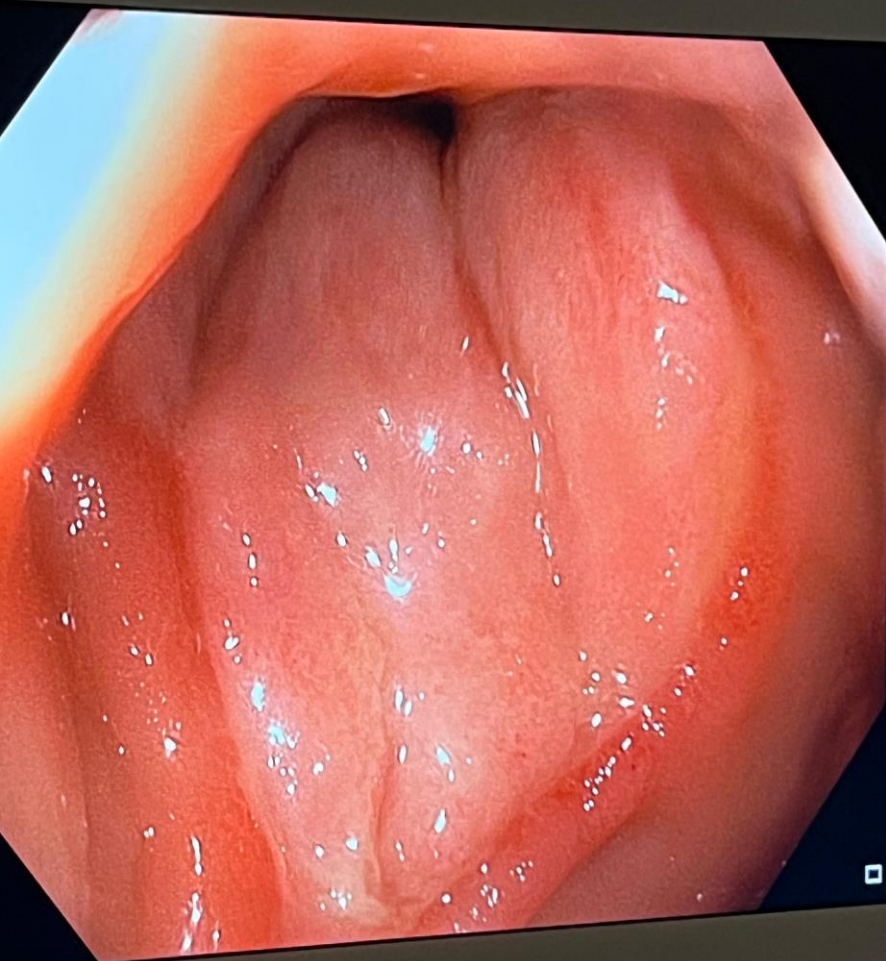
- Failure To Show Improvement In Functional Outcome !
- More Leak 8.4% In TaTME Vs 4.5% In RTaTME & LapTaTME
- Long Complex Learning Curve (Cadaveric And Observership And Mentorships) 30-35 Cases .
- Urethral Injuries
- Co2 Gas Embolism .



TAMIS (Trans-Anal Minimal Invasive Surgery)

- Benign lesions & T1 TUMORS, **T2 !!!**
- Less than or equal to 30% of the Circumference; 3 cm in size .
- Faster learning Curve
- Lower Costs
- Easier Setup
- Greater Flexibility
- Relatively Safe Procedure





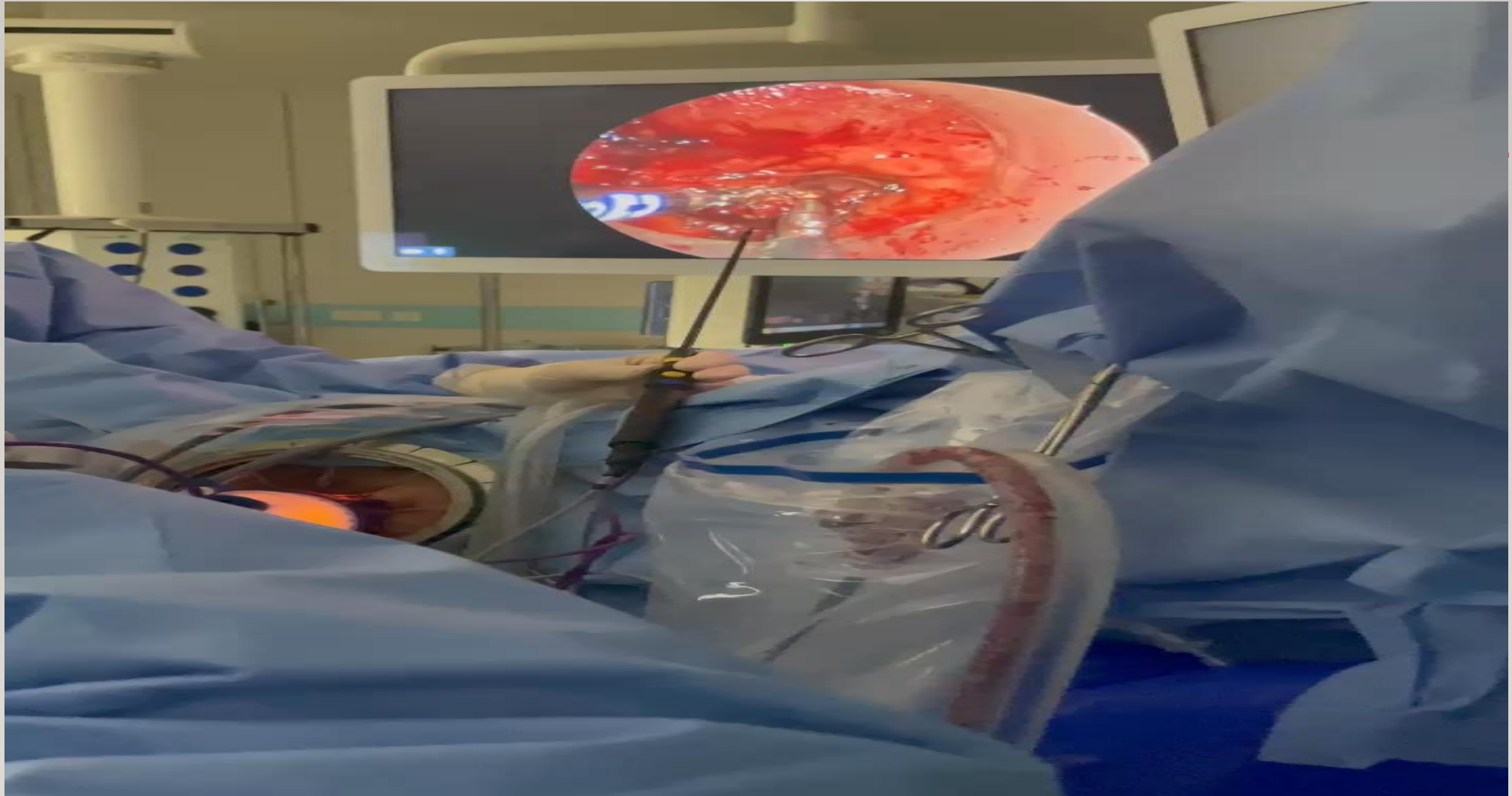


TAMIS... **Challenges !!**

- **Selection of Cases (Endoscopy, Endo-Rectal Ultrasound, MRI)**
- **Positive Margins: 20%**
- **Need of Subsequent Radical Surgery: 15 – 30%**
- **Local Recurrence: 5 – 15%**
- **Post op Suture Dehiscence and Infection: 5 – 10%**
- **Post-op Bleeding: 2-10%**
- **Stenosis: 1-5%**

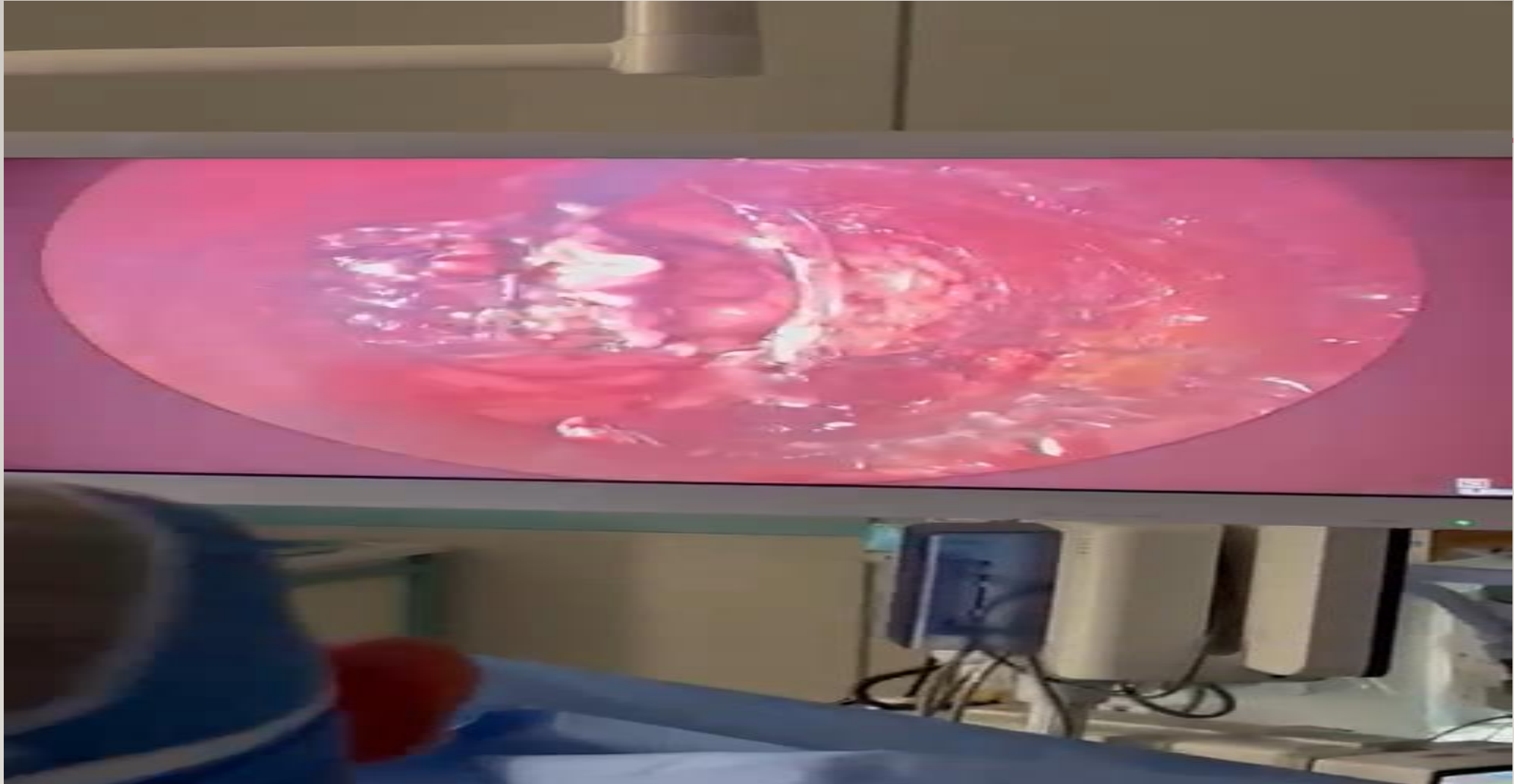


TAMIS (Trans-Anal Minimal Invasive Surgery)





TAMIS (Trans-Anal Minimal Invasive Surgery)





THANK YOU