AGL 2022

51st GLOBAL CONGRESS ON MIGS

December 1–4, 2022 | Gaylord Rockies Resort and Convention Center | Aurora, Colorado

SYLLABUS

ONC-606: Oncology Controversies for the Practicing Gynecologist

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ONC-606: Oncology Controversies for the Practicing Gynecologist

Co-Chairs: *Dario R. Roque, MD, Fernando Heredia, MD*

Faculty: *Emma L. Barber, MD, MS, Gulden Menderes, MD, Edward J. Tanner, MD, MBA*

Course Description

This course will provide an overview of three oncology related topics that would be of interest to any practicing gynecologic surgeon. First, we will present evidence-based guidelines for the work-up and management of the pelvic mass. This will include a review of imaging modalities and features that could help differentiate benign vs. malignant lesions, as well as a discussion of surgical approach (i.e., MIS vs laparotomy) and extent of surgery in special cases (i.e., cystectomy vs. oophorectomy in borderline tumors). The second topic will focus on the impact of uterine manipulators on oncological outcomes in endometrial cancer surgery. This topic will be presented in a debate format. The debaters will review the current literature and make an argument for and against the use of uterine manipulators in patients undergoing MIS for endometrial cancer. The last topic will also be presented in a debate format and will address the role of MIS in interval debulking surgery for ovarian cancer. The presenters will review the current literature, provide videos demonstrating the feasibility of the minimally invasive technique and make an argument for and against this surgical approach in the management of patients with ovarian cancer.

Learning Objectives

At the conclusion of this course, the participants will be able to: 1) Choose the appropriate workup and surgical approach for patients with a pelvic mass; 2) Describe the benefits and potential risks of uterine manipulator use in patients undergoing MIS for endometrial cancer; and 3) State the significance and limitations of MIS in the management of ovarian cancer.

Course Outline

7:00 am	Welcome, Introduction and Course Overview	R. Roque/F. Heredia
DEBATE #1:	**Uterine Manipulator Use in Endometrial Cancer Surgery**	
7:50 am	Pro	E.L. Barber
8:05 am	Con	F. Heredia
8:20 am	Questions and Answers - Discussion	
DEBATE #2:	**Minimally Invasive Surgery for Ovarian Cancer Interval Debulking**	
8:30 am	Pro	G. Menderes
8:45 am	Con	E.J. Tanner
9:00 am	Questions & Answers - Discussion	
9:30 am	Adjourn	

Management of the Pelvic Mass:

Who is it safe for me to operate on and who should I refer?

Oncology Controversies for the Practicing Gynecologist
AAGL Post-Graduate Course – ONC 606
December 1, 2022

Dario R. Roque, MD
Assistant Professor, Division of Gynecologic Oncology
Northwestern University Feinberg School of Medicine

AAGL 2022 51st GLOBAL CONGRESS ON MIGS
December 1-4, 2022 | Aurora, CO | congress.aagl.org

Disclosure

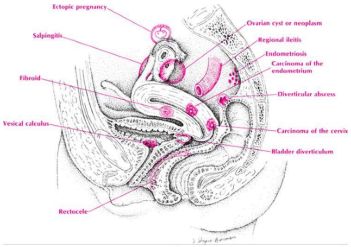
- Consultant: Myriad Genetics
- Speakers Bureau: GSK and Myriad Genetics
- Surgical Proctor: Intuitive

Objectives

By the end of the presentation, participants will be able to:

1. Outline the clinical approach and evaluation of the patient with a pelvic mass
2. Distinguish the imaging characteristics of benign versus malignant lesions
3. Discuss the rationale for choosing surgery over observation in patients with an adnexal mass
4. Review criteria for referral to a gynecologic oncologist

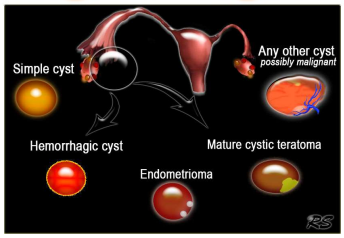
Differential Diagnosis of a Pelvic Mass



Differential Diagnosis of an Adnexal Mass

ADOLESCENT	REPRODUCTIVE	PERI-MENOPAUSAL	POST-MENOPAUSAL
Functional Cyst	Functional Cyst	Fibroids	Ovarian Tumor (malignant or benign)
Pregnancy, Sequelae of PID	Pregnancy, Ectopic Pregnancy	Epithelial ovarian tumor	Functional Cyst
Benign cystic teratoma / Other germ cell tumors	Uterine fibroids,	Functional Cyst	Bowel, malignant tumor or inflammatory
Obstructing vaginal or uterine anomalies	Epithelial ovarian tumor, Mature cystic teratoma		Metastases
Epithelial ovarian tumor	Tubo-ovarian masses (acute/chronic)		

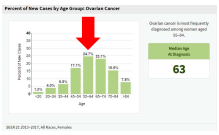
Benign vs. Malignant?



Medical & Family History

Risk Factors

- Age
  - Most important **independent** risk factor
  - **Most adnexal masses are benign**
- Family History
  - Most important **personal** risk factor
  - Ovarian/Breast Cancer
    - BRCA 1/2
  - Colon/Endometrial/Ovarian Cancer
    - Lynch Syndrome

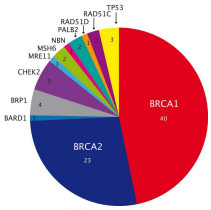


	General Population	BRCA 1 Gene Mutation	BRCA 2 Gene Mutation
Risk of Ovarian Cancer	2%	60 - 90%	45 - 85%
Risk of Breast Cancer	12%	40 - 60%	10-30%

Genetic Panel Testing

Risk Reducing Surgery per NCCN Guidelines

- Other genes associated with increased risk of OC
  - BRIP1
  - RAD51C
  - RAD51D
  - STK11 (non-epithelial OC)

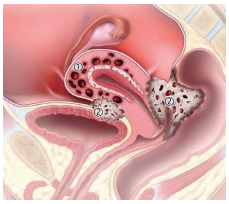


Medical History

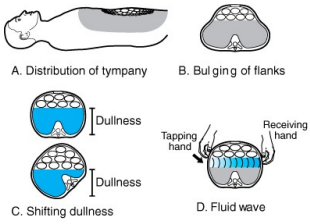
Narrowing the Differential

- Pre-menopausal
  - Acute onset pelvic pain
    - Hemorrhagic cyst
  - Fevers, vaginal discharge
    - TOA
  - Dysmenorrhea, dyspareunia
    - Endometrioma
  - Abnormal uterine bleeding
    - Estrogen producing tumor
- Post-Menopausal
  - Post-menopausal bleeding
    - Estrogen producing tumor
  - Bloating, early satiety
    - Malignancy

Physical Exam



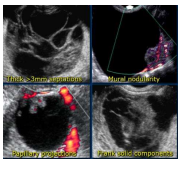
Physical Exam



Imaging

Pelvic Ultrasound

- **Initial (and often only) imaging needed in evaluation of incidental pelvic mass**
  - Size and composition
  - Laterality
  - Presence of mural nodules, papillary excrescences
  - Free fluid in pelvis
  - Vascular features
- Widespread availability
- Patient tolerance
- Cost-Effective

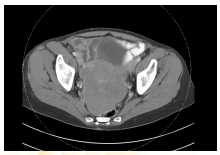


Use with caution when evaluating large pelvic masses

Imaging

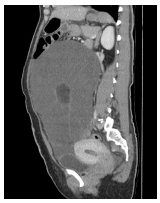
CT

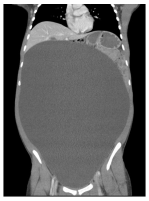
- Very limited use in characterization/evaluation of pelvic masses
- Best used in assessing for metastatic disease
  - Ascites
  - Omental/Peritoneal Nodularity
  - Retroperitoneal Adenopathy
  - Ureteral Obstruction



Imaging

CT





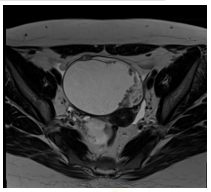
Imaging

MRI

- May be better at classifying benign vs. malignant
- Lower detection rate
- Helpful at differentiating origin
  - Fallopian Tube
  - Pedunculated Fibroid
  - Diverticular Abscess

TABLE 2
Validity of Ultrasound, MRI, and PET in Discrimination of Malignant from Benign Ovarian Lesions

	Sensitivity	Specificity	Positive predictive value	Negative predictive value	Accuracy
Ultrasound	92%	60%	23%	98%	63%
MRI	83%	84%	42%	97%	84%
PET	58%	80%	28%	93%	77%



Laboratory Testing

Tumor Markers

- CA-125
  - Non-Mucinous Epithelial ovarian cancer (EOC)
  - Elevated only in 50% of early stage EOC
    - Low Sensitivity (61-90%)
  - Elevated in non-malignant conditions
    - Low Specificity (71-93%)
  - Much more sensitive and specific after menopause
- CEA
- B-HCG

Table 3. Causes of Elevated Cancer Antigen 125 Levels Not Associated with Ovarian Cancer

Benign gynecologic causes	Benign nongynecologic causes	Malignancies
Endometriosis, especially endometriomas	Caffeine use	Breast cancer
Large uterine fibroids	Liver cirrhosis with or without ascites	Endometrial cancer
Menstruation	Lung disease	Lung cancer
Ovarian fibroma	Obesity	Pancreatic cancer
Pelvic inflammatory disease	Tuberculosis	Peritoneal implants of nonovarian cancers
Previous hysterectomy		

Laboratory Testing

Tumor Markers

Table 1. Serum Biomarker and Multimodal Test Results Considered Abnormal in Women With Adnexal Masses*

Test	Premenopausal	Postmenopausal
CA 125	—†	> 35 U/mL
MIA	≥ 5.0	≥ 4.4
ROMA	≥ 1.31	≥ 2.77
RMI	> 200	> 200

MIA – Multivariate Index Assay
ROMA – Risk of Ovarian Malignancy Algorithm
RMI – Risk of Malignancy Index

Table 2. Serum Biomarkers in Ovarian Germ Cell Tumors

	β-hCG	AFP	LDH	CA 125
Dysgerminoma	+	-	+	-
Endodermal sinus tumo	-	+	-	-
Choriocarcinoma	+	-	-	-
Immature teratoma	-	+	+	+
Embryonal carcinoma	+	+	-	-

Abbreviations: AFP, alpha fetoprotein; CA, cancer antigen; LDH, lactate dehydrogenase.

Imaging Findings

Benign Vs. Malignant

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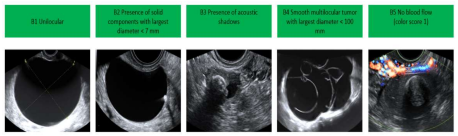
Benign Features on Imaging

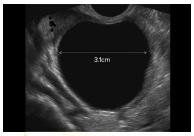
International Ovarian Tumor Analysis (IOTA) Simple Rules



Timmerman D, et al. Ultrasound Obstet Gynecol 2008.

Benign Features on Imaging

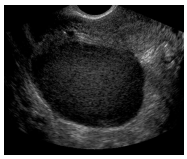
- Simple Cysts
  - Anechoic lesion
  - Unilocular
  - Thin, smooth walls
  - No solid or well vascularized components
  - <0.1% risk of malignancy regardless of menopausal status



Modesitt SC et al Risk of malignancy in unilocular ovarian cystic tumors less than 10 centimeters in diameter. Obstet Gynecol 2003.

Benign Features on Imaging

- Endometrioma
  - Homogeneous, hypoechoic mass
  - Diffuse low-level echoes
  - No internal flow
  - No enhancing nodules or solid masses
  - 30% with echogenic foci within cyst wall
  - MRI may further confirm diagnosis



Fat-saturation T1-weighted image, high signal intensity

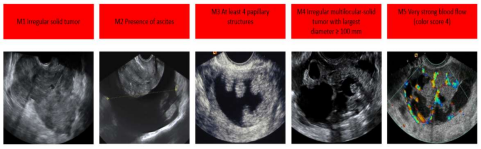
T2-weighted image, blood-degraded content has intermediate to low signal intensity

Benign Features on Imaging

- Mature Cystic Teratoma (Dermoid)
  - Hypoechoic mass with hyperechoic nodule
  - Usually unilocular
  - May contain calcifications
  - Hyperechoic lines (hair)
  - Fat fluid levels
  - MRI may further confirm diagnosis

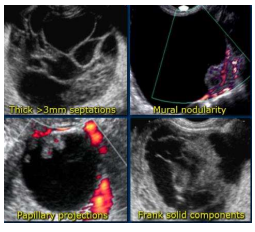
Malignant Features on Imaging

International Ovarian Tumor Analysis (IOTA) Simple Rules



Timmerman D, et al. Ultrasound Obstet Gynecol 2008.

Malignant Features on Imaging



Surgery Vs. Observation

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Surgery vs. Observation

- Lesion morphology
- Risk stratification for malignancy by age, medical and family history
- Risk stratification for peri-operative risks by comorbidities
- Symptomatic vs. Incidental Finding
- Additional Findings
  - Ascites, Adenopathy, Peritoneal Implants

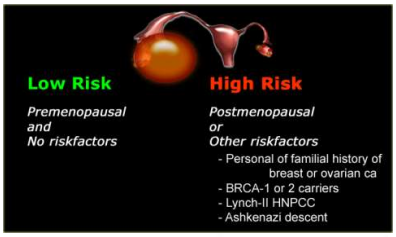
Observation

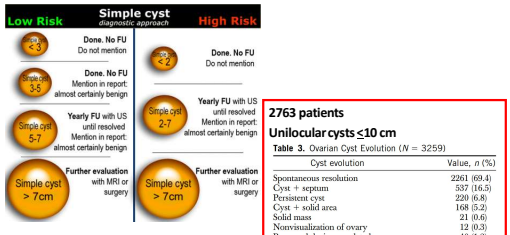
How Frequent and for how long?

- No clear guidelines for interval or duration
- Suh-Burgmann et al. (2014)
  - 1363 adnexal masses in women over 50
    - 994 women had at least 1 follow up US
    - 12 cancer/borderline cases; 10 Stage I
    - All malignancies demonstrated growth with 7 months

Suh-Burgmann E., et al. Outcomes from ultrasound follow-up of small complex adnexal masses in women over 50. AJOG, 2014.

Risk Stratification for Malignancy





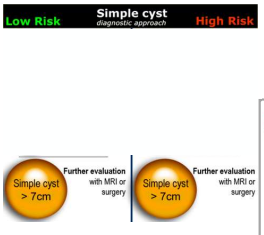
2763 patients

Unilocular cysts ≤10 cm

Table 3. Ovarian Cyst Evolution ($N = 3259$)

Cyst evolution	Value, *n* (%)
Spontaneous resolution	2261 (69.4)
Cyst + septum	537 (16.5)
Persistent cyst	220 (6.8)
Cyst + solid area	168 (5.2)
Solid mass	21 (0.6)
Nonvisualization of ovary	12 (0.3)
Removed during unrelated surgery	40 (1.2)

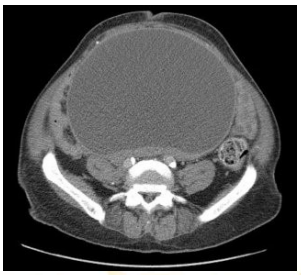
Modesitt SC et al Risk of malignancy in unilocular ovarian cystic tumors less than 10 centimeters in diameter. Obstet Gynecol 2003.

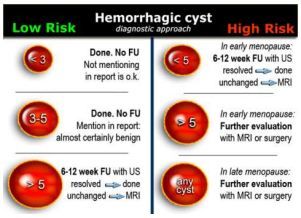


SAFE TO OPERATE UNLESS

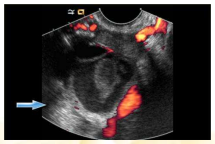
1) Unable to do via MIS
2) Elevated CA-125 or other concerning findings

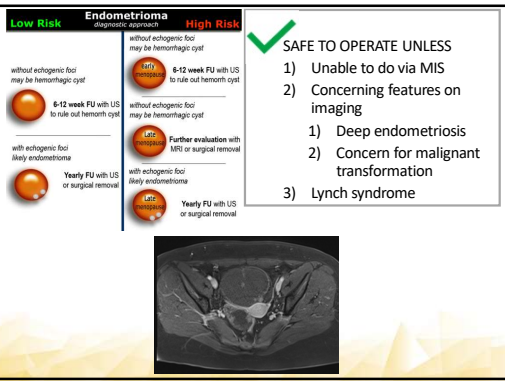
Modesitt SC et al Risk of malignancy in unilocular ovarian cystic tumors less than 10 centimeters in diameter. Obstet Gynecol 2003.





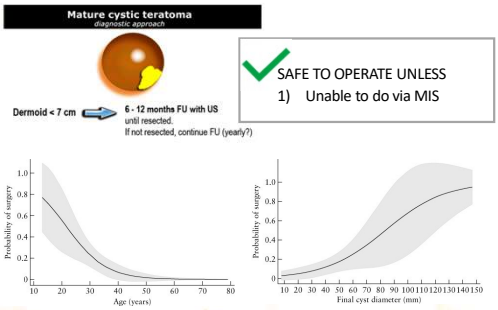
- Differential Diagnosis
  - Endometrioma
  - Solid Mass (Acute Phase)
  - Neoplasm (clot mimicking solid nodule)
- Most resolve within 8 weeks





SAFE TO OPERATE UNLESS

1) Unable to do via MIS
2) Concerning features on imaging
   1) Deep endometriosis
   2) Concern for malignant transformation
3) Lynch syndrome



SAFE TO OPERATE UNLESS

1) Unable to do via MIS

26% of women underwent surgical treatment vs. expectant management

Hoo WL, et al. Expectant management of ultrasonically diagnosed ovarian dermoid cysts: is it possible to predict outcome? Ultrasound Obstet Gynecol 2010.

Which Patient Should I Refer to Gyn Oncology?

Northwestern Medicine

Gyn Oncology Referral Criteria

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Pre-menopausal	Post-Menopausal
• Very elevated CA-125	• CA-125 >35

US Findings suggestive of malignancy
Ascites
Nodular or fixed pelvic mass
Abdominal/Distant Metastasis
Elevated Score on a Risk Assessment Test
RMI
MIA
ROMA
IOTA Scoring Systems

ACOG Practice Bulletin 174

Risk of Malignancy Index (RMI)

- Combines US Findings with CA-125 and menopausal status
  - Direct multiplication of each parameter score
  - Simple and cost effective
  - Sensitivity: 71-88.5%
  - Specificity: 74.3-97%
  - PPV: 62%
  - NPV: 97%

Table 1. Serum Biomarker and Multimodal Test Results Considered Abnormal in Women With Adnexal Masses*

Test	Premenopausal	Postmenopausal
CA 125	—†	> 35 U/mL
MIA	≥ 5.0	≥ 4.4
ROMA	≥ 1.31	≥ 2.77
RMI	> 200	> 200

RISK OF MALIGNANCY INDEX (RMI)

Criteria	Scoring System	Score
Menopausal status premenopausal postmenopausal	 1 3	A (1 or 3)
Ultrasonic feature •Multiloculated •Solis areas •Bilaterality •Ascites •Metastasis	No feature = 0 One feature =1 > 1 feature =3	B (0,1 or 3)
Serum CA 125	Absolute level	C
RISK OF MALIGNANCY INDEX		Ax B x C

Jacobs et al Br J O bstet Gynaecol 1990 : 97 : 922-9

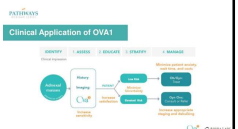
Risk of Ovarian Malignancy Algorithm (ROMA)

- Incorporates measurements of tumor derived CA-125 and HE4 with menopausal status
  - FDA Approved for determining risk of ovarian cancer in women with a pelvic mass
  - Conflicting evidence comparing ROMA vs. RMI
  - Conflicting evidence comparing HE4/CA-125 or ROMA over CA-125 alone OR over HE4 alone
  - Conflicting evidence in effectiveness in pre- vs post-menopausal women

Nolen BM, Lokshin AE. Multianalyte assay systems in the differential diagnosis of ovarian cancer. Expert Opin Med Diagn. 2013

Multivariate Index Assay (MIA)

- FDA Approved for use as an adjunct to physical examination and imaging
- Produces a risk assessment score within the range of 0-10
- Separate cutoff values for premenopausal (5.0) and postmenopausal women (4.4)
- Five biomarker combination
  - CA-125, tranthyretin, ApoA1, β-2 microglobulin, transferrin

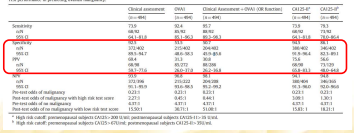


Multivariate Index Assay (MIA)

Table 3
Clinical evaluation of the OVA1 test (reported in [22,23])

	SN	SP	PPV	NPV
ACOG + CA 125	77	68	52	87
ACOG + OVA1	94	35	40	93
PA alone	75	79	62	88
PA + OVA1	98	35	40	95
CA 125 alone	69-77	73-84	56-65	86-88
OVA1 alone	93	45	42	93

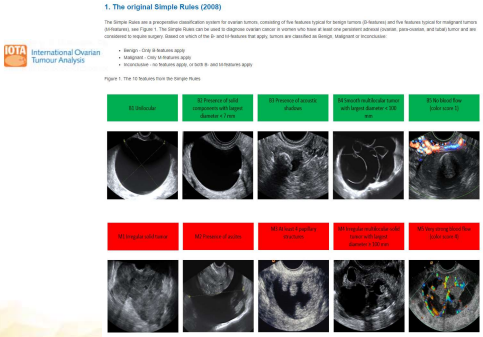
ACOG: American College of Obstetricians and Gynecologists' ovarian tumor referral guidelines
PA: physician assessment



IOTA LR2 Risk Model

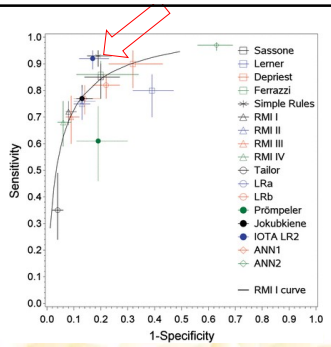
International Ovarian Tumour Analysis

- Six predictors
  - Age + Five US Variables
    - Maximal diameter of largest solid component
    - Irregular internal cyst walls
    - Presence of papillary projections with flow
    - Acoustic shadows
    - Ascites
  - Patients selected for expectant management were excluded
  - Model appears to underestimate the risk of malignancy



IOTA Models

- IOTA Simple Rules
  - Sensitivity: 93%
  - Specificty: 83%
- IOTA LR2
  - Sensitiviy: 92%
  - Specificity: 83%



Kaijser J, et al. Presurgical diagnosis of adnexal tumours using mathematical models and scoring systems: a systematic review and meta-analysis. Hum Reprod Update 2014.

www.gin-onc-calculators.com/ovarian.php (gin-onc-calculators.com)

Adnexal Mass Risk Prediction Models

Home
RMI – risk of malignancy index
IOTA models
Ultrasography score by Sassome and Pelvic Mass Score
MLRA Index
Morphological score and Berlanda index
ROMA - risk of malignancy algorythm
Gyn Onc Model
Contact

Welcome

We invite healthcare professionals to use diagnostic tools for a preoperative adnexal mass diagnosis.

It is essential to perform possibly the most accurate diagnosis in order to refer the patient to the adequate centers for surgery. The most important is to filter patients with suspected ovarian malignancy and offer them a treatment in an oncology centers.

There are few indices that were created originally by different authors, published in core clinical journals and used here, on this web page, with authors' permission. The reference is provided by each of the indices. The web page and presented calculators should be considered as an additional diagnostic tool, and cannot replace a comprehensive clinical examination.

If you were interested in more details about indices for ovarian tumor evaluation, please read the review article: "Usefulness of Diagnostic Indices Comprising Clinical, Sonographic, and Biomarker Data for Discriminating Benign From Malignant Ovarian Masses". Journal of Ultrasound in Medicine 2015 34:207-217; doi:10.7863/ultra.34.2.207.

Maciej Stukan, MD, PhD

Adnexal Mass Risk Prediction Models

Home
RMI – risk of malignancy index
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Morphological score and Berlanda index
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IOTA models - LR1 and LR2[1,2]

You can fill out only the first 6 variables or all 12

Age of the patient (years)
Presence of ascites — No
Presence of blood flow within a papillary projection — No
Largest diameter of the solid component (in mm)
Irregular internal cyst wall — No
Presence of acustic shadows — No
Personal history of ovarian cancer — No
Current hormonal therapy — No
Largest diameter of the lesion (in mm)
Presence of pain during the examination — No
Presence of a purely solid tumor — No
Color score — 1 - No blood flow can be found in the lesion
submit

Link to IOTA home page and software: http://homes.esat.kuleuven.be/~sistawww/biomed/iotaIndex.php#software

References:
1. Timmerman D, Van Calster B, Testa AC et al. Ovarian cancer prediction in adnexal masses using ultrasound-based logistic regression models: a temporal and external validation study by the IOTA group. Ultrasound Obstet Gynecol 2010; 36: 226-234.
2. Timmerman DV, L, Bourne, T.H., Collins, W.P., Verrelst H., Vergote, I. Terms, definitions and measurements to describe the sonographic features of adnexal tumors: a consensus opinion from the International Ovarian Tumor Analysis (IOTA) group. Ultrasond Obstet Gynecol 2000; 16: 500-505

https://homes.esat.kuleuven.be/~sistawww/biomed/ssrisk/

Simple Rules Risk Calculator (SRRisk)

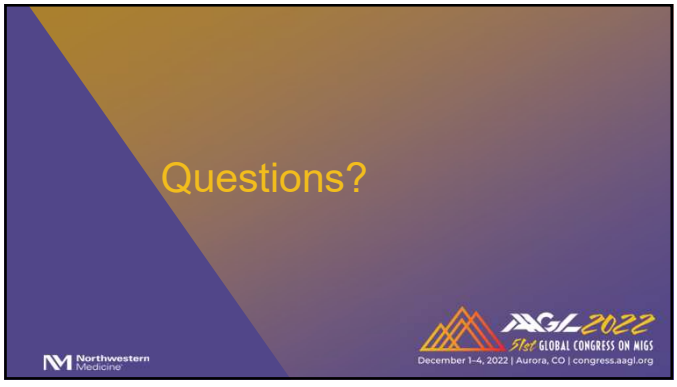
SELECT PARAMETERS

Simple rules paper: Timmerman D, et al. Simple ultrasound-based rules for the diagnosis of ovarian cancer. Ultrasound Obstet Gynecol 2008;31:681-690.

Simple rules risk paper: Timmerman D, Van Calster B, et al. Predicting the risk of malignancy in adnexal masses based on the Simple Rules from the International Ovarian Tumor Analysis group. Am J Obstet Gynecol 2016;214:424-437.

Predictors	
Ultrasound examination at oncology center	◉ no ○ yes
B features (suggestive of benign tumor)	
B1: - Unilocular cyst	◉ Absent ○ Present
B2: - Presence of solid components with max diam < 7 mm	◉ Absent ○ Present
B3: - Acoustic shadows	◉ Absent ○ Present
B4: - Smooth multilocular tumor with max diam <100mm	◉ Absent ○ Present
B5: - No blood flow (color score 1)	◉ Absent ○ Present
M features (suggestive of malignant tumor)	
M1: - Irregular solid tumor	◉ Absent ○ Present
M2: - Ascites	◉ Absent ○ Present
M3: - At least four papillary structures	◉ Absent ○ Present
M4: - Irregular multilocular-solid tumor with max diam ≥100m	◉ Absent ○ Present
M5: - Very strong blood flow (color score 4)	◉ Absent ○ Present

calculate | Clear



DEBATE
Uterine Manipulator in Endometrial Cancer Surgery: PRO

Emma Barber, MD, MS
Northwestern University

AAGL 2022 51st GLOBAL CONGRESS ON MIGS
December 1-4, 2022 | Aurora, CO | congress.aagl.org

Disclosure

- I have the following financial relationships:
  - Research Grants to My Institution: Eli Lilly
  - Advisory Board: Merck

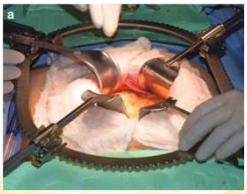
Objectives

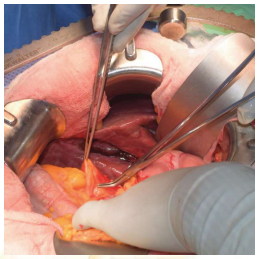
- Describe the benefits and potential risks of uterine manipulator use in patients undergoing MIS for endometrial cancer

Minimally Invasive Surgery Has Revolutionized Endometrial Cancer Care

Rationale for the Uterine Manipulator

- Tension. Counter Tension.
- Retraction and Exposure.





Uterine Manipulator Use is Prevalent

- A cross-sectional survey was conducted to the Society of Gynecologic Oncology.
- 220 U.S. gynecologic oncologists practicing minimally invasive hysterectomy for endometrial cancer.
- **90.1% used a uterine manipulator during endometrial cancer surgery.**
- In France, 165 gynecologic oncologists were surveyed.
- Routine use of uterine manipulator was 42.7%.

MIS including TLH is Safe

- LAP2 Trial
  - 2616 women with stage I to IIA EMC
  - Technique for LAVH, TLH or robotics not specified
  - No difference in detection of advanced disease
  - Improved short term postoperative outcomes
  - No difference in DFS or OS
- LACE trial
  - 760 women with stage I EMC
  - McCartney Tube
  - No difference in recurrence (7.9% TAH) and (8.1% TLH)

LACC Trial: Were Manipulators to Blame?

ORIGINAL ARTICLE

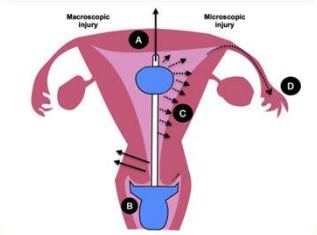
Minimally Invasive versus Abdominal Radical Hysterectomy for Cervical Cancer

Pedro T. Ramirez, M.D., Michael Frumovitz, M.D., Rene Pareja, M.D., Aldo Lopez, M.D., Marcelo Vieira, M.D., Reitan Ribeiro, M.D., Alessandro Buda, M.D., Xiaojian Yan, M.D., Yao Shuzhong, M.D., Naven Chetty, M.D., David Isla, M.D., Mariano Tamura, M.D., et al.

- Recurrence-free survival at 5 years was 80% in the no intra-uterine manipulator group and 94% in the intra-uterine manipulator group.
- Adjusted analysis, use of an intra-uterine manipulator was not associated with worse recurrence-free survival (HR 0.4, 95% CI 0.2 to 1.0, p=0.05).

Nica A, Kim SR, Gien LT, *et al*
Survival after minimally invasive surgery in early cervical cancer: is the intra-uterine manipulator to blame?
International Journal of Gynecologic Cancer 2020;**30**:1864-1870.

Why Would Manipulators Worsen Survival?



Is Hysteroscopy Unsafe?

- **All the same principles apply as a uterine manipulator.**
- **Results:** A total of 1731 women from 15 centers were included: 1044 in the hysteroscopy group and 687 in the Pipelle sampling group. 225 patients relapsed during the 10 year follow-up period: 139 (13.3%) in the hysteroscopy group and 86 (12.4%) in the Pipelle sampling group. There is no evidence of an association between the use of hysteroscopy as a diagnostic method and relapse rate (HR 1.24, 95% CI 0.92 to 1.66; p=0.16), lower disease-free survival (HR 1.23, 95% CI 0.92 to 1.66; p=0.15), or overall survival (HR 0.95, 95% CI 0.70 to 1.29; p=0.76).
- **Hysteroscopy is widely accepted as a diagnostic technique for endometrial cancer with no evidence of inferior outcomes.**

Quintana-Bertó R, Padilla-Iserte P, Gil-Moreno A, Oliver-Pérez R, Coronado PJ, Martín-Salamanca MB, Pantoja-Garrido M, Lorenzo C, Cazorla E, Gilabert-Estellés J, Sánchez L, Roldán-Rivas E, Díaz-Feijoo B, Rodríguez-Hernández JR, Marcos-Sanmartín J, Munuzabal JC, Cañada A, Domingo S. Oncological safety of hysteroscopy in endometrial cancer. Int J Gynecol Cancer. 2022 Jul 26:ijgc-2022-003586. doi: 10.1136/ijgc-2022-003586. Epub ahead of print. PMID: 35882425.

Retrospective Studies

The International Journal of Medical Robotics and Computer Assisted Surgery

ORIGINAL ARTICLE | Full Access

Does the use of a uterine manipulator in robotic surgery for early-stage endometrial cancer affect oncological outcomes?

Hiroe Ito, Tetsuya Moritake, Keiichi Isaka

- Eighty six robotic surgeries and sixty seven open surgeries were performed for early-stage endometrial cancer.
- Recurrence 5.8% MIS and 9.0% Open
- **Conclusions:** The use of a uterine manipulator during robotic surgery for early-stage endometrial cancer did not influence recurrence or survival.

- Ito H, Moritake T, Isaka K. Does the use of a uterine manipulator in robotic surgery for early-stage endometrial cancer affect oncological outcomes? Int J Med Robot. 2022 Jul 20:e2443. doi: 10.1002/rcs.2443. Epub ahead of print. PMID: 35856237.

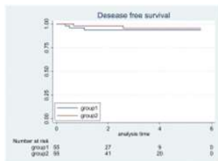
Surgical Oncology

Volume 25, Issue 2, June 2016, Pages 98-103

Laparoscopic treatment of early-stage endometrial cancer with and without uterine manipulator: Our experience and review of literature

Raffaele Tinelli, Ettore Cicinelli, Andrea Tinelli, Stefano Bettocchi, Stefano Angioni, Pietro Litta

- 110 patients with clinical stage I endometrial cancer were enrolled in a retrospective study and underwent surgical staging comprised of LPS hysterectomy, bilateral salpingo-oophorectomy, and in all cases we performed systematic bilateral pelvic lymphadenectomy with uterine manipulator (Group 1, 55 patients) or without (Group 2, 55 patients).
- **No difference in positive cytology**
- **No difference in DFS**



- Tinelli R, Cicinelli E, Tinelli A, Bettocchi S, Angioni S, Litta P. Laparoscopic treatment of early-stage endometrial cancer with and without uterine manipulator: Our experience and review of literature. Surg Oncol. 2016 Jun;25(2):98-103. doi: 10.1016/j.suronc.2016.03.005. Epub 2016 Mar 23. PMID: 27312035.

Surgeons Corner

Does the Type of Surgical Approach and the Use of Uterine Manipulators Influence the Disease-Free Survival and Recurrence Rates in Early-Stage Endometrial Cancer?

INTERNATIONAL JOURNAL OF GYNECOLOGICAL CANCER

Josefa Marcos-Sanmartín, MD, José Antonio López Fernández, MD, José Sánchez-Payá, MD, Óscar Cruz Piñero-Sánchez, MD, María José Román-Sánchez, MD, María Asunción Quijada-Cazorla, MD, María Amparo Candela-Hidalgo, MD and Juan Carlos Martínez-Escoriza, MD

- 147 patients with clinical endometrial cancer (laparoscopic surgery group, 77 women; laparotomy group, 70 women).
- No significant difference in the cumulative recurrence rates (7.4% and 13.1%, P = 0.091) and overall survival (97.1% and 95.1%, P = 0.592) was detected between both groups of stage I endometrial cancer.
- The use of uterine manipulators did not have increased recurrence rate in patients treated with laparoscopic approach.

American Journal of Obstetrics and Gynecology

Volume 216, Issue 6, June 2017, Pages 592.e1-592.e11

Original Research

Gynecology

The effect of a uterine manipulator on the recurrence and mortality of endometrial cancer: a multi-centric study by the Italian Society of Gynecological Endoscopy

- Retrospective 7 Italian Centers
- 951 patients: 579 patients in the manipulator group and 372 patients in the no manipulator group.
- The rate of recurrence was 13.5% and 11.6% in the manipulator and no manipulator groups, respectively (P=.37).
- The use of a uterine manipulator did not affect the risk of recurrence, both at univariate (odds ratio, 1.18; 95% confidence interval, 0.80-1.77) and multivariable analysis (odds ratio, 1.00; 95% confidence interval, 0.60-1.70). Disease-free, disease-specific, and overall survivals were similar between groups. Propensity-matched analysis confirmed these findings. The site of recurrence was comparable between groups. In addition, the type of uterine manipulator and the presence or not of a balloon at the tip of the device were not associated significantly with the risk of recurrence.
- Uccella S, Bonzini M, Malzoni M, Fanfani F, Palomba S, Aletti G, Corrado G, Ceccaroni M, Seracchioli R, Shakir F, Ferrero A, Berretta R, Tinelli R, Vizza E, Roviglione G, Casarella L, Volpi E, Cicinelli E, Scambia G, Ghezzi F. The effect of a uterine manipulator on the recurrence and mortality of endometrial cancer: a multi-centric study by the Italian Society of Gynecological Endoscopy. Am J Obstet Gynecol. 2017 Jun;216(6):592.e1-592.e11. doi: 10.1016/j.ajog.2017.01.027. Epub 2017 Jan 29. PMID: 28147240.

Largest Systematic Review

- **Results:** This systematic review included **18 studies (3 prospective studies, 13 retrospective studies, and 2 RCT**). The pooled results showed no significant difference (RR: 0.86, 95% CI, 0.69 to 1.08) in the incidence of LVSI between manipulated hysterectomy and total abdominal hysterectomy (TAH) and between UM group and non-UM group in minimally invasive surgery (RR: 1.18, 95% CI, 0.76 to 1.85), **no significant difference in the rate of recurrence (RR: 1.11, 95% CI, 0.71 to 1.74),** in the incidence of positive peritoneal cytology between manipulated and non-manipulated hysterectomies in minimally invasive surgery (RR: 1.89, 95% CI, 0.74 to 4.83) and before and after the use of uterine manipulator (RR: 1.21, 95% CI, 0.68 to 2.16). We found a positive association between malignant cytology and hysterectomies in which a uterine manipulator had been used in a sub-group analysis where LH/LAVH were compared to TAH. (RR = 2.26, 95% CI, 1.08-4.71. P = 0.03).
- **Conclusions:** This meta-analysis supports that the use of uterine manipulator for minimally invasive treatment of endometrial cancer does not increase the rate of recurrence and LVSI. Therefore, the opportunity of any other studies on its use in endometrial cancer women should be questioned.
- Scutiero G, Vizzielli G, Taliento C, Bernardi G, Martinello R, Cianci S, Riemma G, Scambia G, Greco P. Influence of uterine manipulator on oncological outcome in minimally invasive surgery of endometrial cancer: A systematic review and meta-analysis. Eur J Surg Oncol. 2022 Jun 9:S0748-7983(22)00484-X. doi: 10.1016/j.ejso.2022.05.034. Epub ahead of print. PMID: 35725683.

American Journal of Obstetrics and Gynecology

Volume 224, Issue 1, January 2021, Pages 65.e1-65.e11

Original Research

Gynecology

Impact of uterine manipulator on oncological outcome in endometrial cancer surgery

Pablo Padilla-Iserte PhD, Víctor Lago MD, Carmen Tauste PhD, Berta Díaz-Feijoo PhD, Antonio Gil-Moreno PhD, Reyes Oliver PhD, Pluvio Coronado PhD, María Belén Martín-Salamanca PhD, Manuel Pantoja-Garrido PhD, Josefina Marcos-Sanmartin MD, Juan Gilabert-Estellés PhD, Cristina Lorenzo MD, Eduardo Cazorla PhD, Fernando Roldán-Rivas MD, José Ramón Rodríguez-Hernández MD, Lourdes Sánchez MD, Juan Carlos Muruzábal PhD, David Hervas PhD ... Santiago Domingo PhD

- Retrospective multicenter study
- A total of 2661 women from 15 centers were included; 1756 patients underwent hysterectomy with a uterine manipulator and 905 without it.
- The rate of recurrence was 11.69% in the uterine manipulator group and 7.4% in the no-manipulator group (*P*<.001). The use of the uterine manipulator was associated with a higher risk of recurrence (hazard ratio, 2.31; 95% confidence interval, 1.27–4.20; *P*=.006).
- **No differences were found regarding the pattern of recurrence between both groups (chi-square statistic, 1.74; *P*=.63).**

Randomized Controlled Trials

A Multicentric Randomized Trial to Evaluate the ROle of Uterine MANipulator on Laparoscopic/ Robotic HYsterectomy for the Treatment of Early-Stage Endometrial Cancer: The ROMANHY Trial

Salvatore Gueli Alletti[1,2], Emanuele Perrone[1], Camilla Fedele[2], Stefano Cianci[2], Tina Pasciuto[3], Vito Chiantera[4], Stefano Uccella[5], Alfredo Ercoli[1], Giuseppe Vizzielli[1,2], Anna Fagotti[1,2], Valerio Gallotta[1,2], Francesco Cosentino[1,2], Barbara Costantini[1,2], Stefano Restaino[2], Giorgia Montanaro[1], Andrea Rosati[1], Luigi Carlo Turco[1], Vito Andrea Capozzi[1,2], Francesco Fanfani[1,2] and Giovanni Scambia[1,2]

frontiers in Oncology

- Multicenter randomized trial, enrolled patients were randomly allocated in two groups according to the no use (arm A) or the use (arm B) of the uterine manipulator.
- Inclusion criteria were G1-G2 early-stage endometrial cancer at preoperative evaluation

- 154 patients (76 in arm A and 78 in arm B)
- No differences were detected in terms of overall survival and disease-free survival (p=0.996 and p=0.480, respectively). Similarly, no differences were recorded in the number of recurrences, 6 (7.9%) in arm A and 4 (5.2%) in arm B (p=0.486).
- The use of the uterine manipulator had no impact on DFS both at univariable and multivariable analyses.

Gueli Alletti S, Perrone E, Fedele C, Cianci S, Pasciuto T, Chiantera V, Uccella S, Ercoli A, Vizzielli G, Fagotti A, Gallotta V, Cosentino F, Costantini B, Restaino S, Monterossi G, Rosati A, Turco LC, Capozzi VA, Fanfani F, Scambia G. A Multicentric Randomized Trial to Evaluate the ROle of Uterine MANipulator on Laparoscopic/Robotic HYsterectomy for the Treatment of Early-Stage Endometrial Cancer: The ROMANHY Trial. Front Oncol. 2021 Sep 10;11:720894. doi: 10.3389/fonc.2021.720894. PMID: 34568050; PMCID: PMC8461311.

Randomized Controlled Trial > Int J Gynecol Cancer. 2013 Feb;23(2):372-9.
doi: 10.1097/IGC.0b013e3182788485.

Effects of uterine manipulation on surgical outcomes in laparoscopic management of endometrial cancer: a prospective randomized clinical trial

Maria Lee [1], Young Tae Kim, Sang Wun Kim, Sunghoon Kim, Jae Hoon Kim, Eun Ji Nam

- 110 patients with clinical stage I endometrial cancer were randomly assigned for laparoscopic staging surgery with (group A, 55) or without (group B, 55) the use of a uterine manipulator (RUMI), between June 2009 and June 2011.
- Group A had a similar incidence of lymphovascular space invasion compared with group B (12.7% vs 9.1%, respectively; P = 0.76).
- During the median follow-up of 19 months, 6 patients had tumor recurrence without significant difference between the groups.

Lee M, Kim YT, Kim SW, Kim S, Kim JH, Nam EJ. Effects of uterine manipulation on surgical outcomes in laparoscopic management of endometrial cancer: a prospective randomized clinical trial. Int J Gynecol Cancer. 2013 Feb;23(2):372-9. doi: 10.1097/IGC.0b013e3182788485. PMID: 23266650.

Conclusions

- Data on benefits of uterine manipulator are lacking
- >90% of practicing SGO members responding to a survey use a uterine manipulator for endometrial cancer
- Preponderance of available data (including 2 prospective RCTs) suggests uterine manipulator is safe in endometrial cancer surgery

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- Camille Sallee, Aymeline Lacorre, France Despoux, Lobna Ouldamer, Cyrille Huchon, Martin Koskas, Jean-Marc Classe, Frédéric Guyon, François Margueritte, Emilie Raimond, Tristan Gauthier. Use of uterine manipulator in endometrial cancer: A French survey from Francogyn group. European Journal of Surgical Oncology, Volume 48, Issue 6, 2022, Pages 1395-1399, ISSN 0748-7983, https://doi.org/10.1016/j.ejso.2022.02.007.
- Ido Laskov. The Impact of Intra-Uterine Manipulators on Outcome and Recurrence Patterns of Endometrial Cancer Patients Undergoing Minimally Invasive Surgery. https://doi.org/10.21203/rs.3.rs-538902/v1
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UTERINE MANIPULATOR USE IN ENDOMETRIAL CANCER SURGERY AGAINST

(RISKS AND SOME CONFLICTING NEW DATA)

DR FERNANDO HEREDIA M – GYNECOLOGIC ONCOLOGIST
ASSOCIATE PROFESSOR - UNIVERSIDAD DE CONCEPCION, CHILE

Universidad de Concepción

AGL ELEVATING GYNECOLOGIC SURGERY

DISCLOSURES

SPEAKER FOR ASTRA ZENECA

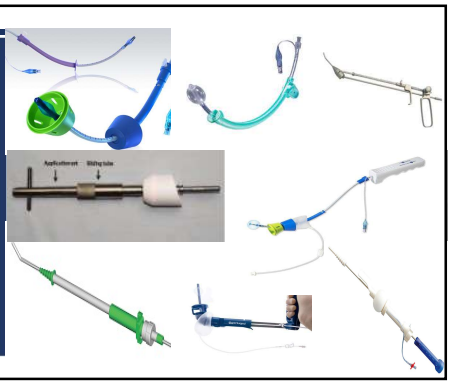
SPEAKER AND CONSULTANT FOR JOHNSON & JOHNSON

drfheredia@gmail.com
herediaf@gmail.com

TODAY I WILL DISCUSS

1. Rationale of uterine manipulation
2. Theoretical risks of uterine manipulation in endometrial cancer
3. Emerging new evidence

THEN YOU CHOOSE



The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

Dan L. Longo, M.D., *Editor*

Endometrial Cancer

Karen H. Lu, M.D., and Russell R. Broaddus, M.D., Ph.D.

N ENGL J MED 383;21 NEJM.ORG NOVEMBER 19, 2020

significant coexisting conditions. For most women with endometrial cancer, the current surgical approach includes laparoscopic or robotic removal of the uterus, cervix, fallopian tubes, and ovaries and a sentinel lymph-node evaluation. Two randomized surgical trials showed that a minimally invasive approach, as compared with the traditional open abdominal approach, was associated with significantly lower rates of postoperative complications and an improved short-term quality of life.[55,56] Long-term follow-up of patients in both studies, however, showed no significant difference in overall survival according to the initial surgical approach.[57,58]

I.- RATIONALE OF UTERINE MANIPULATION

- Uterine manipulator helps!
  - Pushing uterus:
    - straighten ureters.
    - facilitates vesicouterine plane dissection.
  - Lateralizing uterus:
    - Giving us a better angle to attack uterine vessels.
    - Furtherly open pelvic avascular spaces.
  - Delineate vaginal fornix for colpotomy.
- I love it!

- BUT: can we do a hysterectomy without a uterine Manipulator?

Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: www.elsevier.com/locate/ejogrb

Full length article

Total laparoscopic hysterectomy without uterine manipulator. A retrospective study of 1023 cases

Dimitrios Zygouris[a,*], Nektarios Chalvatzas[a], Antonios Gkoutzioulis[a], Georgios Anastasiou[a], Andreas Kavallaris[a,b]

[a] Department of Minimally Invasive Gynecology, St Luke's Hospital, Thessaloniki, Greece
[b] Department of Gynecology and Obstetrics, Mother and Child Medical Center, Nikosia, Cyprus

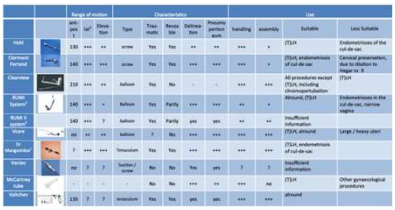
- 10 years
- 1023 patients
- 1 team (2 centers)
- Benign indications

Surgical time	78 (43-168 min)
Hysterectomy alone	75 (43-145 min)
Hysterectomy + Adnexectomy	83 (45-168 min)
Estimated Blood loss	59 (20-260 ml)
Uterine weight	255 (40-1.510 gr)
Conversión	0
Transfusion	14
Ureteral injury	1
Vesical injury	3
Intestinal injury	5
Vaginal injury	18 (1.8%)

European Journal of Obstetrics & Gynecology and Reproductive Biology 253 (2020) 254–258

Efficacy and safety of uterine manipulators in laparoscopic surgery: a review

L. van den Haak[1] · C. Alleblas[2] · T. E. Nieboer[2] · J. P. Rhemrev[3] · F. W. Jansen[1,4]



Conclusion The use of uterine manipulators is well established and it is clear that uterine manipulators offer the easiest way to handle the uterus during surgery. However, detailed information regarding efficacy and safety is scarce. Clinical evidence substantiating the assumed

Arch Gynecol Obstet Received: 23 October 2014 / Accepted: 20 April 2015

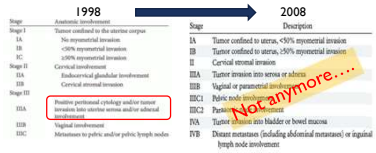
CONCERNS AND POTENTIAL RISKS OF USING THEM IN EC

- Tumor spillage/seeding:
  1. Through tubes.
  2. Lymphovascular tumor "pushing":
     - Endocavitary baloon
     - Manipulator cervical screw
  3. Perforation risk
  4. To the vagina
     - "Squeeze" effect
     - Need of Morcelation (Not related to Manipulator)

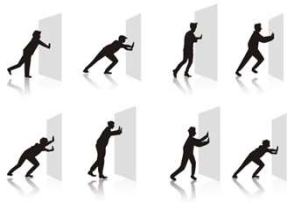
THROUGH THE TUBES???

- Is it really important?
  - Hysteroscopy is the standart to diagnose ENDOMETRIAL CANCER
  - No impact if "only + cytology" in "uterus confined disease"
- Easy task…

It has also to be considered that the vast majority of EC patients underwent a hysteroscopic assessment as a milestone of their preoperative work-up. It is now widely accepted that this procedure is not burdened by an increased risk of positive peritoneal cytology thus not requiring any specific countermeasures to avoid retrograde tubal flow.



2.- UTERINE MANIPULATORS AND LVSI



Vascular "Pseudo Invasion" in Laparoscopic Hysterectomy Specimens: A Diagnostic Pitfall

Sanjay Logani, MD, Anne V. Herdman, MD,* James V. Little, MD,† and Karen A. Moller, MD‡*

Am J Surg Pathol • Volume 32, Number 4, April 2008

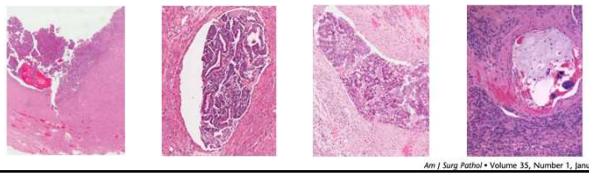
- "Artifact of mechanical transportation of endometrial tumor tissue and benign endometrial glands and stroma into vascular channels in hysterectomy specimens performed using the Koh colpotomizer system at our institution"

Histologic Artifacts in Abdominal, Vaginal, Laparoscopic, and Robotic Hysterectomy Specimens: A Blinded, Retrospective Review

Adriana Krizova, MD, Blaise A. Clarke, MB BCh,*† Marcus Q. Bernardini, MD,*‡ Sarah James, MLT, PA,† Steve E. Kalloger, BSc,§ Scott L. Boerner, MD,*† and Anna Marie Mulligan, MB BCh*‖*

Laparoscopic surgical techniques are an important advance in laparotomic techniques. However, the use of a UM in such procedures is problematic, causing histologic artifacts that may hinder the pathologist's interpretation and lead to erroneous determination of important prognostic factors.

It is important, therefore, that pathologists be familiar with the spectrum of artifacts encountered with these procedures to minimize misinterpretation. However, interobserver variability in the assessment of LVI, cell type, and grade is a reality in pathology, which is an interpretive discipline

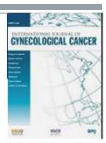


Am J Surg Pathol • Volume 35, Number 1, January 2011

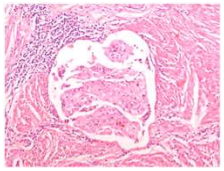
ESMO-ESGO-ESTRO Consensus Conference on Endometrial Cancer

Diagnosis, Treatment and Follow-up

Nicoletta Colombo, Carien Creutzberg,† Frederic Amant,‡ Tjalling Bosse,§ Antonio González-Martín,|| Jonathan Ledermann,¶ Christian Marth,# Remi Nout,** Denis Querleu,†† Mansoor Raza Mirza,‡‡ Cristiana Sessa,§§ and the ESMO-ESGO-ESTRO Endometrial Consensus Conference Working Group*

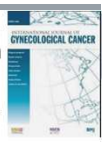


- LVSI positive status was introduced in the ESGO guidelines as a recomendation for Lymphadenectomy, even in the abscense of other well known risk factors.
- It also "upgraded" patients with low risk tumors to intermediate-high risk.
- If not correctly diagnosed it could prompt adyuvant treatment for patinets with no "real indication"…



International Journal of Gynecological Cancer • Volume 26, Number 1, January 2016

Intrauterine Manipulator Use During Minimally Invasive Hysterectomy and Risk of Lymphovascular Space Invasion in Endometrial Cancer



Hiroko Machida, MD,† Marianne S. Hom, MD,* Crystal L. Adams, MD,* Sarah E. Eckhardt, MD,* Jocelyn Garcia-Sayre, MD,* Mikio Mikami, MD, PhD,† and Koji Matsuo, MD, PhD*‡*

- Retrospective case-control study (419/194 patients) + systematic review (1371/1246 patients).
- Stages I-IV between 2008 – 2015
- Compared TAH/BSO v/s TLH/BSO with UM (Why not TLH/BSO with and without UM????)

"IUM use during TLH for Endometrial Cancer is not associated with increased frequency of LVSI"

Insufficient evidence evaluating LVSI either caused by IUM insertion or originally present in the endometrium…this makes results difficult to interpret for proper anaysis…..concerns regarding the potential increased risk of disease spread with UM use remain unsettled.

UTERINE MANIPULATORS AND LVSI (ONLY PROSPECTIVE)

A Multicentric Randomized Trial to Evaluate the ROle of Uterine MANipulator on Laparoscopic/ Robotic HYsterectomy for the Treatment of Early-Stage Endometrial Cancer: The ROMANHY Trial

Salvatore Gueli Alletti[1,2], Emanuele Perrone[1], Camilla Fedele[2], Stefano Cianci[2], Tina Pasciuto[1], Vito Chiantera[2], Stefano Uccella[3], Alfredo Ercoli[1], Giuseppe Vizzielli[1,2], Anna Fagotti[1,2], Valerio Gallotta[1,2], Francesco Cosentino[1,2], Barbara Costantini[1,2], Stefano Restaino[3], Giorgia Monterossi[1], Andrea Rosati[1], Luigi Carlo Turco[1], Vito Andrea Capozzi[1,2], Francesco Fanfani[1,2] and Giovanni Scambia[1,2]

- Italian Multicentric Prospective Randomized Trial.
- 154 patients, early stage, G1-G2 at preop evaluation.
- Only Clermont-Ferrand Uterine Manipulator.
- **Designed to asses the impact of UM in LVSI presence in early stage Endometrial Cancer…**
- **Conclusion: it does not affect LVSI status.**
  - **Suggests same Oncological outcomes…not designed for that…**

frontiers in Oncology

September 2021 | Volume 11 | Article 720894

3.- PERFORATION RISK

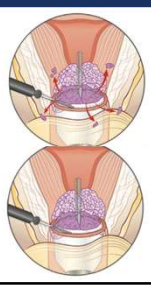
Intrauterine Manipulator Use During Minimally Invasive Hysterectomy and Risk of Lymphovascular Space Invasion in Endometrial Cancer

Hiroko Machida, MD,† Marianne S. Hom, MD,* Crystal L. Adams, MD,* Sarah E. Eckhardt, MD,* Jocelyn Garcia-Sayre, MD,* Mikio Mikami, MD, PhD,† and Koji Matsuo, MD, PhD*‡*

- Rarely reported….
- 0,4 -1% cases in this review article….
- More in atrophic uterus, small cervix, prior c-sections/isthmoceles, etc

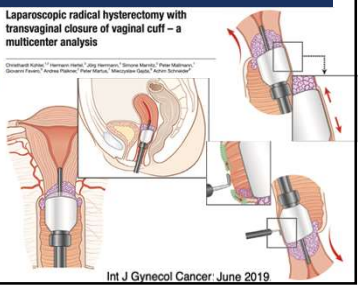
4.- TO THE VAGINA

- "Squeeze" effect
- Need of morcellation + mucosal disruption

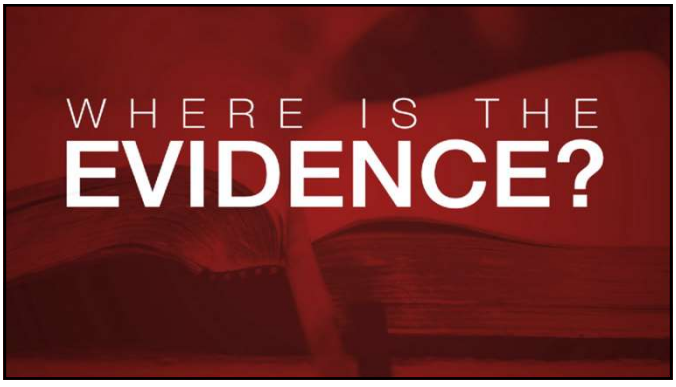


Laparoscopic radical hysterectomy with transvaginal closure of vaginal cuff – a multicenter analysis

Christhardt Köhler[1,2], Hermann Hertel[1], Jörg Herrmann[1], Simone Marnitz[1], Peter Mallmann[1], Giovanni Favero[1], Andreas Flämmer[1], Peter Martus[1], Mieczysław Gajda[3], Achim Schneider[4]



Int J Gynecol Cancer: June 2019



REVIEW ARTICLE | VOLUME 46, ISSUE 7, P1225-1232, JULY 01, 2020

The effects of uterine manipulators in minimally invasive hysterectomy for endometrial cancer: A systematic review and meta-analysis

Yifan Meng • Yan Liu • Shitong Lin • ... Ting Peng • Lingli Gui • Peng Wu • Show all authors

- Systematic review and metanalysis.
- 11 studies (3 Prospective – 7 retrospective -1 RCT)

"No significant difference in timing of manipulator insertion and manipulator use for positive peritoneal cytology, LVSI, or recurrence rate."

  - Peritoneal washing and timing of insertion : 602 patients (largest 55 patients, 40% TLH/BSO).
  - LVSI and manipulator use: 961 patients (largest 77 patients - 18 Robotic TLH/BSO/PLND with UM v/s 59 without UM).
  - Recurrence rate/OS: 1171 patients. Only 3 studies that allocated lots of small studies….

The Effect of a Uterine Manipulator on the Recurrence and Mortality of Endometrial Cancer: A Multi-Centric Study by the Italian Society of Gynecological Endoscopy

Stefano Uccella, MD, PhD, Matteo Bonzini, MD, Mario Malzoni, MD, Francesco Fanfani, MD, Stefano Palomba, MD, Giovanni Aletti, MD, Giacomo Corrado, MD, Marcello Ceccaroni, MD, Renato Seracchioli, MD, Fevzi Shakir, MD, Annamaria Ferrero, MD, Roberto Berretta, MD, Raffaele Tinelli, MD, Enrico Vizza, MD, Giovanni Roviglione, MD, Lucia Casarella, MD, Eugenio Volpi, MD, Ettore Cicinelli, MD, Giovanni Scambia, MD, Fabio Ghezzi, MD

Am J Obstet Gynecol. 2017 Jun;216(6):592.e1-592.e11.

- Objective : Study risk and site of recurrence, OS, DFS after TLH with and without UM. (No robot here…)
- Retrospective, non-randomized, Cohort (2000-2013) multicentric (7 Italian centers) -
- 951 patients (579 with UM / 372 without) – Also analyze type of manipulator.
- Excluded > preop Stage I and follow up < 12 months.
- Median follow up 46 months – Recurrence 13,5% with UM / 11,6% without UM.
  - UM (and type of UM) was not associated with higher risk of recurrence.
  - Similar DFS, Disease specific survival, and OS.

13,5%???? Isn´t it a Little high?
Lots of Type 2 tumors

Review Article on Endometrial Cancer

Role of uterine manipulator during laparoscopic endometrial cancer treatment

Vito Andrea Capozzi[1], Andrea Rosati[2], Stefano Uccella[3], Gaetano Riemma[4], Mattia Tarascio[5], Marco Torella[4], Pasquale De Franciscis[4], Nicola Colacurci[4], Stefano Cianci[4]

The most recent studies have highlighted the safety of the uterine manipulator in the early-stage EC laparoscopic treatment.

Well, thats reassuring…..

To date, all types of manipulators are considered to be fairly safe but its application should be tailored according to tumor dimension and grade of myometrial infiltration. We assume that for large lesions with suspected infiltration up to the serosal layer the positioning of UM could be avoided because of the higher risk of uterine perforation.

The LVSI positivity should be pathologically standardized and the 'pseudo-LVSI invasion' must be considered in all cases where the uterine manipulator is placed.

Author, years	Design	Cases	Stage	Main results
Sanmartin, 2016	Retrospective cohort	174	I–IV	Laparoscopic approach to early-stage EC using UM is as safe and effective as the laparotomic approach
Frimer, 2010	Retrospective cohort	164	NA	Presence of MM and ITCs in EC patients is not an artifact of UM
Lee, 2010	Randomized clinical trial	110	IA	UM did not increase rate of positive peritoneal cytology or lymphovascular space invasion
Machida, 2016	Retrospective case-control	208	I–IV	UM use during laparoscopic hysterectomy for EC is not associated with increased frequency of LVSI
Seifi, 2018	Retrospective cohort	104	I–II	The use of a UM does not appear to increase the rate of pseudovascular invasion
Tinelli, 2016	Retrospective cohort	110	I–II	UM for laparoscopic treatment of EC does not increase positive peritoneal cytology
Uccella, 2017	Multi-centric retrospective cohort	951	I–III	UM during laparoscopic surgery does not affect the risk of recurrence and has no impact on disease-specific or overall survival and on the site of recurrence in women affected by EC
Zhang, 2014	Retrospective case-control	456	I–IV	UM for EC is not associated with LVSI or malignant cytology
Kitahara, 2009	Retrospective case-control	49	I–II	Laparoscopic hysterectomy is associated with a higher rate of vascular pseudoinvasion. However, we cannot attribute this phenomenon to mechanical disruption, displacement, and transport of tumor tissue into vascular spaces by the use of a UM alone
Folkins, 2010	Retrospective case-control	97	I–II	The clinical significance of apparent true vascular space involvement seen adjacent to artifacts is unclear
Fanfani, 2011	Retrospective case-control	314	Ia–Ib	Systematic use of UM does not represent a bias for correct evaluation of the specimen

Transl Cancer Res 2020;9(12):7759-7766

Impact of uterine manipulator on oncological outcome in endometrial cancer surgery

Mr. Pablo PADILLA-ISERTE, PhD, Mr. Víctor LAGO, MD, Ms. Carmen TAUSTE, PhD, Ms. Berta DÍAZ-FEIJOO, PhD, Mr. Antonio GIL-MORENO, PhD, Ms. Reyes OLIVER, PhD, Mr. Pluvio CORONADO, PhD, Ms. María Belén MARTÍN-SALAMANCA, PhD, Mr. Manuel PANTOJA-GARRIDO, PhD, Ms. Josefina MARCOS-SANMARTIN, MD, Mr. Juan GILABERT-ESTELLÉS, PhD, Ms. Cristina LORENZO, MD, Mr. Eduardo CAZORLA, PhD, Mr. Fernando ROLDÁN-RIVAS, MD, Mr. José Ramón RODRÍGUEZ-HERNÁNDEZ, MD, Ms. Lourdes SÁNCHEZ, MD, Mr. Juan Carlos MURUZÁBAL, PhD, Mr. David HERVAS, PhD, Mr. Santiago DOMINGO, PhD

- Retrospective multicenter study: 2661 patients, 15 centers (1756 w/manip v/s 905 without UM).
- Type of UM, surgical staging, histology, LVSI, FIGO stage, adyuvant treatment, recurrence and pattern were analyzed. Both gorups balanced.
- 1st objective: observe recurrence rate; 2nd objective: Observe DFS, OS, pattern of recurrence.
- Recurrence rate: With manipulator: 11,69%
  Without manupulator: 7,4% (p<0.001)

Am J Obstet Gynecol. 2021 Jan;224(1):65.e1-65.e11

Impact of uterine manipulator on oncological outcome in endometrial cancer surgery

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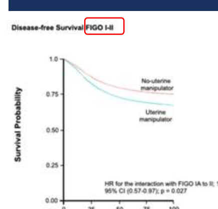
The NEW ENGLAND JOURNAL of MEDICINE

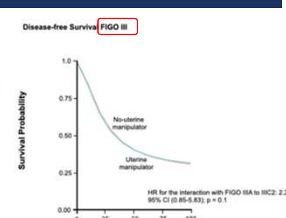
Minimally Invasive versus Abdominal Radical Hysterectomy for Cervical Cancer

- Results:
  - Higher recurrence risk HR 2.31; 95%CI, 1,27-4,20 (p=0,006)
  - Lower DFS for uterus confined tumors (Stage I-II) HR 1,74; 95%CI, 0,57-0,97 (p=0,027)
  - Higher risk of Death from Disease (Stage I-II) HR 1,74; 95%CI, 1.07-2,83 (p=0,63)
  - No difference in pattern of recurrence between both groups.

Am J Obstet Gynecol. 2021 Jan;224(1):65.e1-65.e11

MOST INTERESTING OUTCOME OF THIS STUDY



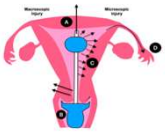


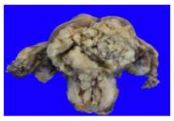
Significant WORSE ONCOLOGICAL OUTCOMES in uterus-confined tumors, no effect in Stage III
UM breaks the uterine-confined disease paradigma of a "Good prognosis disease"…

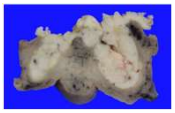
BUT HOW CAN THIS BE POSSIBLE?

Possible mechanisms:

- Macroscopic injury (atrophic uterus):
  - During insertion (under reported!!!)
  - Forced lateral movements in weak myometrium
- Microscopic:
  - Increase in endometrial pressure
    - Balloon
    - Pushing
    - Colpotomy

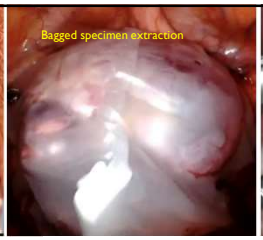


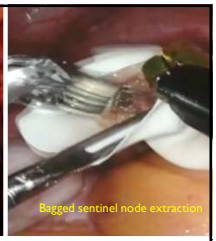


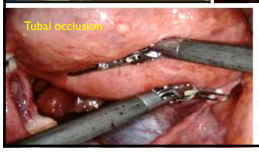


SO THEN, WHAT CAN WE DO?

- First, study the case.
- Nowadays there is no dogma, but there are concerning new data.
- USE YOUR KNOWLEDGE….BE SMART







Four protective maneuvers in minimal invasive surgery of endometrial cancer

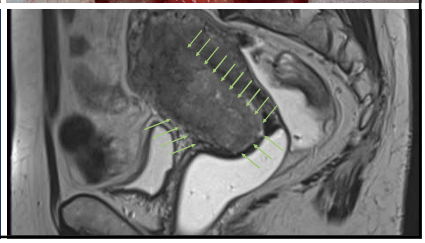
Emad Matanes, Zainab Amajoud, Shannon Salvador, Susie Lau, Walter Gotlieb

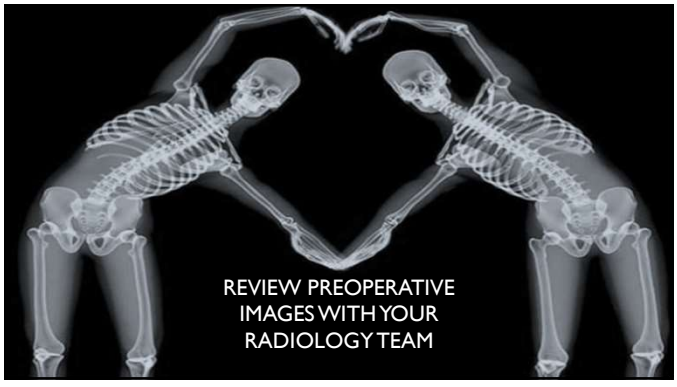
International Journal of Gynecologic Cancer 2022;**32**:953-954.

BESIDES THAT

There are patients in which you should definitely

NOT USE A MANIPULATOR!!!!





ACT WITH SAGENESS

An accurate assesment of preoperative the tumor´s risk factors should be done in parallel with the correct evaluation of the patient to avoid worsening prognosis because of the route and way we perform our treatments.

SEE WHAT HAPPENED WITH MIS IN CERVICAL CANCER

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 — NOVEMBER 15, 2018 — VOL. 379 NO. 20

Minimally Invasive versus Abdominal Radical Hysterectomy for Cervical Cancer

Pedro T. Ramirez, M.D., Michael Frumovitz, M.D., Rene Pareja, M.D., Aldo Lopez, M.D., Marcelo Vieira, M.D., Reitan Ribeiro, M.D., Alessandro Buda, M.D., Xiaojian Yan, M.D., Yao Shuzhong, M.D., Naven Chetty, M.D., David Isla, M.D., Mariano Tamura, M.D., Tao Zhu, M.D., Kristy P. Robledo, Ph.D., Val Gebski, M.Stat., Rebecca Asher, M.Sc., Vanessa Behan, B.S.N., James L. Nicklin, M.D., Robert L. Coleman, M.D., and Andreas Obermair, M.D.

Everybody was doing MIS for RH because it was feasible and apparently as effective

2018

The NEW ENGLAND JOURNAL of MEDICINE

Minimally Invasive versus Abdominal Radical Hysterectomy for Cervical Cancer

Survival after Minimally Invasive Radical Hysterectomy for Early-Stage Cervical Cancer

Comparative outcomes between robotic and abdominal radical hysterectomy for IB1 cervical cancer: Results from a single high volume institution

Impact of laparoscopic radical hysterectomy on survival outcome in patients with FIGO stage IB cervical cancer: A matching study of two institutional hospitals in Korea

Comparison of laparoscopic and abdominal radical hysterectomy in early stage cervical cancer patients without adjuvant treatment: Ancillary analysis of a Korean Gynecologic Oncology Group Study (KGOG 1028)

Survival outcomes in patients with cervical cancer treated with open versus robotic radical hysterectomy: Our surgical pathology interrogation

Comparison of survival outcomes between minimally invasive surgery and conventional open surgery for radical hysterectomy as primary treatment in patients with stage IB1–IIA2 cervical cancer

Se Ik Kim, Jae Hyun Cho, Aeran Seol, Young Im Kim, Maria Lee, Hee Seung Kim, Hyun Hoon Chung, Jae-Weon Kim, Noh Hyun Park, Yong-Sang Song

How to Select Early-Stage Cervical Cancer Patients Still Suitable for Laparoscopic Radical Hysterectomy: a Propensity-Matched Study

Luigi Pedone Anchora, Luigi Carlo Turco, Nicolò Bizzarri, Vito Andrea Capozzi, Andrea Lombisani, Vito Chiantera, Francesca De Felice, Valerio Gallotta, Francesco Cosentino, Anna Fagotti, Gabriella Ferrandina

SUCCOR study: an international European cohort observational study comparing minimally invasive surgery versus open abdominal radical hysterectomy in patients with stage IB1 cervical cancer

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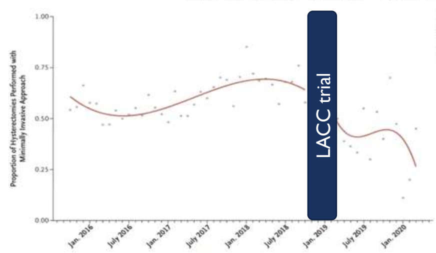
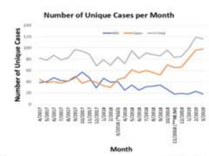
Effect of a Randomized, Controlled Trial on Surgery for Cervical Cancer

N ENGL J MED 384;17 NEJM.ORG APRIL 29, 2021



Rapid dissemination of practice-changing information: A longitudinal analysis of real-world rates of minimally invasive radical hysterectomy before and after presentation of the LACC trial



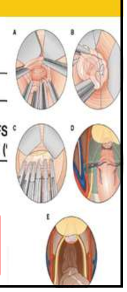
Gynecologic Oncology 157 (2020) 494–499

Laparoscopic radical hysterectomy with transvaginal closure of vaginal cuff – a multicenter analysis

Christhardt Kohler,[1,2] Hermann Hertel,[3] Jörg Herrmann,[4] Simone Marnitz,[5] Peter Mallmann,[1] Giovanni Favero,[6] Andrea Plaikner,[2] Peter Martus,[7] Mieczyslaw Gajda,[8] Achim Schneider[9]

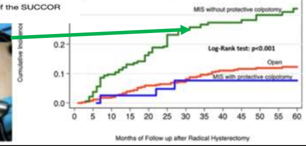
Table 2 Comparison of disease-free survival and overall survival between LACC and this study

DFS	Follow-up	3 years DFS No. at risk (%)	4.5 years DFS No. at risk (%)	5 years DFS No. at risk (%)
LSC/robot arm in LACC trial	2.5 years	87.1% 142 (45%)	86% 80 (25%)	n/a 5 (2%)
Laparotomy arm in LACC trial	2.5 years	97.1% 134 (43%)	96.5% 90 (29%)	n/a 7 (2%)
Own results	>8 years (99 months)	96.8% 305 (78%)	95.8% 271 (70%)	95.7% 264 (68%)



SUCCOR study: an international European cohort observational study comparing minimally invasive surgery versus open abdominal radical hysterectomy in patients with stage IB1 cervical cancer

Luis Chiva, Vanna Zanagnolo, Denis Querleu, Nerea Martin-Calvo, Juan Arévalo-Serrano, Mihai Emil Căpîlna, Anna Fagotti, Ali Kucukmetin, Constantijne Mom, Galina Chakalova, Shamistan Aliyev, Mario Malzoni, Fabrice Narducci, Octavio Arencibia, Francesco Raspagliesi, Tayfun Toptas, David Cibula, Dilyara Kaidarova, Mehmet Mutlu Meydanli, Mariana Tavares, Dmytro Golub, Anna Myriam Perrone, Robert Poka, Dimitrios Tsolakidis, Goran Vujić, Marcin A Jedryka, Petra L M Zusterzeel, Jogchum Jan Beltman, Frederic Goffin, Dimitrios Haidopoulos, Herman Haller, Robert Jach, Iryna Yezhova, Igor Berlev, Margarida Bernardino, Rasiah Bharathan, Maximilian Lanner, Minna M Maenpaa, Vladyslav Sukhin, Jean-Guillaume Feron, Robert Fruscio, Kersti Kukk, Jordi Ponce, Jose Angel Minguez, Daniel Vázquez-Vicente, Teresa Castellanos, Enrique Chacon, Juan Luis Alcazar et al, on behalf of the SUCCOR study group



SOUNDS FAMILIAR, RIGHT?

IN CONCLUSION

1. Uterine manipulator is very useful, eases our Benign and Deep endometriosis surgeries.
2. You can still perform hysterectomy without a Uterine manipulator.
3. There is conflicting evidence concerning its oncological safety in Endometrial Cancer patients.
4. There are lots of pitfalls and ways in which you could worsen the prognosis of a uterus-confined tumor with the use of a Uterine manipulator.
5. Some simple common-sense measures could decrease adverse outcomes:
   - Avoiding the use of Uterine manipulator.
   - Sealing tubes
   - Closing cervical OS
   - Bagging specimens for safe extraction

UTERINE MANIPULATOR USE IN ENDOMETRIAL CANCER SURGERY

AGAINST

(RISKS AND SOME CONFLICTING NEW DATA)

DR FERNANDO HEREDIA M – GYNECOLOGIC ONCOLOGIST
ASSOCIATE PROFESSOR - UNIVERSIDAD DE CONCEPCION, CHILE

Universidad de Concepción

AGL
ELEVATING GYNECOLOGIC SURGERY

MIS for Ovarian Cancer Interval Debulking

Gulden Menderes, MD
Division of Gynecologic Oncology
Health First Cancer Institute
Melbourne, FL

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Disclosure

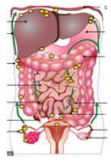
"**I have no financial relationships to disclose**"

Objectives

- Review current literature
- Understand the significance and limitations of MIS in the management of ovarian cancer
- Provide videos demonstrating the feasibility of the minimally invasive technique
- Make an argument FOR this surgical approach in the management of patients with ovarian cancer

OVARIAN CANCER

- Most fatal gynecologic cancer
- 75% of patients with advanced stage
- Traditionally: upfront open debulking
- Recently: are things improving?



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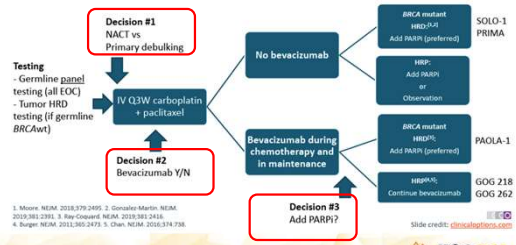
Course of Advanced Stage Ovarian Cancer

A '**CHRONIC**' disease with multiple relapse



WHO to Debulk?

- Debulkability of disease
- Tolerability of the host (performance status, nutritional status etc)

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What do we do in reality when we 'debulk' patients?

WHAT TO DEBULK?

Literature on NACT/IDS vs Upfront Debulking

- WHEN TO DEBULK?

Randomized Trials: NACT vs Primary Cytoreductive Surgery

Author	Study Design	N	R0 (%)	Grade 3/4 complications	PFS (months)	OS (months)
Fagotti *et al.* SCORPION 2016	NACT	55	58%	6%	--	--
	PCS	55	46%	53% including 2 deaths *p*=0.0001	--	--
Kehoe *et al.* CHORUS 2015	NACT	274	39%	14%	12.0	24.1
	PCS	276	17%	24%	10.7	22.6
			p=0.0001	*p*=0.007	HR=0.91	HR=0.87
				Postop mortality 5.6%	0.76-1.08	0.72-1.05
Onda *et al.* JCOG 0602 2016	NACT	152	63%	5%	--	--
	PCS	149	30%	15%	--	--
				p=0.005		
Vergote *et al.* EORTC 55971 2010	NACT	334	51%	21%	12	30
	PCS	336	19%	7.1%	12	29
				Postop mortality 2.5% vs 0.7%	HR=1.01 0.89-1.15	HR=0.98 0.84-1.13 *p*=0.01 noninferiority

Literature on MIS interval debulking

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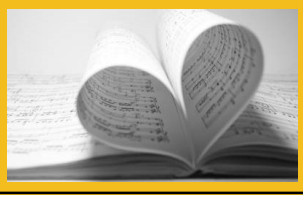


Fagotti Scoring System

- The lower the PIV score,
- The higher the likelihood of achieving R0

Fagotti laparoscopic predictive index value (PIV) score.

Omental cake
Peritoneal/diaphragmatic carcinomatosis
Mesenteric retraction
Bowel/stomach infiltration
Spleen/liver superficial metastasis

Each positive evaluation receives a score of 2.

Fagotti et al. Prospective validation of a laparoscopic predictive model. Am J Obstet Gynecol 2008;199:642.

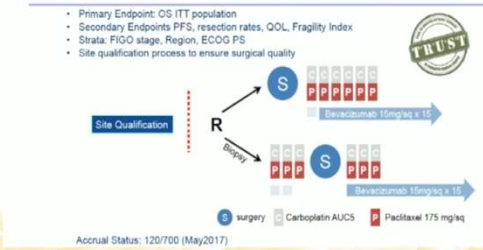
Is this debulkable? Let's take a look!!

Video for staging laparosopy

Will TRUST Provide the Answer?

Trial on Radical Upfront Surgical Therapy (TRUST)

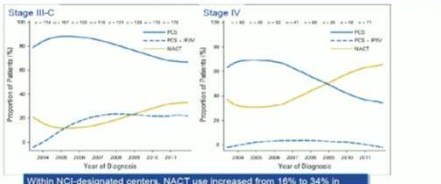
- Primary Endpoint: OS ITT population
- Secondary Endpoints PFS, resection rates, QOL, Fragility Index
- Strata: FIGO stage, Region, ECOG PS
- Site qualification process to ensure surgical quality



Accrual Status: 120/700 (May2017)

Neoadjuvant Chemotherapy vs Primary Cytoreductive Surgery

Adoption of NACT, NCI-Designated Centers (US)



Within NCI-designated centers, NACT use increased from 16% to 34% in stage IIIC (P trend < .001), and from 41% to 62% in stage IV (P trend < .001)

HOW to Debulk?

'In the time of molecular genetic progress of early cancer diagnosis and treatment, open surgery in oncology will soon be a surgical approach of the past.'

Professor Liselotte Mettler
Kiel, Germany

How would MIS benefit patients over open debulking?

- Less blood loss
- Less infection
- Decreased length of stay
- Easier recovery
- What's new?

Current Data on MI-IDS

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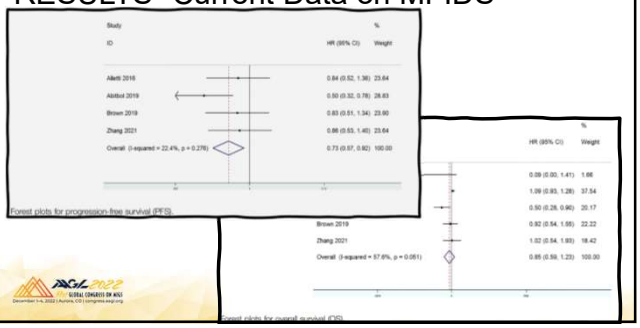
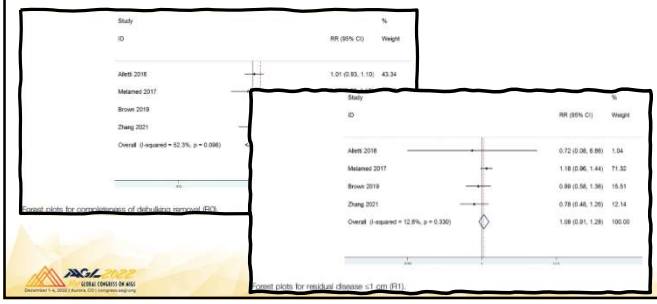
Study/Year	Duration	Study Design	Sample Size (M/O)	Chemo Cycles	ASA	Stage	Follow-up (months)	Primary Outcome	Secondary Outcome
Favero, 2015	2011-2014	R	10/11	6	NR	IIIC-IVA	20	OS	Complications, LOS
Aletti, 2016	2010-2014	R	30/65	6	1-2	III-IV	28	PFS	Complications, LOS, residual disease
Melamed, 2017	2010-2012	R	450/2621	NR	NR	III-IV	32	OS	LOS, residual disease
Ackroyd, 2018	2011-2016	R	29/0	3.9	NR	III-IV	34	OS, PFS	LOS, residual disease
Fagotti, 2019	2016-2019	R	127	4	1-3	IIIC-IV	37	OS, PFS	Complications, LOS, residual disease, TTC
Abitbol, 2019	2008-2014	R	57/34	NR	1-3	III-IV	37	OS, PFS	LOS

Study/Year	Duration	Study Design	Sample Size (M/O)	Chemo Cycles	ASA	Stage	Follow-up (months)	Primary Outcome	Secondary Outcome
Brown, 2019	2006-2017	R	53/104	3.5	NR	III-IV	43	OS, PFS	Complications, LOS, residual disease
Zhang, 2021	2011-2018	R	43/50	4	NR	III-IV	31	OS, PFS	Complications, LOS, residual disease
Morton, 2021	2017-2019	R	10/40	4	0-4	III-IV	15	Perioperative outcomes	PFS
Brown, 2021	2008-2018	R	200/293	NR	NR	III-IV	24	OS,PFS	Complications, LOS, residual disease
Augusto, 2022	2006-2013	R	7/23	3	NR	IIIC-IV	31	OS,PFS	Complications, LOS, residual disease
Menderes, unpublished	2015-2020	R	42/54	4	1-3	IIIC-IV	26	OS, PFS	Complications, LOS, residual disease

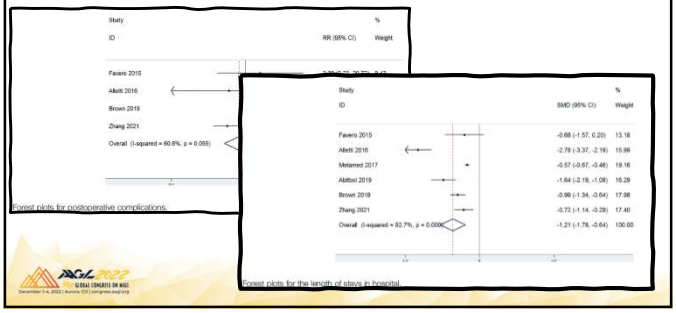
RESULTS- Current Data on MI-IDS



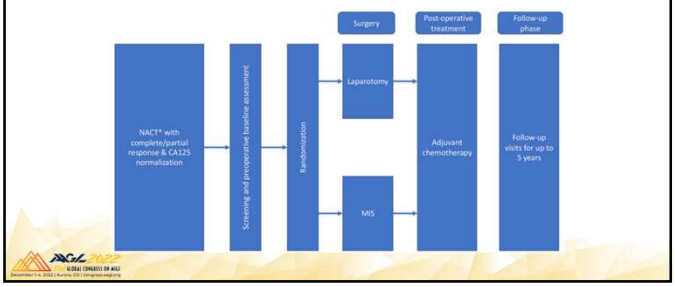
RESULTS- Current Data on MI-IDS



RESULTS- Current Data on MI-IDS



LANCE trial [NCT04575935].




Videos
Robotic LAR and partial urinary bladder resection


Video
RP LN debulking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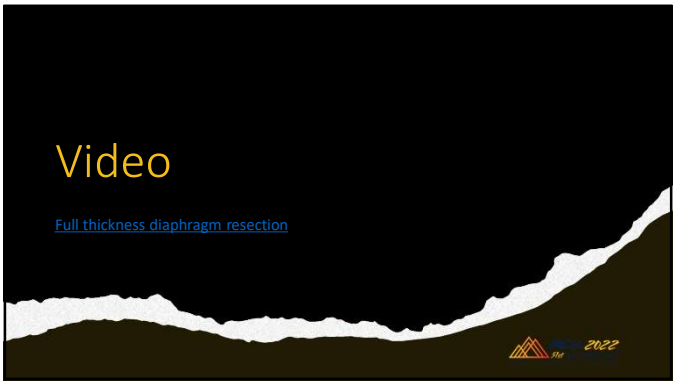
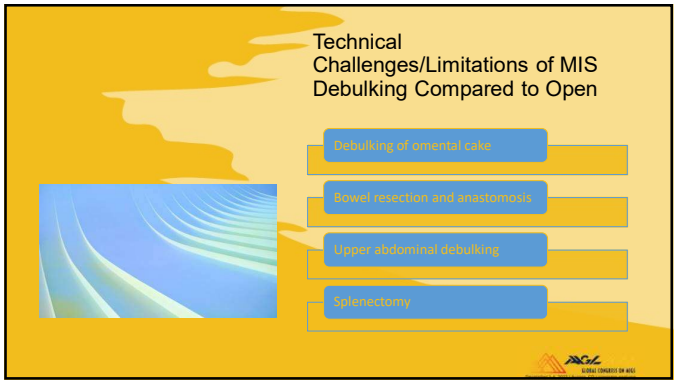
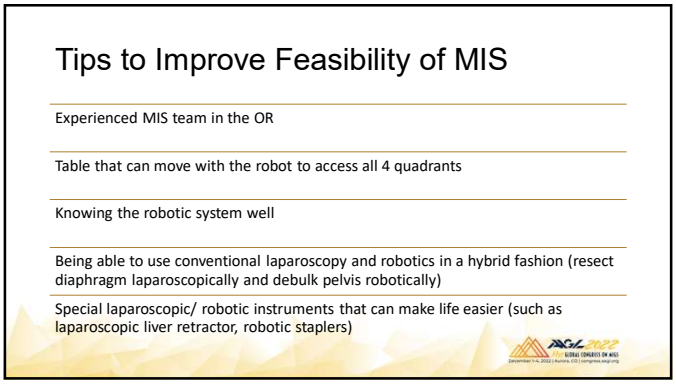
Video
Gastrosplenic ligament tm resection


Video
Full thickness diaphragm resection


Technical Challenges/Limitations of MIS Debulking Compared to Open
Debulking of omental cake
Bowel resection and anastomosis
Upper abdominal debulking
Splenectomy


Tips to Improve Feasibility of MIS
Experienced MIS team in the OR
Table that can move with the robot to access all 4 quadrants
Knowing the robotic system well
Being able to use conventional laparoscopy and robotics in a hybrid fashion (resect diaphragm laparoscopically and debulk pelvis robotically)
Special laparoscopic/ robotic instruments that can make life easier (such as laparoscopic liver retractor, robotic staplers)

Summary

The first consideration is who to debulk? Would the patient survive general anesthesia for over 2-3 hours and debulking surgery?

If debulking is a possibility, is my patient more appropriate for upfront or interval debulking?

If an interval debulking candidate, can it be done safely and efficiently with MIS approach? Can I get this patient to R0 with reasonable recovery and QoL?

Acknowledgements

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- Dr. Shabnam Kashani
- Dr. Dan-Arin Silasi
- Dr. Lindsay Clark
- Dr. Merima Ruhotina
- Dr. Annemieke Wilcox

Questions

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Minimally Invasive Surgery for Ovarian Cancer Interval Debulking

CON

Edward Tanner, MD, MBA
Chief of Gynecologic Oncology
Northwestern University
Chicago, IL

Disclosure

- Consultant: Johnson & Johnson
- Speakers Bureau: Eisai, AstraZeneca, Merck

Objectives

- Review the rationale for cytoreductive surgery for ovarian cancer
- Explore implications of inadequate cytoreductive outcomes with minimally invasive approach
- Consider criteria for future consideration of minimally invasive cytoreductive surgery

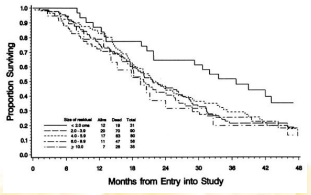
Advanced Ovarian Cancer Outcomes: what do we control?

1. Cytoreductive outcome
2. Appropriate systemic therapy
3. Minimize complications impacting #1 and #2

Not in our control:
Tumor biology

Cytoreductive Success = Survival

- Largest diameter residual disease is most important modifiable predictor of survival in patients undergoing cytoreductive surgery



Hoskins et al, AJOG, 1994

Cytoreductive Success = Survival

Trial	Residual disease at IDS, n (%)	Overall survival	% IDS pts with complete response to NACT	Major surgical complications in IDS arm
Fagotti, *et al* SCORPION trial 2016	0 mm: 57 (77%) ≥ 1 mm: 16 (23%)	~50 months ~ 24 months	Not reported	G3-4: 7% Death: 0
Kehoe, *et al* CHORUS trial 2015	0 mm: 64 (43%) 1 – 10 mm: 49 (33%) > 10 mm: 36 (24%)	~47 months ~24 months ~15 months	2%	G3-4: 14% Death: 1 (<1%); PE
Onda *et al* JCOG 0602 2016	0 mm: 83 (64%) 1 - 10 mm: 24 (19%) > 10 mm: 23 (18%)	67 months 34 months 32 months	6.6%	G3-4: 5.4% Death: 0
Vergote *et al* EORTC 55971 2010	0 mm: 151 (51%) 1 - 10 mm: 87 (30%) > 10 mm: 57 (19%)	38 months 27 months 25 months	4.3%	G3-4: 5.4% Death: 2 (0.7%)

Especially with interval debulking surgery (IDS)

Cytoreductive Success = Survival

- Surgeon-reported cytoreductive outcome correlates strongly with survival
- Does this actually indicate that minimal disease was left behind?

No… 67 patients at MSKCC with postoperative CT following optimal cytoreduction to surgeon reported < 1 cm residual disease: ~47% with > 1 cm residual on CT

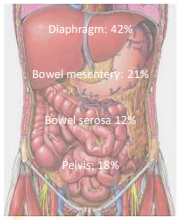
- Residual disease on postop CT → decreased OS

Lakhman et al, JR Am J Roentgenol, 2012

Cytoreductive Success = Survival

- Even with best *open* effort, disease is oftentimes left behind
- Tough areas to see are most common locations for residual disease
- No video can show you how well or poorly you removed disease that you never saw

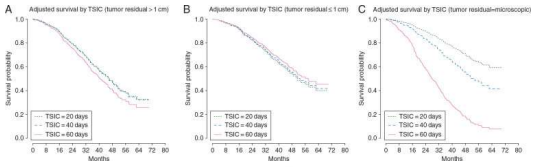
Most Common Residual Disease Sites at IDS



Manning-Geist et al, AJOG 2019

Importance of Timely Systemic Therapy

- Time from surgery to chemotherapy impacts survival (a little)



Tewari et al, Ann Oncol 2016

Importance of Timely Systemic Therapy

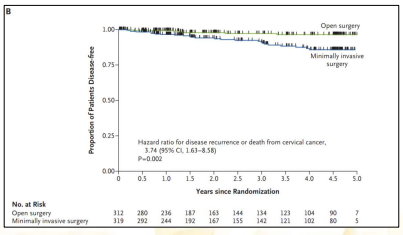
- Time to chemotherapy/reducing complications does impact survival but…
- Patients who are best candidates for MIS interval surgery:
  - Complete response to NACT on imaging
  - Normal CA125
  - Good candidate for minimally invasive surgery
- Risk of complications with laparotomy for these patients is LOW

MIS Interval Cytoreduction

- Burden of proof must be VERY high:
  - Cytoreductive outcome is most important predictor of survival at interval cytoreduction
  - Good MIS IDS candidates have low risk of complications regardless of surgical approach
  - Since complications are not a concern, must demonstrate that residual disease does not matter much at IDS (contrary to 30+ years of data)

Just because something makes sense, doesn't mean it's true

LACC Trial: A Lesson in MIS Surgery



Ramirez et al, NEJM 2018

Lessons for Future

- Must wait for randomized trial to determine safety and efficacy of MIS interval cytoreduction in ovarian cancer
- New technology may improve detection of occult metastases in patients undergoing interval surgery
  - Pafolacianine (FR+) with near infrared imaging → detected 40% more lesions; could be especially helpful during MIS

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CULTURAL AND LINGUISTIC COMPETENCY & IMPLICIT BIAS

The California Medical Association (CMA) announced new standards for Cultural Linguistic Competency and Implicit Bias in CME. The goal of the standards is to support the role of accredited CME in advancing diversity, health equity, and inclusion in healthcare. These standards are relevant to ACCME-accredited, CMA-accredited, and jointly accredited providers located in California. AAGL is ACCME-accredited and headquartered in California.

CMA developed the standards in response to California legislation (Business and Professions (B&P) Code Section 2190.1), which directs CMA to draft a set of standards for the inclusion of cultural and linguistic competency (CLC) and implicit bias (IB) in accredited CME.

The standards are intended to support CME providers in meeting the expectations of the legislation. CME provider organizations physically located in California and accredited by CMA CME or ACCME, as well as jointly accredited providers whose target audience includes physicians, are expected to meet these expectations beginning January 1, 2022. AAGL has been proactively adopting processes that meet and often exceed the required expectations of the legislation.

CMA CME offers a variety of resources and tools to help providers meet the standards and successfully incorporate CLC & IB into their CME activities, including FAQ, definitions, a planning worksheet, and best practices. These resources are available on the CLC and IB standards page on the CMA website.

Important Definitions:

Cultural and Linguistic Competency (CLC) – The ability and readiness of health care providers and organizations to humbly and respectfully demonstrate, effectively communicate, and tailor delivery of care to patients with diverse values, beliefs, identities and behaviors, in order to meet social, cultural and linguistic needs as they relate to patient health.

Implicit Bias (IB) – The attitudes, stereotypes and feelings, either positive or negative, that affect our understanding, actions and decisions without conscious knowledge or control. Implicit bias is a universal phenomenon. When negative, implicit bias often contributes to unequal treatment and disparities in diagnosis, treatment decisions, levels of care and health care outcomes of people based on race, ethnicity, gender identity, sexual orientation, age, disability and other characteristics.

Diversity – Having many different forms, types or ideas; showing variety. Demographic diversity can mean a group composed of people of different genders, races/ethnicities, cultures, religions, physical abilities, sexual orientations or preferences, ages, etc.

Direct links to AB1195 (CLC), AB241 (IB), and the B&P Code 2190.1:

Bill Text – AB-1195 Continuing education: cultural and linguistic competency.
Bill Text – AB-241 Implicit bias: continuing education: requirements.
Business and Professions (B&P) Code Section 2190.1

CLC & IB Online Resources:

Diversity-Wheel-as-used-at-Johns-Hopkins-University-12.png (850×839) (researchgate.net)
Cultural Competence In Health and Human Services | NPIN (cdc.gov)
Cultural Competency – The Office of Minority Health (hhs.gov)
Implicit Bias, Microaggressions, and Stereotypes Resources | NEA
Unconscious Bias Resources | diversity.ucsf.edu
Act, Communicating, Implicit Bias (racialequitytools.org)
https://kirwaninstitute.osu.edu/implicit-bias-training
https://www.uptodate.com/contents/racial-and-ethnic-disparities-in-obstetric-and-gynecologic-care-and-role-of-implicitbiases
https://www.contemporaryobgyn.net/view/overcoming-racism-and-unconscious-bias-in-ob-gyn
https://pubmed.ncbi.nlm.nih.gov/34016820/