

# Lateral Pelvic Lymph Nodes East vs West — Who Is Right?

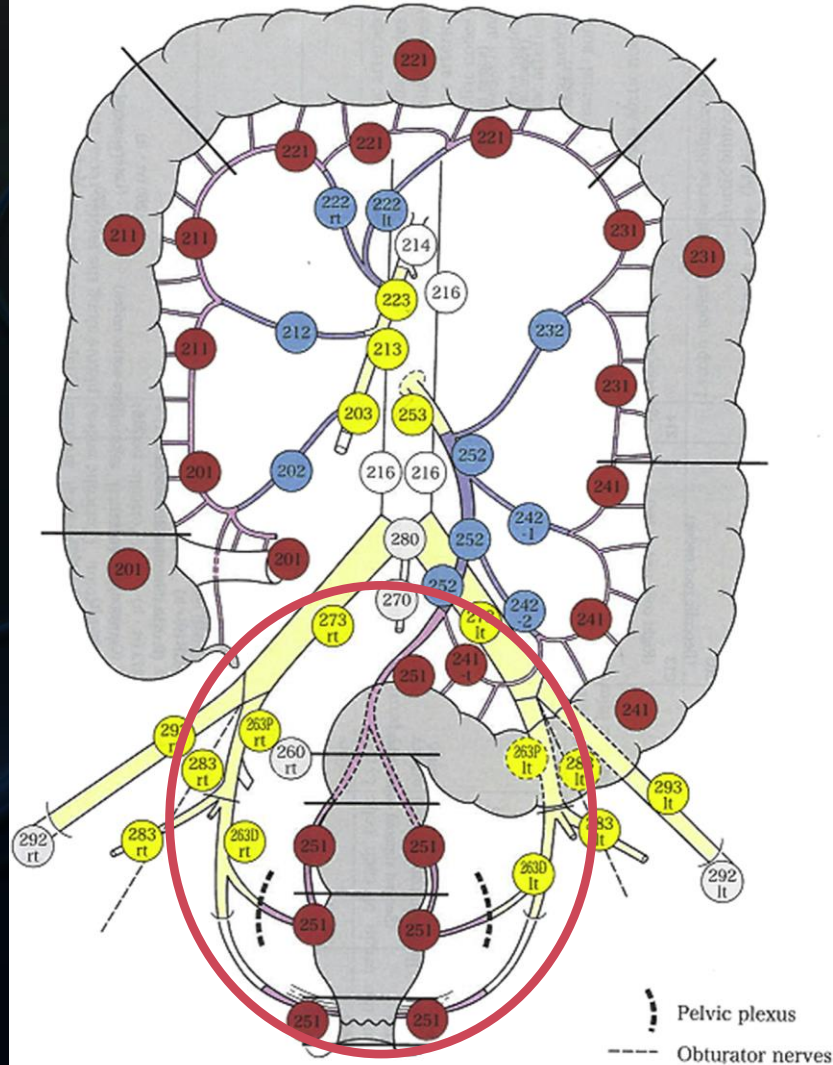
Prof F. Ris

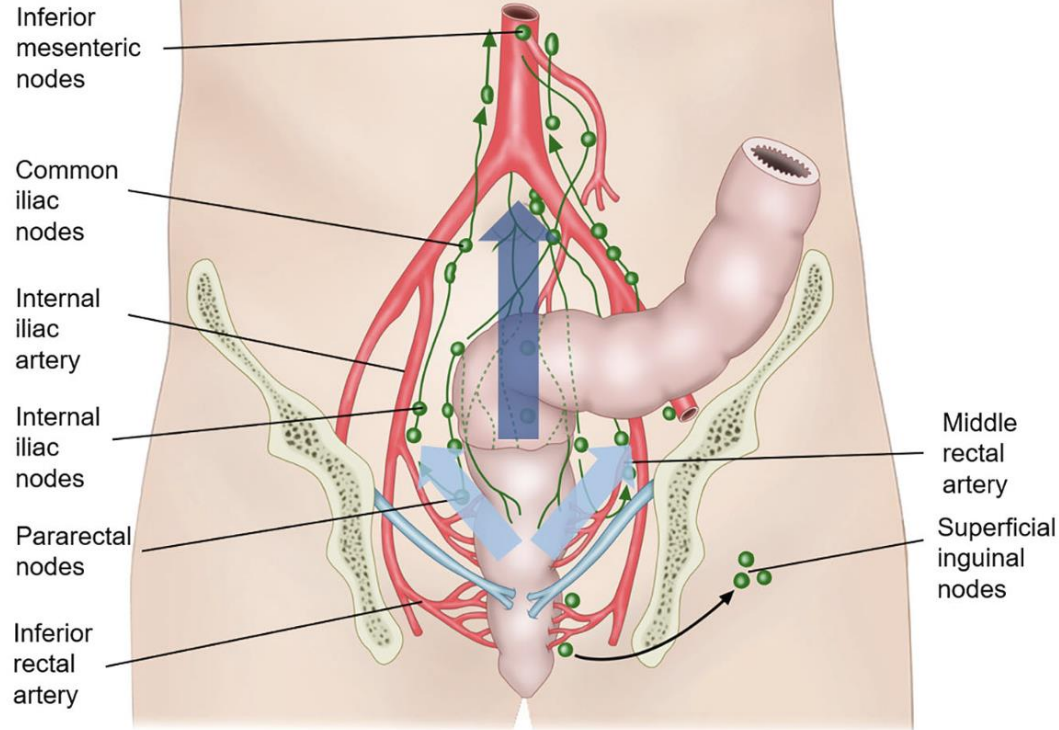
Geneva University Hospitals, Geneva Switzerland



# JSCCR nodal classification map

Annals of Surgery: July 2014 e Volume 260 e Issue 1 e p. 23e30.

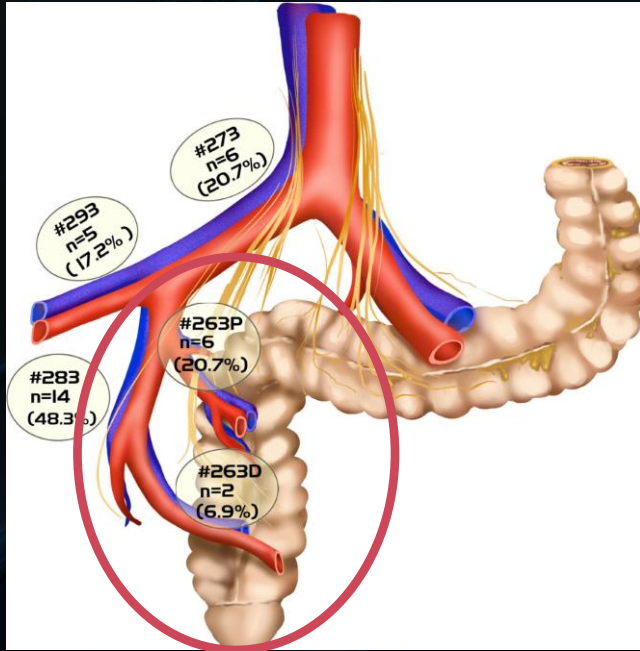




**FIGURE 2**

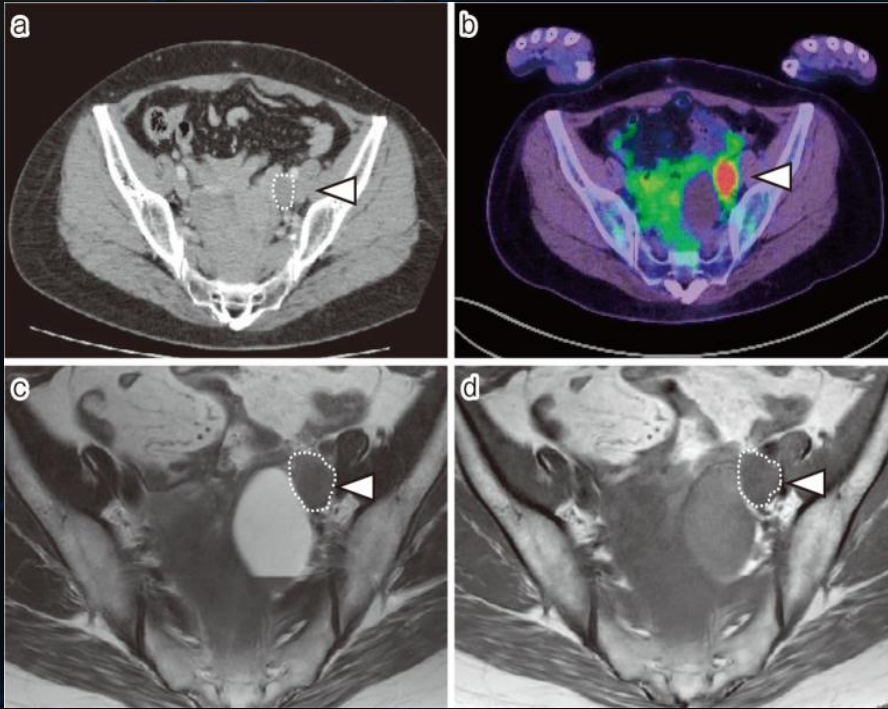
Lymphatic drainage of the rectum. The lymphatic drainage above the peritoneal reflection follows mostly an upward pathway along the perirectal, superior rectal, and inferior mesenteric nodes via the mesenteric vessel (along the dark blue arrow). Rectal tumors below the peritoneal reflection tend to drain along the mid-rectal vessel and then into the pelvic sidewall lymph nodes, including the obturator, internal iliac, external iliac, and common iliac lymph nodes (along the sky-blue arrow). The third route of the lymphatic drainage is from the level below the dentate line, in which the lymphatic spread is along the inferior rectal vessel and then into the superficial inguinal and external iliac lymph nodes.

# Compartment of the LPLN



- Internal iliac and obturator basins are the key locoregional compartments.
- External/common iliac disease behaves differently and should not be folded into a single “LPLN” category.
- Compartment matters as much as size.

# Why lateral recurrence matters clinically



- Lateral pelvic recurrence is anatomically difficult and potentially morbid to salvage.
- A suspicious side-wall node is not simply “another mesorectal node”.
- Preventing a lateral failure may be more valuable than attempting salvage after fixation to vessels/nerve.

# 2 strategies, but to treat 2 different questions

**EAST**  
**Japan**



**WEST**  
**Europe / North America**



# East



LPLNs = regional disease

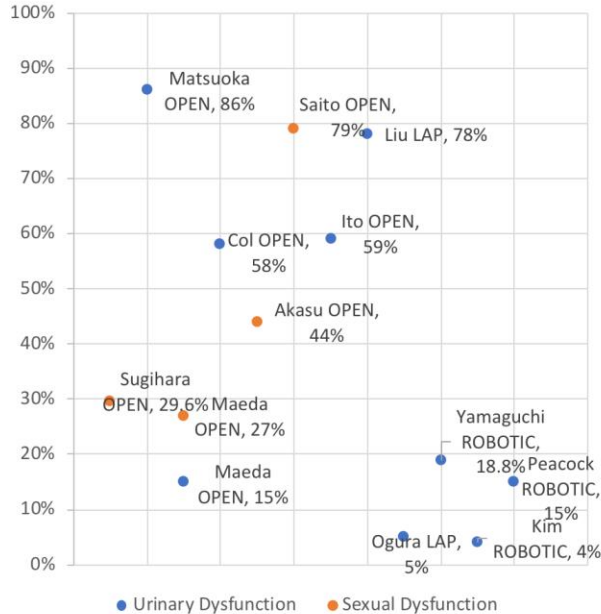
TME + bilateral nerve-preserving LLND for advanced low rectal cancer

Historically little routine preoperative RT



# Morbidity of LPLND

Urinary and Sexual Dysfunction after LPLND



**World Journal of Surgery**

Original Scientific Report

**Feasibility of Laparoscopic Total Mesorectal Excision with Extended Lateral Pelvic Lymph Node Dissection for Advanced Lower Rectal Cancer after Preoperative Chemoradiotherapy**

Atsushi Ogura, Takashi Akagishi, Yoshio Nagakura, Tsuyoshi Konoike, Yoshiyuki Fujimoto, Satoshi Nagayama, Yusuke Fukunaga, Masashi Ikeno, Hiroto Kuriyama

First published: 11 October 2018 | <https://doi.org/10.1007/s00389-018-3762-0> | Citations: 64

Atsushi Ogura and Takashi Akagishi contributed equally to this study.

**Laparoscopic LPLND after nCRT, n=107**

**Blood Loss: 115 mL**

**GIII+ complications: 9.3%**



**Original article**

doi:10.1111/cod.15350

**Robotic lateral pelvic lymph node dissection after chemoradiation for rectal cancer: a Western perspective**

O. Peacock\*, T. Limvorapitak\*, B. K. Bednarski\*, H. Kauri, M. W. Taggart\*, A. Dasarij, E. B. Holliday\*, B. D. Minsky\*, Y. N. You\* and G. J. Chang\*

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Received 13 June 2020; revised 6 August 2020; accepted 25 August 2020; Accepted Article online 04 September 2020

**Robotic LPLND after nCRT, n=40**

**Blood Loss: 150 mL**

**GIII+ complications: 10.0 %**

THE UNIVERSITY OF TEXAS  
**MD Anderson Cancer Center**

**Original Article**

doi:10.1111/cod.15350

**Lateral Pelvic Lymph Node Dissection After Neoadjuvant Chemoradiotherapy in Patients With Rectal Cancer: A Single-Center Experience and Literature Review**

Min Chul Kim, Jae Hwan Oh

Center for Colorectal Cancer, Research Institute and Hospital, National Cancer Center, Gyeongsang, Korea

**Open/lap LPLND after nCRT, n=69**

**Blood Loss: 100 mL**

**GIII+ complications: 5.8 %**

**국립암센터**  
NATIONAL CANCER CENTER

# WEST — Europe / North America

LPLNs addressed mainly by neoadjuvant  
(chemo)radiation + TME, almost a systemic disease

LLND historically avoided because of morbidity and  
uncertain survival benefit



# Morbidity of LPLN irradiation

Late toxicity

Approximate evidence

Significant long-term GI complication  
requiring hospitalization/intervention

**11%**

Small-bowel obstruction

**9%**

Increased SBO risk vs surgery alone

**RR 1.58**

GI fistula

**~1%**

Significant GU complication

**~4%**

Chronic diarrhea

up to **35%** in older series

Fecal incontinence

**~22%**

Sexual dysfunction

common, but estimates highly  
heterogeneous

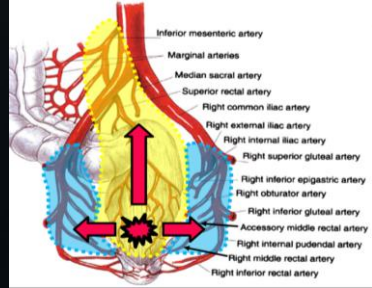
# Who is at risk ?

## Incidence and prognostic significance of lateral lymph node metastasis in patients with advanced low rectal cancer

M. Ueno, M. Oya, K. Azekura, T. Yamaguchi and T. Muto

(Konishi T, World J Gastroint. Surg. 2010)

*British Journal of Surgery* 2005; 92: 756–763



More LPLND in lower  
rectal ca.

15-20% LPLN mets.  
in T3-4 lower rectal cancer

| Distance from AV (cm) | Pt. No. | LPLN mets. (%) | P     |
|-----------------------|---------|----------------|-------|
| 6.1-8.0               | 105     | 10.5 %         | 0.001 |
| 4.1-6.0               | 62      | 12.9 %         |       |
| 2.1-4.0               | 46      | 26.1 %         |       |
| 0-2.0                 | 24      | 41.7 %         |       |

# Does Size matter ?

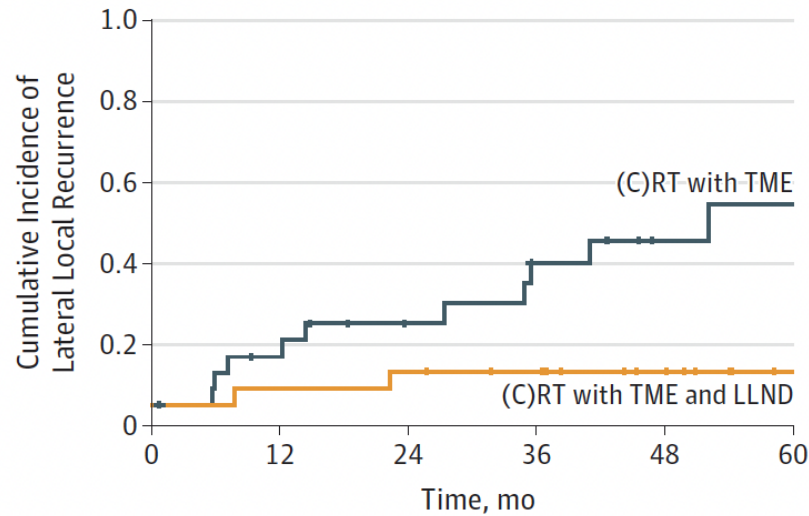
JAMA Surgery | **Original Investigation**

## Lateral Nodal Features on Restaging Magnetic Resonance Imaging Associated With Lateral Local Recurrence in Low Rectal Cancer After Neoadjuvant Chemoradiotherapy or Radiotherapy

Atsushi Ogura, MD; Tsuyoshi Konishi, PhD; Geerard L. Beets, PhD; Chris Cunningham, MD; Julio Garcia-Aguilar, PhD; Henrik Iversen, PhD; Shigeo Toda, MD; In Kyu Lee, PhD; Hong Xiang Lee, BS; Keisuke Uehara, PhD; Peter Lee, MS; Hein Putter, PhD; Cornelis J. H. van de Velde, PhD; Harm J. T. Rutten, PhD; Jurriaan B. Tuynman, PhD; Miranda Kusters, MD, PhD; for the Lateral Node Study Consortium

# Size and location are important factors

Figure 2. Kaplan-Meier Analysis of Lateral Lymph Node Dissection



No. at risk

|                         |    |    |    |    |    |   |
|-------------------------|----|----|----|----|----|---|
| (C)RT with TME          | 25 | 20 | 15 | 11 | 6  | 5 |
| (C)RT with TME and LLND | 23 | 22 | 21 | 19 | 13 | 7 |

Kaplan-Meier plot of patients with a short-axis node size of 7 mm or greater on primary magnetic resonance imaging and greater than 4 mm on restaging magnetic resonance imaging located in the internal iliac compartment among patients who received chemoradiotherapy or radiotherapy [(C)RT] with total mesorectal excision (TME) alone and patients who received (C)RT with TME and lateral lymph node dissection (LLND). Crosses indicate censored events.

If basic MRI >7mm

Or post treatment > 4mm



mm

is the golden number

**Enlarged nodes are not  
sterilized reliably by CRT**

**Radiotherapy is not a substitute  
for surgery in every persistent  
lateral node.**

# Chemoradiation does NOT (always) sterilize LPLND

## ORIGINAL CONTRIBUTION

### What To Do With Lateral Nodal Disease in Low Locally Advanced Rectal Cancer? A Call for Further Reflection and Research

Miranda Kusters, M.D., Ph.D.<sup>1,2</sup> • Andrew Slater, M.B. Ch.B.<sup>3</sup>  
Rebecca Muirhead, M.D., F.R.C.S.<sup>4</sup> • Roel Hompes, M.D.<sup>5</sup>  
Richard J. Guy, M.D., F.R.C.S.<sup>5</sup> • Oliver M. Jones, D.M., F.R.C.S.<sup>5</sup>  
Bruce D. George, M.S., F.R.C.S.<sup>5</sup> • Ian Lindsey, M.B.B.S., F.R.A.C.S.<sup>5</sup>  
Neil J. Mortensen, M.D., F.R.C.S.<sup>5</sup> • Chris Cunningham, M.D., F.R.C.S.<sup>5</sup>

**TABLE 5.** Multivariate analysis

| Variable                                    | Lateral local recurrence |           |       |
|---------------------------------------------|--------------------------|-----------|-------|
|                                             | HR                       | CI        | p     |
| Short-axis size largest lateral node on MRI |                          |           | 0.053 |
| ≤ 10mm                                      | 1.00                     |           |       |
| >10 mm                                      | 4.87                     | 0.98–24.3 |       |
| Margin involvement                          |                          |           | 0.001 |
| R0                                          | 1.00                     |           |       |
| R+                                          | 9.33                     | 2.42–36.0 |       |

n.a. = not applicable.

Retrospective MRI  
review  
cT3-4 , <8cm AV

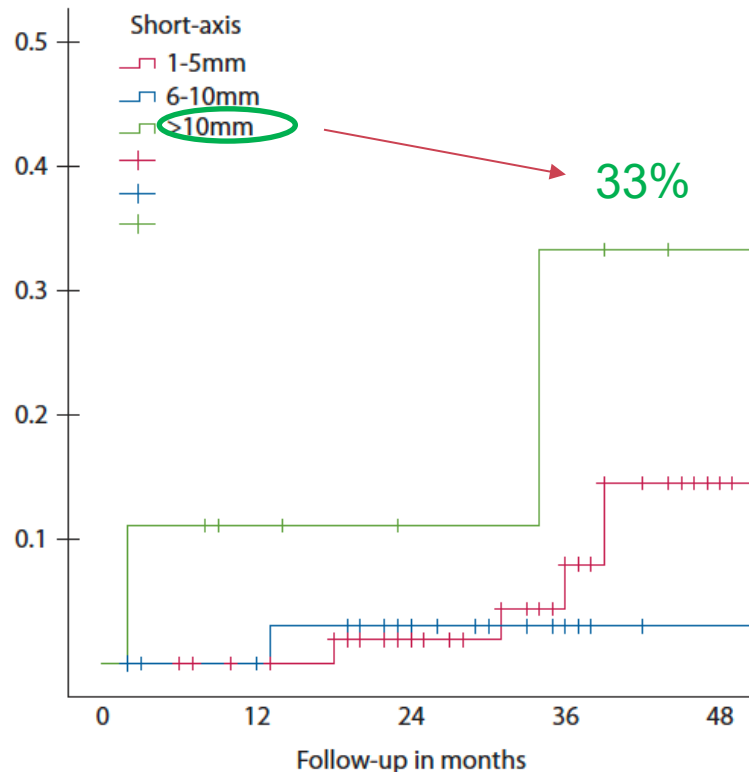
# chemoradiation does NOT (always) sterilize LPLND

Retrospective MRI  
review  
cT3-4 , <8cm AV

Kusters M, Slater A, et al. . Dis Colon Rectum. 2017 Jun;60(6):577-585

## Lateral LRR after CRT and TME

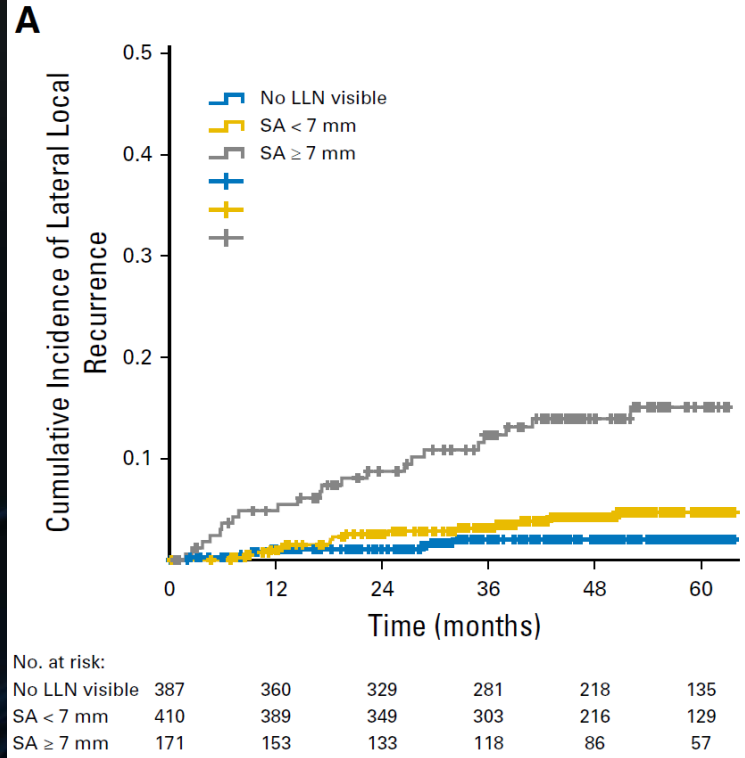
Lateral local recurrence rate



# 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

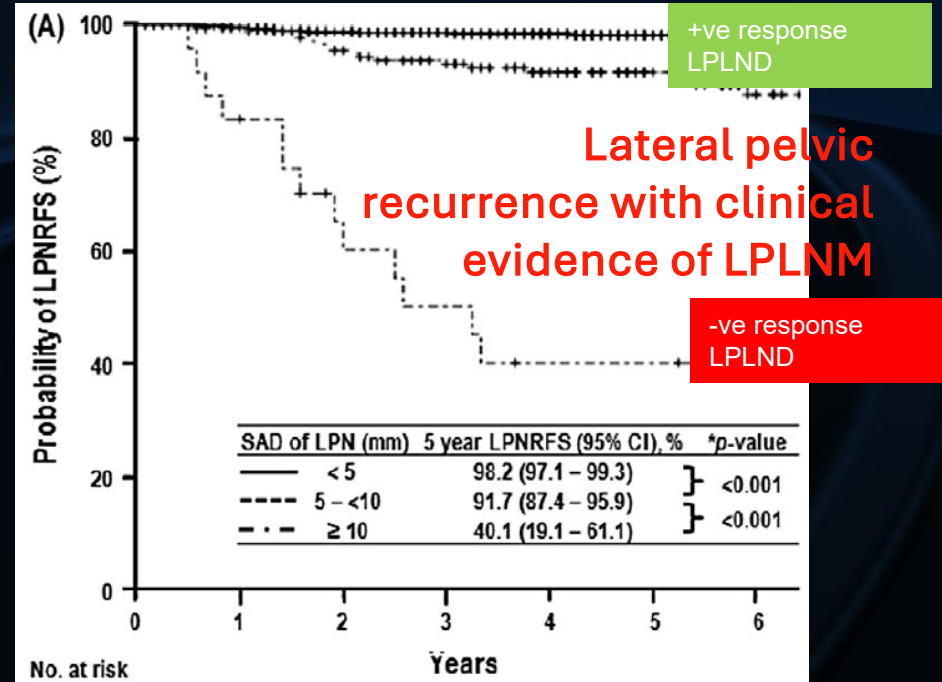
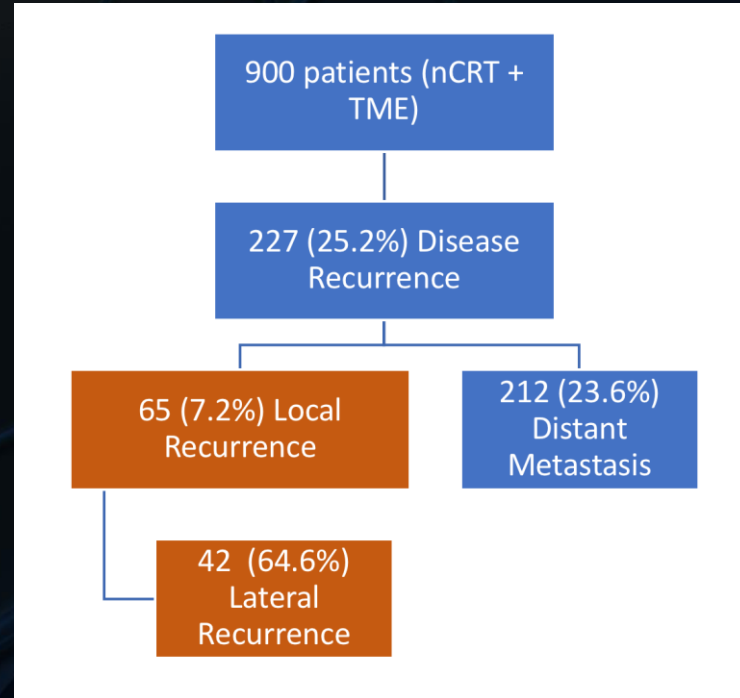
Atsushi Ogura, MD<sup>1,2,3</sup>; Tsuyoshi Konishi, MD<sup>3,4</sup>; Chris Cunningham, MD<sup>5</sup>; Julio Garcia-Aguilar, MD, PhD<sup>4</sup>; Henrik Iversen, MD, PhD<sup>6</sup>; Shigeo Toda, MD<sup>7</sup>; In Kyu Lee, MD, PhD<sup>8</sup>; Hong Xiang Lee<sup>8</sup>; Keisuke Uehara, MD, PhD<sup>2</sup>; Peter Lee, MS<sup>10</sup>; Hein Putter<sup>1</sup>; Cornelis J.H. van de Velde, MD, PhD<sup>1</sup>; Geerard L. Beets, PhD<sup>11</sup>; Harm J.T. Rutten, MD, PhD<sup>12,13</sup>; and Miranda Kusters, PhD<sup>12,14</sup>; on behalf of the Lateral Node Study Consortium

- N=1,216 patients with rectal cancer  $\leq 8$  cm AV
- N=703 with mrLLN visible,  $\geq 7$  mm in 192 (16%)
- N=968 received RT and were analyzed
- N=741 had restaging MRI
- N=142 (129 Japanese) underwent LPLN, 53 after nCRT



**TME +LPLND lower  
5yr Lateral LR  
5.7% vs 19.5%  
(p=0.042)**

# After neoadjuvant therapy and high quality TME the most common site of local recurrence is lateral





ORIGINAL ARTICLE – COLORECTAL CANCER

# Oncological Impact of Lateral Lymph Node Dissection After Preoperative Chemoradiotherapy in Patients with Rectal Cancer

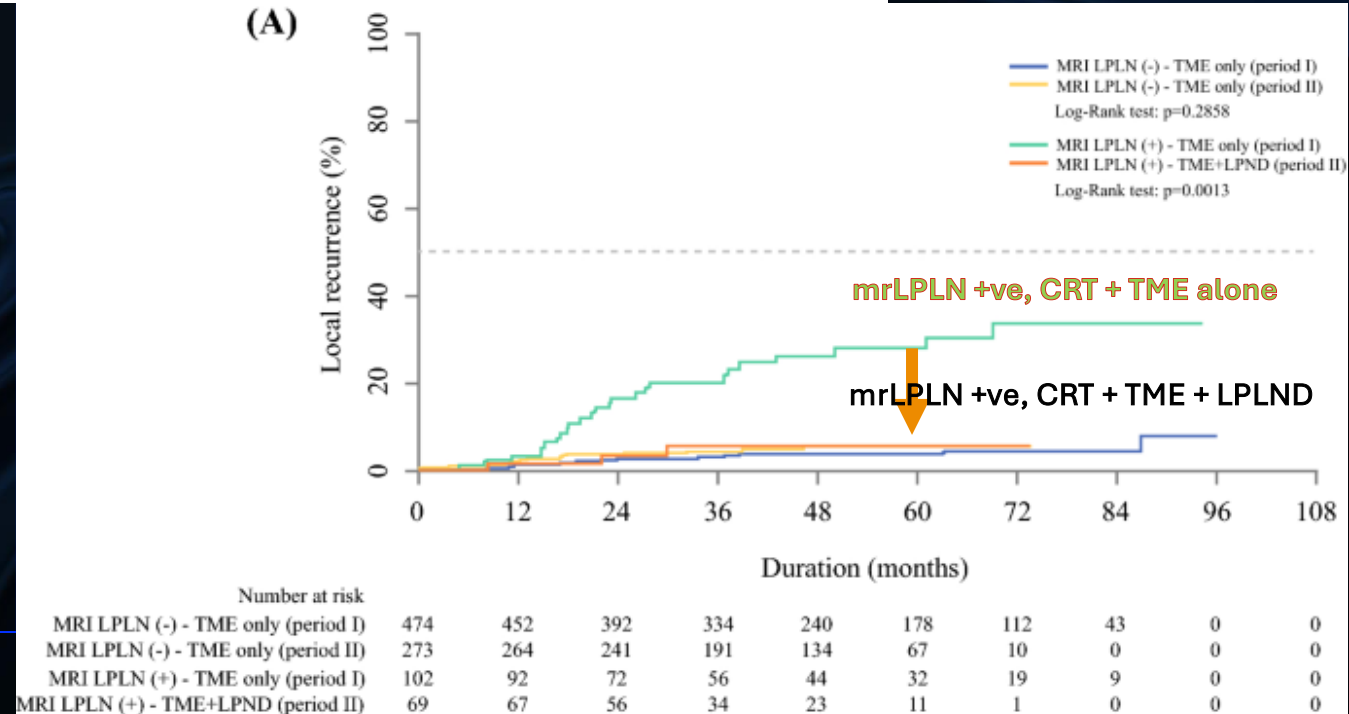
Min Jung Kim, M.D.<sup>1,2</sup>, George J. Chang, M.D., M.S.<sup>3</sup>, Han-Ki Lim, M.D.<sup>4</sup>, Mi Kyung Song, Ph.D.<sup>5</sup>, Sung Chan Park, M.D.<sup>4</sup>, Dae Kyung Sohn, M.D., Ph.D.<sup>4</sup>, Hee Jin Chang, M.D., Ph.D.<sup>4</sup>, Dae Yong Kim, M.D., Ph.D.<sup>4</sup>, Ji Won Park, M.D.<sup>1,2</sup>, Seung-Yong Jeong, M.D., Ph.D.<sup>1,2</sup>, and Jae Hwan Oh, M.D., Ph.D.<sup>4</sup>

Pts with Pre-op CRT :  
Group A :TME only, LLN  
<5mm (2001-2009)

Group B: TME only, LLN <  
5mm (2011-2016)

Group C: TME only with  
LLN ≥ 5mm (01-09)

Group D: TME + LPLND ≥  
5mm (11-16)





ORIGINAL ARTICLE – COLORECTAL CANCER

## Oncological Impact of Lateral Lymph Node Dissection After Preoperative Chemoradiotherapy in Patients with Rectal Cancer

Min Jung Kim, M.D.<sup>1,2</sup>, George J. Chang, M.D., M.S.<sup>3</sup>, Han-Ki Lim, M.D.<sup>4</sup>, Mi Kyung Song, Ph.D.<sup>5</sup>, Sung Chan Park, M.D.<sup>4</sup>, Dae Kyung Sohn, M.D., Ph.D.<sup>4</sup>, Hee Jin Chang, M.D., Ph.D.<sup>4</sup>, Dae Yong Kim, M.D., Ph.D.<sup>4</sup>, Ji Won Park, M.D.<sup>1,2</sup>, Seung-Yong Jeong, M.D., Ph.D.<sup>1,2</sup>, and Jae Hwan Oh, M.D., Ph.D.<sup>4</sup>

*Therapeutic* LPLND after CRT for patients with **LN  $\geq$  5mm eliminates the increased risk for local recurrence**

**HR 0.15 (0.04-0.68)**

**+ve response LLN: reduced LR,  
for –ve response LLN: LR & RFS**

| Variables                         | TME only<br>(n = 102) | TME with lateral<br>LN dissection<br>(n = 69) | P value |
|-----------------------------------|-----------------------|-----------------------------------------------|---------|
| No. of local recurrence (%)       | 25 (24.51)            | 3 (4.35)                                      | < 0.001 |
| Location of local recurrence (%)  |                       |                                               | 0.026   |
| Central (anastomosis, mesorectum) | 6 (5.88)              | 3 (4.35)                                      |         |
| Lateral pelvis                    | 19 (18.63)            | 0 (0)                                         |         |

# Who will benefit from LPLND ?

Ann Surg Oncol (2014) 21:2280–2287  
DOI 10.1245/s10434-014-3559-z

Annals of  
**SURGICAL ONCOLOGY**  
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – COLORECTAL CANCER

**Neoadjuvant Chemoradiotherapy Affects the Indications for Lateral Pelvic Node Dissection in Mid/Low Rectal Cancer with Clinically Suspected Lateral Node Involvement: A Multicenter Retrospective Cohort Study**

**NO ypLPLN metastasis with responsive LN <5 mm**

## ORIGINAL CONTRIBUTION

### Who Should Get Lateral Pelvic Lymph Node Dissection After Neoadjuvant Chemoradiation?

Songphol Malakorn, M.D.<sup>1,2</sup> • Yun Yang, M.D., Ph.D.<sup>1</sup> • Brian K. Bednarski, M.D.<sup>1</sup>  
Harmeet Kaur, M.D.<sup>3</sup> • Y. Nancy You, M.D., M.H.Sc.<sup>1</sup> • Emma B. Holliday, M.D.<sup>4</sup>  
Arvind Dasari, M.D.<sup>5</sup> • John M. Skibber, M.D.<sup>1</sup> • Miguel A. Rodriguez-Bigas, M.D.<sup>1</sup>  
George J. Chang, M.D., M.S.<sup>1,6</sup>

**NO ypLPLN metastasis when ymr <5 mm**

## JAMA Surgery | Original Investigation

### Lateral Nodal Features on Restaging Magnetic Resonance Imaging Associated With Lateral Local Recurrence in Low Rectal Cancer After Neoadjuvant Chemoradiotherapy or Radiotherapy

Atsushi Ogura, MD, Tsuyoshi Konishi, PhD, Gerard L. Beets, PhD, Chris Cunningham, MD, Julio Garcia-Aguilar, PhD, Henrik Iversen, PhD, Shingo Toda, MD, In Kyu Lee, PhD, Hong Xiang Lee, BS, Kensuke Uehara, PhD, Peter Lee, MS, Hein Putter, PhD, Cornelis J. H. van de Velde, PhD, Harm J. T. Rutten, PhD, Jurriaan B. Teyssie, PhD, Miranda Kusters, MD, PhD, for the Lateral Node Study Consortium

**ymr ≤4 mm (<5 mm) without LPLND did not develop 3yr LPLR**

TME with LPLND after nCRT for clinically suspected metastatic lateral node (n = 77)

Patients excluded  
• History of pelvic radiation (n = 3)  
• Another malignancy (n = 4)  
• Absent post CRT MRI (n = 4)

Included in the analysis (n = 66)

Patients with **persistent LPN** (n = 36)

pLPLN(+) (n = 22)

pLPLN(-) (n = 14)

Patients with responsive LPN (n = 30)

pLPLN(+) (n = 0)

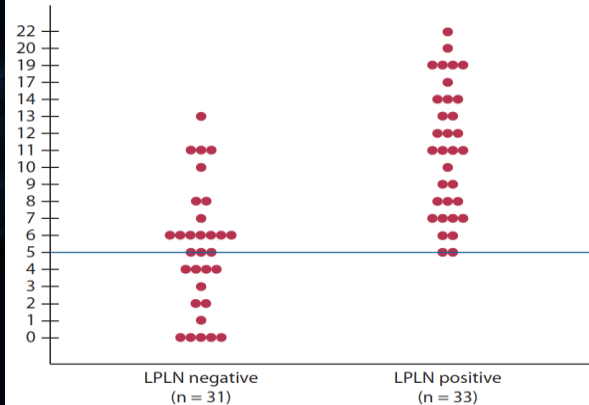
pLPLN(-) (n = 30)

pLPLN +ve: 61%

pLPLN +ve: 0%

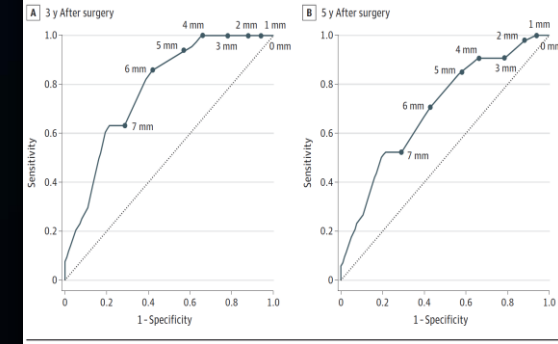
Oh et al, Ann Surg Oncol 2014 Jul;21(7):2280-7.  
DOI: [10.1245/s10434-014-3559-z](https://doi.org/10.1245/s10434-014-3559-z)

Short axis (mm) after nCRT



Malakorn et al, Dis Colon Rectum 2019 Oct;62(10):1158-1166.  
DOI: [10.1097/DCR.0000000000001465](https://doi.org/10.1097/DCR.0000000000001465)

Figure 1. Time-Dependent Receiver Operating Characteristic Curves for Short-Axis Node Size on Restaging Magnetic Resonance Imaging at 3 and 5 Years After Surgery in 651 Patients Who Underwent Chemoradiotherapy or Radiotherapy With Total Mesorectal Excision

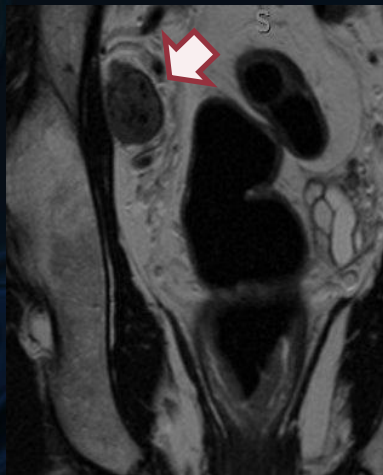


Ogura et al, JAMA Surgery 2019 Sep 1;154(9):e192172.  
DOI: [10.1003/jamasurg.2019.2172](https://doi.org/10.1003/jamasurg.2019.2172)

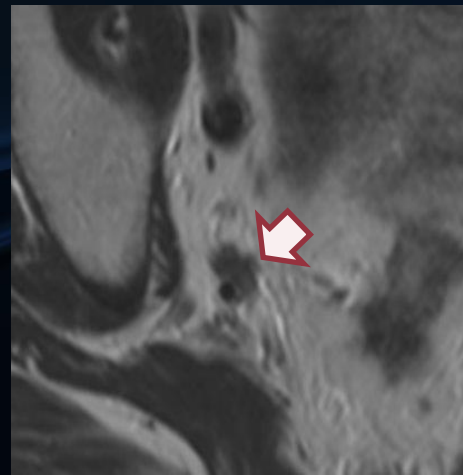
HUG  
Hôpitaux  
Universitaires  
Genève

# MD Anderson MRI criteria for lateral node dissection after TNT

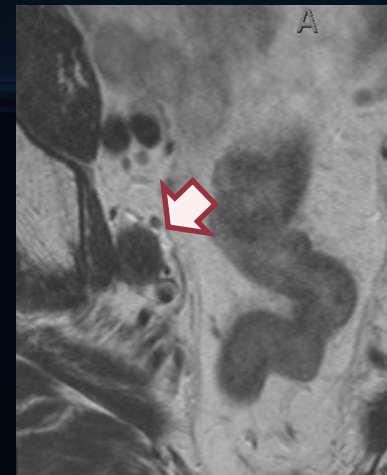
- **158 pre-treatment mrLPLN+ve**
- **88 LPLND, 34.1% LPLN metastasis +ve**
- **3-year lateral LR: 3.4% vs 4.6% (ns)**



**Increased  
Size  $\geq 5$  mm  
post-TNT**



**Irregular  
Borders  
Pre-TNT**



**Signal  
Heterogeneity  
Pre-TNT**

# Is lateral pelvic node dissection necessary after preoperative chemoradiotherapy for rectal cancer patients with initially suspected lateral pelvic node?

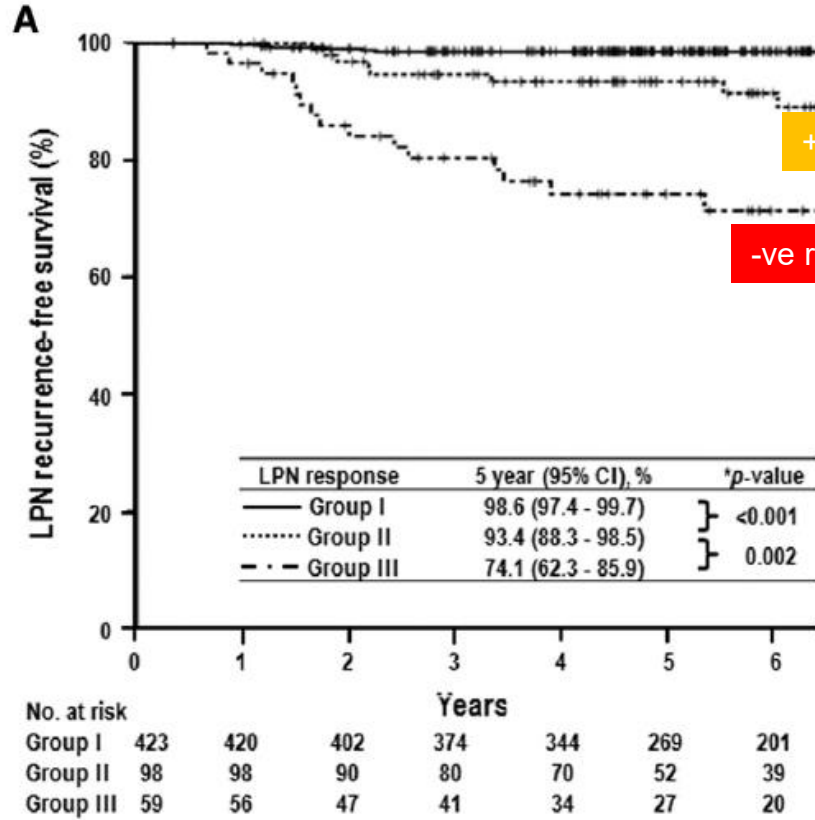


Min Ju Kim, MD, Sung Chan Park, MD, Tae Hyun Kim, MD, Dae Yong Kim, MD, Sun Young Kim, MD, Ji Yeon Baek, MD, Hee Jin Chang, MD, Ji Won Park, MD, and Jae Hwan Oh, MD, Goyang, Republic of Korea

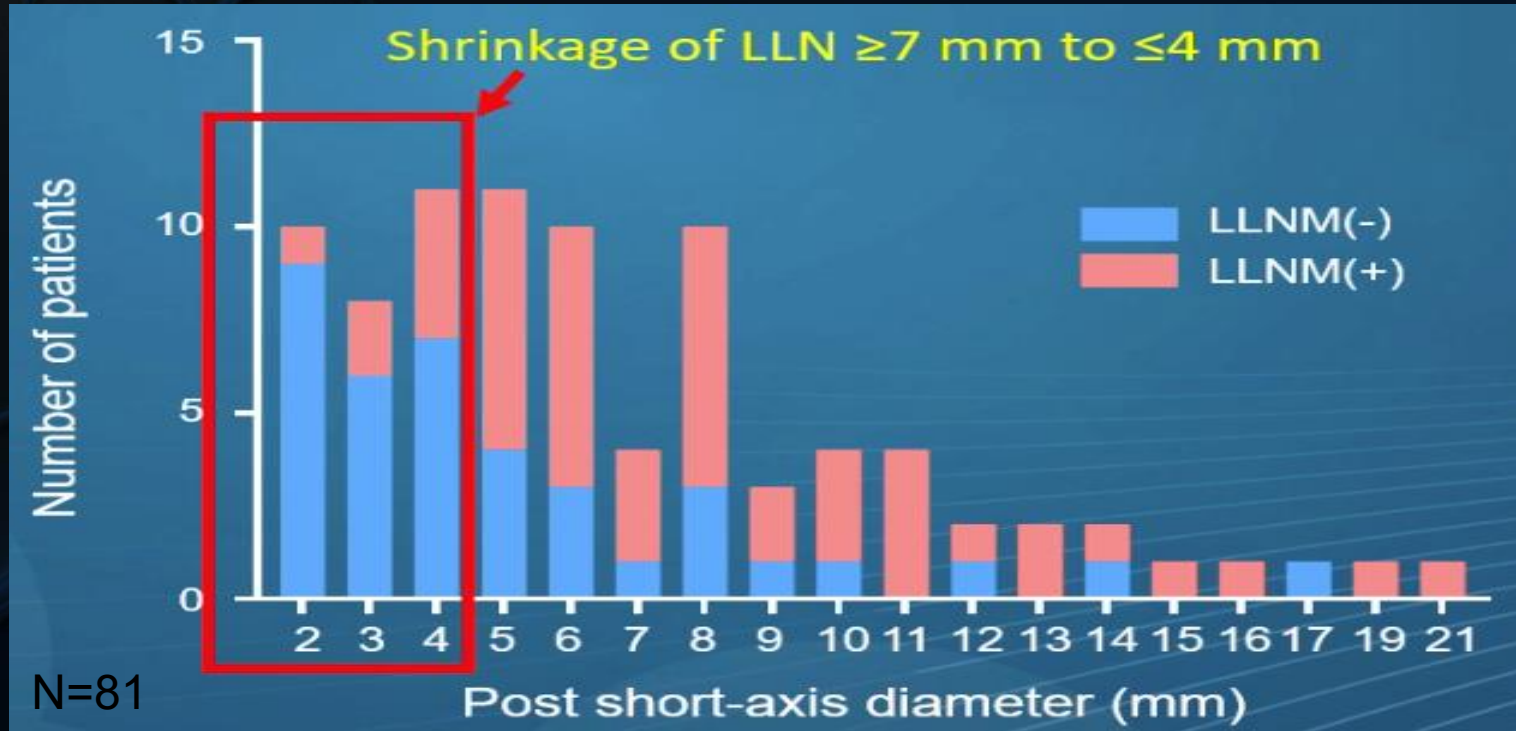
 **3.0% (N=423)**

 **10.6% (N=98)**

 **28.3% (N=59)**



# Despite downsizing on MRI : risk for Lateral LR remains...



# Despite downsizing on MRI : risk for Lateral LR remains...

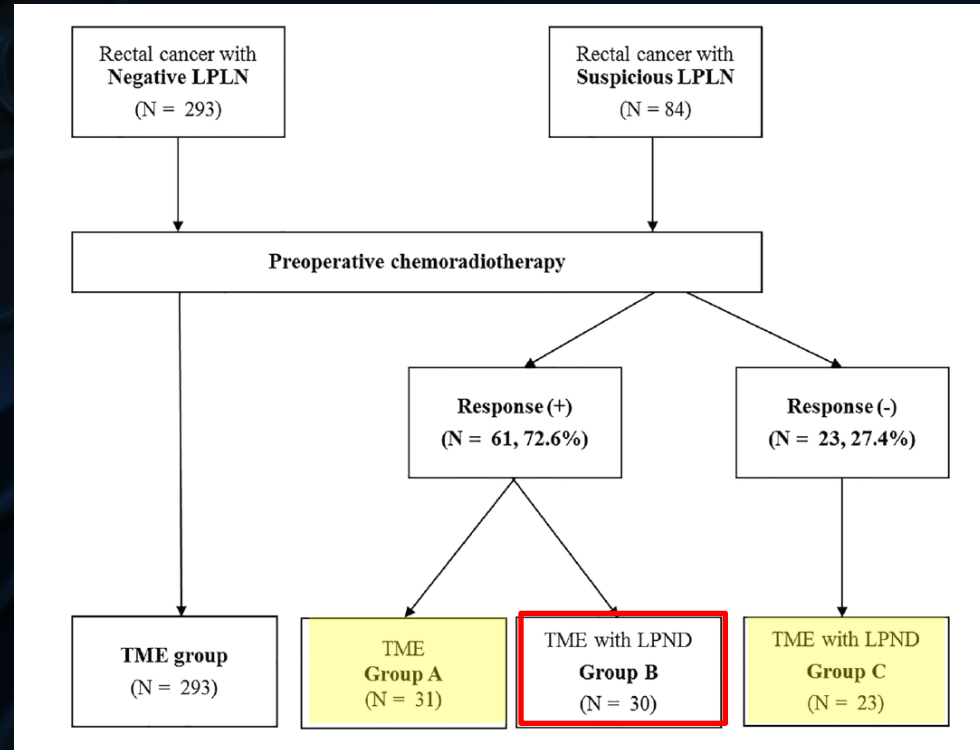
**24.1% of ymr  $\leq 4$  mm ( $< 5$  mm) had ypLPLN metastasis**

N=8

1

# Optimal treatment strategies for clinically suspicious lateral pelvic lymph node metastasis in rectal cancer

Hye Jin Kim<sup>1</sup>, Gyu-Seog Choi<sup>1</sup>, Jun Seok Park<sup>1</sup>, Soo Yeun Park<sup>1</sup>, Seung Hyun Cho<sup>2</sup>, Soo Jung Lee<sup>3</sup>, Byung Woog Kang<sup>3</sup> and Jong Gwang Kim<sup>3</sup>



# Optimal treatment strategies for clinically suspicious lateral pelvic lymph node metastasis in rectal cancer

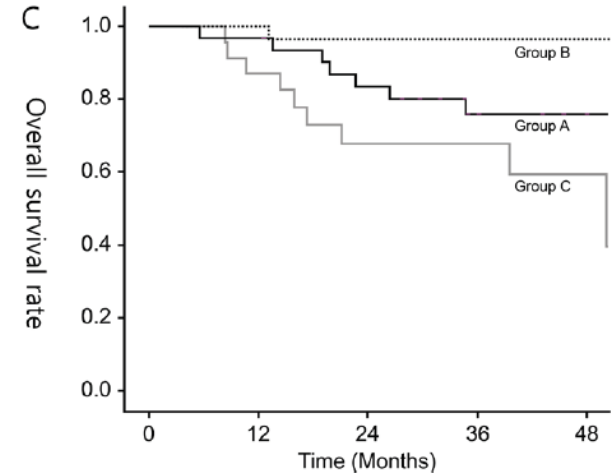
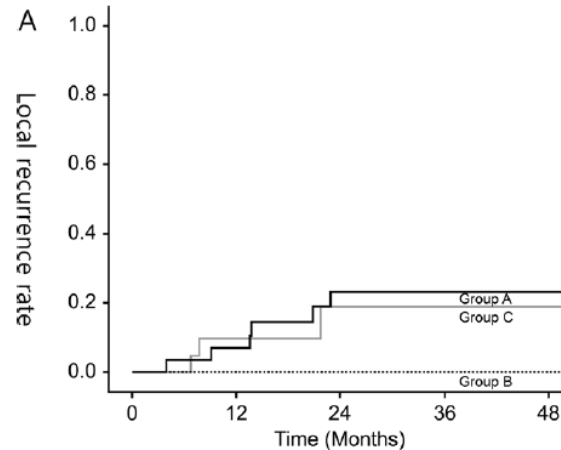
Hye Jin Kim<sup>1</sup>, Gyu-Seog Choi<sup>1</sup>, Jun Seok Park<sup>1</sup>, Soo Yeun Park<sup>1</sup>, Seung Hyun Cho<sup>2</sup>, Soo Jung Lee<sup>3</sup>, Byung Woog Kang<sup>3</sup> and Jong Gwang Kim<sup>3</sup>

**LPND cannot be omitted for patients with suspicious LPNs on pretreatment MRI even with good response to CRT**

## Response (+)

- SAD < 5mm
- Heterogeneity -ve
- Irregular border -ve

**Group A: TME**  
**Group B: TME +LPN**  
**Group C: TME +LPN**



# Prognostic Implications of Lateral Lymph Nodes in Rectal Cancer: A Population-Based Cross-sectional Study With Standardized Radiological Evaluation After Dedicated Training

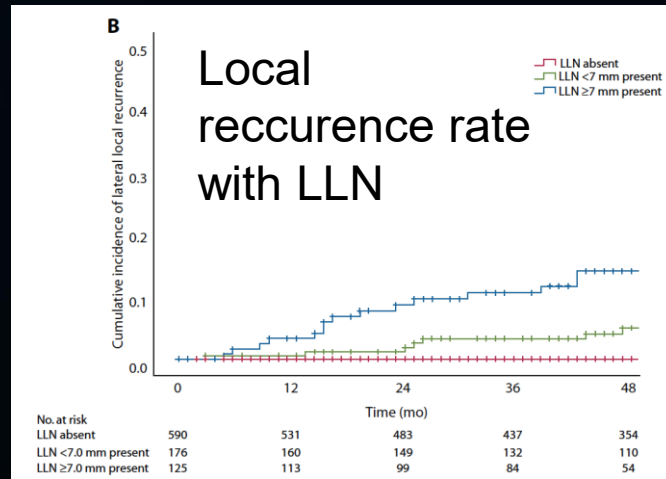
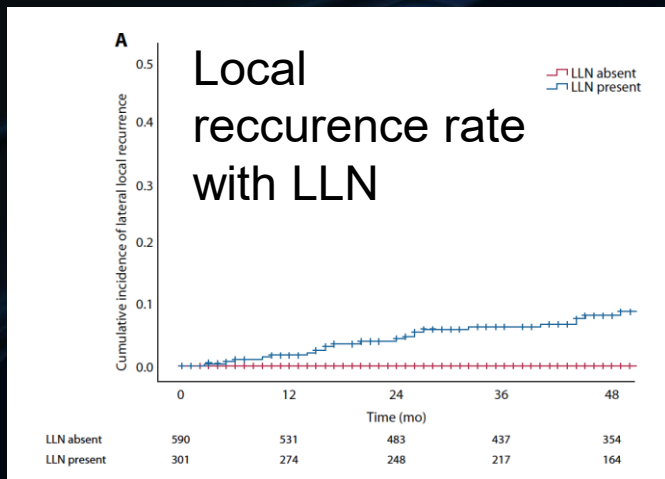
Tania C. Sluckin, M.D.<sup>1,2,3</sup> • Eline G.M. van Geffen, M.D.<sup>1,2,3</sup>  
 Sanne-Marije J.A. Hazen, M.D.<sup>1,2,3</sup> • Karin Horsthuis, M.D., Ph.D.<sup>3,4</sup>  
 Regina G.H. Beets-Tan, M.D., Ph.D.<sup>5,6,7,8</sup> • Corrie A.M. Marijnen, M.D., Ph.D.<sup>9,10</sup>  
 Pieter J. Tanis, M.D., Ph.D.<sup>2,3,11,12</sup> • Miranda Kusters, M.D., Ph.D.<sup>1,2,3</sup>  
 On behalf of the Dutch Snapshot Research Group

## Dutch LPLN Snapshot Study



N=3057 rectal cancer surgery in 2016;  
 67 centres

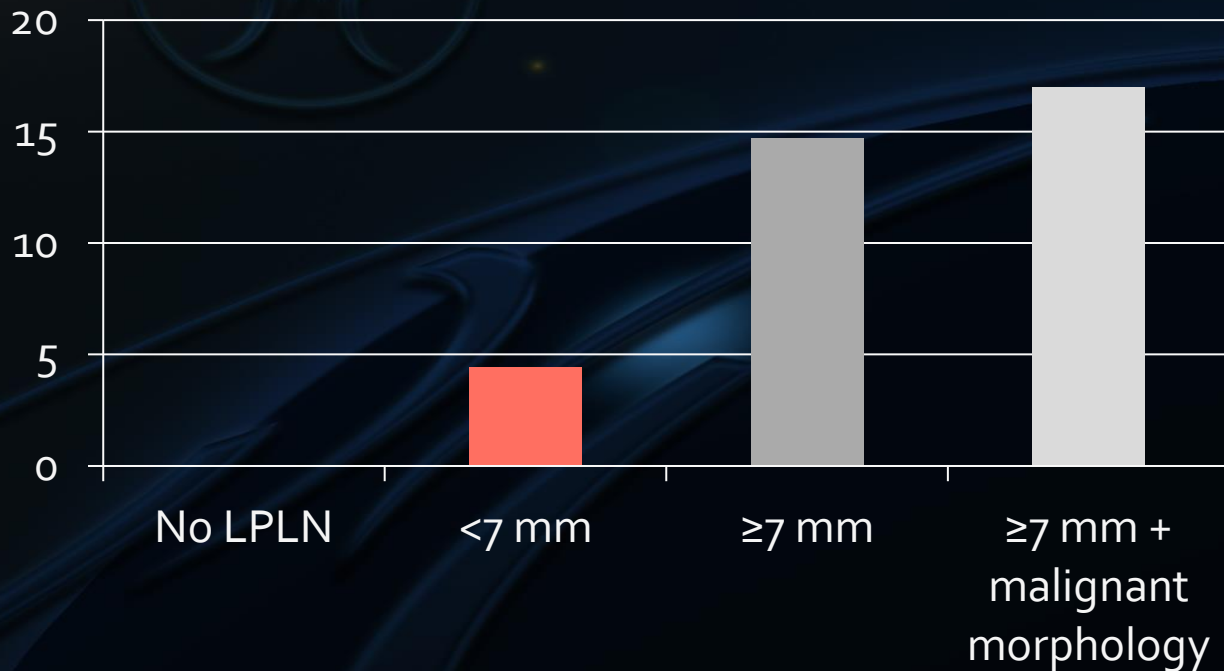
high 4-year ipsilateral LR rates when LLNs were present, with even higher recurrence rates for patients with  $\geq 7$  mm LLNs



>7mm  
 <7mm  
 none

## Western validation — the Dutch population data

### Lateral recurrence risk



standardized MRI rereview

≥7 mm remained a clinically meaningful baseline threshold.

Morphology adds risk information.

Response alone was not sufficient to make the baseline signal disappear.

## Prognostic Implications of Lateral Lymph Nodes in Rectal Cancer: A Population-Based Cross-sectional Study With Standardized Radiological Evaluation After Dedicated Training

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On behalf of the Dutch Snapshot Research Group

# Dutch LPLN Snapshot Study



N=3057 rectal cancer surgery in 2016;  
67 centres

**CONCLUSIONS:** The risk of lateral local recurrence due to (enlarged) lateral lymph nodes was confirmed, but without the prognostic impact of downsizing after neoadjuvant therapy. These results point toward the incorporation of primary lateral lymph node size into treatment planning. See Video Abstract.

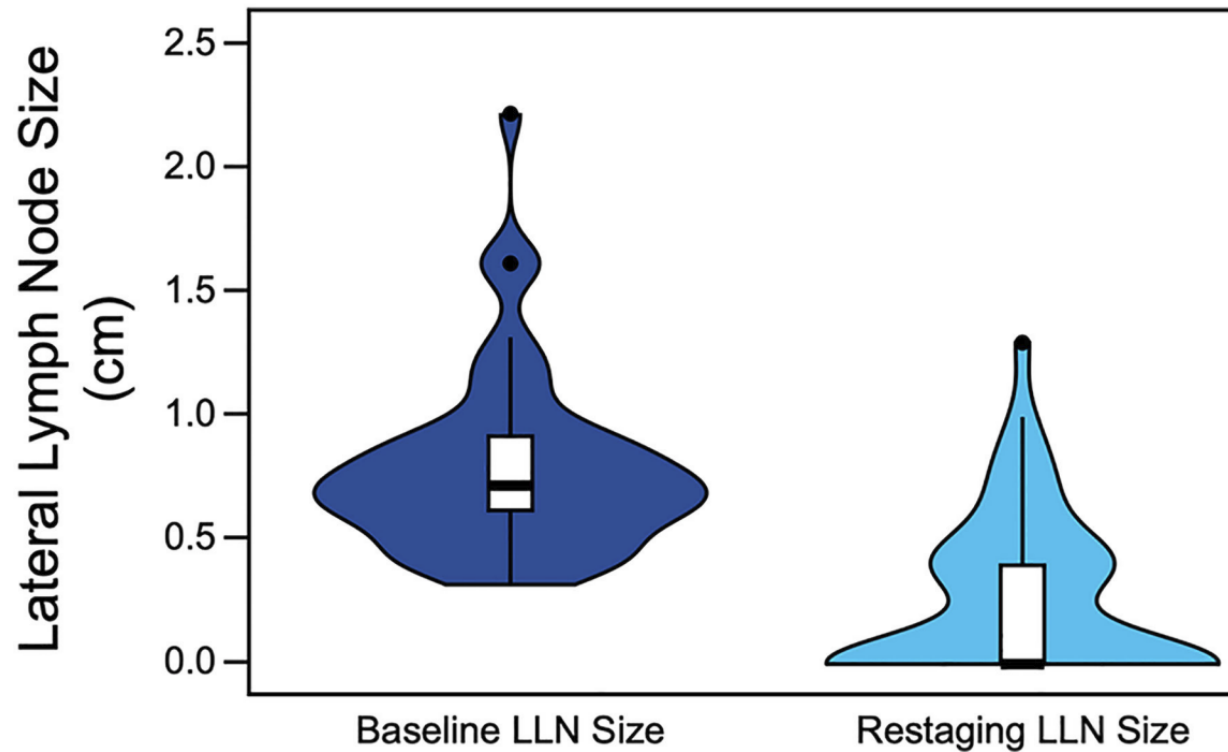
# « Total Neoadjuvant Therapy : TNT »



John Wick  
contract

# **ASSOCIATION OF LATERAL PELVIC LYMPH NODES WITH DISEASE RECURRENCE AND ORGAN PRESERVATION IN PATIENTS WITH DISTAL RECTAL ADENOCARCINOMA TREATED WITH TOTAL NEOADJUVANT THERAPY**

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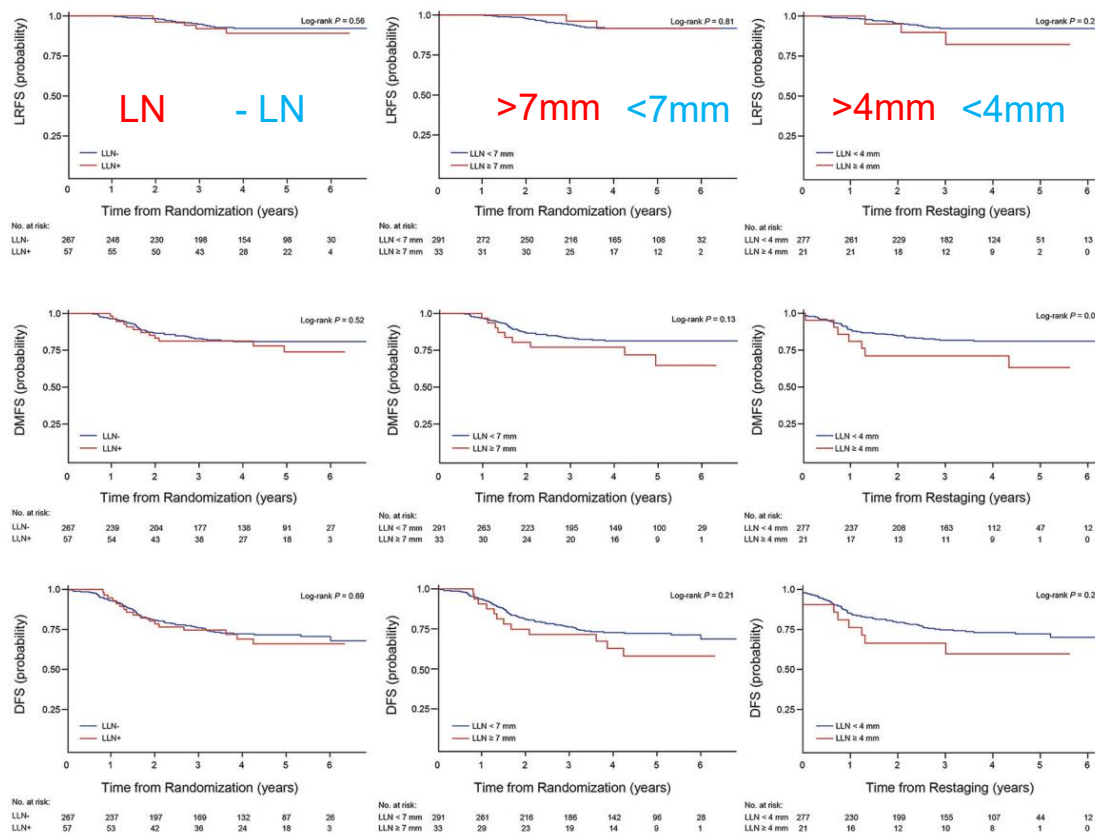


**FIGURE 1.** LLN size distributions on baseline MRI (left) and restaging MRI (right). Medians and quartiles are indicated. LLN, lateral lymph node.

Local  
recurrence  
free survival

Distant  
metastasis  
free survival

Disease  
free survival



P=NS

P=NS

P=NS

**FIGURE 4.**

Kaplan-Meier curves for LRFS (upper row), DMFS (middle row), and DFS (lower row) in relation to LLN+ on baseline MRI (left column), LLN  $\geq 7$  mm on baseline MRI (middle column), and LLN  $\geq 4$  mm on restaging MRI (right column). LRFS, local recurrence-free survival; DMFS, distant metastasis-free survival; DFS, disease-free survival.



Limited potential benefits of LLN dissection  
would seem to be outweighed for most  
patients by the considerable morbidity of  
this procedure



What happen if we boost the PLN with radiotherapy?

# Clinical implication and management of rectal cancer with clinically suspicious lateral pelvic lymph node metastasis: A radiation oncologist's perspective

Gyu Sang Yoo, Hee Chul Park\* and Jeong Il Yu\*

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**LLND vs LPLN BOOST — WHICH PRICE FOR LOCAL CONTROL?**

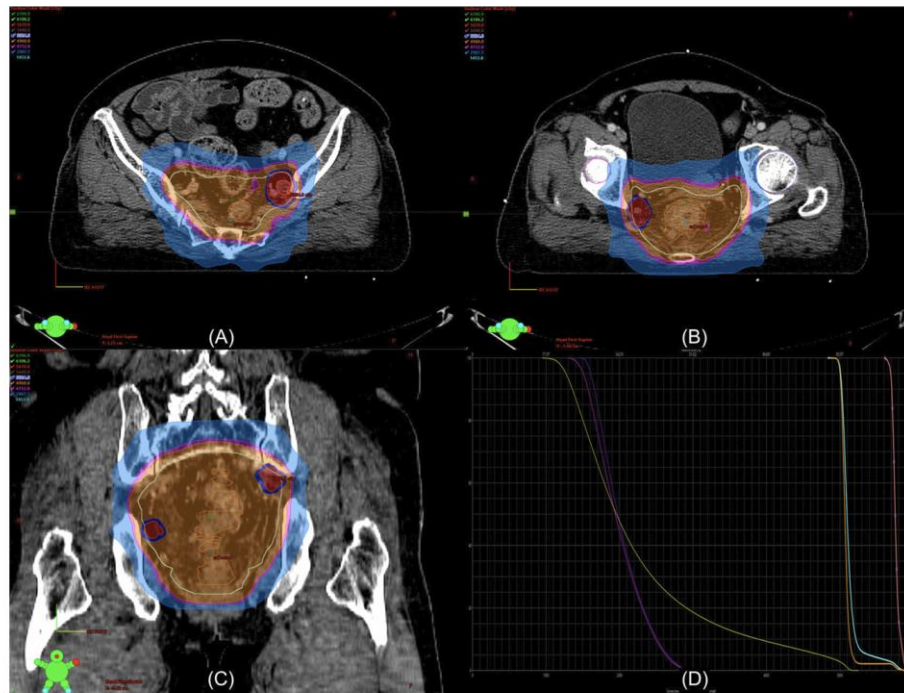


FIGURE 3

Example of a dosimetry in the radiation therapy (RT) plan with a boost to the lateral pelvic lymph node (LPLN) using the intensity-modulated RT (IMRT) simultaneous intensity boost (SIB) technique. The patient is a 62-year-old woman with non-metastatic locally advanced rectal adenocarcinoma extending to the lower rectum with perirectal fat invasion and clinically suspicious LPLN metastases in the left internal iliac and right obturator area. The LPLNs are irradiated with 58.8 Gy in 28 fractions [red color washes in (A-C)] while the primary tumor [orange lines in (A-C)] and other lymphatic area [sky-blue lines in (A-C)] were irradiated with 50.4 Gy in 28 fractions. (D) shows the dose-volume histogram of the RT plan (yellow line, bladder; purple line, right femur head; violet line, left femur head; orange line, primary tumor, sky-blue line, pelvic lymphatics; pink line, LPLNs).

Modern RT techniques including IMRT and SIB, safe dose escalation to the suspicious LPLN is available and improvement of LPLN control would be expected.



## Selective LLND

Pathology ✓  
Excellent nodal clearance ✓  
Avoids radiation dose escalation ✓  
Operative complexity ↑  
Bleeding / urinary / sexual risk

## IMRT-SIB 56–60 Gy

No additional surgery ✓  
LPLN regrowth ~0% in selected series ✓  
No clear increase in acute toxicity ✓  
No pathological staging  
**Late sexual / urinary / bowel toxicity uncertain**

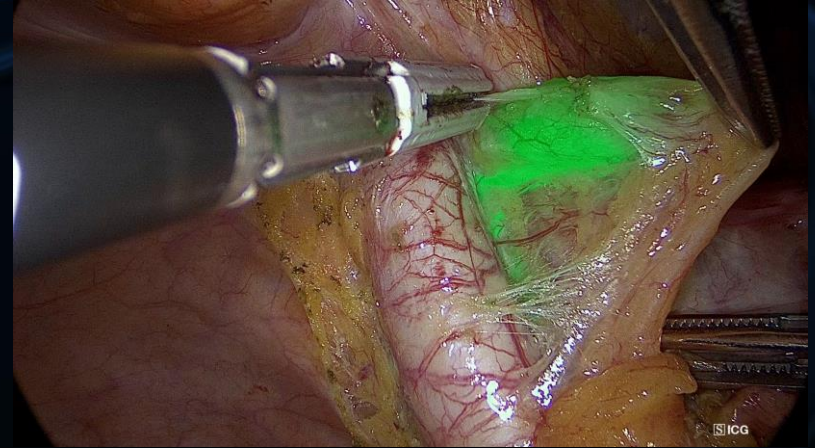
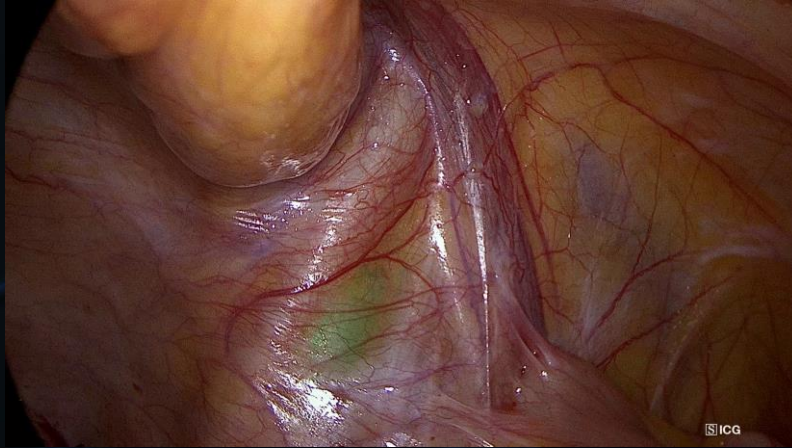
Oncologic equivalence has not been demonstrated — and neither has functional superiority

# **Lateral Node Dissection in Rectal Cancer in the Era of Minimally Invasive Surgery: A Step-by-Step Description for the Surgeon Unacquainted with This Complex Procedure with the Use of the Laparoscopic Approach**

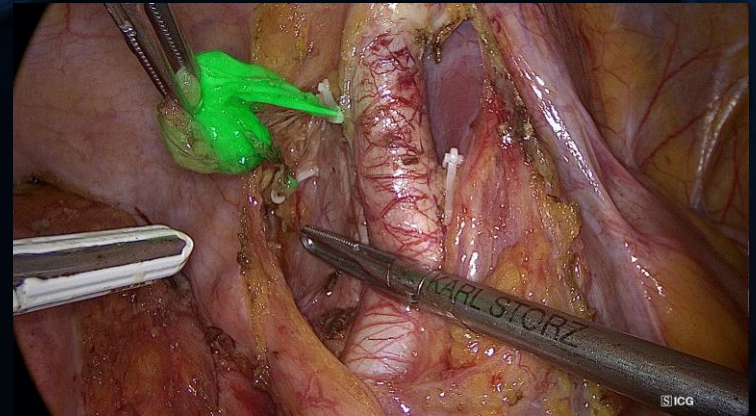
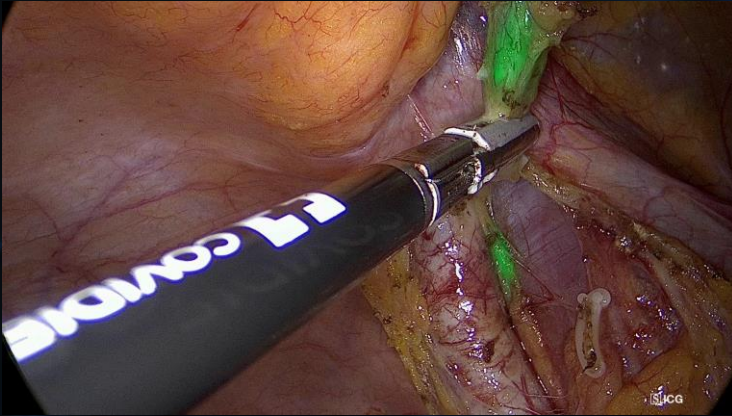
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Standardization of the procedure by minimally invasive surgery may facilitate the dissection and provide optimal early and oncological outcomes.

## LLN guidance



## LLN guidance



# Near-infrared laparoscopic fluorescence for pelvic side wall delta mapping in patients with rectal cancer- 'PINPOINT' nodal assessment

M. Kazanowski\*, H. Al Furajii\*† and R. A. Cahill\*†



2016

Feasible

“ Cherry picking “ less morbid than radical sidewall LA

Need RCT, to determine wheter standard clearance of Lateral basins offers survival benefit

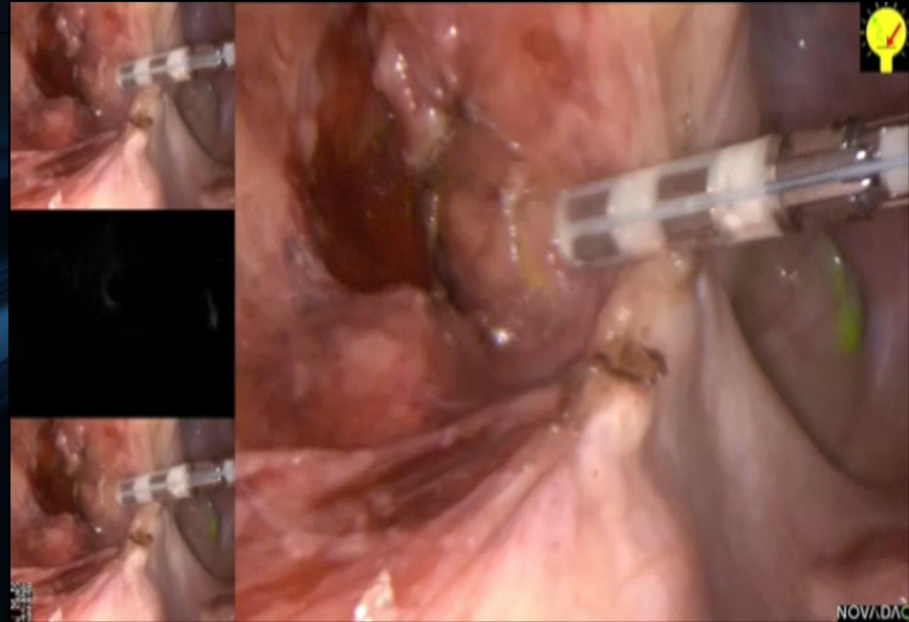
# Near-infrared laparoscopic fluorescence to guide fascial plane identification in total mesorectal excision for rectal cancer: A Video Vignette

G. Ismael\*†, H. Al Furajji\*† and R. A. Cahill\*†



Guidance to  
Embryological Plane  
(TME / CME)

Method :  
2-3ml ICG  
submucosal  
Pinpoint Scope



**Select the patient — not the node.**  
Once surgical treatment is indicated,  
oncologic surgery should generally mean a  
**formal compartmental LLND**, not isolated  
excision of the largest node.

# Recent evidence: the pendulum is moving to selective LLND

|                                 |                    |                                                                           |
|---------------------------------|--------------------|---------------------------------------------------------------------------|
| <b>Choi &amp; Kim 2024</b>      | Review             | Combined CRT/TNT + selective LLND for larger/suspicious nodes             |
| <b>Takao et al. 2024</b>        | 493 LLND           | Lateral pelvic recurrence 5.5%; ~1% recurrence per dissected lateral area |
| <b>Lee et al. 2025</b>          | Comparative cohort | Post-nCRT size + morphology can guide selective LPND                      |
| <b>Ajioka et al. 2025</b>       | Meta-analysis      | MRI thresholds useful, but no single universal post-treatment cutoff      |
| <b>Sammour 2025</b>             | Review             | Best-established benefit = local control; survival benefit less certain   |
| <b>2026 contemporary review</b> | Review             | Selective LLND integrated with neoadjuvant therapy is emerging framework  |

# A pragmatic 2026 algorithm

## 1 • BASELINE MRI

Low rectal  
cT3–4

Map each  
LPLN  
short axis +  
morphology +  
compartment

Flag  $\geq 7$  mm

## 2 • TNT / CRT

Treat  
according to  
oncologic  
indication

Do not  
assume nodal  
sterilization

## 3 • RESTAGING MRI

Re-measure  
same node

Internal iliac  
 $>4$  mm = major  
red flag

Obturator:  
consider  $\sim 6$   
mm +  
morphology

## 4 • MDT

Integrate  
baseline size,  
response,  
morphology,  
compartment,  
metastatic risk  
and surgical  
expertise

## 5 • SURGERY

TME +  
unilateral  
selective  
formal LLND  
when residual  
lateral risk is  
high

Avoid “node  
picking” ?

# So , who is right?

## EAST was right

The lateral pelvis is a genuine locoregional compartment.

Surgical clearance can prevent otherwise avoidable lateral failures.

## WEST was right

Multimodal therapy matters.

Routine bilateral LLND for every advanced low rectal cancer overtreats many patients.

## 2026 synthesis

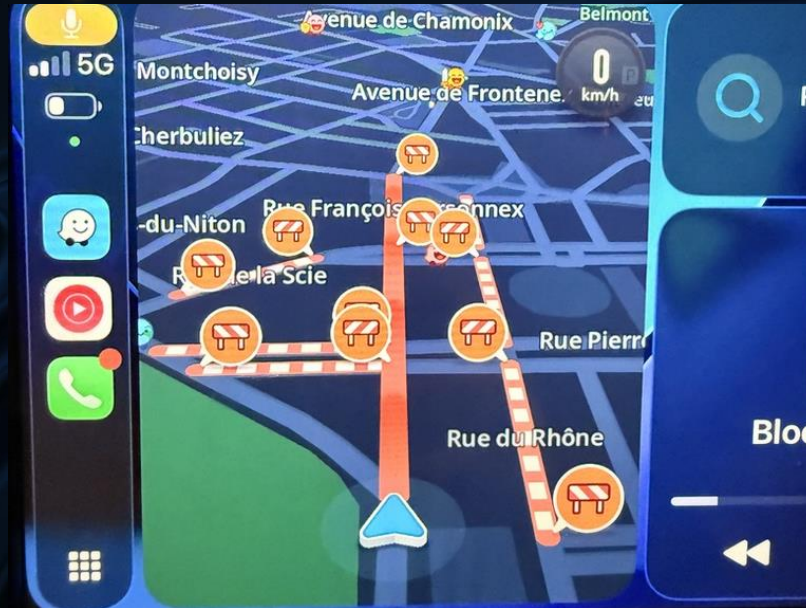
MRI-directed selective LLND integrated with TNT/CRT.

Treat the node you see — according to its compartment and response.

**“Neither East nor West: precision pelvic oncology.”**

So — who is right?

**“TNT alleviate the risk of local recurrence and temper the need for lateral nodee dissection.”**





**“The future is neither routine LLND  
nor routine omission — it is  
selective, compartment-specific  
treatment.”**

# Conclusion

- Lateral pelvic compartment is a major site of local treatment failure
- Chemoradiation or surgical dissection alone are not enough for therapeutic management of patients with clinical evidence of LPLNM
- High quality MRI helps identify patients both at risk for lateral node metastasis and in need of dissection after neoadjuvant therapy
- Further study is needed to optimally identify which patients with responsive LN should still undergo dissection

# Coloproctology Team Geneva 2026

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# Special thanks to R. Hompes





Dates:  
8-11 February 2027

Inscriptions:  
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The background of the poster is a blue-tinted photograph of a surgeon's hands operating with laparoscopic instruments. Overlaid on the left side is a glowing, translucent 3D model of the human large intestine (colon).

Geneva University Hospitals  
Proctology unit  
Service of visceral Surgery

A circular logo with a stylized 'G' and 'H' inside.

The top of the bottom.

30th  
Advanced  
course in  
coloproctology  
and pelvic floor  
disorder

PROCTOLOGY Geneva, Switzerland, 8-11 February 2027

Endorsed by: ESCP  
SUPPORTED

Course director  
Prof. Frédéric Ris

Hôpitaux  
universitaires  
Genève

A logo with the letters 'HUG' in a stylized, blocky font.

# Thank you for your attention

Geneva University Hospitals  
Proctology Unit  
Service of Visceral Surgery



The top of the bottom



## ABOVE AND BEYOND

Colo-proctology's JOURNEY TO TOMORROW