Impact of Pelvic Lymph Node Dissection and its Extension on Perioperative Complications and Morbidity in Patients with Prostate Cancer

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Introduction

- Pelvic lymph node dissection (PLND) plays a critical role in the staging and management of clinically localized prostate cancer
- Optimal extent of lymph node dissection not yet established
- Limited research exists relating extent of PLND and oncologic outcome
- European Association of Urology (EAU) recommends an extended approach for high-risk patients
- EAU defines "extended" PLND as removing lymph nodes adjacent to obturator nerve, internal, and external iliac vessels
- Goal of this study: **to evaluate the difference in complication rates following standard vs. extended PLND**

Methods

- Study design: systematic review and metanalysis in accordance with PRISMA guidelines
- Medline, Web of Science, Scopus, and Embase queried for papers
- Inclusion criteria:
  - Surgical series n >10
  - Non-oncologic intraoperative or postoperative complications as an outcome of interest
  - English language
- Standard vs. extended PLND assigned based on EAU definitions
- Patient demographics, quality of complication reporting, intraoperative, and postoperative complications recorded for each paper

Results

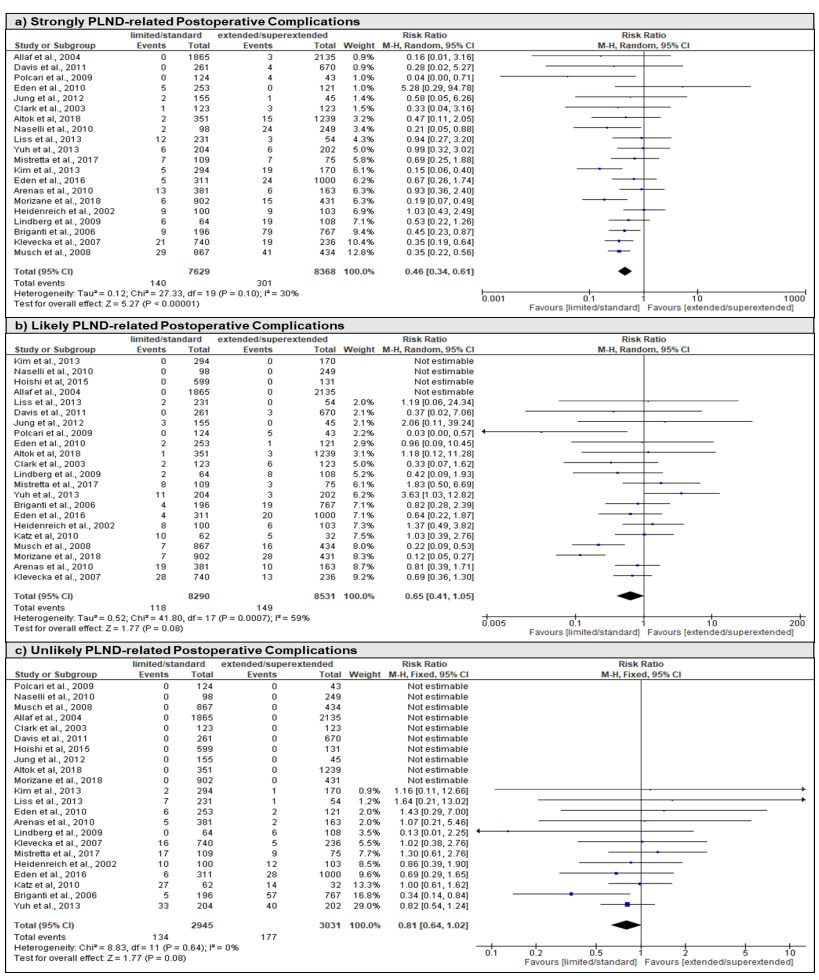

Figure 1. Intervention meta-analysis of studies comparing limited/standard PLND vs. extended/super-extended PLND. a) Strongly PLND-related postoperative complications; b) likely PLND-related postoperative complications; c) Unlikely PLND-related postoperative complications

- Initial search produced 3,645 papers
- 1,454 remained after removing duplicates
- 176 studies met inclusion criteria

Intraoperative Complications (IOC)

- 84 papers described IOC
- 65 (77.4%) reported ≥1 IOC
- Rate of IOC: **11.6% and strongly related to PLND extent**
- Rectal injury most common
- IOC also included obturator nerve and iliac vessel injury

Postoperative Complications (POC)

- 151 papers analyzed POC
- 19 specially reported complication rates following standard vs. extended PLND
- 137 papers (90.7%) reported ≥1 POC
- Lymphatic system morbidities most common
- Lymphocele was the most frequently reported complication **(90.6%) strongly related to PLND**

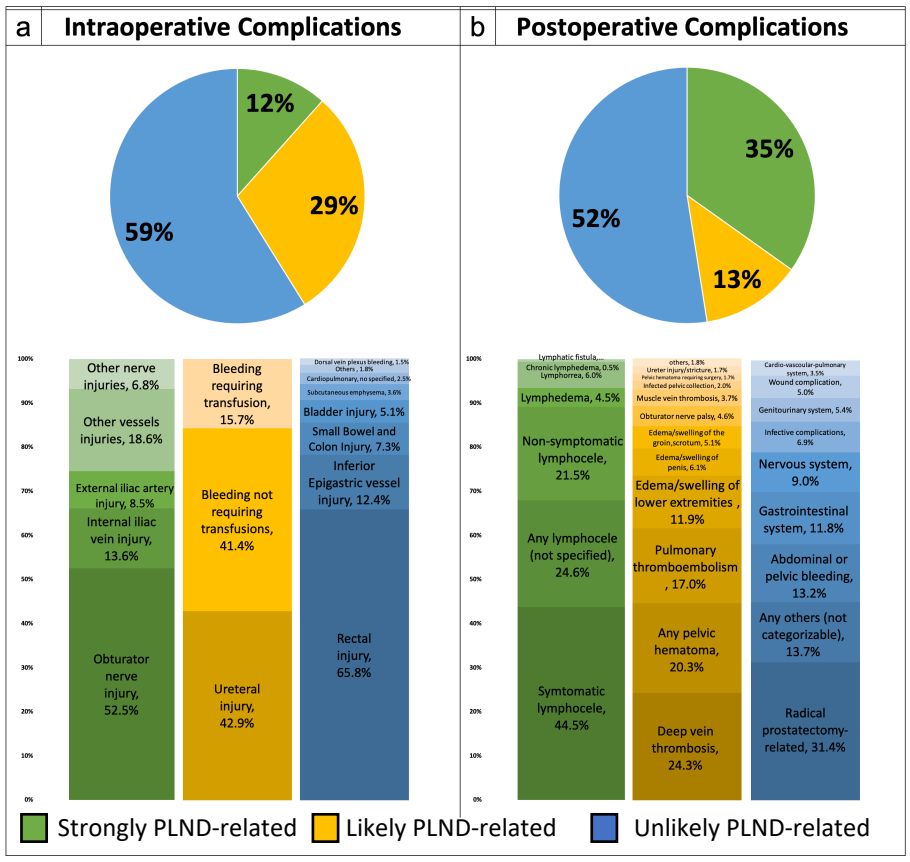

Figure 2. Assessment of discrete categorization of perioperative complications of patients undergoing RP and PLND for prostate cancer. **a)** Intraoperative complications; **b)** Postoperative complications.

- Metanalysis demonstrated statistically significant decreased risk of complications with standard/limited PLND compared to extended/super-extended
  - IOC RR: **0.55 (p=0.01)**
  - PLND-related POC RR: **0.55 (p=0.01)**
- Extent of PLND is an independent predictor of lymphocele formation (RR:1.77; p>0.0001)

Conclusions

- Extended PLND may confer an oncologic benefit
- However, it is associated with an increased risk of intraoperative and postoperative complications, especially lymphocele formation
- Shared decision making must be undertaken between patient and practitioner when deciding extent of PLND