

# Significance of Nodal Status and Dilemma in Aortic Node Dissection

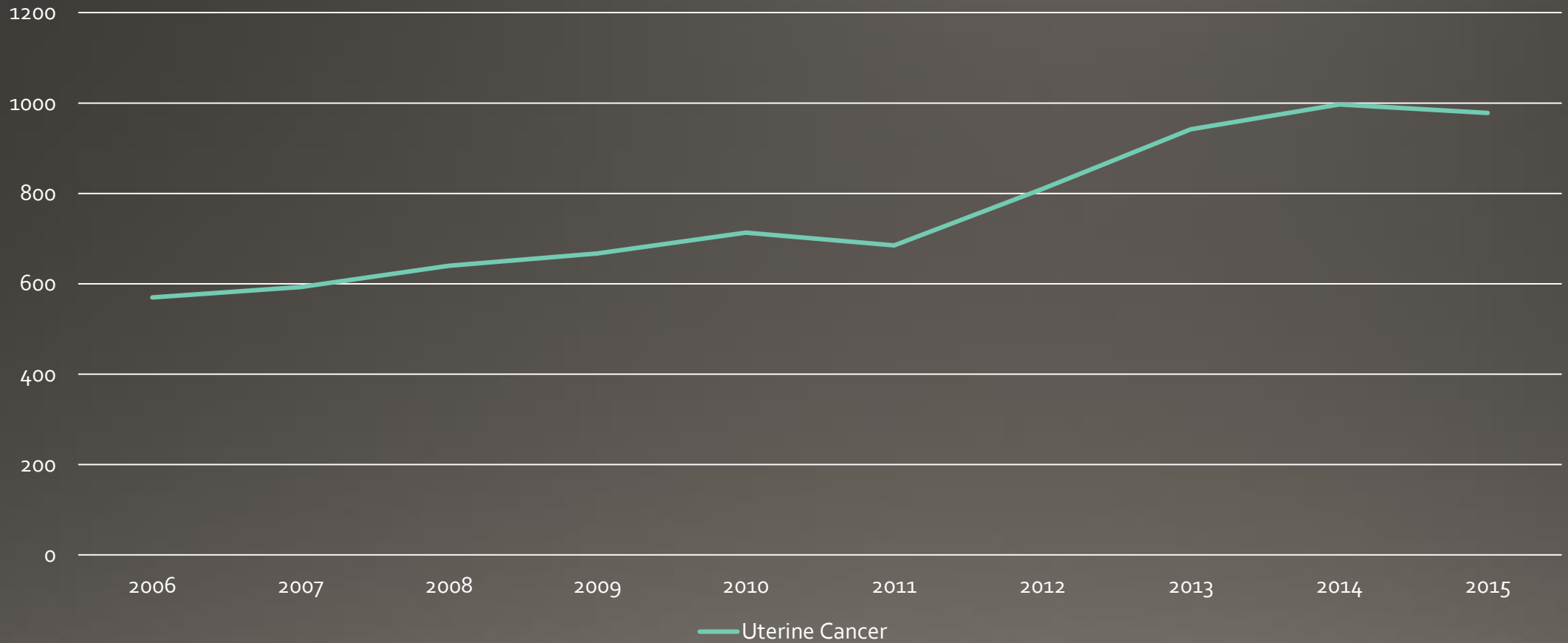
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# Hong Kong Cancer Registry 2015

## Annual Incidence of Uterine Malignancy



# Average Annual Percent Changes of Age-standardized Rates over 2006-2015

Cancer sites	Incidence		Mortality	
	Male	Female	Male	Female
Breast	-	<b>+2.4%*</b>	-	+0.0%
Cervix	-	<b>+0.3%</b>	-	-0.9%
Colorectum	<b>+0.5%*</b>	-0.4%*	-0.7%*	-1.1%*
Corpus uteri	-	<b>+3.4%*</b>	-	<b>+2.8%*</b>
Liver	-2.3%*	-2.3%*	-2.8%*	-1.8%*
Lung	-2.4%*	-0.5%*	-2.9%*	-1.4%*
Nasopharynx	-2.1%*	-4.5%*	-3.8%*	-4.9%*
Ovary etc.	-	<b>+1.3%*</b>	-	-0.4%
Prostate	<b>+2.3%*</b>	-	<b>+1.3%*</b>	-
Stomach	-2.8%*	-0.2%	-3.2%*	-3.5%*
Thyroid	<b>+2.3%*</b>	<b>+4.1%*</b>	-0.5%	-3.6%*
All sites	-0.5%*	+1.2%*	-2.2%*	-0.8%*

# FIGO Staging 2009

- IA Tumor confined to the uterus, no or  $< \frac{1}{2}$  myometrial invasion
- IB Tumor confined to the uterus,  $> \frac{1}{2}$  myometrial invasion
- II Cervical stromal invasion, but not beyond uterus
- IIIA Tumor invades serosa or adnexa
- IIIB Vaginal and/or parametrial involvement
- IIIC<sub>1</sub> Pelvic node involvement
- IIIC<sub>2</sub> Para-aortic involvement
- IVA Tumor invasion bladder and/or bowel mucosa
- IVB Distant metastases including abdominal metastases and/or inguinal lymph nodes

# GOG 33 Study

- Patients with disease apparently confined to the uterus
  - 9% had pelvic nodal metastases
  - 6% had para-aortic nodal metastases
  - 5% had disease that had spread to the adnexa
  - 6% had other extrauterine metastases
- <30% of patients with pelvic lymph node metastases having grossly enlarged lymph nodes

# Society of Gynaecologic Oncology

- Treatment and surgical staging of endometrial cancer involves removing the uterus, cervix, adnexa, and pelvic and para-aortic lymph node tissues as well as obtaining pelvic washings.

# GOG Surgical Procedures Manual

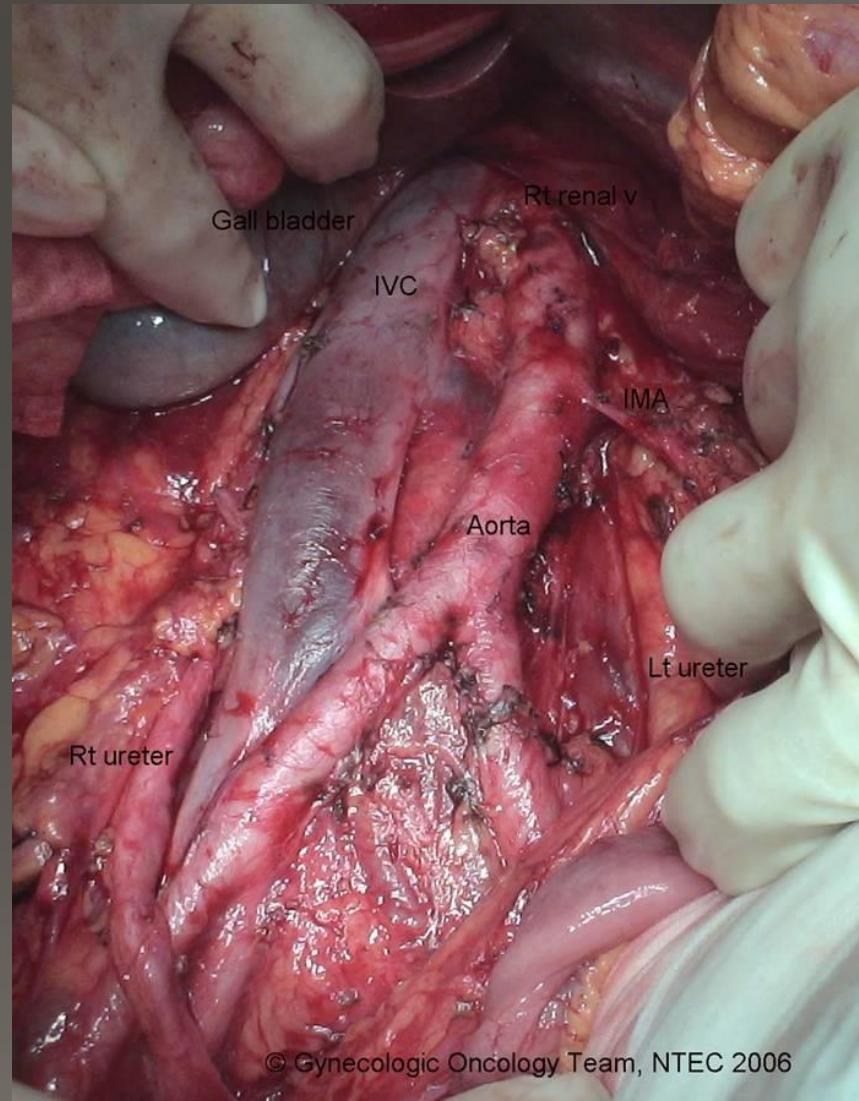
- Pelvic lymph nodes dissection
  - from the distal one half of the common iliac artery down to the circumflex iliac vein, and nodal tissue was to be removed anterior to the obturator nerve and surrounding the iliac arteries and vein.
- Para-aortic nodes dissection
  - The cephalad boundary was generally, but not limited to, the **inferior mesenteric artery**, and the distal boundary was the midpoint of the common iliac artery
- \***No minimum nodal counts** recommended

# Aortic Node Involvement

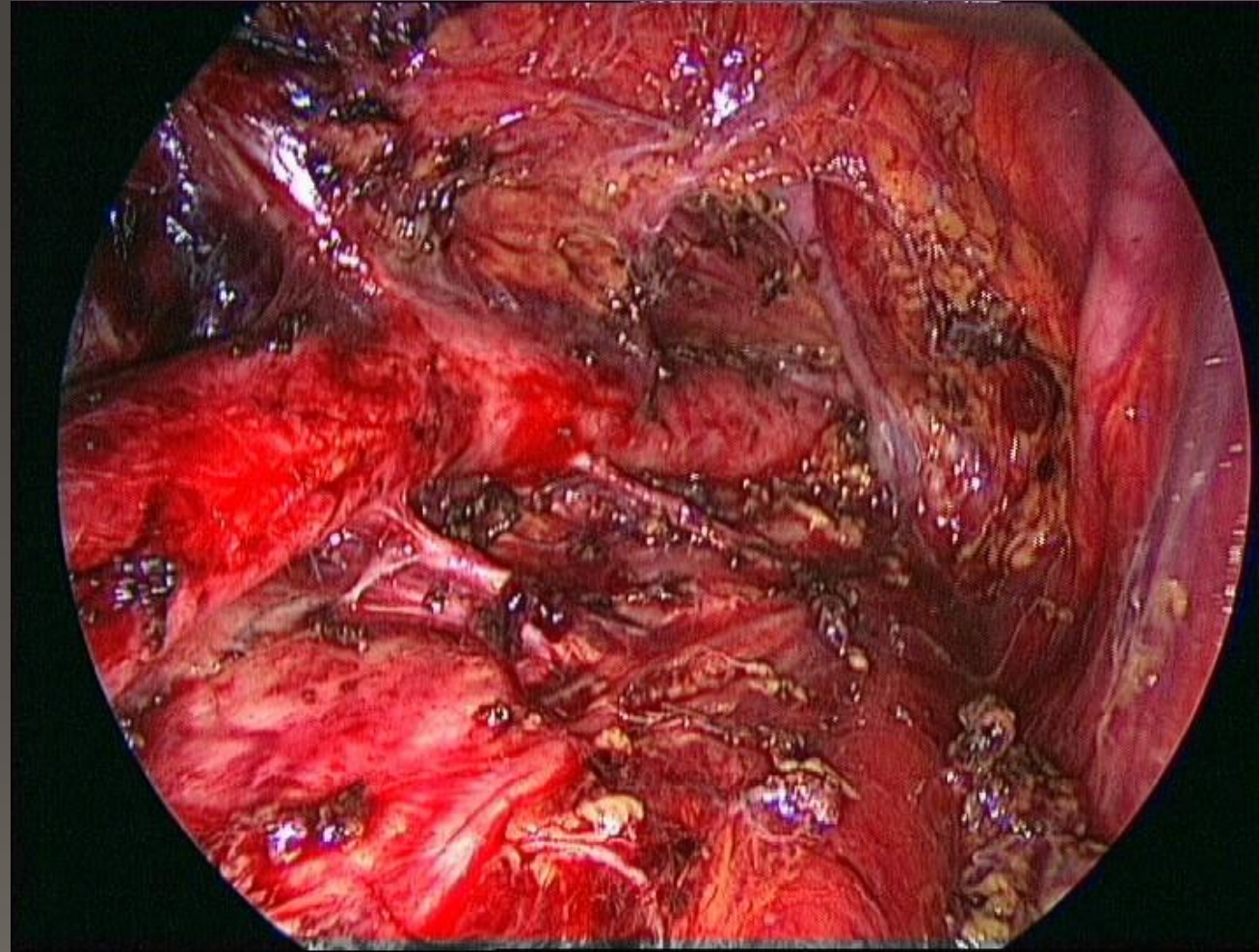
- When lymph node metastasis occurs, the para-aortic lymph nodes were involved 57–67% of the time
- Isolated para-aortic lymph node involvement in the absence of pelvic lymph node metastases occurs in 16–17% of patients with lymph node involvement
  - the risk of isolated para-aortic lymph node metastases ranges from 1% to 3.5%
- 77% of patients with para-aortic metastases have disease above the inferior mesenteric artery.



# Laparotomy

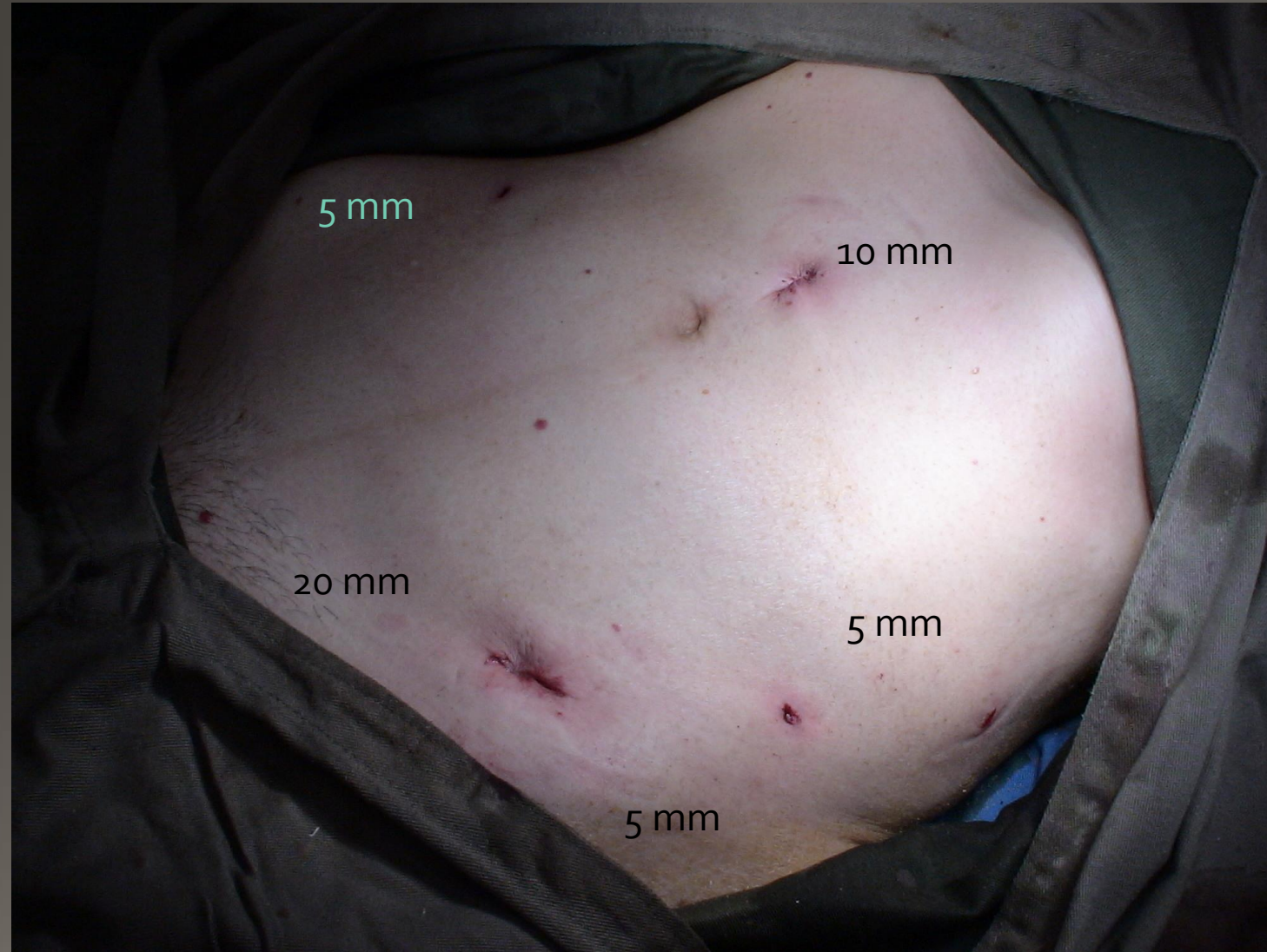


# Laparoscopic Approach - Extraperitoneally





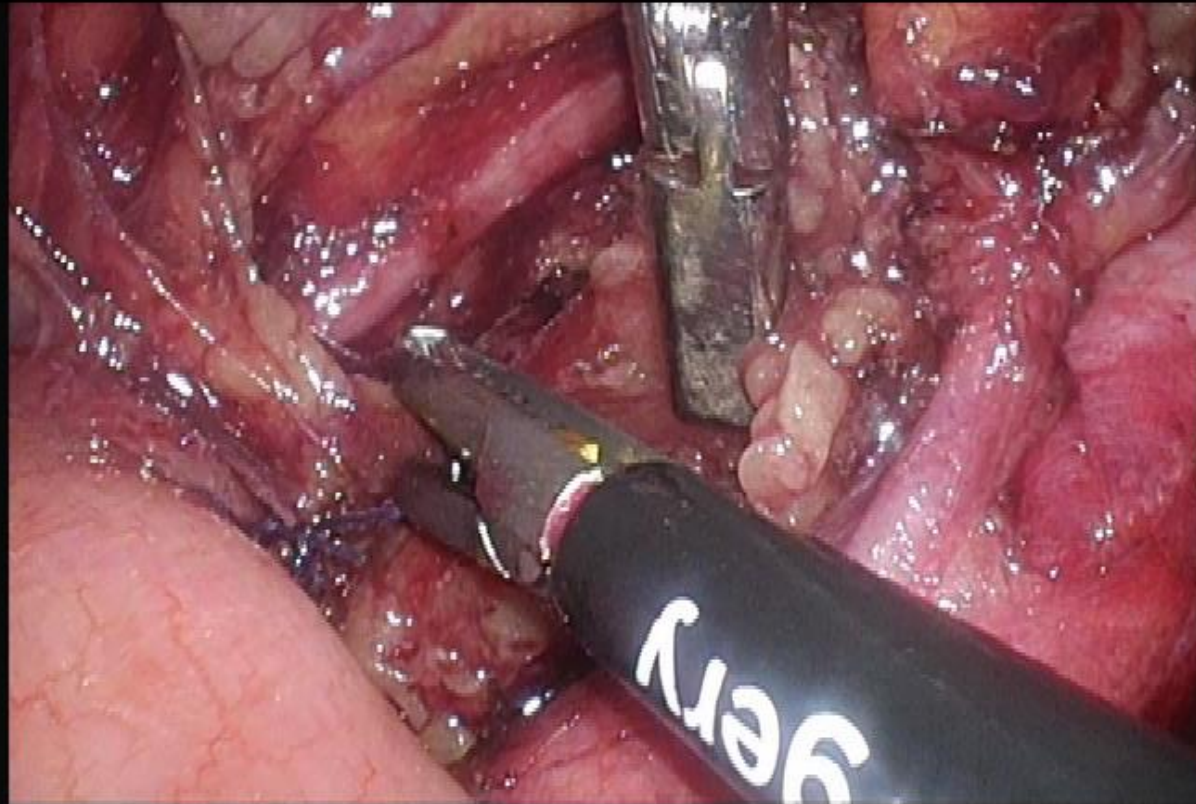
# Port Sites



# Aortic Node Specimen

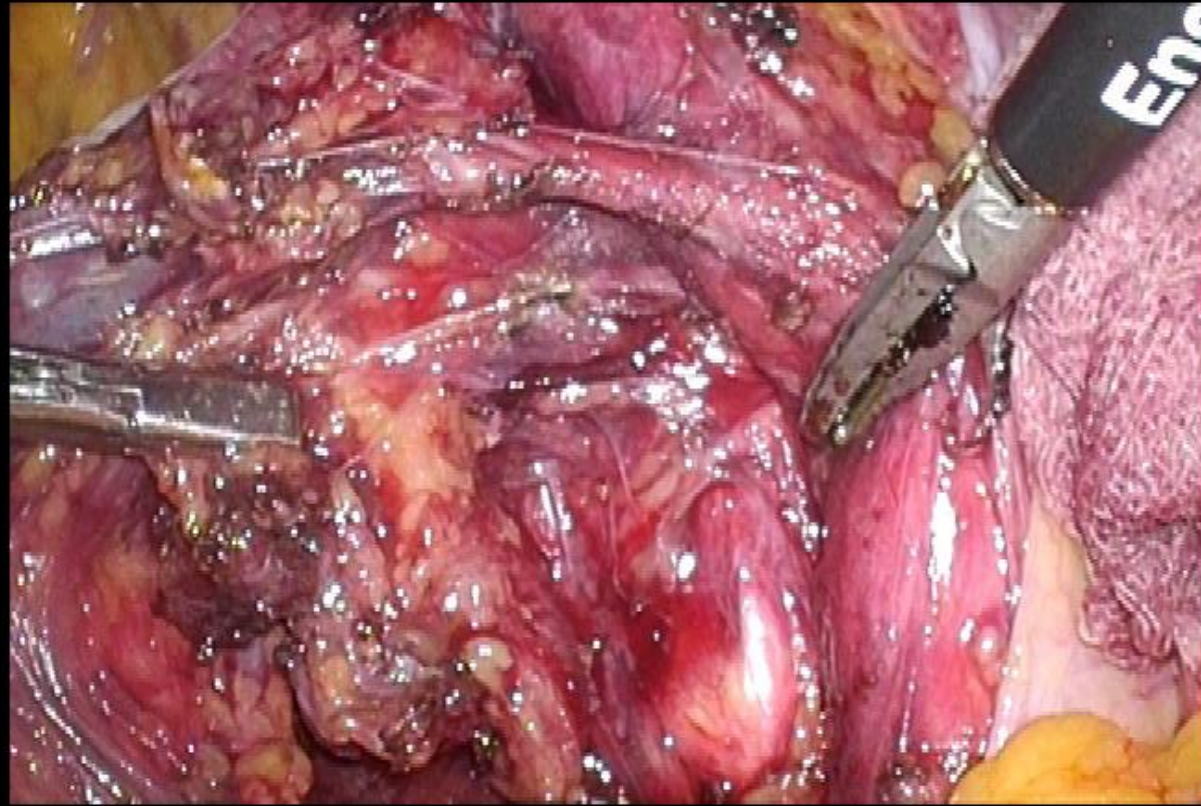


# Laparoscopic Transperitoneal Approach

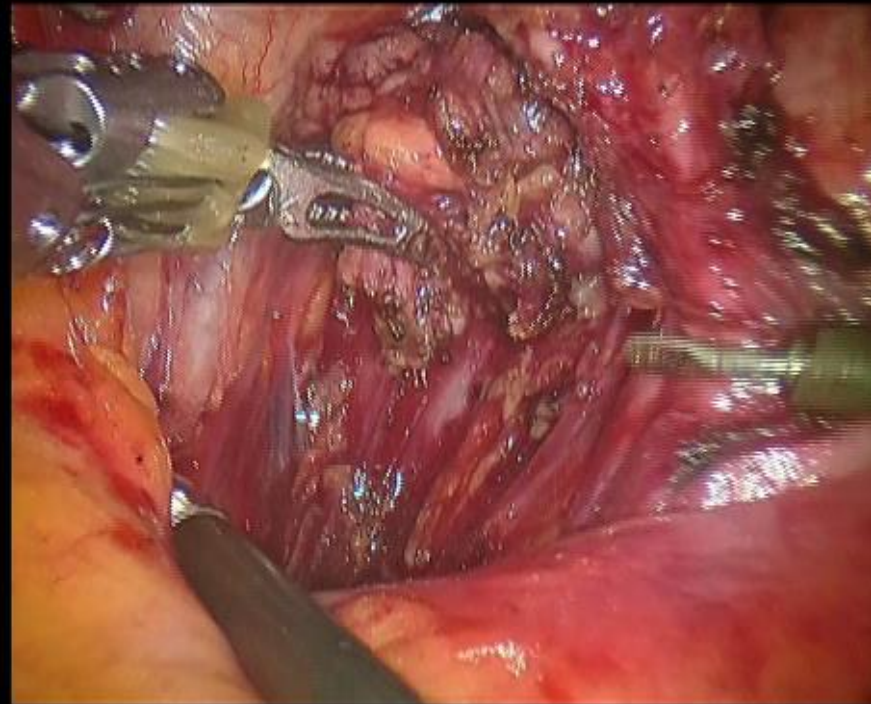




# Laparoscopic Transperitoneal Approach



# Robotic Transperitoneal Approach



# Number of Lymph Node Removed Matters

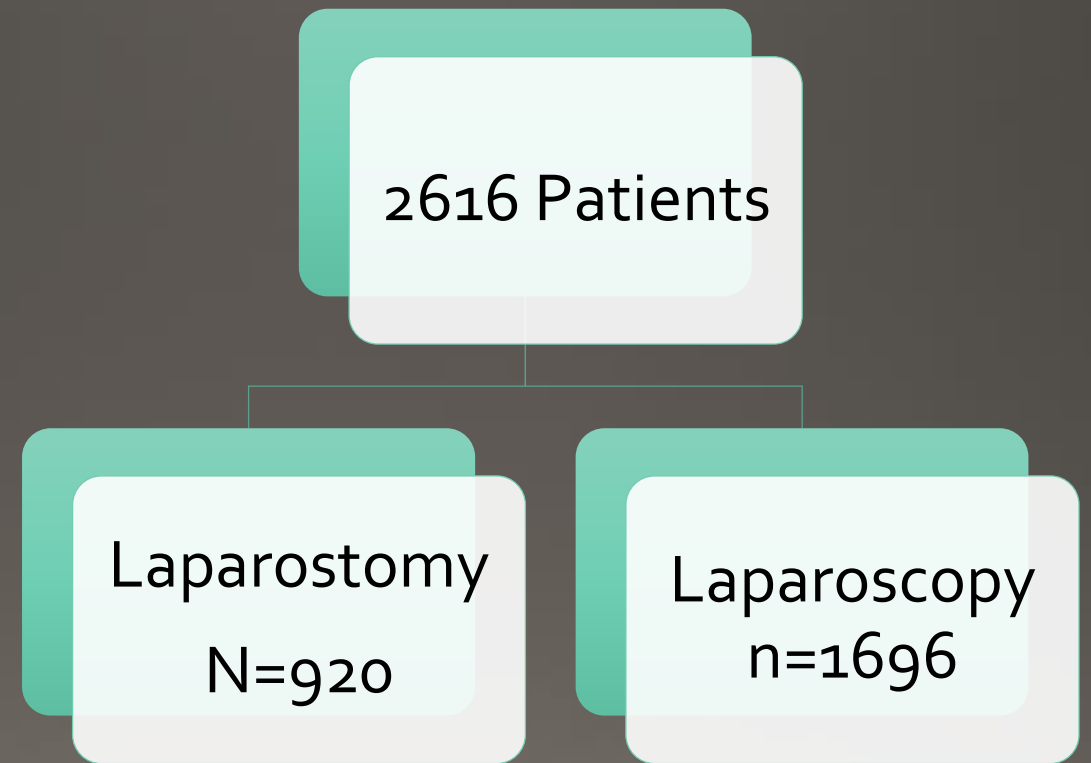
- Data of 11,443 women diagnosed with endometrioid uterine carcinoma from 1990 to 2001 were database from the National Cancer Institute (NCI).
  - represent approximately 14% of the U.S. population
- The median number of lymph nodes reported was 9 (range, 1–90)
- The removal of **21 to 25 lymph nodes** significantly increases the probability of detecting at least 1 positive lymph node in endometrioid uterine cancer.

Cancer 2007;109:2454–60.



# LAP<sub>2</sub>

- The study was designed to compare laparoscopy with laparotomy for the purpose of complete comprehensive surgical staging of uterine cancer.
- The primary outcome of the study was recurrence-free survival



J Clin Oncol 27:5331-5336

# Outcomes

- Both para-aortic and pelvic lymph nodes were identified in 96% of laparotomy patients and 92% of laparoscopy patients

	Laparotomy	Laparoscopy
Pelvic Nodes		
Median Number	18	17
Range	12-24	12-23
Aortic Nodes		
Median Number	7	7
Range	4-11	4-11

# Surgical Risk

- 30% patients with uterine cancer are above the age of 60 in Hong Kong
- >70% of women presenting with endometrial cancer have significant coexisting cardiac, pulmonary, vascular, or endocrine disease

\*about 15% endometrial cancer patients have nodal metastasis

Gynecol Oncol. 1991;42:209-216

# National Comprehensive Cancer Network 2018 Guidelines

- THBSO and lymph node assessment is the recommended treatment of apparent uterine-confined endometrial carcinoma
- Lymph node assessment
  - Suspicious nodes should be removed
  - Pelvic node are frequently removed in the staging process
  - Para-aortic lymph node assessment should be restricted to high risk cases

# Low Risk Patients

- Defined as Grade 1 or 2 disease, < 50% myoinvasion and tumour size < 2 cm
- Lymphadenectomy may be safely omitted because the chance of having metastatic nodes is < 1%

Gynecol. Oncol. 109 (2008) 11–18.

# Nodal Metastasis

- The risk of pelvic node metastasis by grade
  - Grade 1, 2– 5%
  - Grade 2, 9– 11%
  - Grade 3, 18– 26%
- Most patients with para-aortic nodal metastasis will have
  - palpably aortic nodes
  - clinically involved pelvic nodal metastasis
  - macroscopic adnexal disease
  - deep myometrial invasion (outer 1/3 myometrial involvement)

Surg Clin North Am. 1991;71:991-1004

# Sentinel Lymph Node

- The primary purpose is to avoid extensive nodal dissection
- Injection to the uterine cervix is commonly practiced
  - SN detection rates range from 70-90% but only 40 to 80% has SN detected bilaterally
  - <10% have SN found in the aortic area

Gynecol Oncol 146 (2017) 405–415

# SEPAL Study

- “Survival Effect of Para-Aortic Lymphadenectomy”
- Retrospective study of 671 endometrial cancer patients
- THBSO + Pelvic or Pelvic & para-aortic lymphadenectomy
  - followed by adjuvant radiotherapy or chemotherapy.
- Multivariate analyses showed that use of para-aortic lymphadenectomy and adjuvant chemotherapy were significantly and independently associated with survival of patients at **intermediate and high risk of recurrence**.

Lancet 2010; 375: 1165–72



# Case Scenario

- 38 Years old, Para 1
- Good past health
- Presented with menorrhagia
- Endometrial sampling showed adenocarcinoma
- MRI: 3cm tumour, no deep invasion or no enlarged node
- Laparoscopic hysterectomy and bilateral salpingo-oophorectomy
- Pathology: **G3 myometrial invasion 8/21mm, LVSI++**

# Laparoscopic Lymphadenectomy

## Pathology Report

### DIAGNOSIS

- I. Right pelvic lymph node, Resection: 13 lymph nodes, all benign.
- II. Left pelvic lymph node, Resection: 10 lymph nodes, all benign.
- III. Right para-aortic lymph node, Resection: 5 lymph nodes, all benign.
- IV. Left para-aortic lymph node, Resection: 16 lymph nodes, all benign.
- V. Left upper para-aortic lymph node, Resection: 8 lymph nodes, all benign.



# PWH Experience

- TAHBSO and
  - pelvic lymphadenectomy in 47 patients
  - pelvic and para-aortic lymphadenectomy in 48 patients
- 19 of 95 (20.0%) patients had nodal metastases.
  - Positive pelvic lymph nodes in 15 of 95 (15.8%) patients
  - Positive para-aortic lymph nodes in 12 of 48 (25.0%) patients
- As the result of the lymphadenectomy
  - 19 (20.0%) patients had their surgical stage upgraded to stage IIIC
  - 61 (64.2%) patients had a change in their management plan.
    - 12 patients had extended field irradiation for para-aortic nodal metastases
    - 49 patients with negative nodes avoided postoperative radiotherapy

# PWH Experience

- A retrospective study of 163 endometrial carcinoma patients
- 35 (21.5%) patients had nodal metastases
  - positive pelvic nodes in 26 patients
  - positive aortic nodes 24 patients
  - Isolated aortic metastases were found in 17 cases
- Among 24 patients with aortic nodal metastases, 12 patients remain disease free with a median disease-free survival was 47 months

*European Journal of Gynaecological Oncology. 28(2):98-102, 2007.*

# To Best Benefit Our Patient

- We need the help of **radiologist and pathologist** to identify patients with significant risk of nodal metastasis
- We need to work with **medical and radiation oncologist** to decide whether postoperative adjuvant therapy is needed

Thank You