Complications in Crohn's Disease

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IRCCS Casa Sollievo della Sofferenza

San Giovanni Rotondo, Italy

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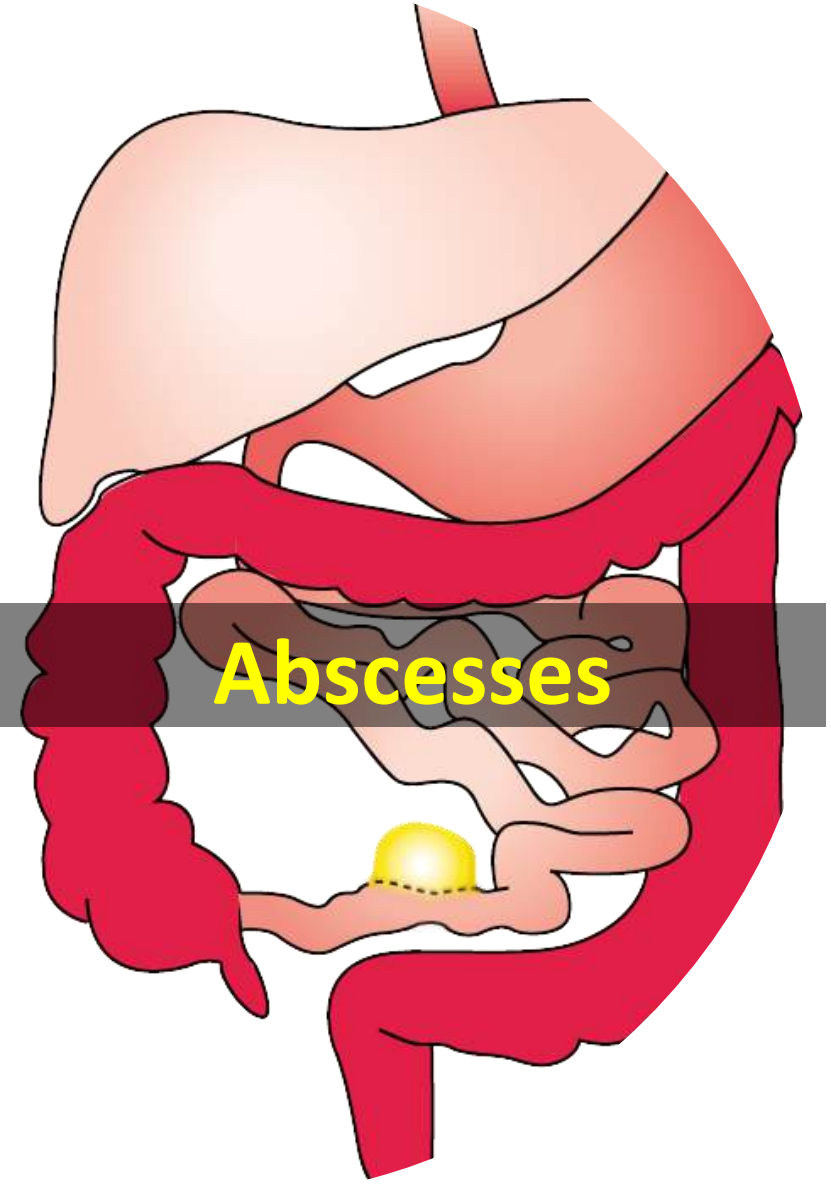
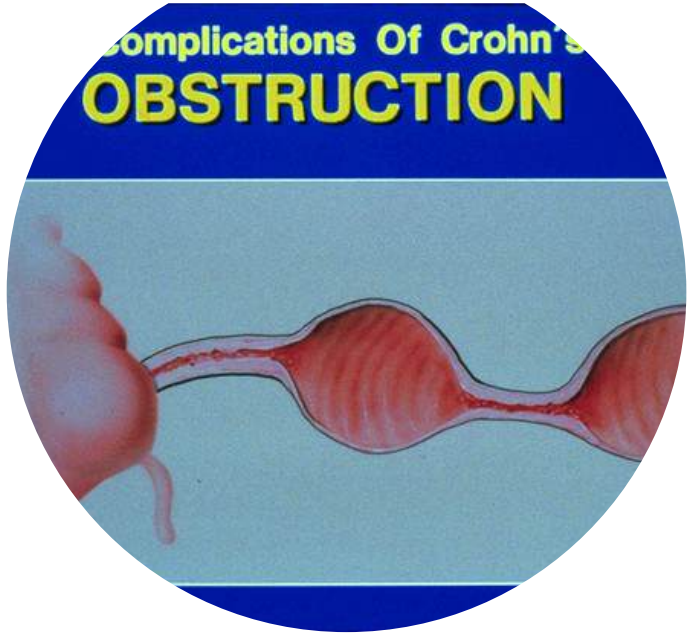
Copenhagen – 3-5 December 2025



Abscesses



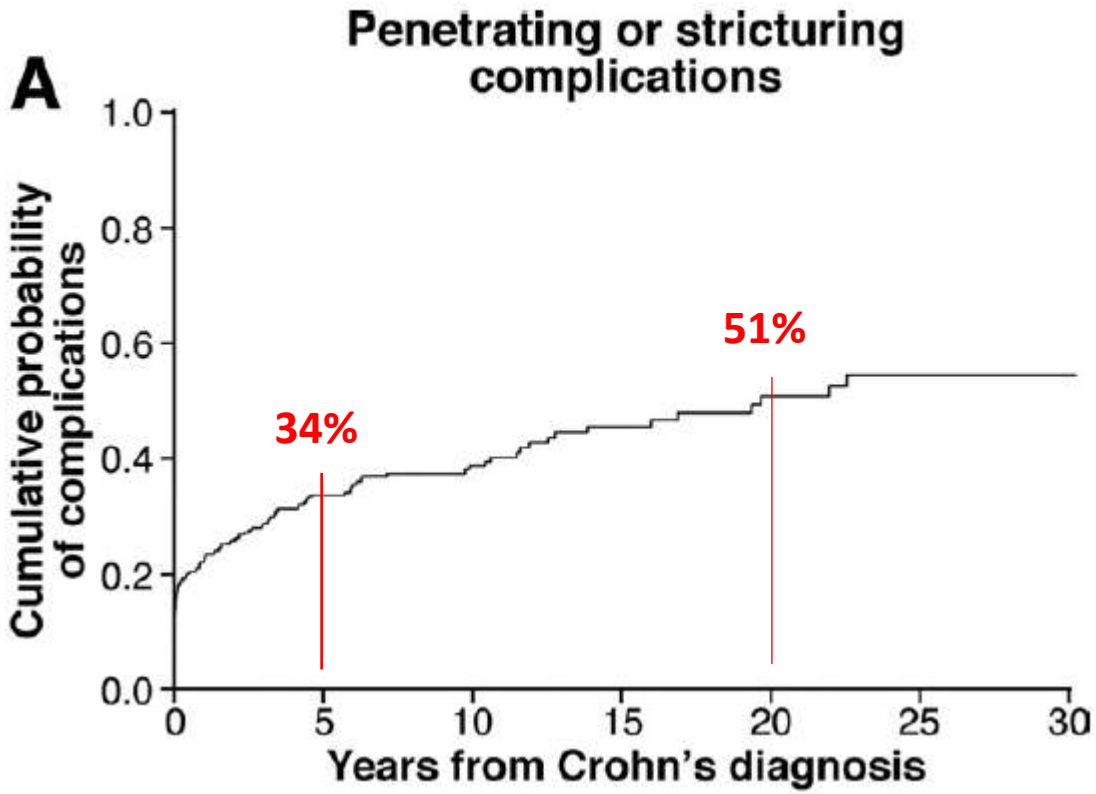
Which complications?

Complications in Crohn's disease

The main abdominal complications of CD are stenoses, fistulae and abscesses. These are the main indications for surgical intervention. Surgery is a frequent treatment in the natural history of CD patients [101, 102].

Crohn's disease is a chronic progressive disease

The natural history of Crohn's disease



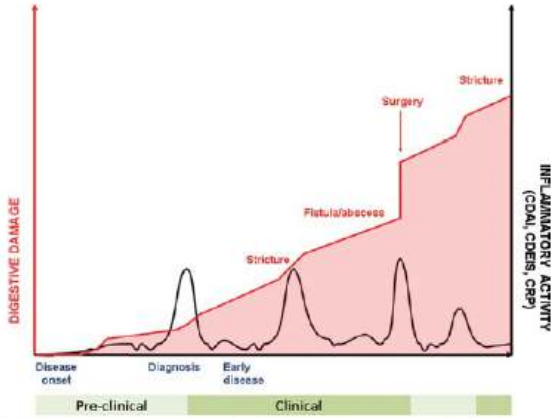


FIGURE 1. Progression of digestive damage and inflammatory activity in a theoretical patient with CD.

Thia KT. Gastroenterology 2010; 139: 1147-1155

Journal of Crohn's and Colitis, 2025, **19(7)**, jjaf106
https://doi.org/10.1093/ecco-jcc/jjaf106
Advance access publication 31 July 2025
ECCO Guideline/Consensus Paper

JCC OXFORD

ECCO-ESGAR-ESP-IBUS Guideline on Diagnostics and Monitoring of Patients with Inflammatory Bowel Disease: Part 1

Part 1: initial diagnosis, monitoring of known inflammatory bowel disease, detection of complications

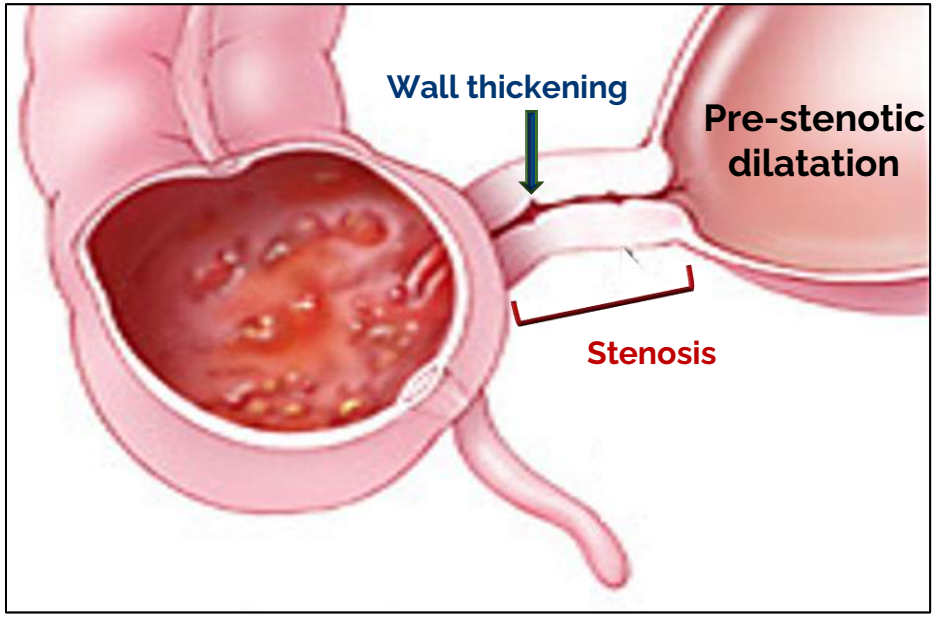
Diagnostic Accuracy of Intestinal Ultrasound in the Detection of Intra-Abdominal Complications in Crohn's Disease: A Systematic Review and Meta-Analysis

Maarten J. Pruijt,[a] Floris A.E. de Voogd,[a] Nahid S.M. Montazeri,[a] Faridi S. van Etten-Jamaludin,[b] Geert R. D'Haens,[a] Krisztina B. Gecse[a]

Maarten Pruijt et al, JCC , Jan 2024

Strictures

- > 50% of patients with CD develop strictures over their lifetime. The terminal ileum is the most common stricture location.
- Strictures are characterized by different degrees of inflammation & fibrosis.
- Identification of these two components can improve the quality of IBD management.



- Zishan Liu et al, UEG J,ournal March 2024
- C. Lu et al, Aliment Pharmacol Ther. April 2024

INTESTINAL ULTRASOUND CAN....

- …recognize the presence of a stenosis?
- … define its seat and extension ?
- … Assess disease activity?
- … differentiate between inflammatory and fibrotic stenosis?
- … evaluate complications (bowel/ileum/acute abdomen obstruction)

INTESTINAL ULTRASOUND CAN....

- …recognize the presence of a stenosis?
- … define its seat a
- … Assess dise
- … differentiate b stenosis?
- … evaluate complications (bowel/ileum/acute abdomen obstruction)

Yes!

B-mode IUS can detect CD complications

- **Strictures**

Statement 3.1.1. ECCO-ESGAR Diagnostics GL [2018]

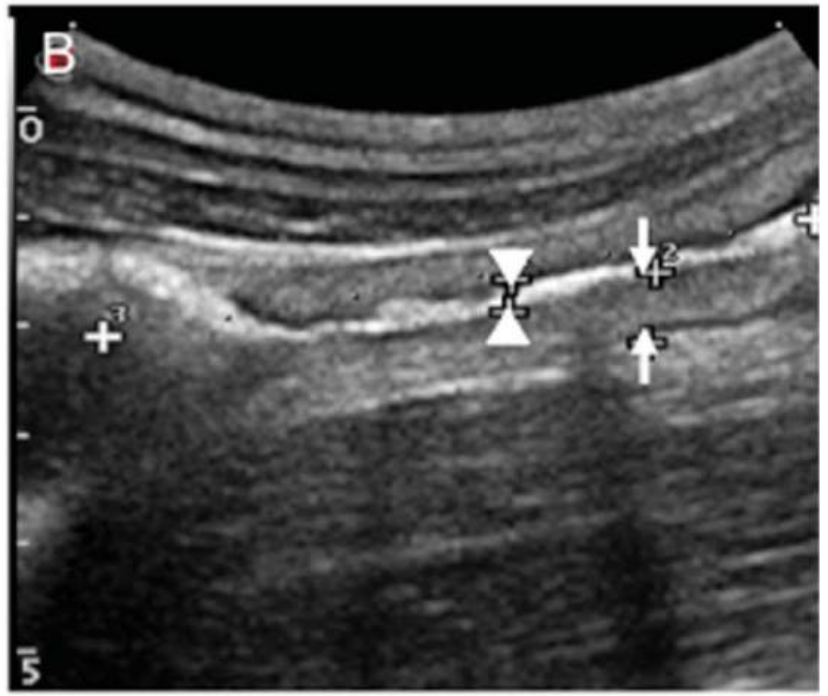
Cross-sectional imaging should be used to detect small bowel strictures [EL2]. Due to radiation exposure with CT, the preferred methods are MRI and/or intestinal ultrasound [IUS]. No imaging technique is currently able to determine the degree of fibrosis [EL3]

Guidelines and Recommendations

EFSUMB Recommendations and Clinical Guidelines for Intestinal Ultrasound (GIUS) in Inflammatory Bowel Diseases

RECOMMENDATIONS

16. Stenoses can be visualized by GIUS as segments of bowel wall thickening with luminal narrowing and pre-stenotic dilatation [EL 2a, GoR A].
Consensus levels of agreement: A+ 16/17; I 1/17



- C. Maaser et al. ECCO-ESGAR guideline, 2019
- Maconi G et al. EFSUMB Recommendations in Med 2018

Practice Guideline > Lancet Gastroenterol Hepatol. 2024 Dec;9(12):1101-1110.
doi: 10.1016/S2468-1253(24)00265-6. Epub 2024 Oct 22.

International expert guidance for defining and monitoring small bowel strictures in Crohn's disease on intestinal ultrasound: a consensus statement

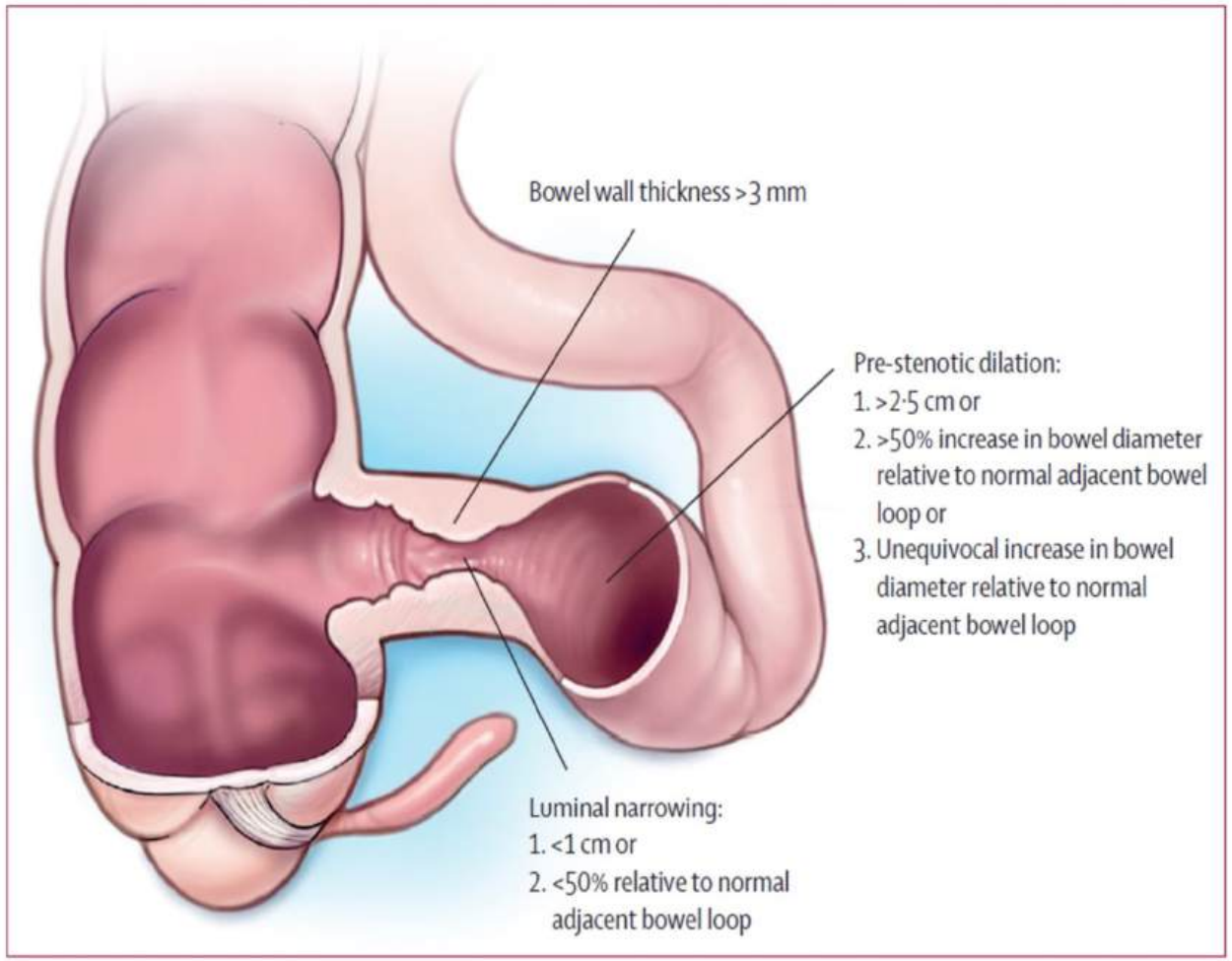


Figure 1: Anastomotic and naive small bowel Crohn's disease strictures on intestinal ultrasound defined by the combination of bowel wall, luminal narrowing, and pre-stenotic dilation

Bowel wall thickness

- BWT < 3 mm: absent
- BWT 3.1-5 mm: mild
- BWT 5,1-8 mm: moderate
- BWT > 8 mm: severe

LUMINAL NARROWING measured at narrowing area

- present if >50% relative to a normal adjacent bowel loop or
- < 1 cm luminal diameter

PRE STENOTIC DILATATION

- increase in luminl diameter relative to a normal adjacent bowel loop with BWT < 3 mm

or

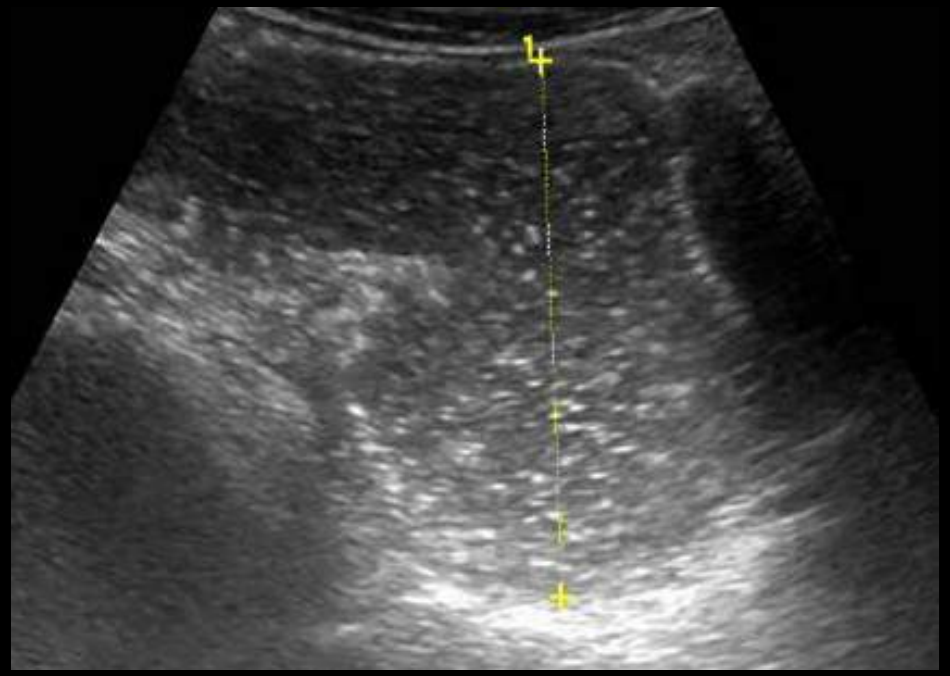
- >50% increase in bowel diameter (maximally dilated area) or
- bowel diameter > 2,5 cm

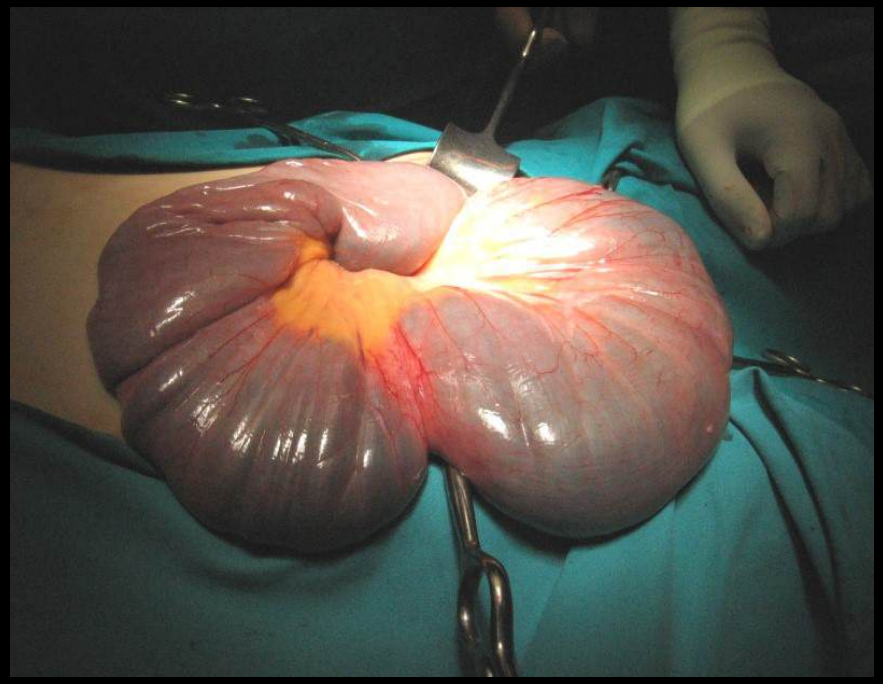
Lu C et al. Lancet Gastroenterol Hepatol 2024.

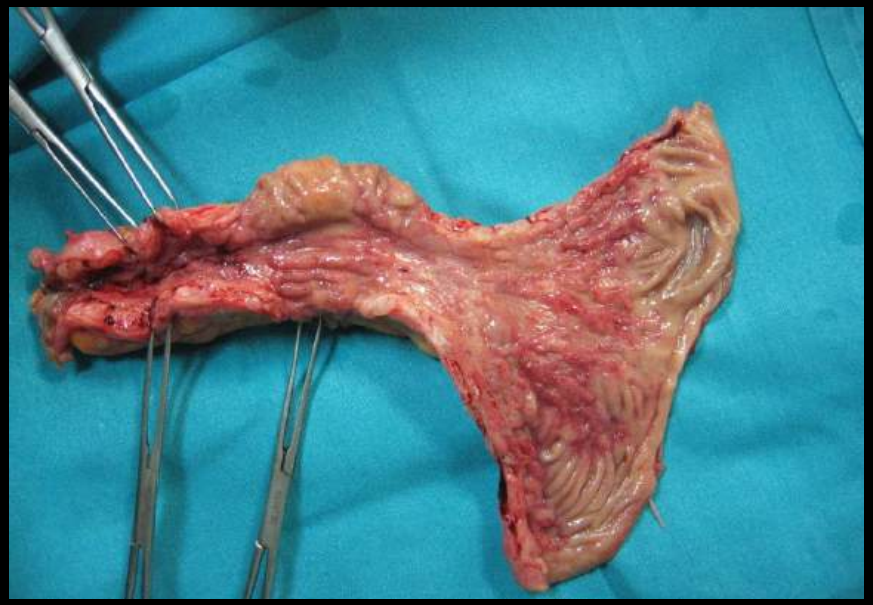

GE
L9
2
4
6

Thickened and stiff bowel walls

Narrowed lumen

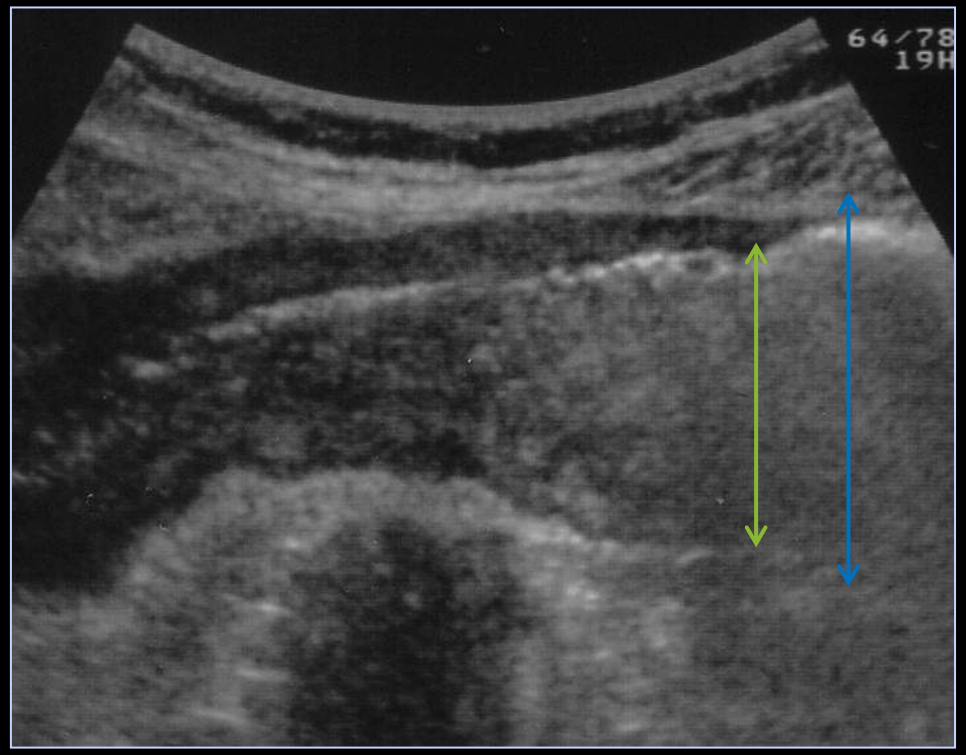


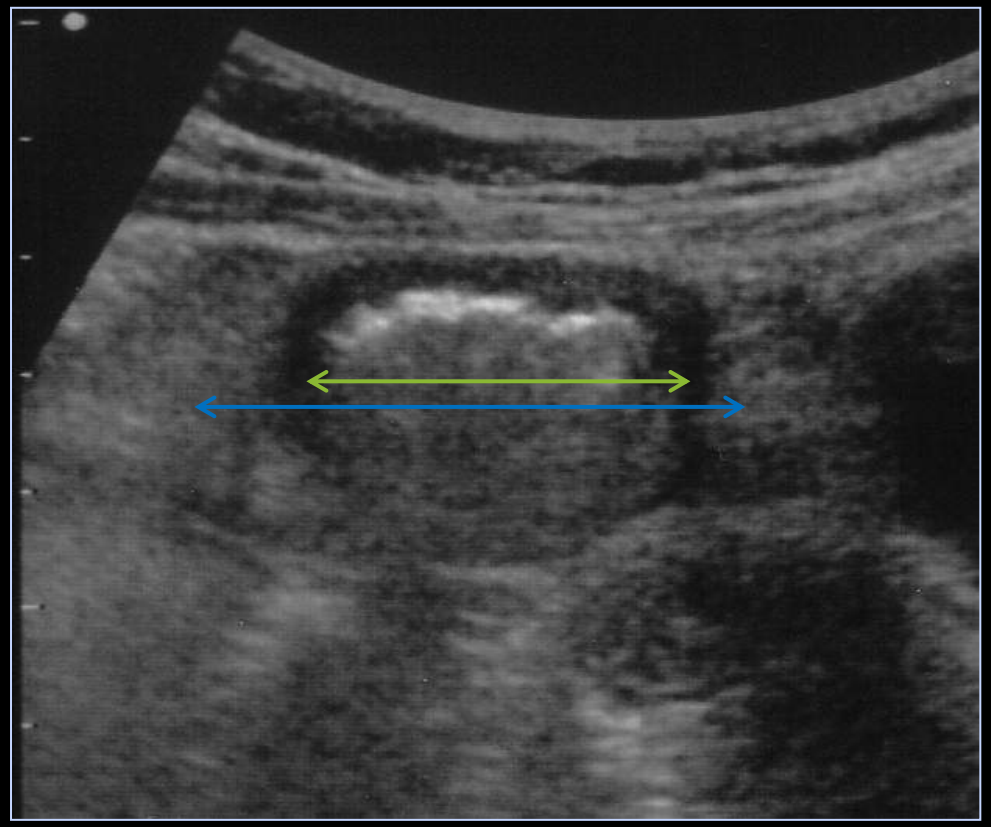




international bowel
ULTRASOUND GROUP

Regarding dilation, which of the following measurements are correct?



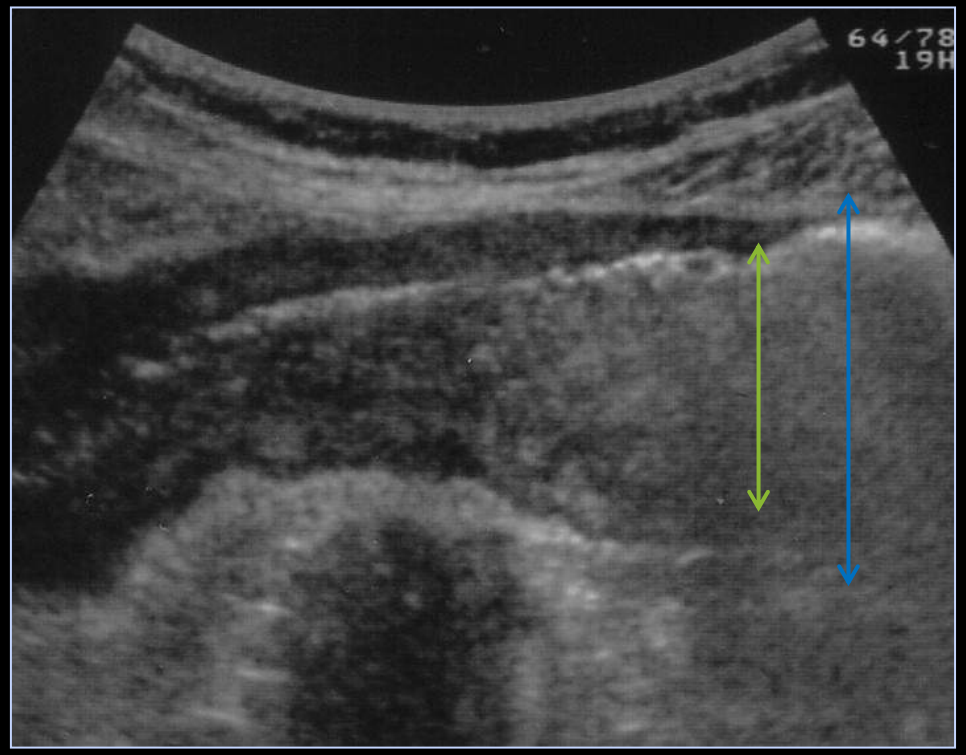


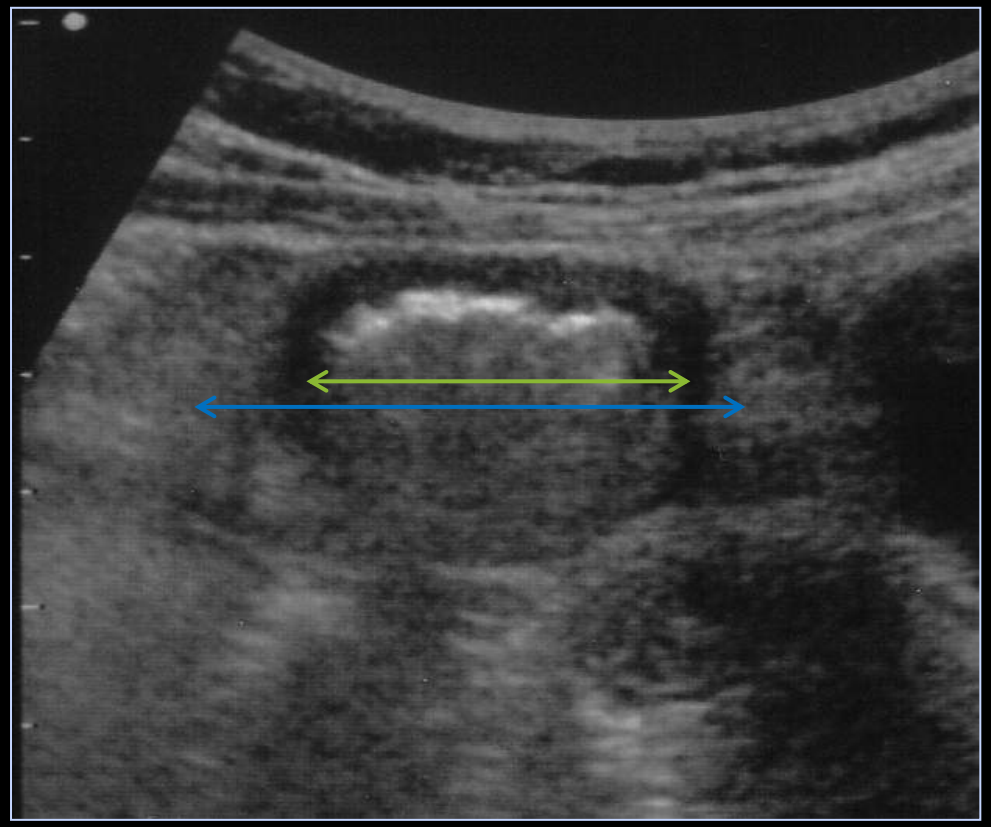
A. The green arrow

B. The blue arrow

international bowel
ULTRASOUND GROUP

Regarding dilation, which of the following measurements are correct?

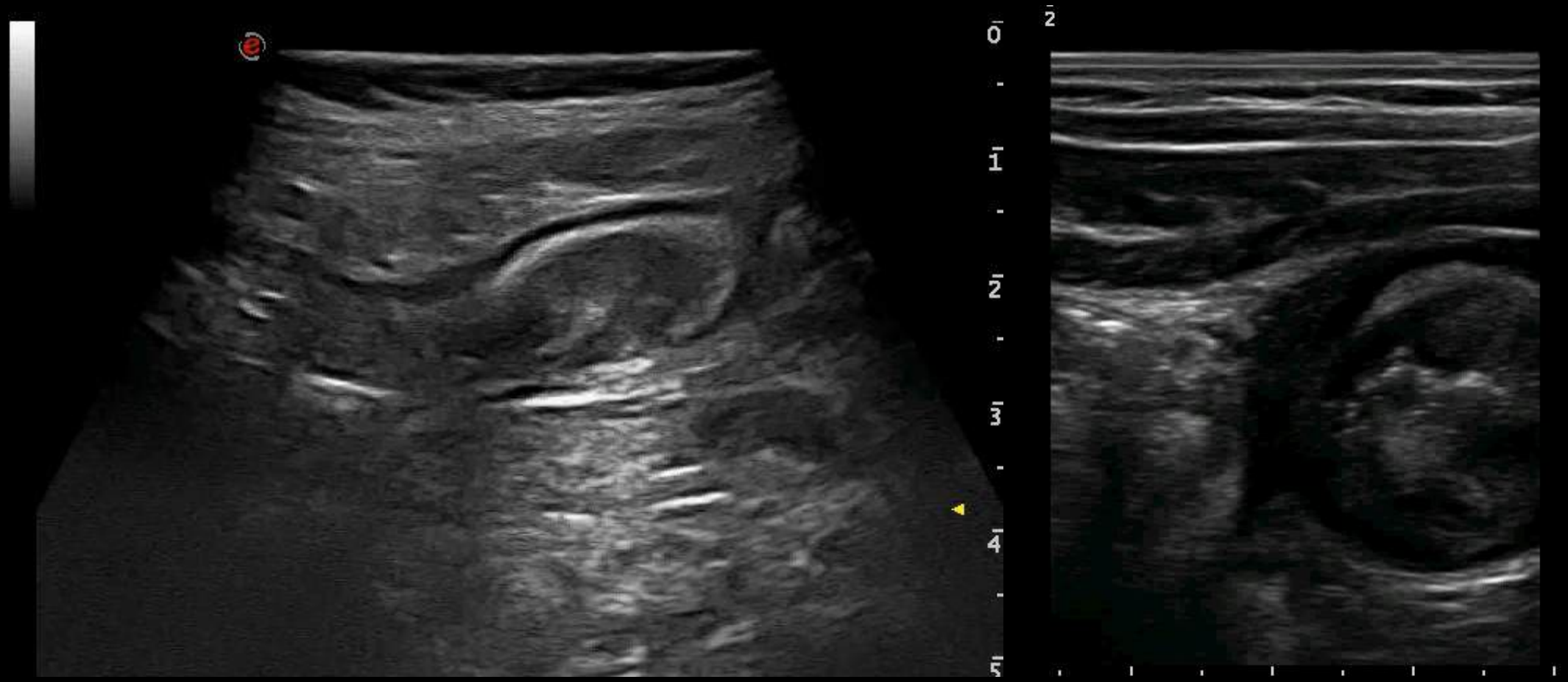




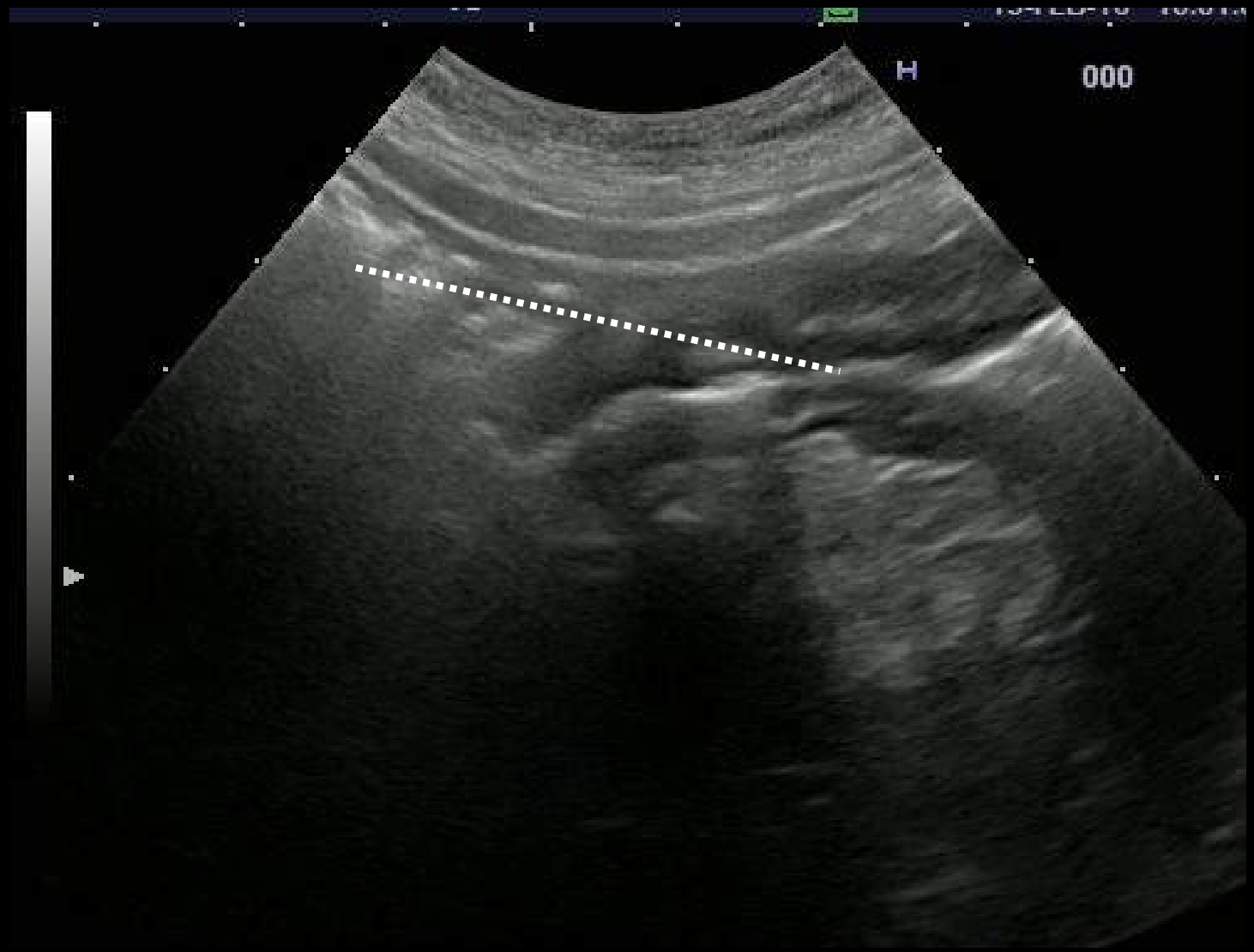
A. The green arrow

B. The blue arrow

Short anastomotic strictures



Short stricture



LONG STRICTURE

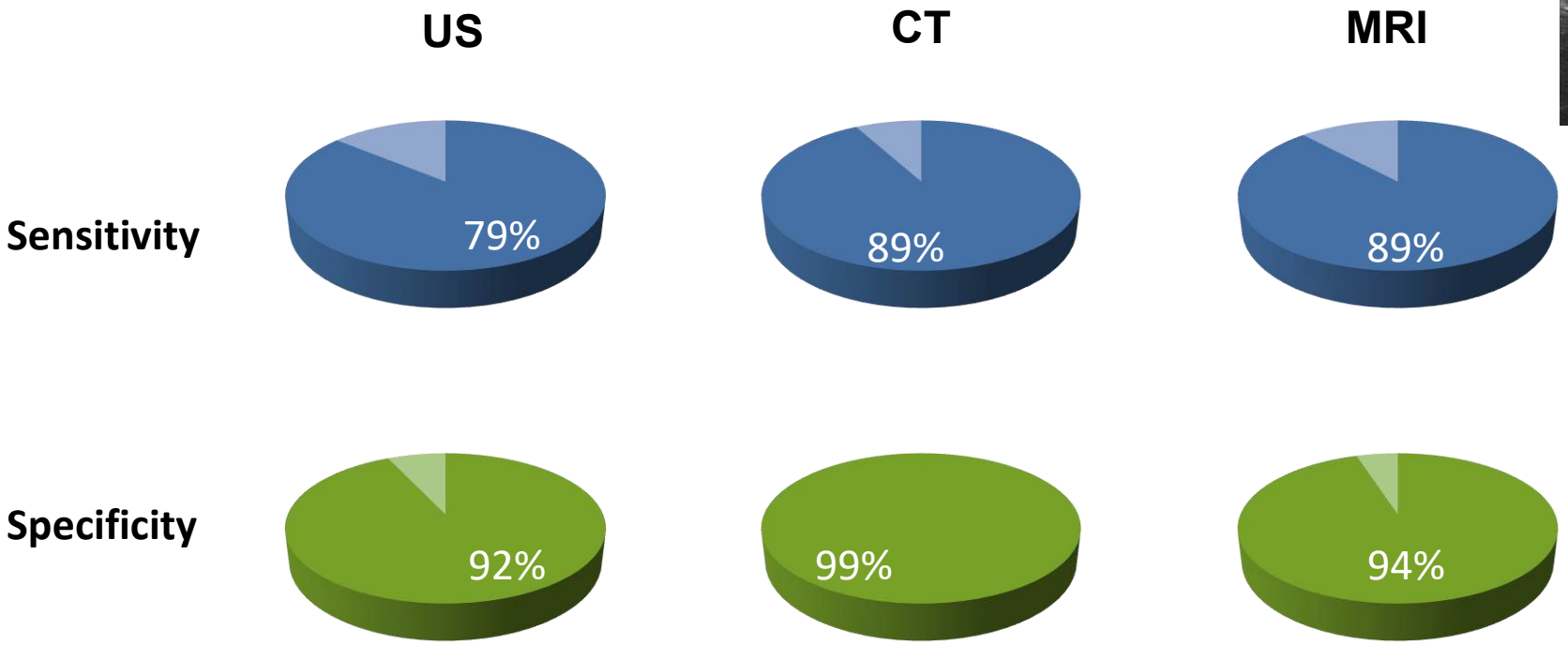
SHORT MULTIPLE STRICTURES WITH OCCLUSION

SANDGLASS

ULTRASOUND VERSUS X-RAY AND SURGERY IN THE DETERMINATION OF CROHN'S DISEASE STENOSIS

Author	n.pts	Comparator	Sensitivity (%)	Specificity (%)
Maconi 1996	98	X-ray **Surgery**	74 **93**	93
Kohn 1999	44	X-ray	82	100
Gasche 199	33	**Surgery**	**100**	91
Parente 2002	211 95	X-ray **Surgery**	79 **90**	98 100
Pallotta 2012	49	**Surgery**	**97.5**	100
Calabrese 2013	59	CT-enteroclysis	95.5	80
Castiglione 2013	234	MRI	100	91

Accuracy of cross-sectional imaging for diagnosis of stenosis



Panés J, et al. *AP&T* 2011, 34:125-45


Canon
Aplio a
Intestino
Precision+
A Pure+
MI
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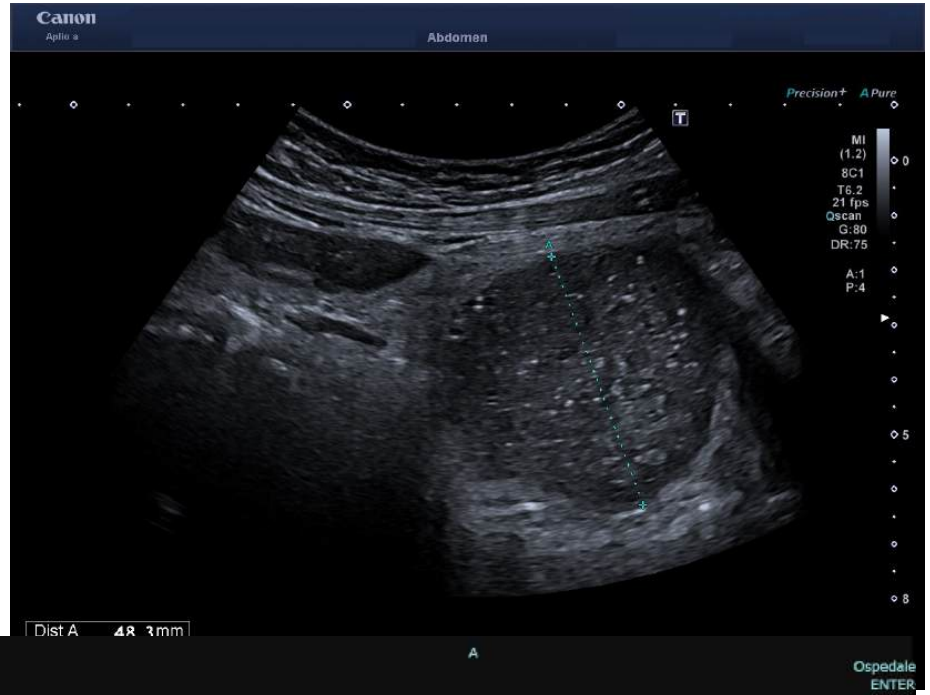
21 fps
Qscan
G:88
DR:80
A:2
P:8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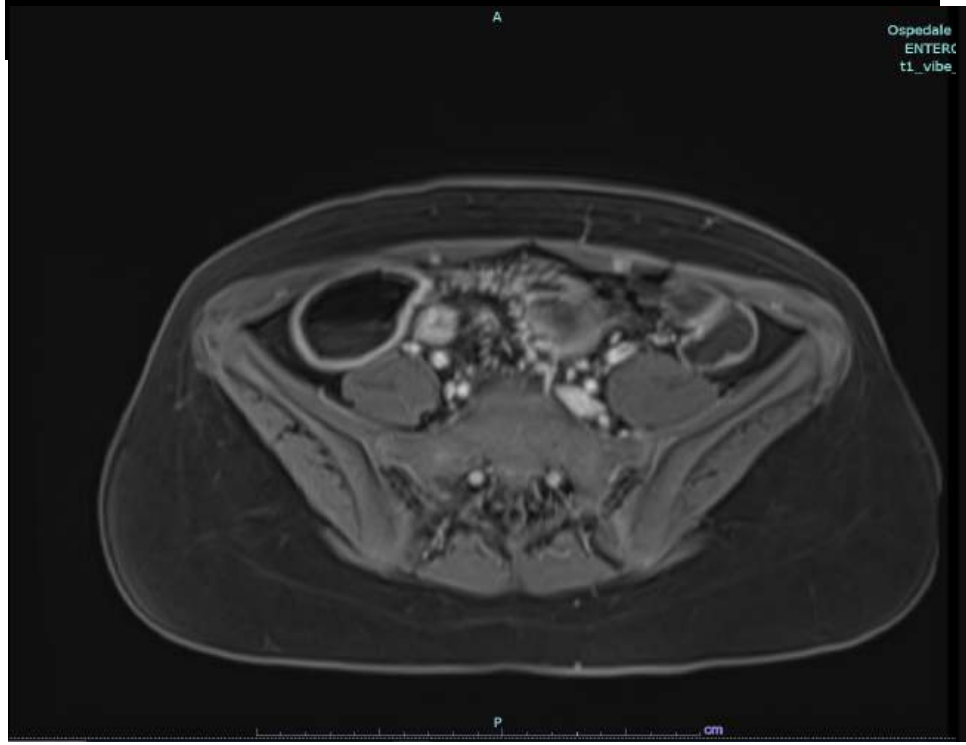
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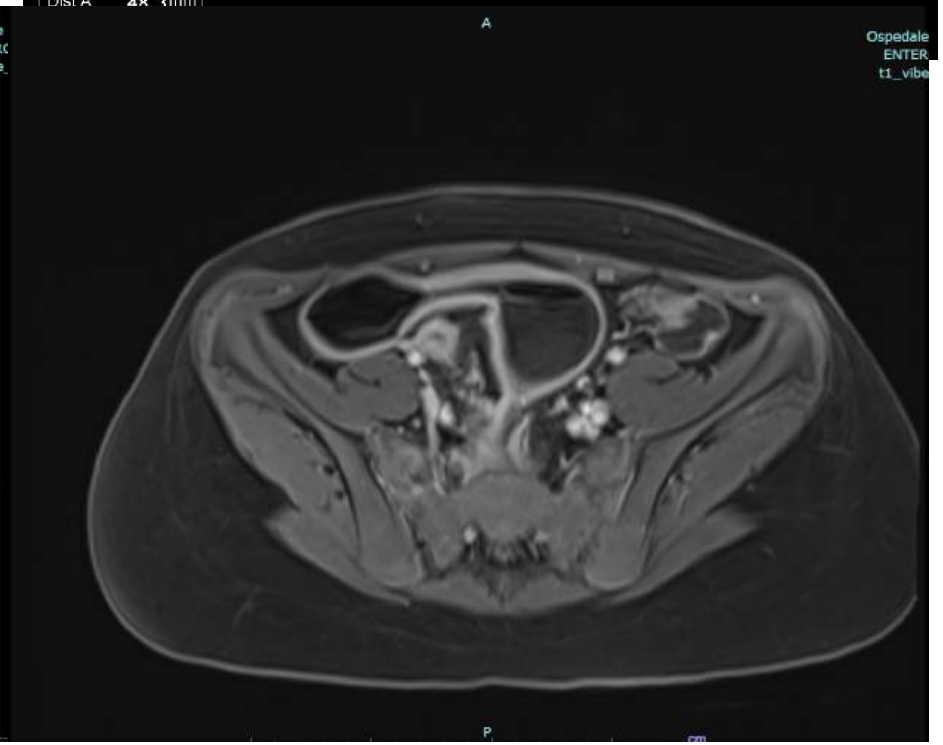
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Diagnostic accuracy of B-mode IUS for strictures

- Systemic review

- 45 of 56 studies reported on the diagnostic accuracy of IUS in small bowel CD based on a gold standard; *(Histopathology, endoscopy and CT/MRI images as reference)*.

- Estimates for stricture diagnosis in IUS using the various 'gold standards:

  - The pooled sensitivity → 68% to 100%.
  - The Pooled specificity → 86% to 100%.

- C. Lu et al, Aliment Pharmacol Ther. April 2024

STENOSES: THE SICUS ROLE

SMALL INTESTINE CONTRAST ULTRASONOGRAPHY

Performing US before & after the administration of an oral contrast agent such as polyethylene glycol (PEG) solution (500–800 mL).

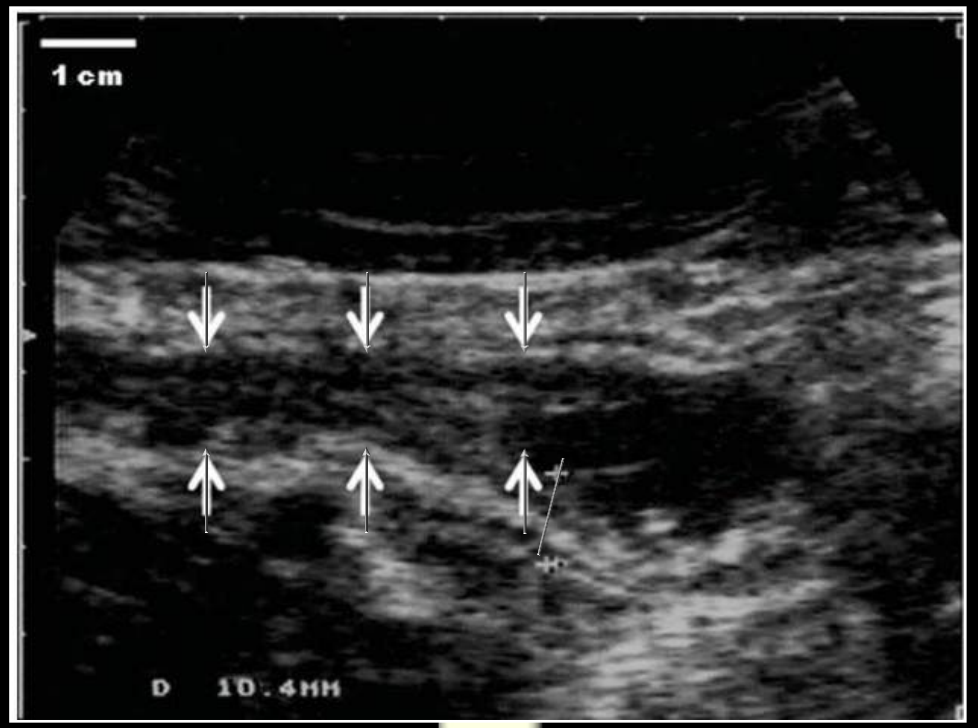
	TP	TN	FP	FN	Sensitivity (95% CI)	Specificity (95% CI)
Conventional bowel US						
At least one small bowel stricture*	20	70	5	7	74.0% (72.1–75.8)	93.3% (90.9–95.6)
Multiple strictures (two or more)	5	86	5	4	55.5% (54.1–56.8)	95.5% (93.1–97.8)
Contrast enhanced US						
At least one small bowel stricture*	24	73	2	3	88.8% (86.5–91.0)	97.3% (94.8–99.7)
Multiple strictures (two or more)	7	89	2	2	77.7% (75.7–79.6)	97.8% (95.3–100)

+ 15%

+ 22%

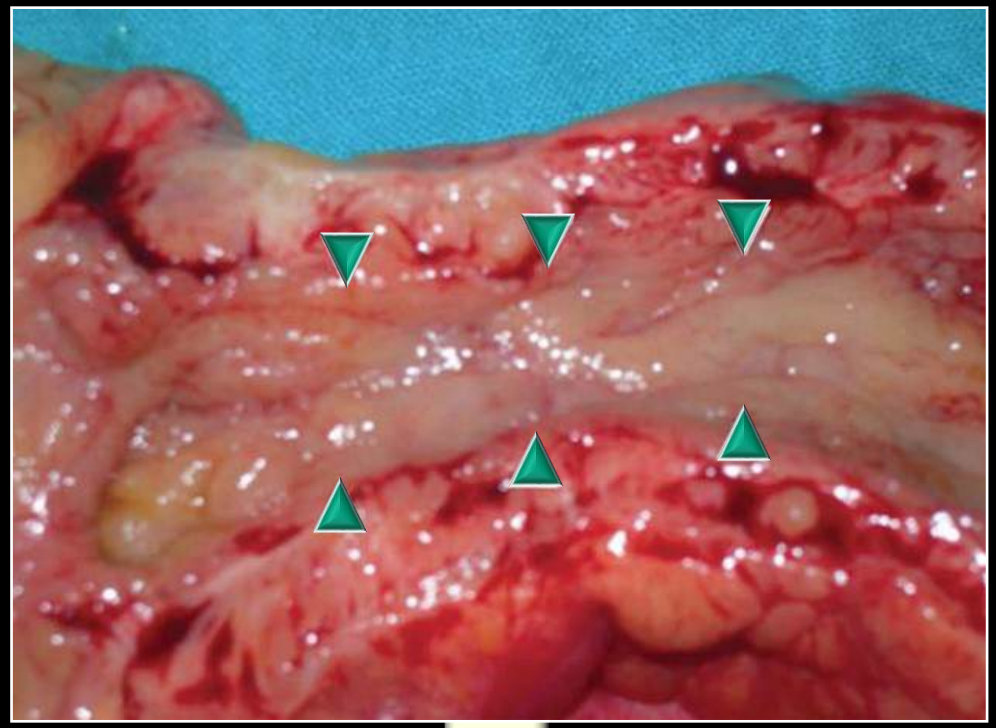
Parente F et al Gut 2004

Small intestine contrast ultrasonography (SICUS)



SICUS of ileal stricture at the level of terminal ileum.

- Calipers → Thickness of ileal wall.
- Arrows → Extension of luminal narrowing



Corresponding surgical finding of the same patient

- Arrow → The extension of luminal narrowing

- Pallotta et al, Inflamm Bowel Dis. January 2012

Small intestine contrast ultrasonography (SICUS)

PRO

There is an improvement in the visualization of the small bowel loops filled with oral contrast that increases the localization, extension, and detection of stricturing and penetrating complications

CONS

It is time-consuming → since the oral contrast has to be visualized in the caecum in order to perform correct retrograde examination.

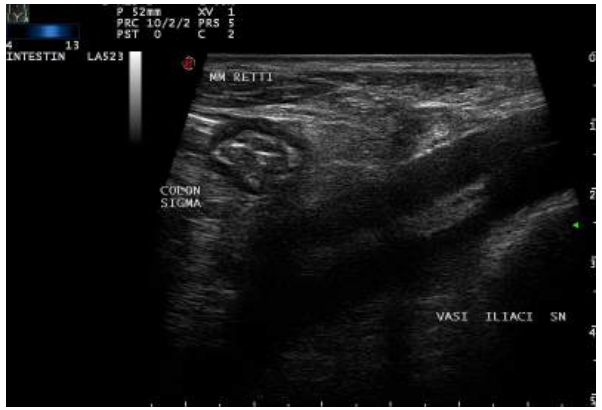
Maarten Pruijt et al, JCC , Jan 2024

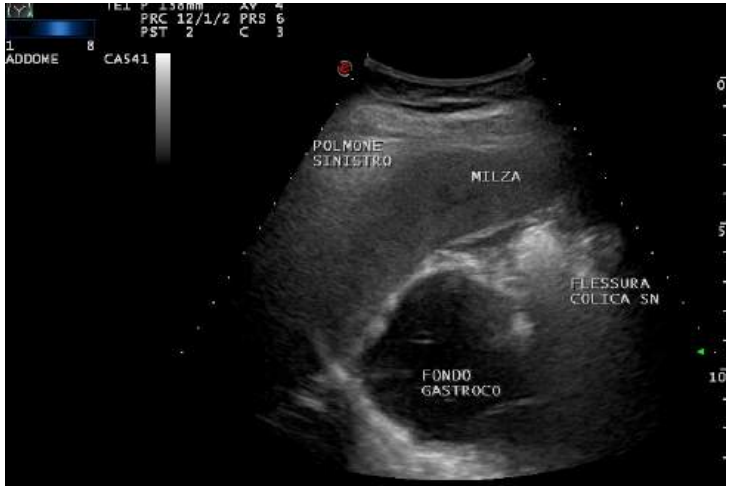
INTESTINAL ULTRASOUND CAN....

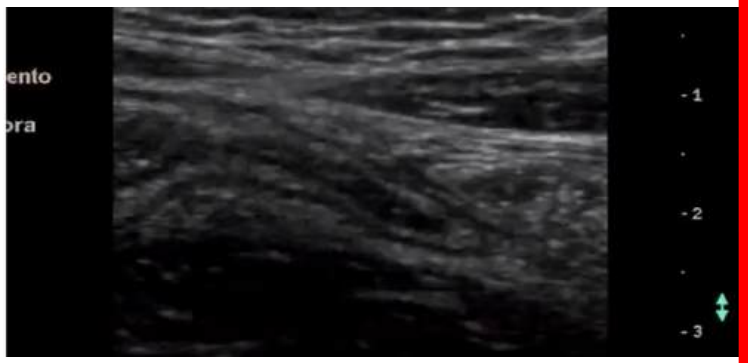
- …recognize the presence of a stenosis?
- … detect its seat and extensi
- … Assess disease activity
- … differentiate between infla
- … evaluate complications (bowel/ileum/acute abdomen obstruction)

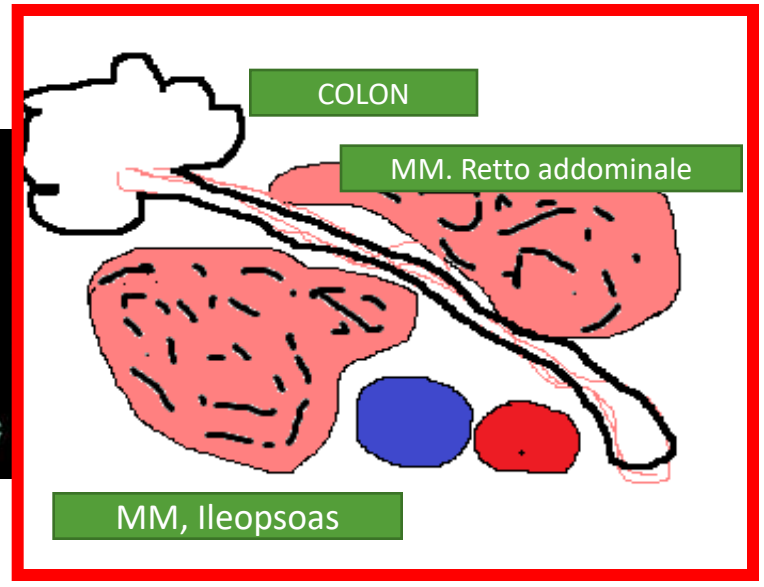
Yes!

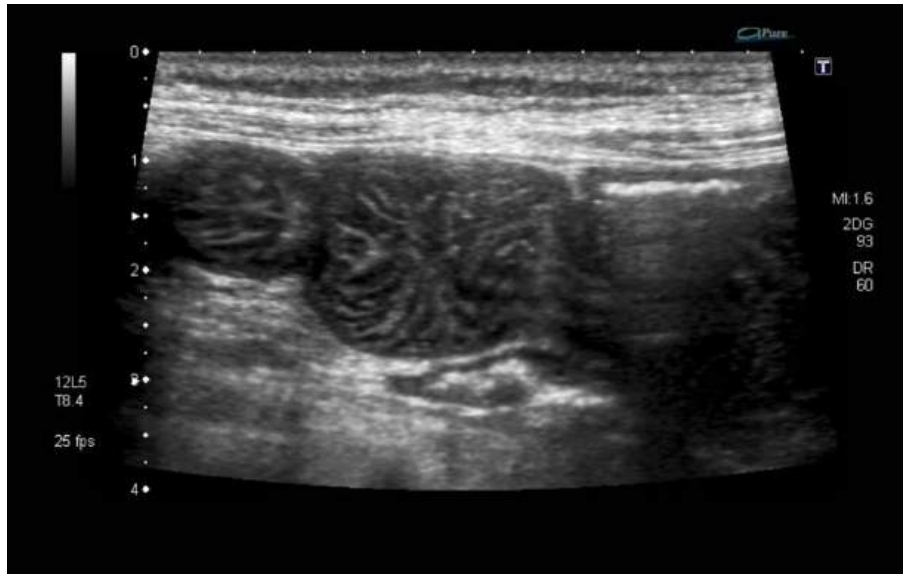
ULTRASOUND LANDMARKS











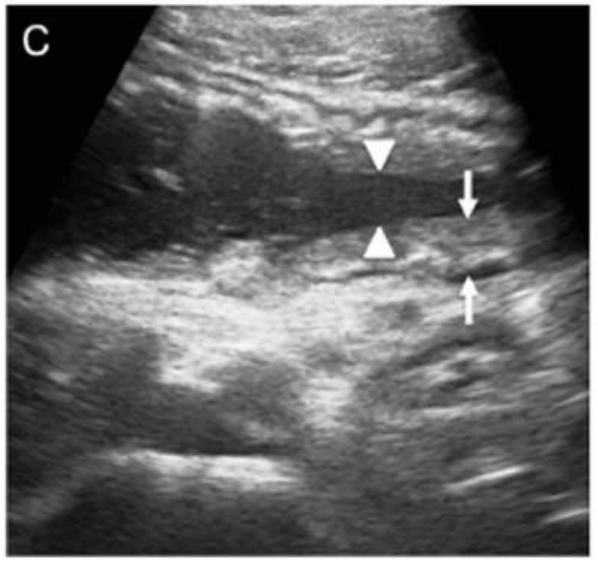
STENOSES: THE SICUS ROLE

SMALL INTESTINE CONTRAST ULTRASONOGRAPHY

Table 2 Sensitivity at segment-by-segment analysis of conventional and contrast enhanced bowel US in the detection of small bowel CD lesions documented at *x* ray/endoscopy

Site of lesion ascertained at *x* ray/endoscopy	Conventional US Sensitivity (95% CI)	Contrast enhanced US Sensitivity (95% CI)
Jejunum (n = 5)	80.0% (78.0–82.0)	100%
Ileum (n = 98)	92.0% (89.7–94.3)	98.5% (96.2–100)
Proximal ileum (n = 16)	93.7% (91.3–96.0)	93.7% (91.3–96.0)
Distal ileum (n = 82)	96.3% (93.9–98.7)	98.7% (96.2–100)

Calabrese et al, Inflamm Bowel Dis Volume 22, Number 5, May 2016



Parente F, GUT 2004

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- …recognize the presence of a stenosis?
- … define its seat and exten
- … Assess disease activity
- … differentiate between inflam
- … evaluate complications (bowel/ileum/acute abdomen obstruction)

Yes/No!

IUS to determine the degree of inflammation & fibrosis in CD strictures

international bowel ULTRASOUND GROUP

ECCO- ESGAR stated:

- Strictures in CD are transmural & contain variable proportions of inflammatory & fibrotic tissue.
- Quantification of active inflammation versus fibrosis is challenging.

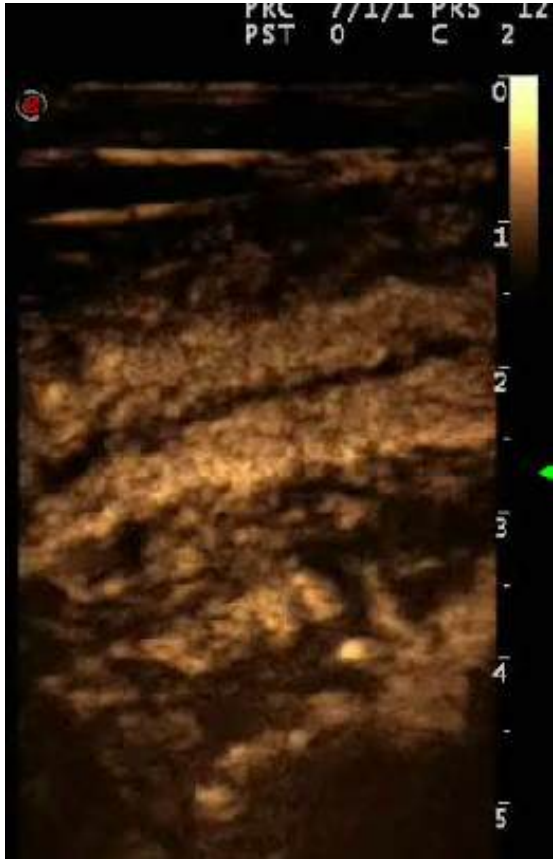
- C. Maaser et al. ECCO-ESGAR , 2019

STENOSES

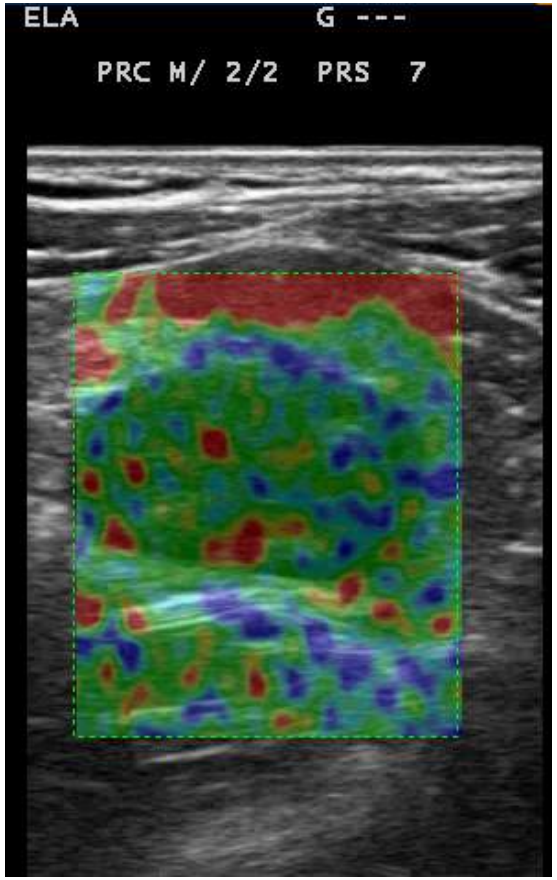
FIBROTIC OR INFLAMMATORY?

Echopattern
Ipoecoic vs normal stratification

Color Doppler



CEUS



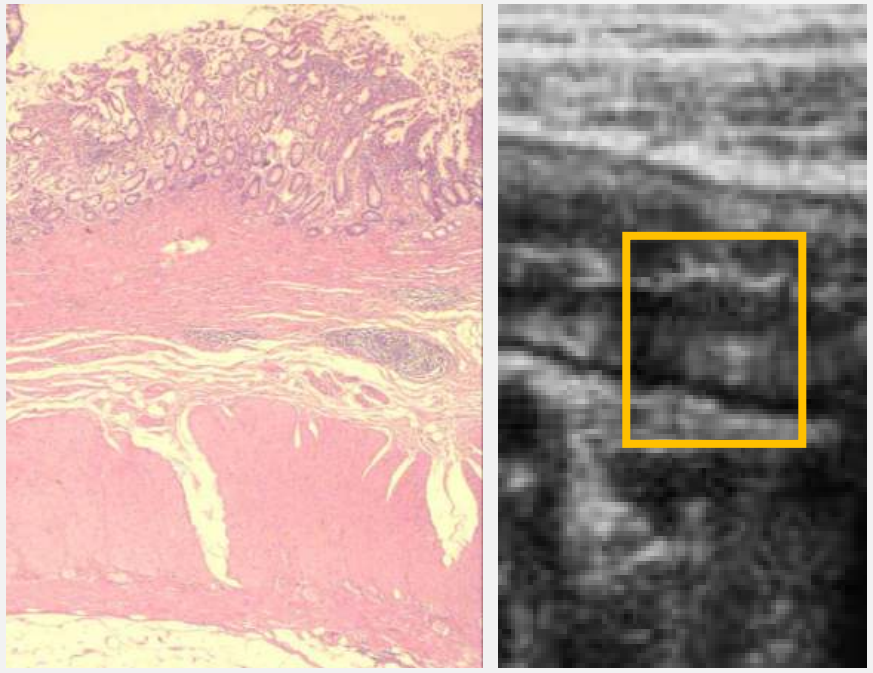
Elastography

VASCULARIZATION

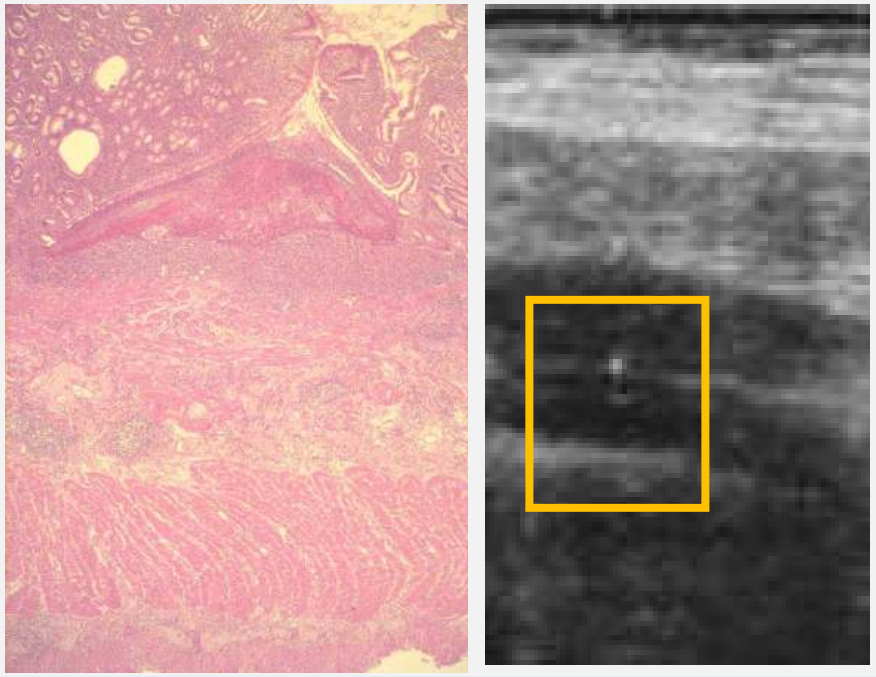
Rieder, APT 2018

Strictures Echopattern Characterization

FIBROTIC
Stratified pattern



INFIAMMATORY
Hypoechoic pattern



Maconi et al. APT 2003

INFLAMMATION is likely	FIBROSIS is likely
BOWEL WALL TICKENING *(appropriate)*	BOWEL WALL TICKENING *(appropriate)*
LOSS OF STRATIFICATION *(appropriate)*	Pre-stenotic dilation *(appropriate)*
FAT WRAPPING *(appropriate)*	ECHOGENIC SUBMUCOSA (uncertain)
HYPERAEMIA *(appropriate)*	
COMB SIGN *(appropriate)*	
ULCERATION *(appropriate)*	
PENETRATING DISEASE *(appropriate)*	
ECHOGENIC SUBMUCOSA (uncertain)	

Practice Guideline > Lancet Gastroenterol Hepatol. 2024 Dec;9(12):1101-1110.
doi: 10.1016/S2468-1253(24)00265-6. Epub 2024 Oct 22.

International expert guidance for defining and monitoring small bowel strictures in Crohn's disease on intestinal ultrasound: a consensus statement

Cathy Lu [1], Ryan Rosentreter [2], Claire E Parker [3], Julie Remillard [3], Stephanie R Wilson [4], Mark E Baker [5], Gauraang Bhatnagar [6], Jakob Begun [7], David H Bruining [8], Robert V Bryant [7], Britt Christensen [9], Brian G Feagan [10], Joel G Fletcher [11], Ilyssa Gordon [12], Gaylyn Henderson [13], Vipul Jairath [14], John Knudsen [11], Torsten Kucharzik [15], Kyle Lesack [2], Christian Maaser [16], Giovanni Maconi [17], Kerri Novak [2], Jordi Rimola [18], Stuart A Taylor [19], Rune Wilkens [20], Florian Rieder [21]; Stenosis Therapy and Anti-Fibrotic Research (STAR) consortium

CONSENSUS ON THE DEFINITION OF US PATTERN OF INFLAMMATION AND FIBROSIS STRICTURES


HIBA
CASA SOLL. SOFFERENZA
Intestino 2
0
2
4
6
IDIGIBBONI
12-01-98
13:57:53
11/12
12Hz
5.0M 5.0
PWR:100%
R08:G63 C4
1:ABDOM


TOSHIBA
CASA SOLL. SOFFERENZA
Intestino 2
0
2
4
6
12L5
T6.6
34 fps
Dist A
TOSHIBA
20130521.075703.TSB_Hosp.ID:20130521.07...
CASA SOLL. SOFFERENZA - Dr -
Intestino 2
4.2
4.2
cm/s
12L5
T6.6
CF 4.4
9 fps
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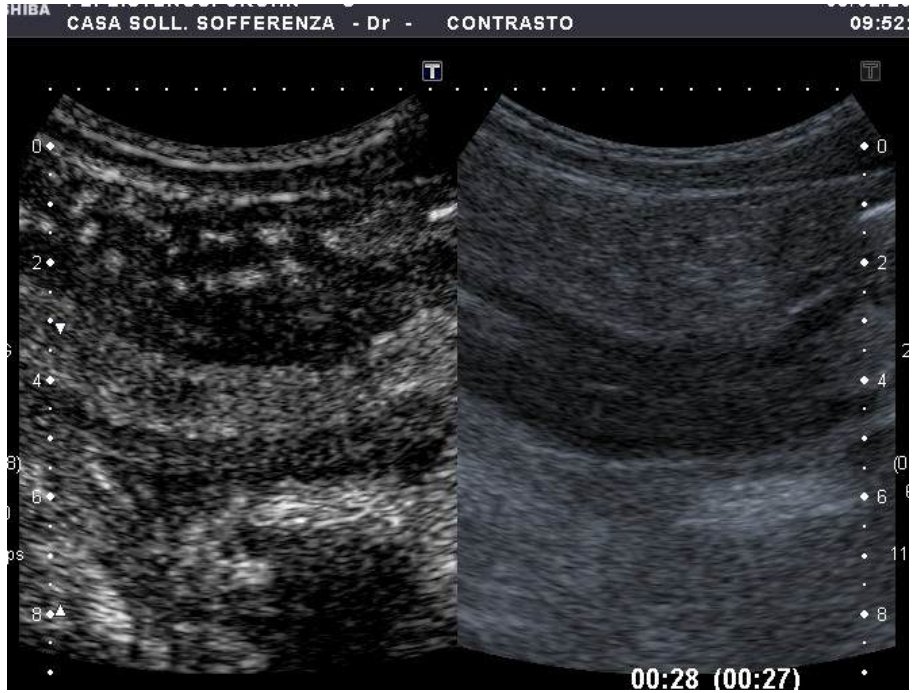
DILATAZ I

STENOSI: MDC

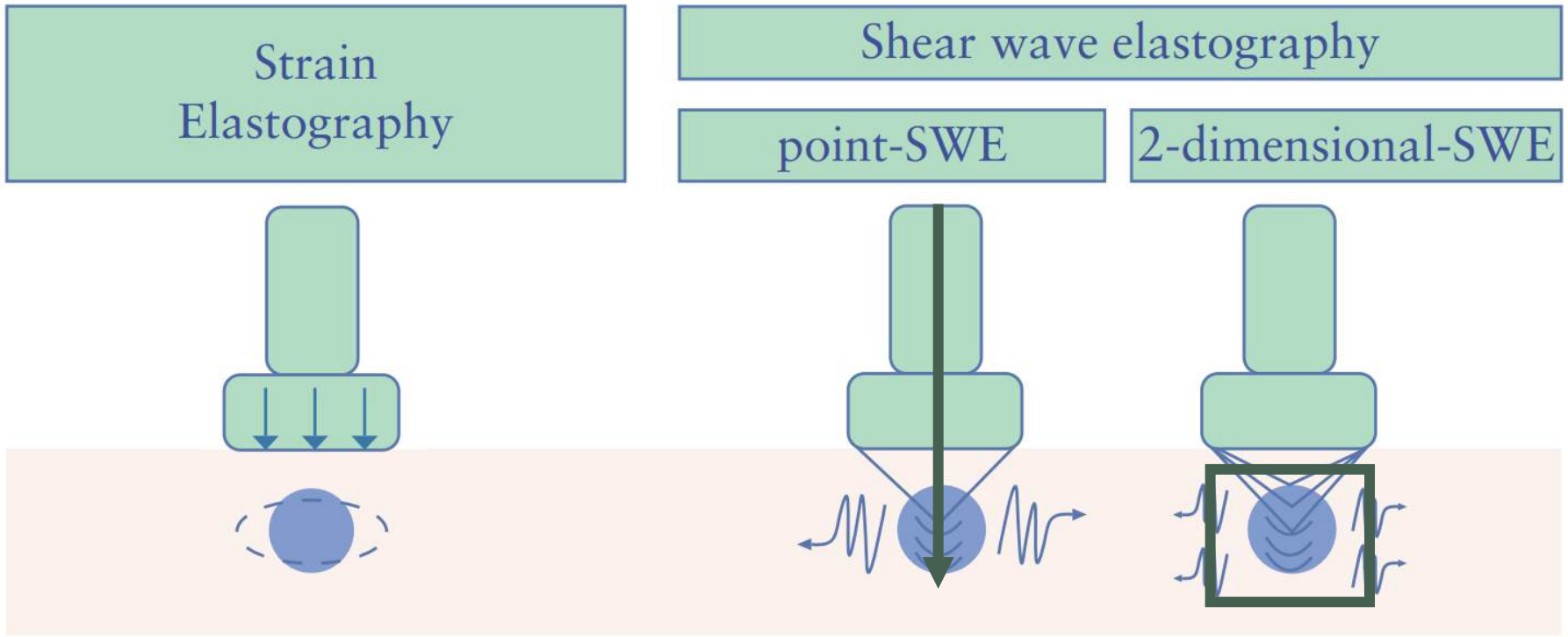
Inflammatory Stricture



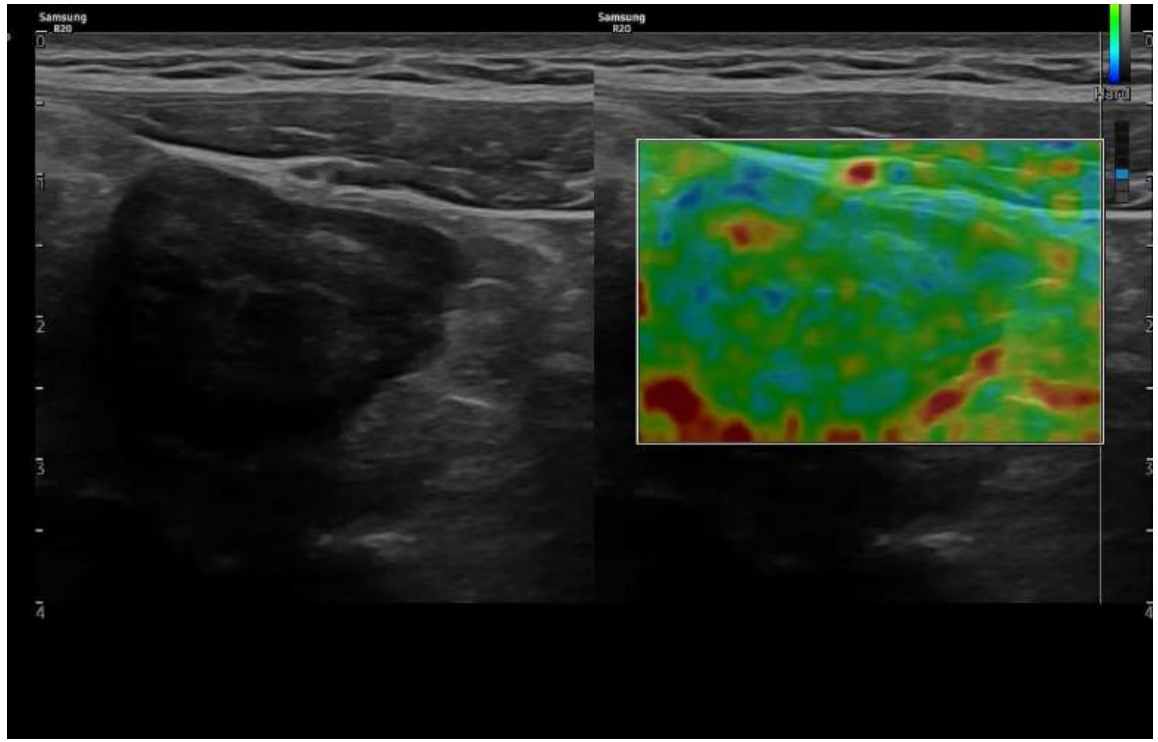
Fibrotic Stricture

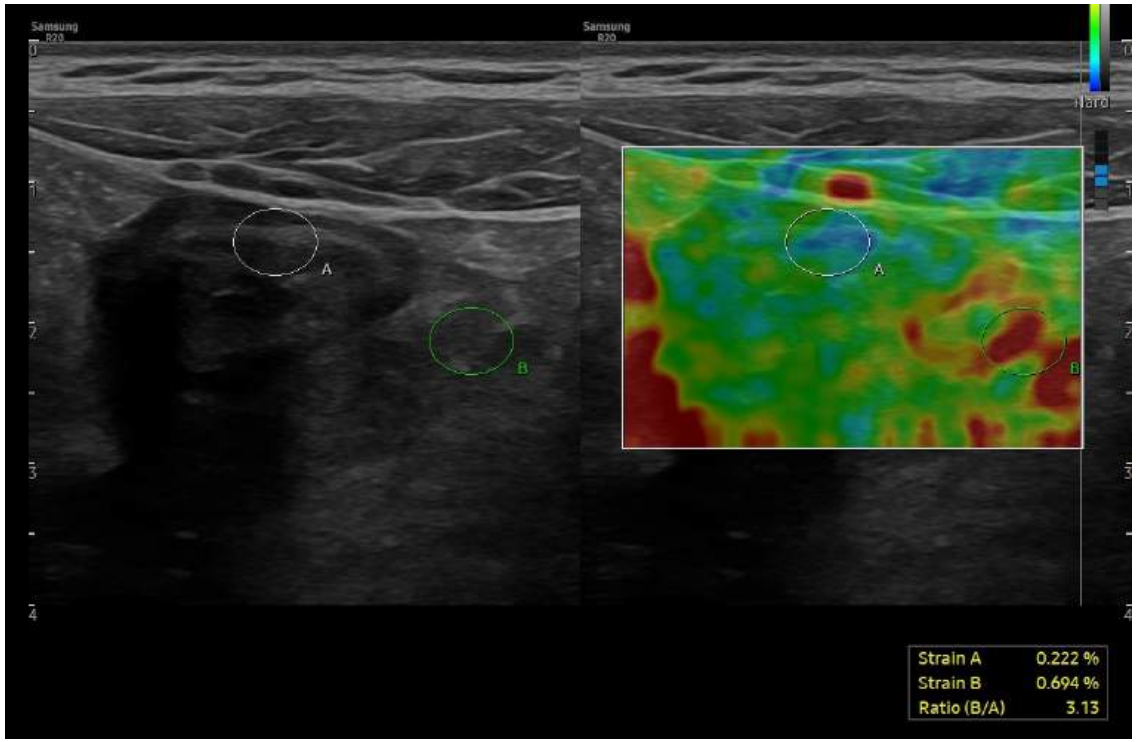
- the intramural flow at the level of stenosis, documented with color power doppler to discriminate inflammatory stenosis was studied also using ceus.
- in the past the initial data were very encouraging, but it is necessary to acquire further prospective studies with surgical gold standard

Bowel wall stiffness and elastography



Strain Elastography





SE provides a **semi-quantitative estimate** of stiffness by applying repeated probe pressure above the loop

The exact stress applied is unknown, so absolute elasticity values can't be calculated.

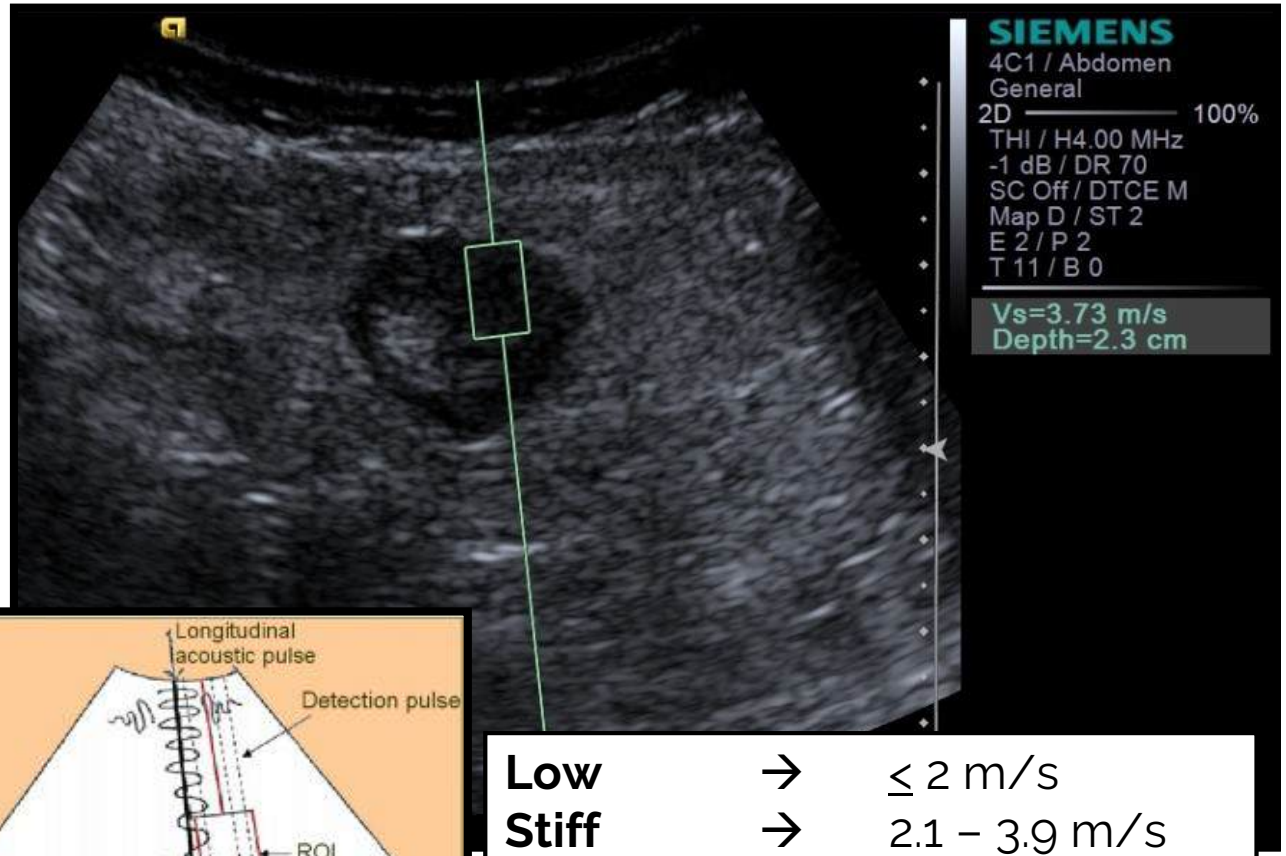
Stiffness is expressed as a **ratio** between the bowel loop and surrounding softer tissue.

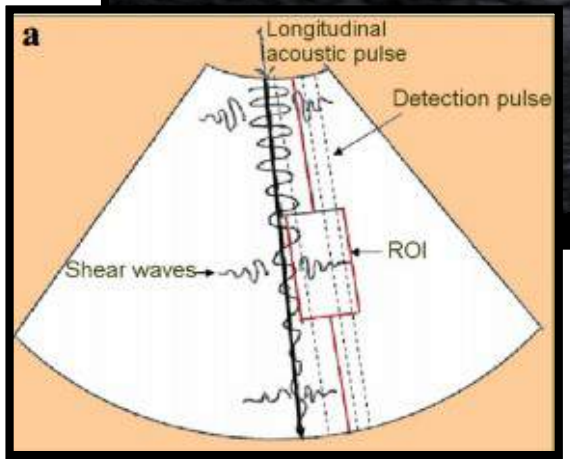
A ratio greater than 2 usually indicates **hard, likely fibrotic tissue**.

Shear wave elastography (SWE)

B. Shear wave Elastography

- **Acoustic radiation** force impulse (ARFI)
  - Measure SW propagation speed within the tissue.
  - SW propagate faster in hard than soft tissue. (Qualify stiffness)
    - Less fibrosis: **LOW SWE**
    - More fibrosis: **HIGH SWE**
- Qualitative assessment:
  - Color-scaled image.
- Quantitative assessment:
  - Determine maximum elasticity value in kPa or m/s.





Low → ≤ 2 m/s
Stiff → 2.1 – 3.9 m/s
Very Stiff → ≥ 4 m/s

- Ferretti et al. Front. Pharmacol. 2021
- Nylund K et al. EFSUMB Recommendations 2017
- Maconi G et al. EFSUMB Recommendations 2018
- Dillman JR, Stidham RW, et al. Radiology. 2013.
- Frulio et al. BMC. 2014

Bowel wall stiffness and elastography

Ultrasound Elastography in Inflammatory Bowel Diseases: A Systematic Review of Accuracy Compared with Histopathological Assessment

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[c]Department of Gastroenterology and Inserm NGERE U1256, University Hospital of Nancy, University of Lorraine, Vandoeuvre-lès-Nancy, France
[d]Gastroenterology and Endoscopy, IRCCS Ospedale San Raffaele, and University Vita-Salute San Raffaele, Milan, Italy

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Tel.: +39026432069; E-mail: mariangela.allocca@gmail.com

Conclusions: From the preliminary available data, an overall moderate-to-good accuracy of USE in detecting histological fibrosis [10/12 studies] was found. Point-shear wave elastography has been shown to perform superiorly. Further studies are needed to confirm these evidences.

CEUS and SWE to characterize strictures

Journal of Crohn's and Colitis, 2025, **19(7)**, jjaf106
https://doi.org/10.1093/ecco-jcc/jjaf106
Advance access publication 31 July 2025
ECCO Guideline/Consensus Paper

ECCO-ESGAR-ESP-IBUS Guideline on Diagnostics and Monitoring of Patients with Inflammatory Bowel Disease:

European Crohn's and Colitis Organisation

Recommendation 20 We recommend cross-sectional imaging (MRE, IUS, or both) to detect small-bowel strictures (EL1). Active inflammation within strictures should be assessed using MRE, IUS, or both (EL2). Currently, no imaging technique is sufficiently accurate to quantify fibrosis (EL3). Cross-sectional imaging criteria have low sensitivity for detecting small-bowel cancer complicating CD (EL3). (97% agreement)

INTESTINAL ULTRASOUND CAN....

- …recognize the presence of a stenosis?
- … define its seat and extension ?
- … Assess disease activity?
- … differentiate between inflammatory
- … evaluate complications (urgency/chronic or acute abdominal obstruction)


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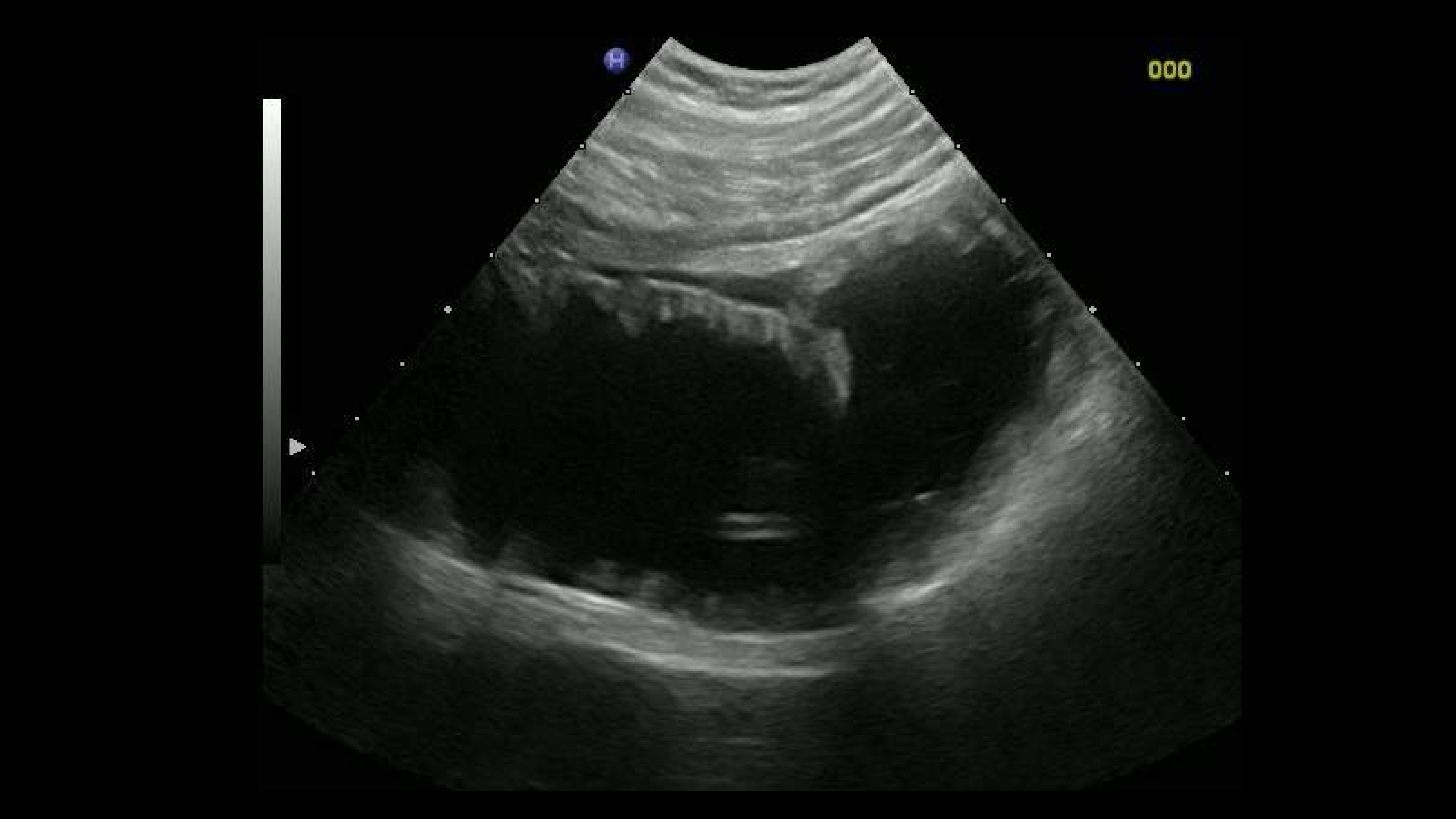
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B-mode IUS can detect CD complications

- **Abdominal Fistulas**

Statement 2.1.7. ECCO-ESGAR Diagnostics GL [2018]

Extramural complications in CD [such as fistulae and abscesses] should be monitored by cross-sectional imaging, including intestinal ultrasound [IUS] [EL2] or MRI [EL2] [or both] in combination with clinical and laboratory parameters [EL5]

Guidelines and Recommendations

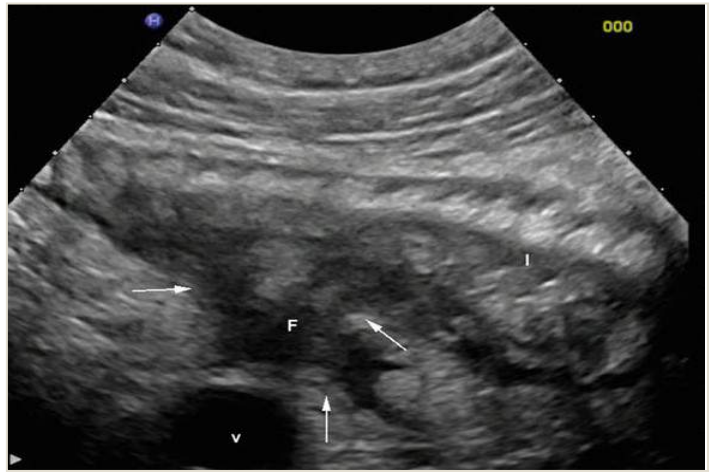
EFSUMB Recommendations and Clinical Guidelines for Intestinal Ultrasound (GIUS) in Inflammatory Bowel Diseases

RECOMMENDATIONS

20. Fistulae in Crohn's disease can be identified by GIUS as hypoechoic tracts with or without air bubbles [LoE 2b, GoR A]
    Consensus levels of agreement: A+ 17/17
21. GIUS can be applied with high sensitivity and specificity, comparable to CT or MRI, for the detection of CD fistulas [LoE 1; GoR A]
    Consensus levels of agreement: A+ 14/17; A- 3/17

The Hallmarks of penetrated complications in CD are

- FISSURES
- SINUS TRACT
- FISTUALE



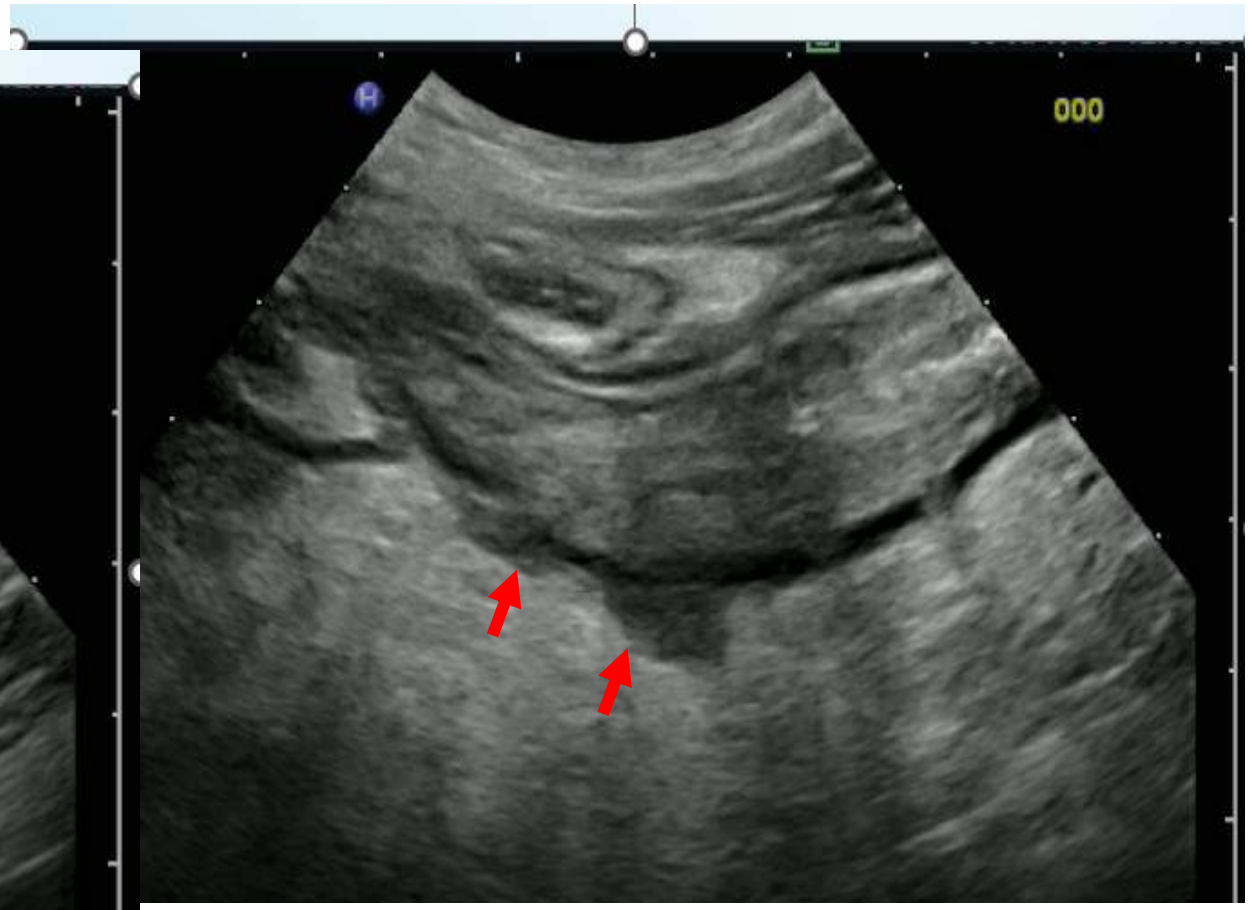
- C. Maaser et al. ECCO-ESGAR guideline, 2019
- Maconi G et al. EFSUMB Recommendations in Med 2018

Definitions:

- **EXTRAMURAL FISSURES** originating from deep ulcerations of the intestinal wall are visualized as small hypoechoic irregularities of the bowel surface, in correspondence with hypoechoic segments of the bowel wall.

EFSUMB Recommendations and Clinical Guidelines for Intestinal Ultrasound (GIUS) in Inflammatory Bowel Diseases

international bowel ULTRASOUND GROUP



EFSUMB Recommendations and Clinical Guidelines for Intestinal Ultrasound (GIUS) in Inflammatory Bowel Diseases

international bowel ULTRASOUND GROUP

Definitions:

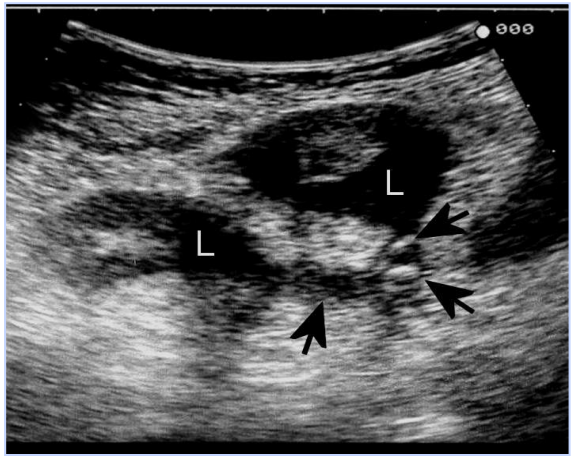
Fistulae

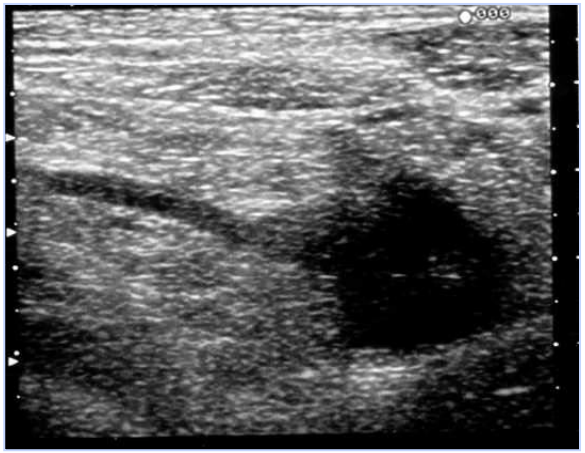
- Hypoechoic areas or tracts between ileal loops with or without internal gaseous artifacts

- Hypoechoic periintestinal tracts with or without gas within

- Hypoechoic peri-intestinal areas with a diameter < 2 cm

Calabrese et al, Inflamm Bowel Dis Volume 22, Number 5, May 2016





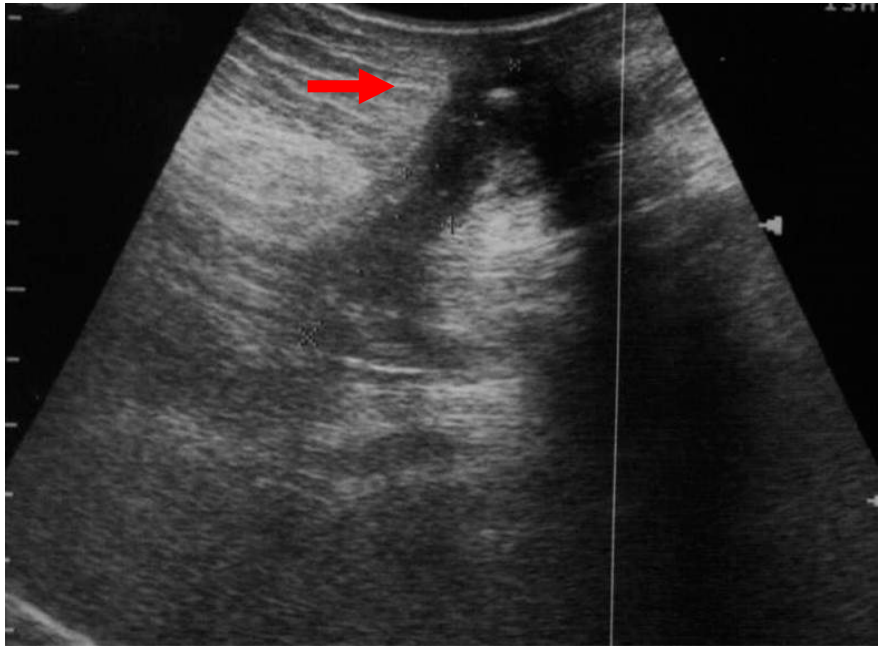
Maconi et al. 1996; Gasche et al. 1999

Maconi G et al. EFSUMB Recommendations and... Ultraschall in Med 2018; 39: 304–317

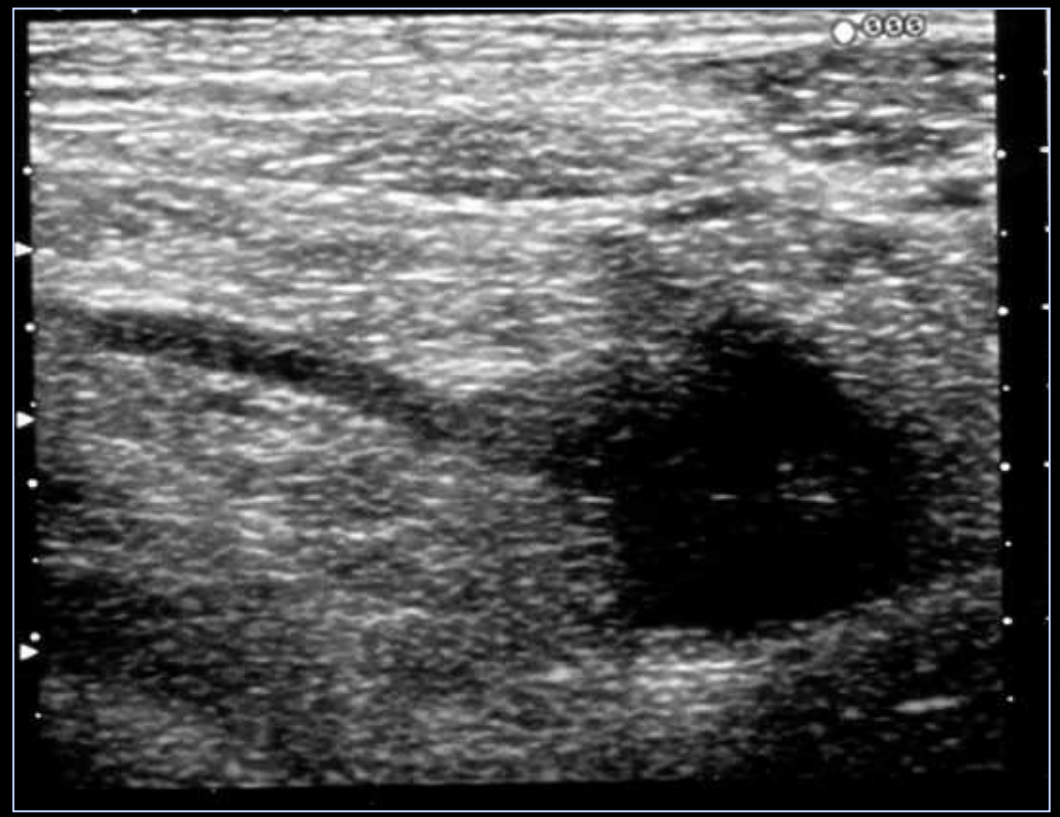
Definitions:

FISTULAE: are classified as internal and external.

- The internal can be entero-enteric, entero-mesenteric or enterovesical
- The external have a communication with an external orifix



FISTULAE
ENTERO-MESENTERIC



Maconi et al. Am J Gastroenterol 2003

FISTULAE

ENTERO-ENTERIC

Maconi et al. Am J Gastroenterol 2003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-2
-4
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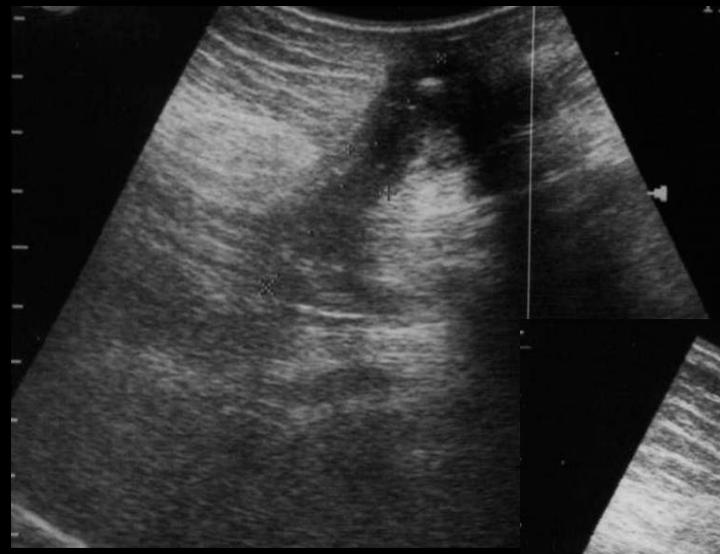
HdT-4.8Rx R:11.0 BG:67 BD:84
ANSE Convex

Wall fissures

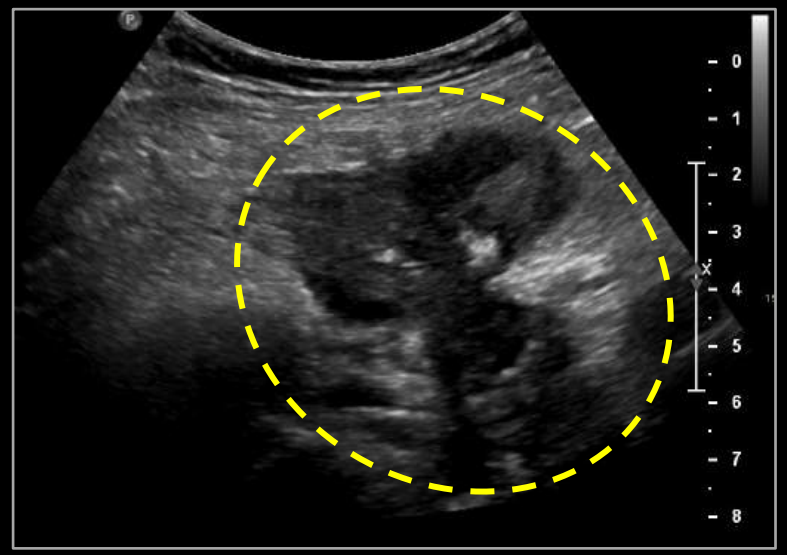
FISTULAE
ENTERO-CUTANEOUS

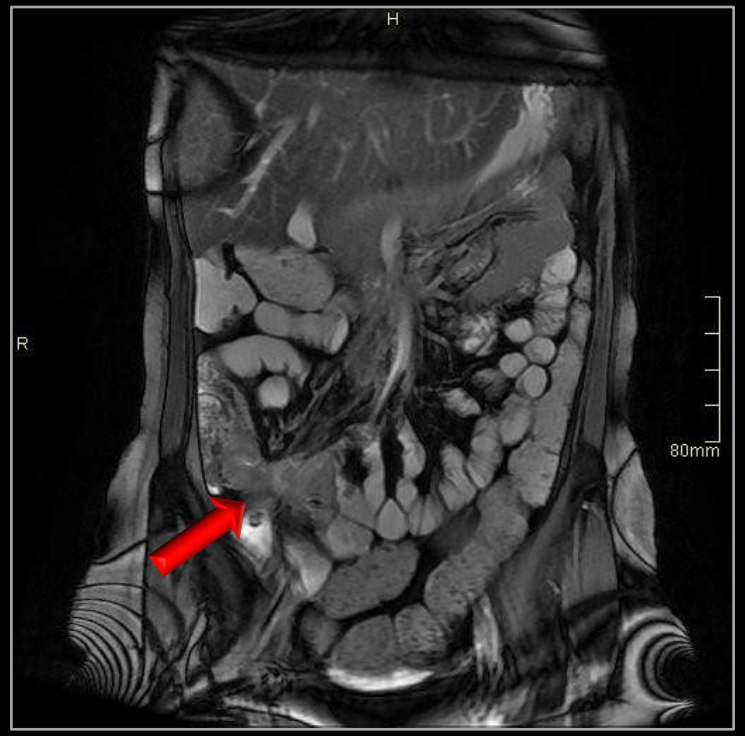


Maconi et al. Am J Gastroenterol 2003

IUS to detect CD complications (Fistula)

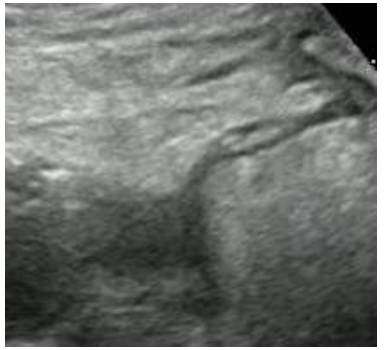
- MR- Enterography:

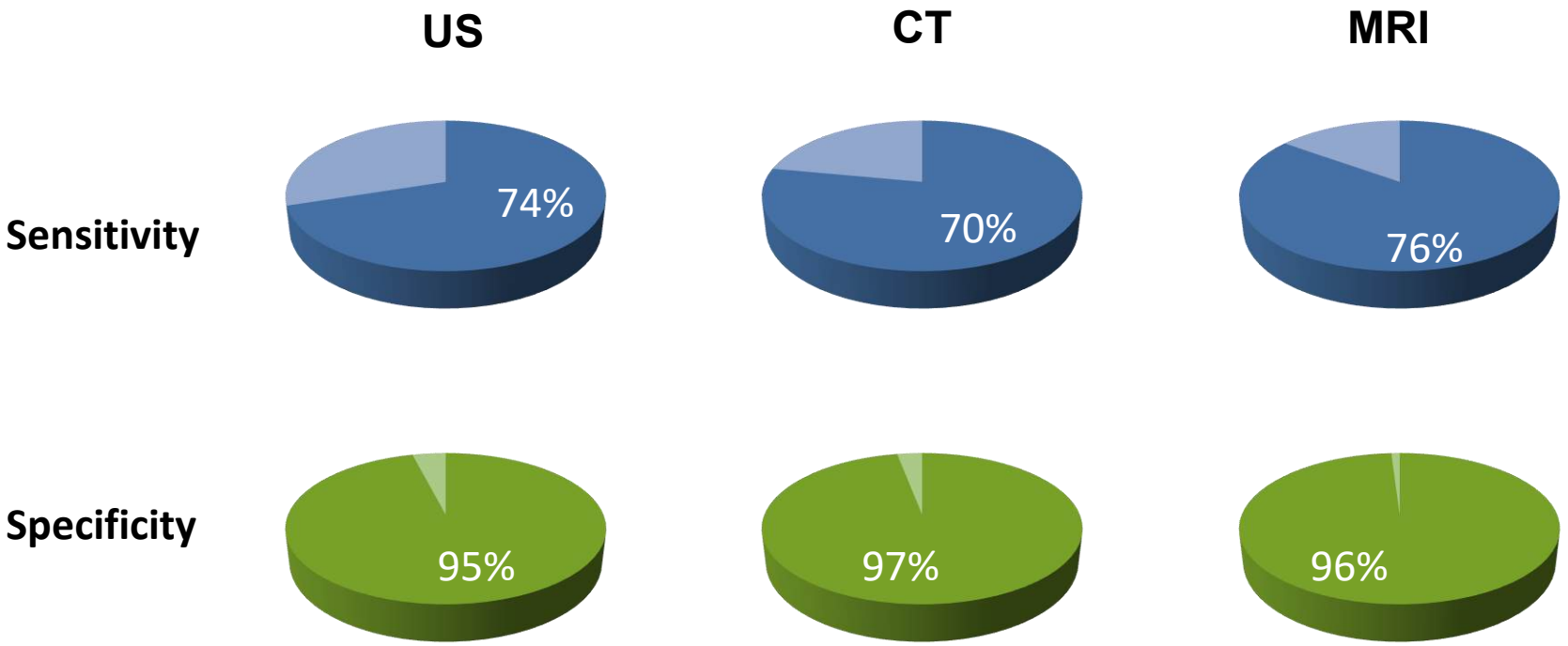




Courtesy of dr Heba Al-Farhan

Accuracy of cross-sectional imaging for extramural complications: fistula





Panés J, et al. *AP&T* 2011, 34:125-45

B-mode IUS can detect CD complications

- **Abscesses/Inflammatory Masses**

Statement 3.2.1. ECCO-ESGAR Diagnostics GL [2018]

Cross-sectional imaging [IUS, MRI, and CT] can detect internal penetrating disease and intra-abdominal abscesses with varying accuracy [EL1]. MRI is preferable to ultrasound for deep-seated fistulae or abscesses or pelvic fistulae [EL4]

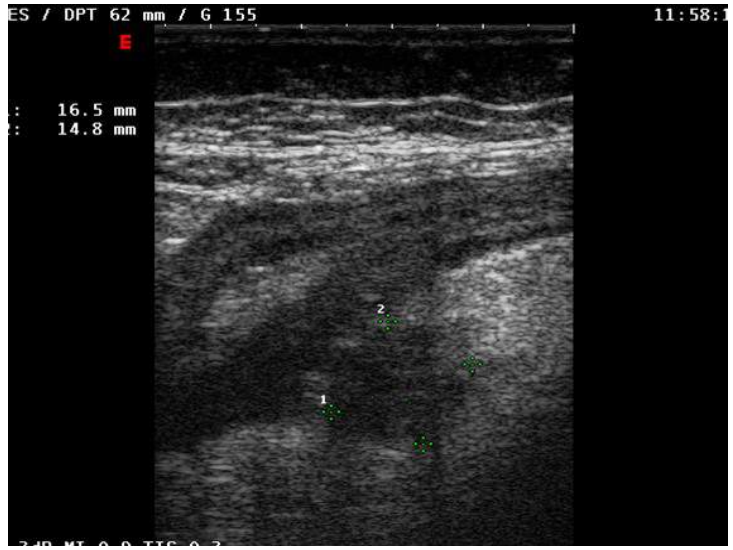
Guidelines and Recommendations

EFSUMB Recommendations and Clinical Guidelines for Intestinal Ultrasound (GIUS) in Inflammatory Bowel Diseases

RECOMMENDATIONS

22. Abscesses can be detected using GIUS as organized fluid collections that may contain bubbles of gas [LoE 2a, GoR B]
    Consensus levels of agreement: A+ 17/17
23. CEUS is useful for distinguishing between phlegmons and abscesses [LoE 2a, GoR B]
    Consensus levels of agreement: A+ 17/17
24. GIUS may be applied with high sensitivity and specificity to detect Crohn's abscesses [LoE 2, GoR B]
    Consensus levels of agreement: A+ 17/17

INTRA WALL BOWEL



EXTRA WALL BOWEL

- C. Maaser et al. ECCO-ESGAR guideline, 2019
- Maconi G et al. EFSUMB Recommendations in Med 2018

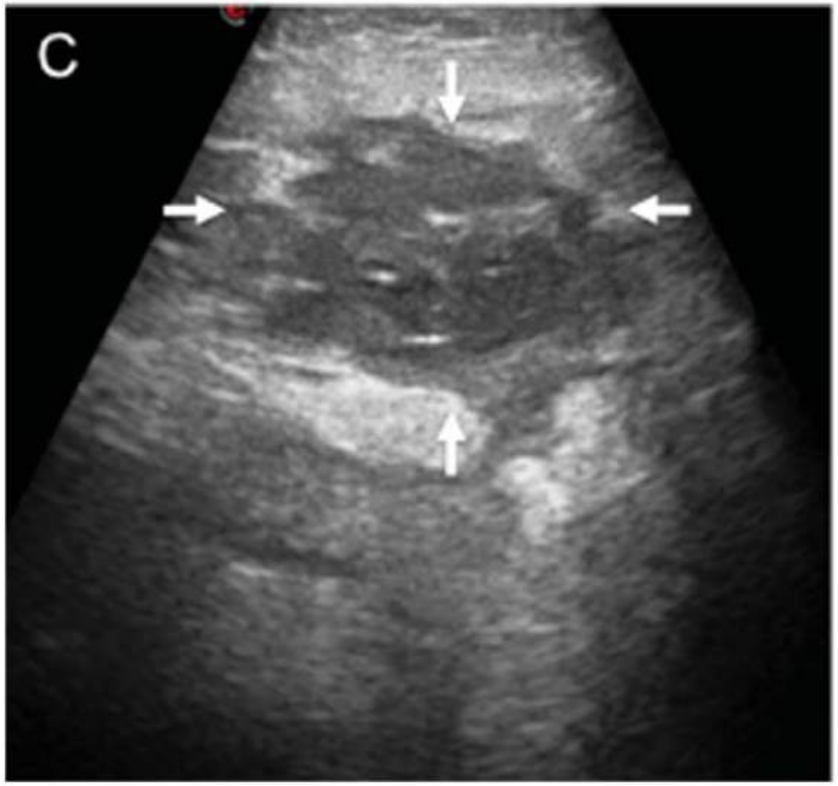
EFSUMB Recommendations and Clinical Guidelines for Intestinal Ultrasound (GIUS) in Inflammatory Bowel Diseases

international bowel ULTRASOUND GROUP

Definitions:

➢ **Abdominal abscesses:**

- Hypo-anechoic lesions containing fluid and gaseous artifacts
- Posterior enhancement
- Irregular margins sometimes within hypertrophic mesentery

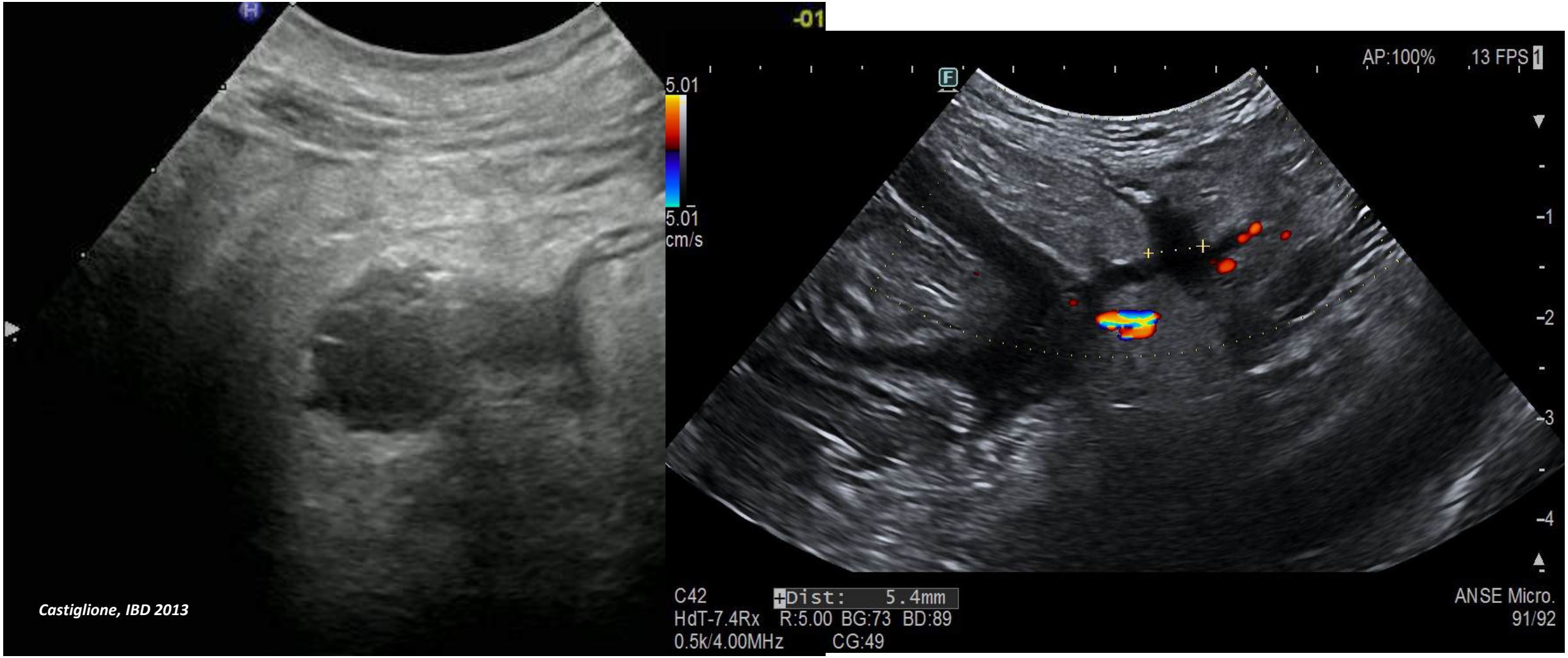


Calabrese et al, Inflamm Bowel Dis Volume 22, Number 5, May 2016

Maconi G et al. EFSUMB Recommendations and... Ultraschall in Med 2018; 39: 304–317

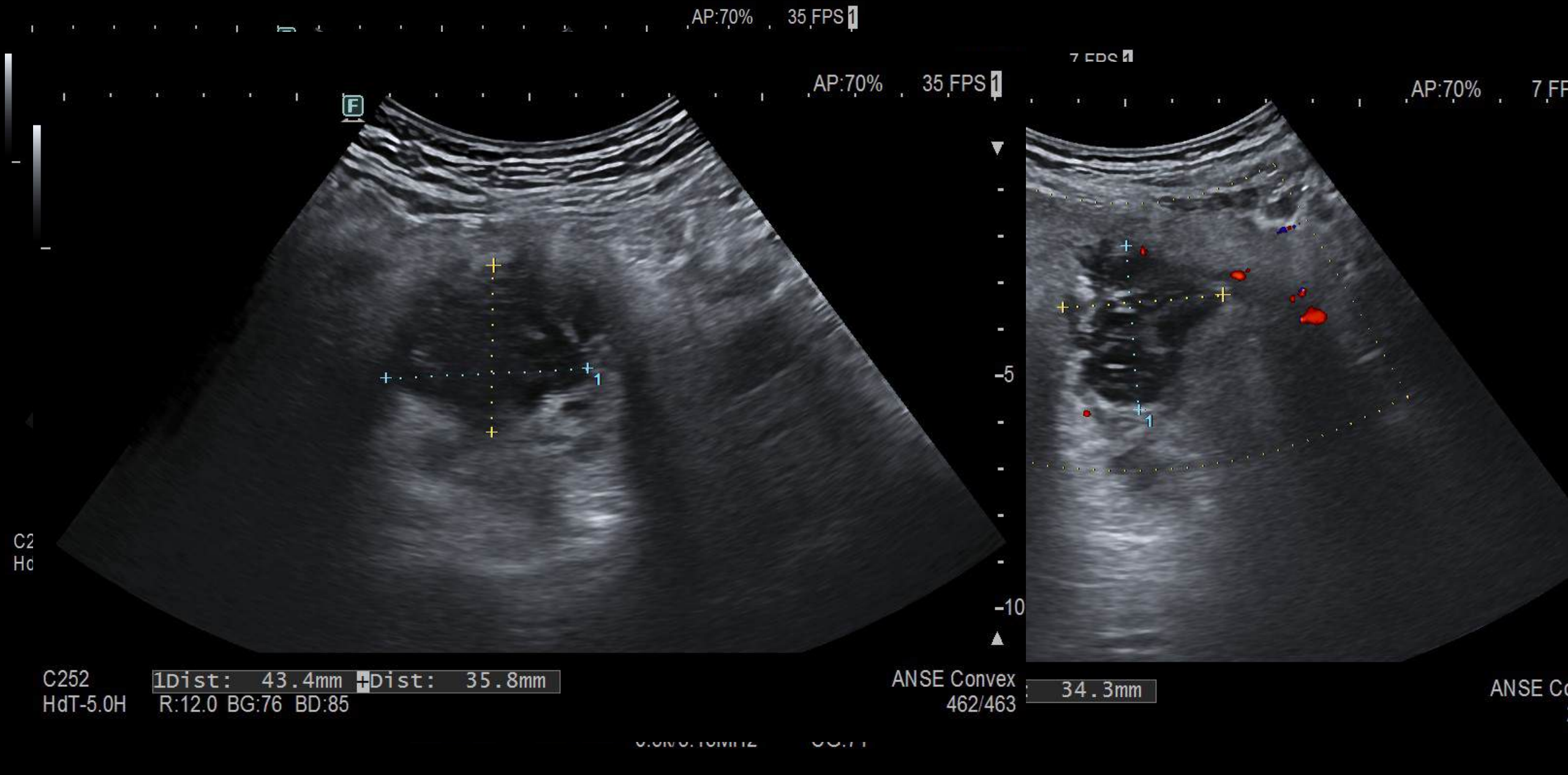
ABDOMINAL ABSCESSES

Hypo- anechoic areas containig fluid and gaseus artifacts
Irregular margins
Hypertrophic mesentery

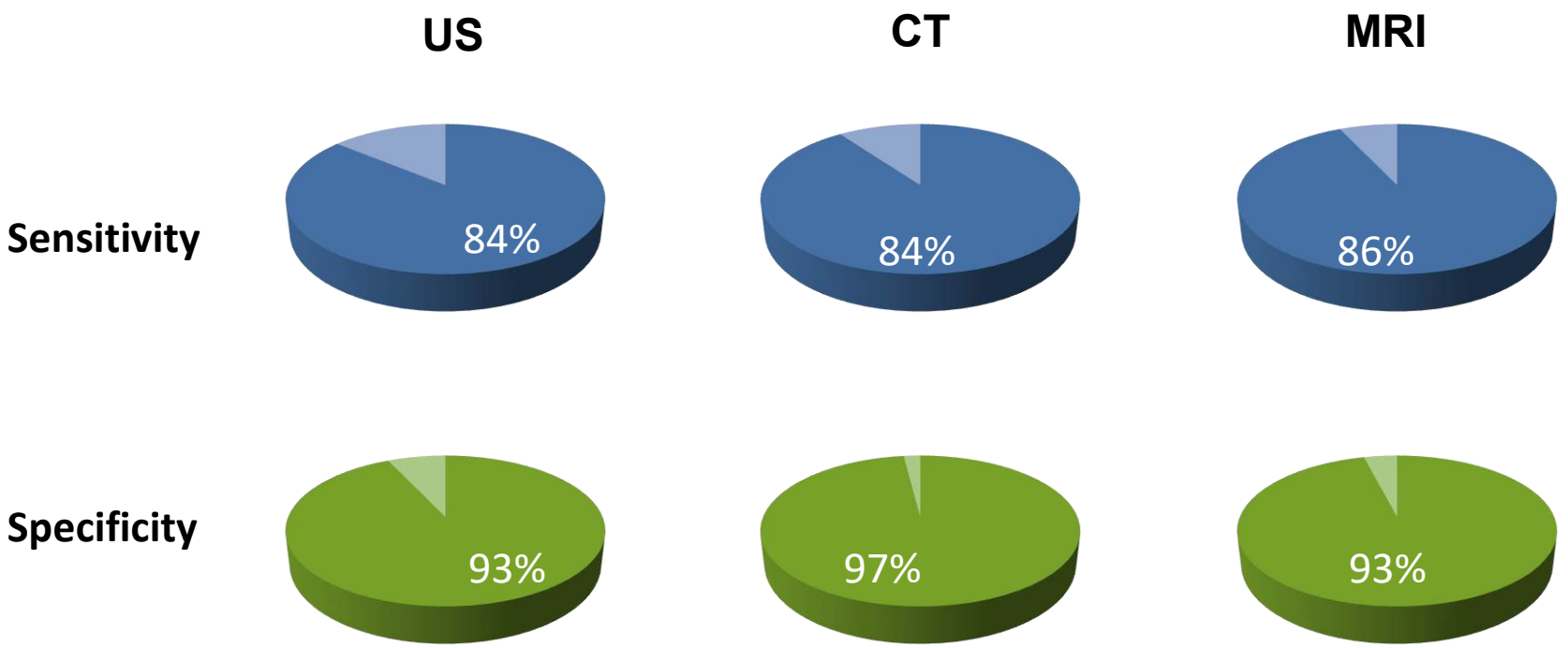


Castiglione, IBD 2013

Post-surgical abscess after colectomy in CD



Accuracy of cross-sectional imaging for extramural complications: abscesses

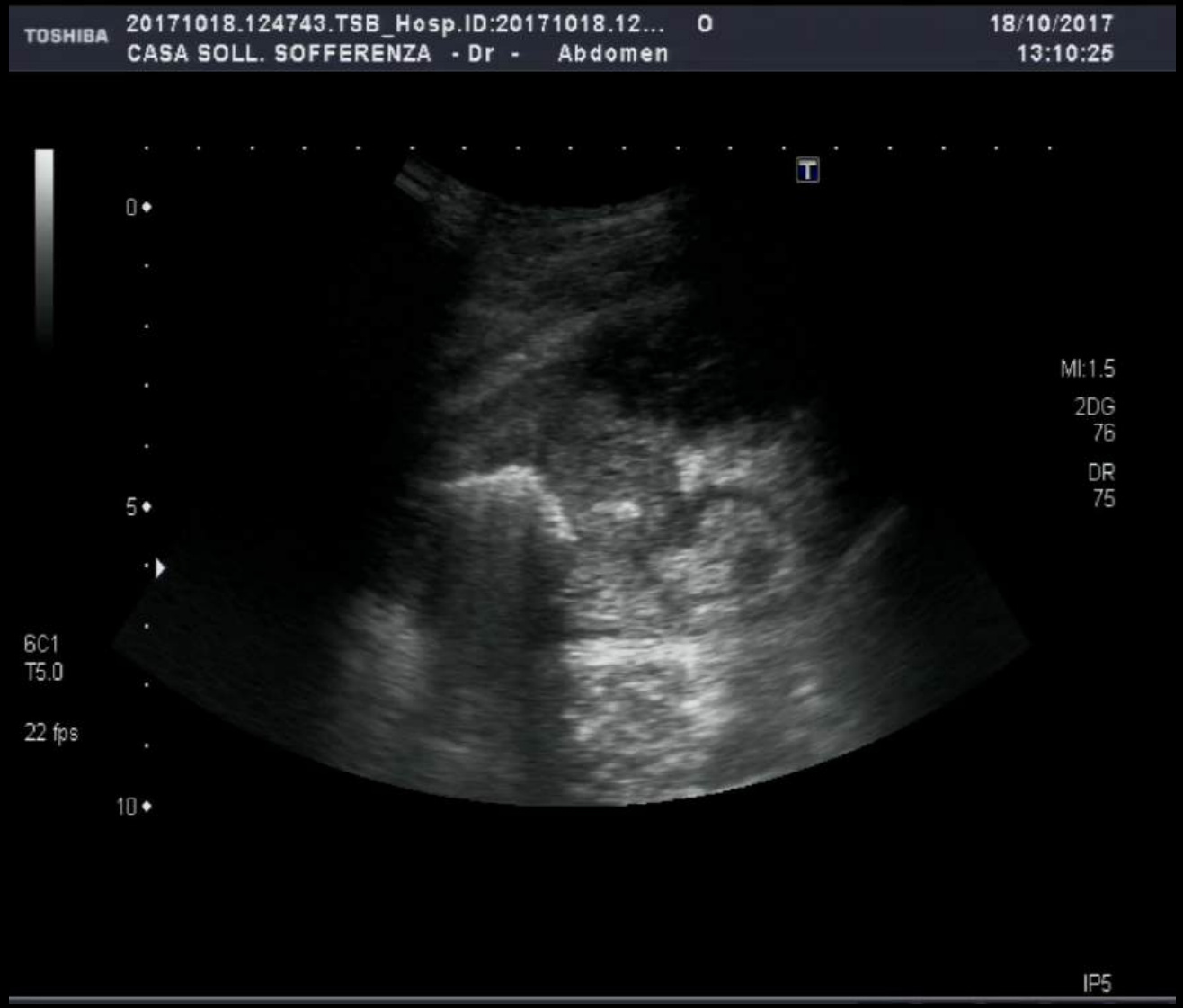


Panés J, et al. *AP&T* 2011, 34:125-45

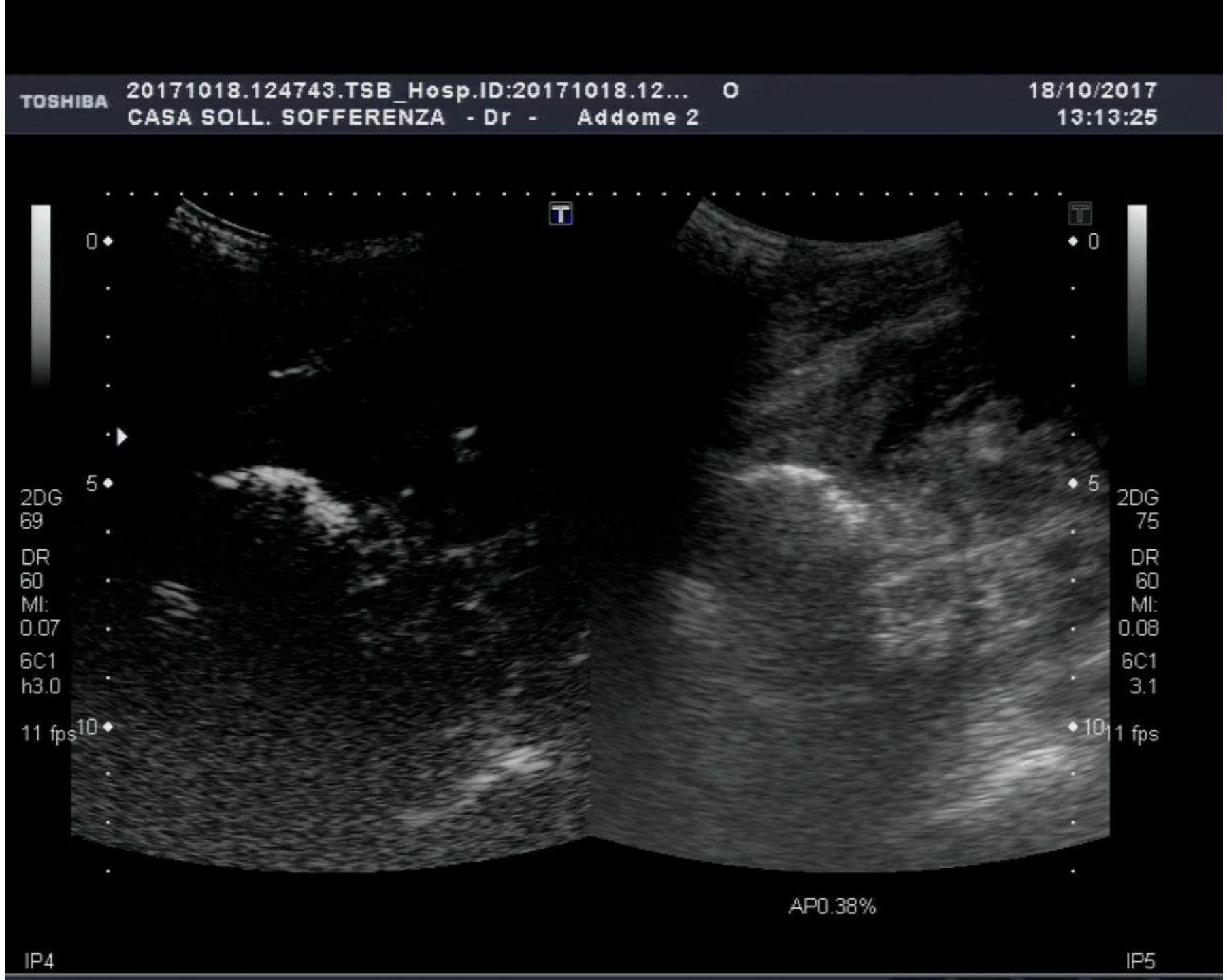
IUS to detect CD complications (Masses)

Case

- Francesco is a young paz with Crohn from 2017
- He came in ambulatory for abdominal pain in LRQ that spreads to the leg and also cause difficulty in movement, fever and anorexia



Courtesy of dr Heba Al-Farhan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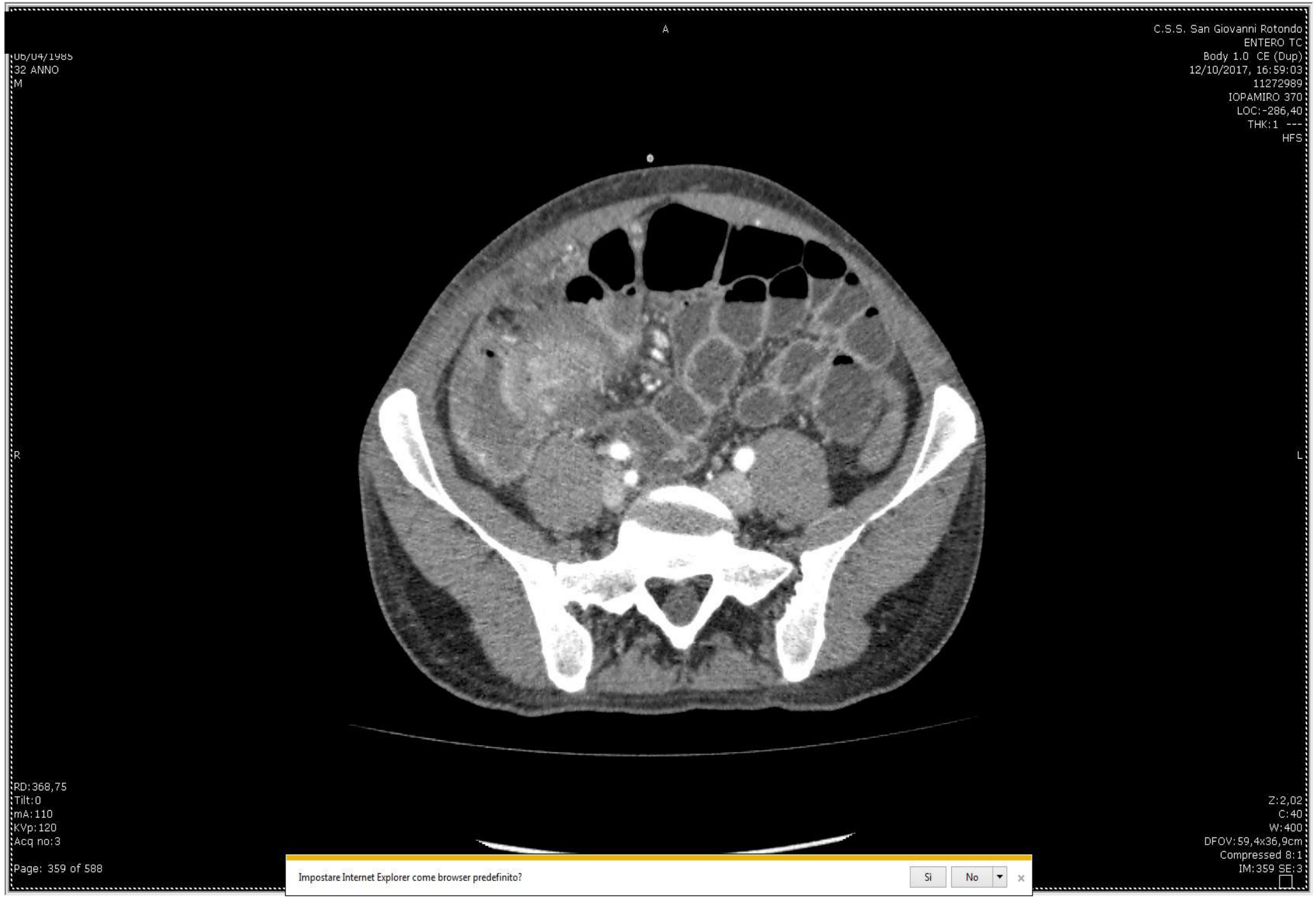
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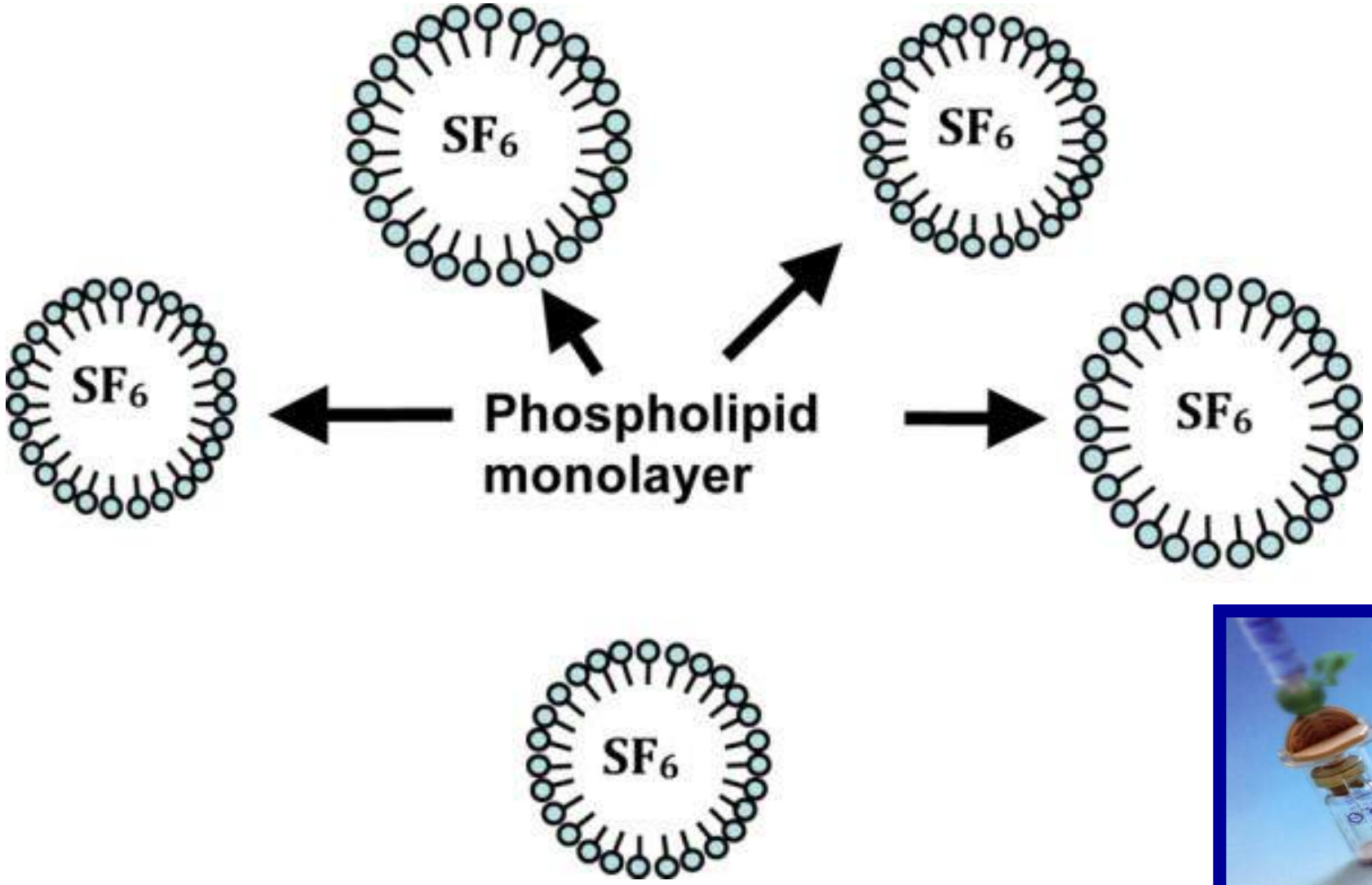
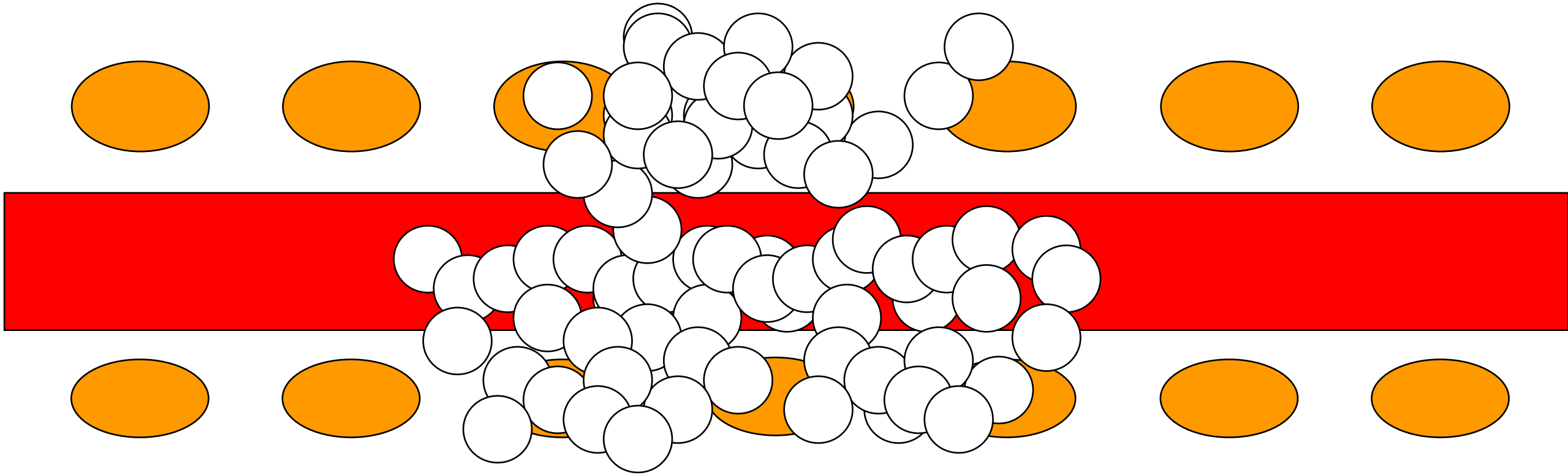
CONTRAST ENHANCEMENT ULTRASOUND

CEUS



SONOVue®
sulphur hexafluoride

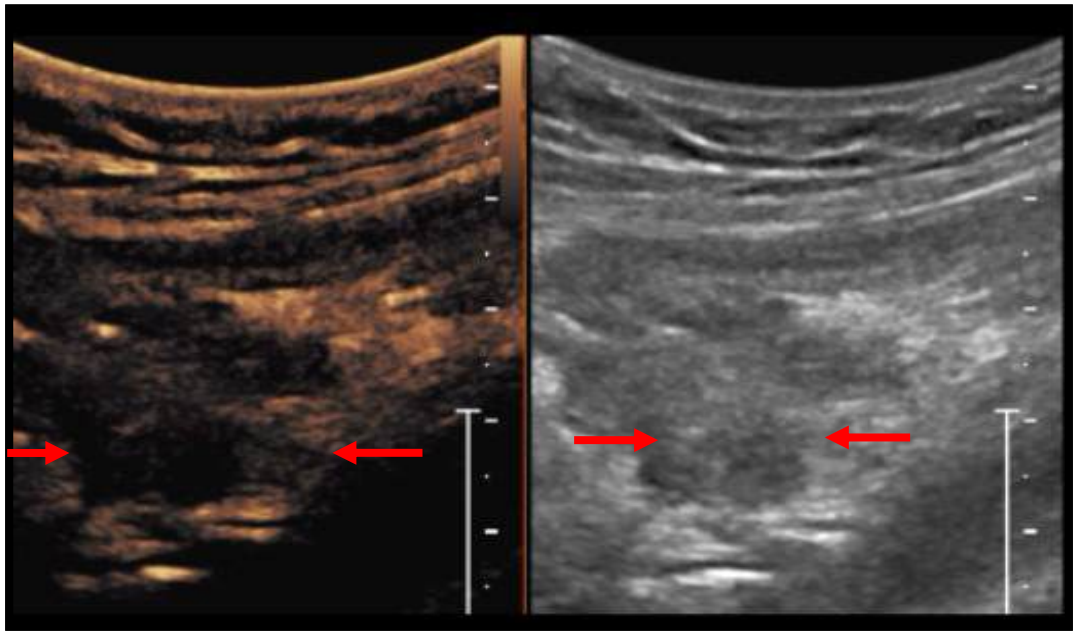
The difference between contrast for X-rays and MRI and contrast for ultrasound, consists in the fact that the microbubbles (∅: 1-7 μ) do not diffuse through the endothelium



There is no interstitial enhancement phase

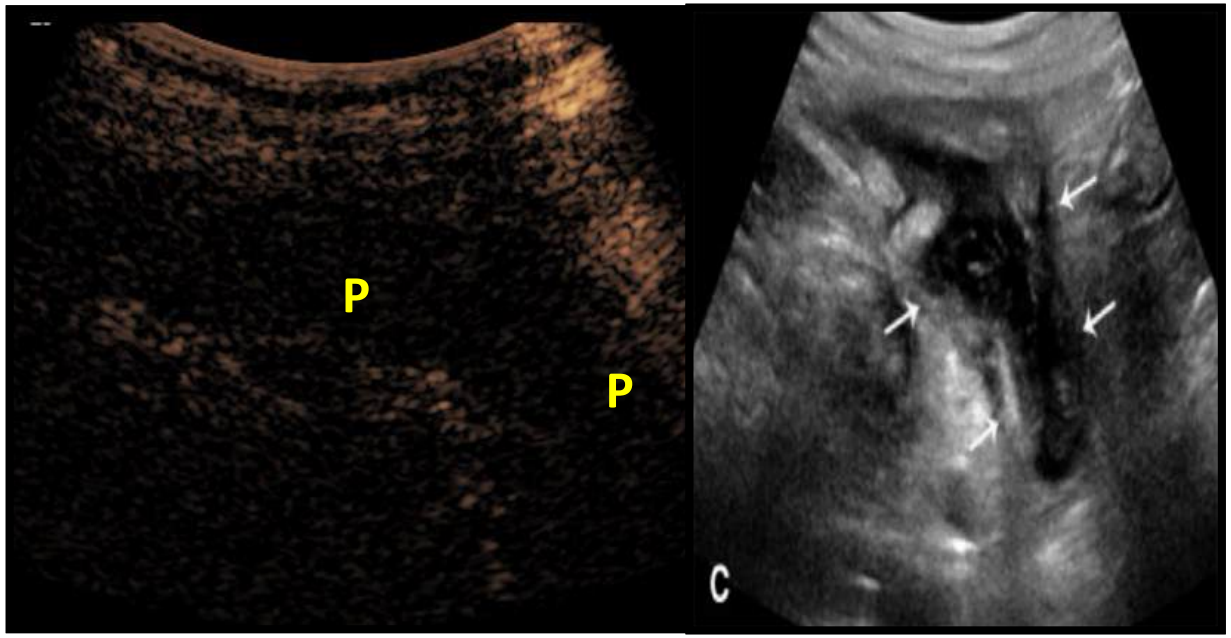
Use of CEUS with inflammatory masses

- **Phlegmonous masses:**
  - Diffuse hyperenhancement reflecting acute inflammatory changes.



Abscess:

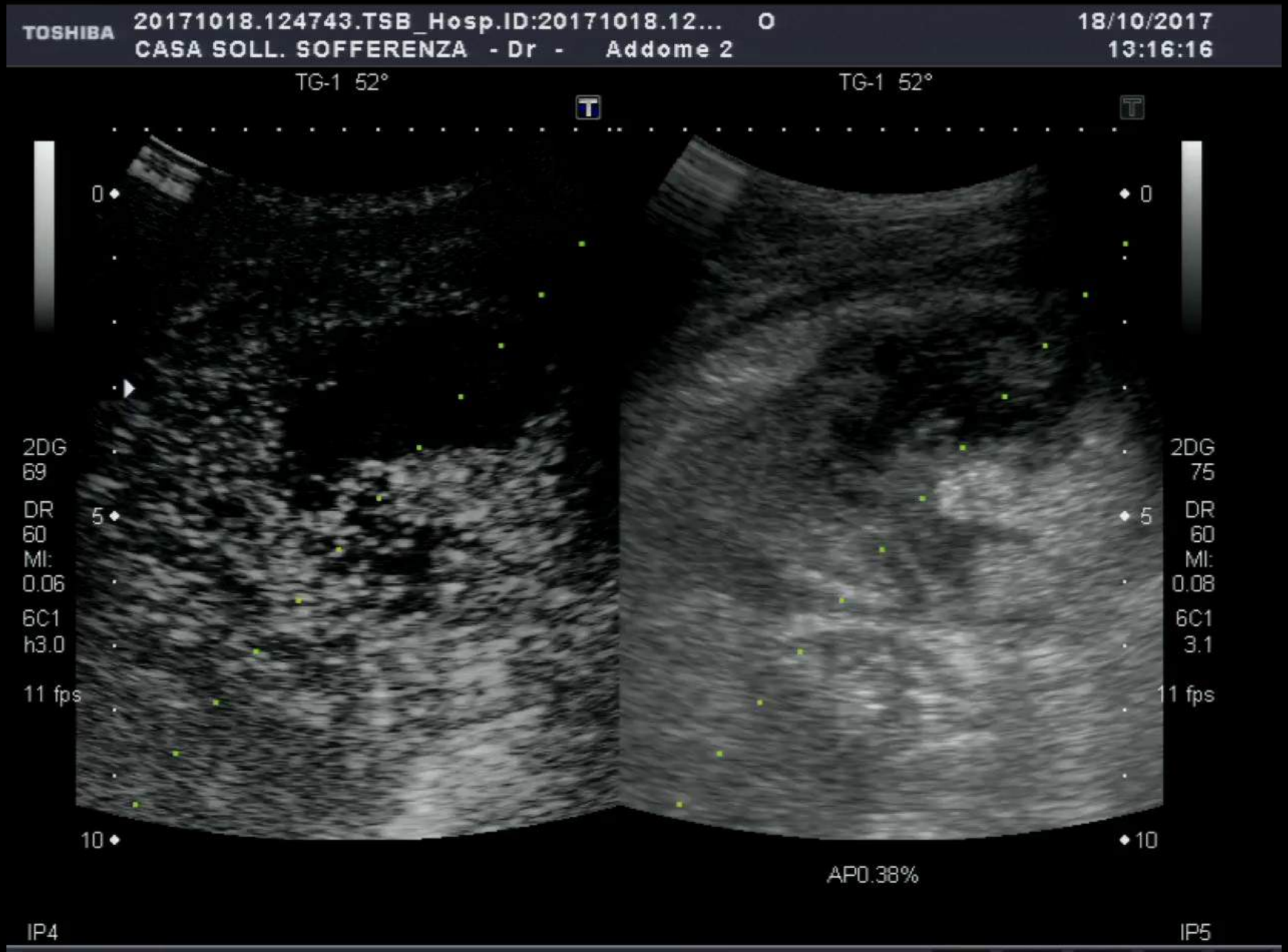
- Regions of avascularity corresponding to pockets of pus with peripheral areas of enhancement.
- Reflective of reactive inflammation & the abscess wall.



- Medellin et al. Abdom Radiol 2018.
- C. Lu et al. J Ultrasound Med 2019
- C. Maaser et al. UEG J, Feb 2022

Statement 4.3: ECCO CD Treatment GL - SURGICAL [2024]
We recommend control of sepsis prior to abdominal surgery for CD [EL3]

Statement 4.4: ECCO CD Treatment GL - SURGICAL [2024]
We suggest use of intravenous antibiotics and percutaneous, image-guided drainage as the first-line treatment for intra-abdominal abscesses related to CD [EL3]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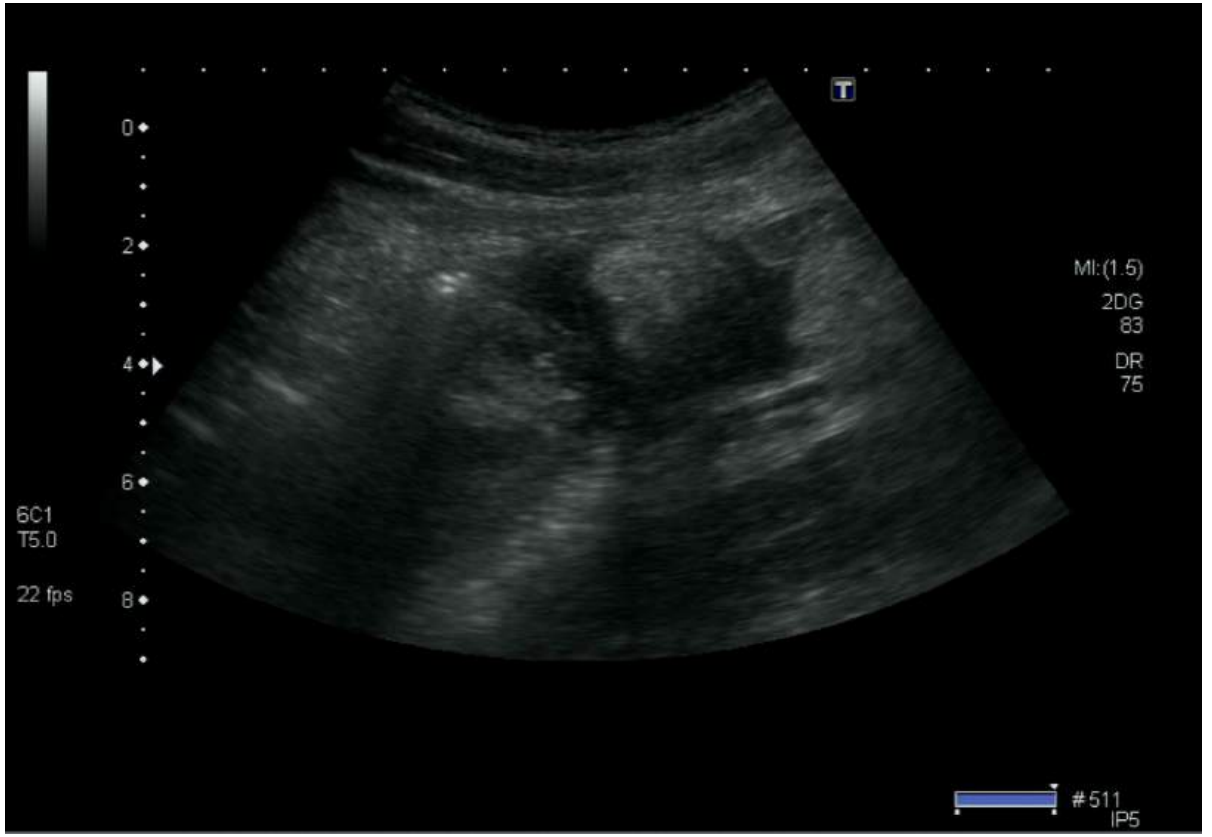
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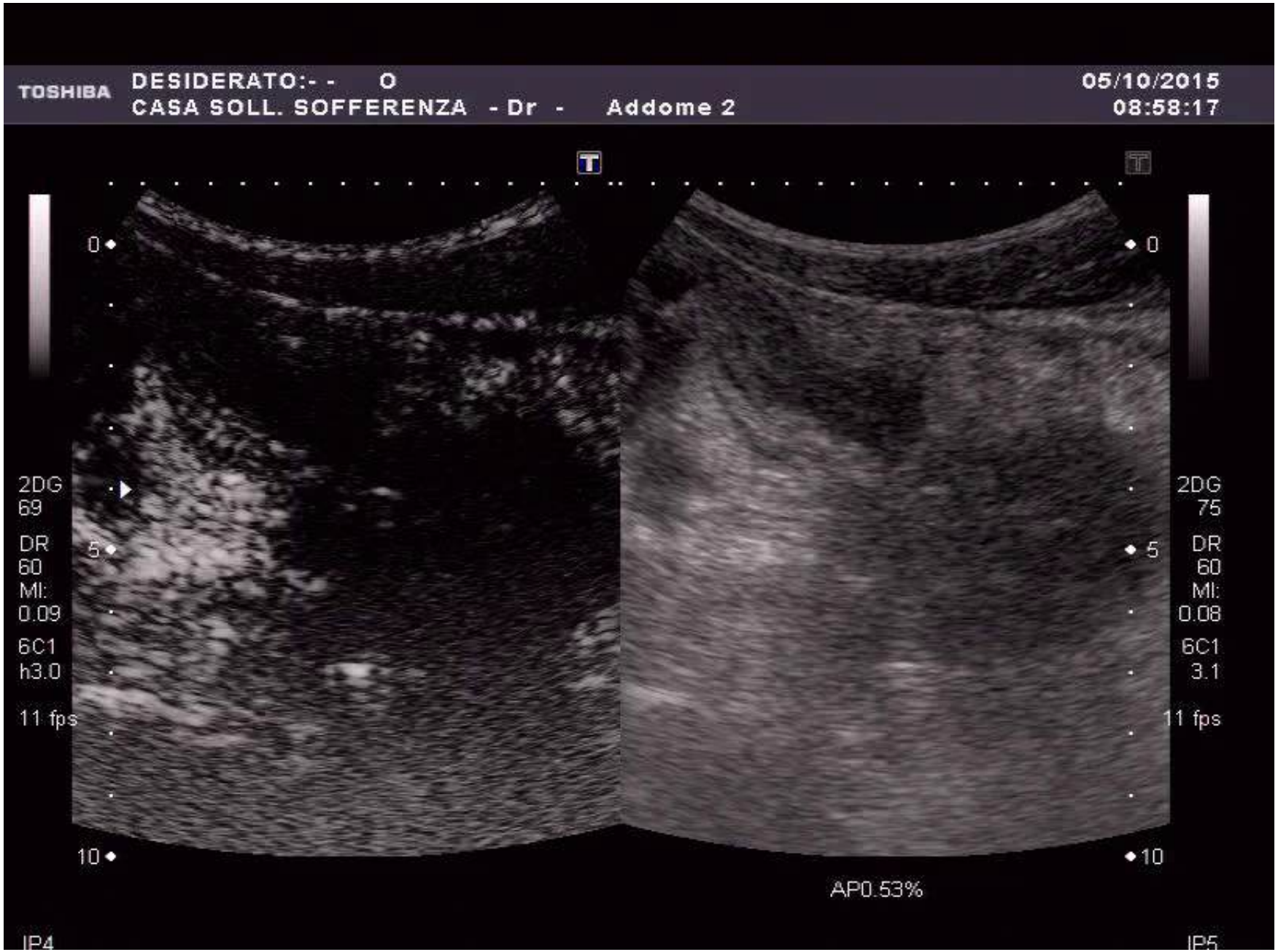
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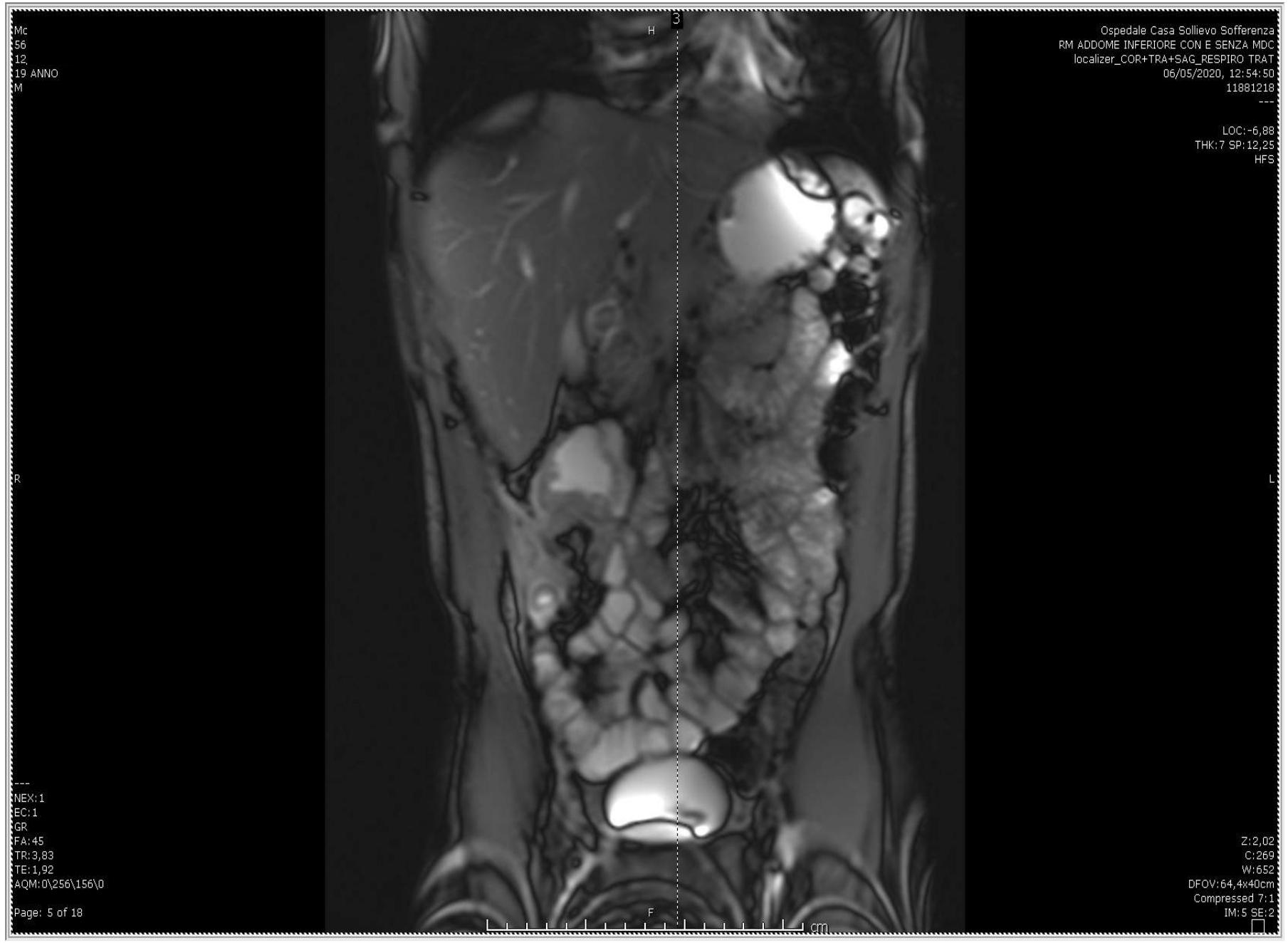
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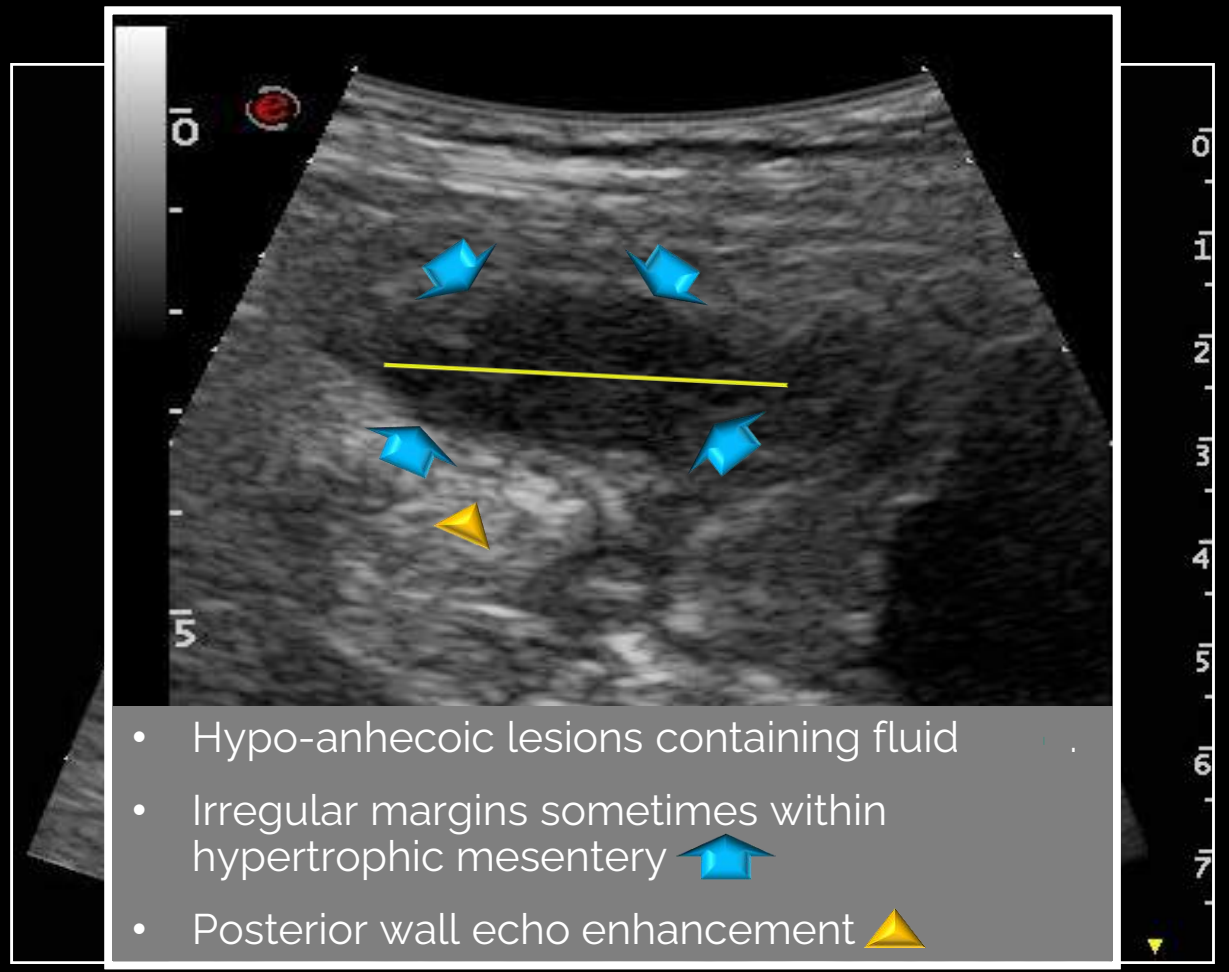
localizer_COR+TRA+SAG_RESPIRO TRAT
06/05/2020, 12:54:50
11881218

LOC:-6,88
THK:7 SP:12,25
HFS
R
L

NEX:1
EC:1
GR
FA:45
TR:3,83
TE:1,92
AQM:0\256\156\0
Page: 5 of 18
F
cm
Z:2,02
C:269
W:652
DFOV:64,4x40cm
Compressed 7:1
IM:5 SE:2

Use of CEUS with masses

Case

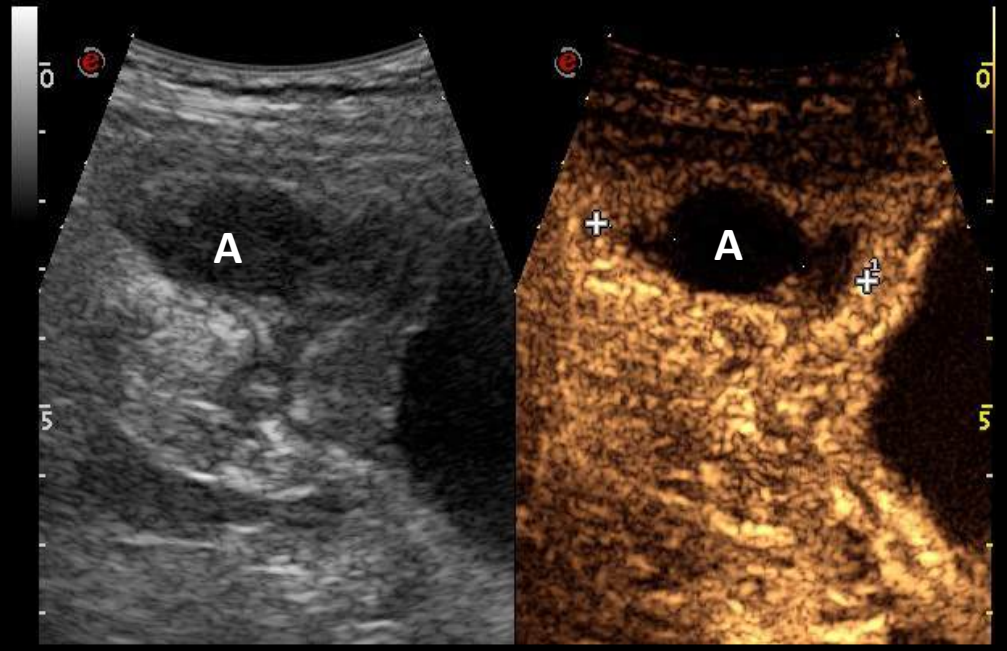


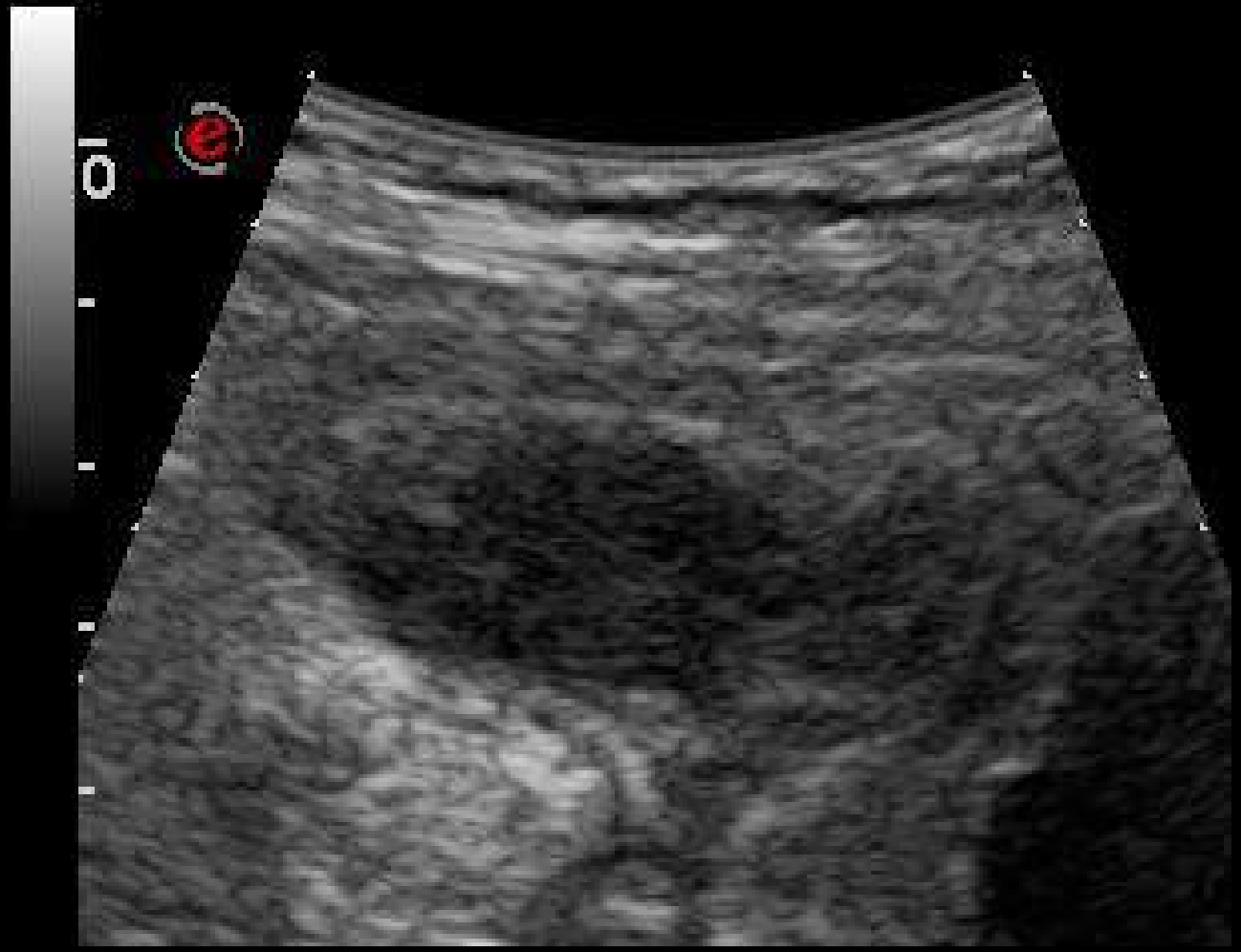
Courtesy of dr Heba Al-Farhan

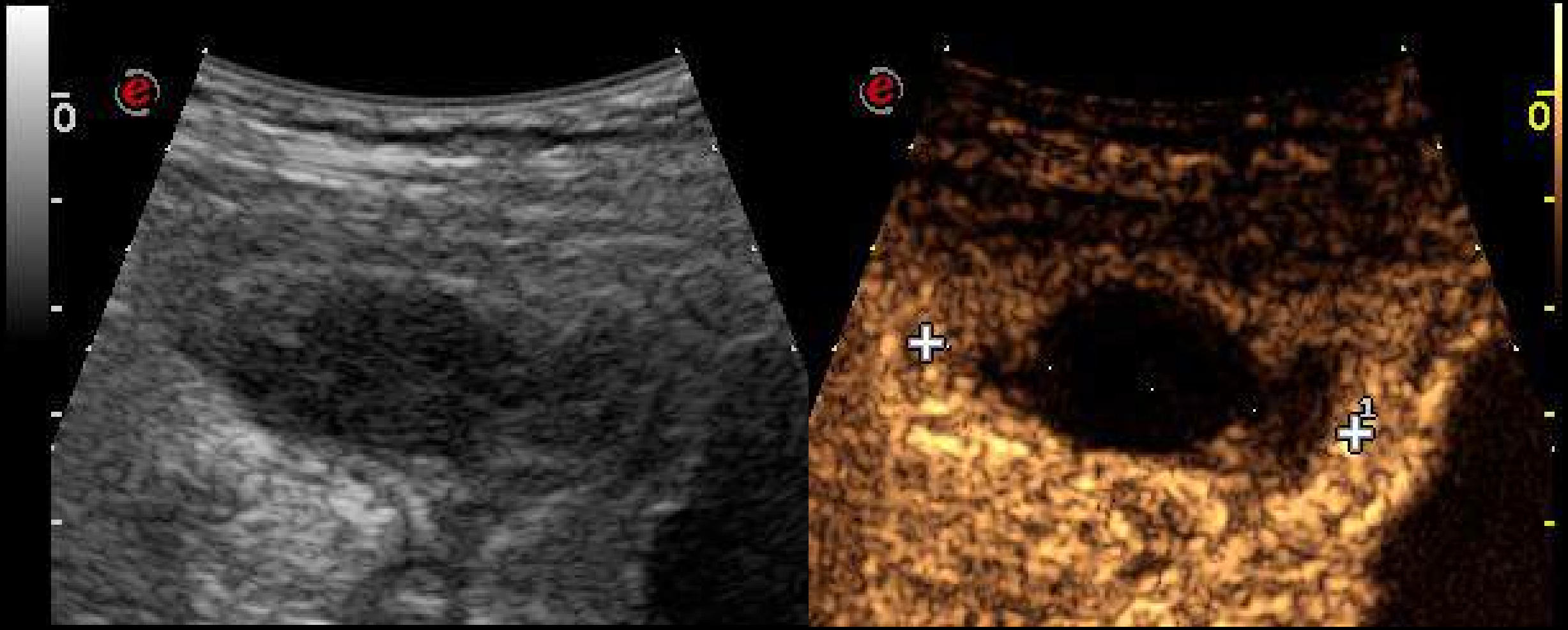
Use of CEUS with masses

Case

- **Abscess**:
  - Avascular mass with peripheral areas of enhancement.




10



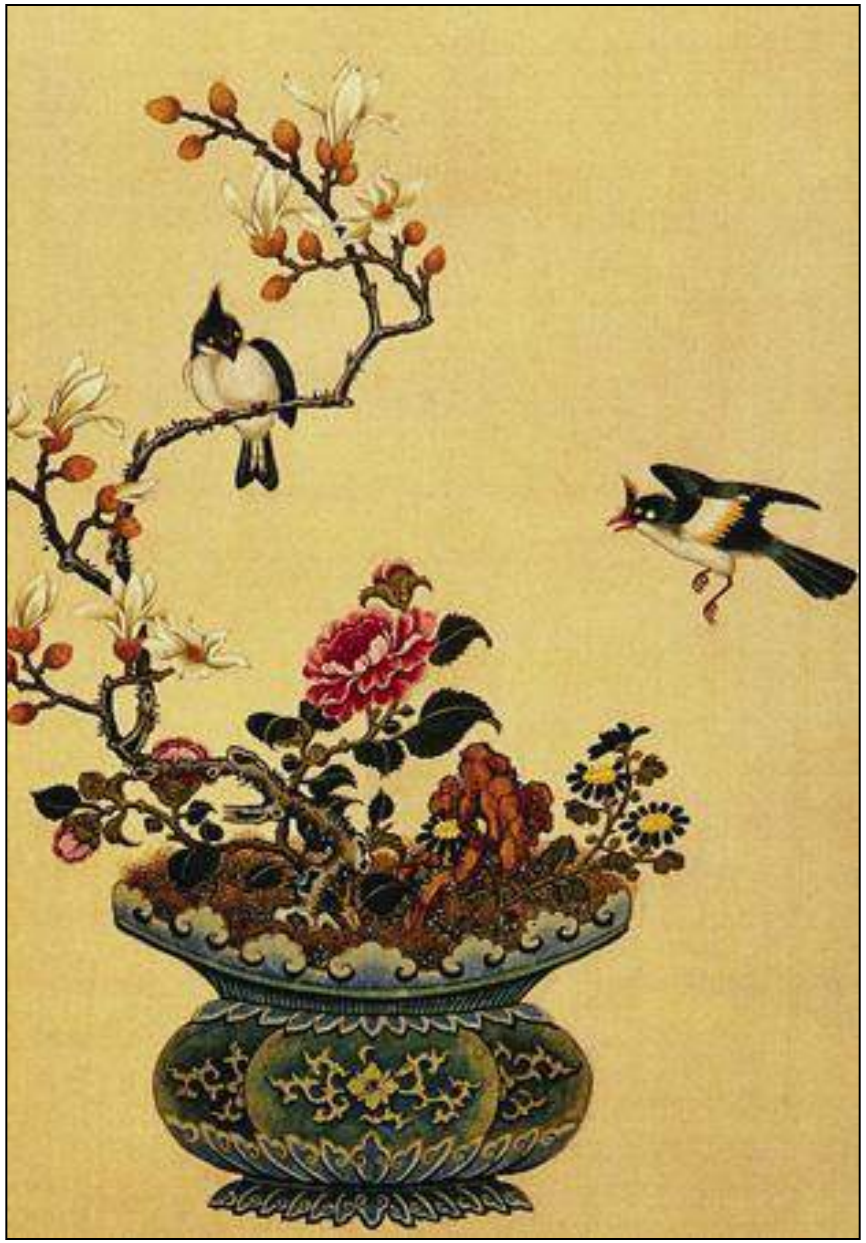
TAKE HOME MESSAGES

Intestinal US is useful in diagnosis of stenosis, fistulas and abscesses in CD

Role of IUS in detecting complications is well established, also by international guidelines

SICUS may increase IUS accuracy in diagnosis of CD stenosis

CEUS may increase IUS accuracy in diagnosis of abscesses



If you can't
convince them,

Confuse them.

如 (Confucio)