



衛生福利部雙和醫院
(委託臺北醫學大學興建經營)
Taipei Medical University · Shuang Ho Hospital,
Ministry of Health and Welfare



OB/GYN POCUS in ER

超音波在婦產科急症之應用

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台灣疼痛醫學會專科醫師
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醫用超音波學會指導醫師
WINFOCUS director / instructor
Certified Interventional Pain Sonologist

急診 / 重症 / 介入 / 急性疼痛

經歷

新光急診超音波訓練中心主任
西園醫院急診醫學科主任
急診醫學會超音波委員會主委
台灣疼痛醫學會大體模擬手術講師
急救加護醫學會重症超音波負責人

juice119@gmail.com



Core Applications (2023 ACEP Emergency Ultrasound Guidelines)
15項急診超音波核心應用

陳國智醫師

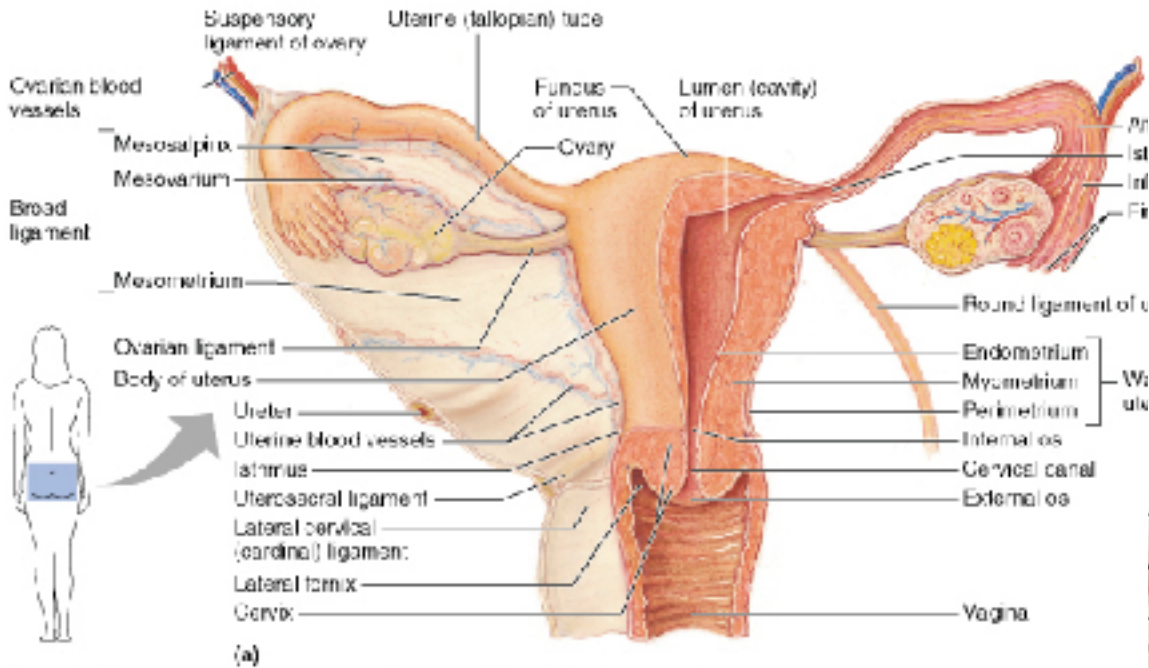
Aorta
 DVT
 Trauma
 Thoracic/Airway
 Cardia/HD assessment

Procedural Guidance
 US-guided NB
 Testicular
 Ocular
 Skin & Soft tissue

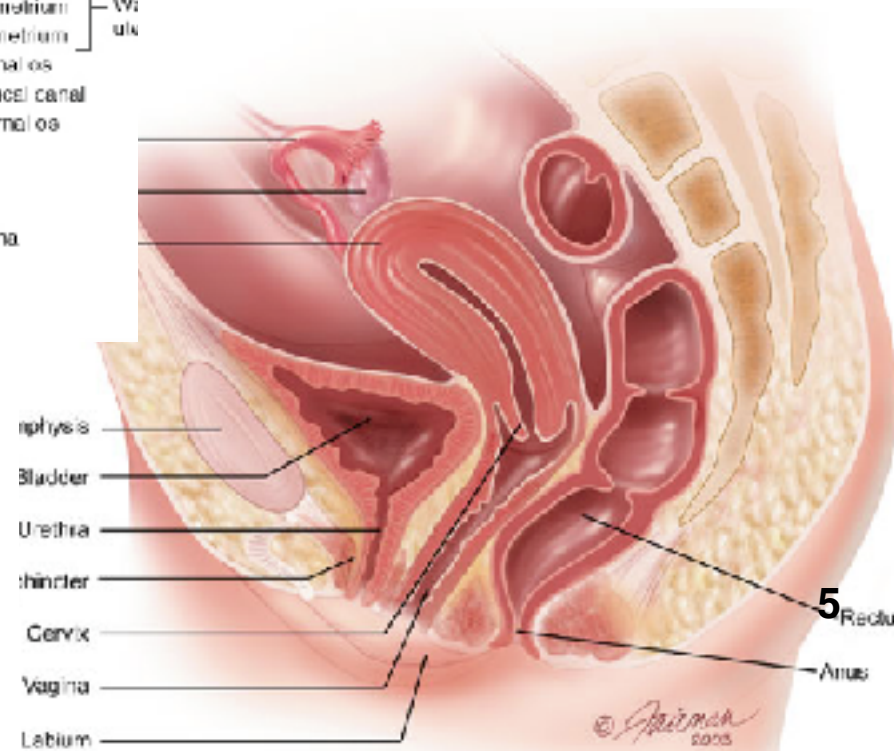
Hepatobiliary
 Urinary tract
 Pregnancy
 Bowel
 MSK



Female pelvic anatomy

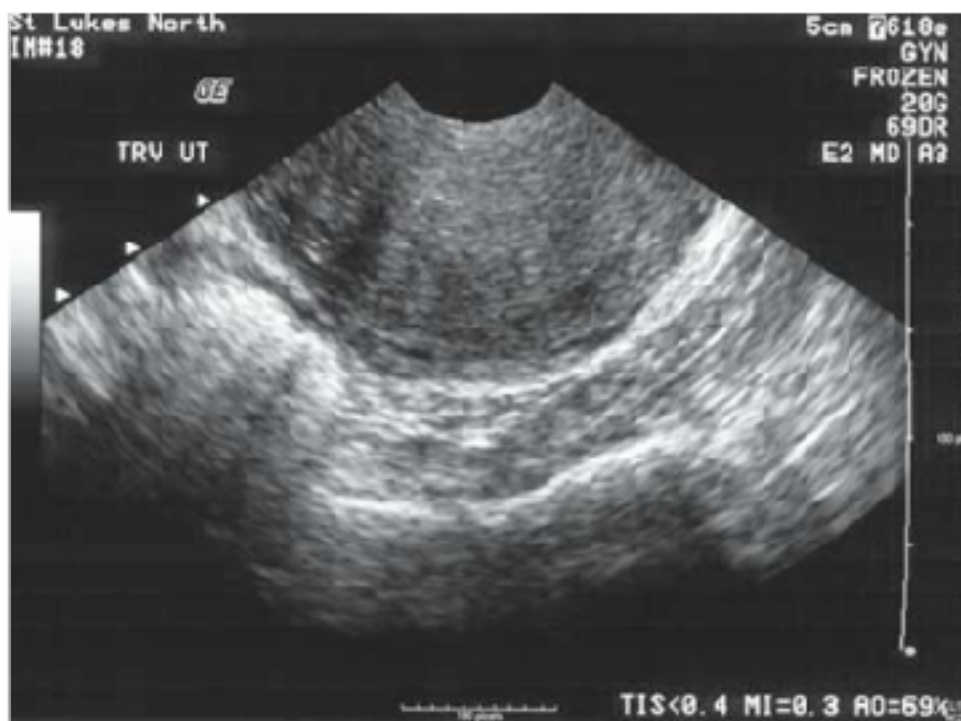
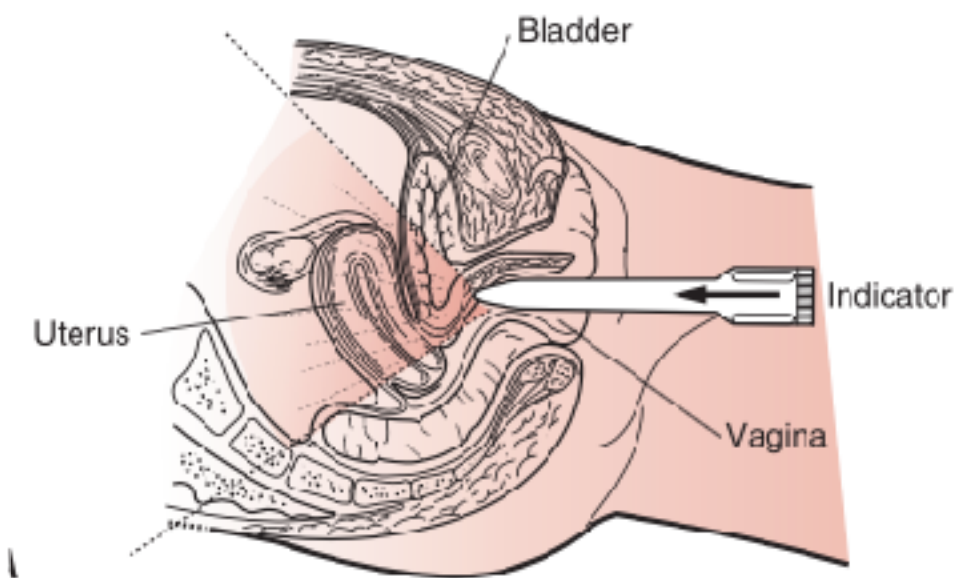
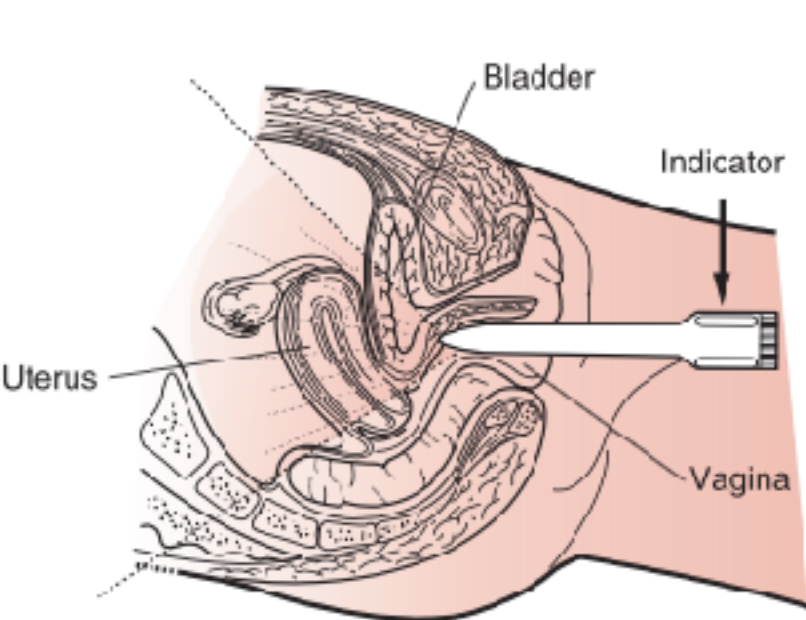


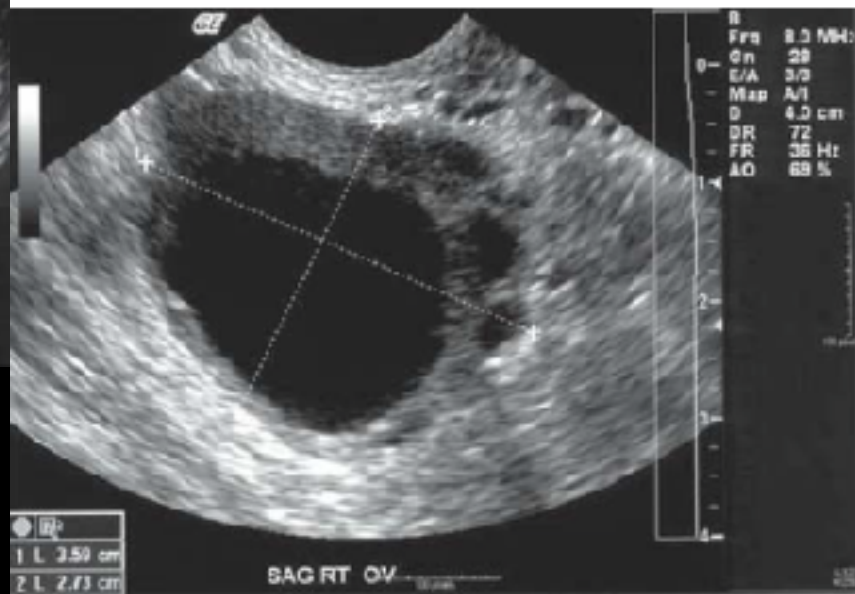
Copyright © 2001 Benjamin Cummings, an imprint of Addison Wesley Longman, Inc.

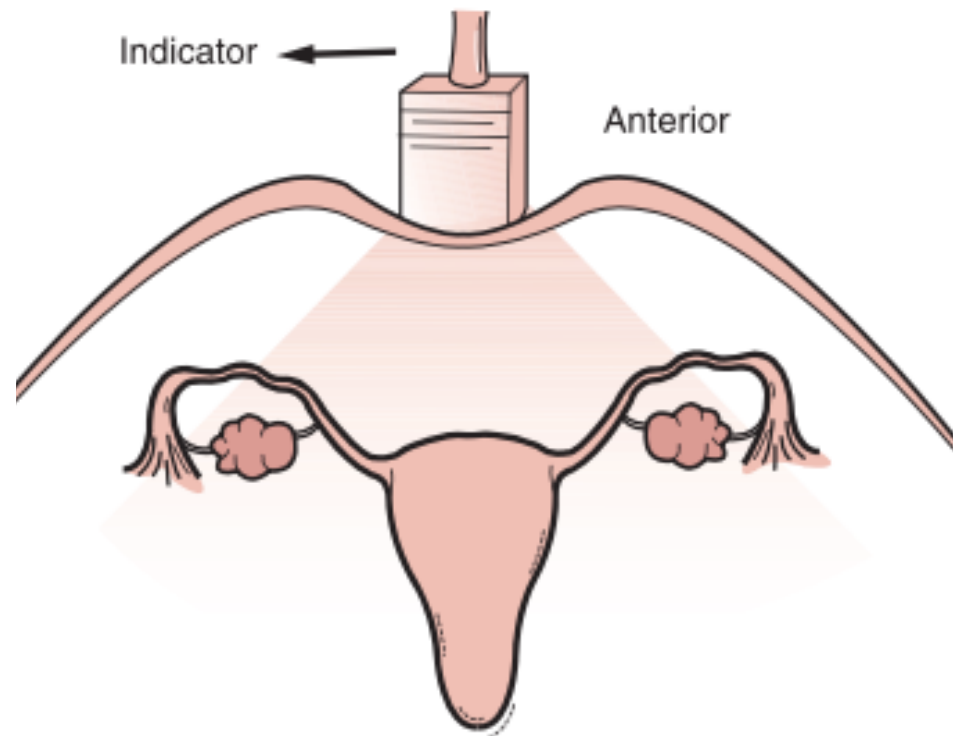
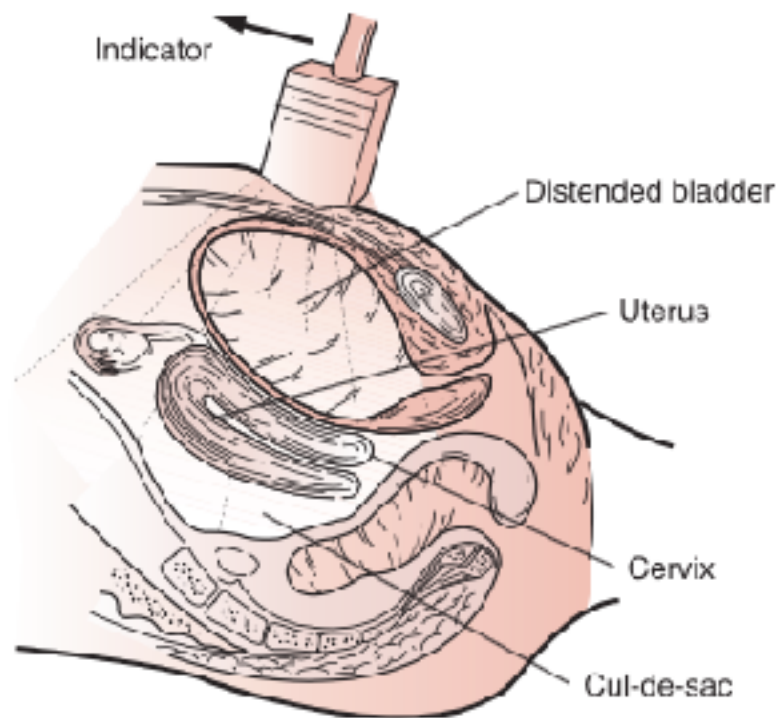


Endocavity (TVS) & Curvilinear (TAS) probes









A



C



24F, ER nurse, ABD pain / vomiting for half day





7.7cm
3.8cm
1.0cm
1.0cm

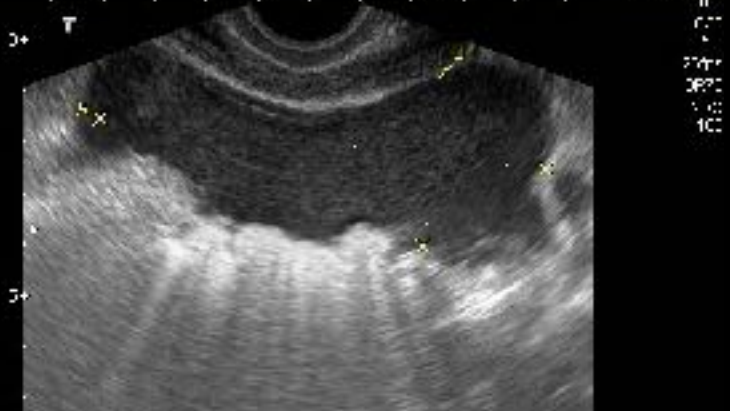
Dist A 1.40cm | Dist B 6.45cm | Dist C 7.22cm | Dist D 7.41cm

ExpReady CINE REVIEW



7.7cm
3.8cm
1.0cm
1.0cm

TOSHIBA 7012 104 10:40:43



7.7cm
3.8cm
1.0cm
1.0cm



TOSHIBA SHIN KONG MEMORIAL HOSPITAL ABD-ER 2013/11/04 08:25:39AM

PH01
SC3
4.2
22fps
08:30
CDO
94

Frame B

CINE REVIEW



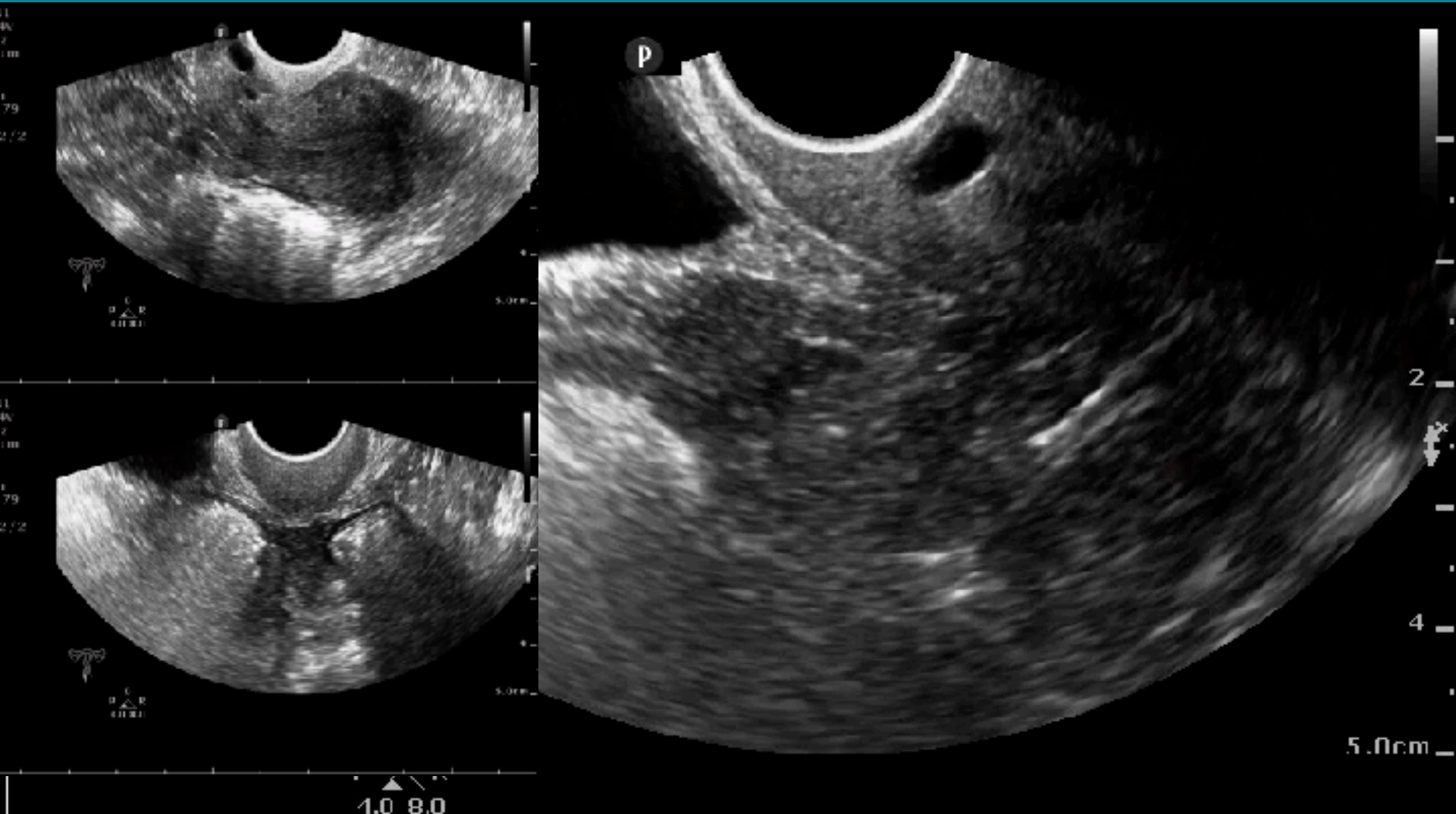
TOSHIBA SHIN KONG MEMORIAL HOSPITAL ABD-ER 2013/11/04 08:24:56AM

PH01
SC3
4.2
22fps
08:30
CDO
94

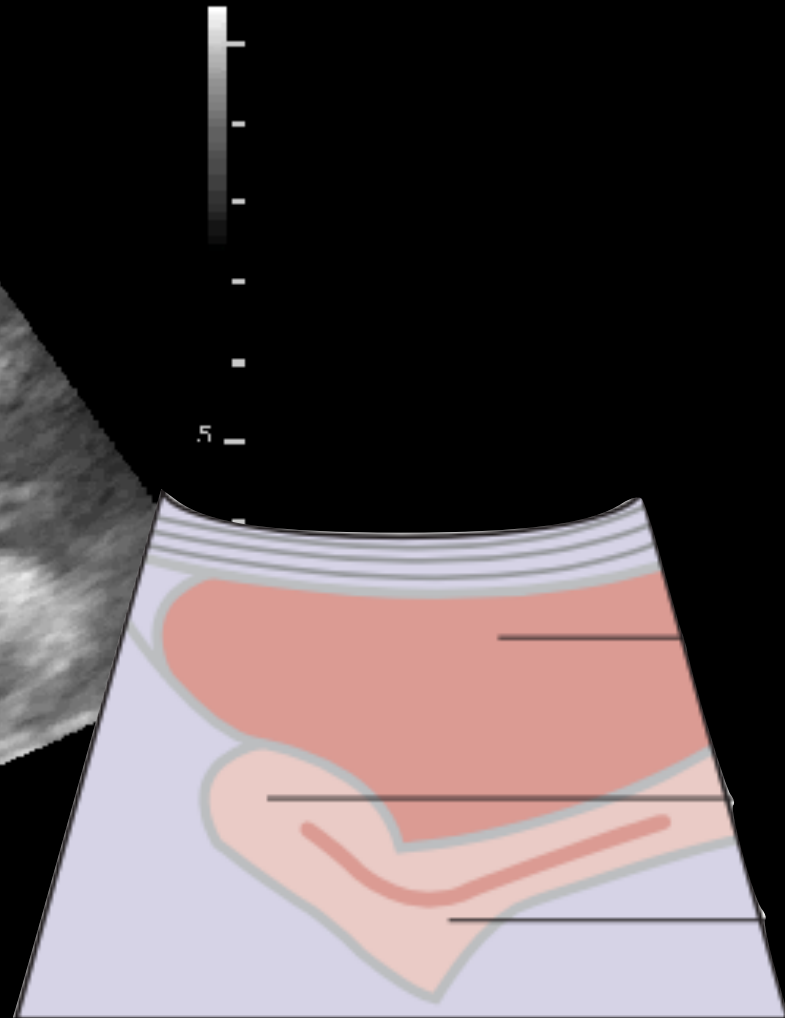
Dist A 47.0mm | Dist B 22.8mm

CINE REVIEW

TVS



Uterus-anteverted



Limitations

Bladder

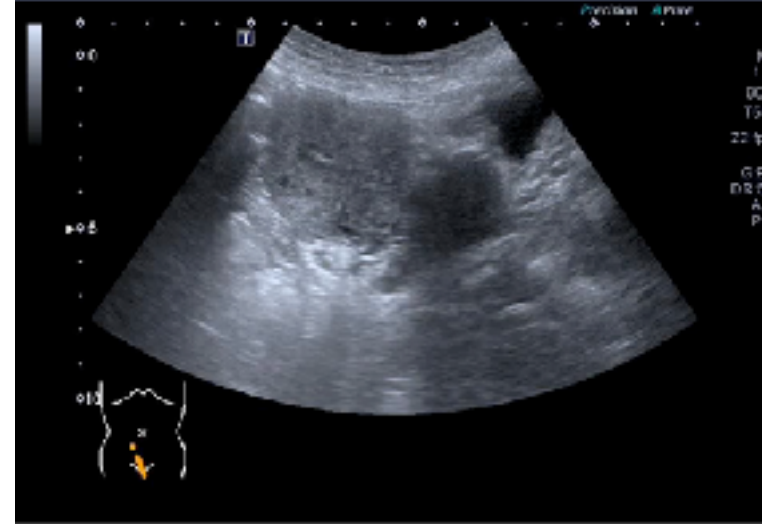
Bowel

Ovaries

Physiologic free fluid

Limited field of views

Endovaginal probe preparation



VIPS

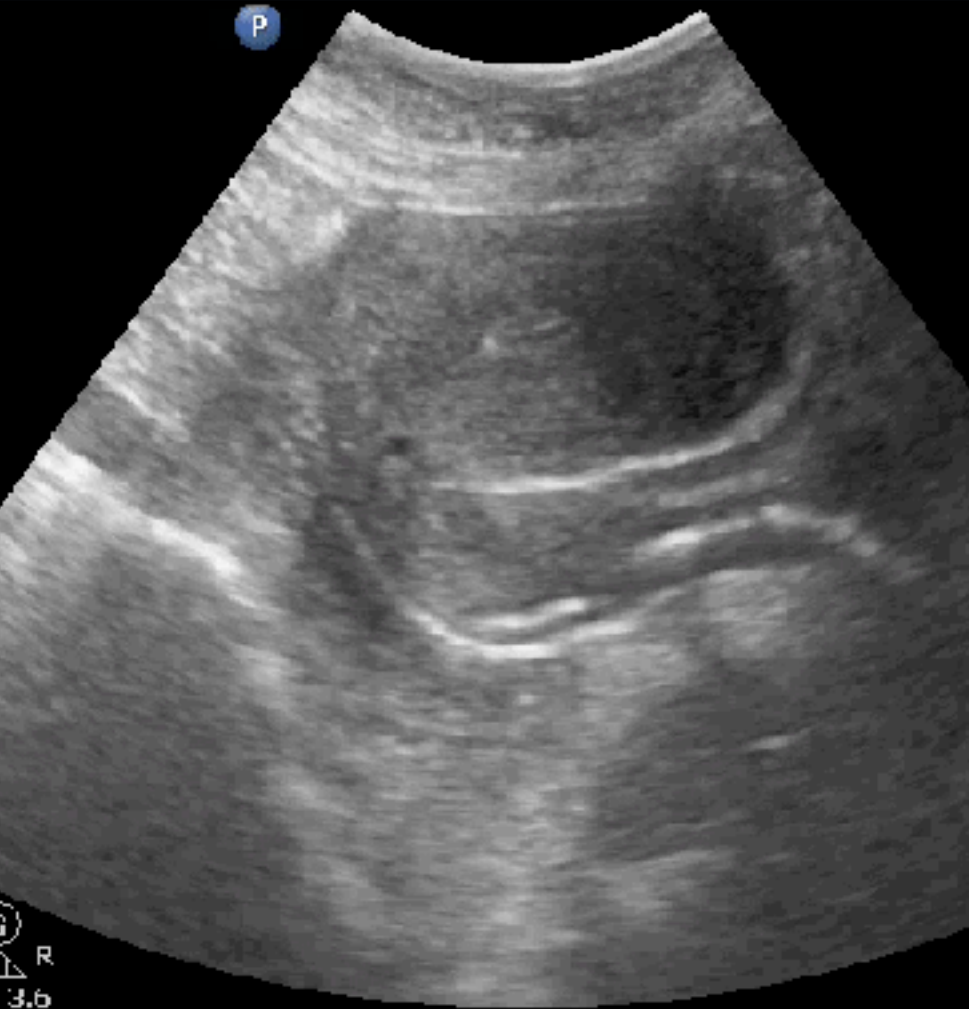
V for vaginal bleeding

I for infection

P for pain

S for shock

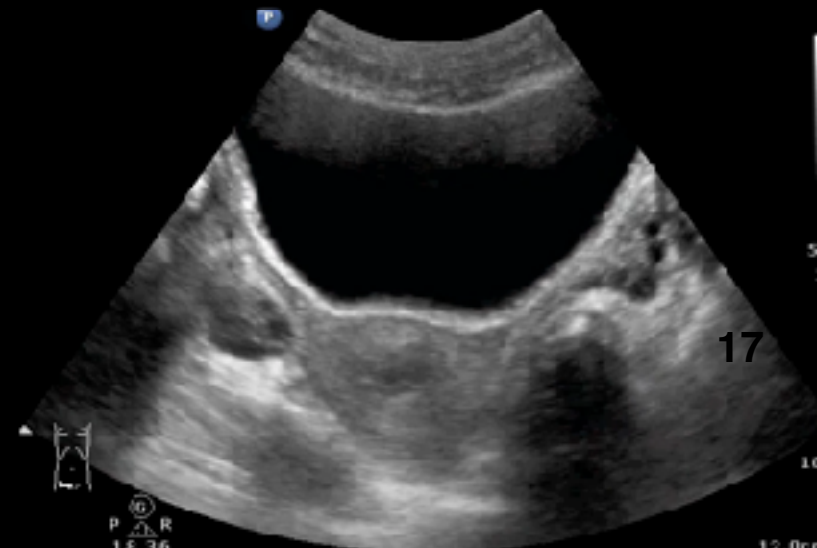
Urine or POCUS First ?

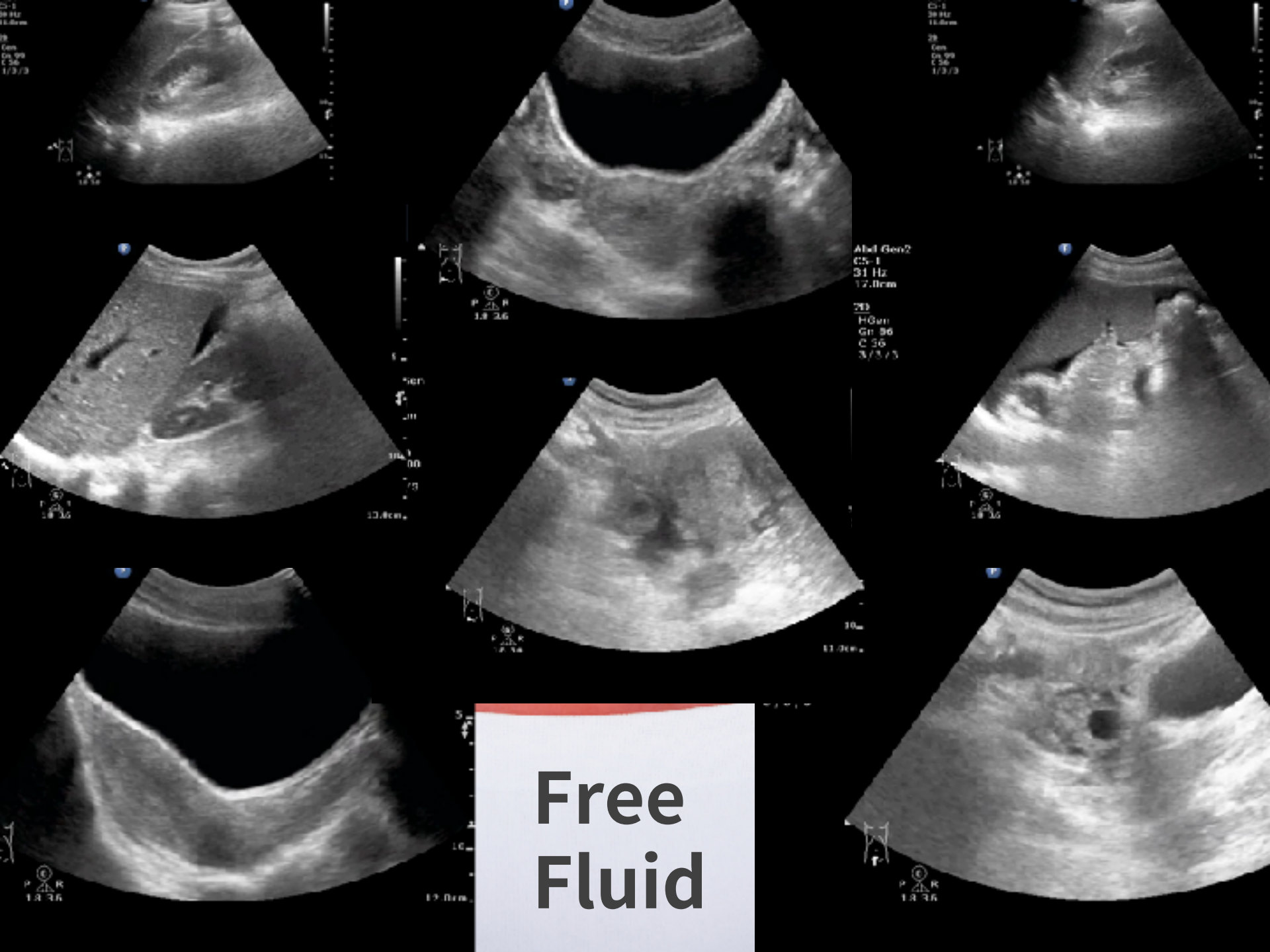


Abd Gen2
C5-1
39 Hz
12.0cm
2D
HGen
Ga 61
C 56
3/3/3



Abd Gen2
C5-1
39 Hz
12.0cm
2D
HGen
Ga 61
C 56
3/3/3





**Free
Fluid**



To exclude ectopic pregnancy
Find **intra-uterine pregnancy** first

ADU Gen
C5-1
38 Hz
13.0cm

1



ADU Gen
C5-1
31 Hz
8.0cm

2



ADU Gen
C5-1
30 Hz
18.0cm

3



ADU Gen
C6-2
44Hz
9.0cm

4

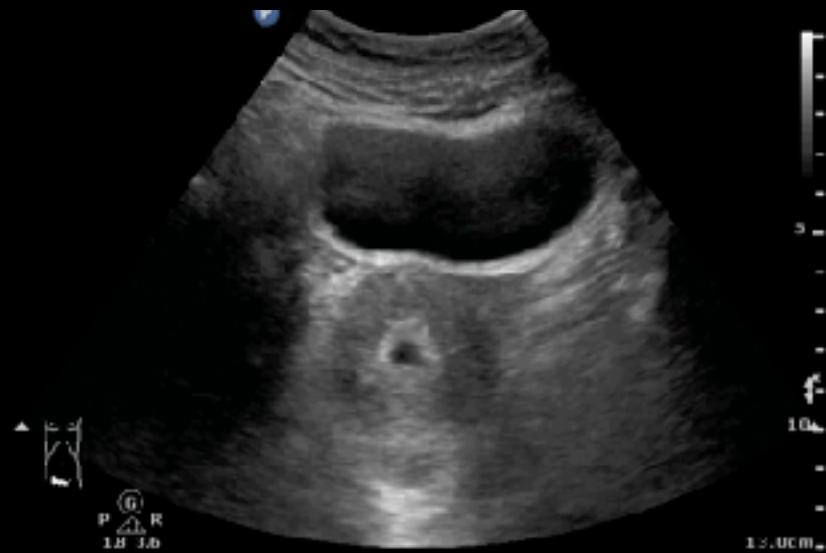


Double Decidual Sac Sign

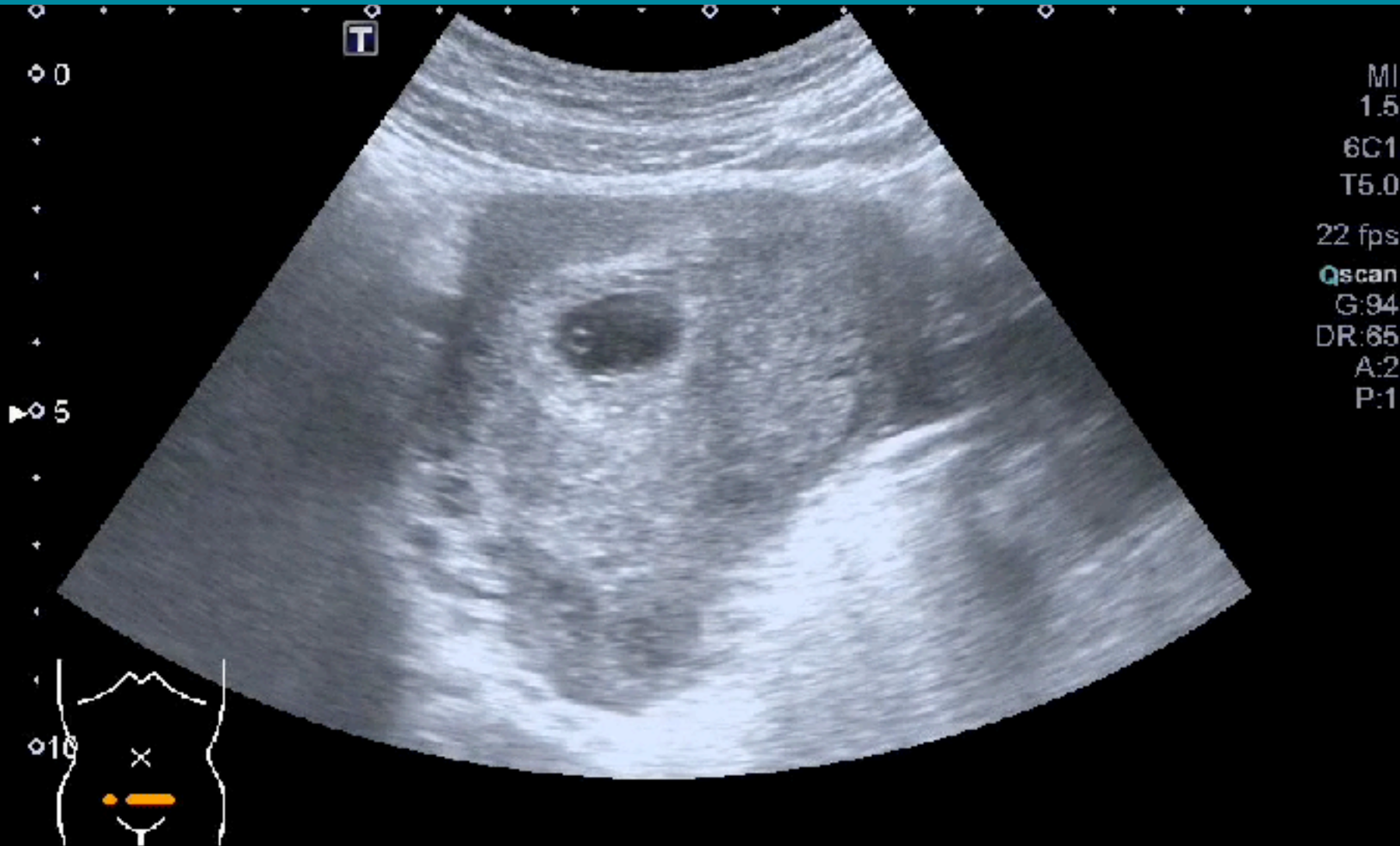
Abd Gen
C5-1
38 Hz
13.0cm
2D
HGen
Gn 47
C 56
3/3/3



Abd Gen
C5-1
38 Hz
13.0cm
2D
HGen
Gn 47
C 56
3/3/3



Yolk Sac - 最早IUP的証據



USG vs β -HCG

Table 178-1

Landmarks for Gestational Age and β -hCG Level by Transvaginal Ultrasonography

FINDING	WEEKS FROM LMP	β -hCG (mIU/mL)
Gestational sac (25 mm)	5	1000
Discriminatory zone	5-6	1000-2000
Yolk sac	6	2500
Upper discriminatory zone	6-7	3000
Fetal pole		TVS 1500 mIU/ml
Fetal heart motion		TAS 6000 mIU/ml

Diagnostic of Intrauterine Pregnancy

“Double” gestational sac
Intrauterine fetal pole or yolk sac
Intrauterine fetal heart activity

Diagnostic of Ectopic Gestation

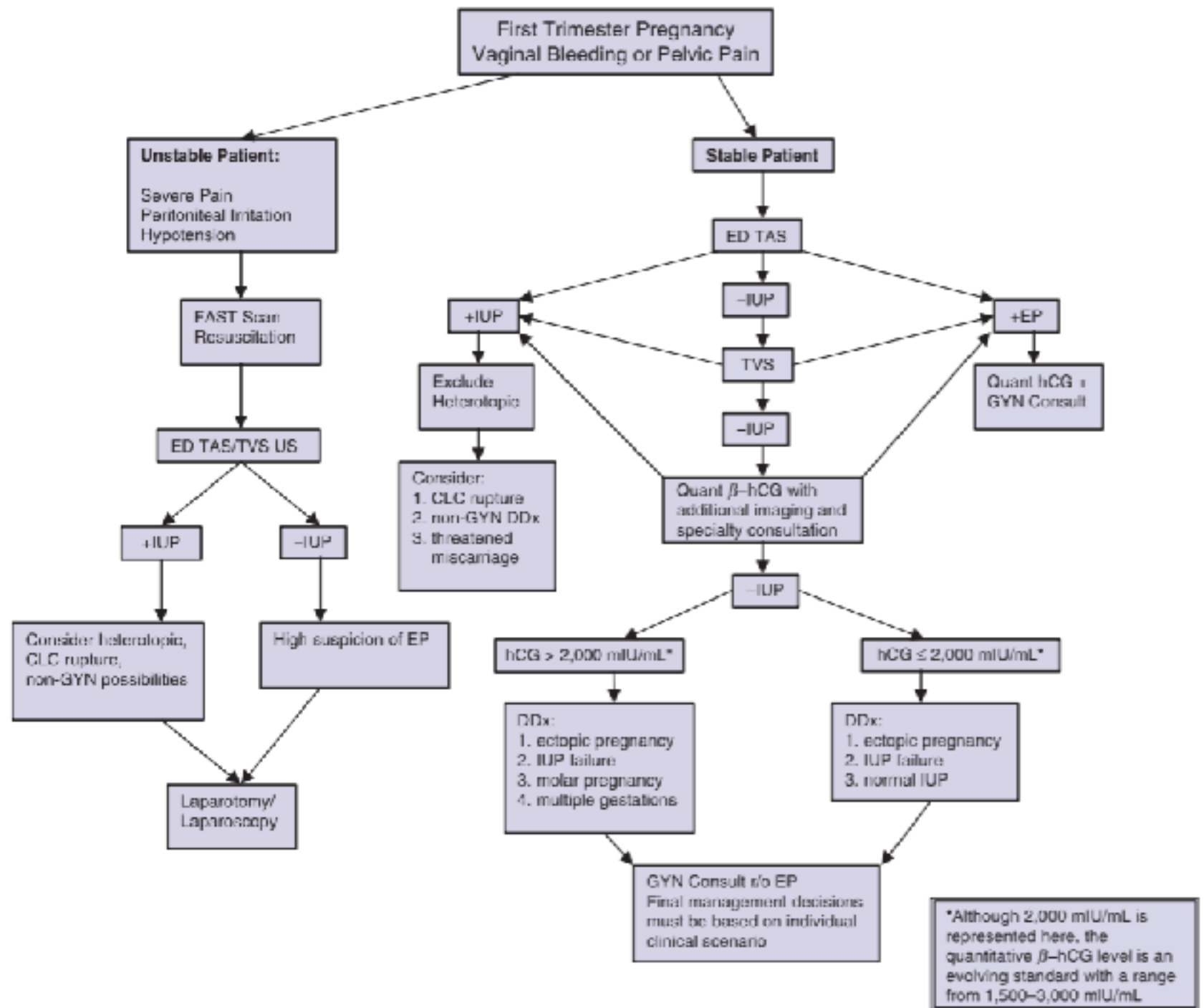
Pregnancy in fallopian tube (Fig. 178-1)
Ectopic fetal heart activity (Fig. 178-2)
Ectopic fetal pole

Suggestive of Ectopic Gestation

Moderate or large cul-de-sac fluid without intrauterine pregnancy
Adnexal mass without intrauterine pregnancy*

Indeterminate

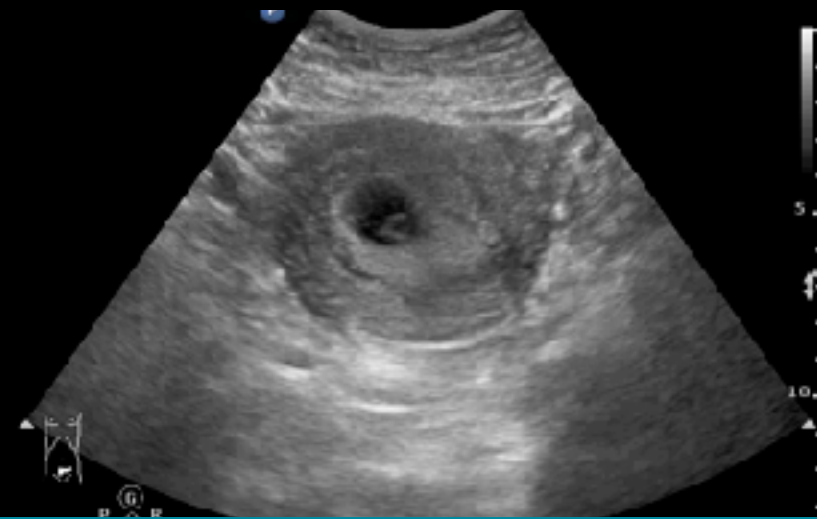
Empty uterus (Fig. 178-3)
Nonspecific fluid collections (Fig. 178-4)
Echogenic material
Abnormal sac (Fig. 178-5)
Single gestational sac



APU Gen
C5-1
36 Hz
14.0cm
2D
HGen
Gn 74
C 56
3/3/3

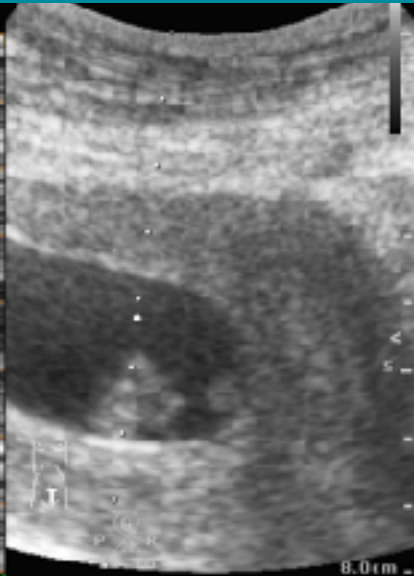
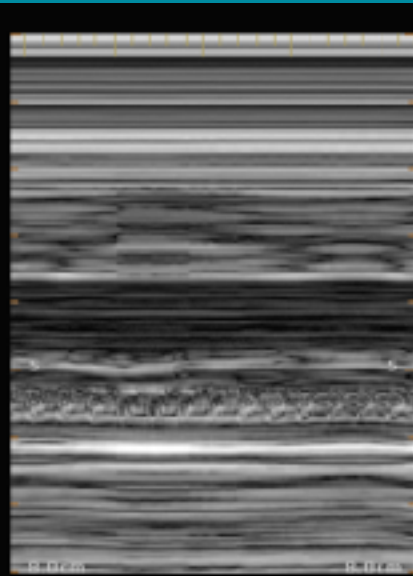


APU Gen
C5-1
36 Hz
14.0cm
2D
HGen
Gn 74
C 56
3/3/3



Pregnancy 9 wks; Stable V/S; Vaginal bleeding

49 Hz
8.0cm
2D
HGen
Gn 88
C 56
3/3/3



49 Hz
8.0cm
2D
HGen
Gn 88
C 56
3/3/3



Threatened abortion

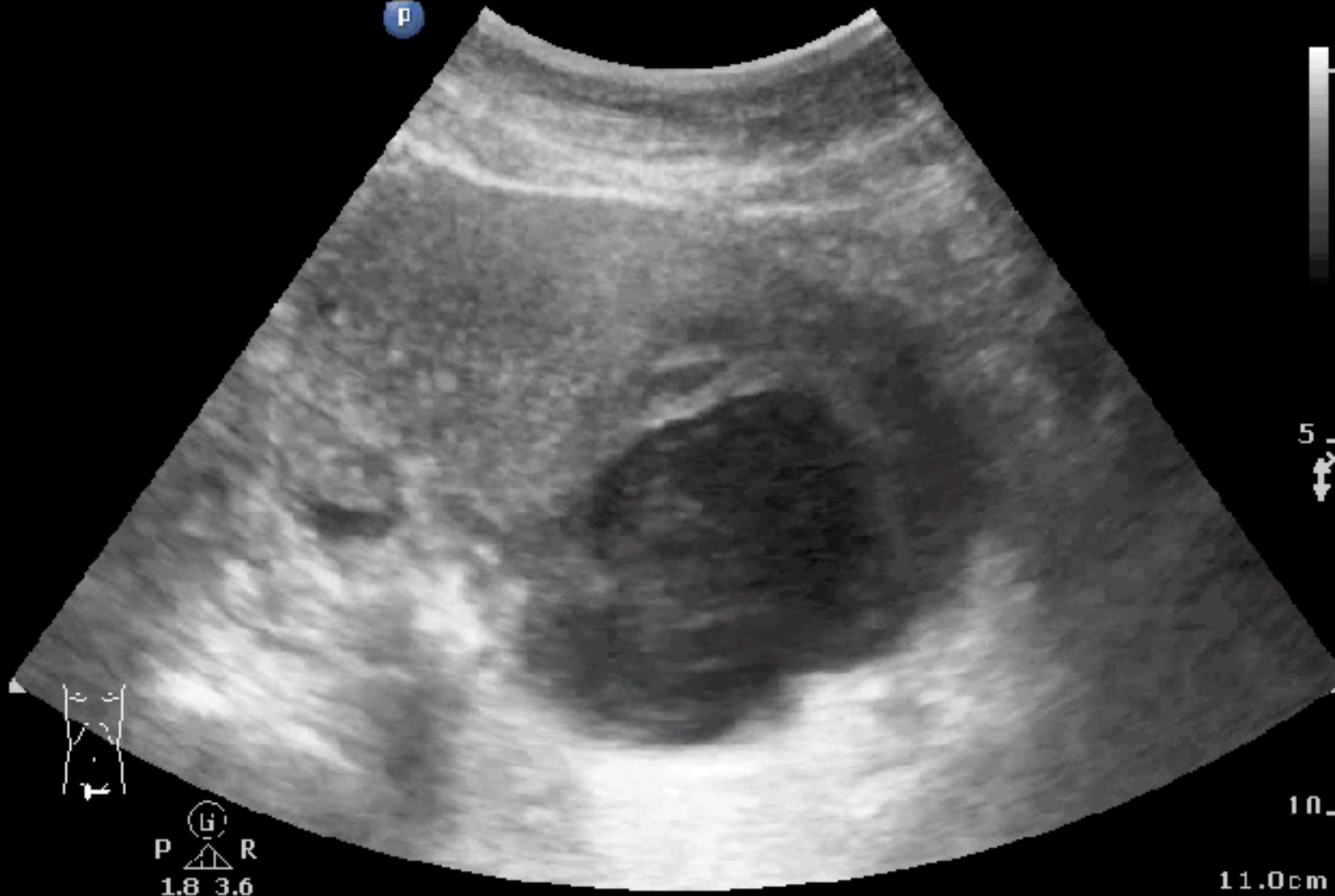
26F, Pregnancy 10wks; Stable V/S; Vaginal bleeding 1D



50F, low abd pain 1wk; Fever & leukocytosis

Abd Gen
C5-1
42 Hz
11.0cm

2D
HGen
Gn 100
C 56
3 / 3 / 3

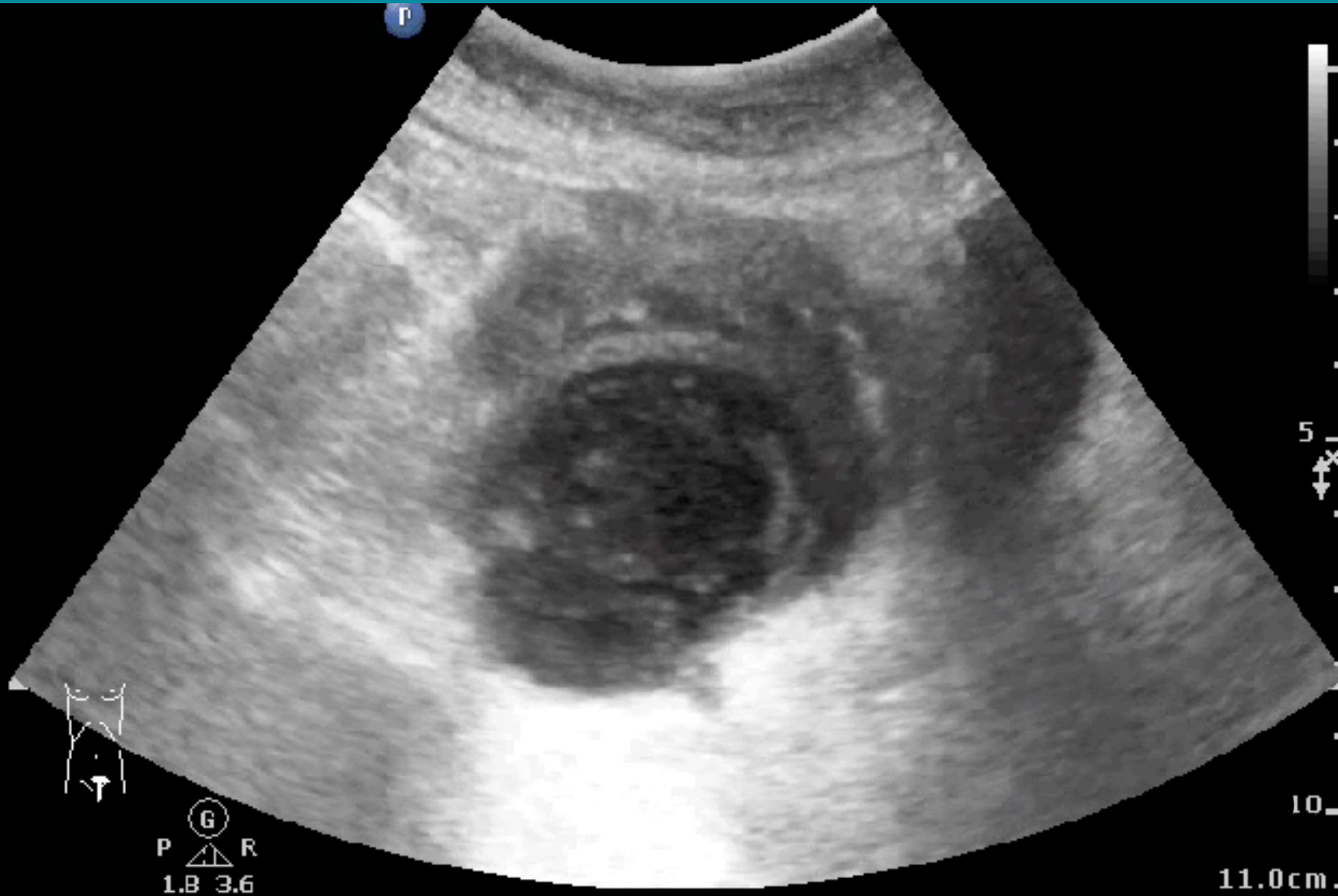


50F, low abd pain 1wk; Fever & leukocytosis

Abd Gen
C5-1
42 Hz
11.0cm

2D

HGen
Gn 100
C 56
3/3/3



Tubo-ovarian abscess

Abd Gen
C5-1
42 Hz
11.0cm

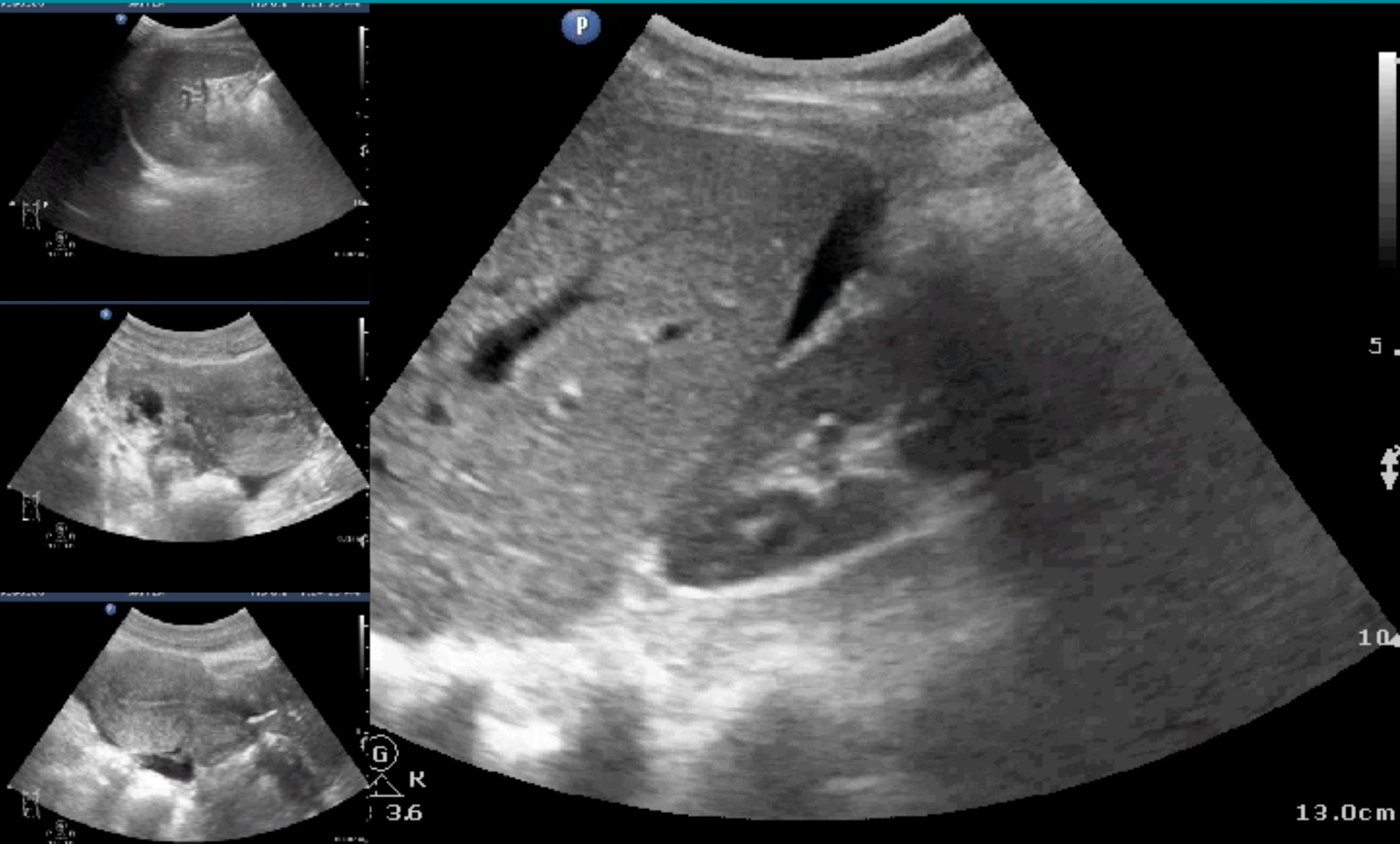
2D
11Gen
Gn 100
C 56
3 / 3 / 3



Transverse scan

33F, low abd pain for half day

Tachycardia; no fever ; normal BP; Diffuse low abd tenderness



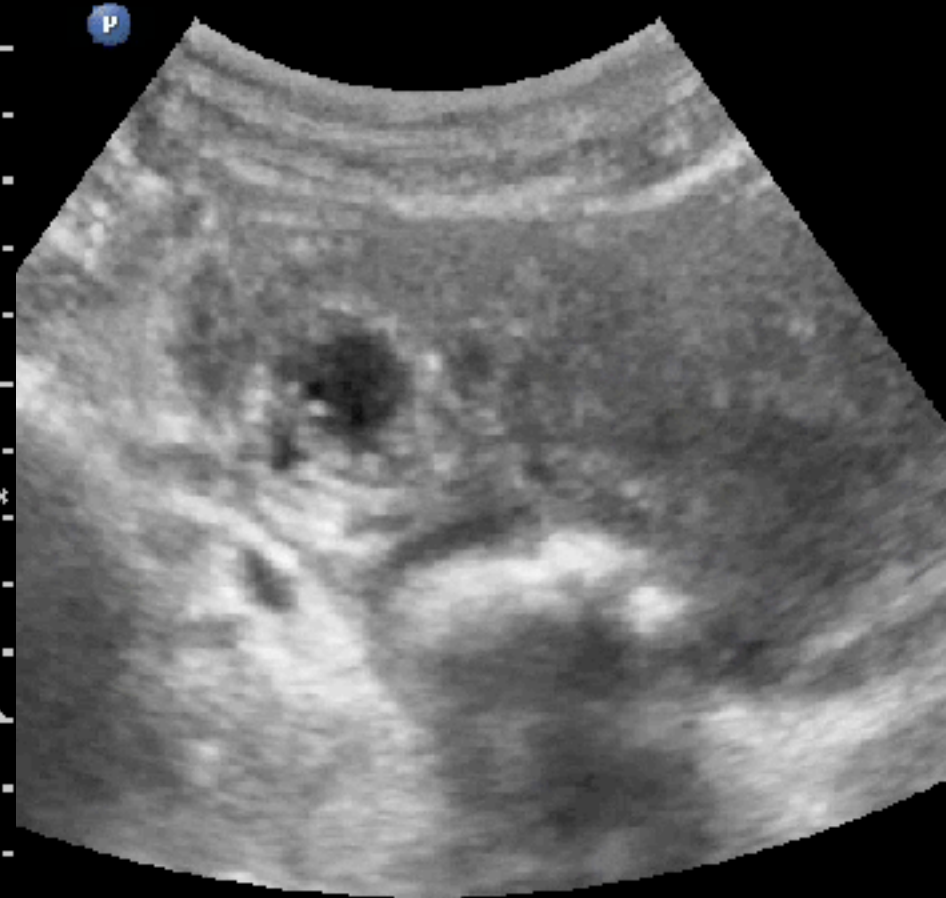
Ectopic pregnancy

MI 1.1 4/13/2016 2
TIS 0.1 1:21:22 PM

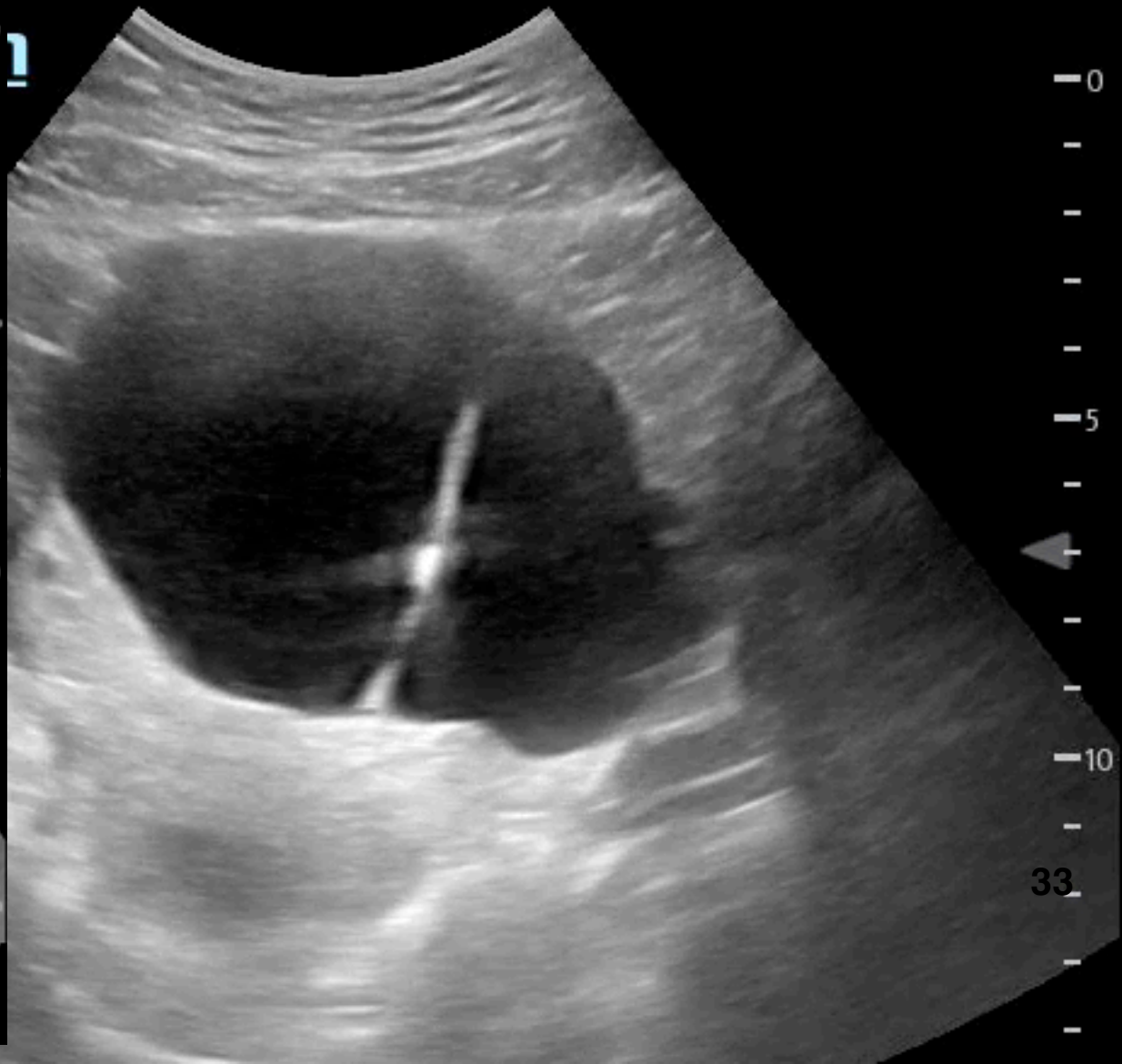
MI 1.0 4/13/2016
TIS 0.1 1:30

SKH ER

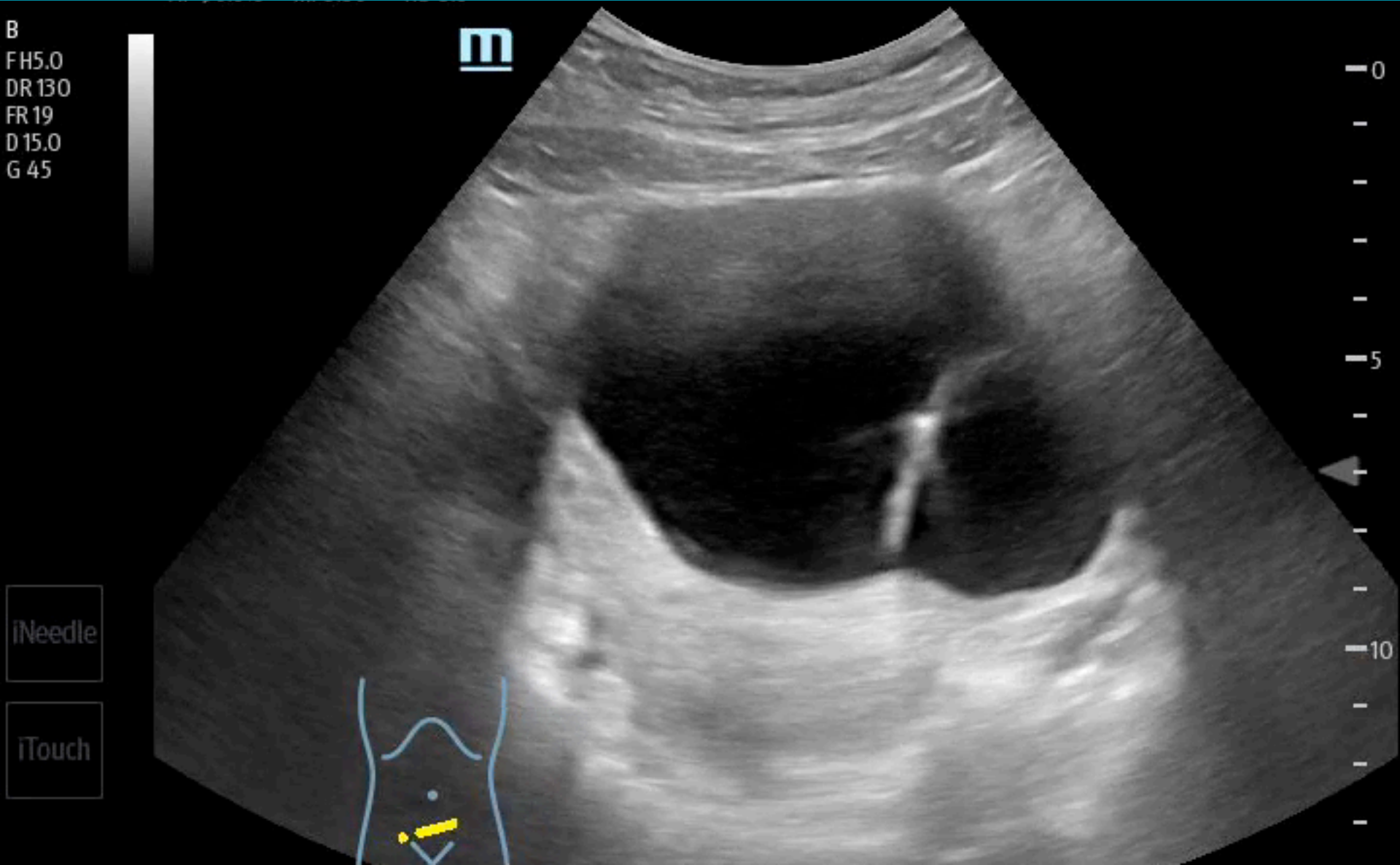
SKH ER



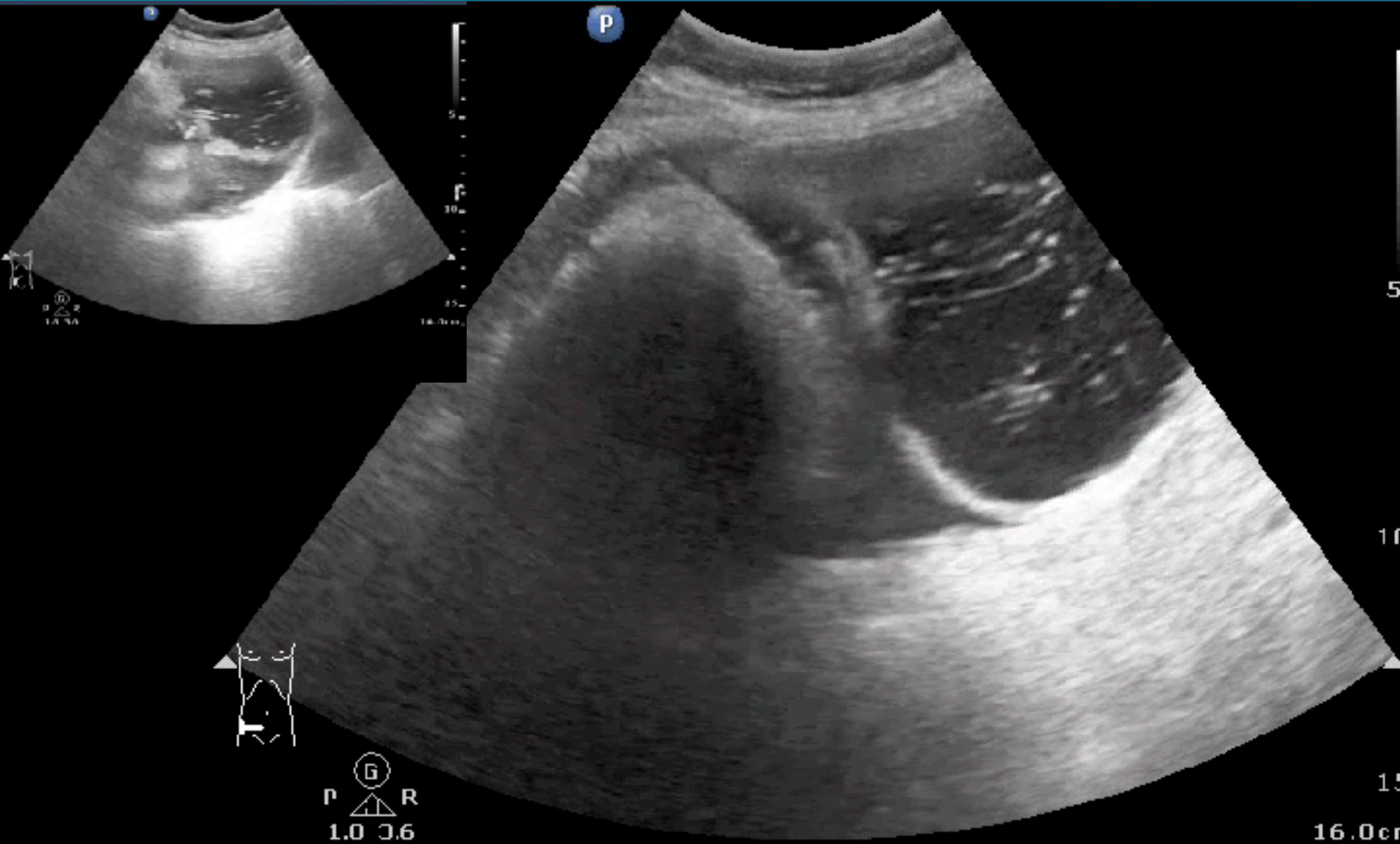
25F, severe RLQ pain



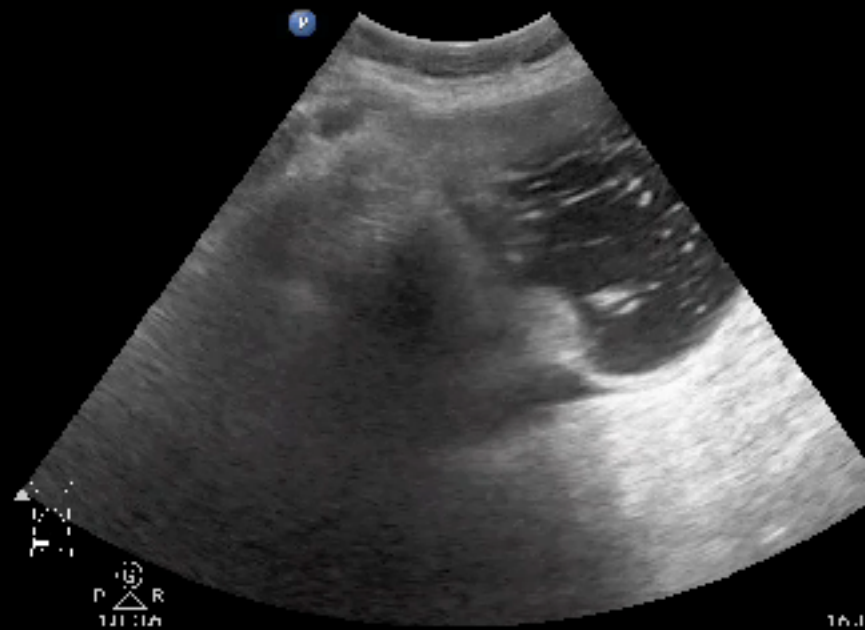
RIGHT OVARIAN TORSION



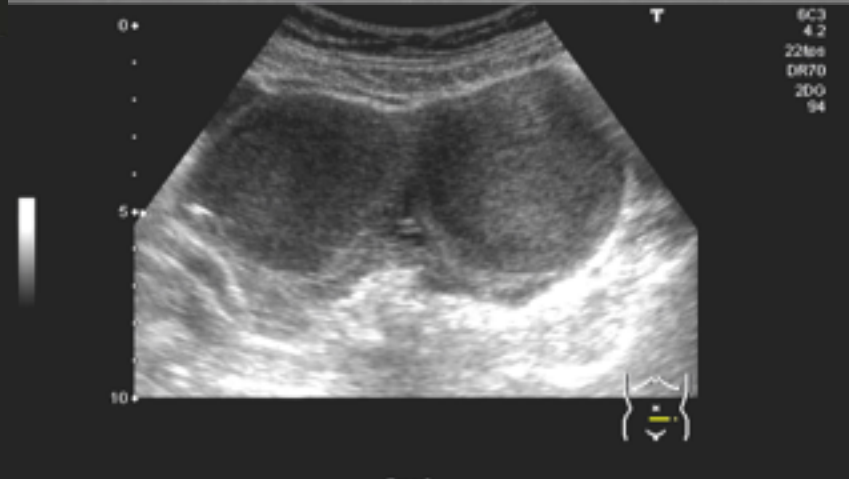
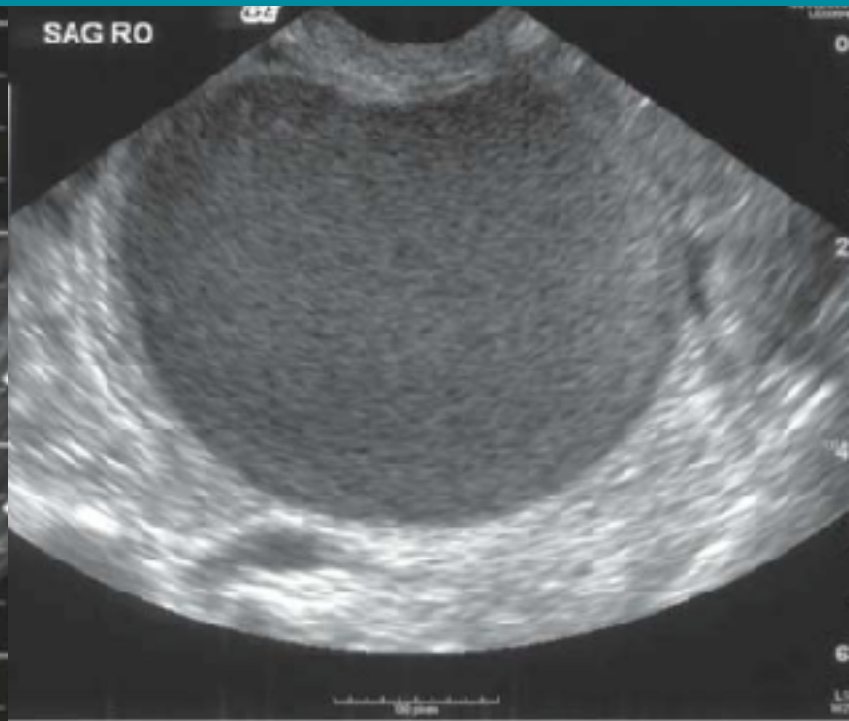
76F, low abd pain 1wk; Stable V/S R abdominal tenderness



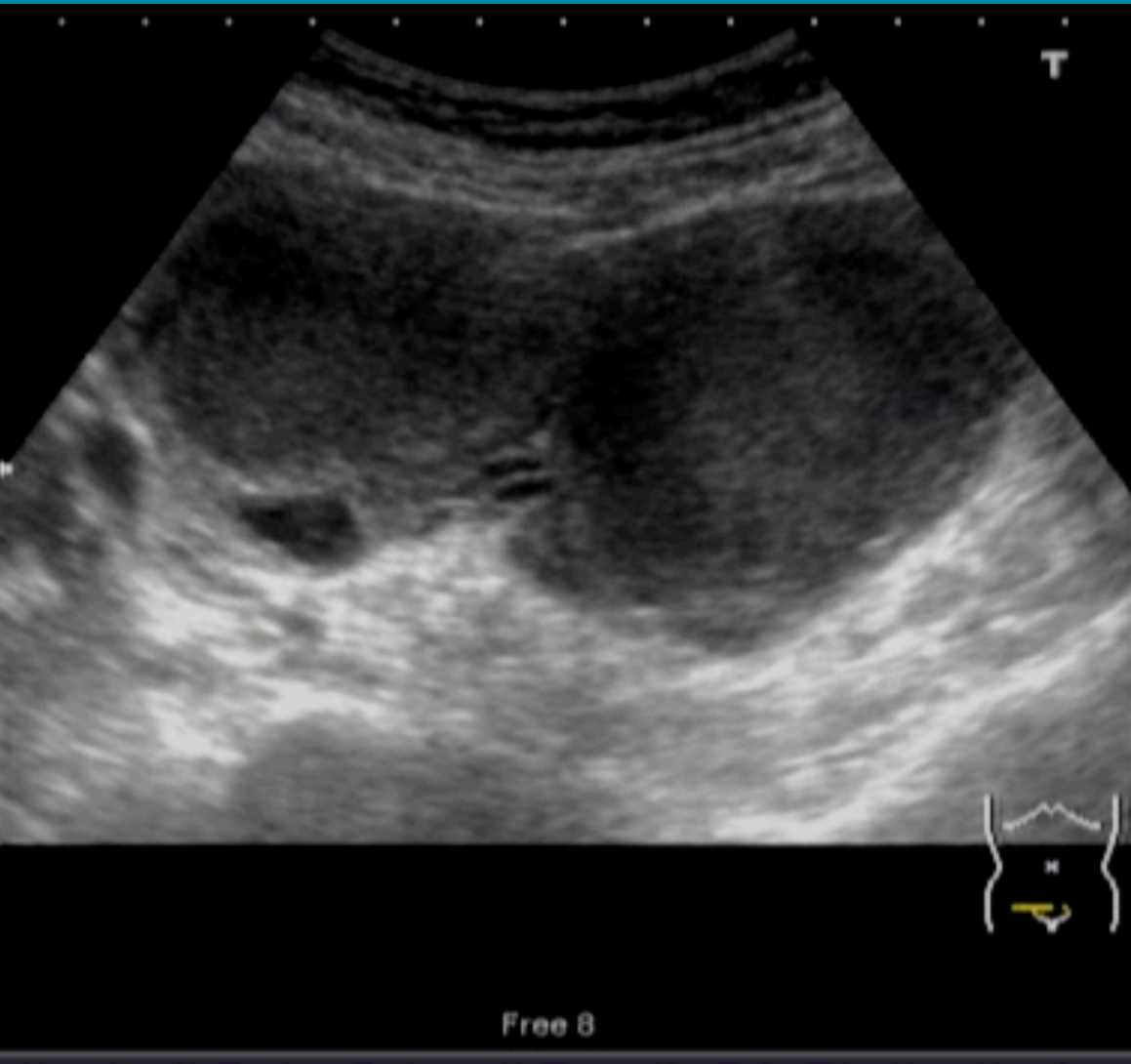
Dermoid cyst



Ovarian cyst



Chochocholate cyst



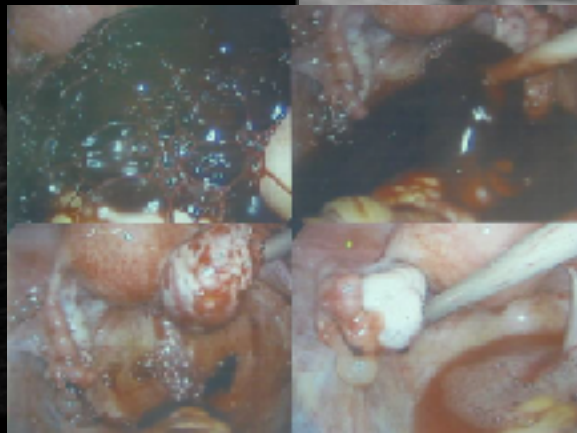
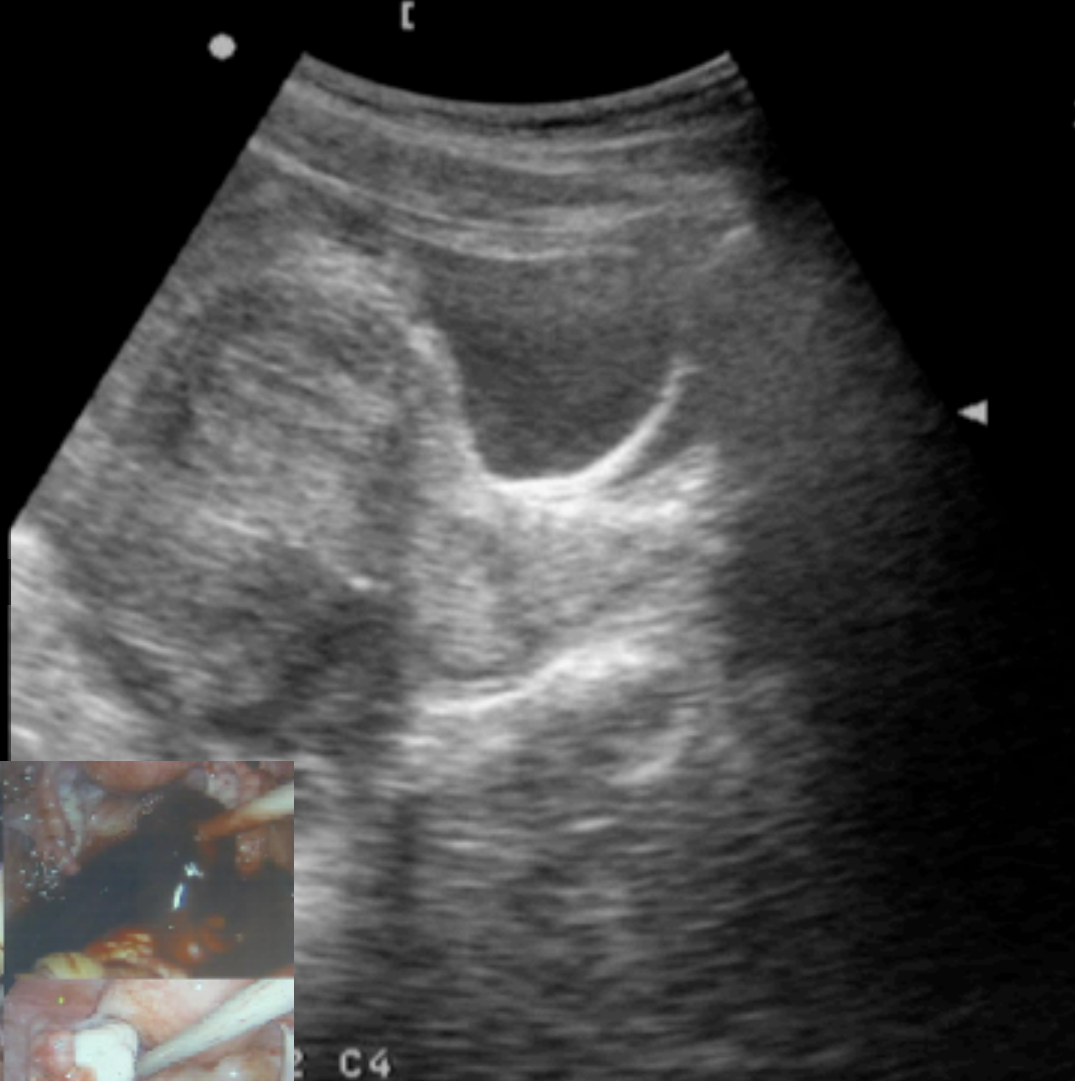
24F, low abd pain 1 day

Tachycardia / Low BP / Diffuse low abd tenderness



24F, low abd pain 1 day

Tachycardia / Low BP / Diffuse low abd tenderness



Ectopic pregnancy

20F, low abdominal pain

Tachycardia/ low BP / Diffuse low abd tenderness



36F, abdominal pain & vomiting after dinner

Tachycardia/ low BP / Diffuse low abd tenderness



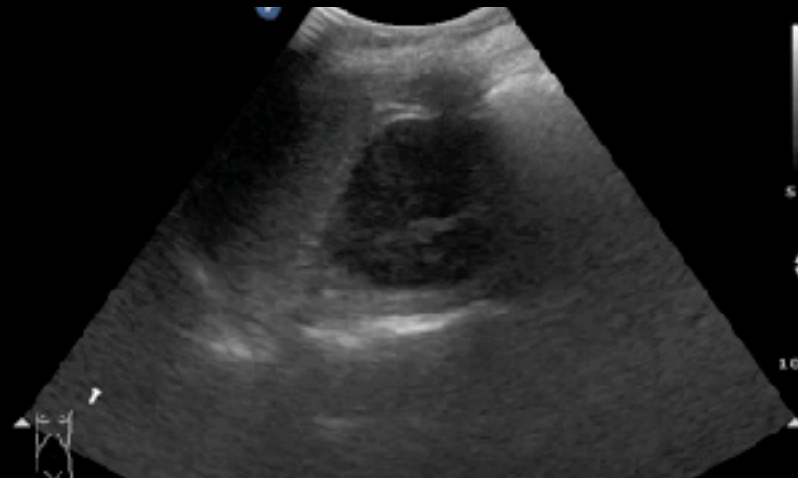
ADD Gen
C5-1
3.4 Hz
15.0cm

2D
HGen
Gn 100
C 56
3/3/3



ADD Gen
C5-1
3.4 Hz
15.0cm

2D
HGen
Gn 100
C 56
3/3/3



Pregnancy 22wk; stable V/S; BAT in traffic accident

ADD Gen
C5-1
3.0 Hz
18.0cm

2D
HGen
Gn 7.4
C 56
3/3/3



ADD Gen
C5-1
3.4 Hz
15.0cm

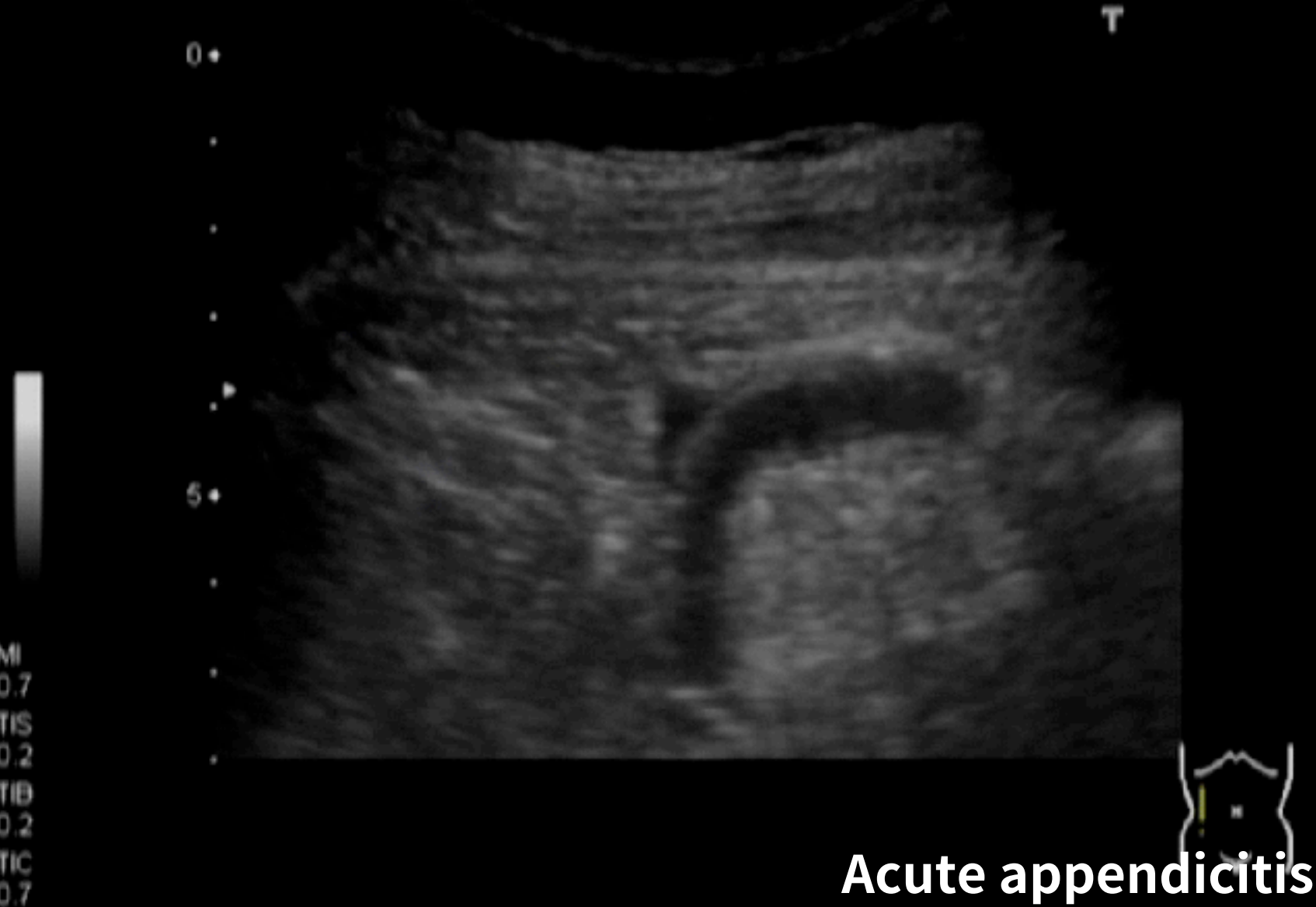
2D
HGen
Gn 7.4
C 56
3/3/3



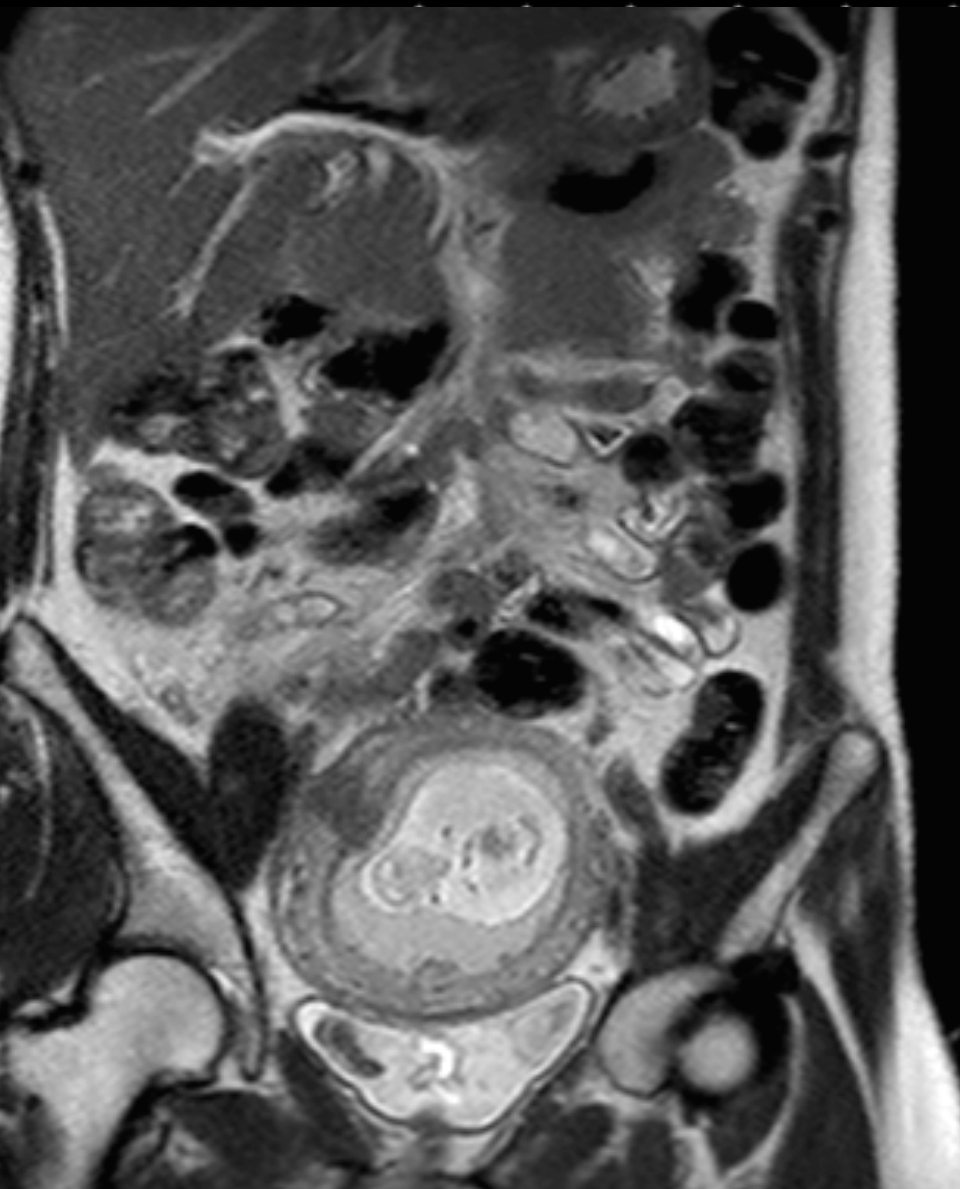
28F, Pregnancy 14wk, RLQ pain & tenderness



28F, Pregnancy 14wk, RLQ pain & tenderness

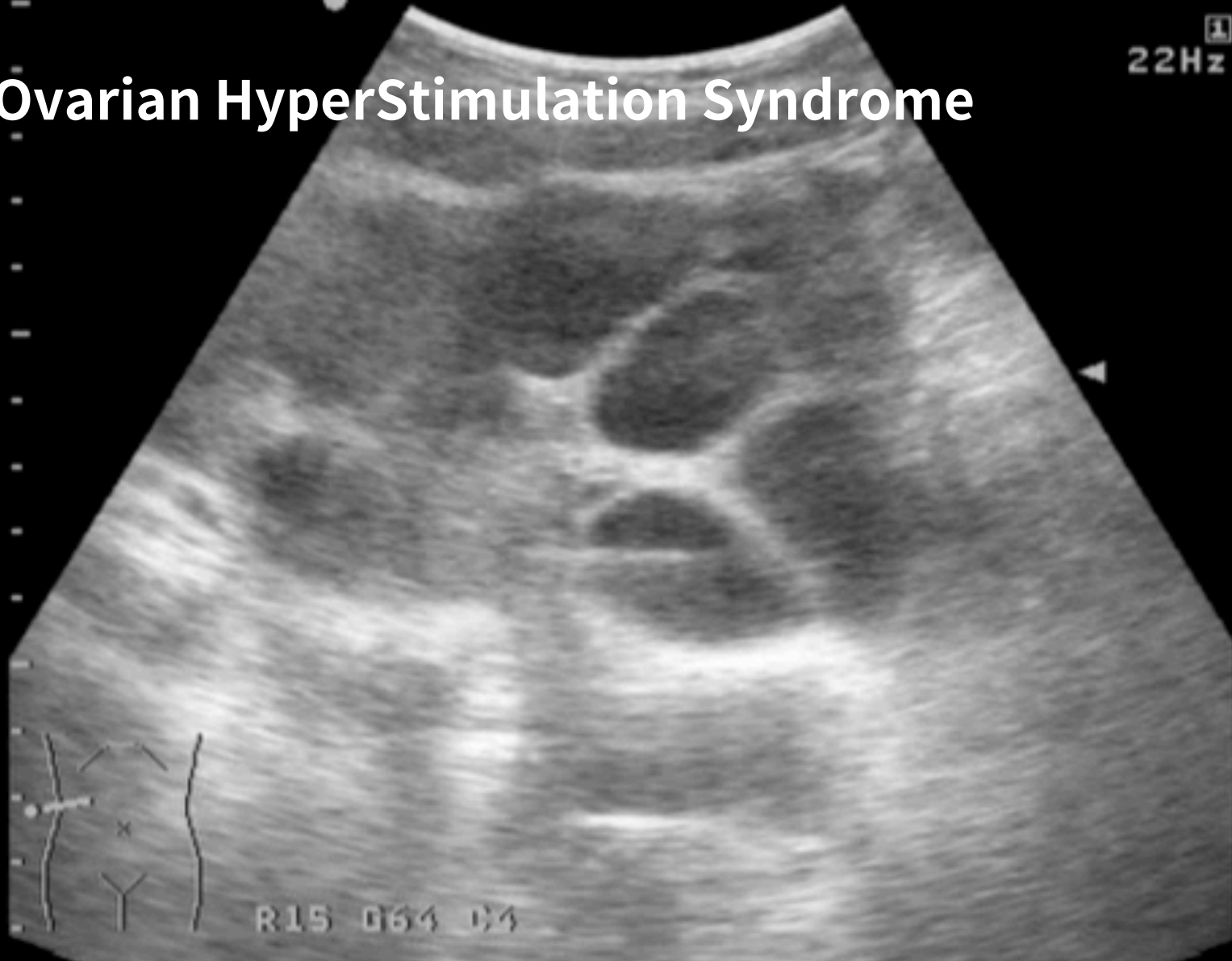


35F, Preg 11wks, RLQ pain & tenderness

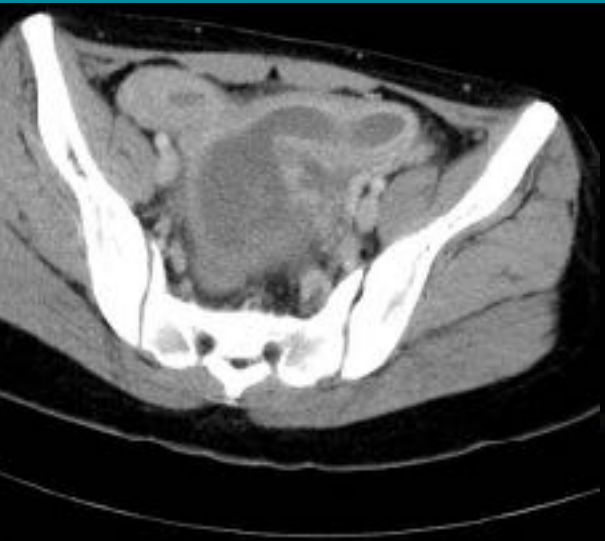


Abdominal pain , need surgery ?

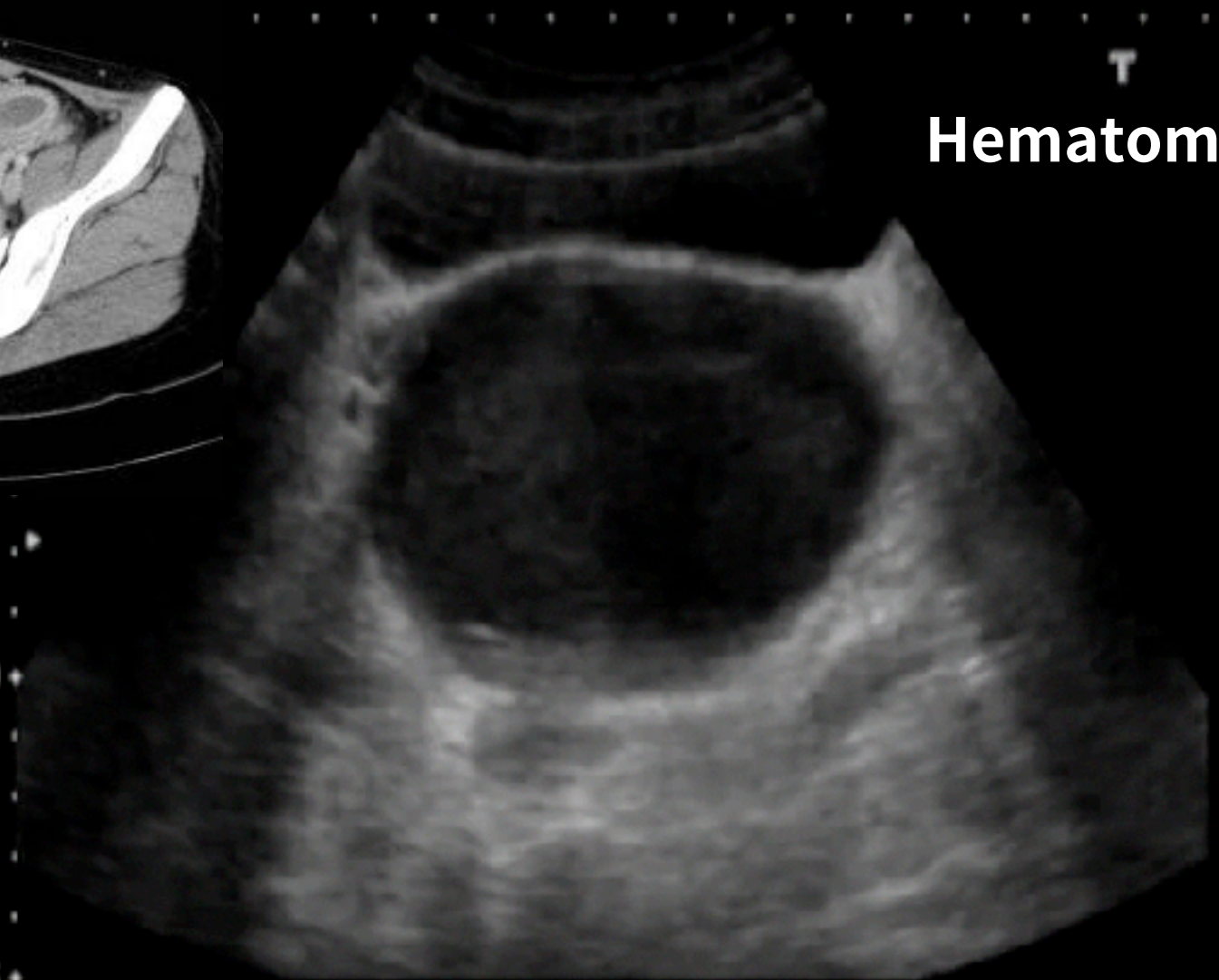
Ovarian HyperStimulation Syndrome



Low abdominal pain



Hematometra

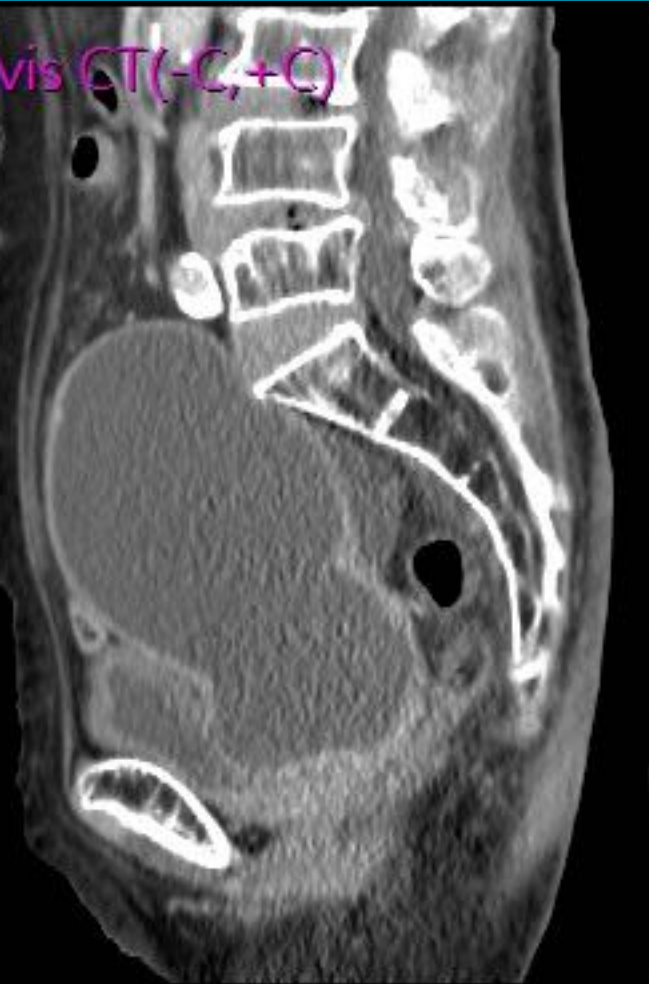


MI
0.6
TIS
0.2
TIB
0.2

10+
15+



85F, poor intake

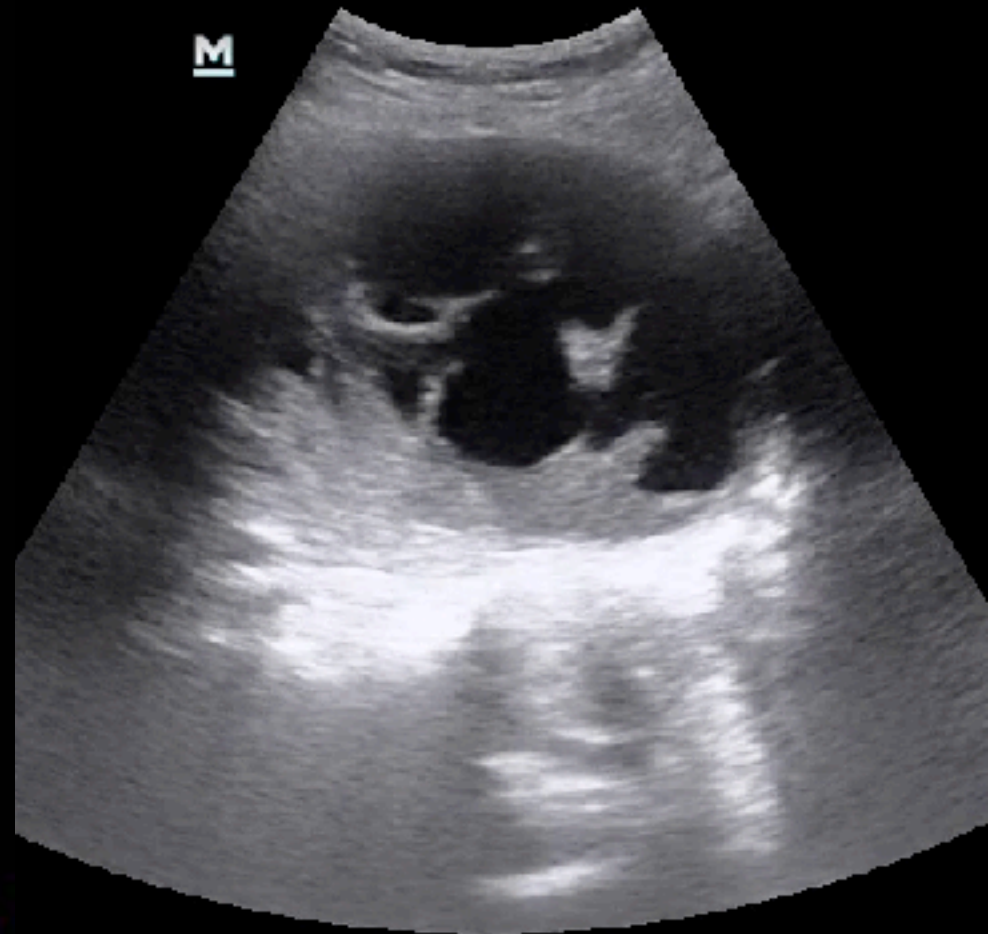


F

401
37

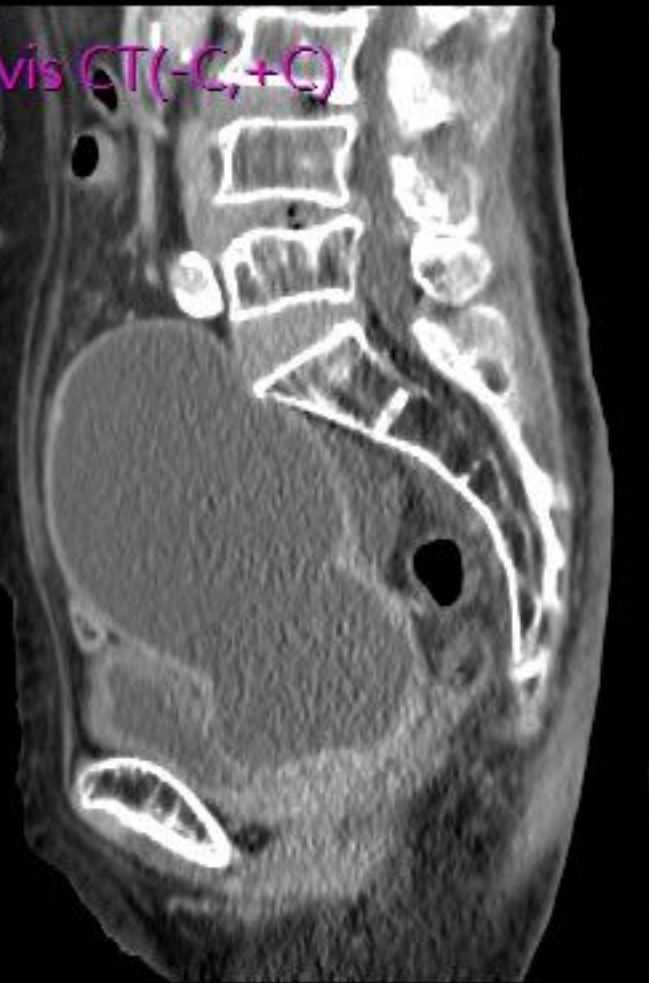
11/11/2022 09:15:37 AP 92.0% MI 0.8 TIS 0.7
C5 2s Adult ABD

P



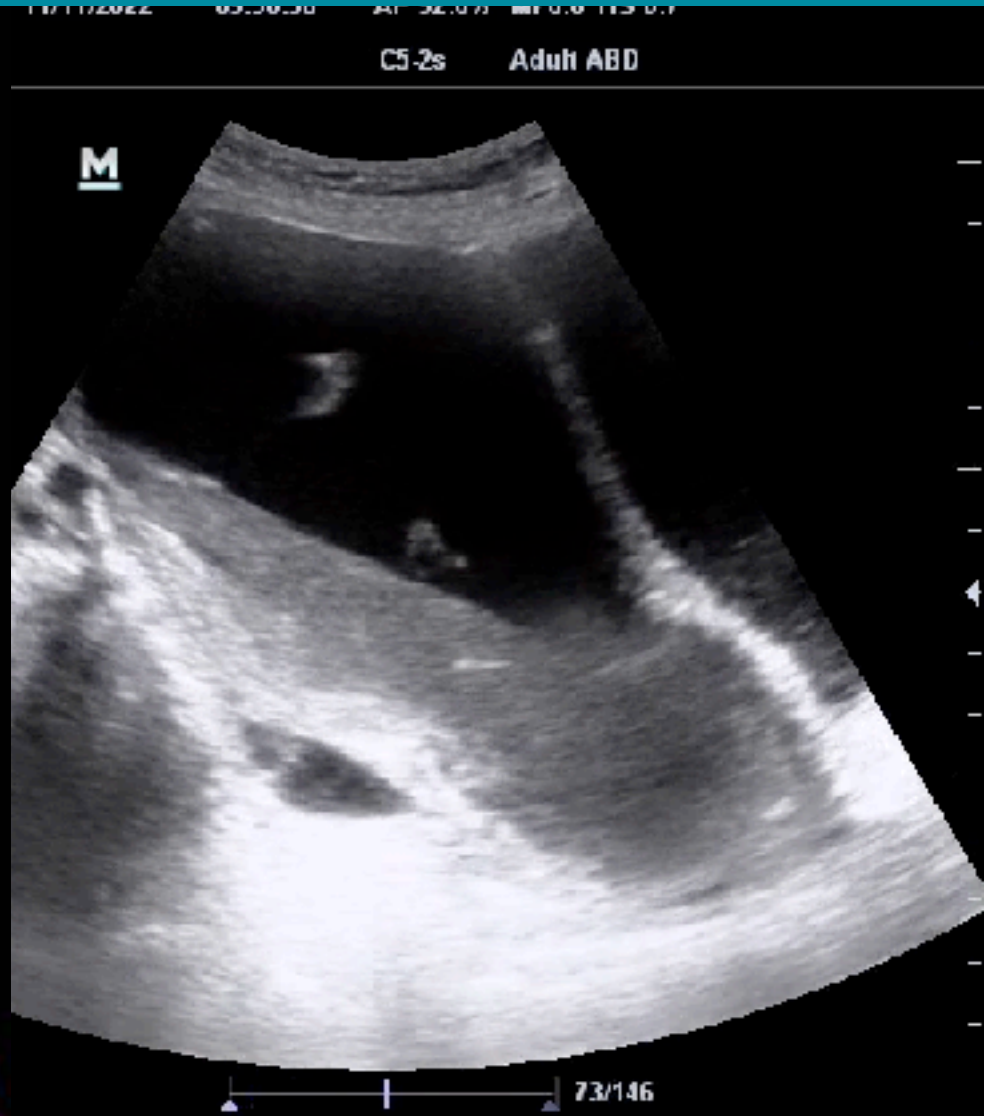
43/146

Pyometra

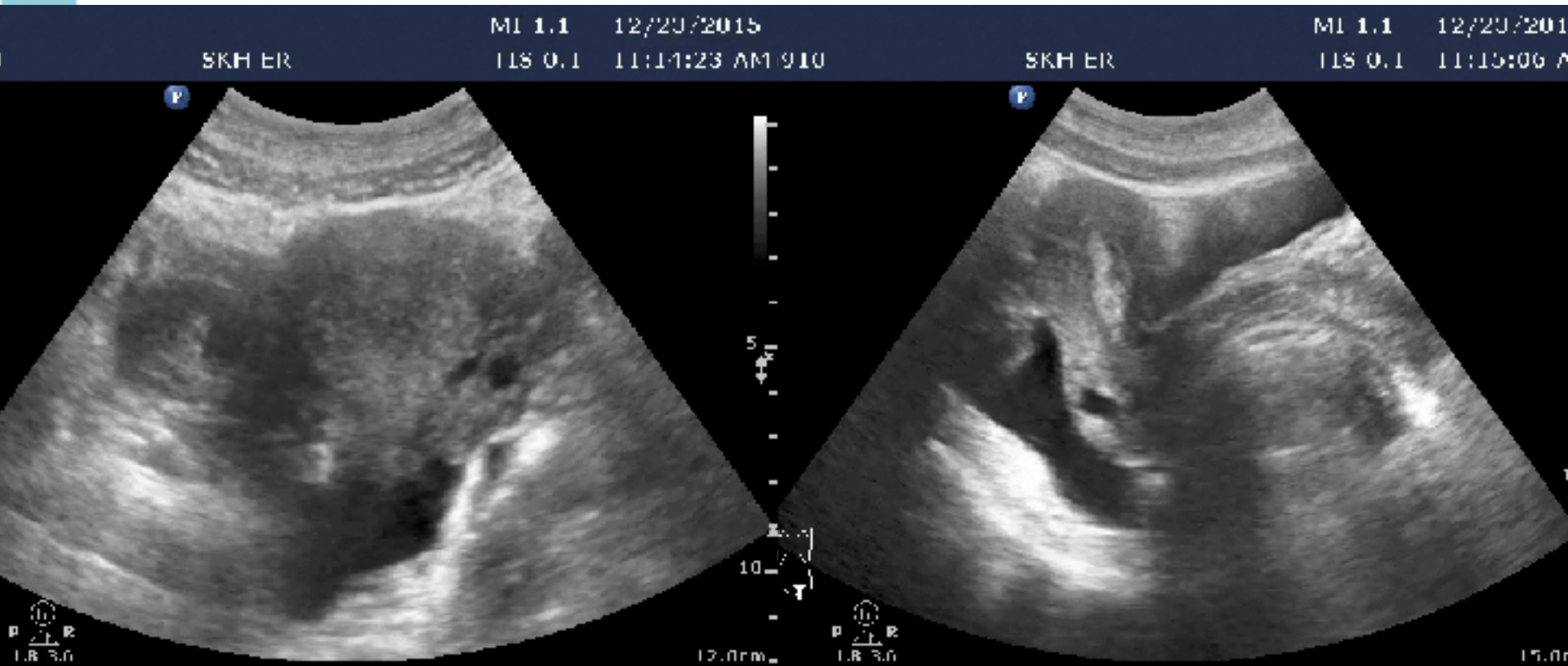


F

401
37

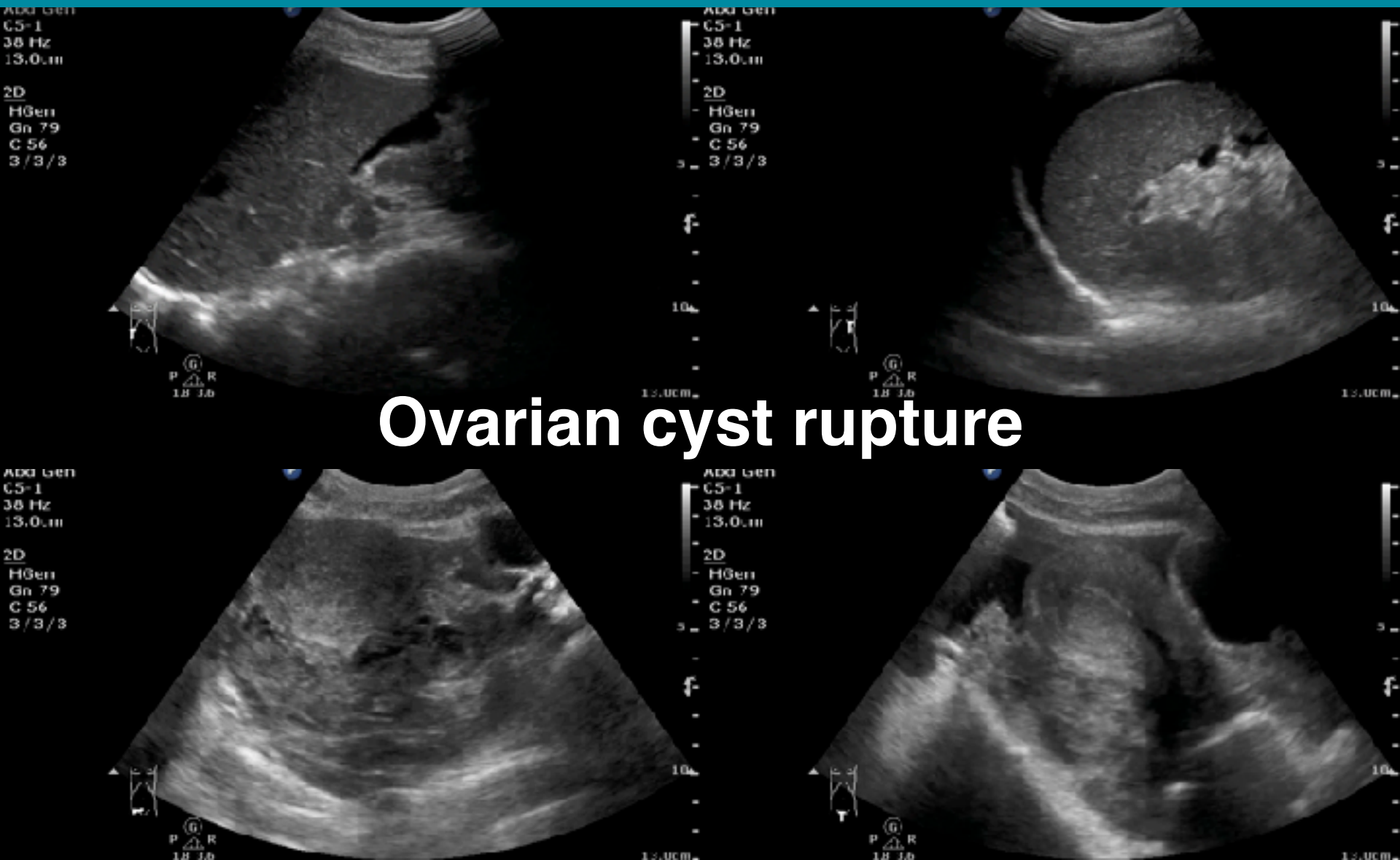


27F, low abdominal pain, stable V/S



36F, diffuse abdominal pain

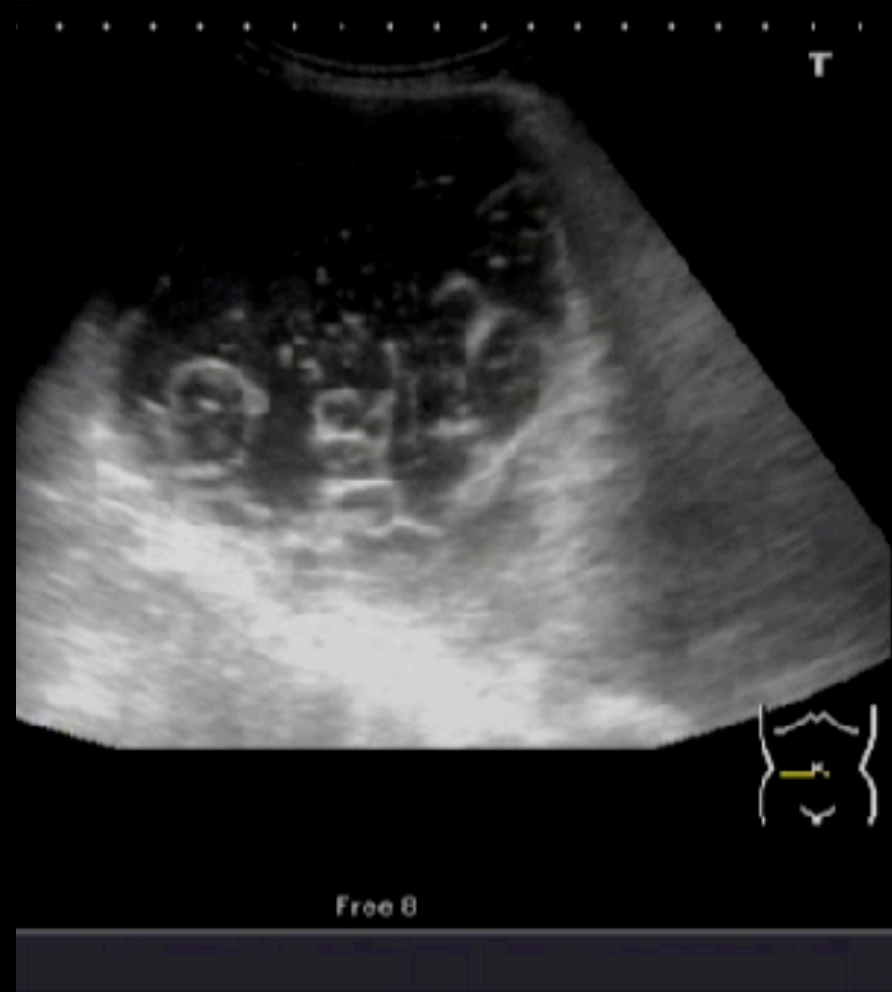
Diffuse tenderness & shock

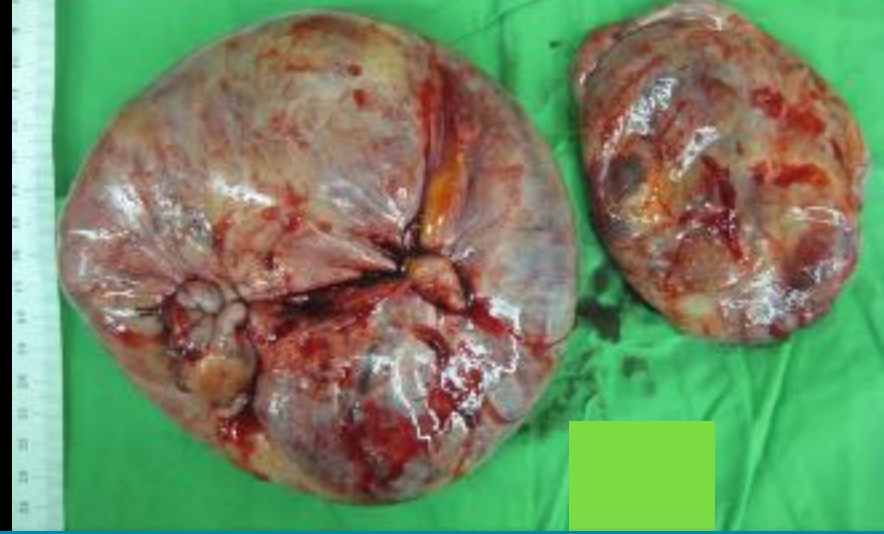
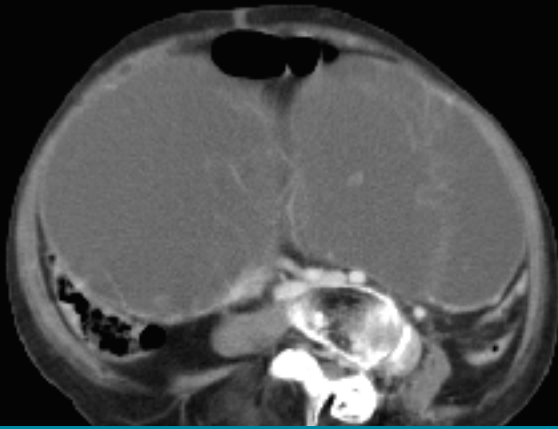


48F, diffuse abdominal pain

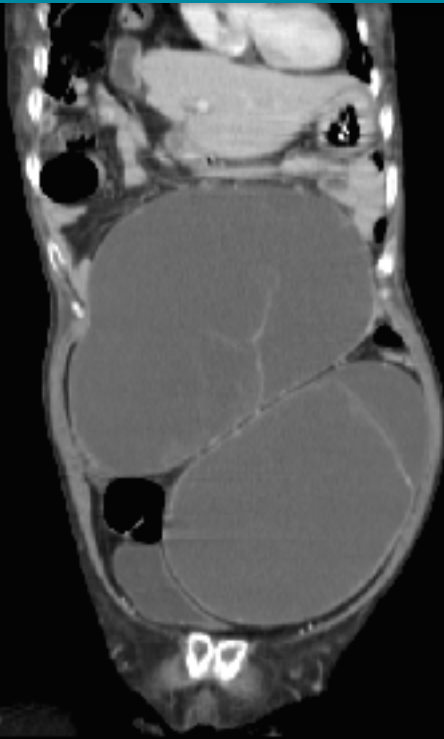
Stable vital signs

Distended abdomen & diffuse tenderness





Mucinous cystadenocarcinoma



801.3
TR 1

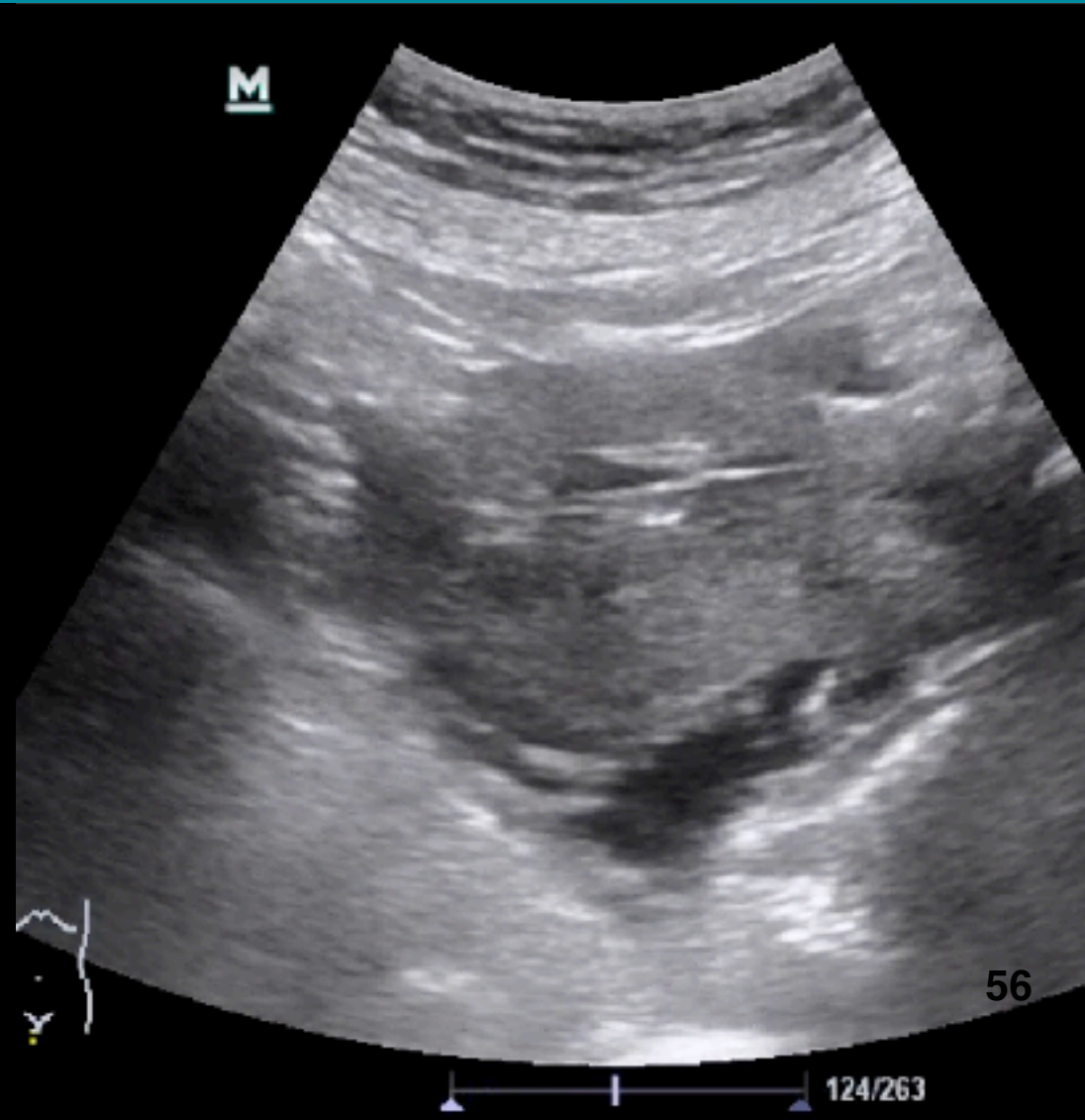
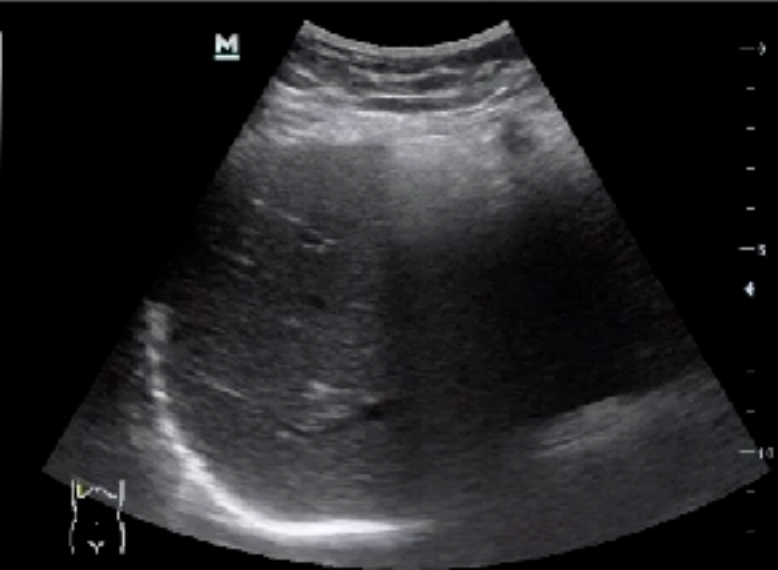


MI
0.6
TIS
0.2
TIB
0.2
TIC
0.9



Free 8

48F, 子宮鏡取myoma時突發性腹痛，VAS 9

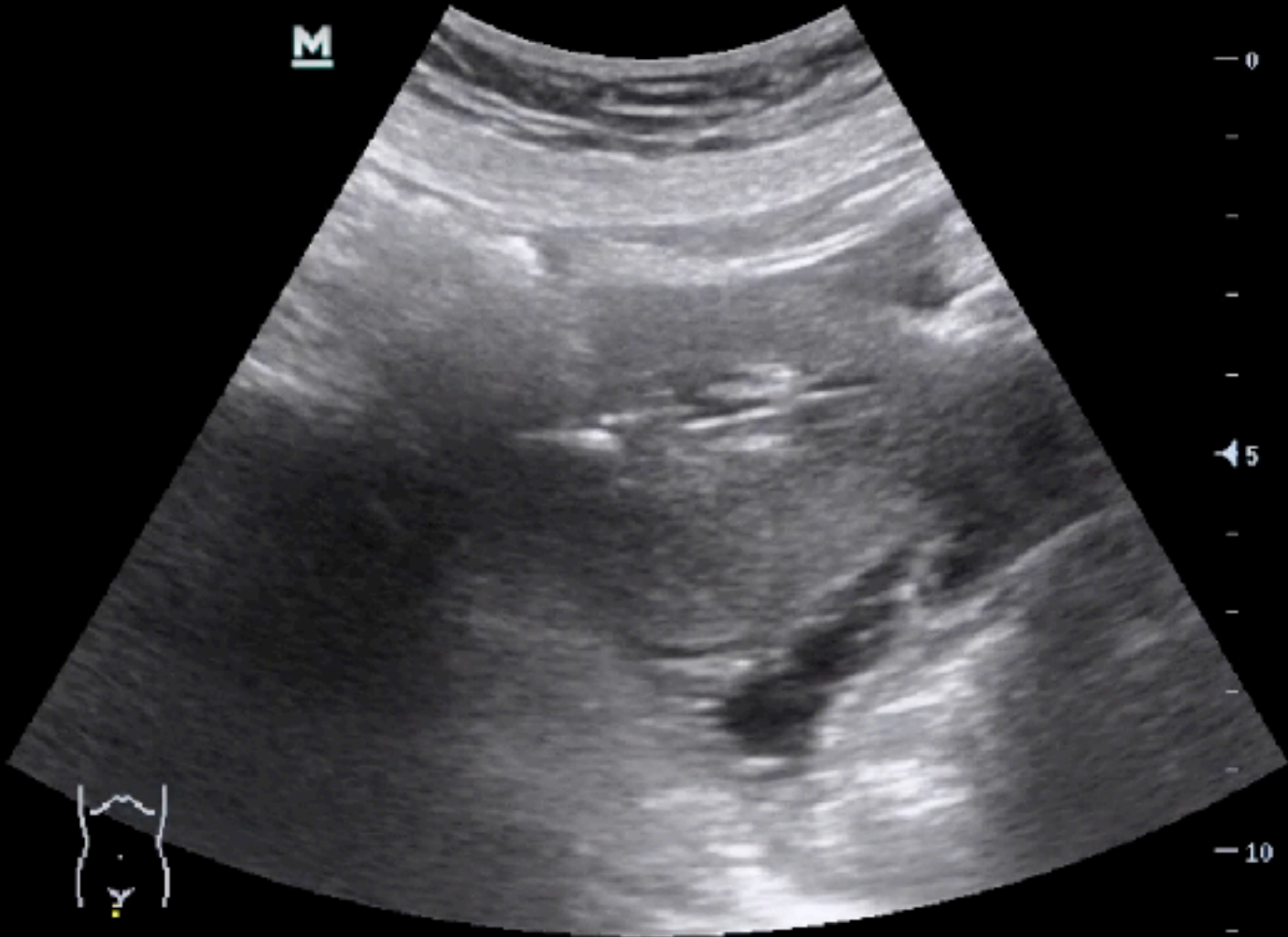


48F, 子宮鏡取myoma時突發性腹痛，VAS 9

M7
B1
FH5.0 / D11.1
G79 / FR39
IP4 / DR143



M



0
5
10

262/519

Pearls

Free fluid

Intrauterine pregnancy

Focused on tenderness

Pitfalls

Urine first
Echogenic fluid
Pelvis one view
POCUS \neq Everything

**The best way to earn respect is to
consult for **definite treatment** !!**



VIPS

Acquisition

Interpretation

**Making
decision**