

# Role and extension of lymph node dissection in kidney, bladder and prostate cancer

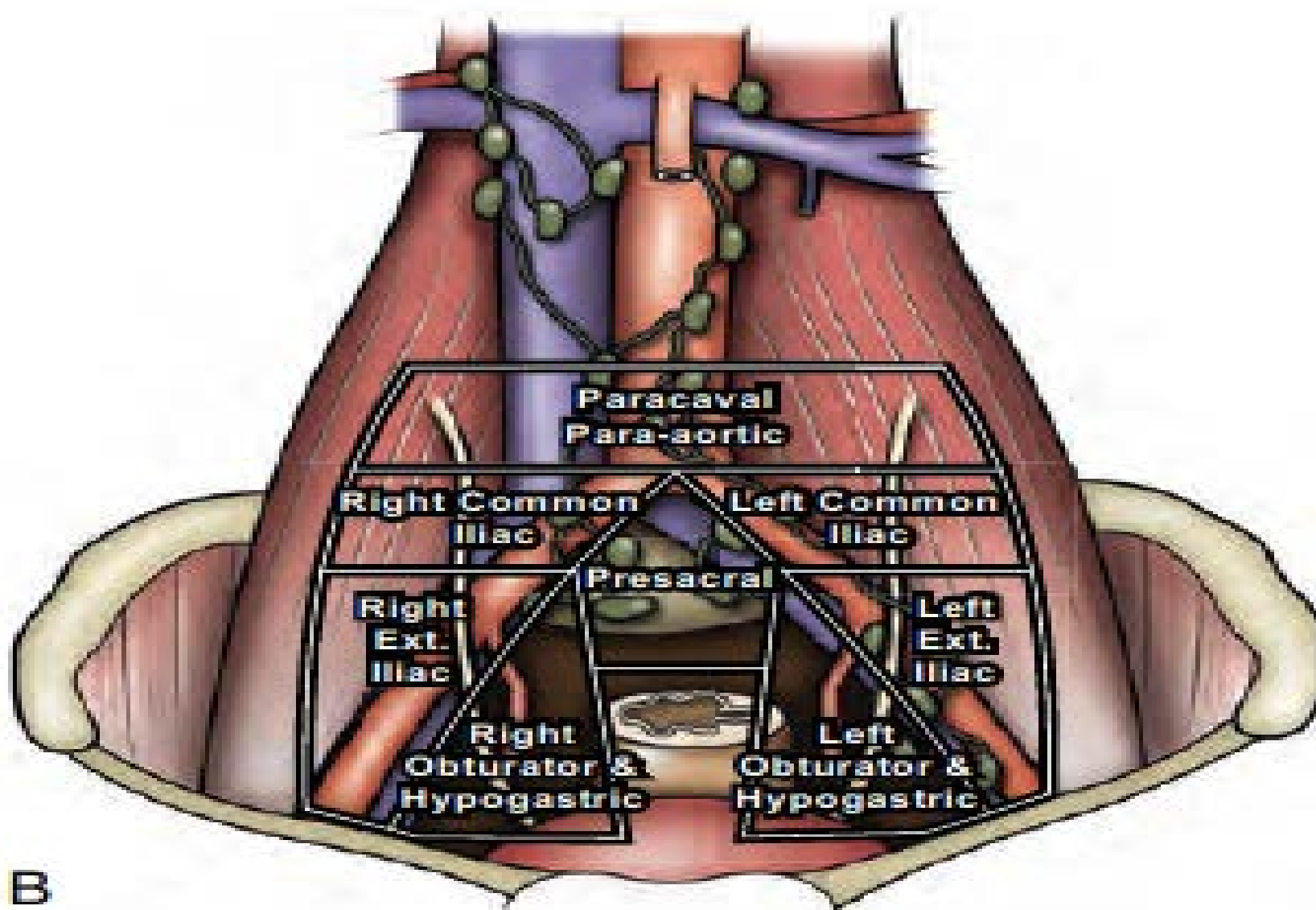
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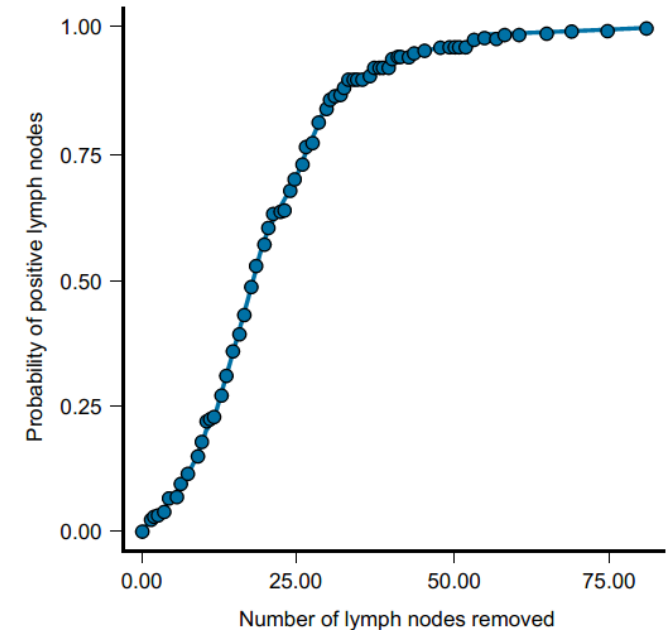
30<sup>th</sup> March 2017

# Bladder Cancer

# LN dissection in Bladder cancer





- 25% of patients will have pathologic lymph node metastases at the time of cystectomy.
- Pathologic LN metastases is an Independent predictor of survival and local recurrence.
- 20 % LN density carry a prognostic significance
- Survival benefit:9-16 lymph node dissected



**Figure 94-1.** A plot describing the relationship between the number of lymph nodes removed and the probability of detecting lymph node metastasis. (From Capitanio U, Suardi N, Shariat SF, et al. Assessing the minimum number of lymph nodes needed at radical cystectomy in patients with bladder cancer. *BJU Int* 2009;103:1359–62.)

# Pre-operative evaluation of LN

- Equivocal lymph node enlargement that is suspicious of metastatic disease  Percutaneous biopsy of LN.
- Equivocal pelvic lymph node enlargement on preoperative imaging that is not suspicious for metastasis  Radical cystectomy.

## Cohort study :Cleveland clinic +university of bern

- Total :658 patients
- Limited v.s extended Lymphatic dissection.
- 5 year recurrence free survival: (7% vs 35%).

	Limited	Extended
PT2N0	67%	77%
PT2N0-2	63%	71%
PT3N0	23%	54%
PT3N0-2	19%	49%

# EAU guidelines

- SR of literature, 5 studies showed LND vs. no LND reported a better oncological outcome for the former group in clinical N0M0.
- Super-extended with limited or standard LND reported a beneficial outcome for (super-) extended.
- No difference in outcome was reported between extended and super-extended LND in the two high-volume-center studies identified.

# Renal Cell Carcinoma



# LN dissection in Renal cell carcinoma

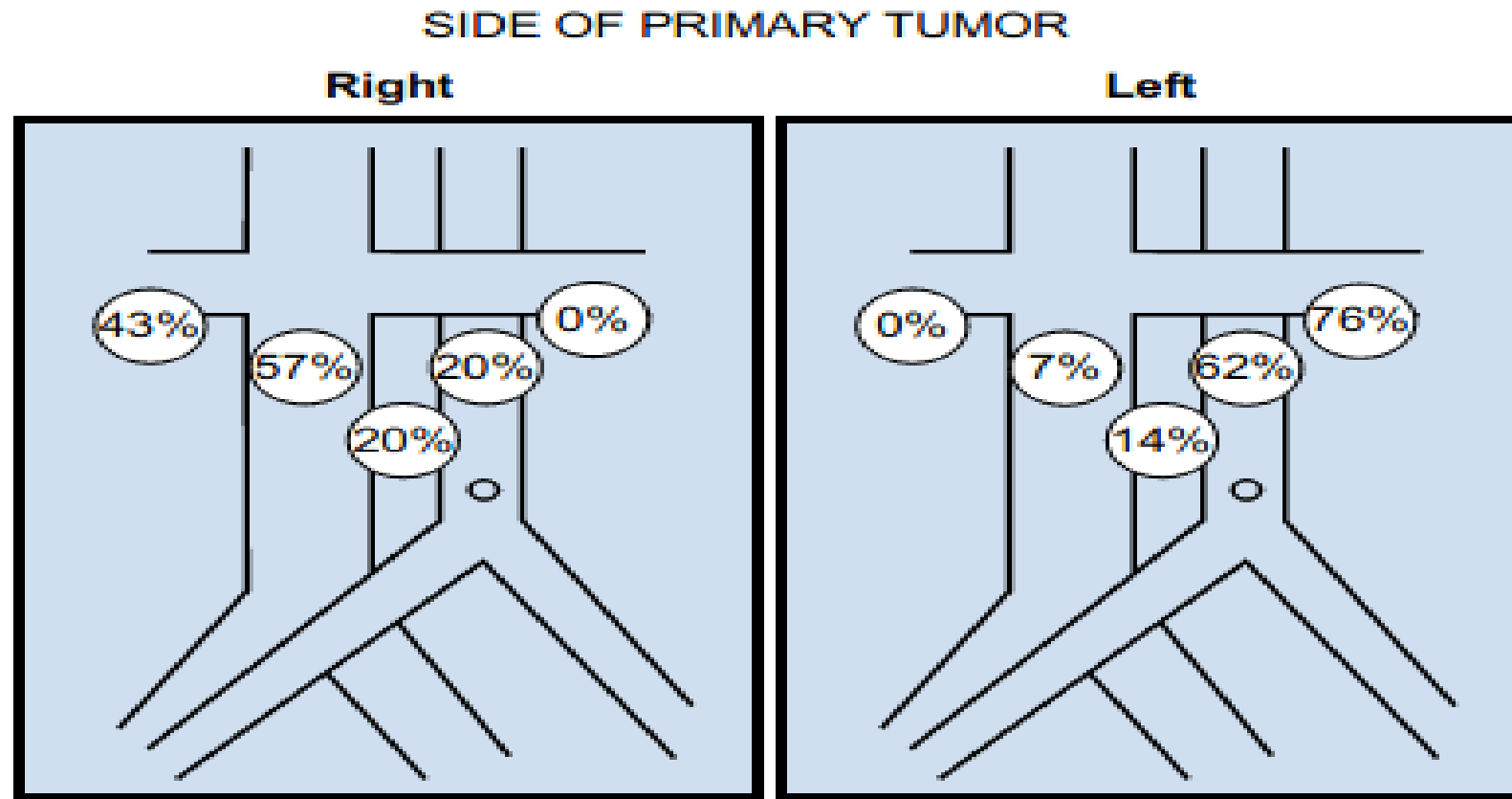
- The need for extensive lymphadenectomy in patients undergoing RN remains controversial.
- There are several factors that mitigate against a benefit of routine extensive lymphadenectomy:
  - Bloodstream metastasis
  - Variable Lymphatic drainage
  - <4% benefit from a routine lymphadenectomy.

# Risk of regional LN metastasis in RCC

- Sarcomatoid component
- >10 cm in size
- Grade 3-4
- PT3-4
- Histologic tumor necrosis.

NO. OF RISK FACTORS*	PERCENTAGE OF PATIENTS IN THIS RISK GROUP	PERCENTAGE WITH POSITIVE LYMPH NODES IN RETROSPECTIVE SERIES†	PERCENTAGE WITH POSITIVE LYMPH NODES IN PROSPECTIVE SERIES‡
0	44% (729/1652)	0.4% (3/729)	—
1	18% (302/1652)	1.0% (3/302)	—
2	17% (276/1652)	4.4% (12/276)	20% (7/35)
3	13% (209/1652)	12% (26/209)	37% (26/71)
4	7.3% (121/1652)	13% (16/121)	49% (26/53)
5	0.9% (15/1652)	53% (8/15)	50% (5/10)

# LN dissection in RCC



**Figure 57-26. Frequency of lymph node positivity detected at extended lymphadenectomy in patients with lymph node positive renal cancer at nephrectomy. (From Crispin PL, Breau RH, Allmer C, et al. Lymph node dissection at the time of radical nephrectomy for high-risk clear cell renal cell carcinoma: indications and recommendations for surgical templates. Eur Urol 2011;59:18–23.)**

# Clinically negative lymph node

- Less than 20% of clinically positive (cN+) LNs are confirmed to be metastatic at pathology (pN+) .
- Involvement of interaortocaval LNs without regional hilar involvement is reported in up to 35-45% of cases
- Retrospective series support the hypothesis that LND may be beneficial in high-risk patients . However, in the (EORTC) study only 4% of cN0 patients had positive LNs at final pathology, suggesting that LND represents over-treatment in the majority of these cases.

# Clinically positive lymph node

- In the presence of clinically positive LNs (cN+), LND is always justified . However, the extent of LND is controversial.
- Patients with locally advanced disease due to clinically enlarged lymph nodes, the survival benefit of lymph node dissection is unclear but lymph node dissection can add staging information.

- Results from the European Organization for Research and Treatment of Cancer trial 30881 showed no benefit in performing LND during surgery for clinically node-negative RCC, but the results are limited to patients with the lowest risk of developing LNI.

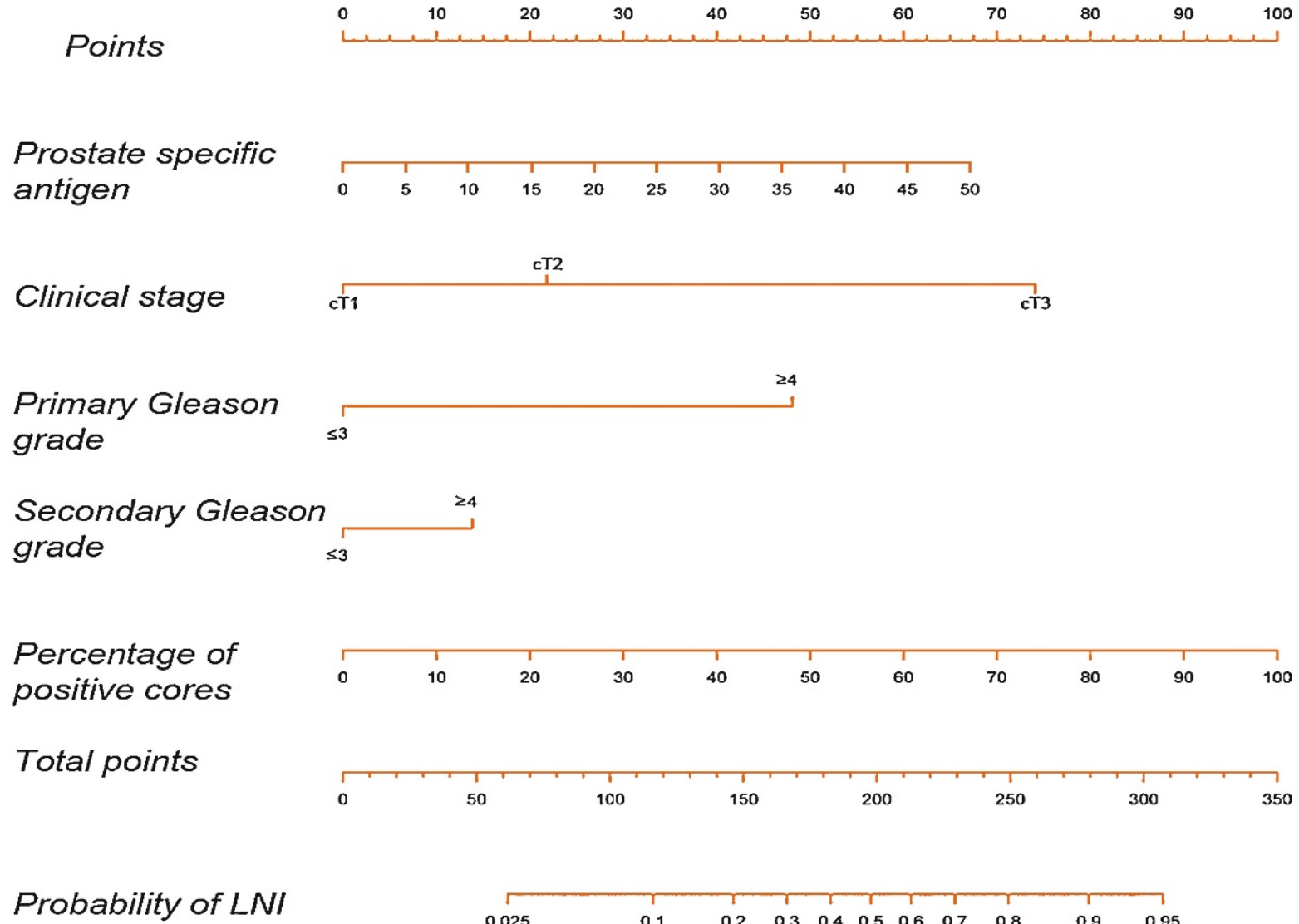
# Prostate Cancer

# LN dissection in Pca

- Extended LND includes removal of the nodes overlying the external iliac artery and vein, the nodes within the obturator fossa located cranially and caudally to the obturator nerve, and the nodes medial and lateral to the internal iliac artery.
- Recent studies described survival outcomes after surgery in pN1 PCa, with 5-, 10- and 15-year CSS rates ranging from 84-95%, 51-86% and 45%, respectively.



# BRIGANTI nomogram



# Importance of the extent of pelvic lymph node dissection in prostate cancer staging

- What does represent an ePLND in PCa is still a matter of debate.
- In the presence of extensive nodal dissections, approximately 25% of lymph nodes potentially harbouring PCa nodal metastases would not be removed.
- Available data seem to support the statement that if PLND is planned in patients with PCa, it should be extended.

- Low-risk Pca:

Do not perform LND in low-risk PCa	A
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- Intermediate-risk, localised Pca

Perform an ePLND if the estimated risk of positive lymph node exceeds 5%	B
Do not perform a limited LND.	B

- High-risk and locally advanced PCa

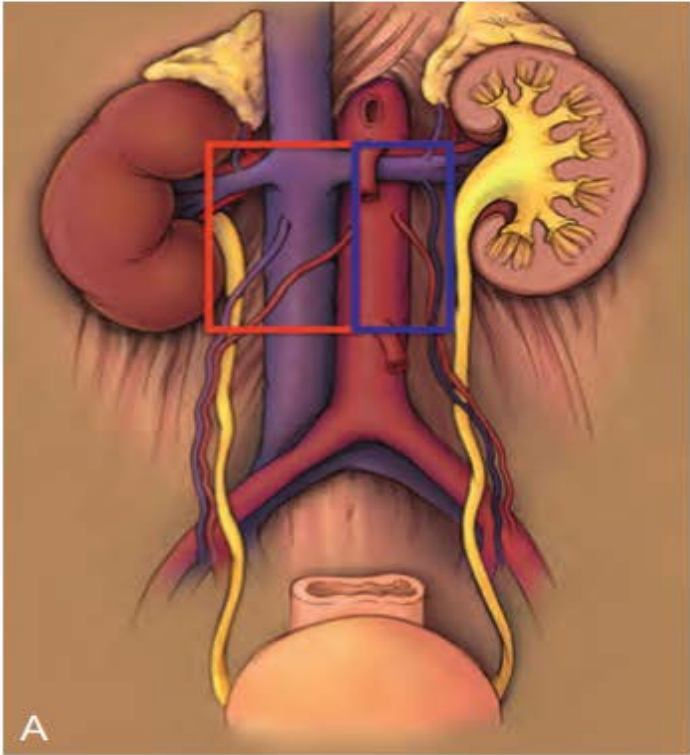
Perform an eLND in high-risk PCa.	A
Do not perform a limited LND.	A

# Impact of pelvic lymph node dissection on prostate cancer outcome

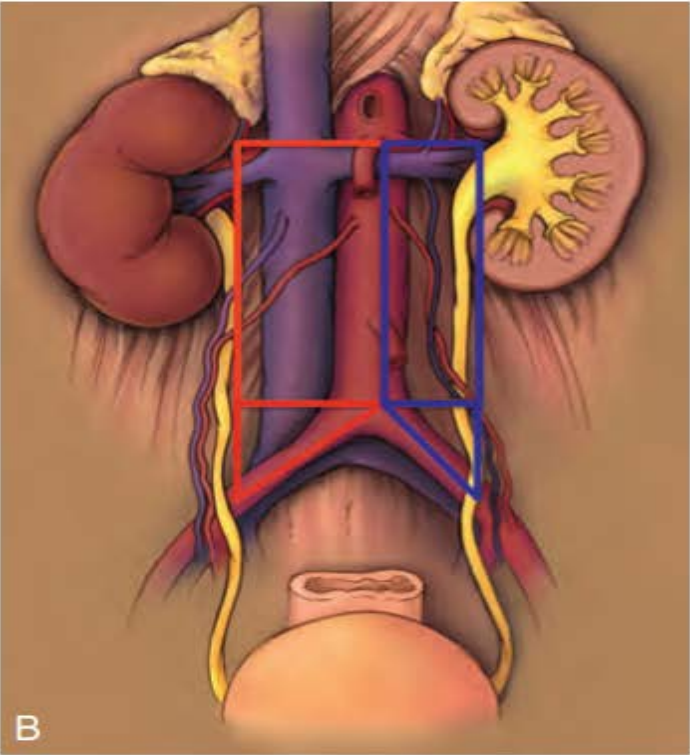
- No data from prospective randomized studies indicate that the extent of PLND improves cancer control or survival.

# Upper Urinary Tract TCC

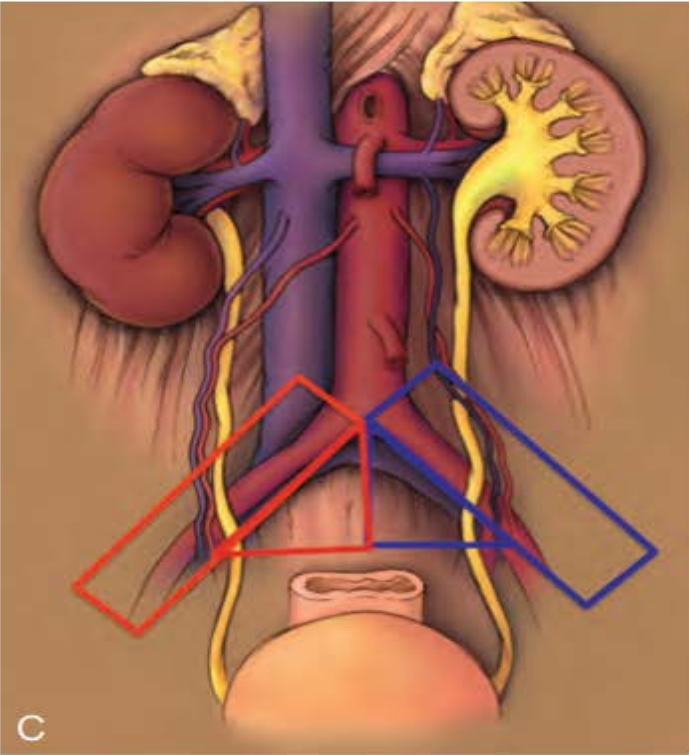
# Template of extended lymphadenectomy in UTUC



A  
Renal pelvis



B  
Upper 2/3 of the ureter



C  
Lower 1/3 of the ureter`

- Extranodal extension is a powerful predictor of clinical outcomes in UTUCs and positive lymph node metastases .
- Accurate predictive tools are rare for UTUC.
- Increased overall survival for T2 to T4 patients who underwent lymphadenectomy versus those who had nephroureterectomy only
- Lymph node involvement is reported in 12% to 25% of patients with UTUC.

# Positive LN in UTUC

- 0% to 3% in pTa/pTis, 0% to 6.3% in pT1, 0% to 40% in pT2, 19% to 47% in pT3, and 20% to 100% in pT4
- Lymph node dissection appears to be unnecessary in cases of TaT1 UTUC because lymph node retrieval is reported in only 2.2% of T1 versus 16% of pT2-4 tumors



Thank You