

# ESMO PRECEPTORSHIP PROGRAMME GASTROINTESTINAL TUMOURS

Multidisciplinary management, standards of care and future perspectives

**Singapore**  
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# State of the art: Standard of surgical practice for resectable rectal cancer



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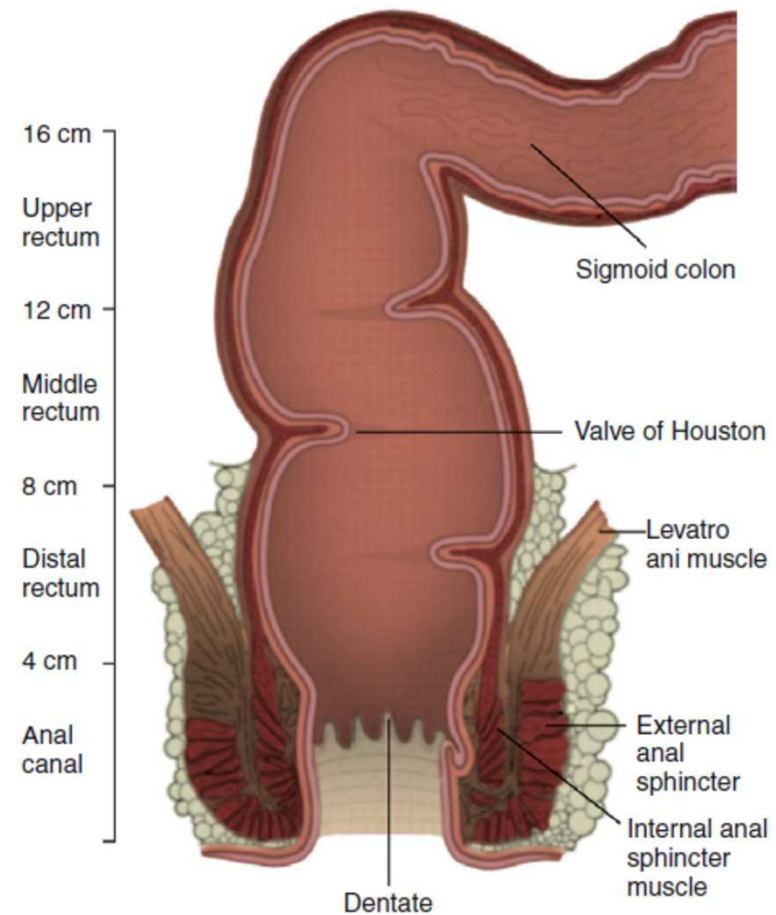
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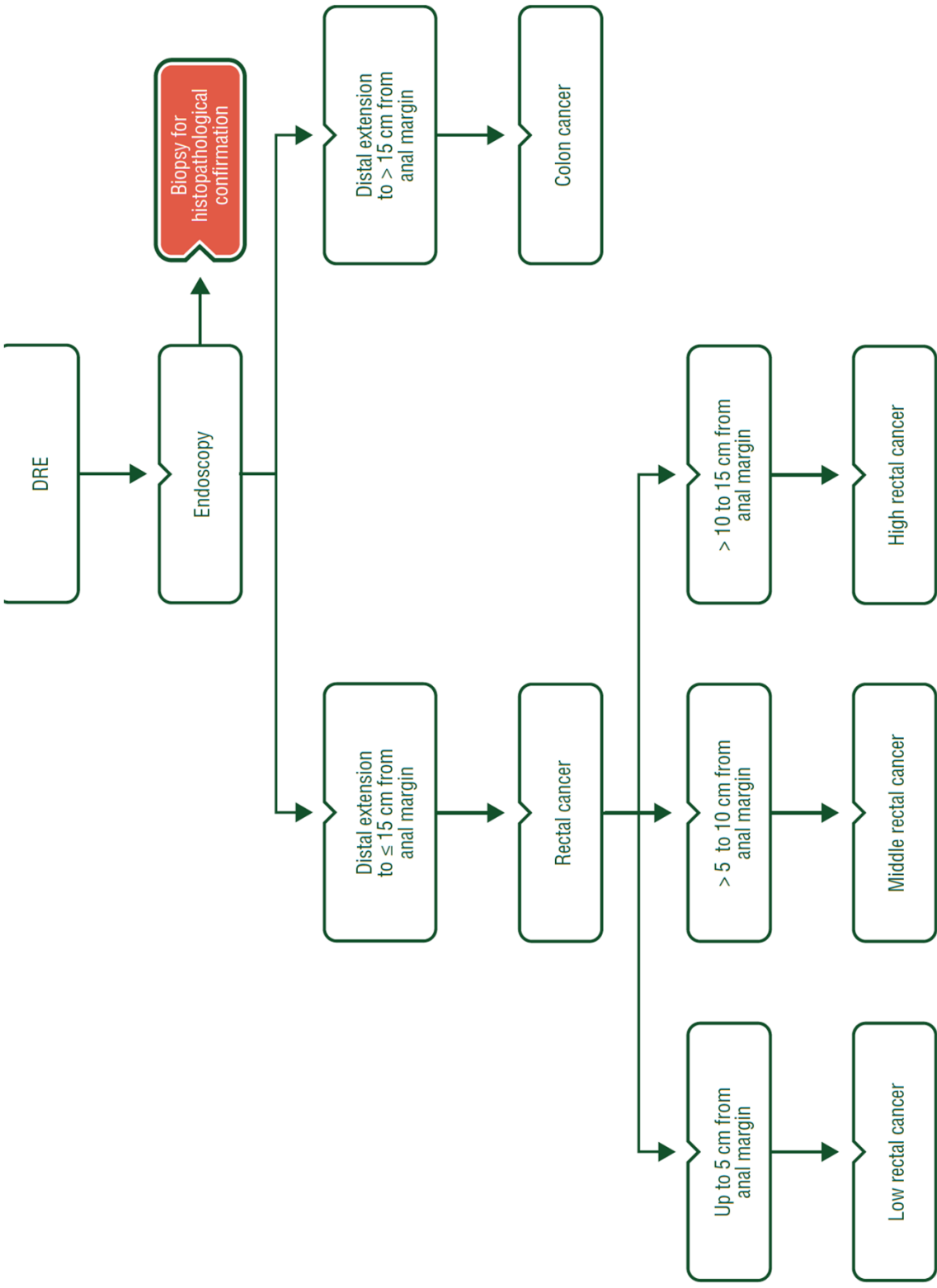
- **No Financial Disclosures**

# Anatomy

- Lack of consensus about the exact boundary of the proximal rectum
- **Rectum** : 12 cm or less from anal verge by rigid proctoscopy<sup>1</sup>
  - Colorectal cancers located above 12 cm from the anal verge have a local recurrence rate more consistent with patterns of recurrence in the colon than in the rectum<sup>2</sup>



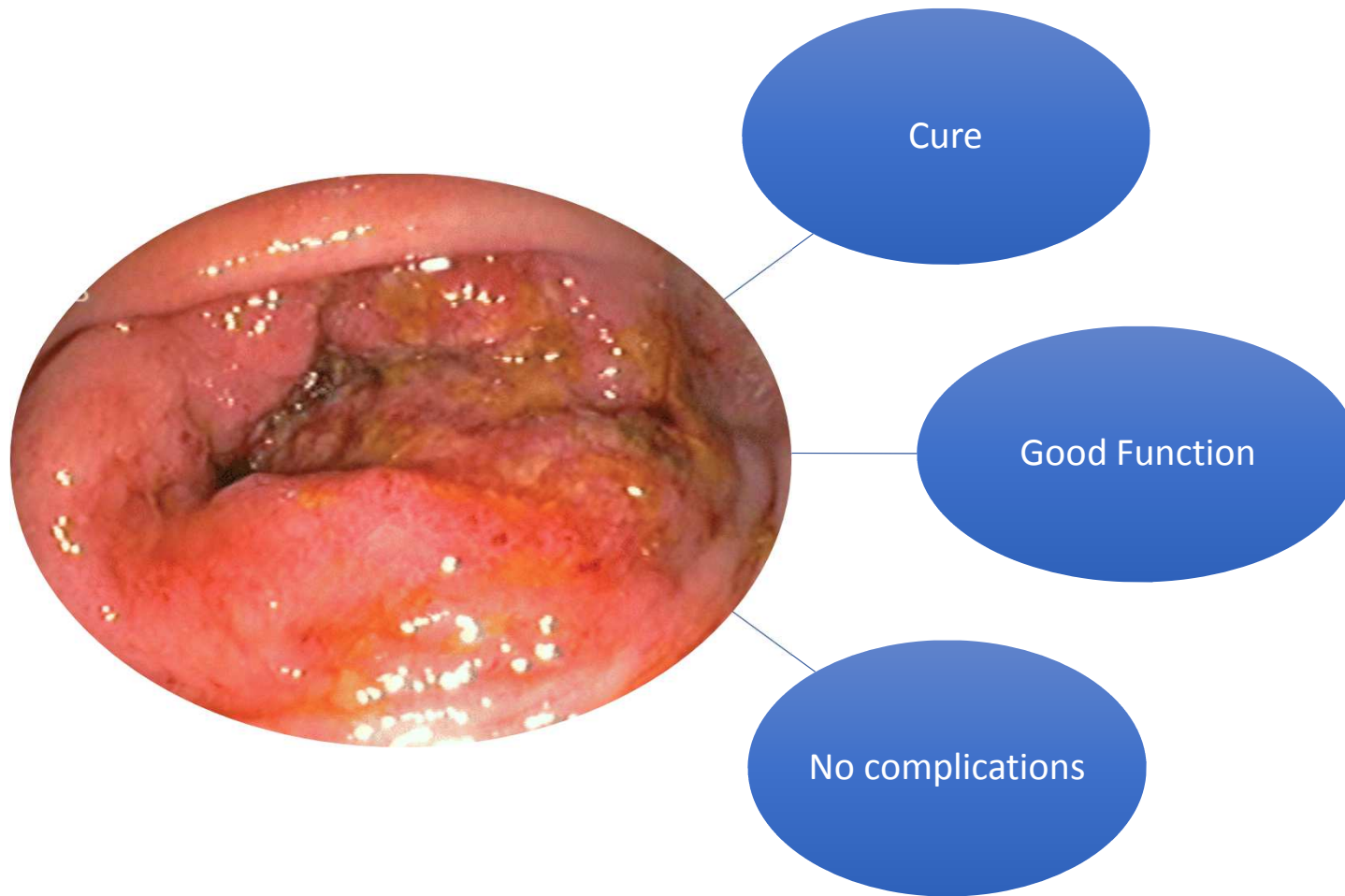
1. Guidelines 2000 for Colon and Rectal Cancer Surgery. Journal of the National Cancer Institute, Vol. 93, No. 8, April 18, 2001
2. Pilipshen SJ, Heilweil M, Quan SH, Sternberg SS, Enker WE. Patterns of pelvic recurrence following definitive resections of rectal cancer. Cancer 1984;53:1354–62.



# Surgery for Rectal Cancer

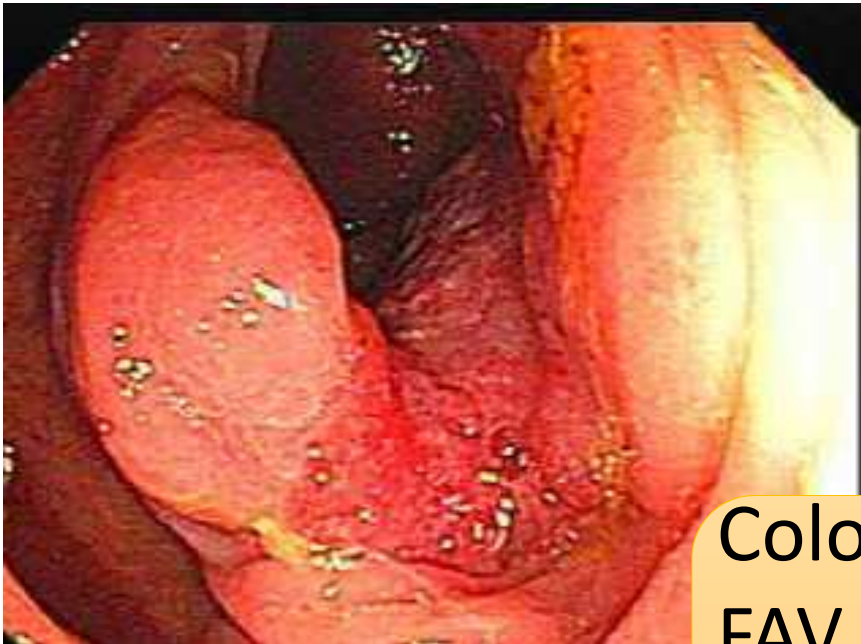
- Radical resection
    - Sphincter-sparing procedures
      - High anterior resection
      - Low anterior resection
      - Ultra low anterior resection
    - Non- Sphincter-sparing procedure
      - Abdominal perineal resection
  - Local excision
    - Transanal excision
    - Transanal endoscopic microsurgery
    - TEO
    - Transcoccygeal (Kraske) procedure
    - Transsphincteric (York-Mason) procedure
- } Largely abandoned

# Aims of Rectal Cancer Surgery



**Main Challenge revolves in Cancers 8cm from anal verge**

- **Patient 1: 44 year old Gentleman, BMI 30**
- **Referred for Tenesmus and reduced stool output**
- **No significant past medical history**



Albumin 38 g/L  
CEA 8.7 ng/ml

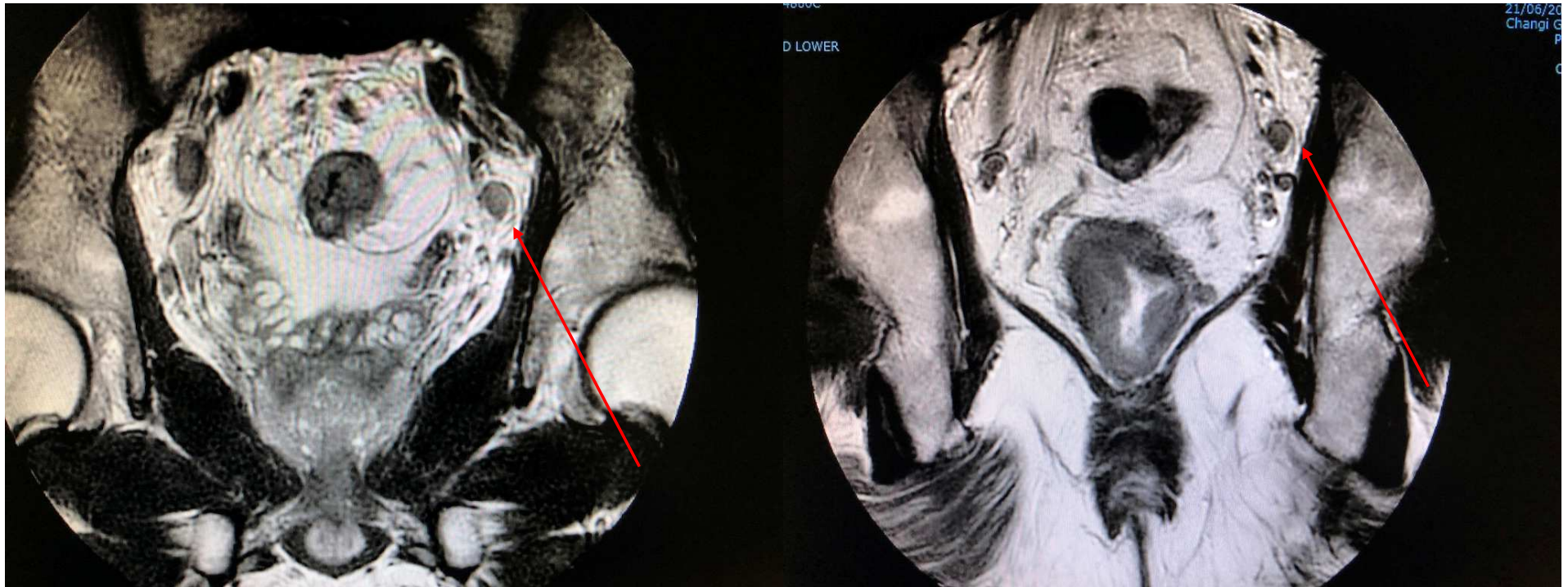
Colonoscopy: Low rectal tumour, 5cm  
FAV

Biopsy: moderately differentiated  
adenocarcinoma





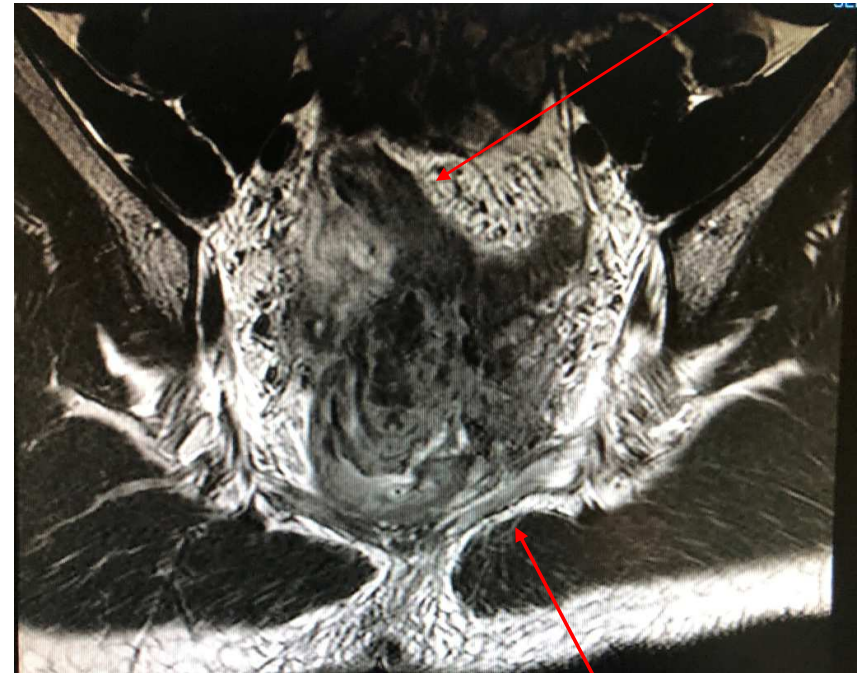
MRI pelvis (sag) : Large Rectal tumour, CRM 1mm



10mm Left Common iliac Lymph node, 7mm right internal iliac Lymph nodes

# Patient 2, 25 year old male

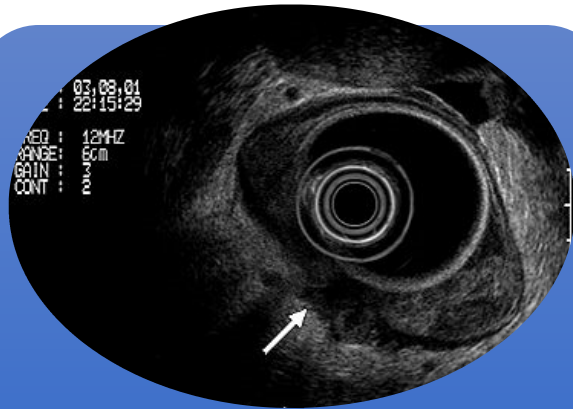
Symptoms: tenesmus, anal pain, CEA 2.2, no mets on staging scans



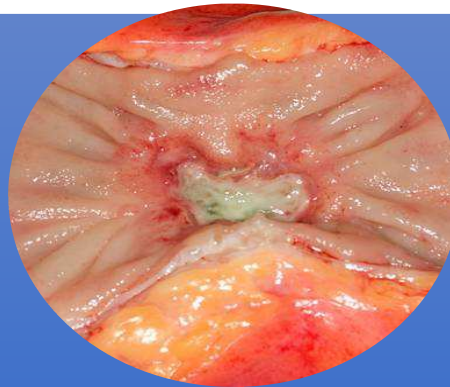
What should we do?



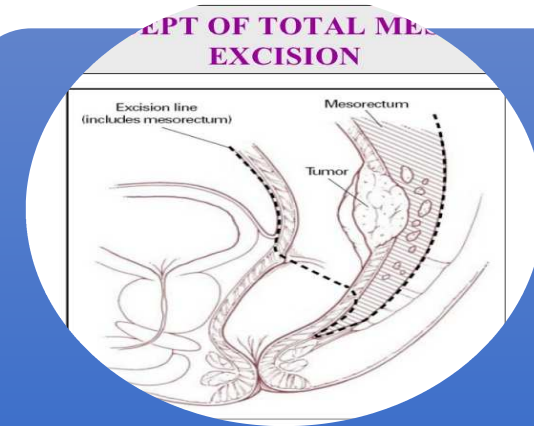
# Essential decision making process



Proper diagnosis  
and staging



Consider  
Neoadjuvant



A Good TME

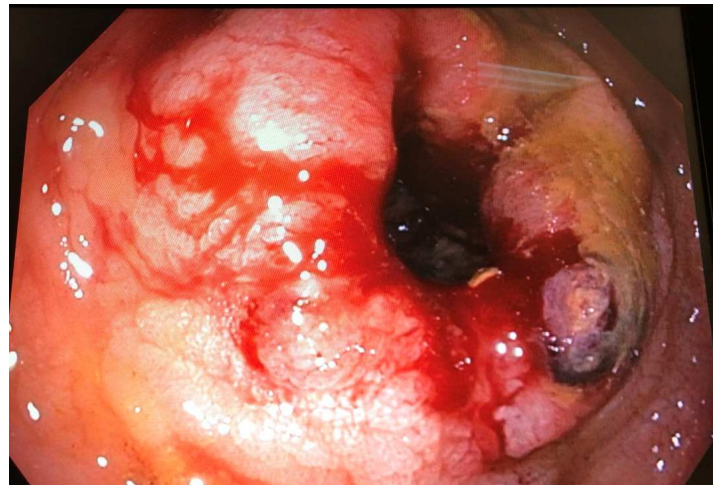
Preventing local recurrence

- Basic Principles and Options
- Neo-adjuvant treatment
- Lateral Lymph nodes
- Preservation of Function
- (Exenterative Surgery for locally advanced tumours )



# Surgery for Rectal Cancer

- Always begins from clinical examination
  - Symptoms to suggest sphincter involvement
  - Any presence of pelvic sepsis/ Fistulas
- How do we judge ability for sphincter preservation?



# Surgery for Rectal Cancer

- Location
- Stage
- Presence or absence of high risk factors
  - ??

- Is transanal Surgery possible?

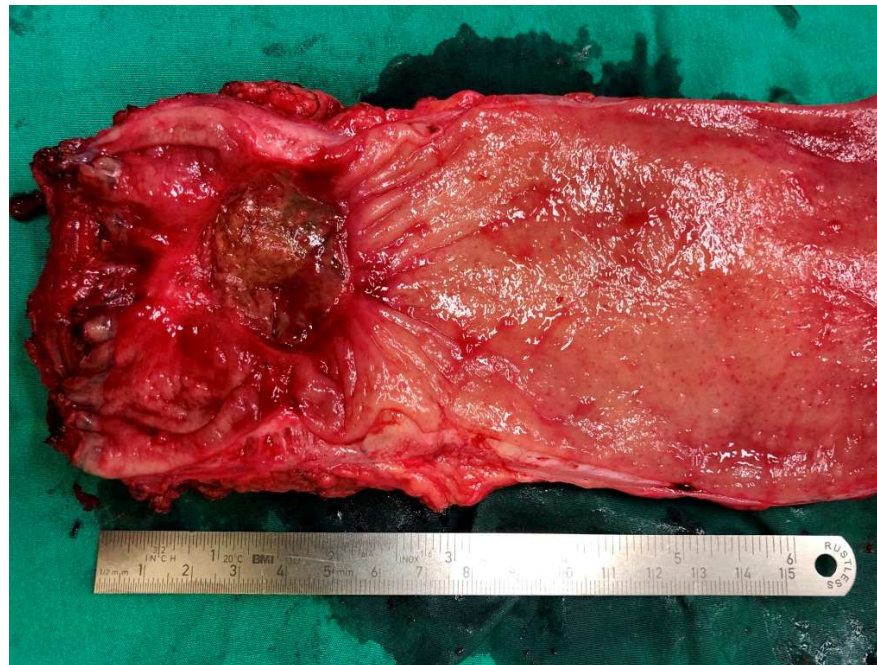
1. **Polypectomy** for select T1 cancers.
2. **Transanal local excision** (LE) and transanal endoscopic microsurgery (**TEM**) for select clinically staged T1 N0 rectal cancers.





# Ultralow Anterior Resection

- Proctectomy with transection at the pelvic floor below the mesorectum at the rectal muscular tube, leaving rectal mucosa within the functional anal canal; sigmoid colectomy
- Distal rectal cancer that **does not invade the anal sphincter**



# Abdominoperineal resection

- APR refers to a combined abdominal and perineal approach to resect the rectum and mesorectum en bloc, along with the anus, surrounding perineal soft tissue, and pelvic floor musculature.
- An end colostomy is then created.

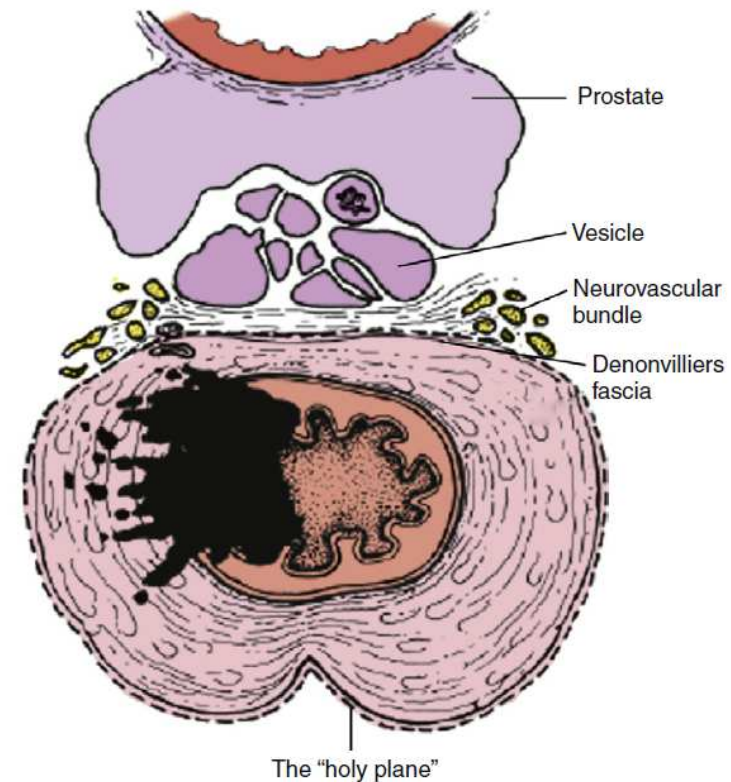


# Principles of Radical Resection

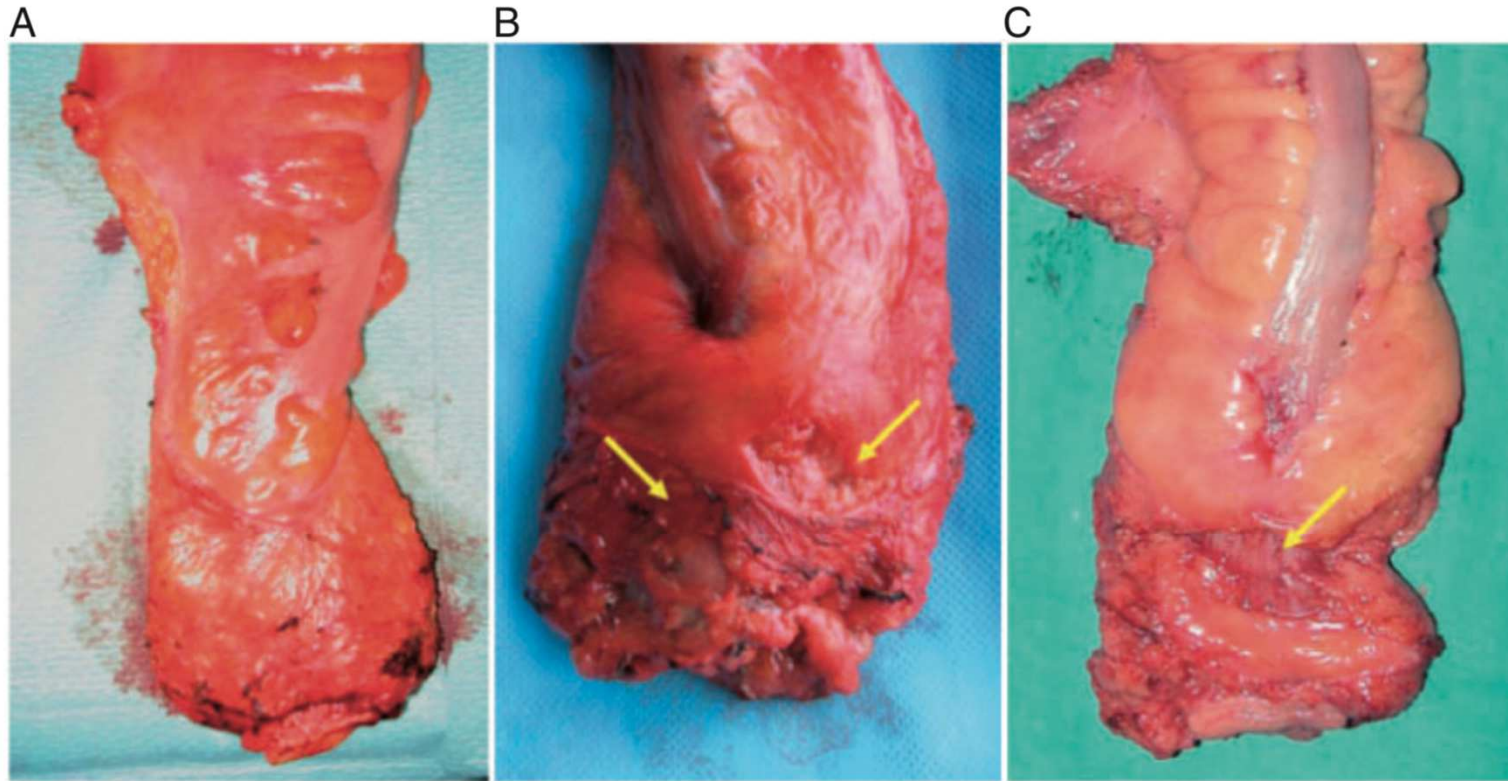
1. Total Mesorectal Excision
2. Autonomic nerve preservation
3. Negative circumferential and distal margins,
4. Sphincter preservation and restoration of bowel continuity and function

# Total Mesorectal Excision

- A concept introduced in 1979 by RJ Heald
- Complete excision of the visceral mesorectum with pelvic nerve preservation
- **Mesorectum** refers to the fatty tissue that encompasses the rectum. It contains lymphatic elements from the rectum and is encased by visceral fascia.
- TME entails sharp dissection in the areolar plane between the visceral fascia that envelops the rectum and mesorectum and the parietal fascia overlying the sacrum and pelvic sidewall structures (the “Holy Plane”)



## Quality of TME is a surrogate for good oncologic outcomes



**Figure 3.** The definitions for defining quality of mesorectal excision [28].

(A) A complete mesorectal excision—shows good bulk of mesorectum with a smooth surface and no defects. (B) A nearly complete mesorectal excision shows good bulk of mesorectum, but some defects or irregularities in the surface (arrowed) are present. (C) An incomplete mesorectal excision demonstrating a deep defect on the mesorectum below the peritoneal reflection, which allows visualisation of the muscularis propria (arrowed).

Reprinted from [28], with permission from John Wiley & Sons, Inc.

**Table 5. Grading of quality and completeness of the mesorectum in a total mesorectal excision specimen according to the plane of surgical excision [27]**

Mesorectal plane (good plane of surgery achieved)	Intact mesorectum with only minor irregularities of a smooth mesorectal surface; no defect deeper than 5 mm; no coning; and smooth circumferential resection margin on slicing
Intramesorectal plane (moderate plane of surgery achieved)	Moderate bulk to mesorectum, with irregularities of the mesorectal surface; moderate distal coning; muscularis propria not visible with the exception of levator insertion; and moderate irregularities of circumferential resection margin
Muscularis propria plane (poor plane of surgery achieved)	Little bulk to mesorectum with defects down onto muscularis propria; very irregular circumferential resection margin; or both

# Autonomic Nerve Preservation

- Damage to the **sympathetic** hypogastric nerves → increased bladder tone and reduced bladder capacity, impaired ejaculation in men.
- Damage to the **parasympathetic system** → voiding difficulties from increased tone in the bladder neck, erectile dysfunction in men and impaired vaginal lubrication in women



Gastroenterology Report, 0(0), 2016, 1–13

doi: [10.1093/gastro/gow023](https://doi.org/10.1093/gastro/gow023)

Advance Access Publication Date: 29 July 2016  
Review

REVIEW

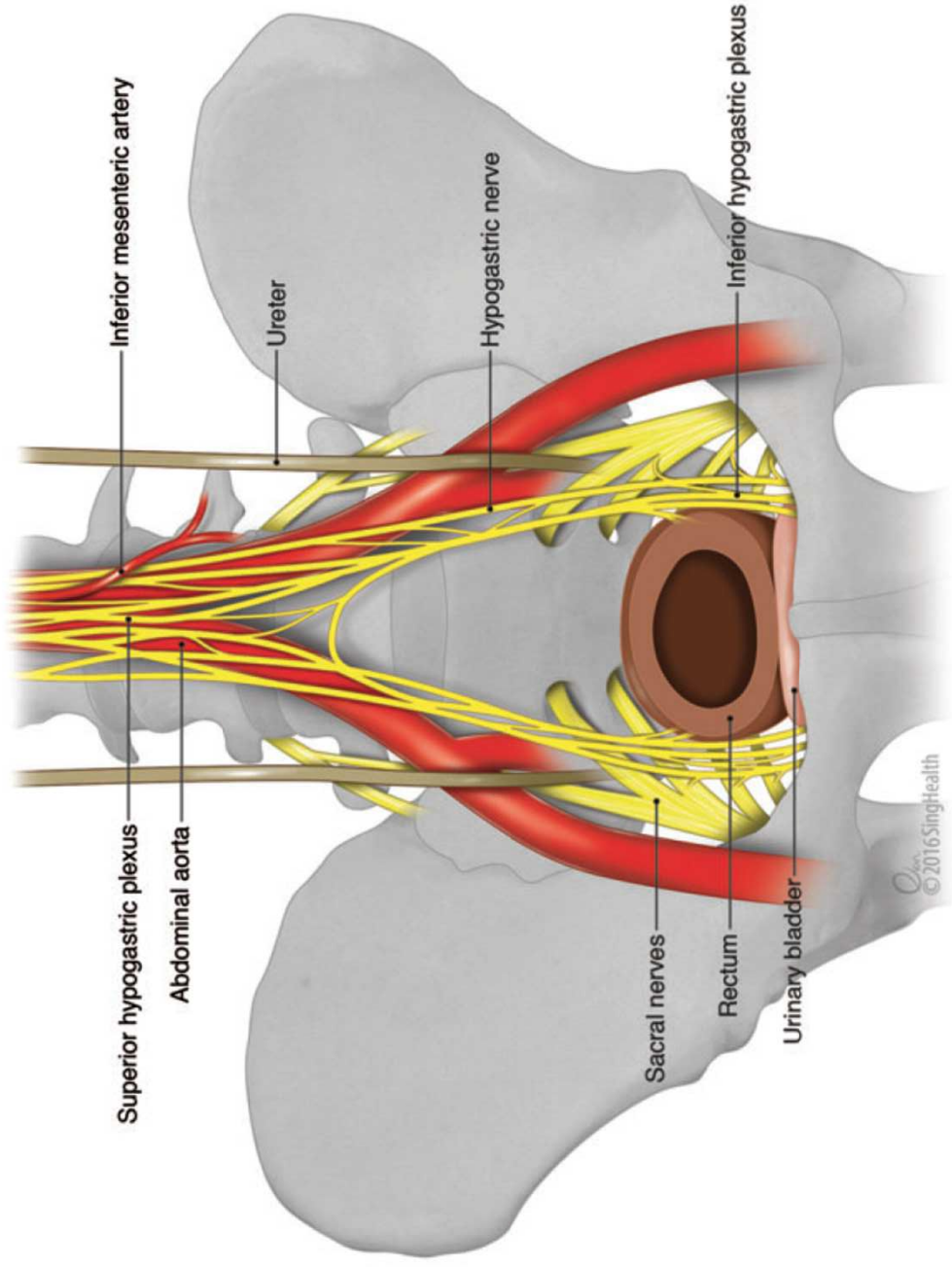
# Pelvic autonomic nerve preservation in radical rectal cancer surgery: changes in the past 3 decades

Min-Hoe Chew<sup>1,\*</sup>, Yu-Ting Yeh<sup>1</sup>, Evan Lim<sup>2</sup> and Francis Seow-Choen<sup>3</sup>

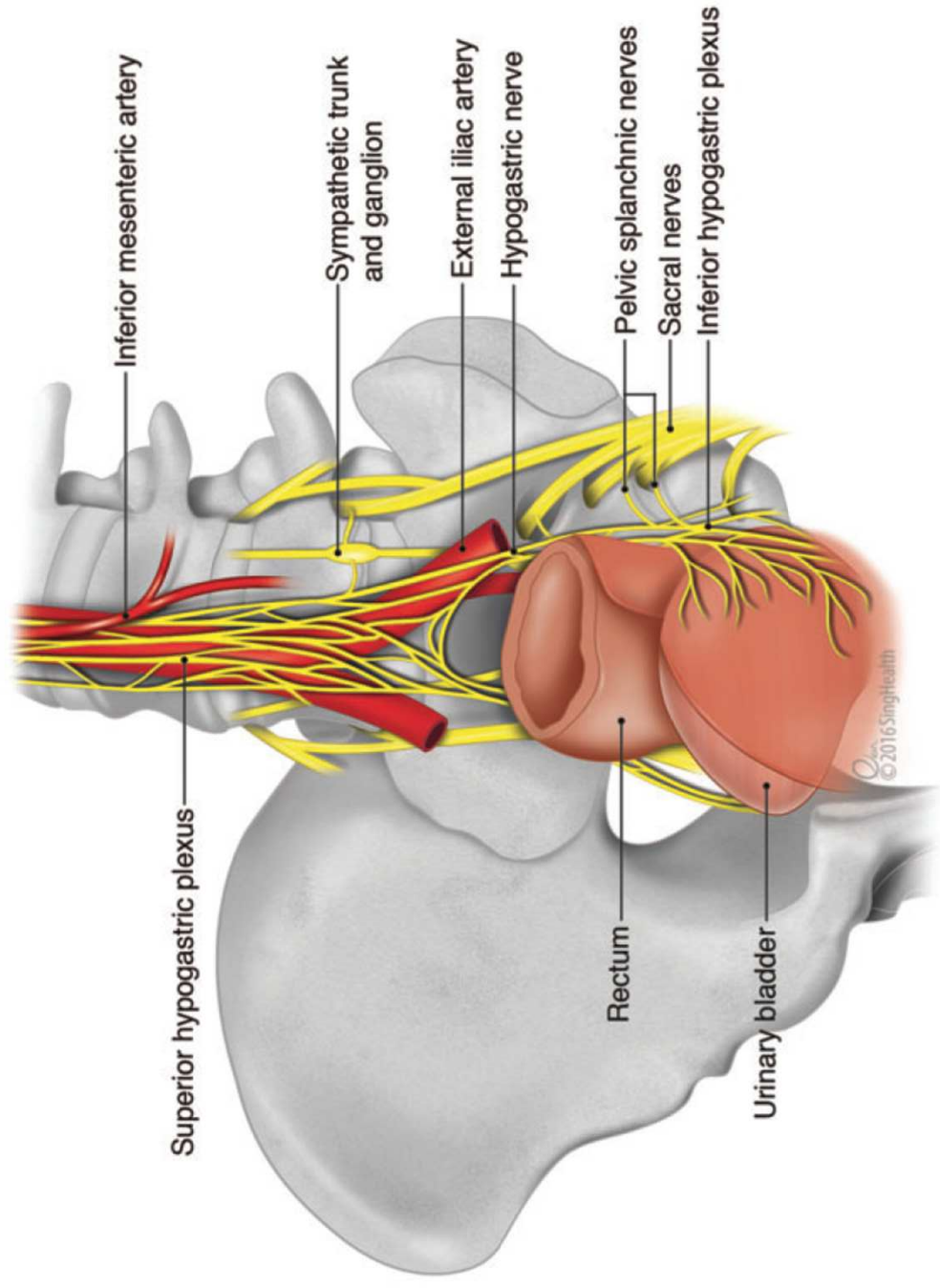
<sup>1</sup>Department of Colorectal Surgery, Singapore General Hospital, Singapore, <sup>2</sup>Singhealth Academy, Singapore General Hospital, Singapore and <sup>3</sup>Seow-Choen Colorectal Centre, Singapore

\*Corresponding author. Department of Colorectal Surgery, Singapore General Hospital, 20 College Road, Academia, Singapore 169856. Tel: +65-6321-4677, Email: [chew.min.hoe@singhealth.com.sg](mailto:chew.min.hoe@singhealth.com.sg)

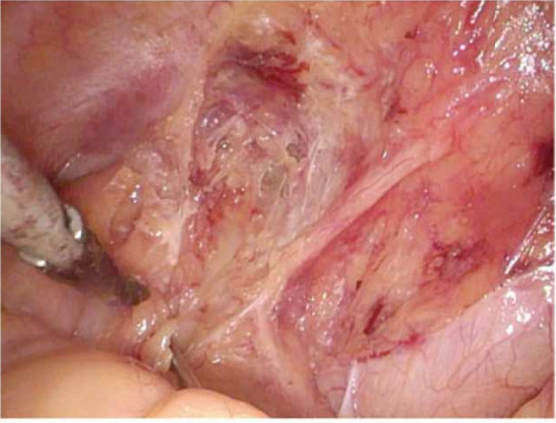




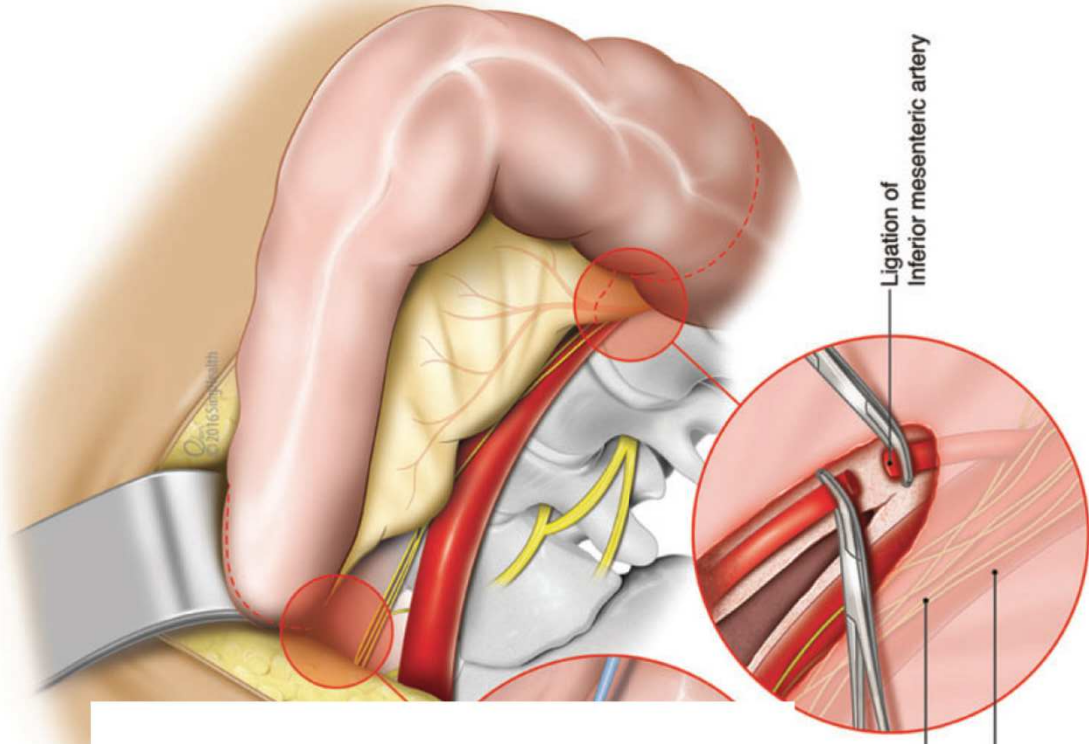
**Figure 1:** General overview of anatomy of the autonomic nerve distribution. The superior hypogastric plexus around the inferior mesenteric artery descends to the sacral promontory and bifurcates into hypogastric nerves. These usually run 1–2 cm medial to the ureters and cross the common iliac arteries and S1 in the sacrum.



**Figure 3:** Anatomy of the pelvic autonomic nerves with relation to rectum. The inferior hypogastric plexus comprises nerves from the hypogastric and pelvic splanchnic nerves at lateral pelvic wall.



**Figure 2:** Inferior hypogastric nerve with branches to the rectum on a robotic view with medial-to-lateral dissection approach.



Neurovascular bundle  
 Superior hypogastric plexus  
 Aorta

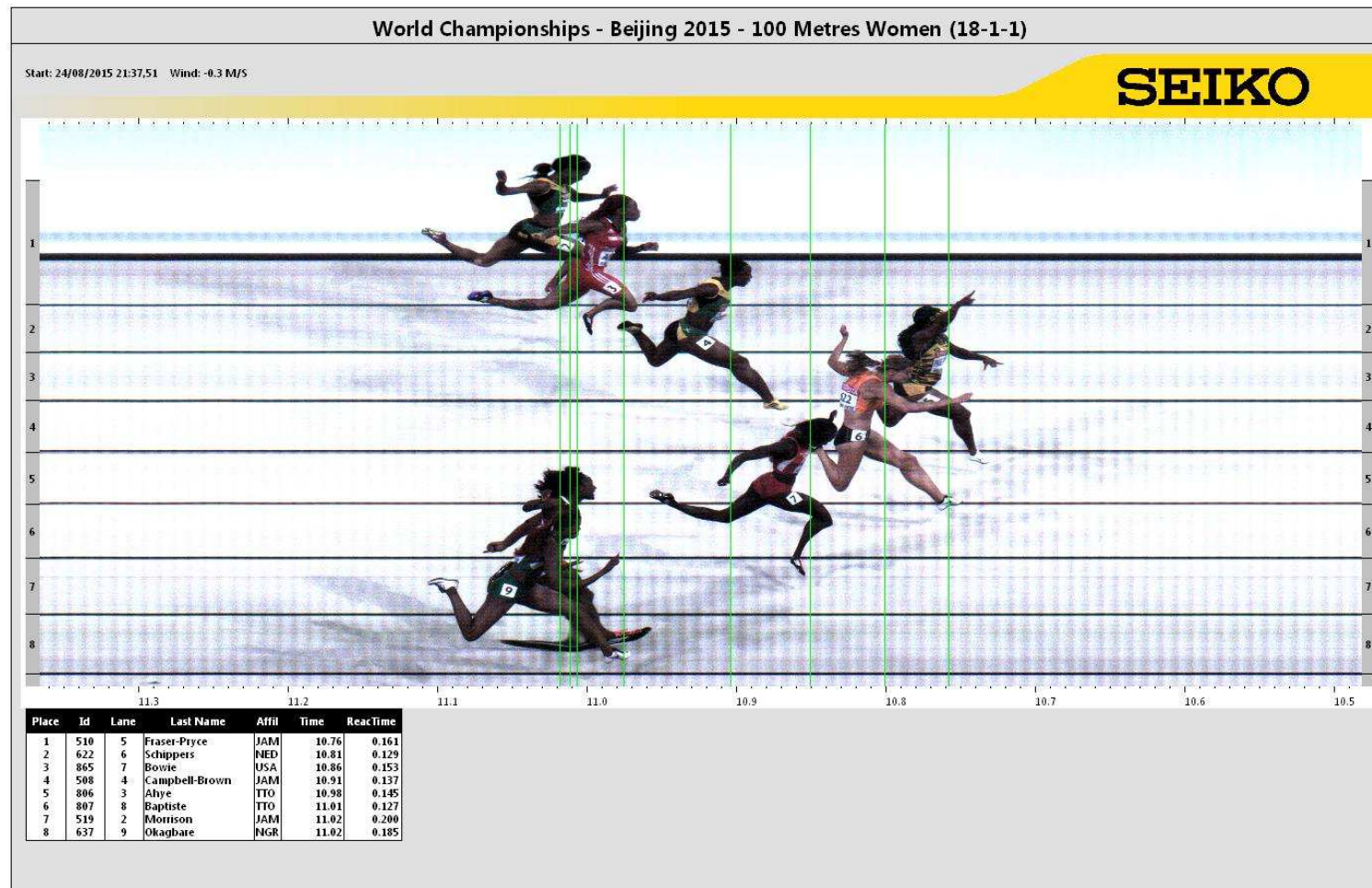
Ligation of  
 Inferior mesenteric artery

**Figure 4:** The relationship of the rectum and pelvic autonomic nerves during open surgery when standing on the patient's left. The ligation of the inferior mesenteric artery should be performed 1.5–2 cm from its origin from the aorta to avoid damaging the superior hypogastric plexus. At the pelvis, for posterior and lateral tumours, dissection should be directed below the Denonvilliers fascia to avoid damaging the neurovascular bundles that run along the tip of the seminal vesicle (2 and 10 o'clock directions).

# Bladder and Sexual Dysfunction

- Urinary dysfunction up to 27%; Sexual dysfunction 11-55%
- Factors: Surgical Technique, Tumour factors, Use of Neoadjuvant chemoRT
- No difference in outcomes between laparoscopic vs open techniques
- Robotic technique – improve shorter term 3 month urinary functions, no difference in 12 months

# Distal Margins



- Karanjia et al termed distal resection margins of 1 cm and less as “close shave” anterior resections<sup>1</sup>
  - Local recurrence rate of 4% over a 10-year period
  - Mean time to recurrence: 1 year
- Nash et al<sup>2</sup> and Bokey et al<sup>3</sup>, on the other hand, both showed an association between increased local recurrence rates and a close distal margin of 1-cm or less
  - Nash et al: 70% received pre-operative radiotherapy
  - Bokey et al: None received pre-operative radiotherapy



1. Karanjia ND, Schache DJ, North WRS, Heald RJ. ‘Close shave’ in anterior resection. Br J Surg. 1990;77:510-512.
2. Nash GM, Weiss A, Dasgupta R, et al. Close distal margin and rectal cancer recurrence after sphincter-preserving rectal resection. Dis Colon Rectum. 2010;53:1365-1373.
3. Bokey EL, Ojerskog B, Chapuis PH, et al. Local recurrence after curative excision of the rectum for cancer without adjuvant therapy: role of total anatomical dissection. Br J Surg. 1999;86:1164-1170.

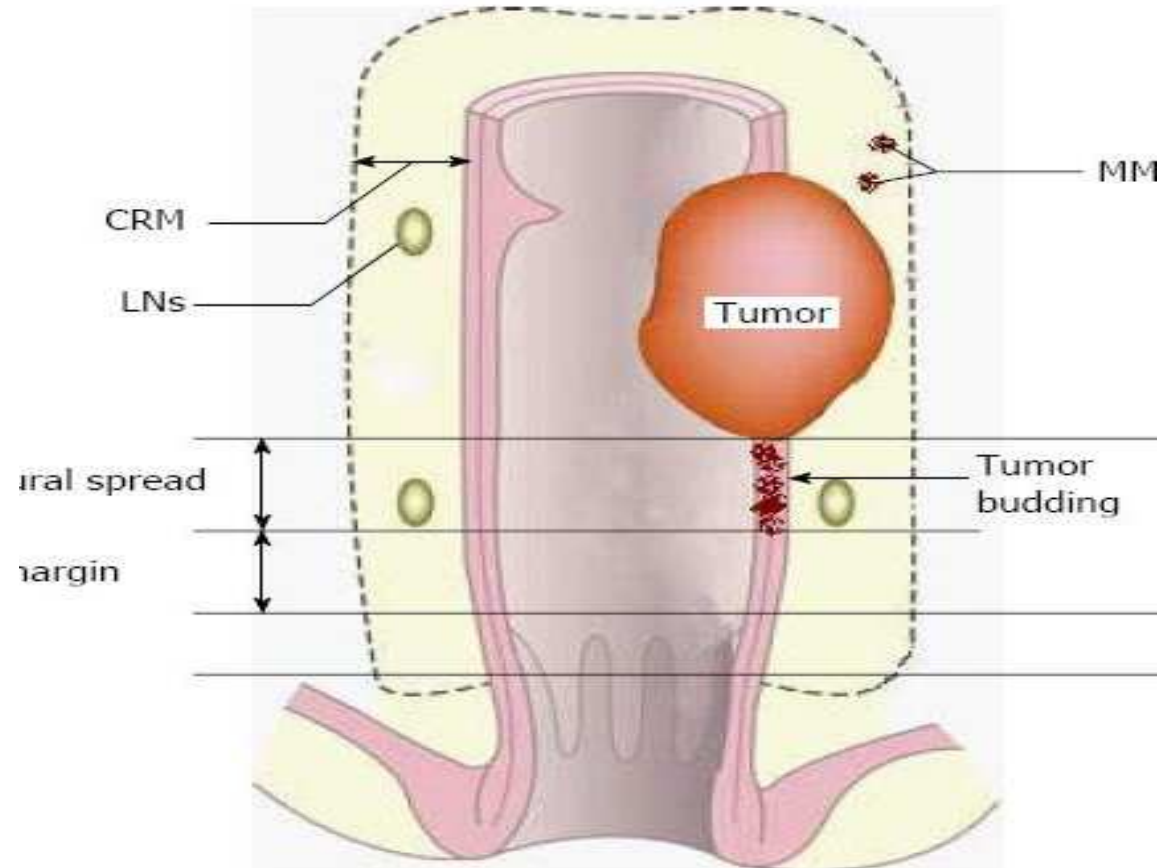
# Rationale of distal margins

Presence of subclinical distal bowel intramural spread usually within 1cm distally from visible tumour.

But:

1cm rule occasionally violated especially after chemo RT

Need for sphincter preservation



Int J Colorectal Dis (2012) 27:1285–1294  
DOI 10.1007/s00384-012-1467-x

ORIGINAL ARTICLE

# Close distal margins do not increase rectal cancer recurrence after sphincter-saving surgery without neoadjuvant therapy

Jason Wei-Min Lim • Min-Hoe Chew • Kiat-Hon Lim •  
Choong-Leong Tang

Accepted: 13 April 2012 / Published online: 24 August 2012  
© Springer-Verlag 2012

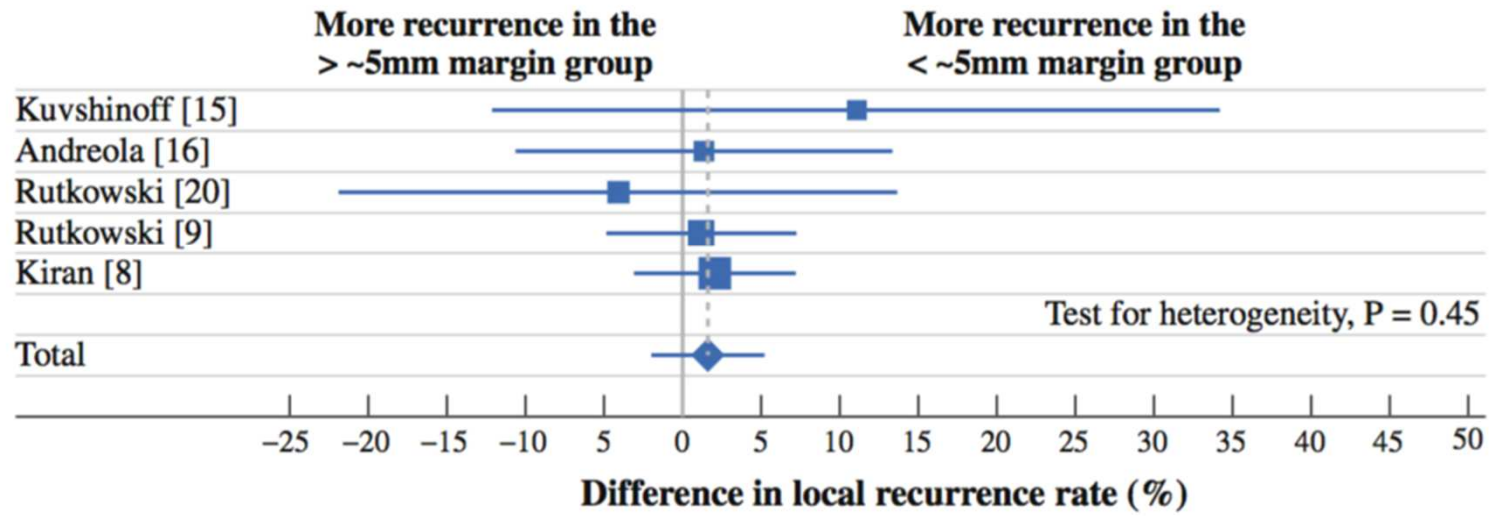


# Is the 1-cm Rule of Distal Bowel Resection Margin in Rectal Cancer Based on Clinical Evidence? A Systematic Review

*Bujko et al. Ann Surg Oncol 2012*

- Review consists of :
  - 17 studies analysing <1 cm (948 patients) versus >1 cm (4626 patients);
  - 5 studies in relation to a margin of  $\leq 5$  mm (173 patients) versus >5 mm (1277 patients),
  - 5 studies showing results in a margin of  $\leq 2$  mm (73 patients).
- Findings:
  - Local recurrence rate was 1.0% higher in the <1-cm margin group compared to the >1-cm margin group (95% CI -0.6 to 2.7; P = 0.175).

**FIG. 2** The differences with 95% confidence intervals in local recurrence rates between the groups with the distal bowel margin shorter or equal to 0.5 cm and the groups with longer distal margin



Local recurrence rate for  $\leq 5$  mm cutoff point : 1.7% (95% CI -1.9 to 5.3;  $P = 0.375$ ).

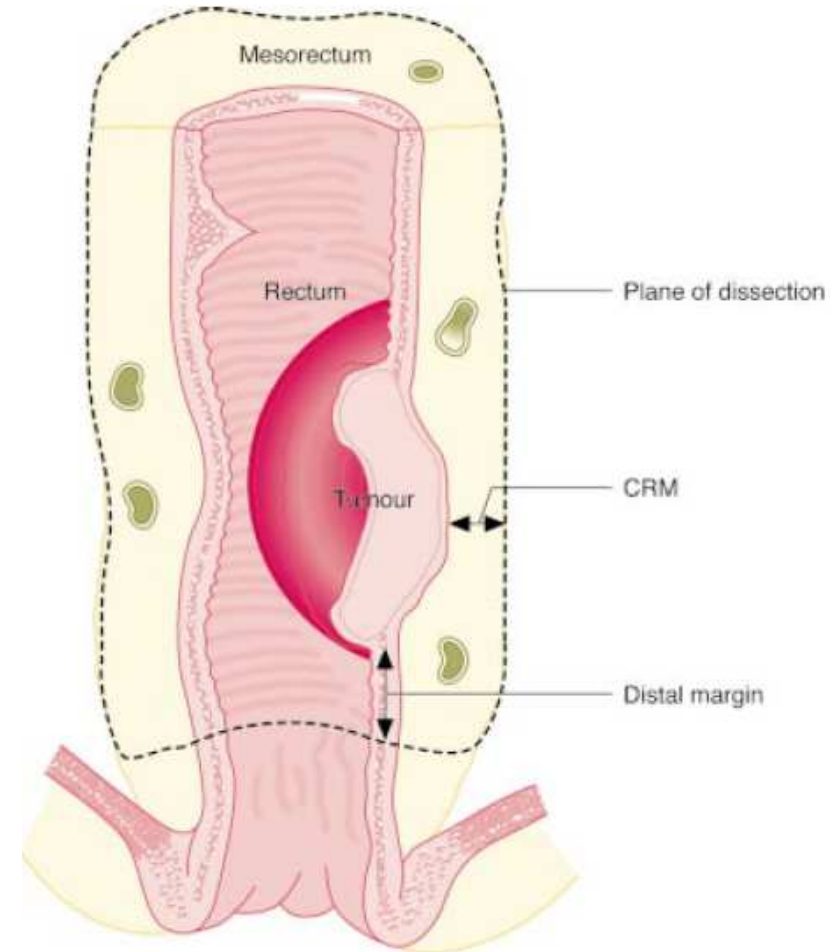
Local recurrence rate in patients  $\leq 2$  mm margin: 2.7% (95% CI 0 to 6.4).

# Circumferential Resection Margins

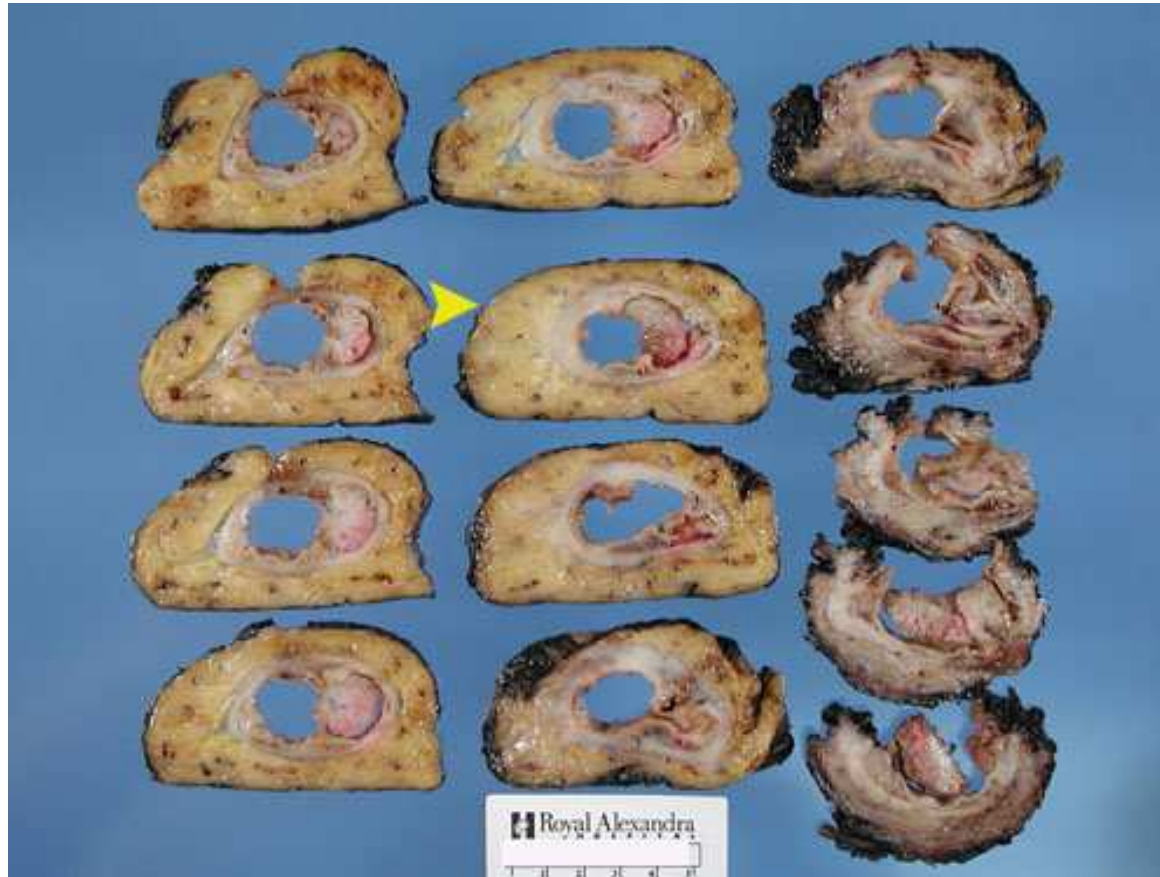


# Circumferential Resection Margin (CRM)

- The smallest distance between the deepest infiltrating tumour cells in the rectal wall and the surgical circumferential margin previously inked.
- A positive CRM is defined as tumor  $\leq 1$ mm from the margin
- A strong predictor for local recurrence and is independent of TNM classification.



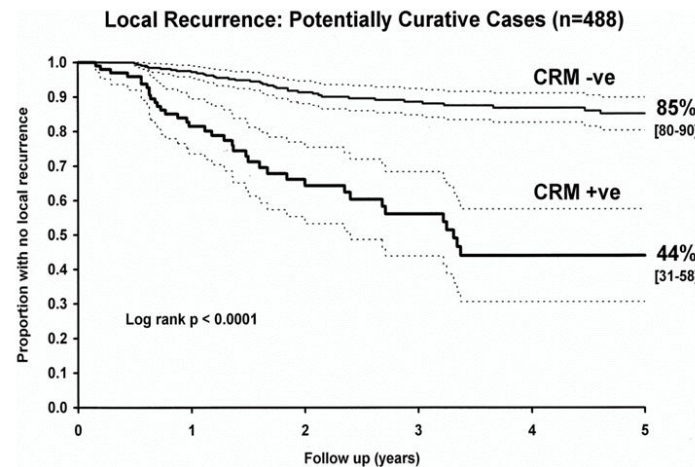
1. P. Quirke, *et al.* Local recurrence of rectal adenocarcinoma due to inadequate surgical resection. Histopathological study of lateral tumour spread and surgical excision *Lancet*, 2 (8514) (1986), pp. 996–999



- The measurement taken for the circumferential margin is measured from tumour to circumferential margin or from lymph node or mesenteric tumour deposit to circumferential margin

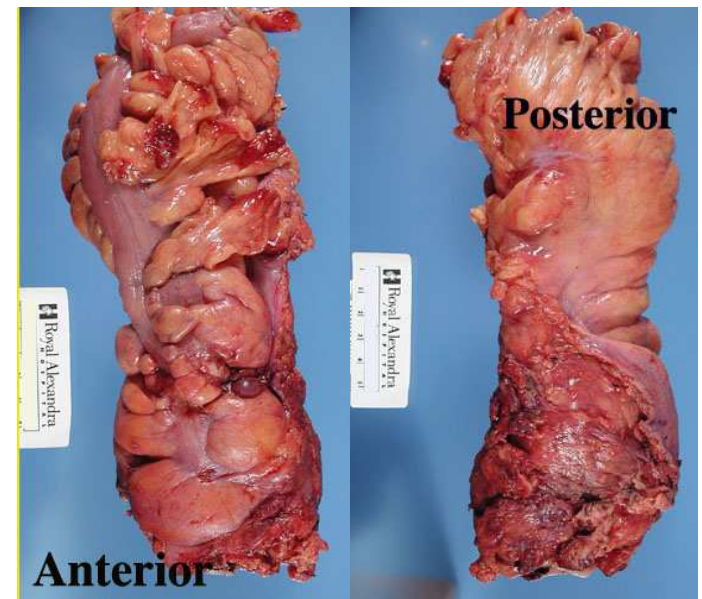
- Quirke P. *Lancet* 1986
  - First to recognize circumferential tumour spread as a necessary pathological evaluation
- 14 positive lateral resection margins- 12 out of 14 had local recurrence

### The Circumferential Resection Margin Quirke et al 1986



# QUALITY OF SURGERY

- Raised awareness of importance of circumferential resection margins and quality of TME specimens
- Developed graded assessment of TME
- Used in Dutch Study and MRC-CR07 trials



# Safety Net





# What do we know about CRM

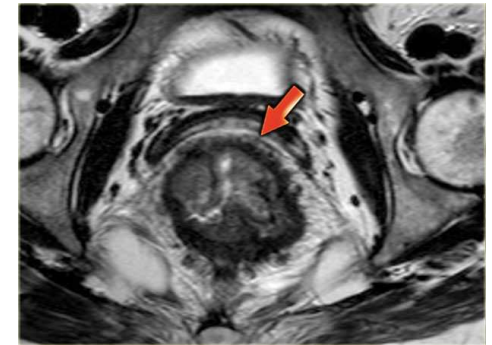
- St Mark's database 1971-1996 (pre neoadjuvant era) (DCR 2009)
- CRM analyzed in 435 patients
- Cancer-specific survival at five years was
  - 80.8%, CRM 10mm
  - 69.2%, CRM 3-10mm
  - 59.2%, CRM 2mm
  - 34.1% CRM 1mm
  - Local recurrence at five years was 9.0%, 14.7%, and 25.8% for margins 10 mm, 2–10 mm, and 1 mm, respectively ( $P$  0.001)

“A resection margin of 1 mm adversely affects both CSS and local recurrence, whereas a margin of 2 mm is also associated with decreased survival.”

“Surgeons should aim to maximize the circumferential margin and aim for at least 2 mm of clearance.”

# Assessing CRM accurately

- MRI is best modality assessing CRM up to 1mm.
- Best for tumours undergoing primary surgery
  - *MERCURY study group 2006*



- **But:**
  - Post neoadjuvant chemoRT MRI over-estimates CRM positivity (*Peschaud et al DCR 2005, MERCURY trial 2011*)
  - Tumours >50% mucin have higher rates of positive CRM, difficult to interpret in MRIs

# Predictive factors of positive CME

*\*data mixed*

- **Yes**

- Advanced T stage
- Positive nodal status
- Mucin, signet ring cell, lymphovascular and perineural invasion
- Incomplete TME
- APR specimens
  - But benefits of extralevator APR unclear

- **No**

- Age
- Gender
- BMI status
- Type of neoadjuvant treatment (short or long course)
- Tumour diameters
- Technique of operation (lap vs open)
  - ?lower CRM positivity rates in lap surgery *NEJM 2015 COLOR II trial*

# CRM positive rates

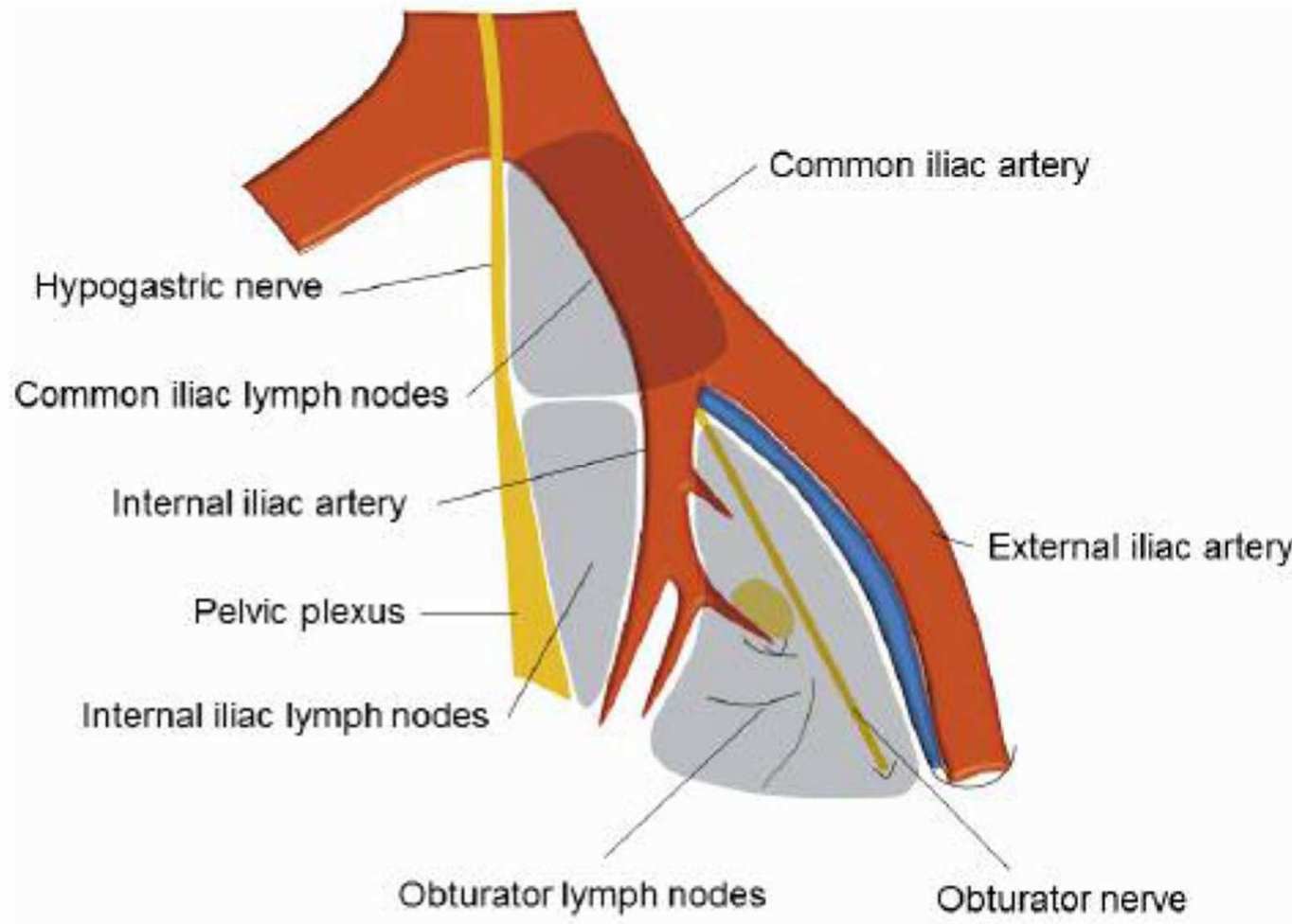
- National Cancer Database [Consortium for Optimizing the Treatment of Rectal Cancer (OSTRiCh) ]
- 16 619 patients: 1 in 6 patients have positive CRM (approx 17%)
  - United States :13.5% Middle Atlantic vs 18.9% West South Central and Pacific regions (P <0.0001)
  - No difference in facility types and treatment center volume
  - Total proctectomy >30% risk of positive CRM
  - Lap approach 22% less risk of positive CRM compared with open approach
  - nCRT no association
- Other centers- 8-13% positive CRM
  - Tekkis et al 2005, Wibe et al 2004, Nagtegall et al 2008, Phang et al 2010

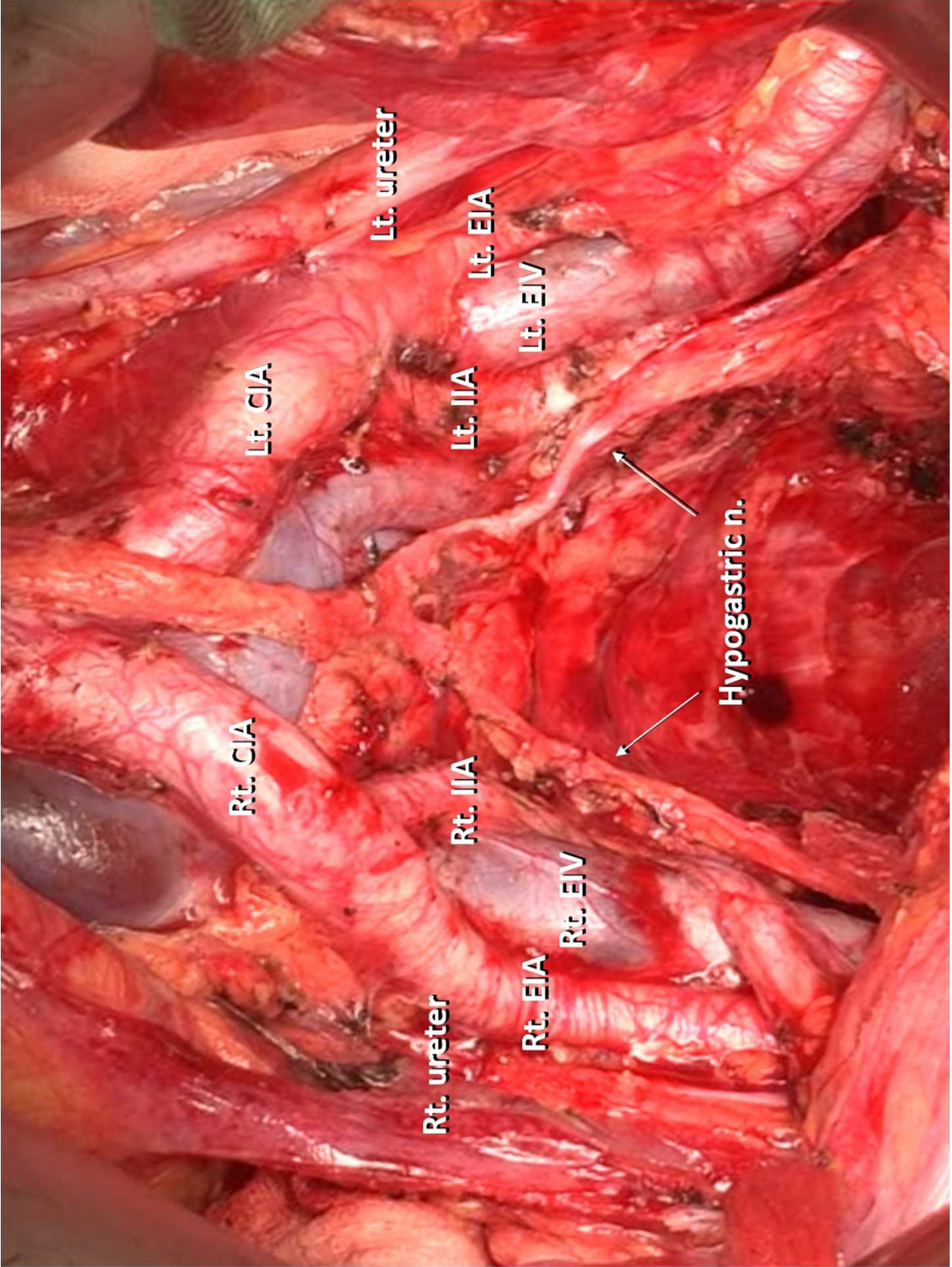


# Summary of margins

- Close distal margins acceptable in selective cases- “clean cut!”
- Achieving good CRM (2mm) is important for good disease control
- The role of neoadjuvant CRT does not necessarily allow the surgeon to cut less-
  - Do we resect based on original MRI or post neoadjuvant CRT MRI?

# Lateral Pelvic Lymph node Dissection (LPLND)





# The Debate

- Not widely performed in the **West**
- Considered Systemic Disease
- LPLND considered complicated technique
  - Increased blood loss
  - Increased morbidity rates
- Neoadjuvant CRT and TME considered standard treatment



# In Japan/East

- Lateral Nodes Considered Regional disease
- Incidence of 14.6-20.1% ( Watanabe et al. Int J Clin Oncol 2012; Akiyoshi et al. Ann Surg 2012)
- Japanese Society for Cancer of Colon and Rectum guidelines
  - Ra (above peritoneal reflection)- surgery and adjuvant chemo for Node positive disease
  - Rb (below peritoneal reflection)- lateral PLND routine treatment



## **Mesorectal Excision With or Without Lateral Lymph Node Dissection for Clinical Stage II/III Lower Rectal Cancer (JCOG0212): A Multicenter, Randomized Controlled, Noninferiority Trial.**

Fujita S<sup>1</sup>, Mizusawa J, Kanemitsu Y, Ito M, Kinugasa Y, Komori K, Ohue M, Ota M, Akazai Y, Shiozawa M, Yamaguchi T, Bandou H, Katsumata K, Murata K, Akagi Y, Takiguchi N, Saida Y, Nakamura K, Fukuda H, Akasu T, Moriya Y; Colorectal Cancer Study Group of Japan Clinical Oncology Group.

- Compared routine PLND versus TME alone (with no evidence of Pelvic lymph node mets)
- Rate of local recurrence with PLND was lower: 7.6% vs 12.6% (p=0.02)
- Non inferiority of TME alone in patients without Pelvic lymph node mets was not proven
- Suggests at least in Japanese population, PLND can reduce local recurrence in absence of neoadjuvant chemoraditaion

## **A comparison between the treatment of low rectal cancer in Japan and the Netherlands, focusing on the patterns of local recurrence.**

Kusters M<sup>1</sup>, Beets GL, van de Velde CJ, Beets-Tan RG, Marijnen CA, Rutten HJ, Putter H, Moriya Y.

- Data from Dutch TME trial vs National Cancer Centre (Japan)
- Rates of local control not different TME+RT and TME+LPLND
- 5 year local recurrence rates, 6.9% Japanese group, 5.8% (Dutch TME+RT) and 12.1% (Dutch TME group)
- Recurrence rates in lateral pelvis, 2.2% Japanese group, 0.8% (Dutch TME+RT) and 2.7% (Dutch TME group)

## **Prognostic implications of MRI-detected lateral nodal disease and extramural vascular invasion in rectal cancer.**

Schaap DP<sup>1</sup>, Ogura A<sup>2,3</sup>, Nederend J<sup>4</sup>, Maas M<sup>5</sup>, Cnossen JS<sup>6</sup>, Creemers GJ<sup>7</sup>, van Lijnschoten I<sup>8</sup>, Nieuwenhuijzen GAP<sup>1</sup>, Rutten HJT<sup>1,9</sup>, Kusters M<sup>1,2</sup>.

- cT3-T4 rectal cohort, 8cm from anal verge
- Enlarged lateral lymph node 10mm (short-axis) higher 5 year recurrence 37% vs 7.7% (nodes <10mm, p=0.041)
- Enlarged lymph nodes did not mean distant metastasis

# **Neoadjuvant (Chemo)radiotherapy With Total Mesorectal Excision Only Is Not Sufficient to Prevent Lateral Local Recurrence in Enlarged Nodes: Results of the Multicenter Lateral Node Study of Patients With Low cT3/4 Rectal Cancer.**

Ogura A<sup>1</sup>, Konishi T<sup>1</sup>, Cunningham C<sup>1</sup>, Garcia-Aguilar J<sup>1</sup>, Iversen H<sup>1</sup>, Toda S<sup>1</sup>, Lee IK<sup>1</sup>, Lee HX<sup>1</sup>, Uehara K<sup>1</sup>, Lee P<sup>1</sup>, Putter H<sup>1</sup>, van de Velde CJH<sup>1</sup>, Beets GL<sup>1</sup>, Rutten HJT<sup>1</sup>, Kusters M<sup>1</sup>; Lateral Node Study Consortium.

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# JCO 2018 Ogura A et al. Lateral Node Study Consortium

- 1216 patients cT3/T4 , 8cm from anal verge
- On pre treatment: 58% had visible LLN and 16% had short axis at least 7mm
- Local recurrence 5 year 10.0%, (5 year Lateral local recurrence (LLR) rate 5.5%)
- Lateral nodes of at least 7mm (Short axis) had significantly higher risk of lateral local recurrence. (HR 2.06, p=0.045)
  
- In node at least 7mm:
  - CRT+TME+PLND: 5 year LLR 5.7% vs
  - CRT+TME 5 year LLR 19.5%, (p=0.042)
  
- **CRT +TME with >7mm LN on pretreatment MRI, is insufficient.**
  
- **Addition of PLND results in a significantly lower LLR Rate**

# Neoadjuvant ChemoRT- German Rectal Cancer Study Group

- 823 patients randomised pre vs post-op chemoradiation
- TME and additional 5FU chemo post op
- Overall 5 year survival was 76% and 74%
- Local relapse: 6% vs 13% (p=0.006)
- Grade 3 or 4 toxicity 27% vs 40%
- Increase in sphincter preservation rates with pre-op chemoRT (p=0.004)

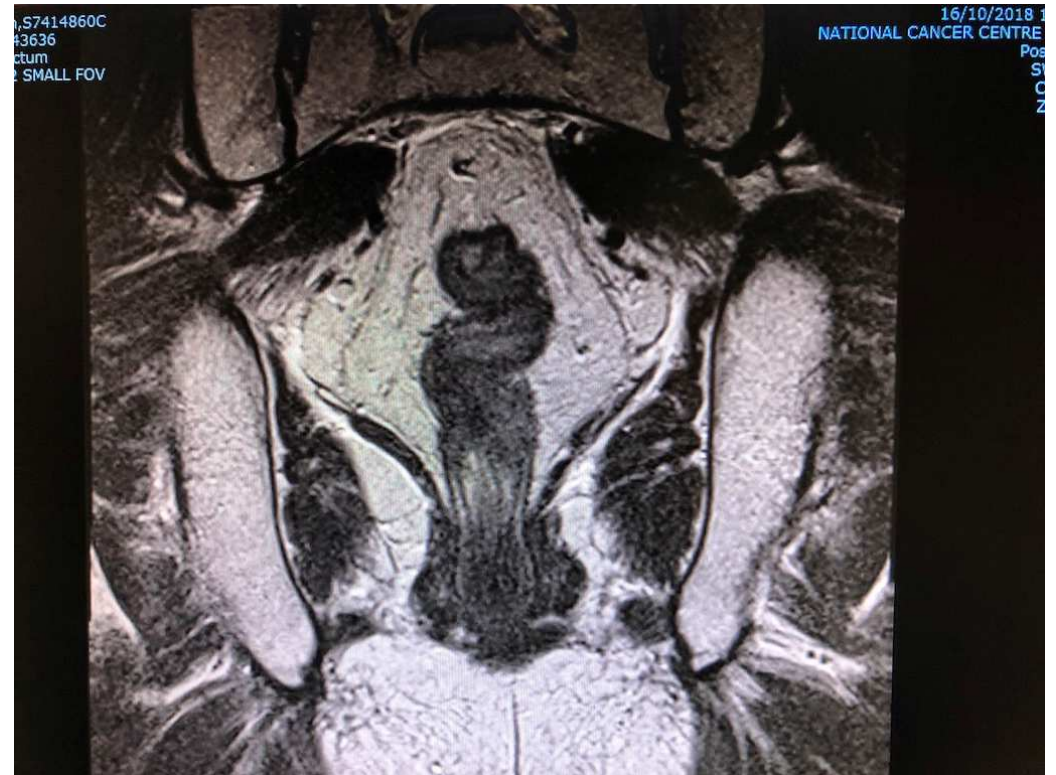


# Neoadjuvant ChemoRT- German Rectal Cancer Study Group

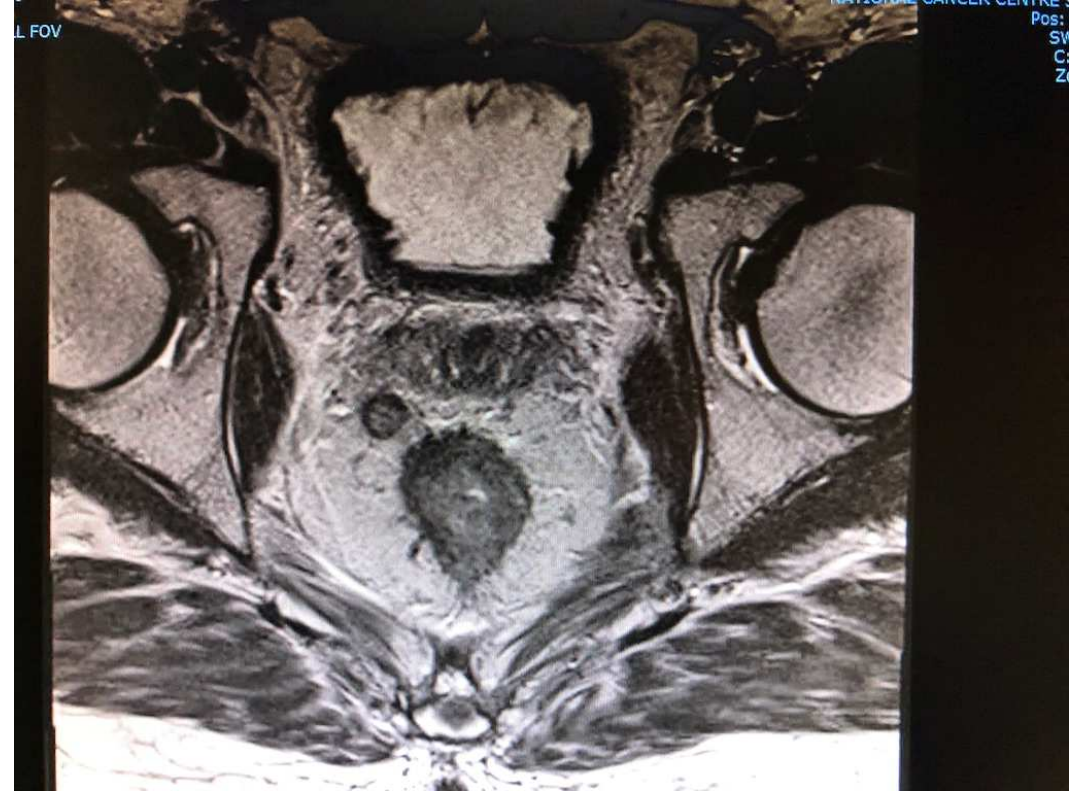
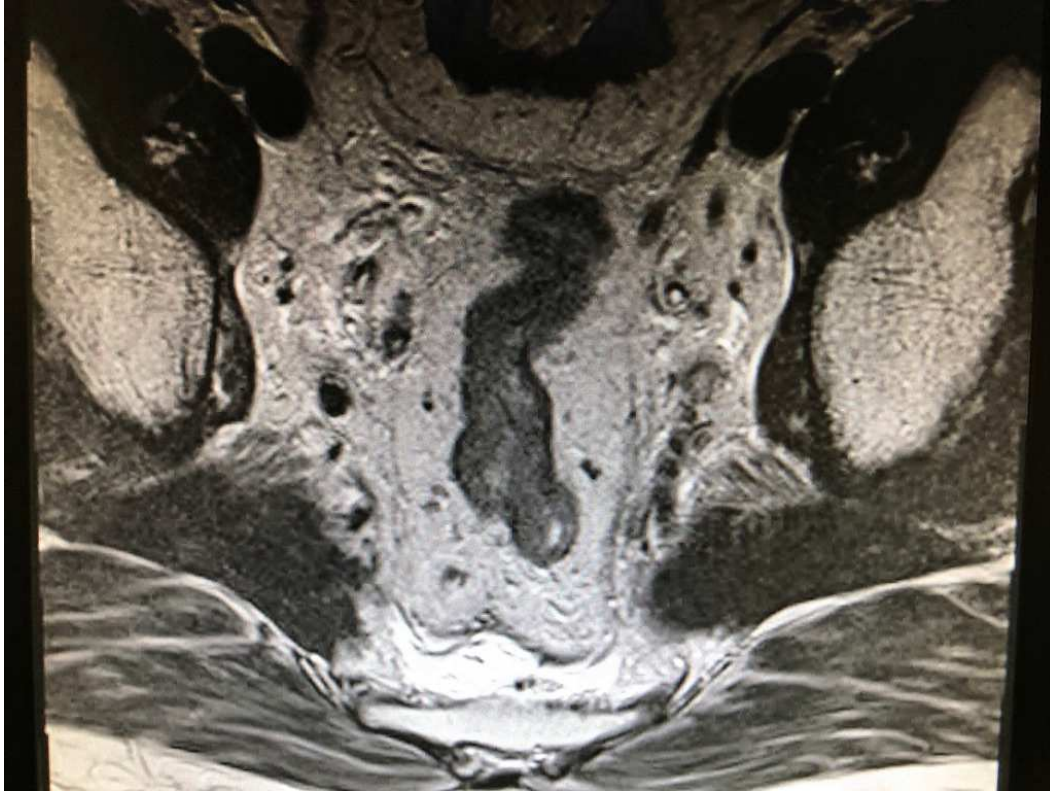
- Long term median follow-up 11 years
  - J Clin Oncol 2012 Sauer et al.
- 10 year survival equivalent (59.6% vs 59.9%)
- Local control benefit present (7.1% vs 10.1%)
- No differences in distant mets
  
- However
  - 18% had pathologically stage I disease in both groups overestimated by endorectal US
  - Quality of TME
  - High number of Stage II tumours in study
  - Effects on function

## Patient 1

- Trepine colostomy done on diagnosis in view of obstructive symptoms
- underwent Long course Chemo RT



Post Long course Neoadjuvant chemo RT, MRI done 4 weeks after completion of treatment



Reduction in Lateral Nodes below 5mm at internal iliac and common iliac, mesorectal nodes still > 7mm

# Interval to Surgery- remains controversial

- Principle:
  - Allowing sufficient time for maximal effects of RT to be fully expressed ( before tumour re-population)
  - To allow acute reaction to settle before surgery carried out **safely**
- Wait duration:
  - For SCPRT – “ immediate” : within 7 days or <3 days if >75 years old
  - Long course- wide variation of **4-12 weeks**
    - Patient factors of recovery ; Surgeon factors due to logistics of waiting list

# Longer interval

- May enhance pCR
- But prognostic implications unknown
- 2016 meta-analysis- 13 prospective or retrospective trials (>3500 patients)
  - Wait of >8 weeks associated with increased pCR (RR 1.42,  $p < 0.0001$ , CI 1.19-1.68)
  - No difference in survival outcomes, R0 resection, sphincter preservation rates or complications
  - No RCT

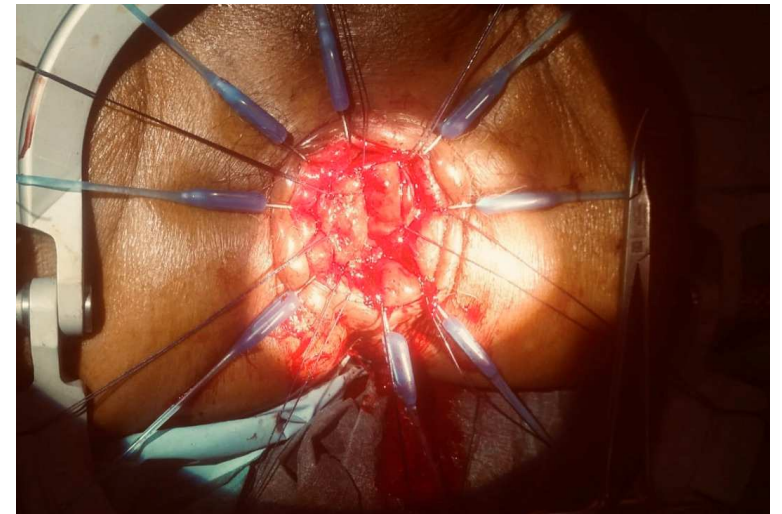
- Retrospective National Cancer Database (*Ann Surg Oncol 2016, Huntington et al.*)
  - 6937 patients
  - pCR rat 6.9%
  - >60 day :risk of positive surgical margins, reduced chance of sphincter preservation
  - Shortened overall survival (HR 1.3,  $p < 0.001$ )
  
- Interpreted with caution
  - Retrospective
  - Study cohort 2004-2006

## 3 Phase III RCT

- Lyon R90-01 (*JCO 1999*) (210 patients, 39Gy in 13 fractions)
  - 2 weeks vs 6-8 weeks; higher pCR, no difference in overall survival
  - But, hypo-fractionated schedule
- GRECCAR-6 study (*JCO 2016*)
  - 7 vs 11 weeks; no difference in pCR or sphincter preservation
  - At 11 week, higher laparoscopic conversion to open surgery (15 vs 10%, non significant) and more post operative complications
- UK NCT 01-17049 trial (*Ann Oncol 2016*)
  - 6 vs 12 weeks
  - At 12 weeks- more down staged- 58 vs 43%,  $p=0.019$ , pCR 20% vs 9% ( $p<0.05$ )
  - No difference in surgical morbidity

# For Patient 1

- Based on interval MRI- I chose to wait 11-12 weeks to allow continued tumour regression
- Planned for Laparoscopic Ultra Low Anterior resection with Transanal TME
- Will require a hand sewn anastomosis
- Selective Right lateral node dissection
- ? More adjuvant chemotherapy after

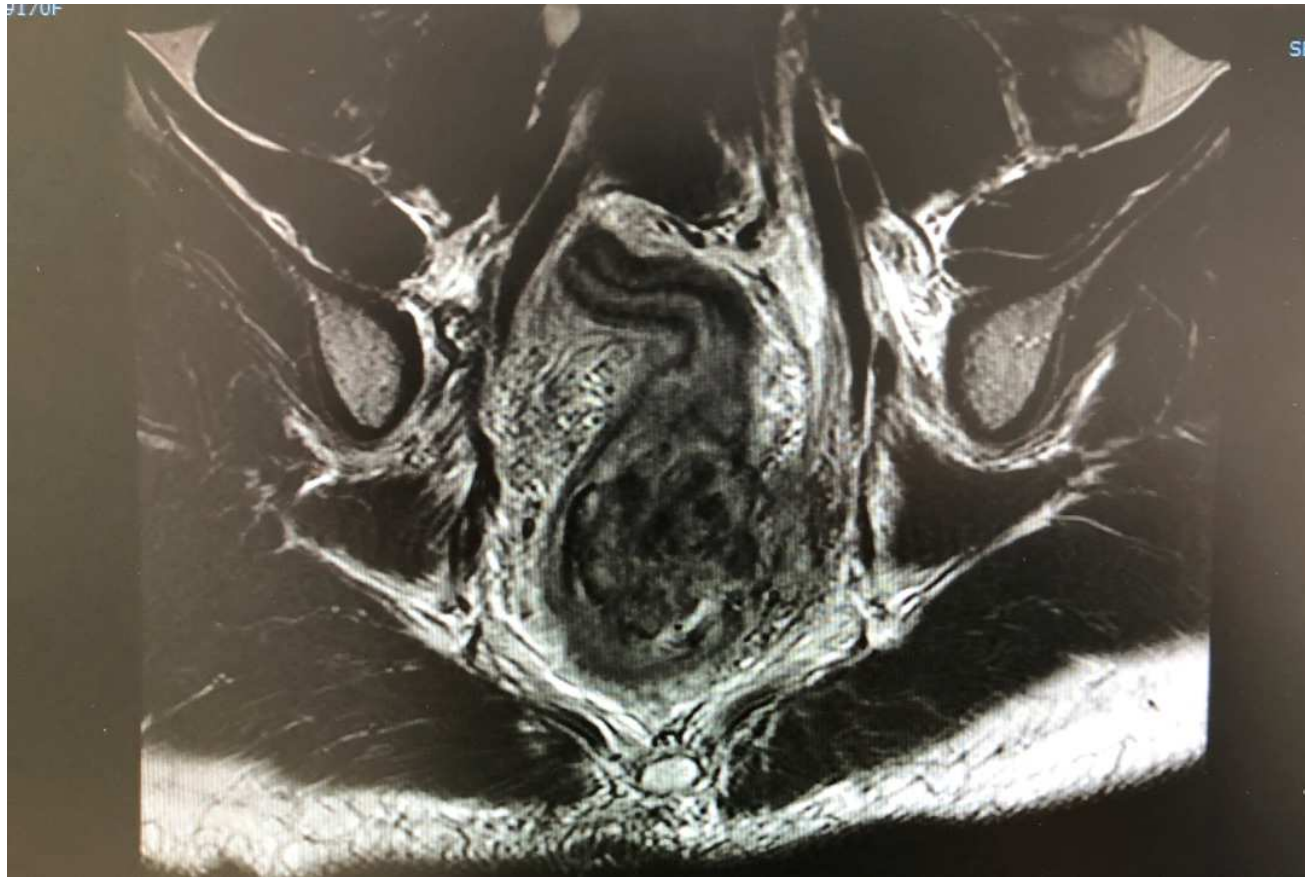




# For Patient 2

- Trepine colostomy done on diagnosis in view of pain and symptoms
- Long course chemoRT
- Had sperm banked prior to starting neoadjuvant treatment
  
- Was admitted 4 weeks during neoadjuvant treatment with cystitis, needed IV antibiotics for 1-2 weeks
- Had CT done during admission
  - Concern of tumour progression
- On discussion with patient
  - Option 1: if interval MRI showed, progression, will operate early- (within 6 weeks of neoadjuvant)
  - Option 2: If reduction in tumour volume, will wait 10-12 weeks
- On Interval MRI (3 weeks after neoadjuvant) gross muscle involvement of levators
  
- Aim to op after 10 weeks- will need an extralevator APR and flap/mesh reconstruction

For Patient 2



# Conclusion

- Standards are guides
- Patients are heterogeneous
- Surgical decision making will require knowledge and application of:
  - **Basic Principles and Options**
  - **Need for Neo-adjuvant treatment**
  - **Lateral Lymph nodes**
  - **Preservation of Function**
  - **Exenterative Surgery for locally advanced tumours**

# Thank You

