Adenomyozis-
Yaygın Ama Tanısı Az Konan Bir Hastalık
Ultrason Tekniği Ve Vaka Örnekleri

Doç. Dr. Gülşah İlhan

S.B.Ü. İstanbul Eğitim Araştırma Hastanesi

IVF- İnfertilite

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JMIG The Journal of Minimally Invasive Gynecology

Original Article

Association between Preoperative Adenomyosis Detection Rate during Pelvic Ultrasonography and the Specialty of the Reading Physician

Nupur Tamhane, MD, Megan McDowell, MD, Mariana Oliva, MD, Jean Paul Tanner, PhD, Lauri Hochberg, MD, Marisa Baker, MD, Anthony N. Imudia, MD, and Emad Mikhail, MD

From the Department of Obstetrics and Gynecology, University of South Florida, Morsani College of Medicine, Tampa, Florida (Drs. Tamhane, Oliva, Hochberg, Baker, Imudia, and Mikhail), Department of Obstetrics and Gynecology, Brigham and Women's Hospital, Boston, Massachusetts (Dr. McDowell), and Department of Community and Family Health, College of Public Health, University of South Florida, Tampa, Florida (Dr. Tanner).

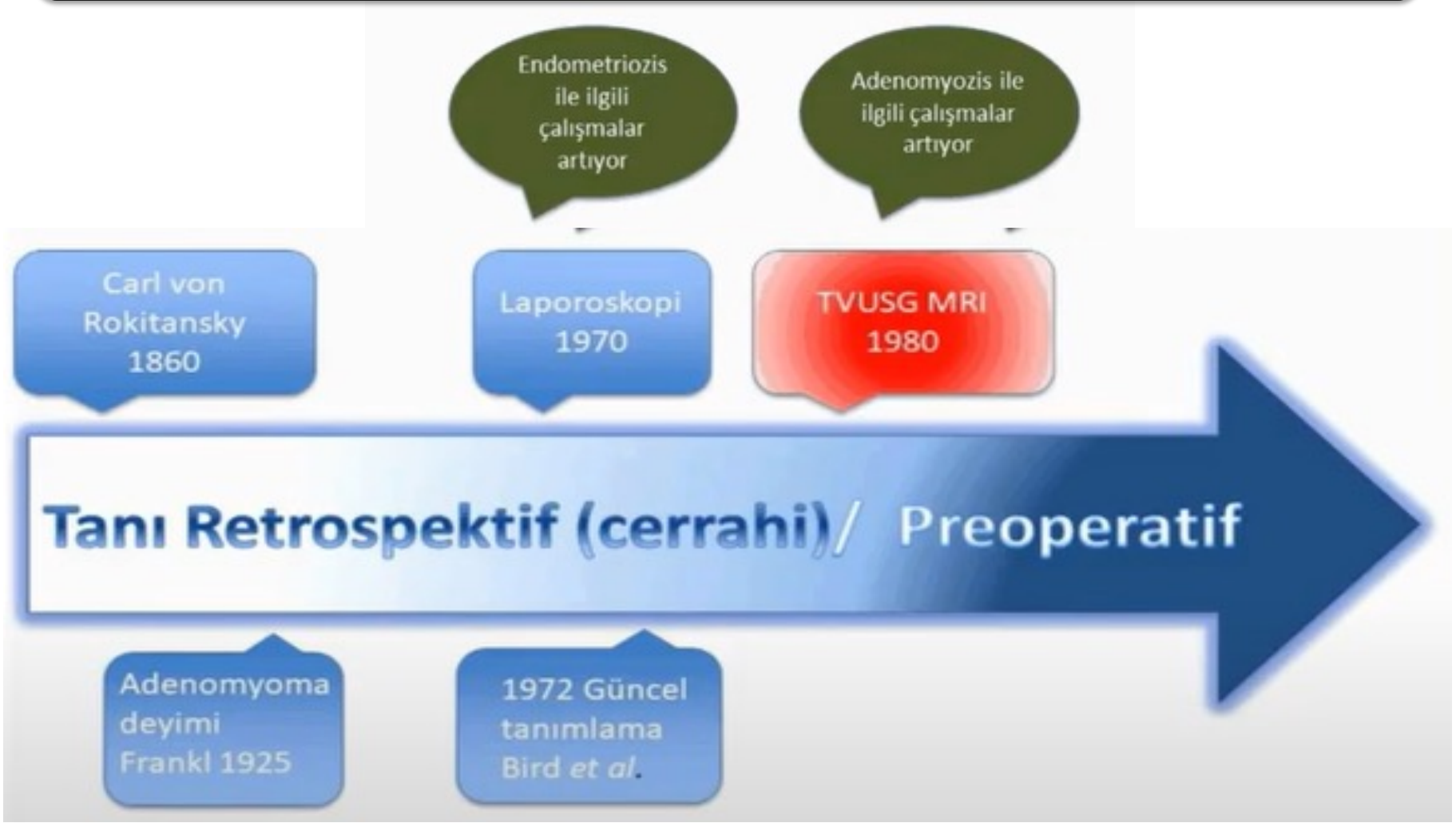
A total of 412 cases were included

a positive histopathology diagnosis of adenomyosis obtained in a hysterectomy specimen

Conclusion: The detection rate of adenomyosis was significantly higher when ultrasound was performed by expert gynecologic sonologists compared with radiologists (95 [56%] vs 29 [12%], p <.01).

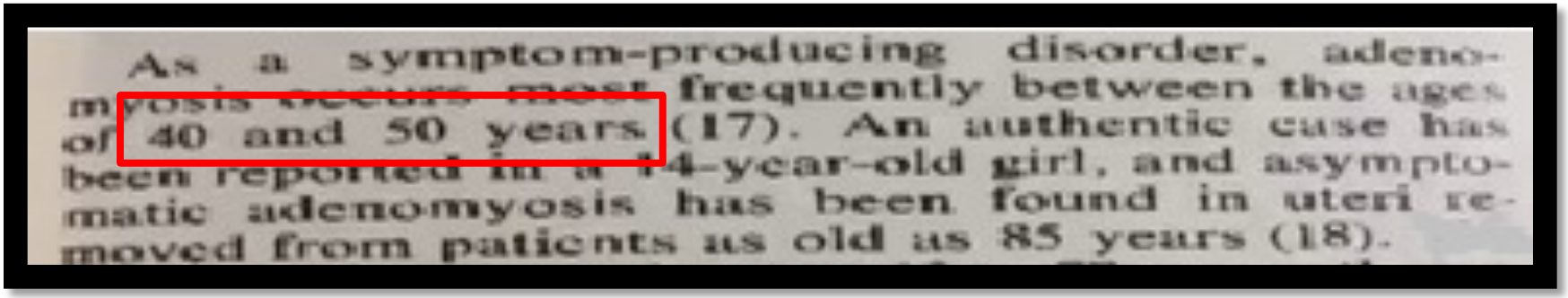
The presence of myomas significantly decreased detection rates regardless of specialty (odds ratio = 0.23; 95% confidence interval, 0.13-0.39).

ADENOMYOSIS



Histopatolojik olarak, hiperplastik ve hipertrofik düz kasla çevrili, miyometriyumda ektopik endometriyal gland ve stroma varlığı.

OLD-PAROUS ???



As a symptom-producing disorder, adenomyosis occurs most frequently between the ages of 40 and 50 years (17). An authentic case has been reported in a 14-year-old girl, and asymptomatic adenomyosis has been found in uteri removed from patients as old as 85 years (18).

OLD-PAROUS ???

The notion of a link with parity is longstanding but not certain. Bird et al. (1972) reported that the average parity of women with adenomyosis was 3.2 compared with 2.5 for all hysterectomies, and that 89.5% of women with adenomyosis were parous.

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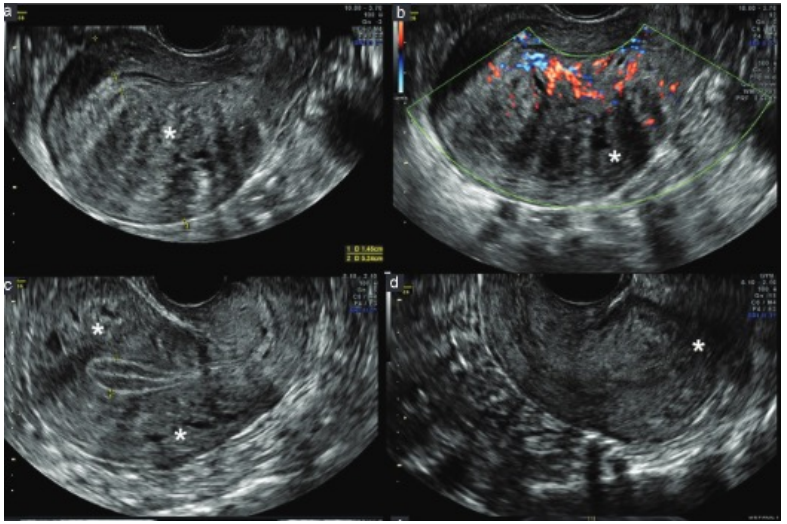
Transvaginal sonographic features of diffuse adenomyosis in 18–30-year-old nulligravid women without endometriosis: association with symptoms

S. PINZAUTI*, L. LAZZERI*, C. TOSTI*, G. CENTINI*, C. ORLANDINI*, S. LUISI*, E. ZUPI*, C. EXACOUSTOS† and F. PETRAGLIA*

An incidence of diffuse adenomyosis of 34.0% in nulligravid women aged 30 years and under who were referred for ultrasound examination .



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REVIEW

Exploring the challenges for a new classification of adenomyosis

BIOGRAPHY

Dr M Habiba MSc PhD FRCOG, is a Consultant Gynaecologist at the University Hospitals of Leicester and Honorary Reader at the University of Leicester. He obtained his PhD on the effects of hormone replacement therapy on the endometrium and a PhD on the ethics of screening in health care.

Marwan Habiba[1,*], Stephan Gordts[2], Marc Bazot[3], Ivo Brosens[4], Giuseppe Benagiano[5]

TABLE 2 HISTOLOGICAL BASED CLASSIFICATION OF ADENOMYOSIS IN DIFFERENT STUDIES

Reference	Classification
Bird et al., 1972	Depth of invasion: grade I: sub-basal lesions within one LPF grade II: up to mid-myometrium grade III: beyond mid-myometrium. Degree of involvement: slight: one to three glands per LPF moderate: four to nine glands per LPF marked: 10 or more glands per LPF.
Siegler and Camilien, 1994	A) According to depth of penetration from the basal layer of endometrium: grades 1–3. B) Degree of involvement: mild (one to three islands/LPF), moderate (four to 10 islands/LPF, severe (>10 islands/LPF). C) Configuration: diffuse, discrete (nodular/focal).
Levgur et al. 2000	2.5 mm depth from the endomyometrial border as a cut-off point: superficial: <40% uterine wall thickness intermediate: between 40–80% wall thickness deep: >80% wall thickness
Sammour et al., 2002	Group A: up to 25%
Gordts et al., 2008	Junctional zone hyperplasia: eight or more but <12 mm on MRI in women aged ≤35 years. Adenomyosis: junctional zone ≥12 mm; high-intensity myometrial foci; involvement of the outer myometrium <1/3, <2/3, >2/3. Adenomyoma: myometrial mass with indistinct margins. Retrocervical, retrovaginal, fallopian tube and bladder types
Hulka et al., 20	
Vercellini et al.,	
Kishi et al., 2012	Subtype I: intrinsic: Inner uterine layer. Subtype II: extrinsic: outer uterine layer (normal junctional zone). Subtype III: solitary adenomyosis no connection to the junctional zone or to the serosa. Subtype IV: indeterminate
Pistofidis et al., 2014	Included assessment of gross appearance at time of surgery: sclerotic nodular cystic
Grimbizis et al., 2014	Diffuse: disease scattered throughout the musculature. Focal: affecting a restricted area (includes adenomyoma and cystic variety) Polypoid (typical and atypical) Special (rare forms)

LPF, low-power field.

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Original Article

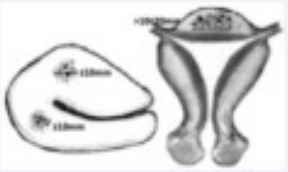
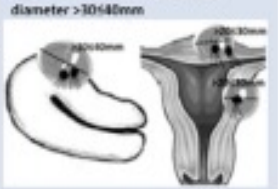
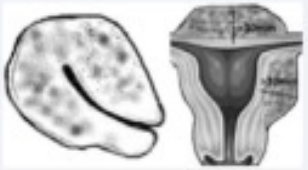
New Sonographic Classification of Adenomyosis: Do Type and Degree of Adenomyosis Correlate to Severity of Symptoms?

Caterina Exacoustos, MD, PhD, Giulia Morosetti, MD, Francesca Conway, MD, Sara Camilli, MD, Francesco Giuseppe Martire, MD, Lucia Lazzeri, MD, PhD, Emilio Piccione, MD, and Errico Zupi, MD

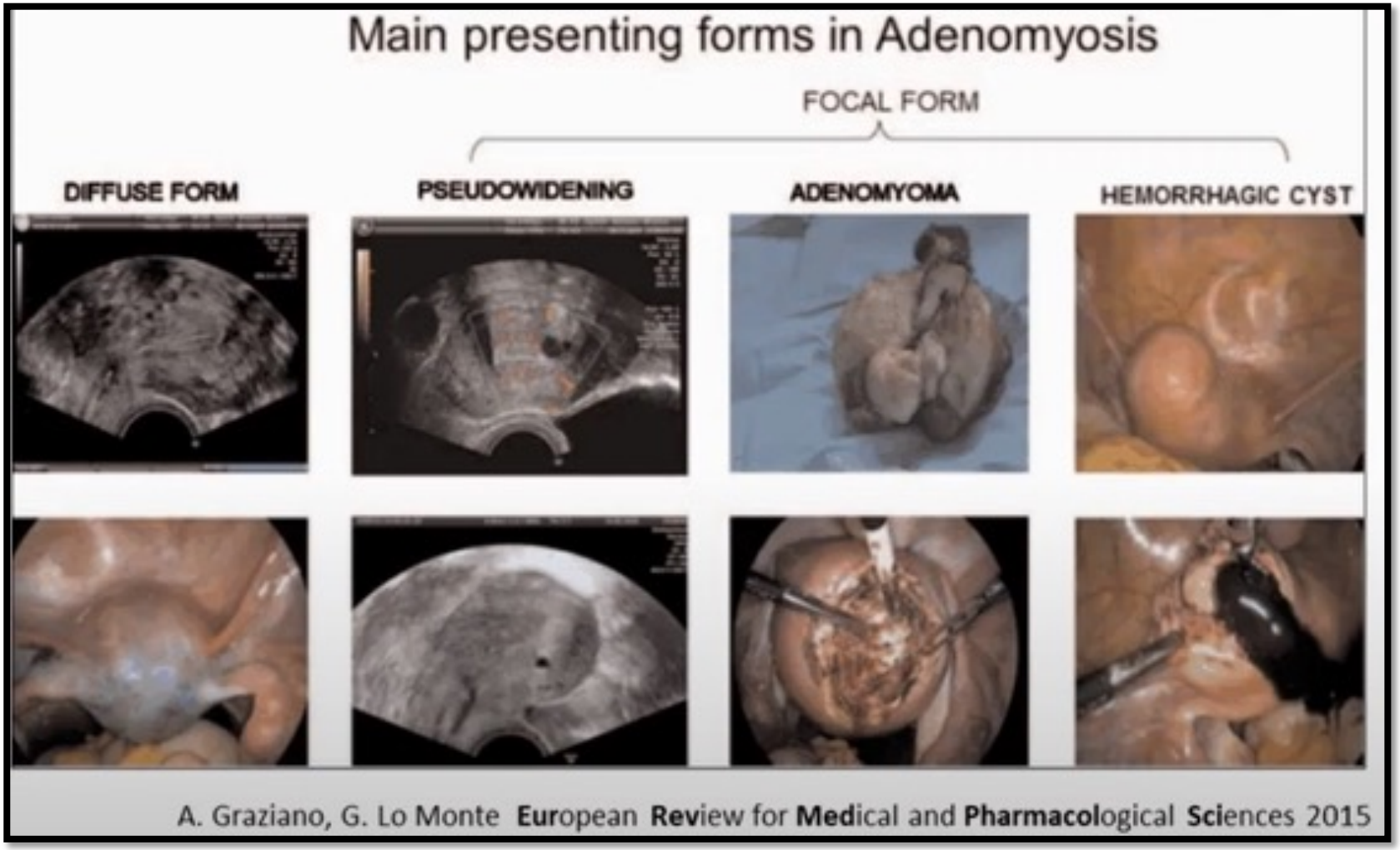
From the Department of Biomedicine and Prevention Obstetrics and Gynecological Clinic, University of Rome "Tor Vergata" (Drs. Exacoustos, Morosetti, Conway, Camilli, Giuseppe Martire, Piccione, and Zupi), Rome, and Department of Molecular and Developmental Medicine, Obstetrics and Gynecological Clinic, University of Siena (Dr. Lazzeri), Siena, Italy.

Fig. 1

Ultrasound score system used to classify the severity of adenomyosis [20].

SCORE	DIFFUSE ADENOMYOSIS OF THE OUTER MYOMETRIUM	DIFFUSE ADENOMYOSIS OF THE INNER MYOMETRIUM OR JUNCTIONAL ZONE (JZ)	FOCAL ADENOMYOSIS OF THE OUTER MYOMETRIUM	FOCAL ADENOMYOSIS OF THE INNER MYOMETRIUM OR (JZ)	ADENOMYOMA
1	•1 myometrial wall involvement with myometrial wall thickness ≤20mm 	•maximum JZ thickness >6≤8 mm •diffuse infiltration of the JZ ≤20mm in length 	•1 focal intramyometrial lesion ≤10mm 	•1 focal lesion of the JZ by hyperechoic tissue or cystic areas ≤10mm 	•1 adenomyoma with the largest diameter ≤ 20mm 
2	•2 myometrial wall involvement with wall thickness ≤20mm •1 myometrial wall involvement with wall thickness >20≤30mm 	•maximum JZ thickness >8 mm •diffuse infiltration of the JZ >20mm in length or <50% of the uterus 	•≥2 focal intramyometrial lesion≤10mm •1 focal intramyometrial lesions >10≤20mm 	• ≥ 2 focal lesions of the JZ ≤10m • 1 focal lesion of the JZ >10≤20m 	•2 adenomyomas with the largest diameter ≤20mm •1 adenomyoma with the largest diameter >20≤30mm 
3	•1 myometrial wall involvement with wall thickness >30mm •2 myometrial wall involvement with wall thickness >20≤30mm 	•diffuse infiltration of the JZ >50%≤80% of the uterus 	•≥ 2 focal intramyometrial lesions >10≤20mm •1 focal intramyometrial lesion >20mm 	• ≥ 2 focal lesions of the JZ >10≤20m • 1 focal lesion of the JZ >20m 	•2 adenomyomas with the largest diameter >20≤30mm •1 adenomyoma with the largest diameter >30≤40mm 
4	•2 myometrial wall involvement with wall thickness >30mm •all the uterus involvements with globally enlarged uterus 	•80% to total infiltration of the JZ 	•≥2 focal intramyometrial lesion >20mm • ≥ 3 focal intramyometrial lesions 	• ≥ 2 focal lesions of the JZ >20m • ≥ 3 focal lesions of the JZ 	•≥3 adenomyomas •1 adenomyoma with the largest diameter >40mm 

ADENOMYOSIS



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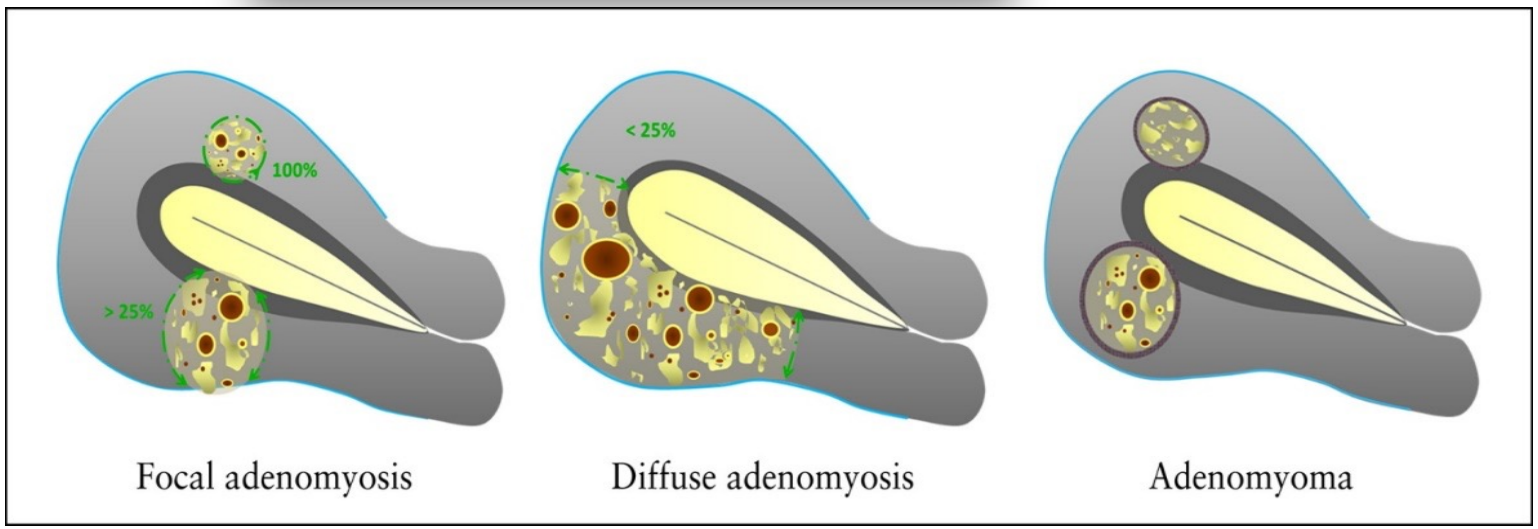
Opinion

Sonographic classification and reporting system for diagnosing adenomyosis

T. VAN DEN BOSCH[1#], A. M. DE BRUIJN[2#], R. A. DE LEEUW[2], M. DUEHOLM[3], C. EXACOUSTOS[4], L. VALENTIN[5], T. BOURNE[1,6], D. TIMMERMAN[1] and J. A. F. HUIRNE[2*]



Adenomyosis is classified as diffuse if **< 25%** of the lesion is surrounded by normal myometrium.

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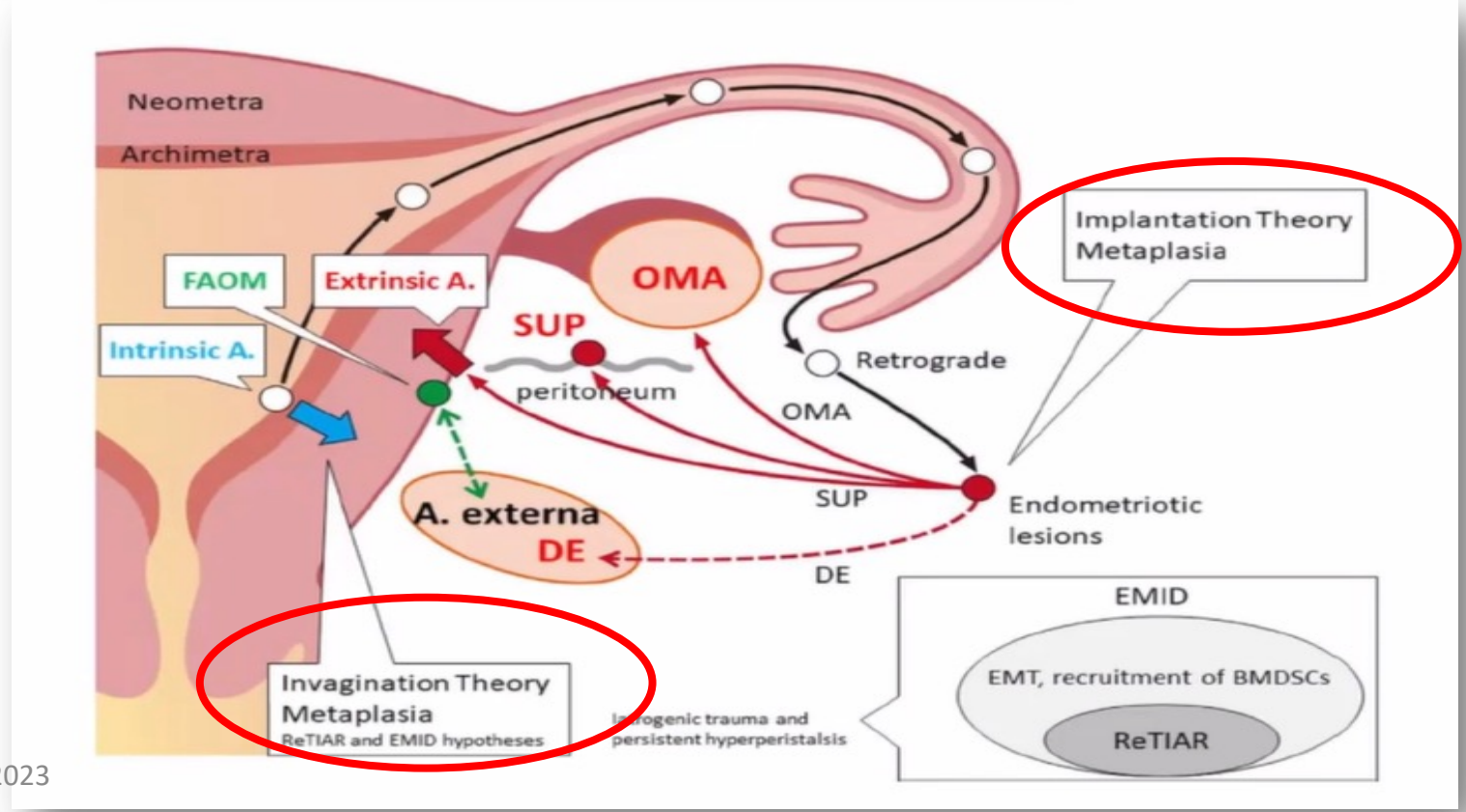
Review Article

Adenomyosis: A Clinical Review of a Challenging Gynecologic Condition

Jennifer Struble, MD, Shannon Reid, MD, and Mohamed A. Bedaiwy, MD, PhD*

From the Department of Obstetrics and Gynecology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada (Dr. Struble), Division of Reproductive Endocrinology and Infertility, University of British Columbia, Vancouver, British Columbia, Canada (Dr. Bedaiwy), and Department of Obstetrics and Gynaecology, University of British Columbia, Vancouver, British Columbia, Canada (Drs. Reid and Bedaiwy).



Risk Factors

Table 1

Risk factors

Risk factor	Statistical significance	Study
Exposure to estrogen		
■ Age: 40s and 50s		
■ Average age of women diagnosed	46.5 years; average age of women with adenomyosis and adenomyosis plus leiomyomas found at hysterectomy n = 36 [4]	Levgur et al [4]: total n = 111; adenomyosis alone: n = 17; adenomyosis + leiomyomas n = 19; leiomyomas alone n = 39, neither adenomyosis or leiomyomas n = 36
	41.0 ± 6.4 women with adenomyosis vs 44.4 ± 4.8 women with leiomyoma p < .001 [14]	Tasan et al [14] compared women who had pathologically confirmed diagnoses of leiomyoma (n = 152) to adenomyosis (n = 76)
■ Early menarche (≤ 10 years of age)	POR = 1.59; 95% CI, 1.26–2.01	Templeman et al [15]: surgical diagnosis of adenomyosis n = 961 compared with disease-free women in the same age range n = 79 495
■ Short menstrual cycles (≤ 24 days in length)	POR = 1.46; 95% CI, 1.13–1.89	
■ Past oral contraceptive use	POR 1.54; 95% CI, 1.28–1.85	
■ Elevated BMI		
- 25–29.9	- POR 1.30; 95% CI, 1.11–1.51	
- ≥ 30	- POR 1.35; 95% CI, 1.12–1.62	
■ Tamoxifen [16,17]	Adenomyosis was histologically diagnosed in 53.6% of tamoxifen treated patients and 18.2% of patients who had not had tamoxifen treatment (p = .019) [17]	Cohen et al [17] compared 28 postmenopausal breast cancer patients with tamoxifen and 11 similar patients without tamoxifen treatment
	Patients who had been treated with tamoxifen were followed; of the patients who had a hysterectomy for various reasons, 57.1% were found to have adenomyosis [16]	Cohen et al [16]: 14 patients had an abdominal hysterectomy and bilateral salpingo-oophorectomy for various reasons; 8 of these women had adenomyosis
Parity	POR = 1.80; 95% CI, 1.47–2.20 [15]	Templeman et al [15]: surgical diagnosis of adenomyosis n = 961 compared with disease-free women in the same age range n = 79 495
	OR = 3.1; 95% CI, 1.7–5.5 in women reporting 2 or more births (p < .01) [8]	Parazzini et al [8]: 707 women had a hysterectomy; adenomyosis was identified in 150 subjects (21.2%)*
■ Pregnancy termination	OR of women with adenomyosis vs women with neither adenomyosis nor leiomyomas; OR = 4.35; CI, 1.19–15.99; p = .03 [4]	Levgur et al [4]: total n = 111; adenomyosis alone: n = 17; adenomyosis + leiomyomas n = 19; leiomyomas alone n = 39, neither adenomyosis or leiomyomas n = 36
	≥ 1 spontaneous abortions vs none; OR = 1.7; 95% CI, 1.1–2.6 [8]	Parazzini et al [8]: 707 women had a hysterectomy; adenomyosis was identified in 150 subjects (21.2%)
Prior uterine surgery	60.5% women with adenomyosis vs 26.1% of women with leiomyoma (p = .039) [14]	Tasan et al [14] compared women who had pathologically confirmed diagnoses of leiomyoma (n = 152) with adenomyosis (n = 76)
	OR = 2.2; 95% CI, 1.4–4.0 in women who reported dilatation and curettage compared with those who did not [8]	Parazzini et al [8]: 707 women had a hysterectomy; adenomyosis was identified in 150 subjects (21.2%)

CI = confidence interval; OR = odds ratio; POR = prevalence odds ratio.

Signs and symptoms

Table 2

Symptoms and signs of adenomyosis

Common presenting symptoms and signs	% Affected	Study (n = subjects)
Symptom		
■ Heavy menstrual bleeding	40–50	Huang et al [38]: Expert opinion
	40–50	Levgur et al [4]: 111 uterine specimens; adenomyosis alone n = 17, adenomyosis and leiomyomas n = 19, leiomyomas alone n = 39, neither n = 36
■ Deep foci*	36.8	Levgur et al [4]
■ Intermediate foci*	13.3	Levgur et al [4]
■ Dysmenorrhea	15–30	Huang et al [38]: expert opinion
	15–30	Levgur et al [4]
■ Deep foci*	77.8	Levgur et al [4]
■ Intermediate foci*	12.5	Levgur et al [4]
■ Chronic pelvic pain	76.9	Shrestha et al [39]: prospective case control n = 78 women with adenomyosis without fibroid
■ Asymptomatic	33	
■ Dyspareunia	7	Huang et al [38]: expert opinion
Signs		
■ Uterine enlargement	30 [4]	Levgur et al [4]
	Slightly enlarged uterus in most cases [40]	Ozdegirmenci et al [40]: 75 women who had TVUS and MRI consistent with adenomyosis were treated with either LNG-IUD or hysterectomy
■ Tender uterus	Significantly more tender uterus was found in adenomyosis group	Huang et al [38]: expert opinion Shrestha et al [39]: prospective case control
■ Infertility	11–12	Huang et al [38]: expert opinion
■ Associated uterine abnormalities		McElin et al [41]
■ Leiomyomas [41]	50	
■ Endometriosis [41]	11	
■ Endometrial polyp [41]	7	
■ Abnormalities at hysteroscopy: irregular endometrium with endometrial defects, cystic hemorrhagic lesions, altered vascularization [42]	These findings may be associated with adenomyosis	Molinas and Campo [42]: expert opinion

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Diagnostic accuracy of transvaginal sonography for the diagnosis of adenomyosis: systematic review and metaanalysis

Susanna M. Meredith, MD; Luis Sanchez-Ramos, MD; Andrew M. Kaunitz, MD

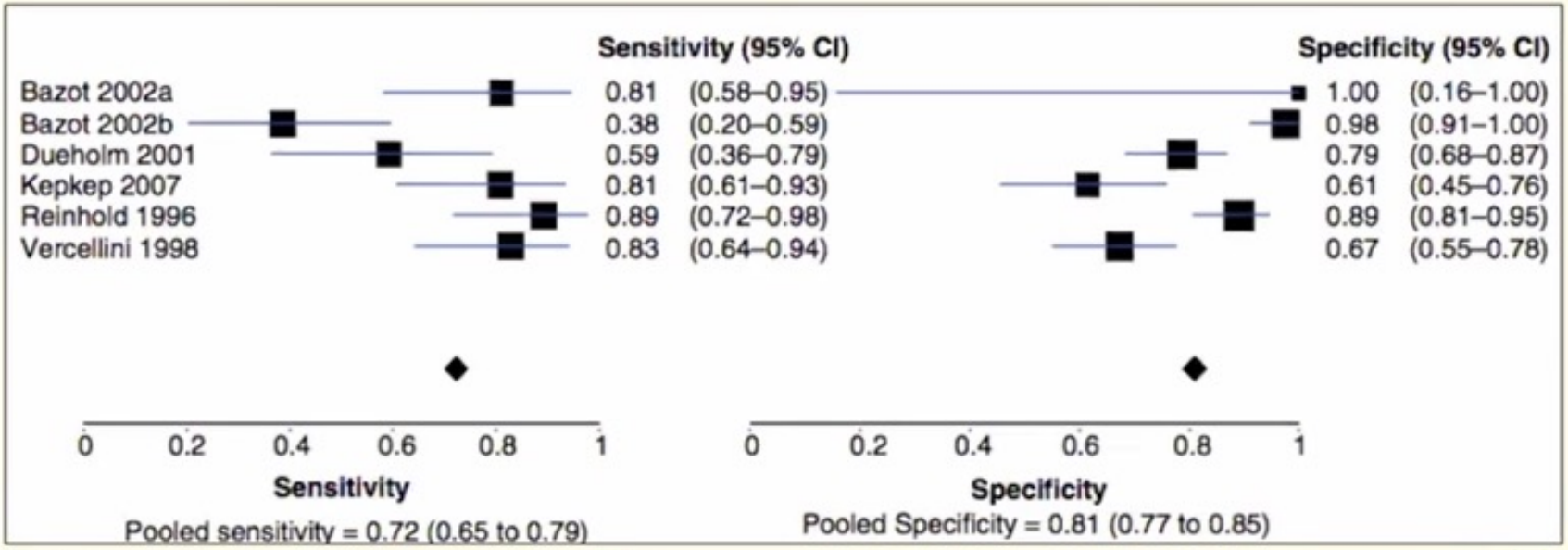
TABLE 3
Summary of pooled results for the diagnostic accuracy of TVS for adenomyosis

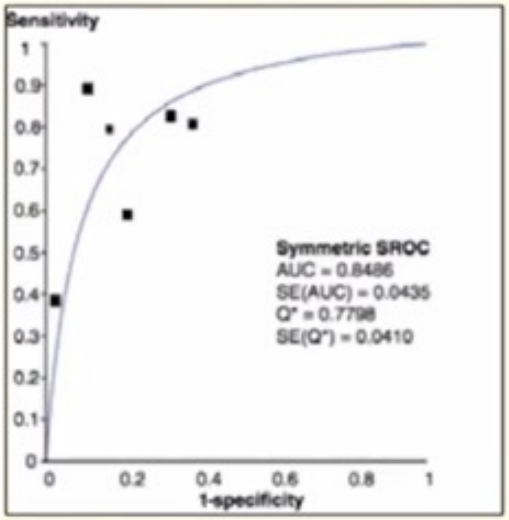
Variable	All studies, n (95% CI)	Symptomatic patients, n (95% CI)	Hysterectomy for any reason, n (95% CI)
Sensitivity	82.5 (77.5-87.9)	84.3 (76.3-93.2)	81.1 (74.5-88.2)
Specificity	84.6 (79.8-89.8)	82.3 (72.5-93.5)	85.1 (79.3-91.4)
Likelihood ratio of positive results	4.7 (3.1-7.0)	4.1 (2.0-8.2)	5.1 (2.3-8.7)
Likelihood ratio of negative results	0.26 (0.18-0.39)	0.25 (0.14-0.43)	0.28 (0.17-0.45)
Area under the curve	0.854 (0.801-0.908)	0.864 (0.759-0.968)	0.848 (0.776-0.921)
Diagnostic odds ratio	20.0 (11.1-35.4)	19.3 (6.6-56.3)	20.3 (9.6-42.8)

CI, confidence interval; *TVS*, transvaginal sonography.

Meredith. Diagnostic accuracy of TVS for the diagnosis of adenomyosis. Am J Obstet Gynecol 2009.

Diagnostic accuracy of US for adenomyosis





- Sensitivity: 0.72 (0.65-0.79)
- Specificity: 0.81 (0.77-0.850
- Area Under the Curve: 0.85

Champaneria et al, AOGS, 89:1374-1384, 2010

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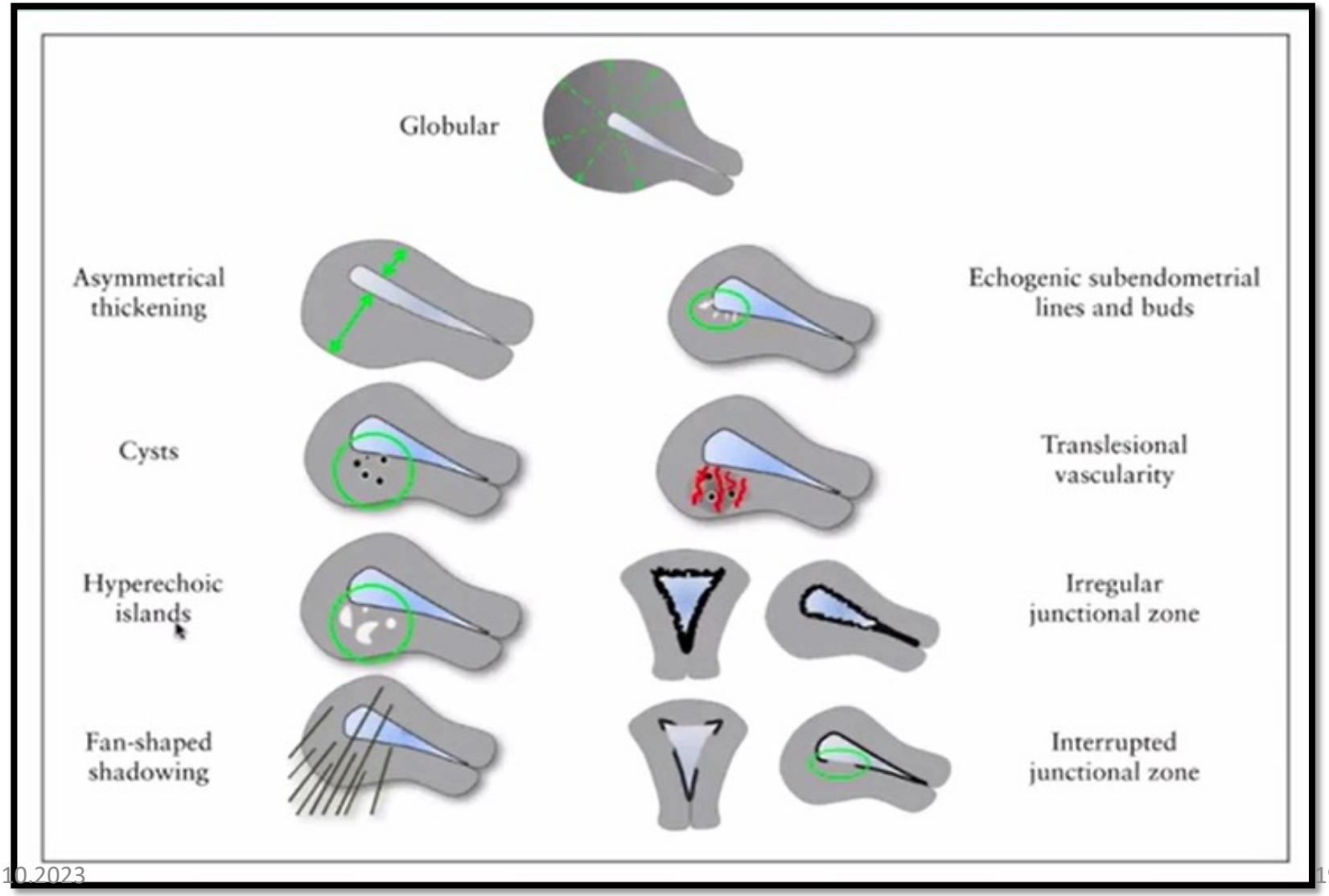
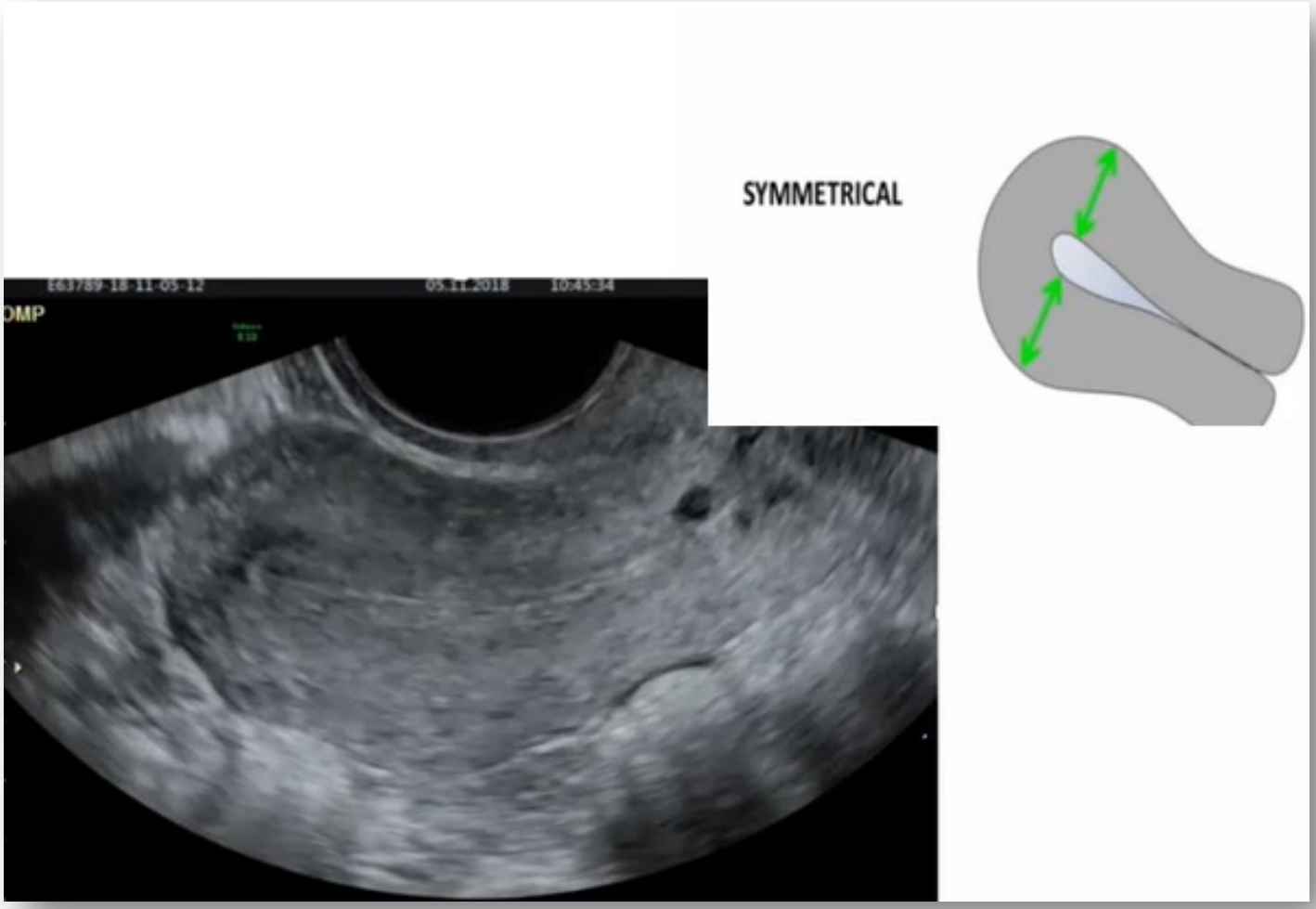
Terms, definitions and measurements to describe sonographic features of myometrium and uterine masses: a consensus opinion from the Morphological Uterus Sonographic Assessment (MUSA) group

T. VAN DEN BOSCH*#, M. DUEHOLM†#, F. P. G. LEONE‡, L. VALENTIN§, C. K. RASMUSSEN†, A. VOTINO¶, D. VAN SCHOUBROECK*, C. LANDOLFO**, A. J. F. INSTALLÉ†††‡‡, S. GUERRIERO§§, C. EXACOUSTOS¶¶, S. GORDTS***, B. BENACERRAF†††, T. D'HOOGHE‡‡‡, B. DE MOOR†††‡‡, H. BRÖLMANN§§§, S. GOLDSTEIN¶¶¶, E. EPSTEIN^, T. BOURNE*~ and D. TIMMERMAN*

ADENOMYOSIS DIAGNOSIS-US



ADENOMYOSIS DIAGNOSIS-US



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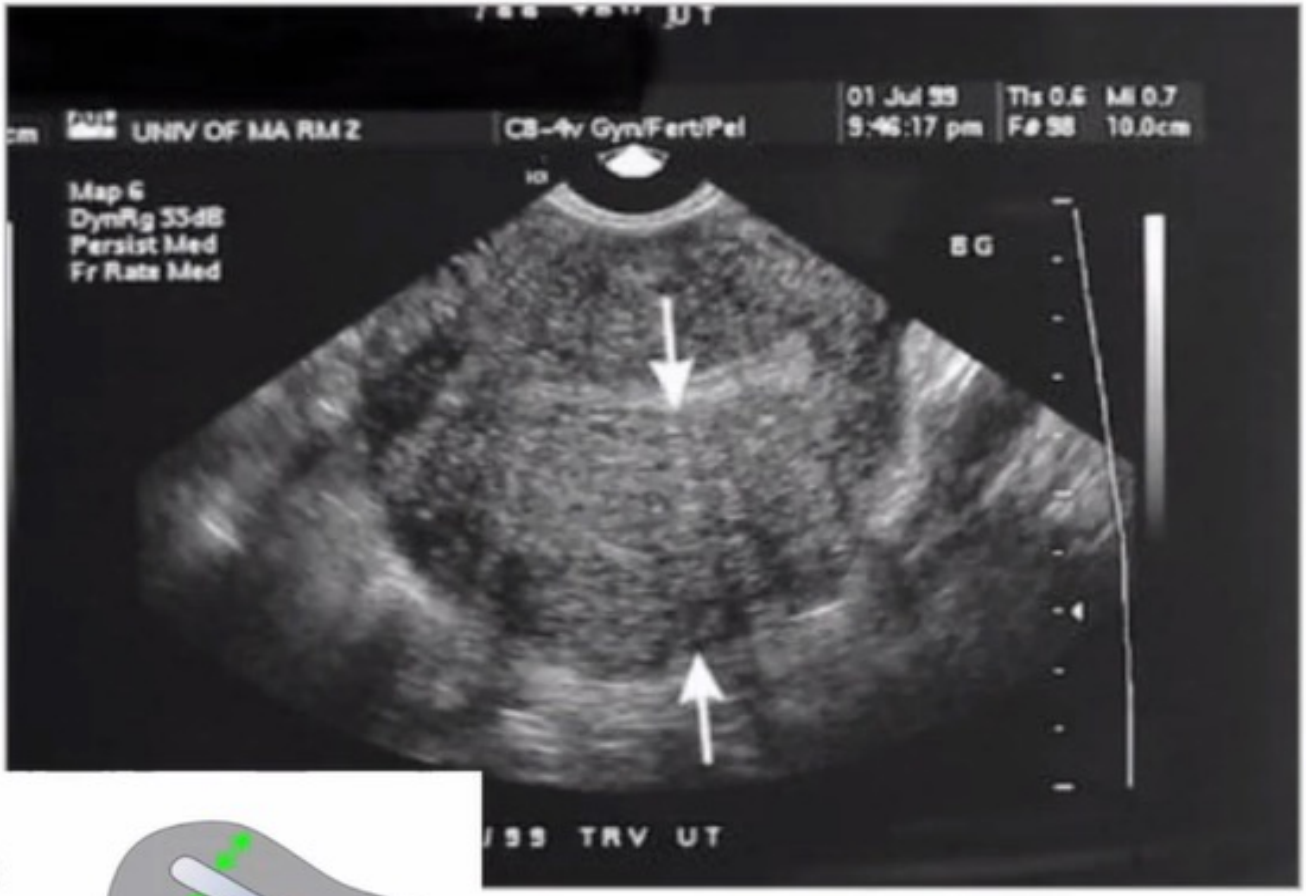
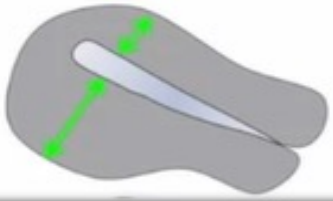
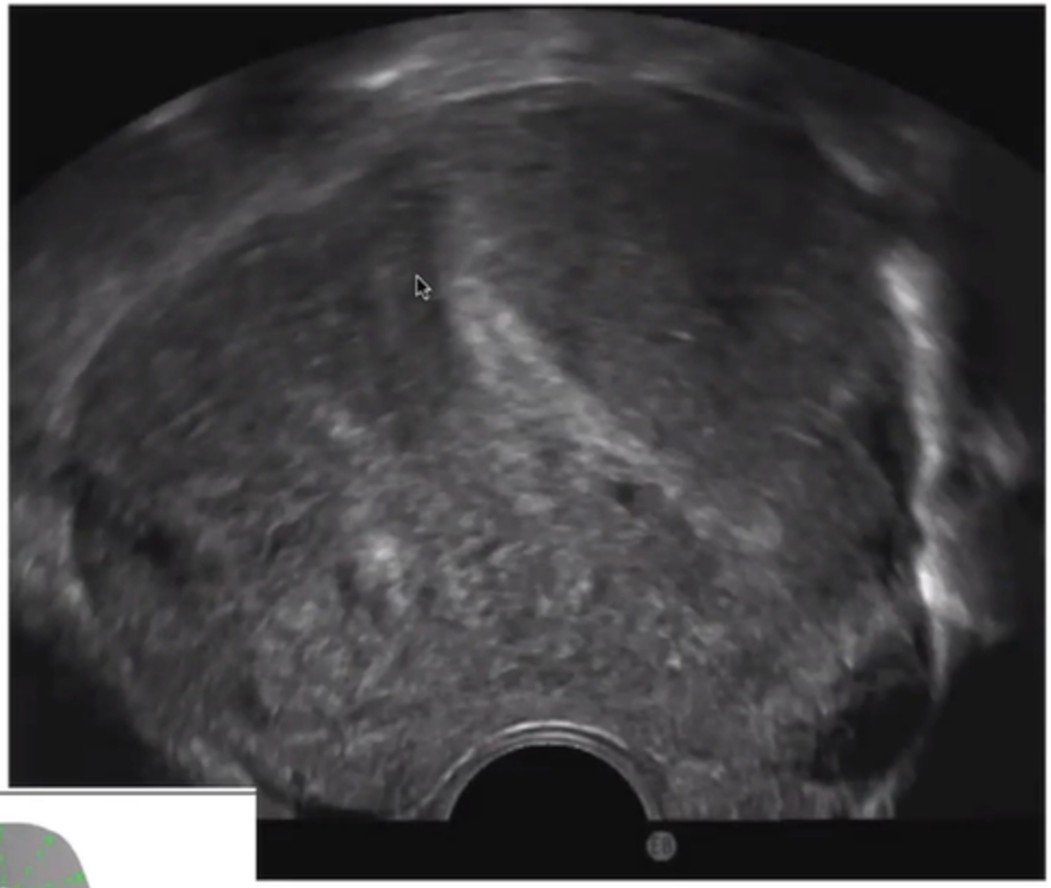


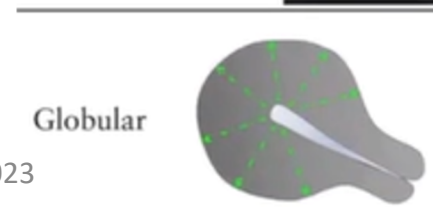


Asymmetrical thickening

ADENOMYOSIS DIAGNOSIS-US

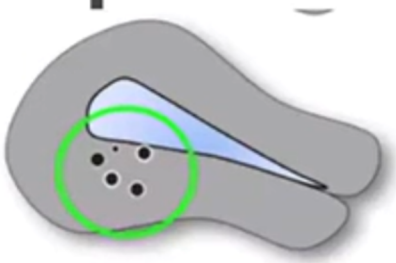
ADENOMYOSIS DIAGNOSIS-US

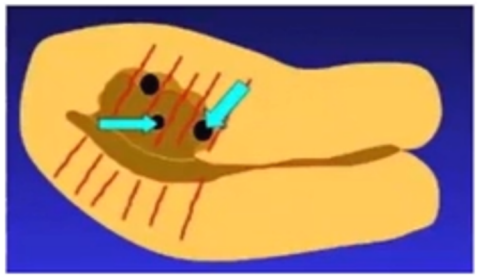




ADENOMYOSIS DIAGNOSIS-US

Cysts

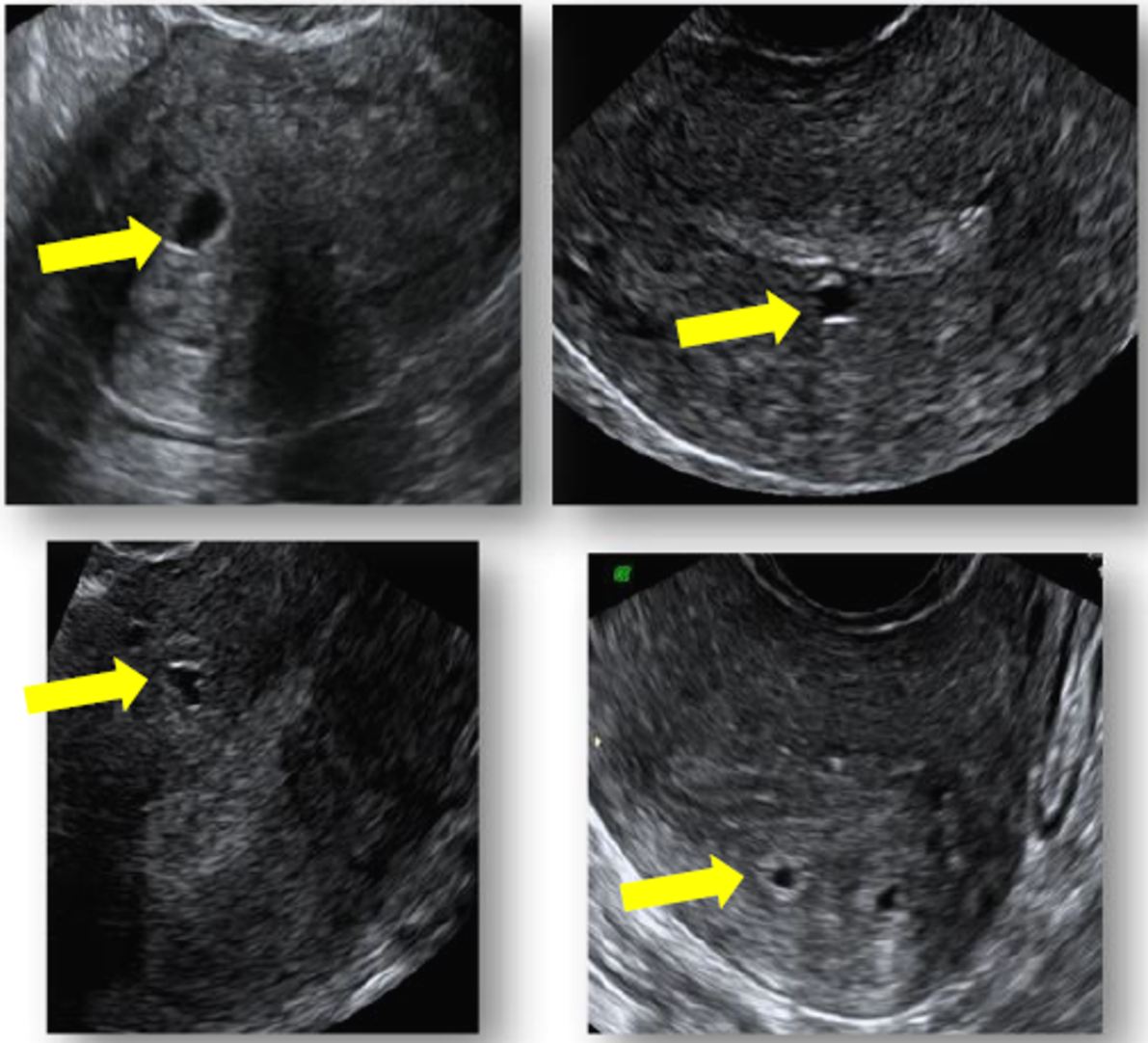




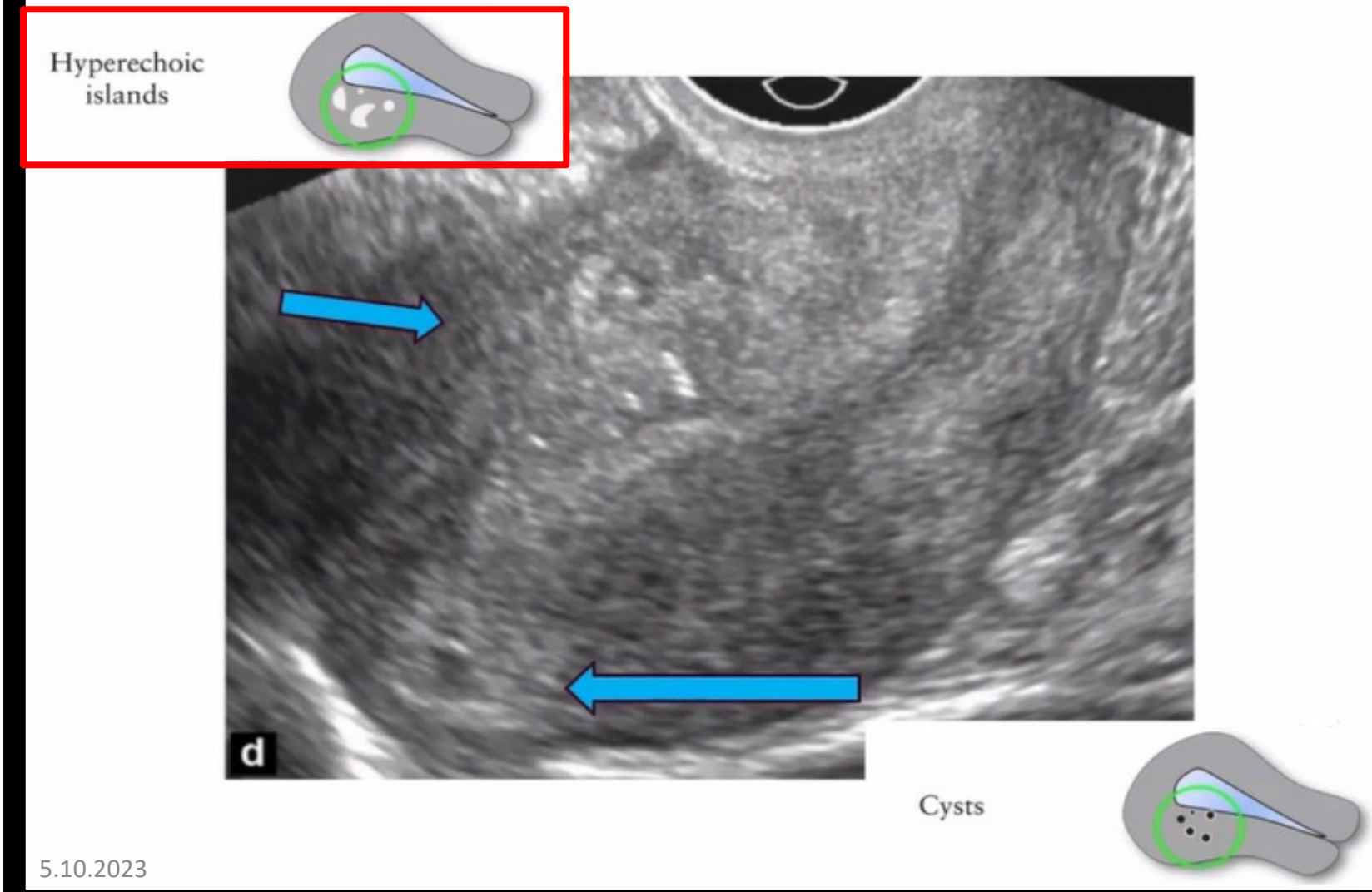
ADENOMYOSIS DIAGNOSIS - USG

- Cyst in myometrium (1-7 mm diameter anechoic areas, seen in 50% of cases)

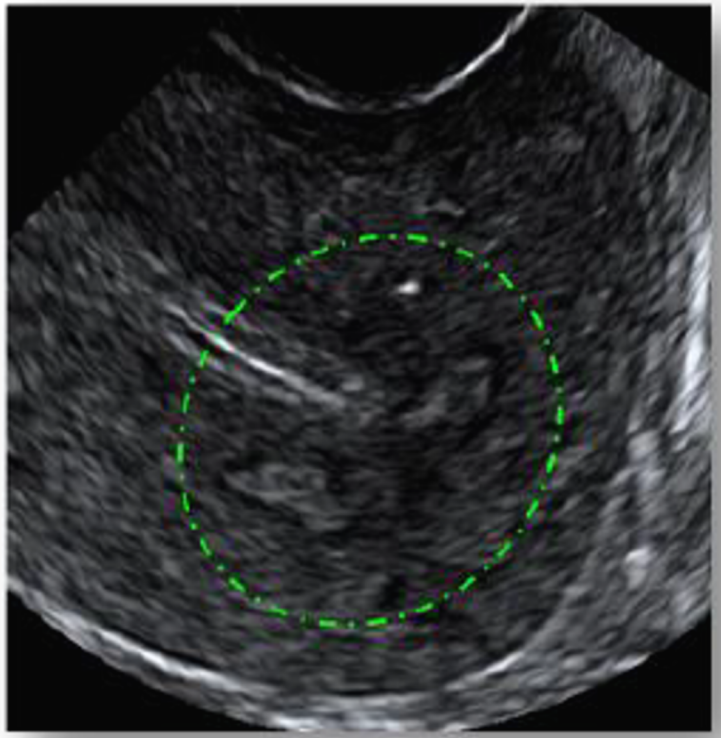
MYOMETRIAL CYSTS

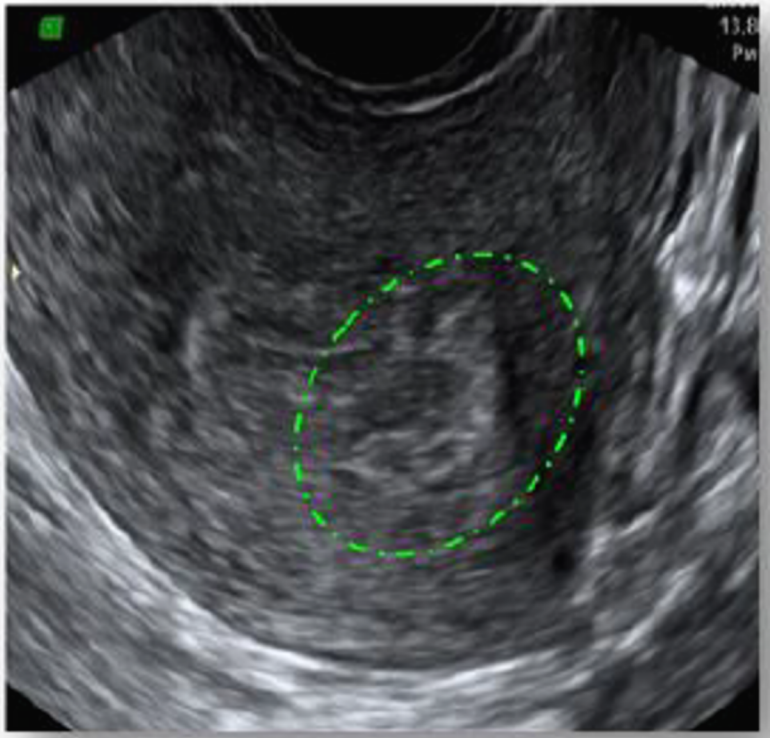


ADENOMYOSIS DIAGNOSIS-US

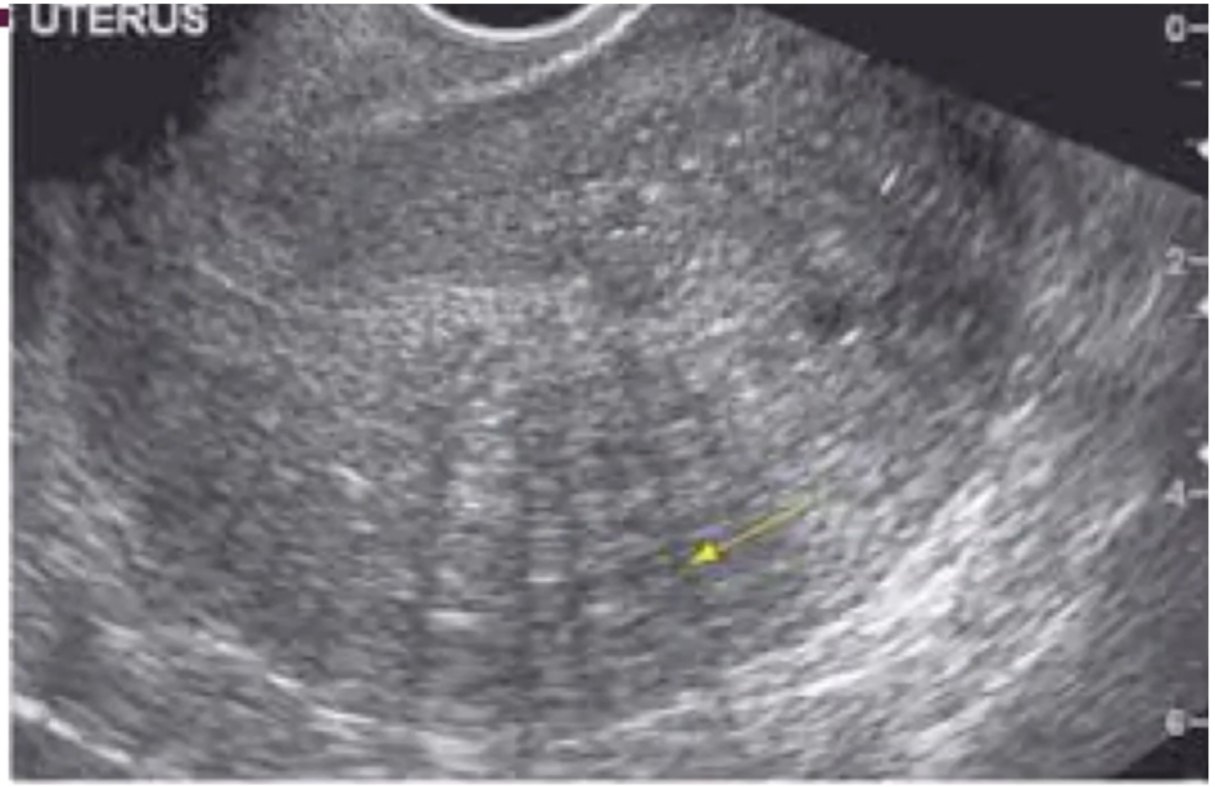


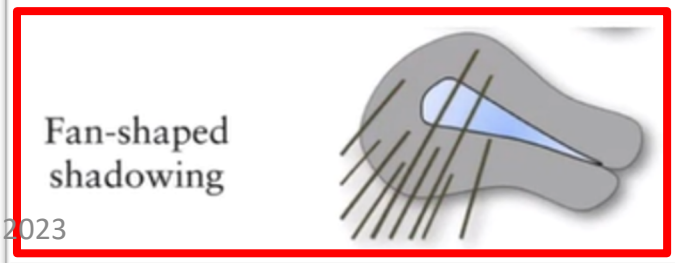
HYPERECHOGENIC ISLANDS





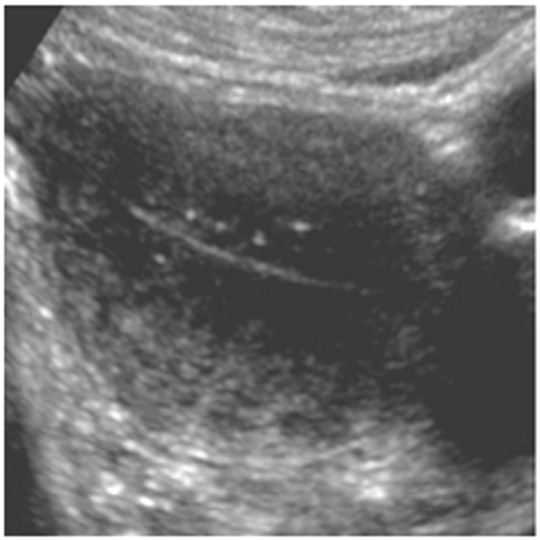
ADENOMYOSIS DIAGNOSIS-US

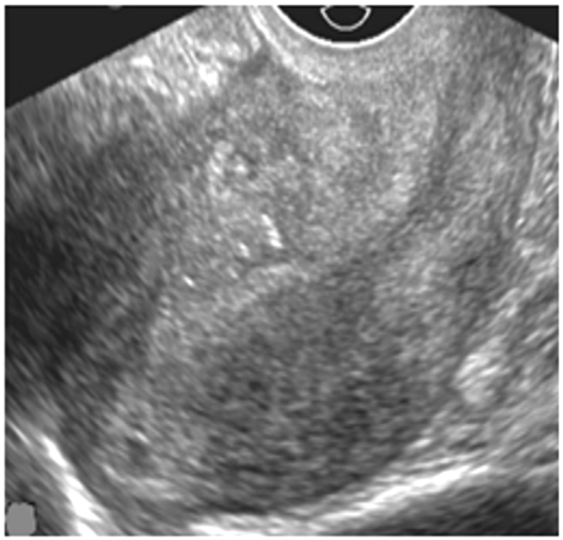


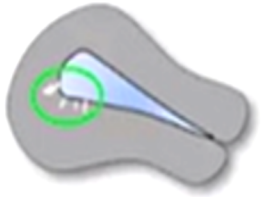


FAN SHAPED SHADOWING

ADENOMYOSIS DIAGNOSIS-US

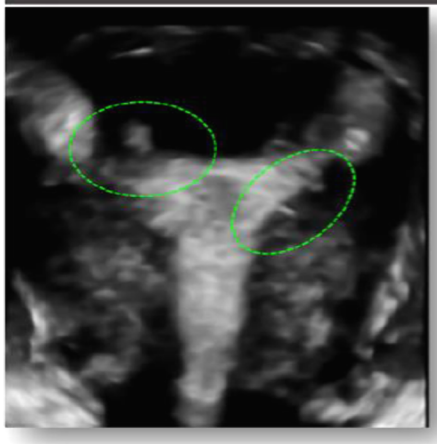


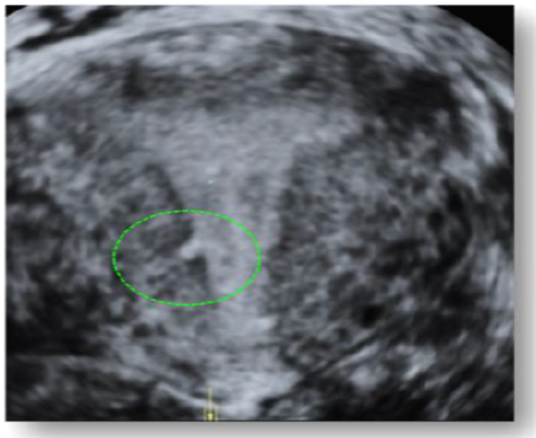




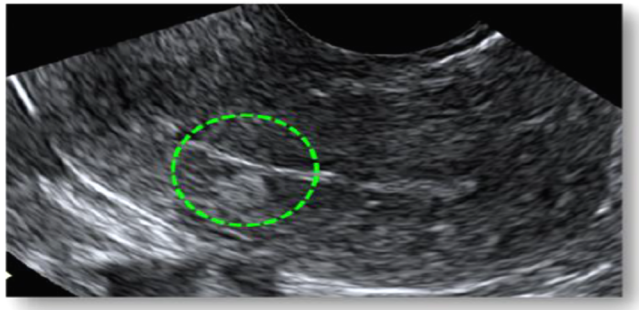
Echogenic subendometrial
lines and buds

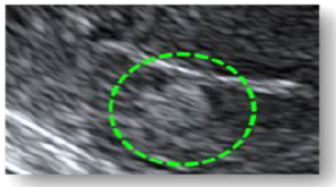
ECHOGENIC SUBENDOMETRIAL LINES

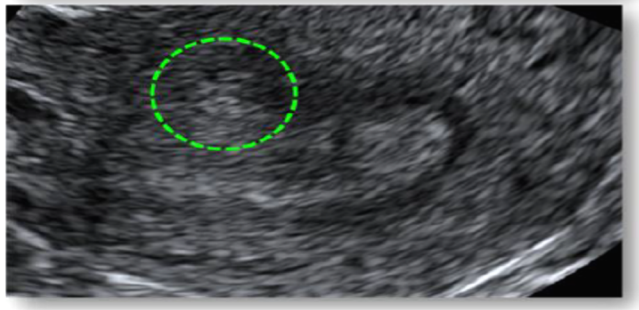


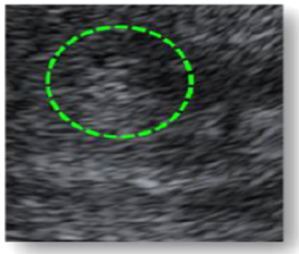


ECHOGENIC SUBENDOMETRIAL BUDS









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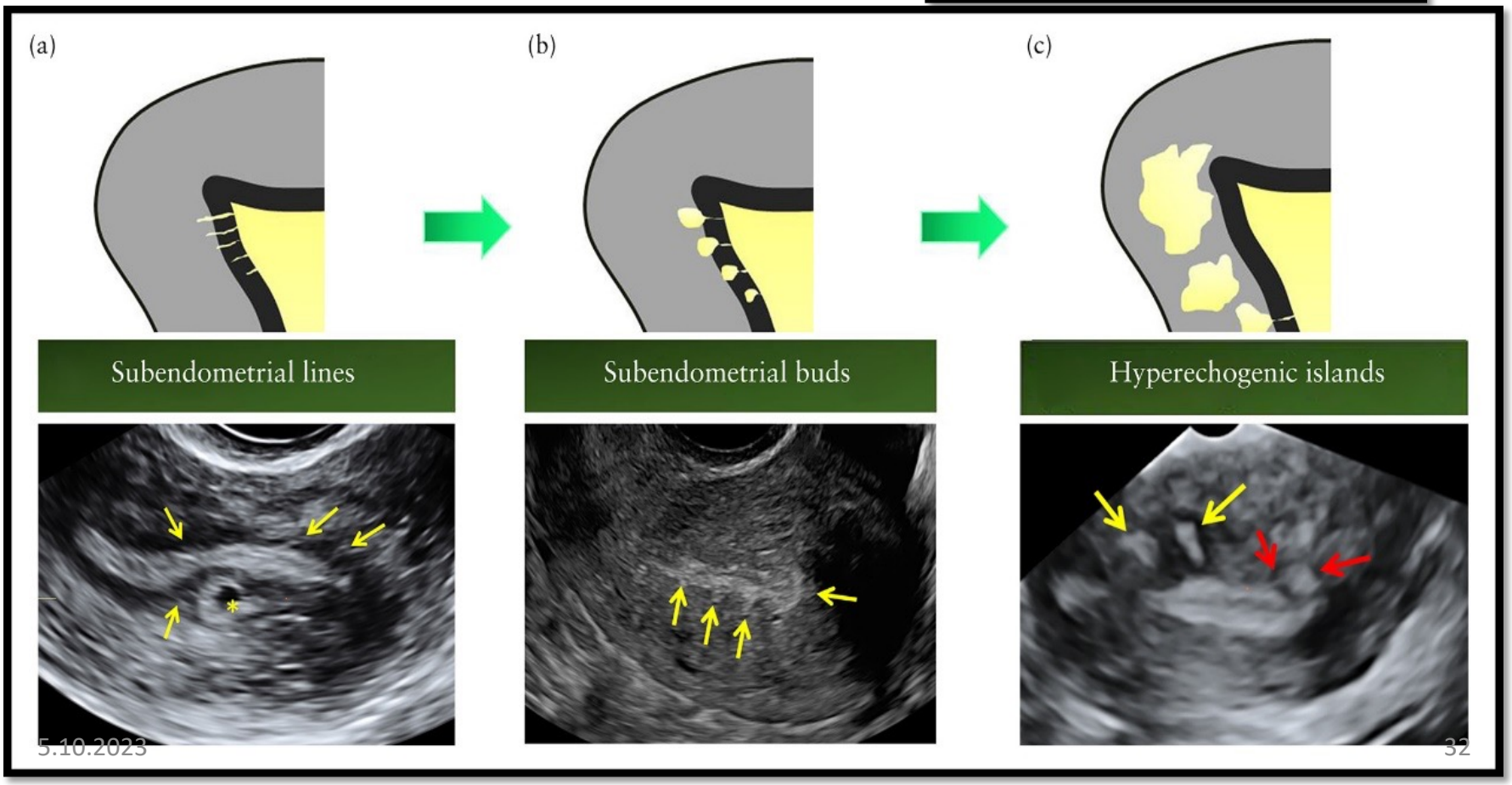
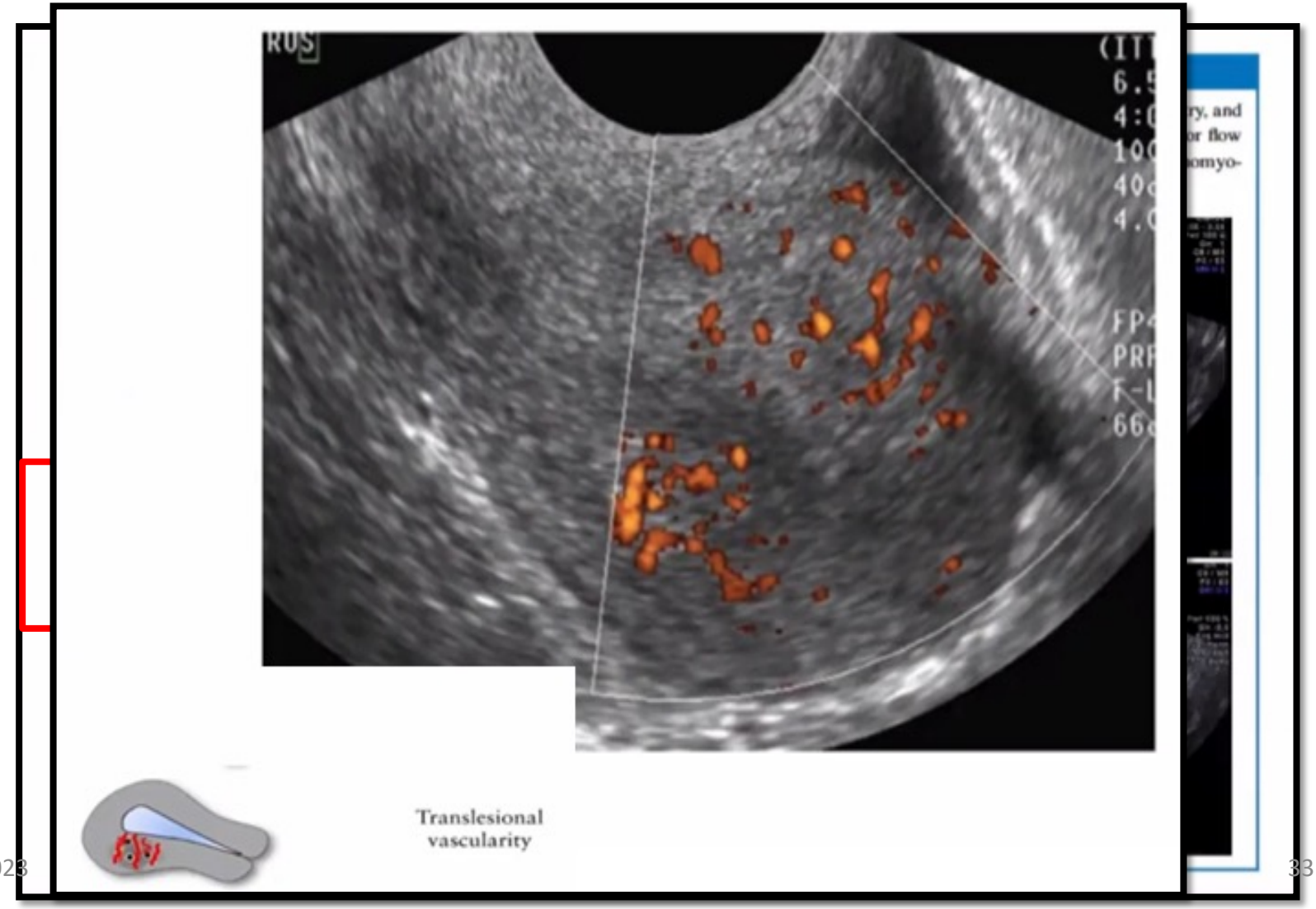
Opinion

Sonographic classification and reporting system for diagnosing adenomyosis

T. VAN DEN BOSCH[1#], A. M. DE BRUIJN[2#], R. A. DE LEEUW[2], M. DUEHOLM[3], C. EXACOUSTOS[4], L. VALENTIN[5], T. BOURNE[1,6], D. TIMMERMAN[1] and J. A. F. HUIRNE[2*]



ADENOMYOSIS DIAGNOSIS-US



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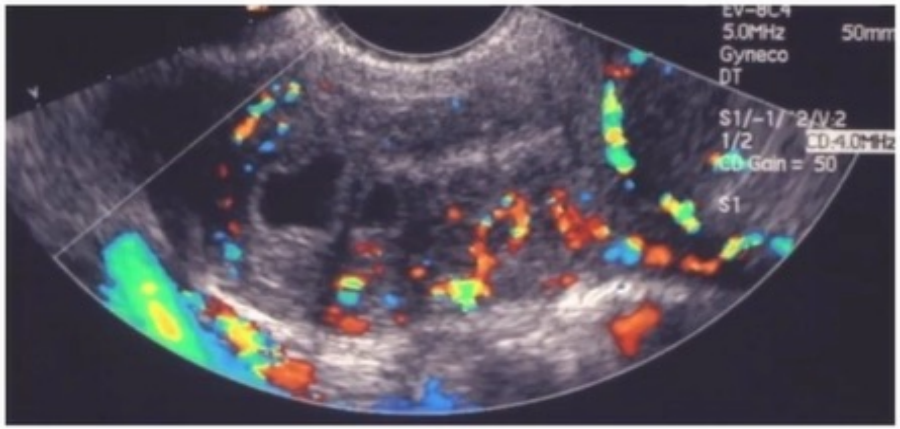

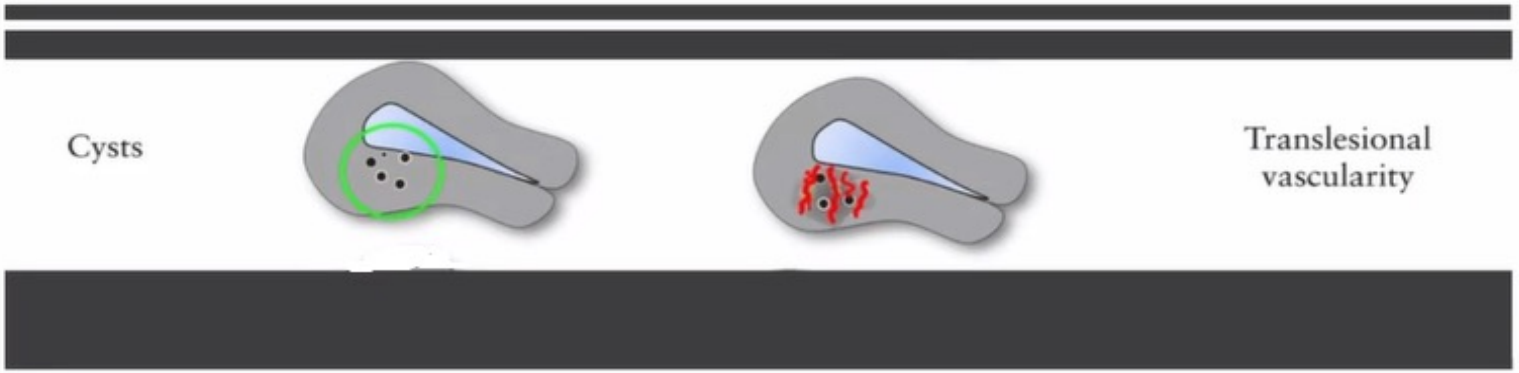

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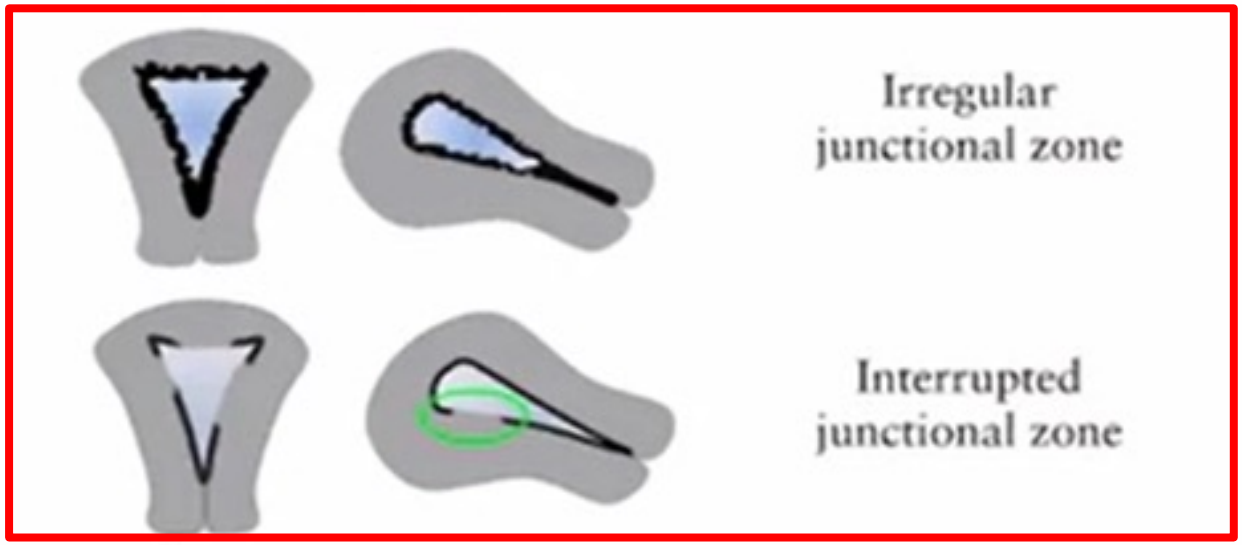
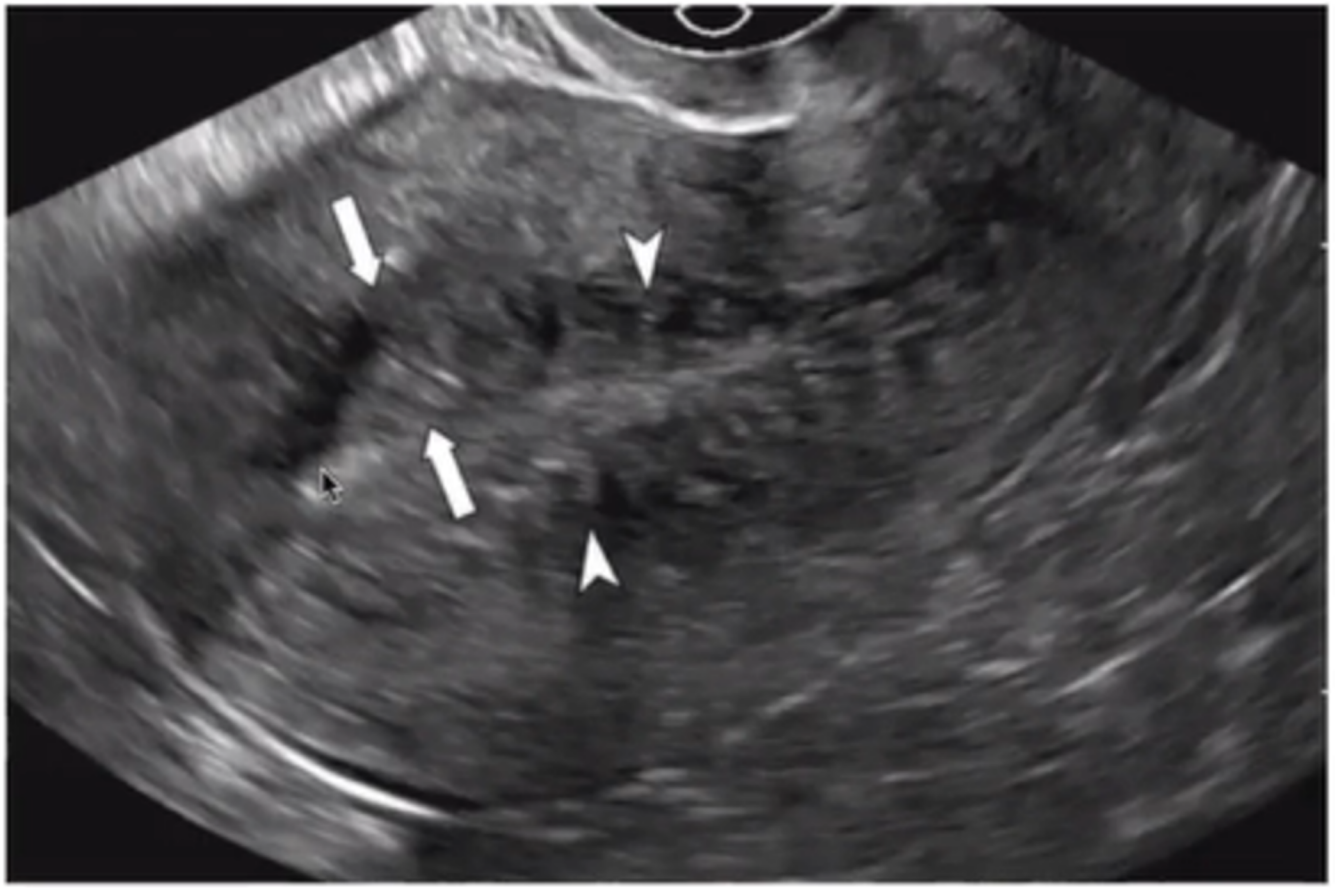
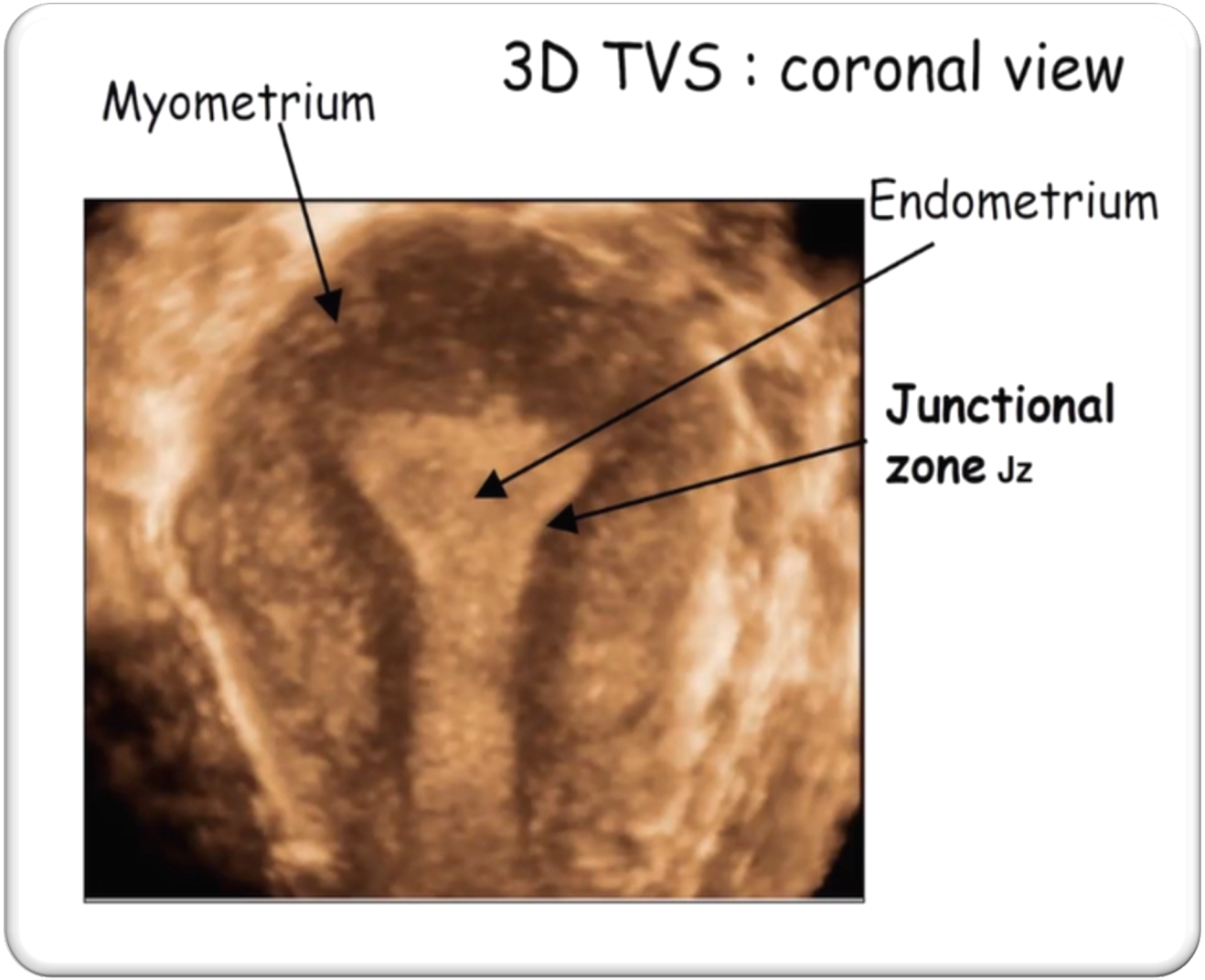


ADENOMYOSIS DIAGNOSIS-2D TVUS



ADENOMYOSIS DIAGNOSIS-3D TVUS



Adenomyosis Diagnosis

Junctional zone

JUNCTIONAL ZONE = JZ

- JZ max MA
- JZ min MI
- Myometrial thickness MT

- Jzmax- JZmin = JZdif describes the irregularity of the junctional zone and should be >5mm for diagnosis of adenomyosis.

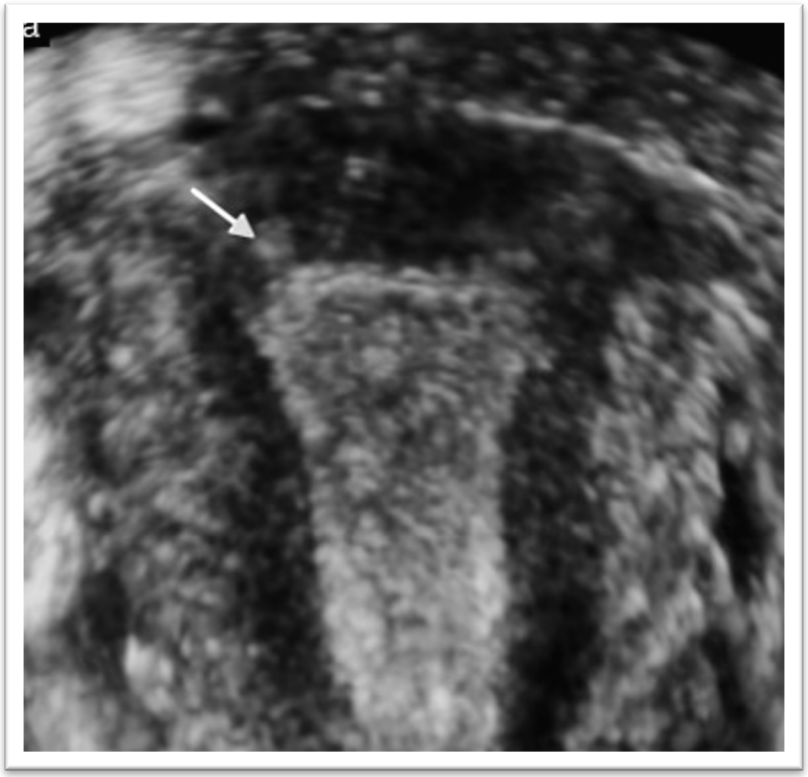
- Jz max / MT% describes the percentage of the myometriuim infiltrated by Jz and adenomyosis

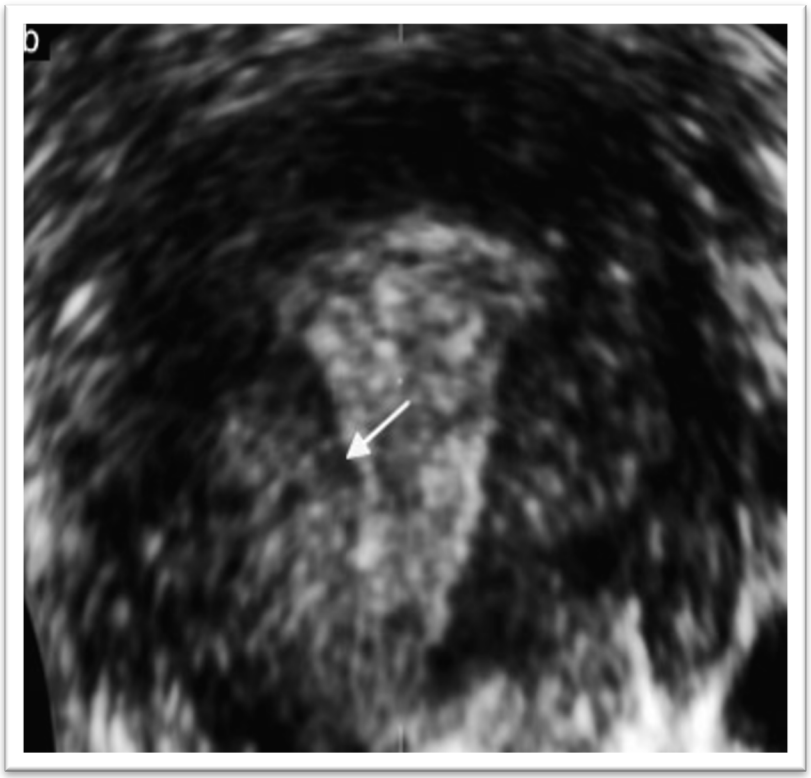
Dueholm and Lundorf Curr Opin Obstet Gynecol 2007

ADENOMYOSIS DIAGNOSIS-3D TVUS

Three-dimensional ultrasound imaging in the coronal plane of a uterus with adenomyosis showing measurement of junctional zone (JZ) maximum (Caliper 1) and minimum (Caliper 2) thickness. Note the complete infiltration of the JZ laterally and the distortion of the uterine cavity.

ADENOMYOSIS DIAGNOSIS-3D TVUS





Three-dimensional ultrasound imaging of uteri with adenomyosis in the coronal plane showing protrusions of the endometrium into the junctional zone (JZ). (a) Note the thicker JZ at the lateral wall and the small infiltration at the fundus (arrow) suggestive of early adenomyosis. (b) Note the complete disruption and infiltration of the JZ laterally (arrow).

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Adenomyosis: three-dimensional sonographic findings of the junctional zone and correlation with histology

C. EXACOUSTOS, L. BRIENZA, A. DI GIOVANNI, B. SZABOLCS, M. E. ROMANINI, E. ZUPI and D. ARDUINI

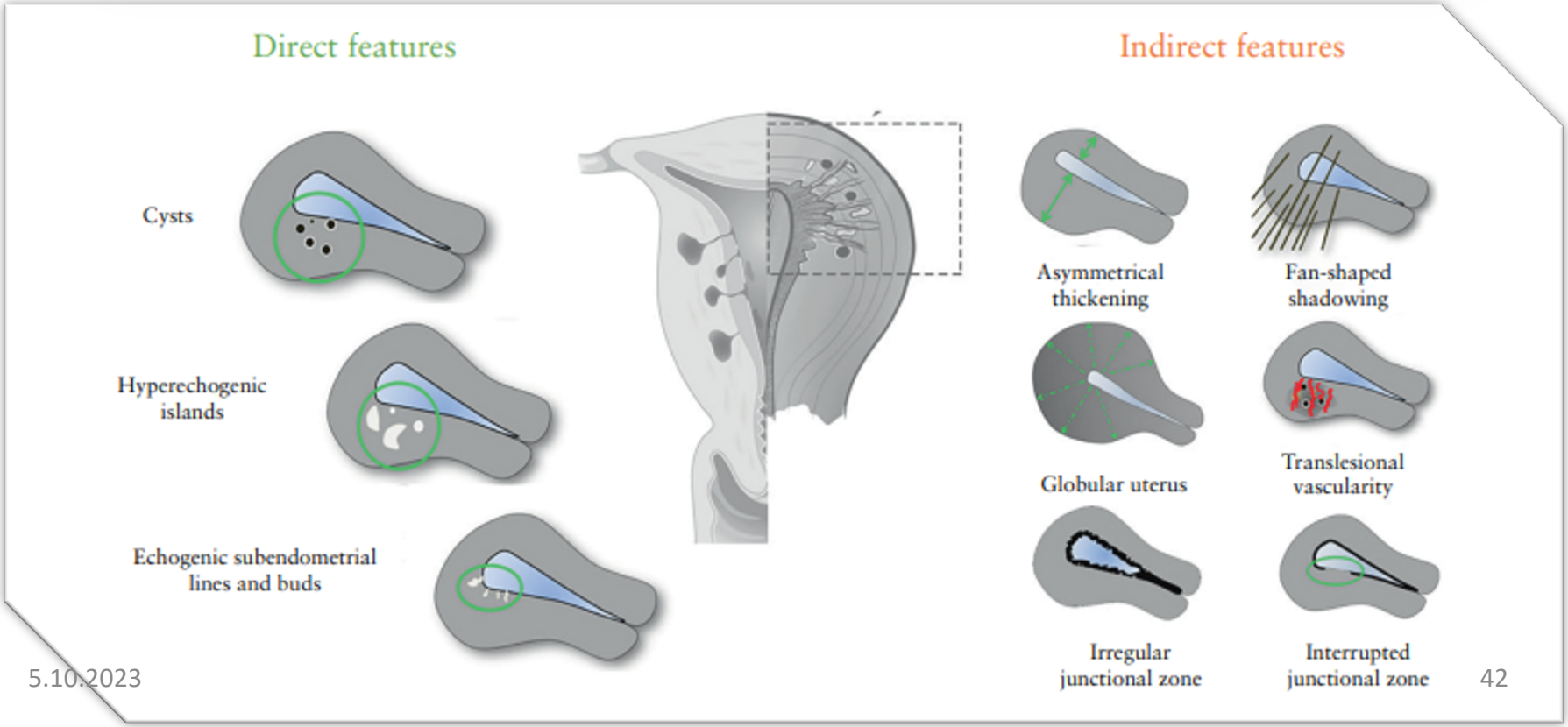
Department of Obstetrics and Gynecology, Università degli Studi di Roma, 'Tor Vergata', Rome, Italy

TVS finding	*Sens. (% (95% CI))*	*Spec. (% (95% CI))*	*PPV (% (95% CI))*	*NPV (% (95% CI))*	*LR+ (95% CI)*	*LR− (95% CI)*	*Accuracy (% (95% CI))*
2D-TVS							
Myometrial cysts	53 (35–70)	98 (85–100)	94 (70–100)	72 (58–83)	21.3 (3.0–151.2)	0.48 (0.33–0.69)	78 (67–86)
Asymmetrical myom.	47 (30–65)	80 (64–90)	65 (43–83)	65 (50–78)	2.3 (1.1–4.8)	0.66 (0.47–0.93)	65 (54–75)
Hypoechoic striations	50 (32–68)	90 (75–97)	80 (56–93)	69 (55–81)	5.0 (1.9–13.5)	0.56 (0.39–0.79)	72 (61–81)
Heterogeneous myom.	88 (70–95)	65 (48–79)	67 (50–80)	87 (68–96)	2.5 (1.6–3.9)	0.19 (0.08–0.49)	75 (64–84)
3D-TVS							
JZmax ≥ 8 mm	84 (67–94)	75 (58–87)	73 (56–86)	86 (69–95)	3.4 (1.9–5.9)	0.21 (0.09–0.47)	79 (68–87)
JZmax − JZmin ≥ 4 mm	88 (70–96)	83 (67–92)	80 (63–91)	89 (74–97)	5.0 (2.5–9.9)	0.15 (0.06–0.38)	85 (75–91)
JZ ratio ≥ 50%	78 (60–90)	65 (48–79)	64 (47–78)	79 (61–90)	2.2 (1.4–3.5)	0.34 (0.17–0.66)	71 (60–80)
JZ alteration	88 (70–96)	78 (61–89)	76 (58–88)	89 (72–96)	3.9 (2.2–7.0)	0.16 (0.06–0.41)	82 (72–89)
Myometrial cysts	63 (44–78)	95 (82–99)	91 (69–98)	76 (62–87)	12.5 (3.1–49.6)	0.40 (0.25–0.62)	81 (70–88)
Asymmetrical myom.	59 (4–76)	73 (56–85)	63 (44–80)	69 (53–82)	2.2 (1.2–3.9)	0.56 (0.36–0.87)	67 (55–76)
Heterogeneous myom.	91 (74–98)	53 (36–68)	60 (45–74)	88 (67–97)	1.9 (1.4–2.7)	0.18 (0.06–0.55)	69 (58–79)
Overall*							
2D-TVS	75 (56–88)	90 (75–97)	86 (66–95)	82 (66–91)	7.5 (2.9–19.4)	0.28 (0.15–0.51)	83 (73–90)
3D-TVS	91 (74–97)	88 (72–95)	85 (68–94)	92 (78–98)	7.3 (3.2–16.6)	0.11 (0.03–0.31)	89 (80–94)

Ultrasound Obstet Gynecol 2022; 60: 118–131
Published online in Wiley Online Library (wileyonlinelibrary.com). **DOI:** 10.1002/uog.24786.

Consensus on revised definitions of Morphological Uterus Sonographic Assessment (MUSA) features of adenomyosis: results of modified Delphi procedure

M. J. HARMSEN[1,2], T. VAN DEN BOSCH[3,4], R. A. DE LEEUW[1], M. DUEHOLM[5], C. EXACOUSTOS[6], L. VALENTIN[7,8], W. J. K. HEHENKAMP[1,2], F. GROENMAN[1,2], C. DE BRUYN[9,10], C. RASMUSSEN[5], L. LAZZERI[11], L. JOKUBKIENE[7], D. JURKOVIC[12], J. NAFTALIN[12], T. TELLUM[13], T. BOURNE[3,14], D. TIMMERMAN[3,4] and J. A. F. HUIRNE[1,2]



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Ultrasound features that are typical of adenomyosis are direct features, while ultrasound features that are a consequence of ectopic endometrium in the myometrium are indirect features.

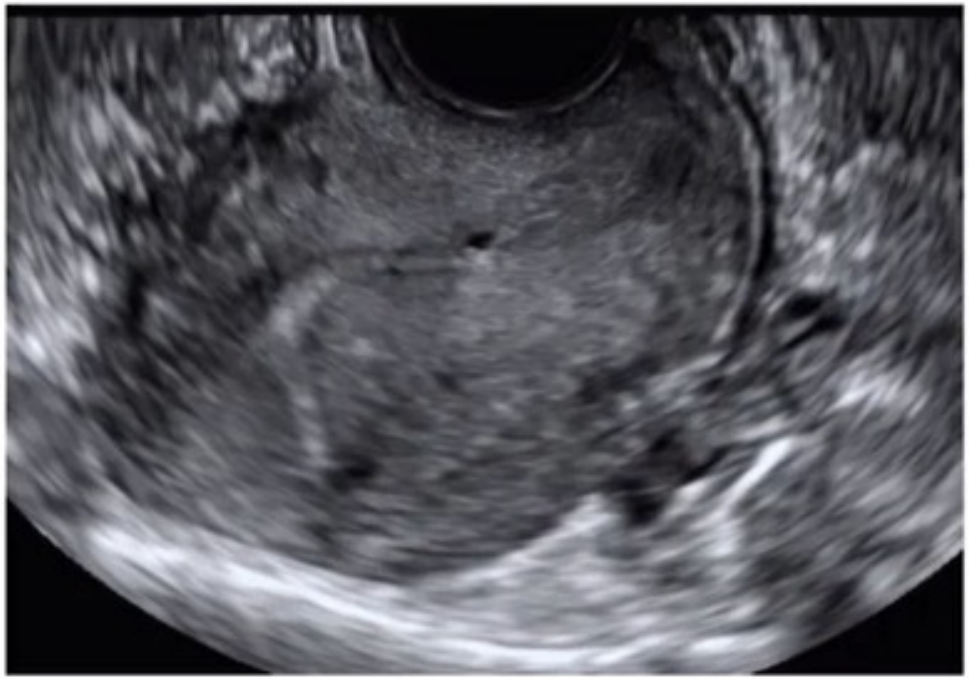
In the absence of intramyometrial abnormalities (myometrial cysts, hyperechogenic islands or subendometrial lines or buds), indirect features are not conclusive for the presence of adenomyosis.

A regular, uninterrupted JZ is an indicator of absence of adenomyosis.

SONOGRAPHIC SIGN ASSOCIATED TO THE PRESENCE OF ADENOMYOSIS

Ultrasound Obstet Gynecol. 2015

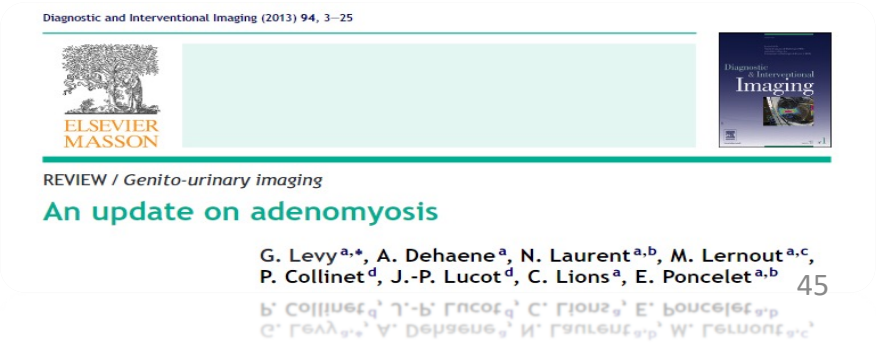
Nadine Di Donato, Valentina Bertoldo, Giulia Montanari, Letizia Zannoni, Giacomo Caprara, Renato Seracchioli



The " question mark sign " was considered positive when
the corpus uteri was flexed backwards,
the endometrium of the uterine fundus was deviated
versus the pelvis posterior compartment
and the cervix was directed frontally towards the urinary bladder

Differential Diagnosis

USG: MYOMA - ADENOMYOSIS	
Myoma	**Adenomyosis**
Clear Borders	Unclear Borders
Round	Various Shapes
Mass Effect	No Mass Effect
Calcifications	No Calcification
Shadowing on Borders	Multiple foci
Peripheral Vascularization	Vascularization in the Hypertrophic Myometrium

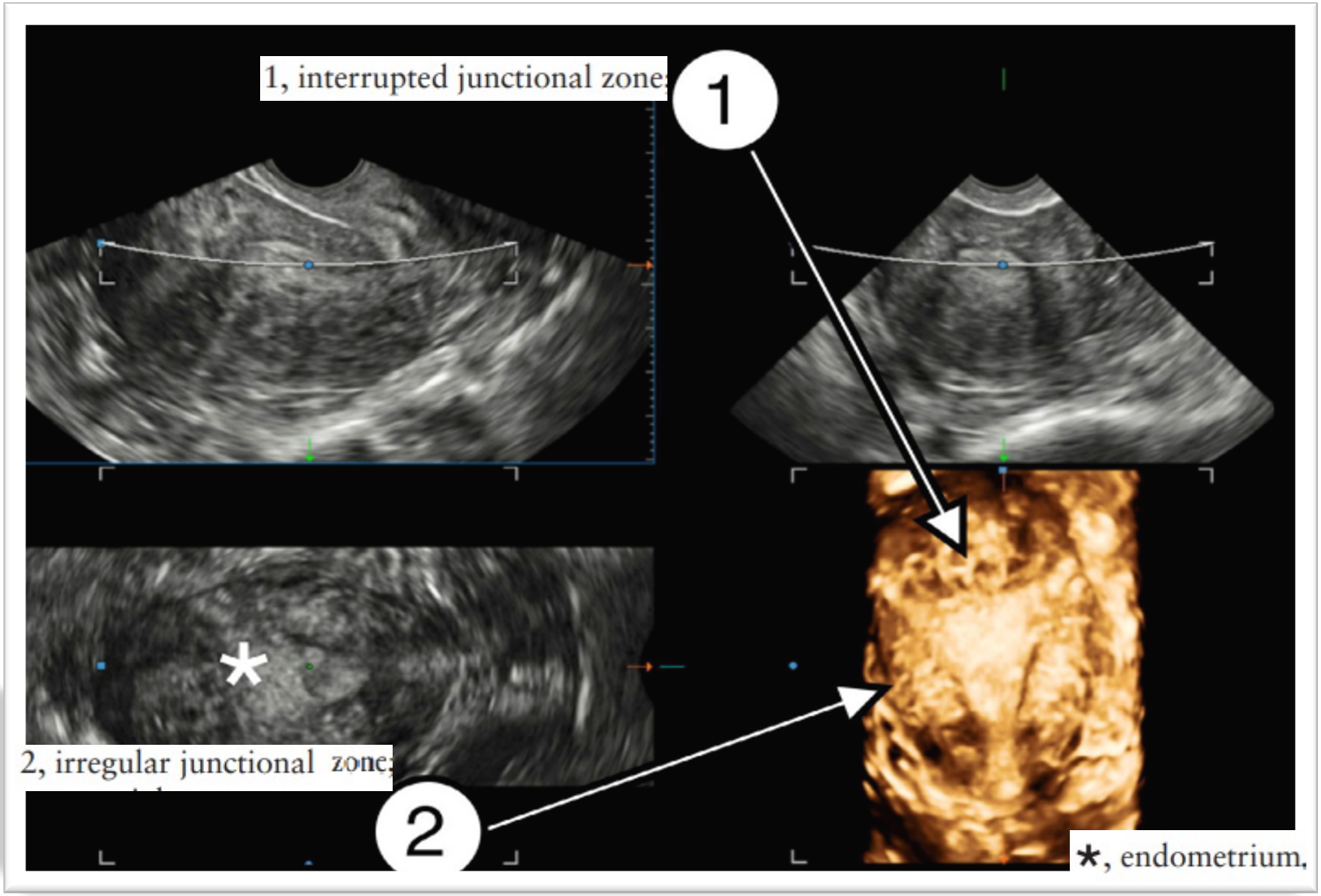


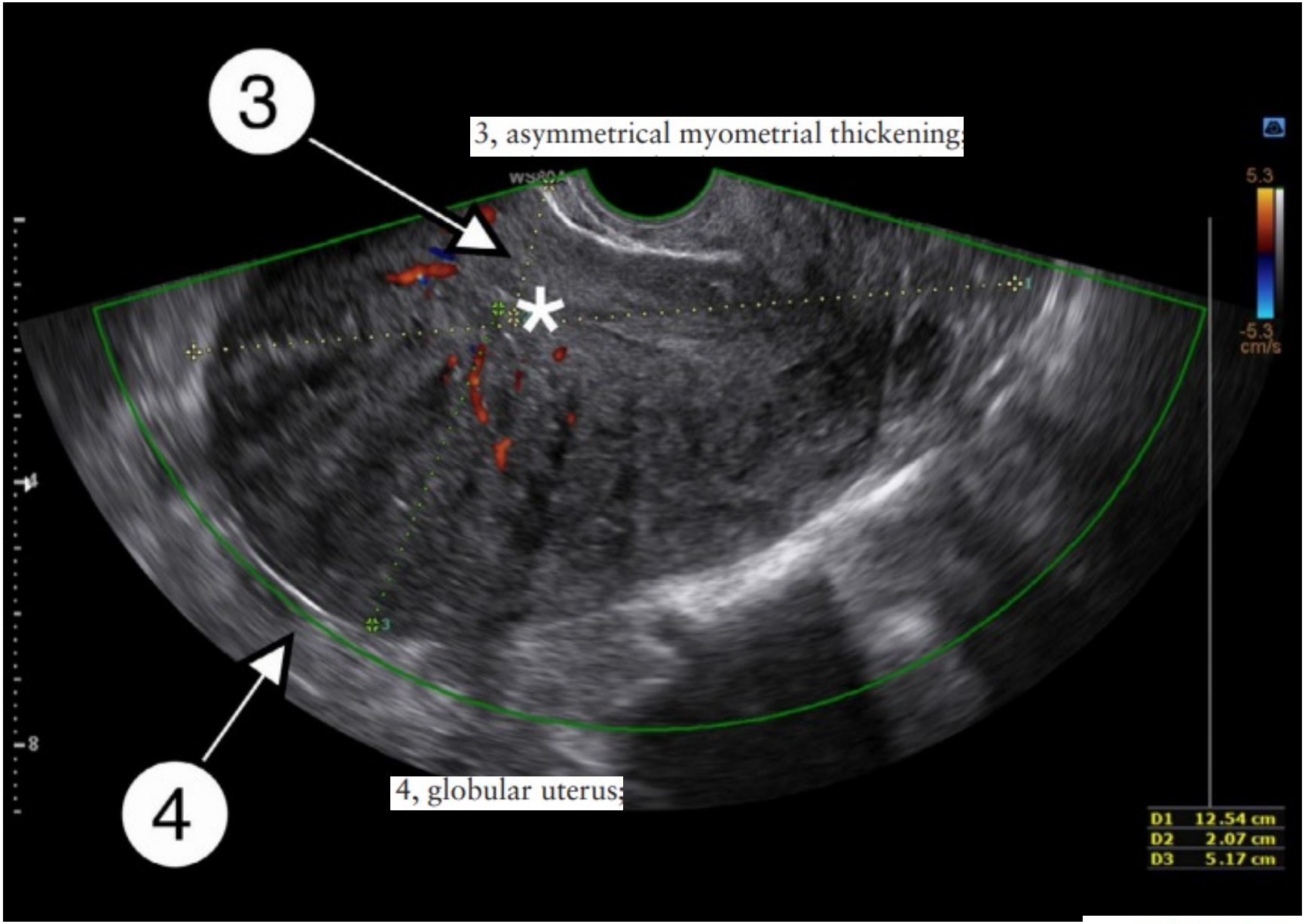
Differential Diagnosis

Fig. 3

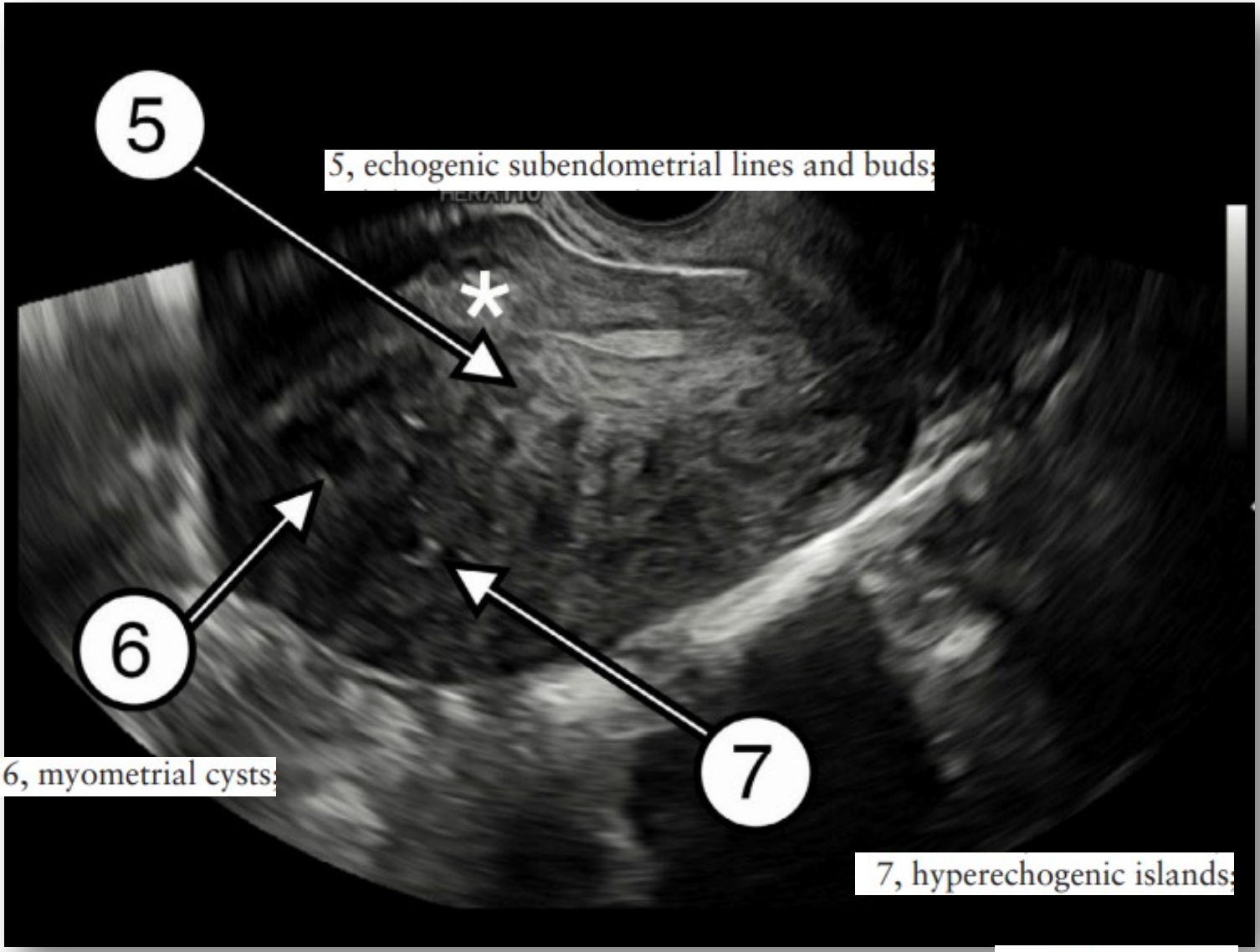
Calcifications demonstrated within intramural myomas.

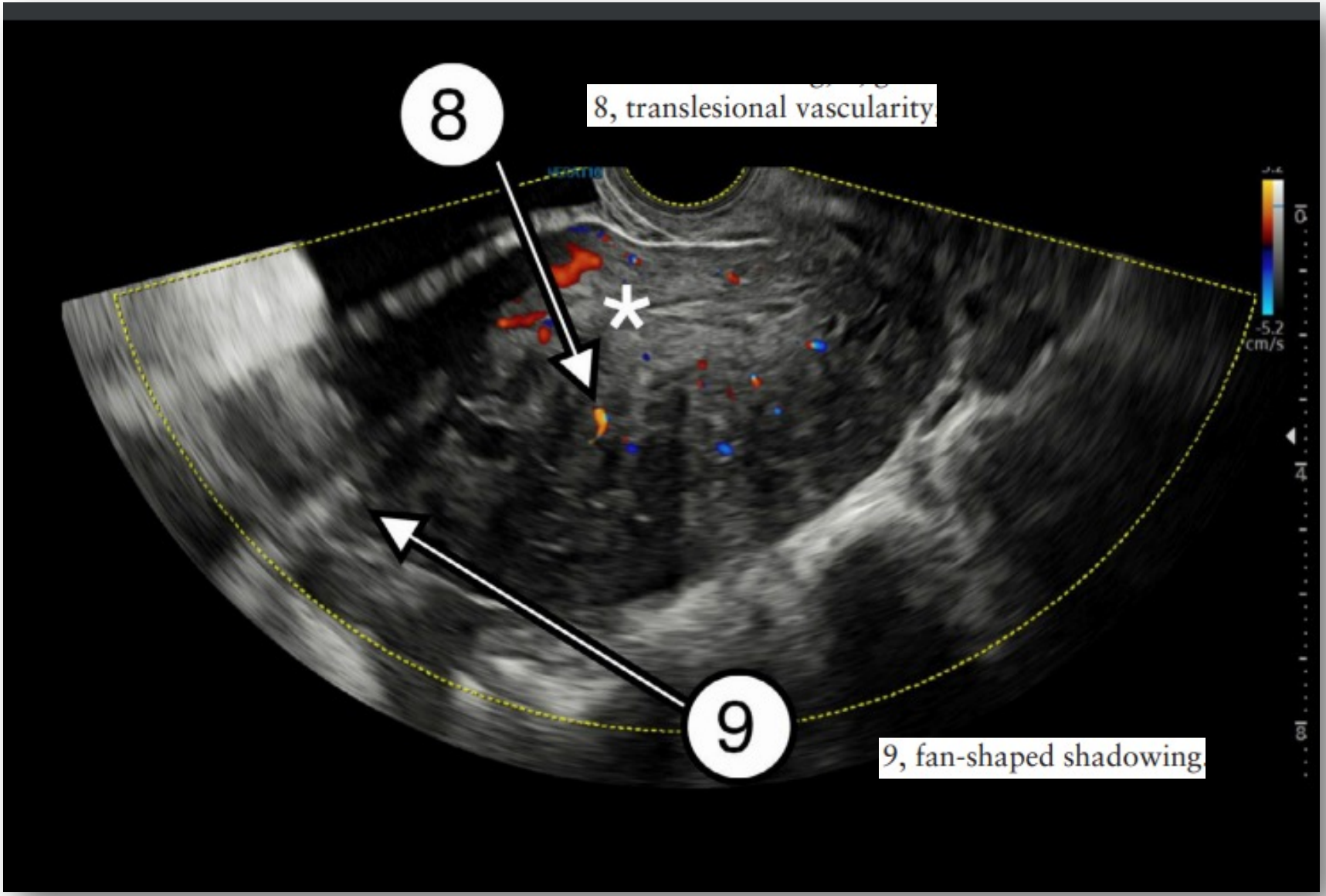
QUIZ


1, interrupted junctional zone;
1
2, irregular junctional zone;
2
*, endometrium.

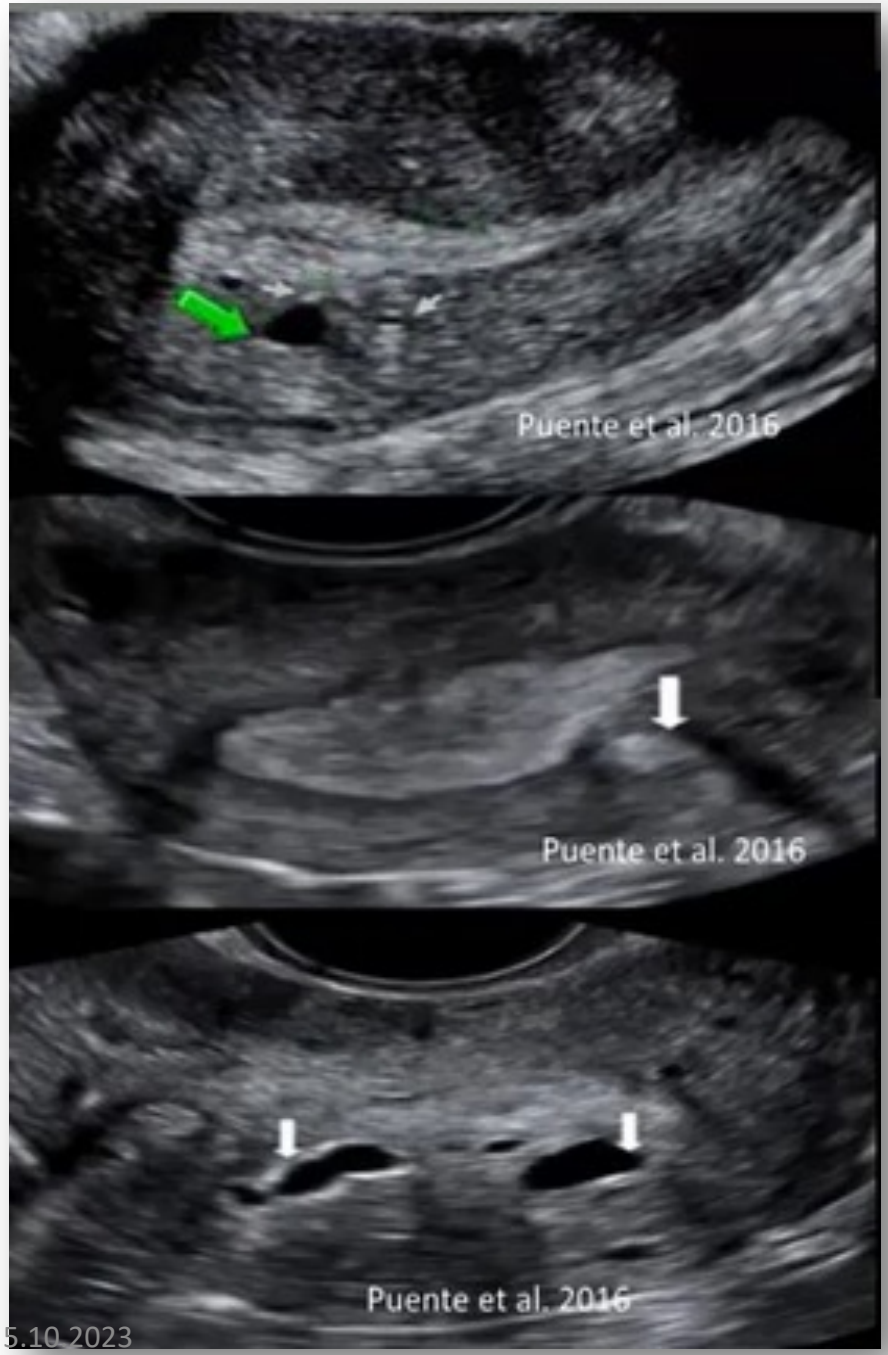


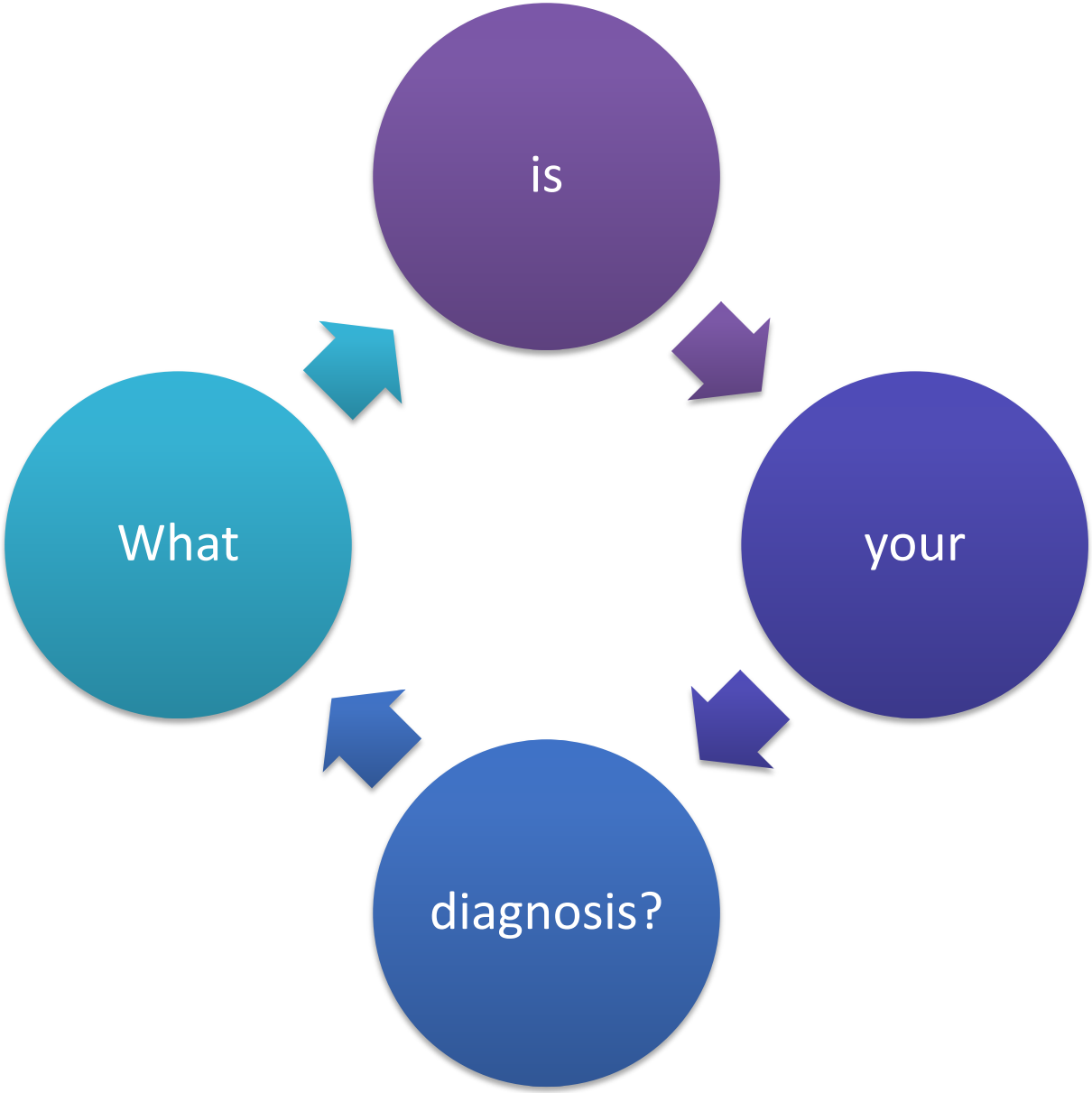
*, endometrium.


5
5, echogenic subendometrial lines and buds;
*
6
6, myometrial cysts;
7
7, hyperechogenic islands;
*, endometrium.



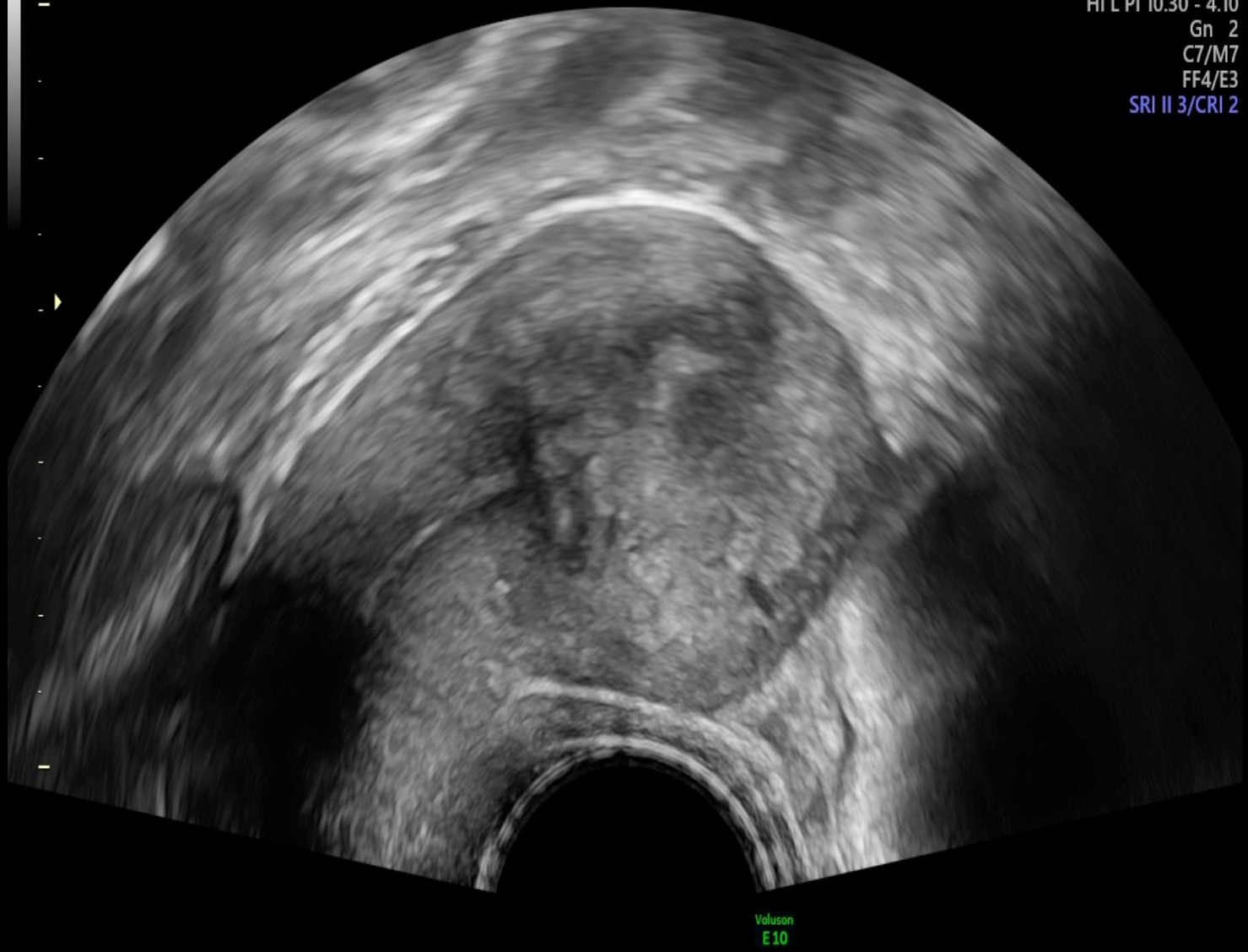
*, endometrium.


Puente et al. 2016
Puente et al. 2016
Puente et al. 2016


is
your
diagnosis?
What

Case 1

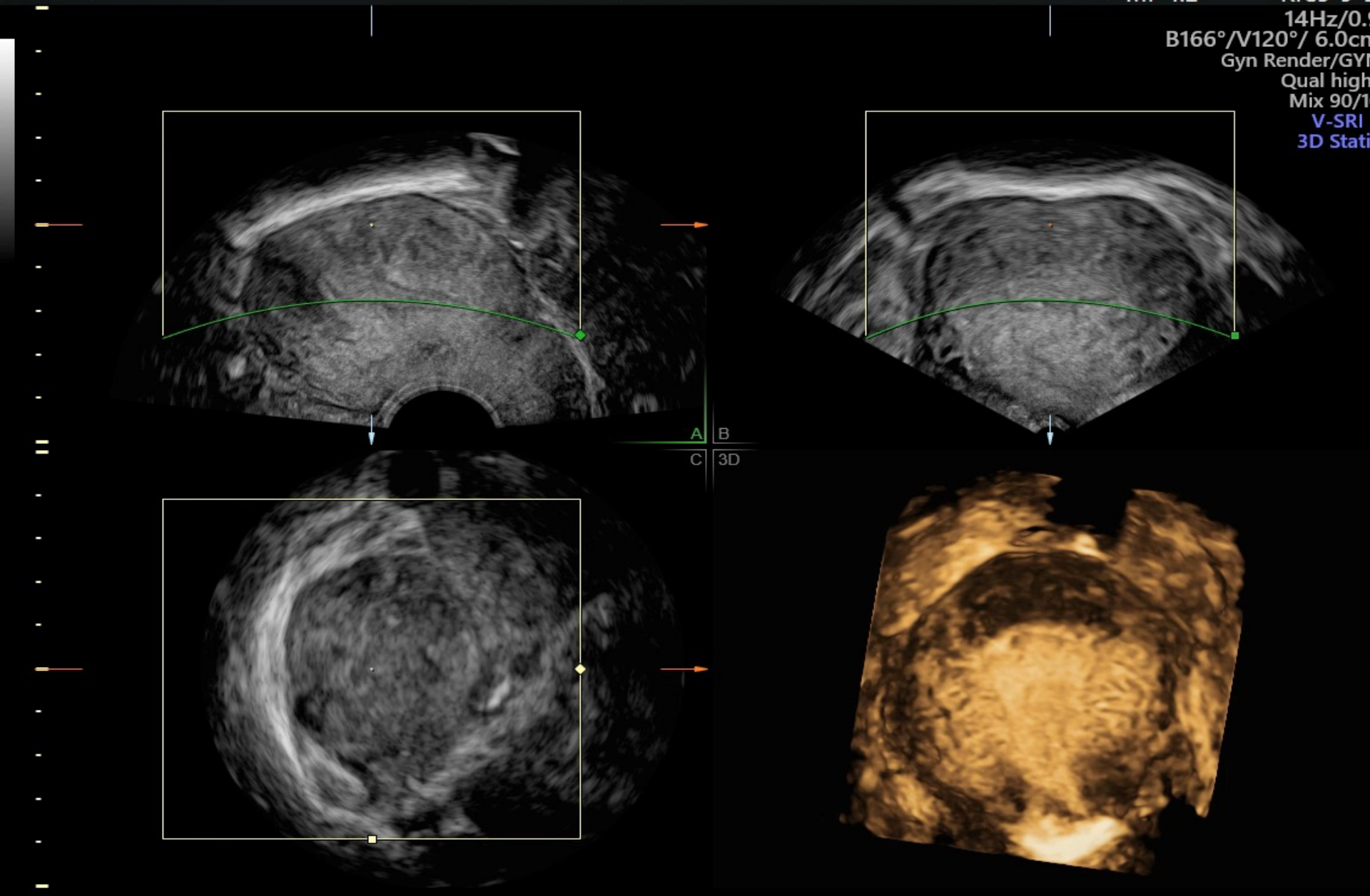
- 47 years old with deep endometriosis
- Oral E/P therapy since 2014
- Currenty complains disparunia
- 2 previous cesarean sections


HI L PI 10.30 - 4.10
Gn 2
C7/M7
FF4/E3
SRI II 3/CRI 2
Voluson
E 10

CASE 2

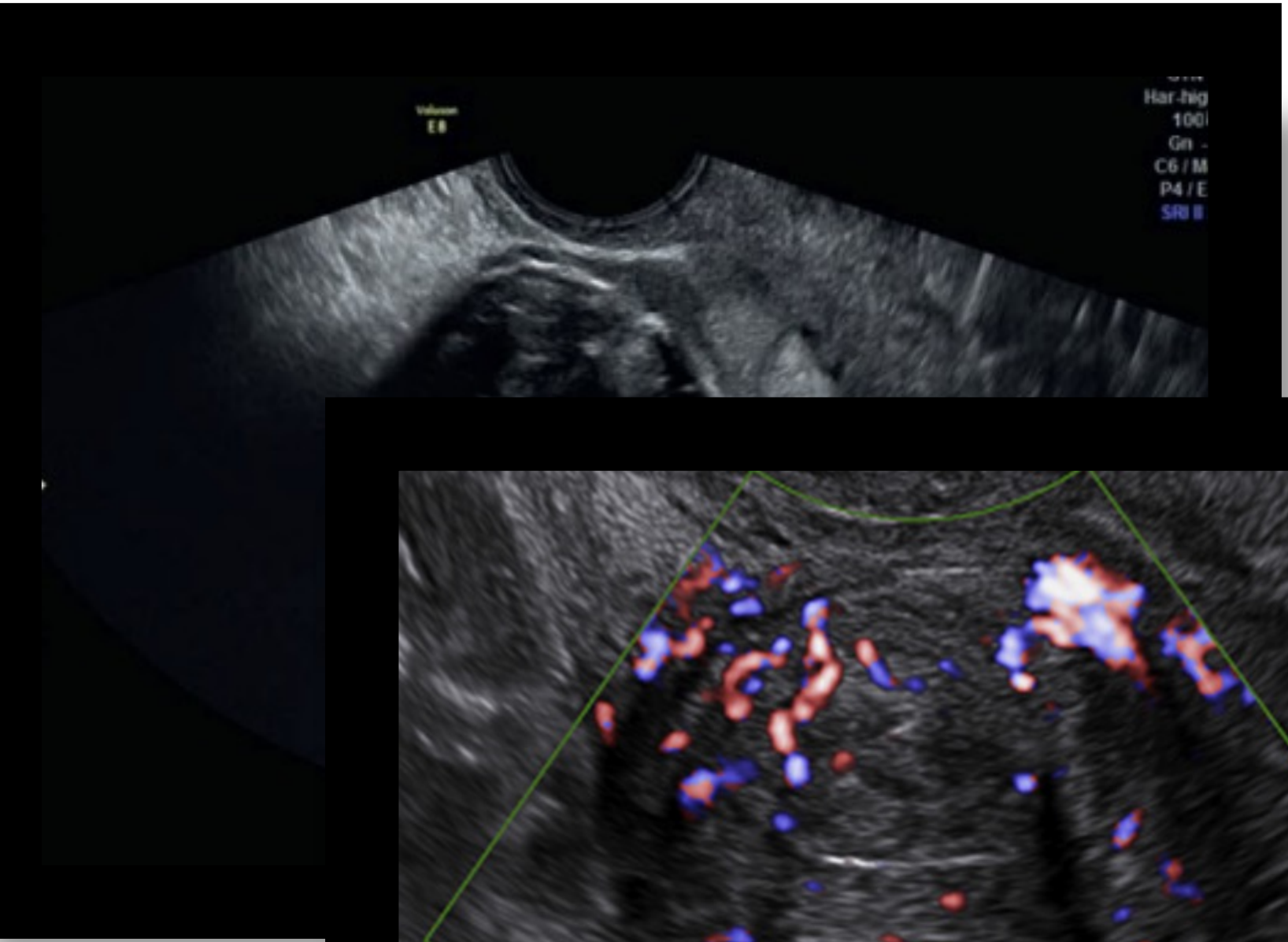
- 43 years old patient presenting menometrorrhagia
- 1 previous cesarean section and 1 termination (due to cardiac and extracardiac multiple fetal anomalies)


MI 1.1
RIC5-9-D
22Hz/ 6.0cm
165°/1.3
Ovary/GYN
HI M PI 10.90 - 3.50
Gn 7
C7/M16
FF5/E2
SRI II 3/CRI 3
Voluson
E10


14Hz/0.
B166°/V120°/ 6.0cm
Gyn Render/GYN
Qual high
Mix 90/1
V-SRI
3D Stati
A
B
C
3D

CASE 3

- 39 years old patient
- Presents with frequent urination and pelvic pain.



5.10.2023

THANKS FOR YOUR ATTENTION