មជ្ឈមណ្ឌលជាតិការពារមាតា និងទារក
NATIONAL MATERNAL AND CHILD HEALTH CENTER

ទិវាសល្យសាស្ត្រ សម្ភព និងរោគស្ត្រី លើកទី៣

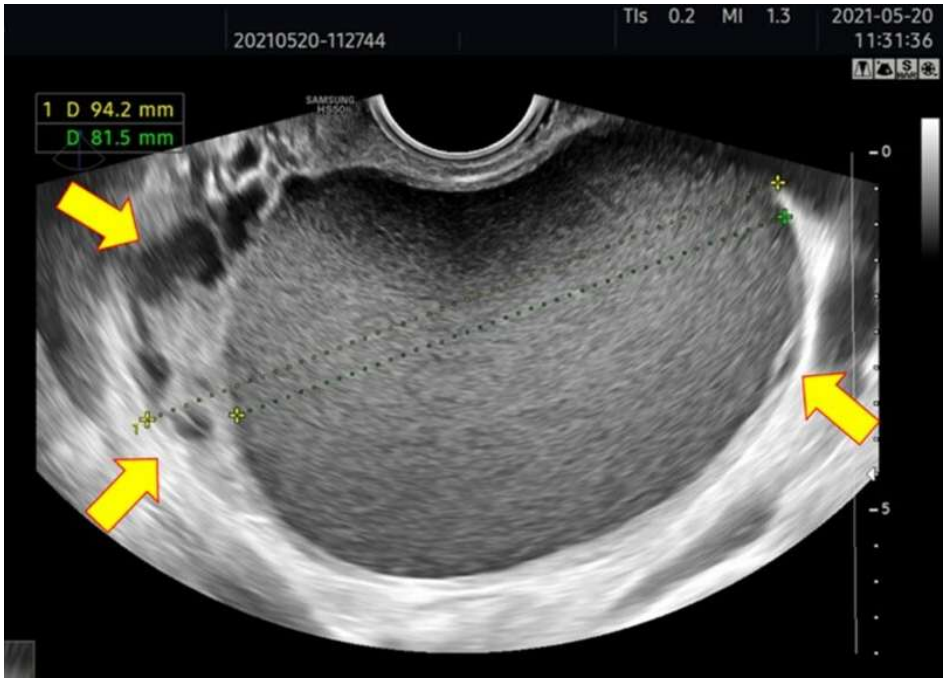
ប្រធានបទ៖ «ពង្រឹង និងបង្កើនសេវាព្យាបាល ថែទាំ សង្គ្រោះ ប្រកបដោយគុណភាព »

Management in Presumed Benign Ovarian Tumor

ថ្ងៃទី៤-៥ ខែកញ្ញា ឆ្នាំ២០២៥
សណ្ឋាគារភ្នំពេញ

Presented by **TIM PICHNISSAY, DR.OBGYN**.

Management in presumed benign ovarian tumor

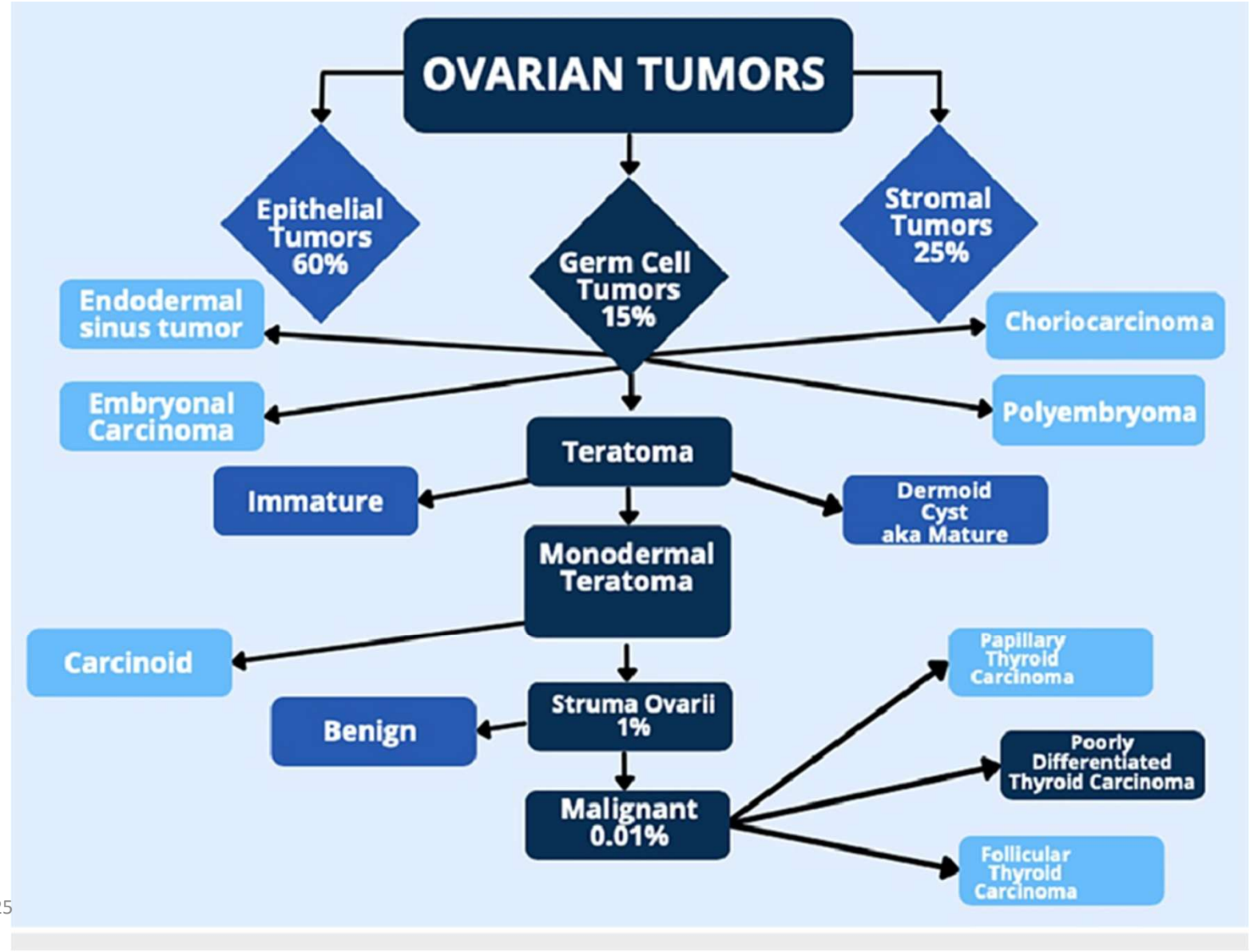


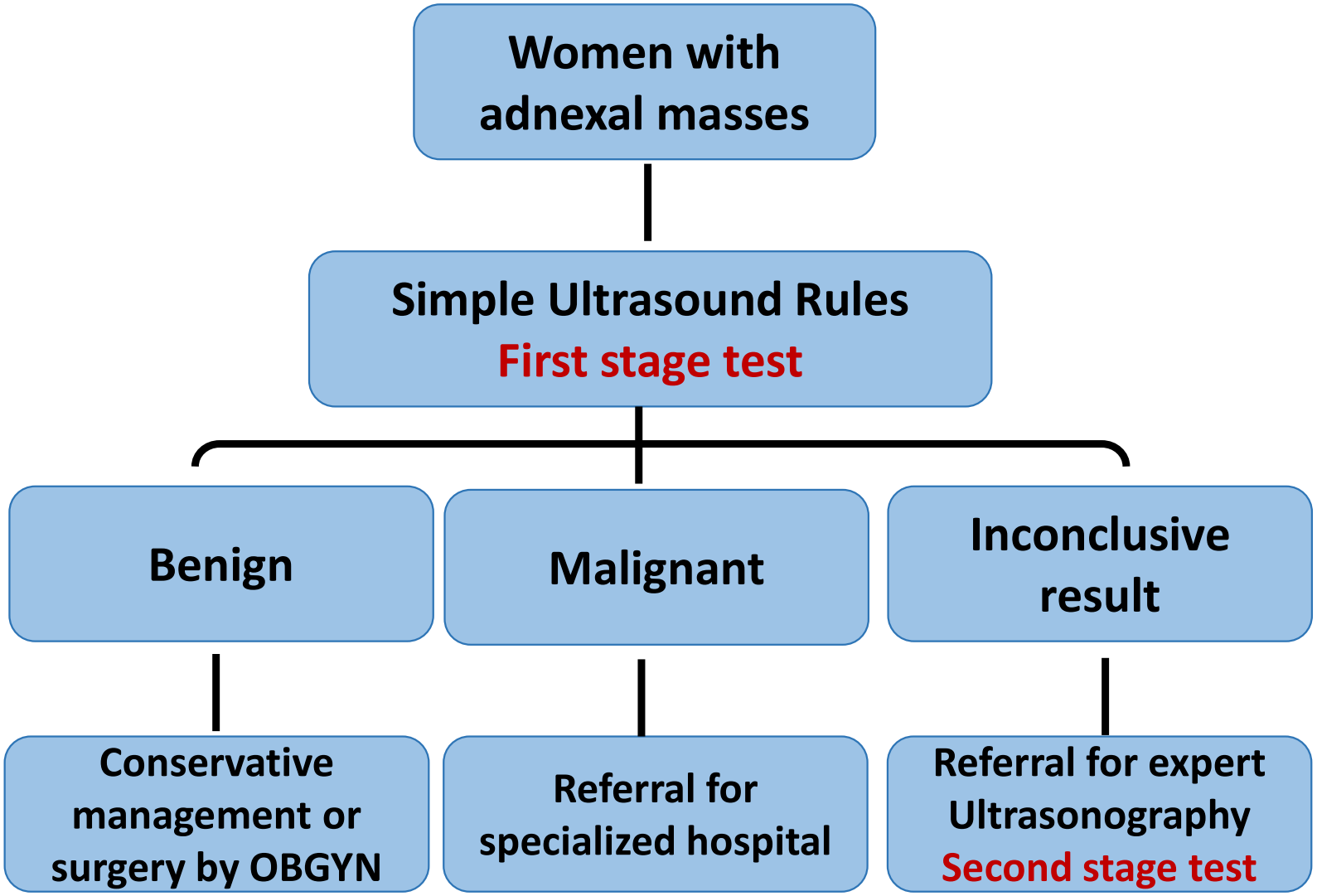
Content

1. Our activities in Gynecology Department
2. Role of ultrasound in ovarian masses
3. Our experience in ovarian masses
4. Our management in benign ovarian tumor before laparoscopy or laparotomy
5. IOTA classification
6. Take Home messages

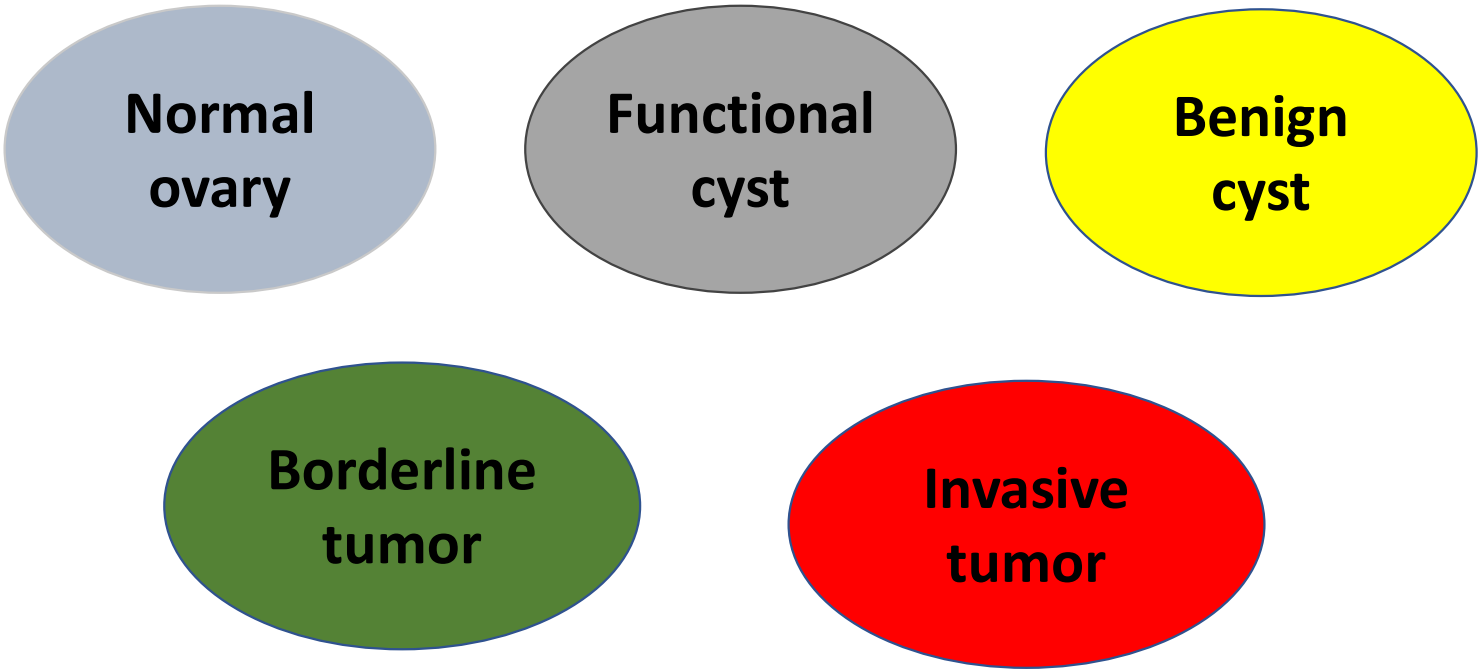
Gynecology Department

Gynecology and obstetric Department	2024
Gynecology	1344
Obstetric	5231
Total	**6575**


OVARIAN TUMORS
Epithelial Tumors 60%
Germ Cell Tumors 15%
Stromal Tumors 25%
Endodermal sinus tumor
Choriocarcinoma
Embryonal Carcinoma
Polyembryoma
Teratoma
Immature
Dermoid Cyst aka Mature
Monodermal Teratoma
Carcinoid
Struma Ovarii 1%
Benign
Malignant 0.01%
Papillary Thyroid Carcinoma
Poorly Differentiated Thyroid Carcinoma
Follicular Thyroid Carcinoma


Women with adnexal masses
Simple Ultrasound Rules
First stage test
Benign
Malignant
Inconclusive result
Conservative management or surgery by OBGYN
Referral for specialized hospital
Referral for expert Ultrasonography
Second stage test

The Simple Ultrasound Roles



Rules
Don't miss ovarian cancer

- Question 1: Is it a **functional** cyst or an **organic** cyst?

  Which criteria?

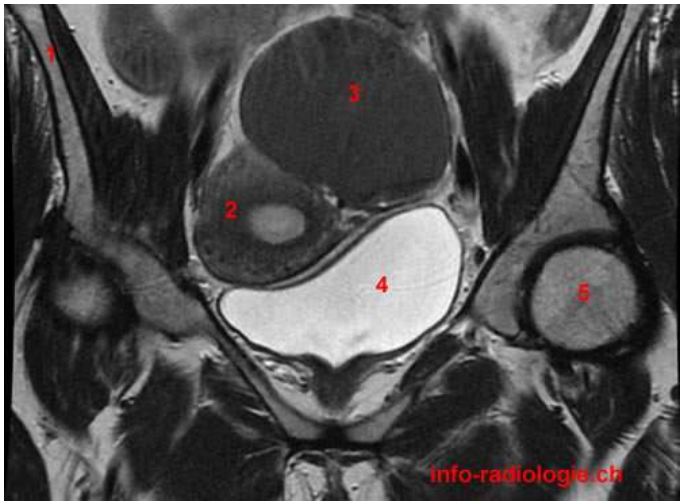
- Question 2: Is this organic cyst **benign** or **malignant**?

  Which criteria?

Diagnoses

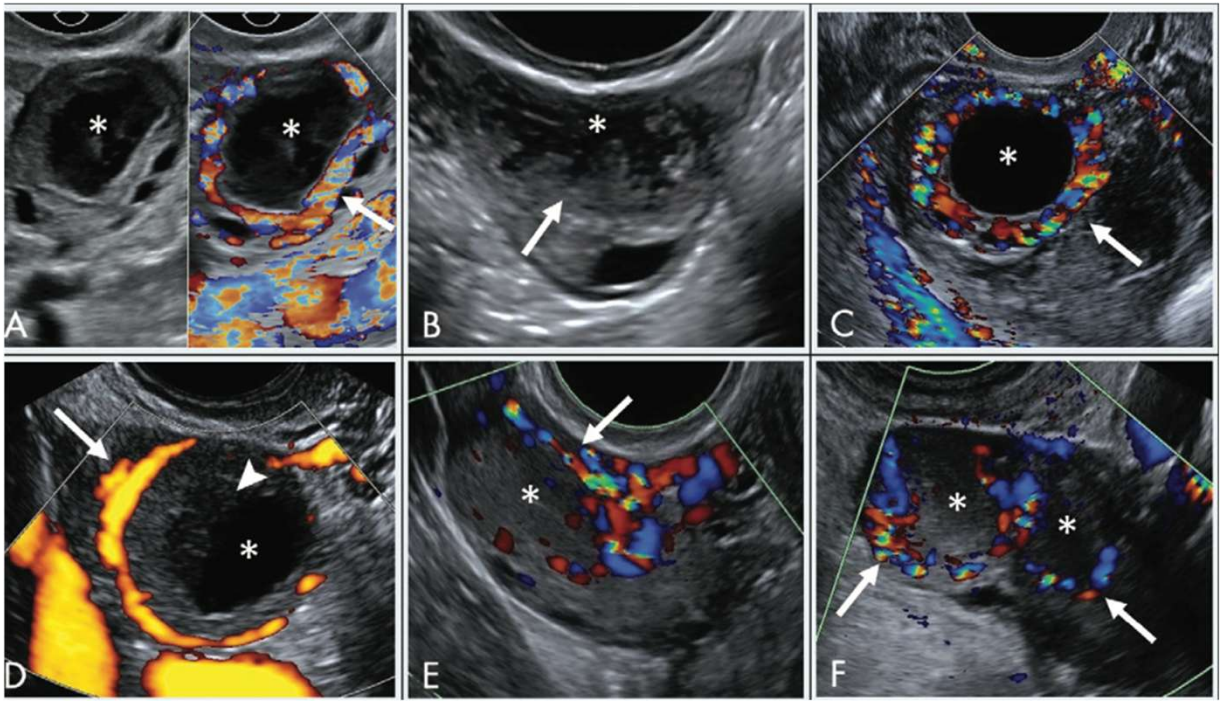
TVUS first line

MRI second line



Should not be supported by imaging alone;
Find out or symptoms, age and desire for pregnancy

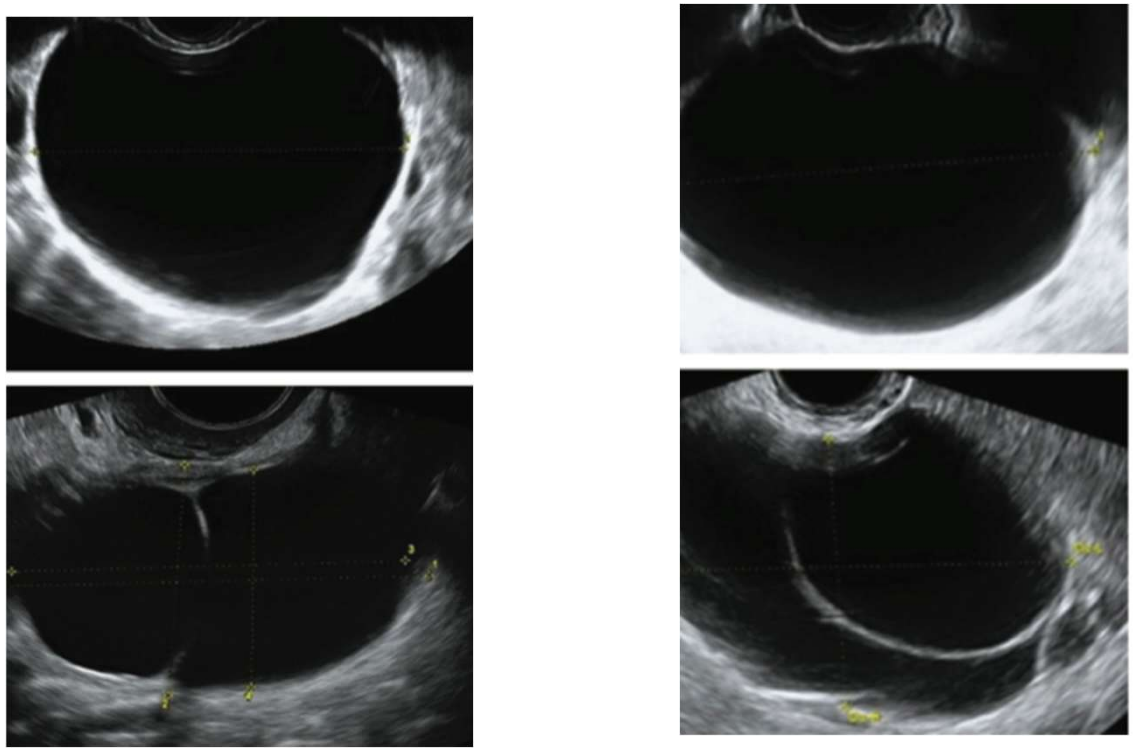
Some examples



Radiology: Volume 00: Number 0— 2019 n *radiology.rsna.org*

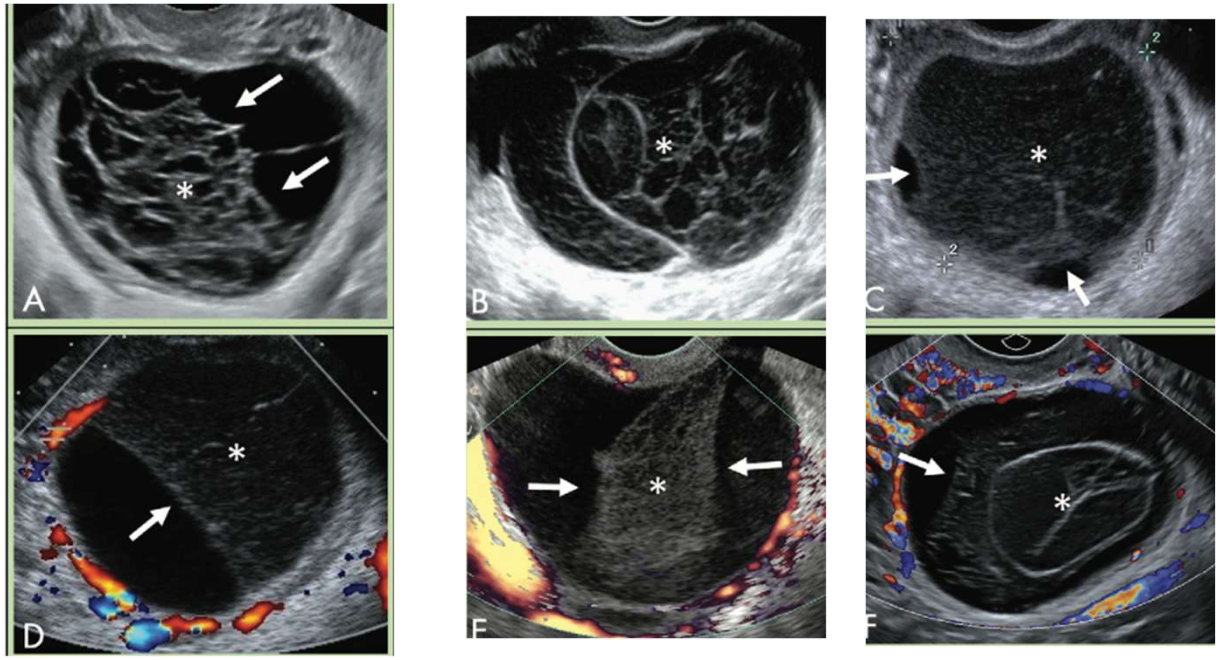
corpo lutea

Serous cystadenomas



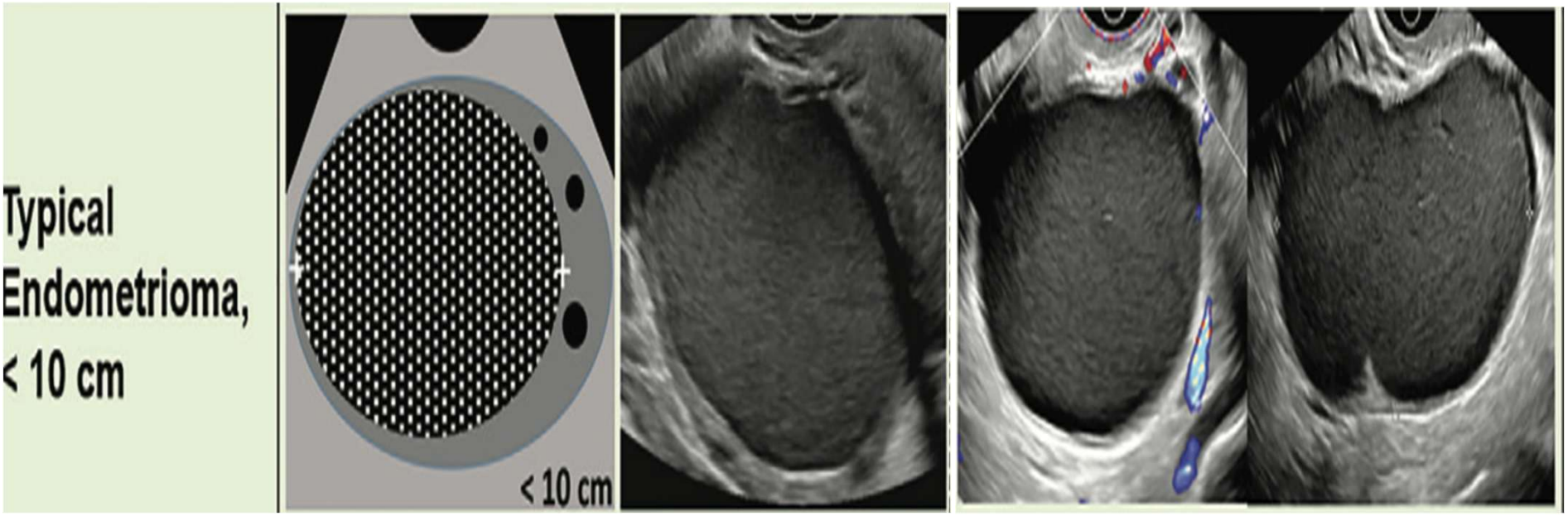
International Society of Ultrasound in Obstetrics and Gynecology. *Ultrasound Obstet. Gynecol.,* **2025**; **66**: 233–241

Typical Hemorrhagic cysts



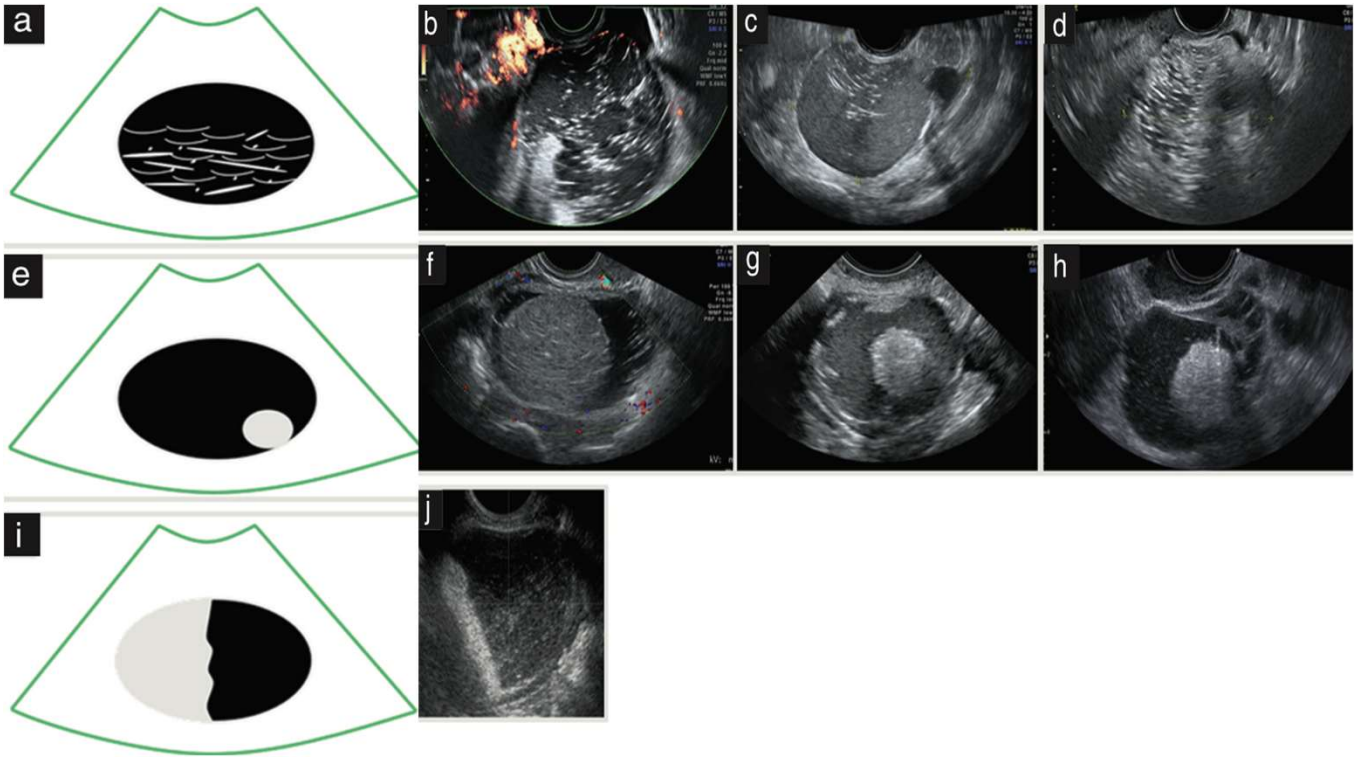
Radiology: Volume 00: Number 0— 2019 *radiology.rsna.org*

Typical Endometriomas



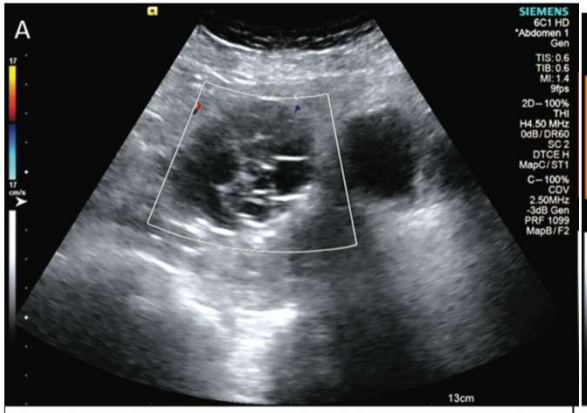
Ground glass/homogenous low-level echoes

Dermoid cyst
(mature cystic teratoma ovarian tumor)



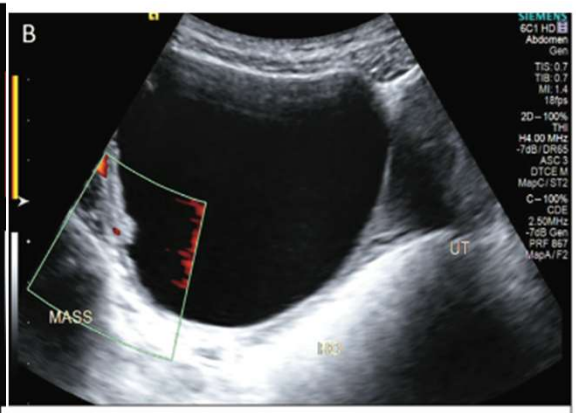
Ultrasound Obstet. Gynecol., **2022; 60**: 549–558.

Color Doppler



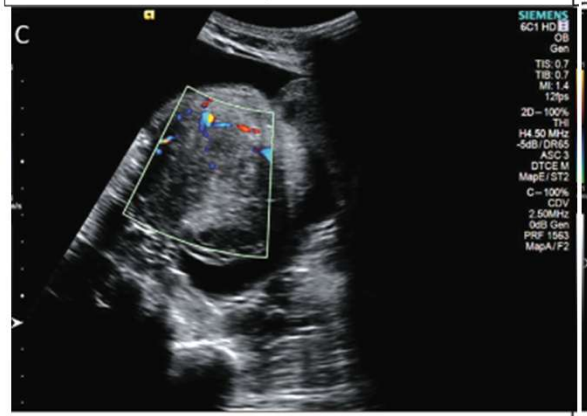
COLOR SCORE 1

No blood flow in septae, cyst walls or solid components



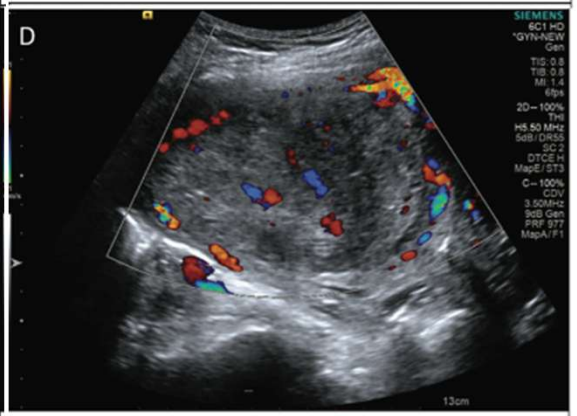
COLOR SCORE 2

Minimal flow in septae, cyst walls or solid components



COLOR SCORE 3

Moderate blood flow in septae, cyst walls or solid components



COLOR SCORE 4

High blood flow in septae, cyst walls or solid components

Our experience

« Cyst presumded benign »

(Adnexal mass presumed ovarian origin)

1. What diagnostic accuracy?
2. Which approach: laparoscopic or laparotomy?
3. What results?

Type of operation	Nb	%
Cystectomy	86	**55%**
Adnexectomy	35	**22%**
Hysterectomy	6	**4%**
Cystectomy + adnexectomy unilateral	6	4%
incision drainage of tubo-ovarian abscess	4	3%
Cystectomy + appendectomy	4	3%
Ovariectomy oophorectomy	4	3%
Hemostatic suture	3	2%
Cystectomy + hysterectomy	2	1%
Adnexectomy+ appendectomy	1	1%
Adnexectomy+ hysterectomy +appendectomy	1	1%
explorer	1	1%
Cystectomy+ myomectomy	1	1%
Oophorectomy + appendectomy	1	1%
Punction + lavage	1	1%
Salpingectomy	1	1%
TOTAL	**157**	**100%**

Patient's data: age

AGE CATEGORIES	NB	%
< 20	5	**3%**
20 - 29	31	**20%**
30 - 39	65	**41%**
40 - 49	39	**25%**
> = 50	17	**11%**
TOTAL	157	100.00

Related to nature of cyst

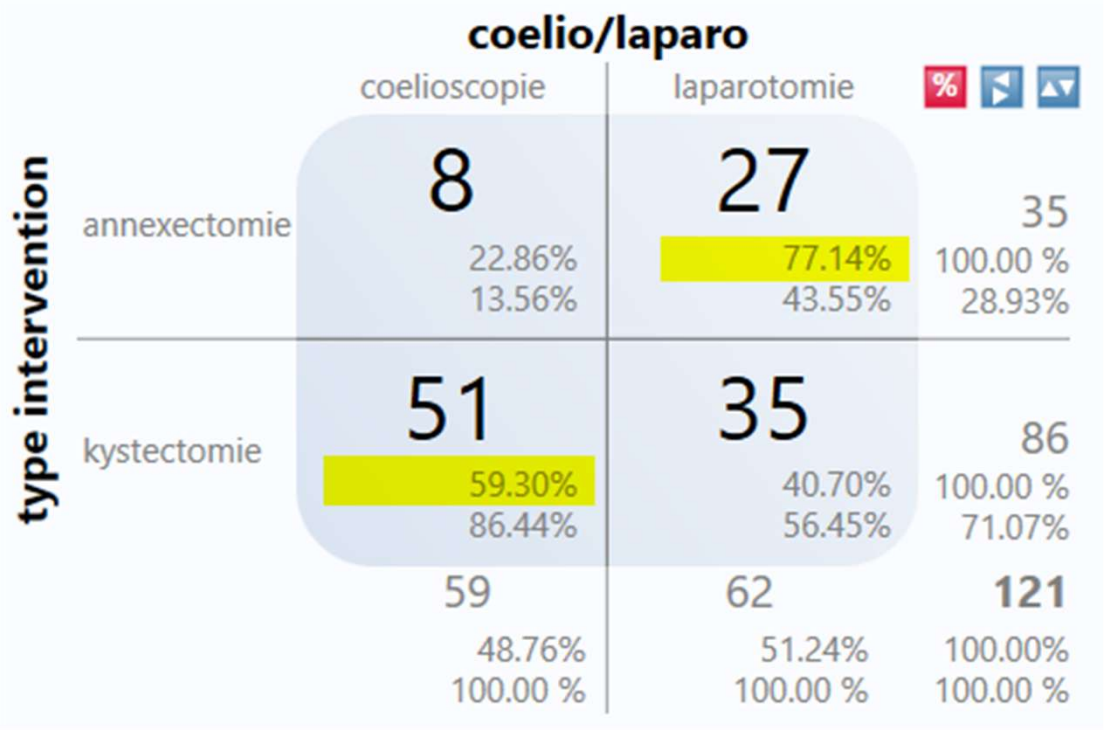
Nature	NB	Mean age
Dermoid	17	**35.7**
Endometrioma	57	**34.7**
Serous	64	**40.6**

P=0,001

Which approach: laparoscopy or laparotomy?

Coelio/Laparo	NB	%
Laparo**scopy**	64	**41%**
Laparo**tomy**	93	**59%**
TOTAL	157	100%

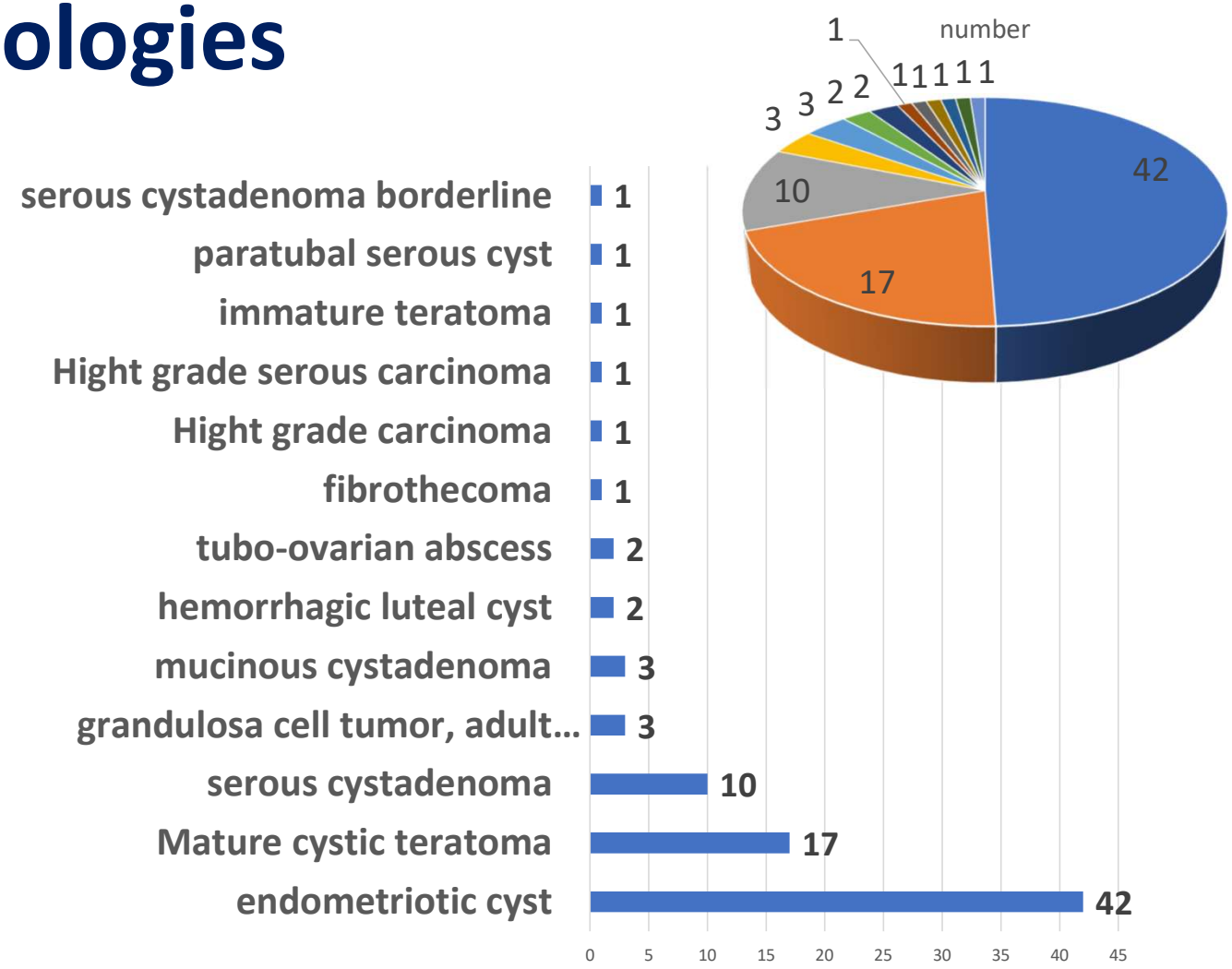
Intervention type	Nb	%
adnexectomy	35	**29%**
cystectomy	86	**71%**
TOTAL	**121**	100%



Duration of op (minutes)			
Duration * type intervention	**NB**	**Mean**	**Median**
Adnexectomy	35	**76.7**	**60**
Cystectomy	86	**90**	**90**

P=0,05

Histologies



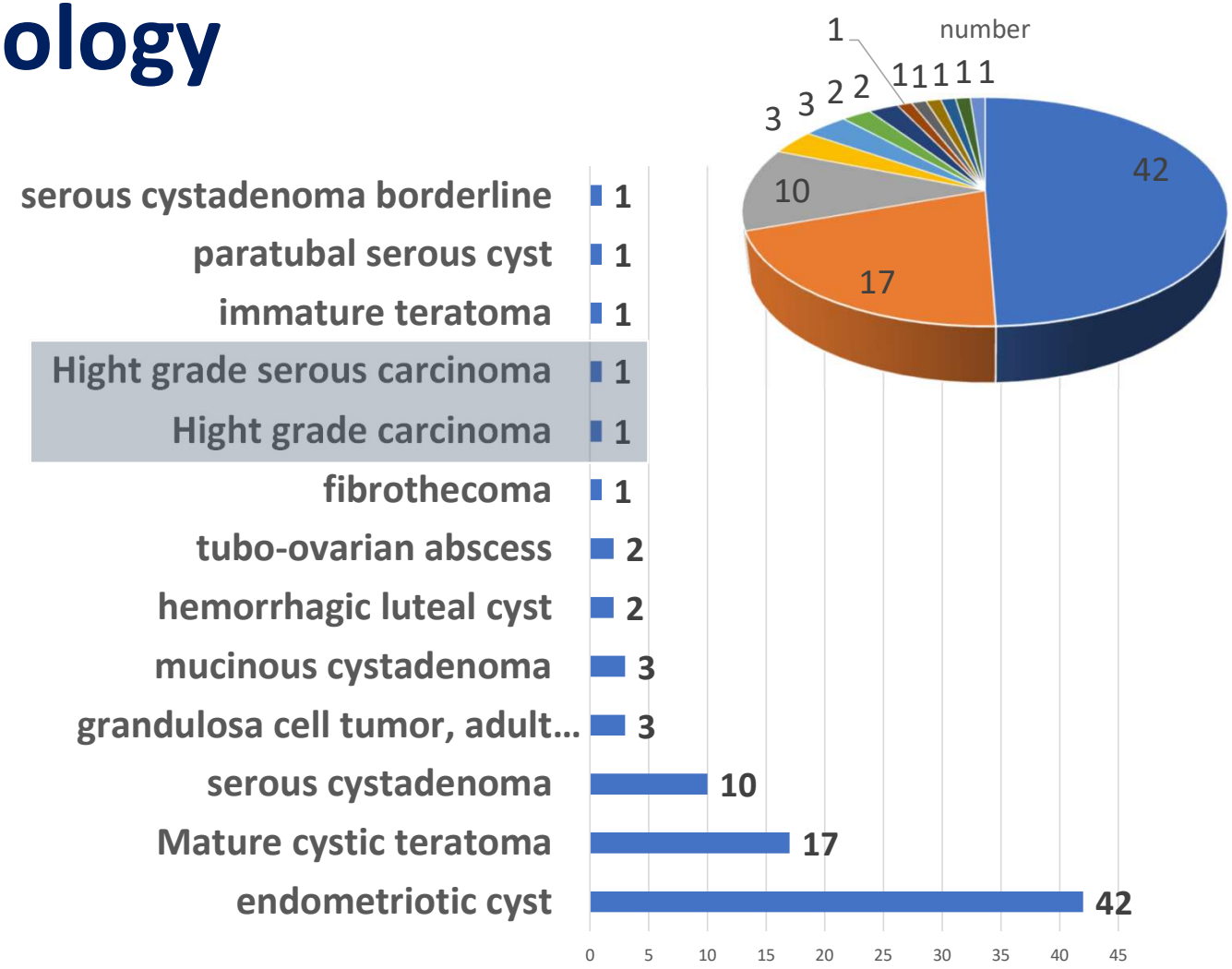
Feedback from our experience

Don't miss ovarian cancer ?

Not fully achieved!

Need for greater precision in preoperative diagnosis

Histology


number
1
1
1
1
1
1
2
2
3
3
42
17
10
serous cystadenoma borderline 1
paratubal serous cyst 1
immature teratoma 1
Hight grade serous carcinoma 1
Hight grade carcinoma 1
fibrothecoma 1
tubo-ovarian abscess 2
hemorrhagic luteal cyst 2
mucinous cystadenoma 3
grandulosa cell tumor, adult... 3
serous cystadenoma 10
Mature cystic teratoma 17
endometriotic cyst 42
0 5 10 15 20 25 30 35 40 45

Greater precision in preoperative diagnosis

FIGURE 1 IOTA-based evaluations

Simple rules[10]

Rules for predicting a malignant tumor (M rules)

- M1 Irregular solid tumor
- M2 Presence of ascites
- M3 At least 4 papillary structures
- M4 Irregular multilocular solid tumor with largest diameter ≥10 cm
- M5 Very strong blood flow (color score 4)

Rules for predicting a benign tumor (B rules)

- B1 Unilocular
- B2 Presence of solid components with largest solid diameter <7 mm
- B3 Presence of acoustic shadows
- B4 Smooth multilocular tumor with largest diameter <10 cm
- B5 No blood flow (color score 1)

If 1 or more M rules apply in the absence of a B rule, the mass is classified as malignant. If 1 or more B rules apply in the absence of an M rule, the mass is classified as benign. If both M rules and B rules apply, the mass cannot be classified. If no rule applies, the mass cannot be classified.

ADNEX model[11]

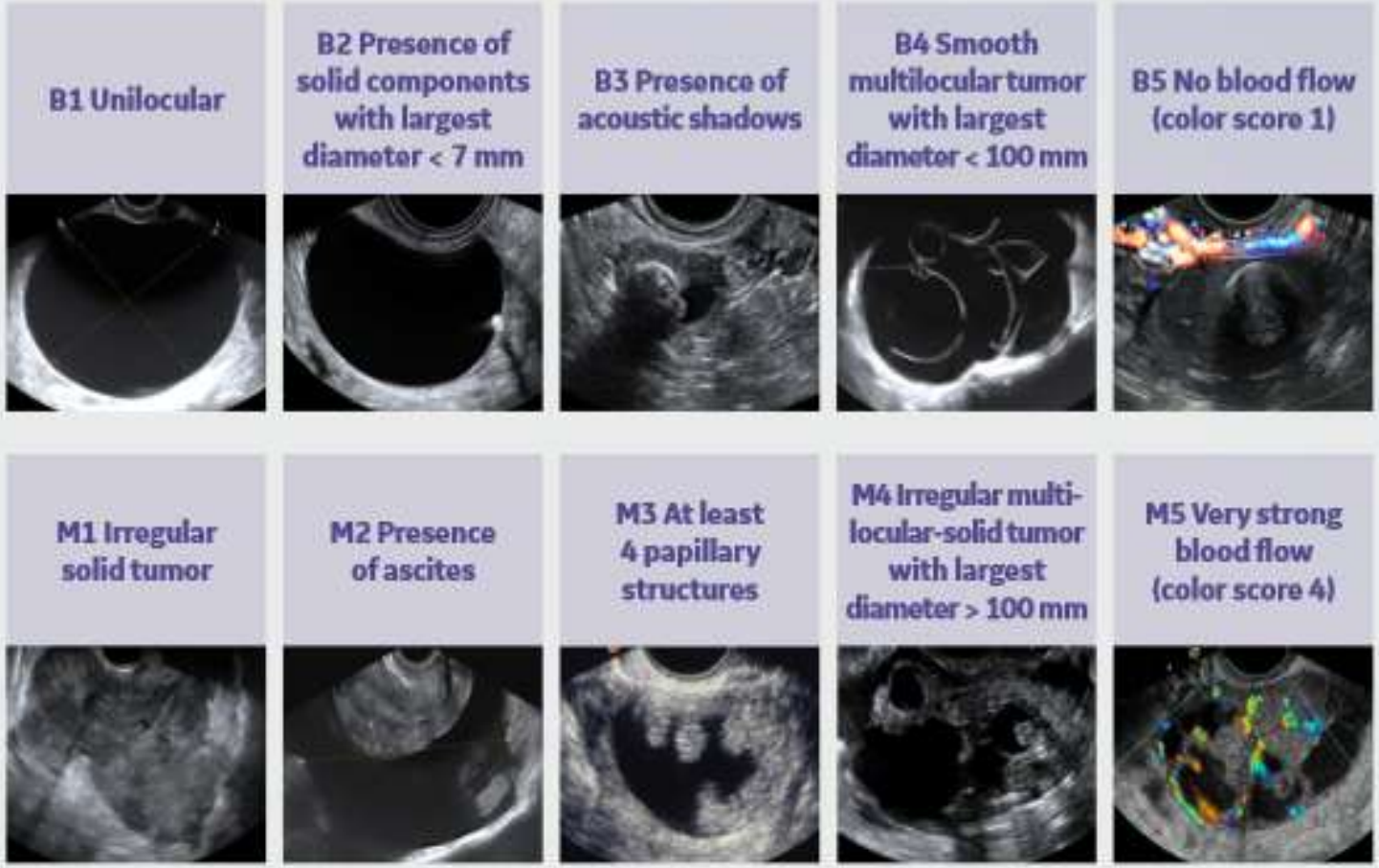
1. Age of patient at examination (years)
2. Oncology center (referral center for gynecologic oncology)
3. Maximal diameter of the lesions (mm)
4. Maximal diameter of the largest solid part (mm)
5. More than 10 locules
6. Number of papillations (papillary projections)
7. Acoustic shadows present?
8. Ascites (fluid outside the pelvis) present?
9. Serum CA 125 (U/mL)

Online calculator: http://www.iotagroup.org/adnexmodel/site%20iota.html

Abbreviation: IOTA, International Ovarian Tumor Analysis.

Carballo, E.V., et al., *Surgical outcomes of adnexal masses classified by IOTA ultrasound simple rules.* Sci Rep, 2022. **12**(1): p. 21848.

Online calculator


B1 Unilocular
B2 Presence of solid components with largest diameter < 7 mm
B3 Presence of acoustic shadows
B4 Smooth multilocular tumor with largest diameter < 100 mm
B5 No blood flow (color score 1)
M1 Irregular solid tumor
M2 Presence of ascites
M3 At least 4 papillary structures
M4 Irregular multi-locular-solid tumor with largest diameter > 100 mm
M5 Very strong blood flow (color score 4)

IOTA for greater precision in preoperative diagnosis

M-Rules		B-Rules	
M1	Irregular solid tumor	B1	Unilocular cyst
M2	Presence of ascites	B2	Presence of solid component where largest solid component is less than 7mm in largest diameter.
M3	At least 1 papillary structure	B3	Present of acoustic shadows
M4	Irregular multilocular solid tumor with largest diameter > 100mm	B4	Smooth multilocular tumor with largest diameter < 100mm
M5	Very strong blood flow (color score4)	B5	No blood flow (color score 1)

*Sharma B et al., Int J Reprod Contracept Obstet Gynecol. **2020** Feb;9(2):652-658*

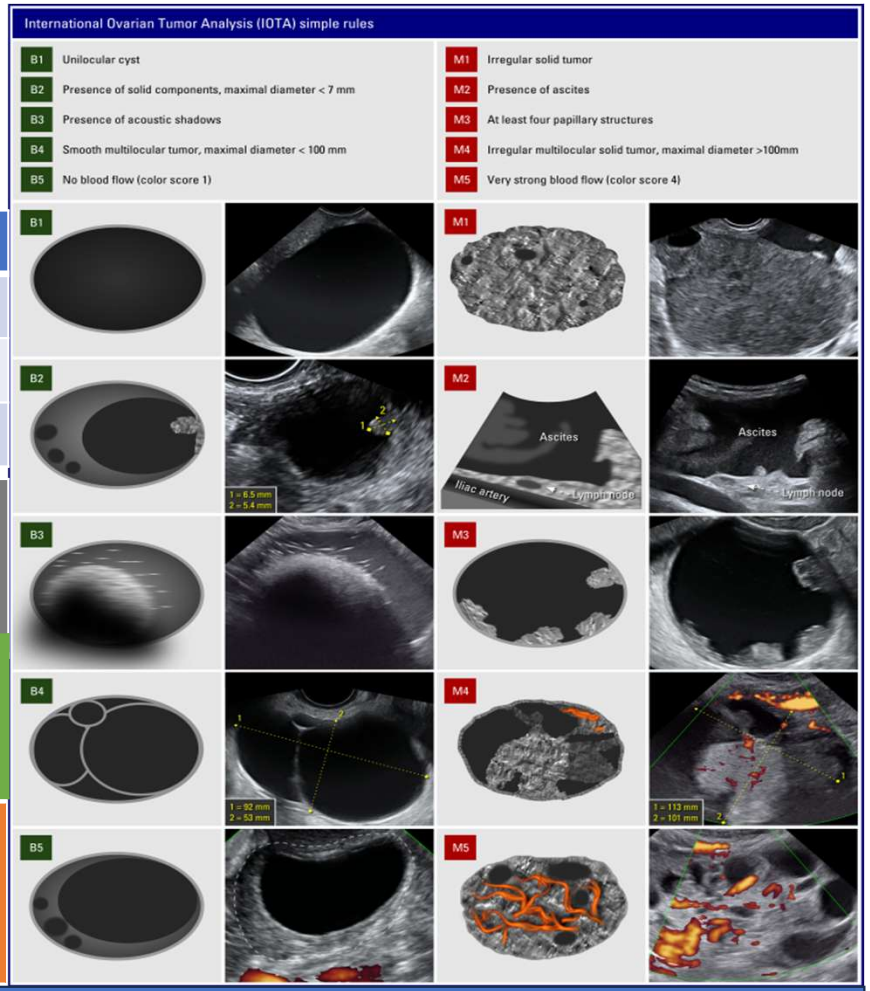
Management in presumed benign ovaries tumor

IOTA simple role		
R1	M>1 +(-/+(B)	M
R2	B>1 + M (-)	B
R3	2M + 2B	Inconclusive

If PBOT => laparoscopy/laparotomy

If inconclusive => scanner + IRM + CA 125

If M => Referral for specialized hospital



Unilocular cyst < 5cm => abstention and follow up

Suspect endometriotic cyst => Discuses with patient when associated with pain and infertily .

Feedback from our experience

Endometrioma : 49%

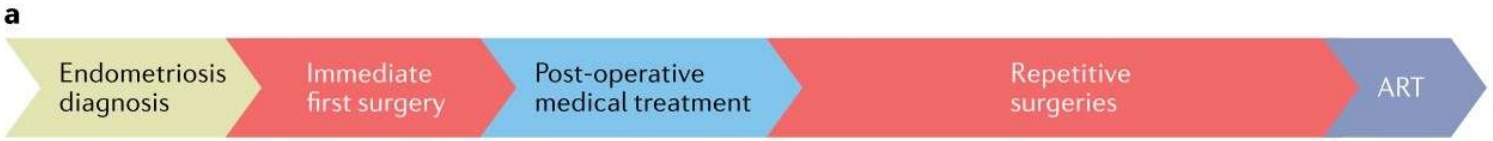
New treatment strategy: because surgery is

1. 50% have recurrence
2. don’t treat the retrograde menstruation
3. miss deep endometriosis
4. often associated with adenomyosis

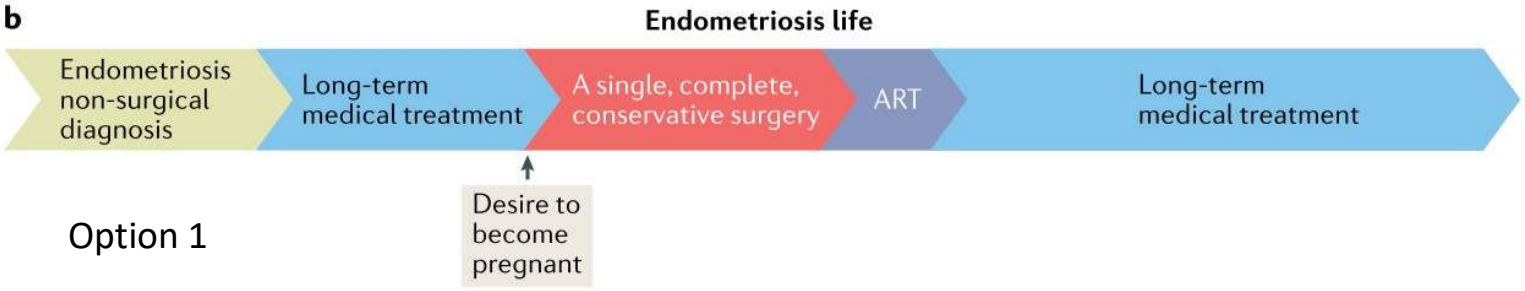
unique, **complete** and **programmed**

according to age and desire for pregnancy

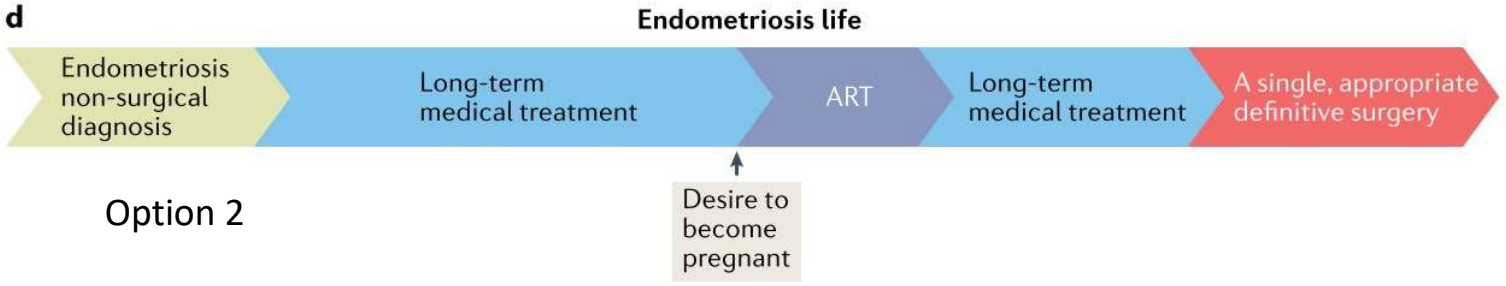
Endometriosis & fertility------ how to improve--------place for ART



Old strategy



Option 1

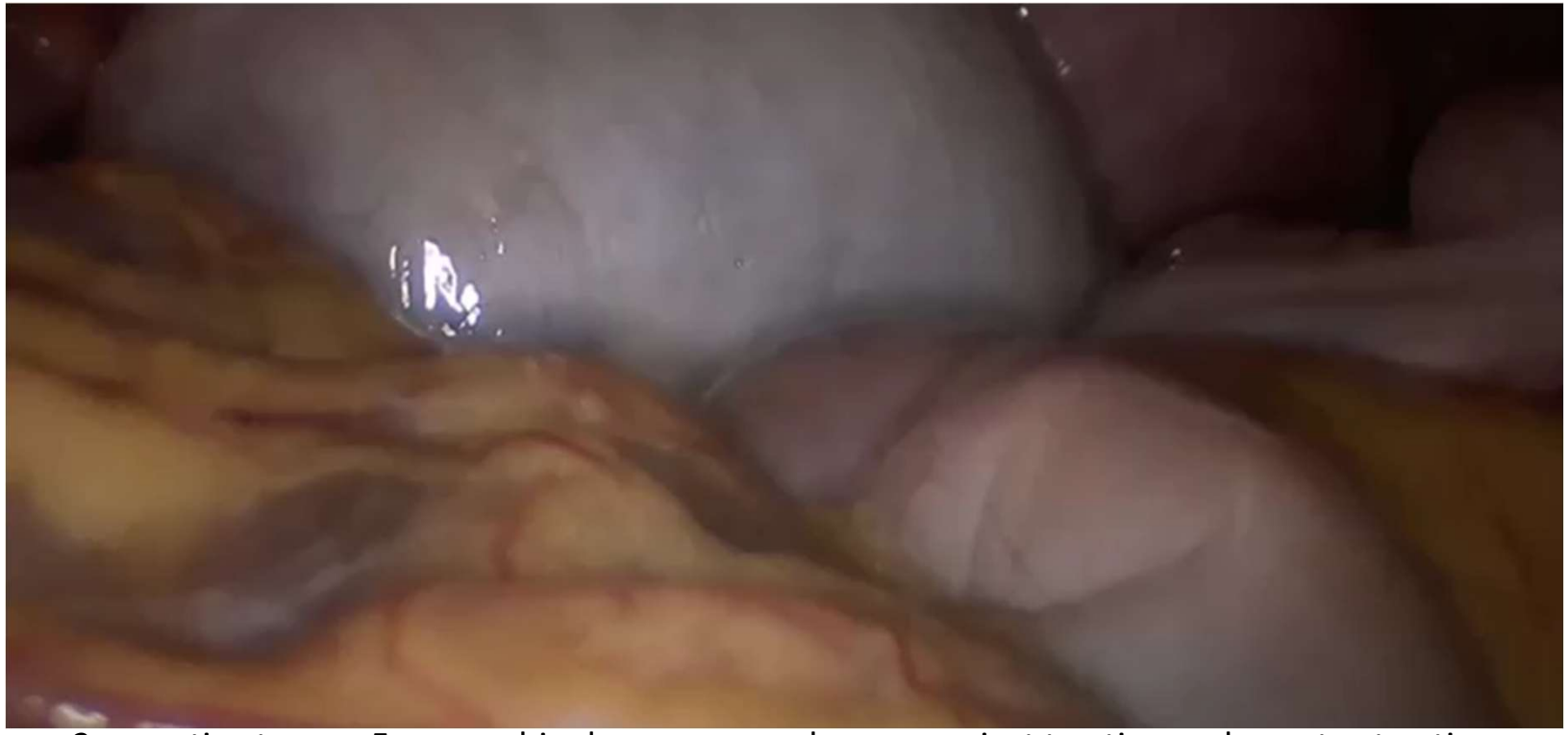


Option 2

Our technique for annexectomy

2 op trocars 5 mm, scissor and bipolar, extraction by sac to 5 → 10 mm

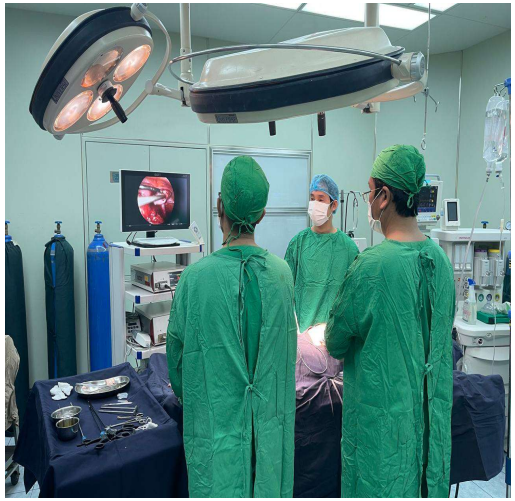
Our technique for Fertility Sparing: Ovarian Cystectomy Ambulatory surgery

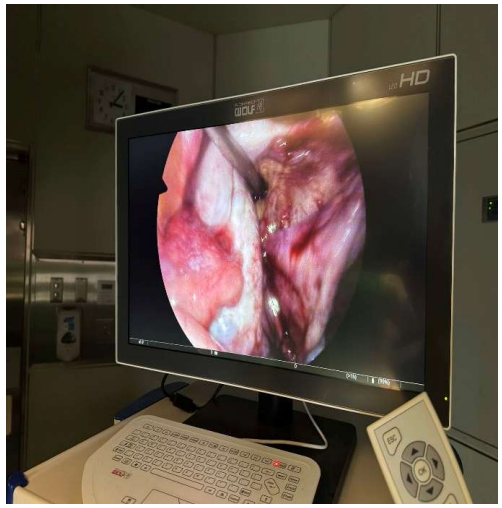


2 operative trocars 5mm, no bipolar or monopolar energy, just traction and counter-traction

Take Home messages

1. Don’t use image alone to make indication.
2. Don’t miss ovarian cancer.
3. Improve diagnosis accuracy by using IOTA.
4. Don’t give surgery for unilocular cyst < 5 cm, but follow up and give operation when persistant.
5. Surgery is not the only solution for endometrioma (50% recurrence).
6. Laparoscopy is the best choice for benign cysts.





Thank you for your attention