

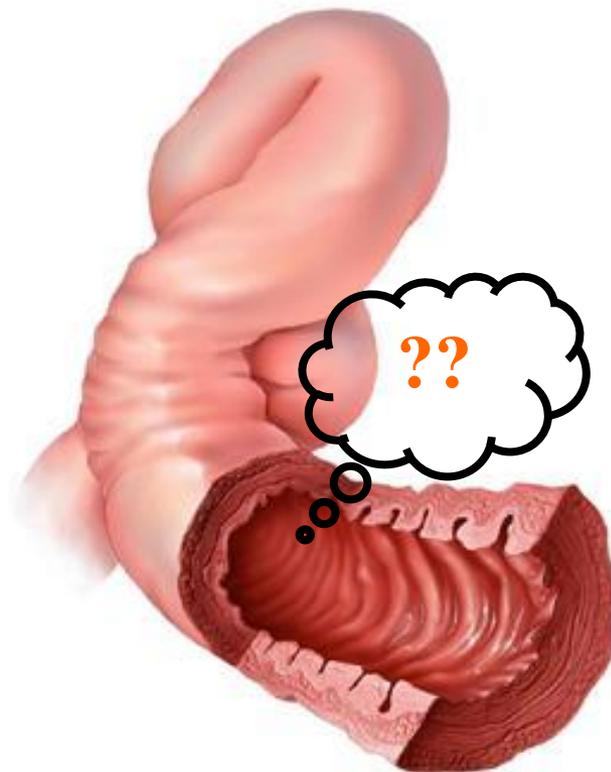
# Tube digestif en écho

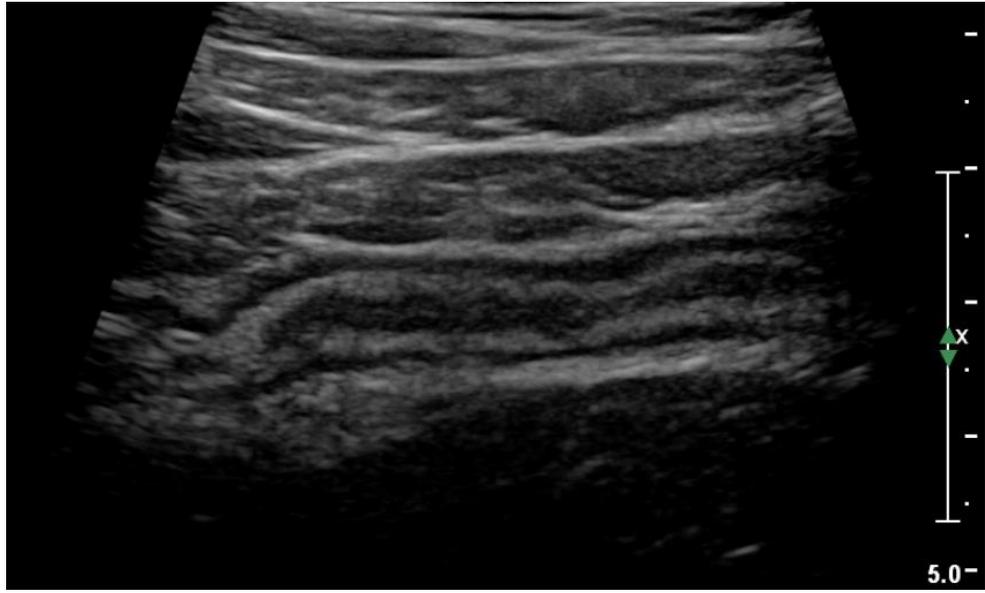
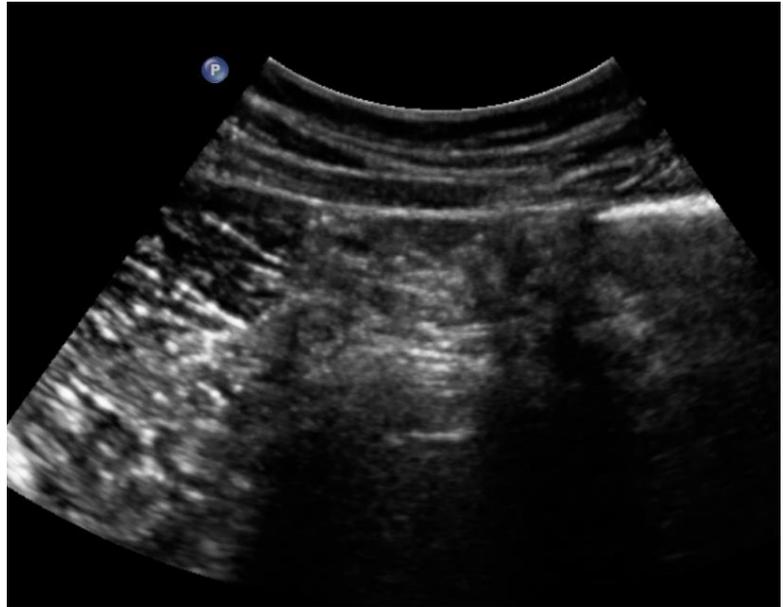
E DANSE

Université Catholique de Louvain

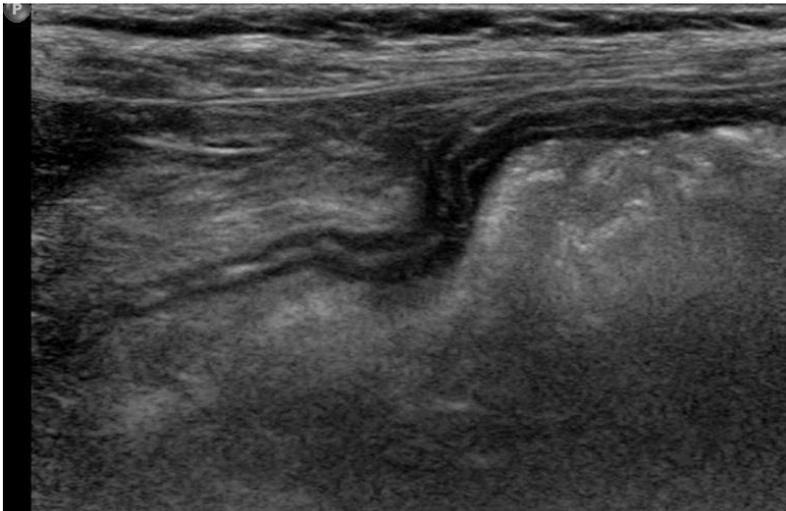
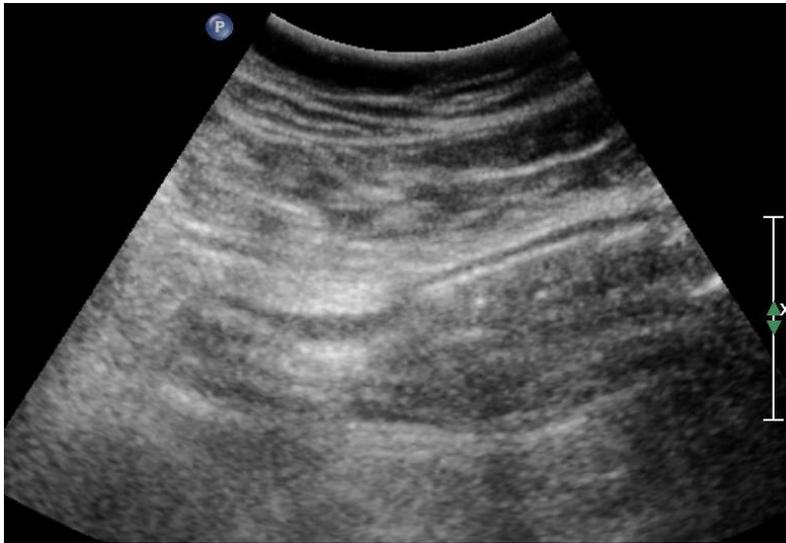
Cliniques Universitaires St Luc ,

1200 Bruxelles



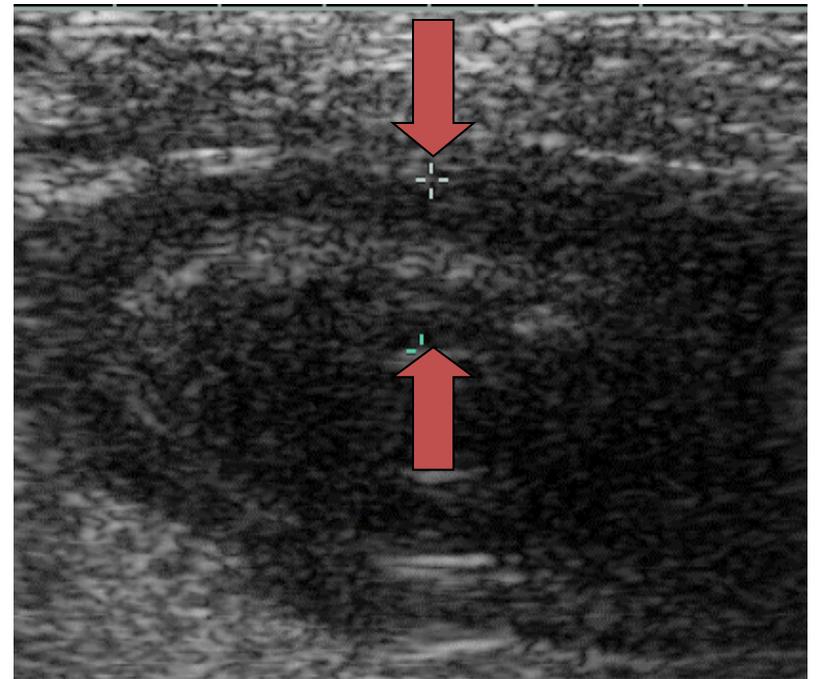
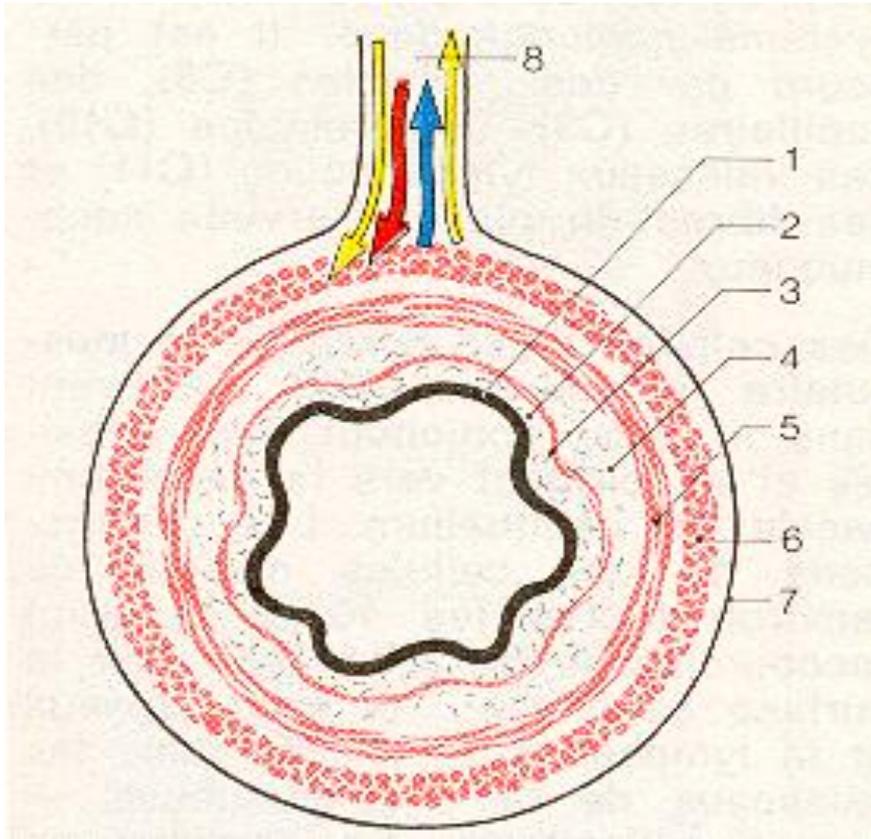


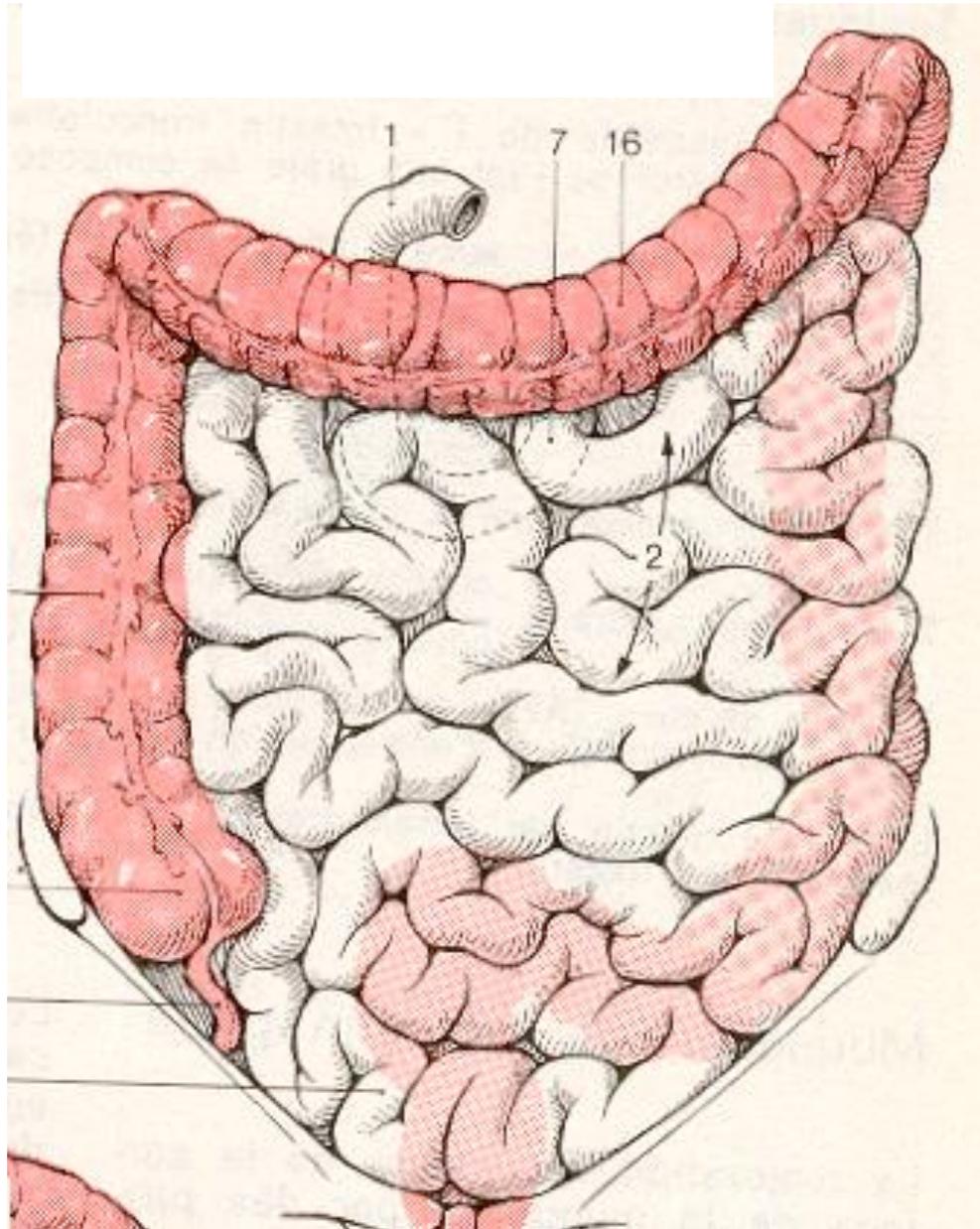
- Analyse du tube digestif en US :
- Sonde de basse fréquence
  - Sonde de haute fréquence

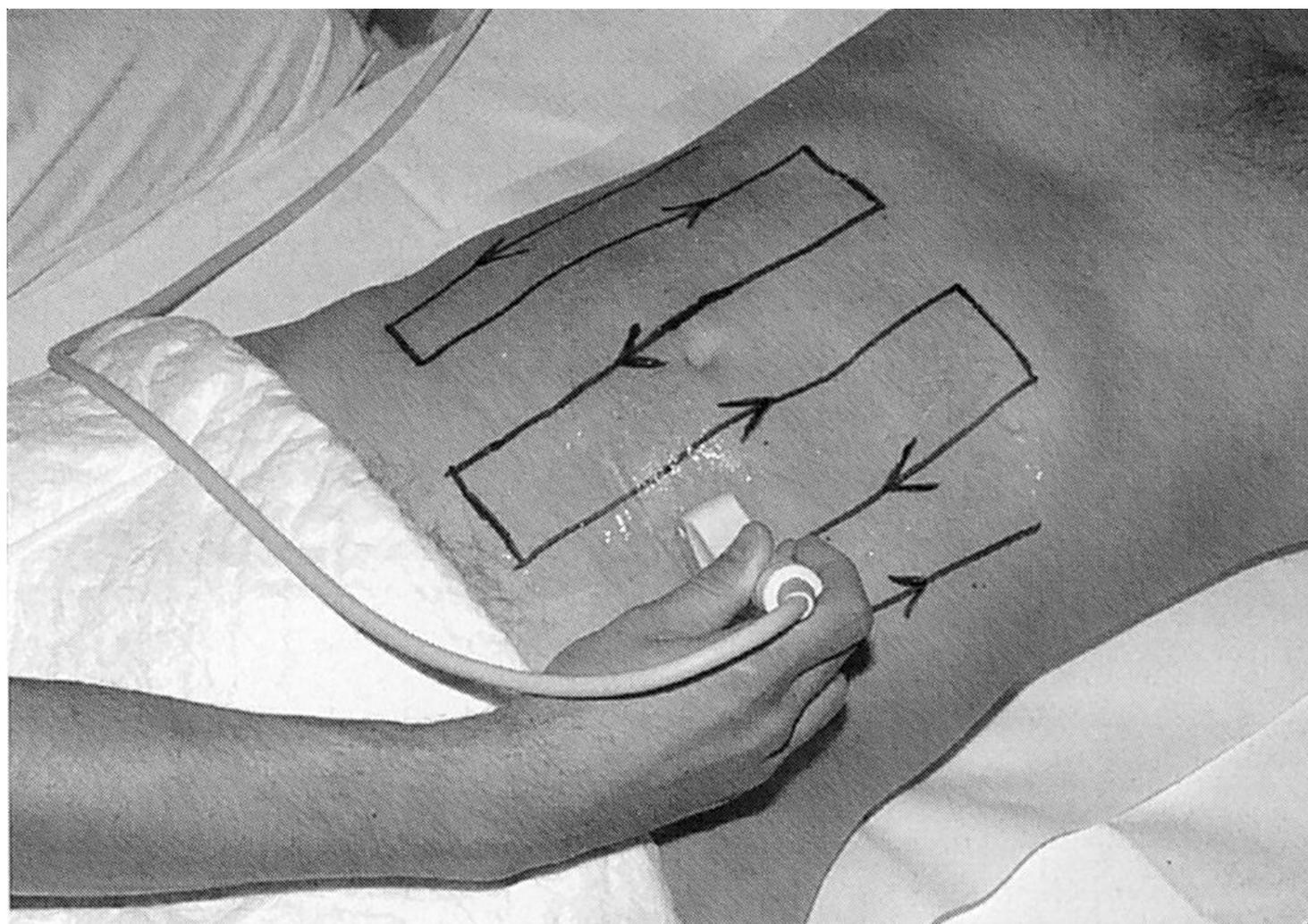


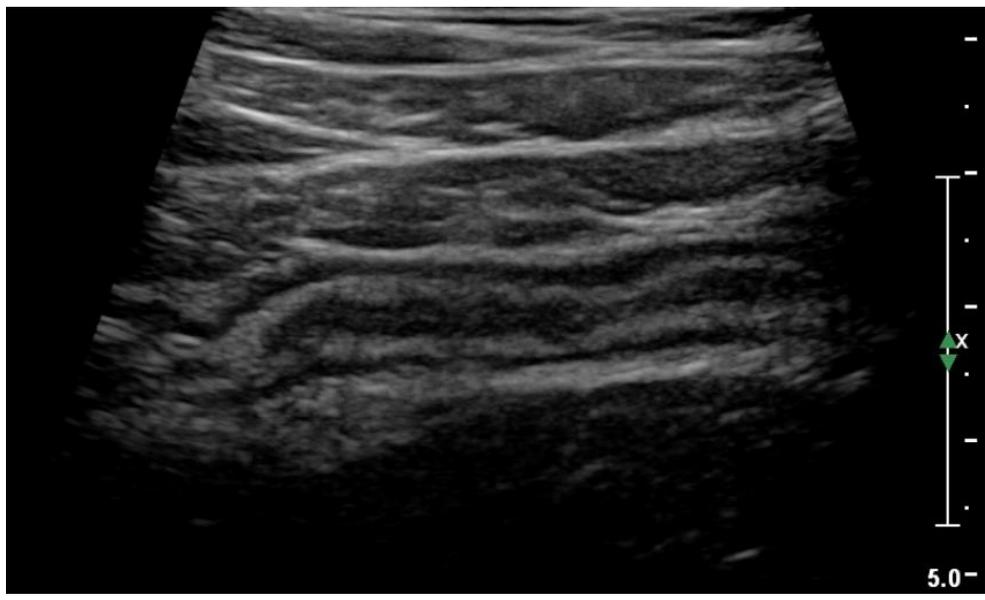
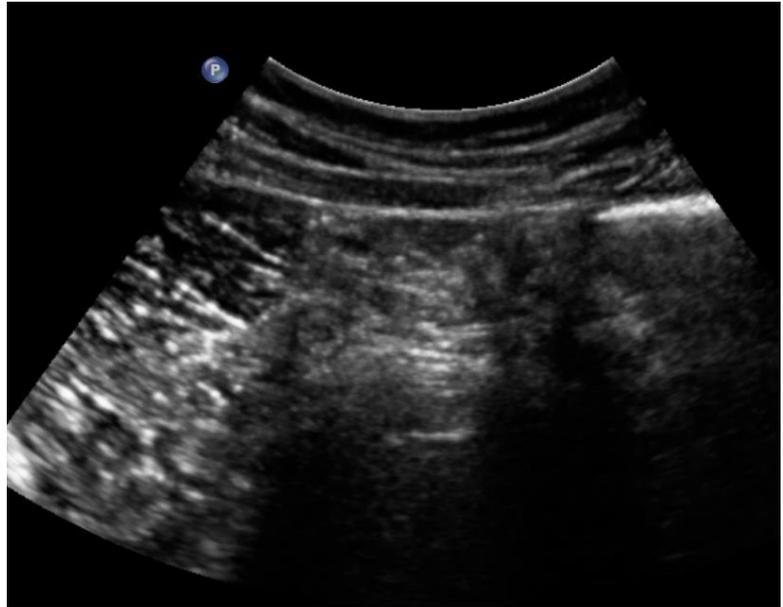
Aspect normal des parois gastriques: US vs CT

- En écho, on peut voir la différence entre l'image avec une sonde de basse et de haute fréquence chez le même patient

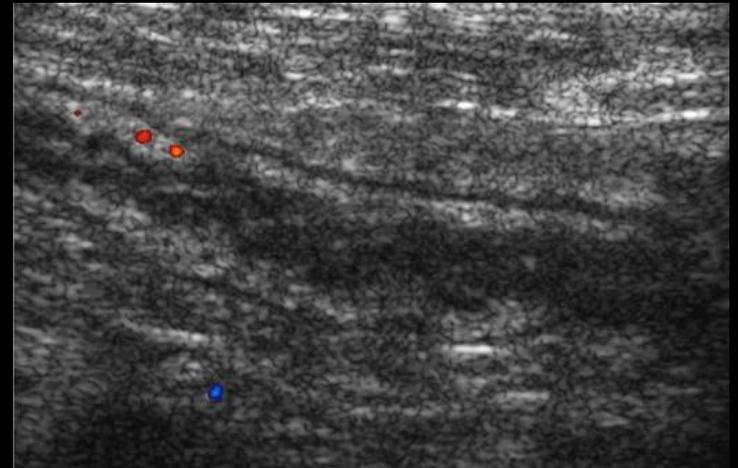
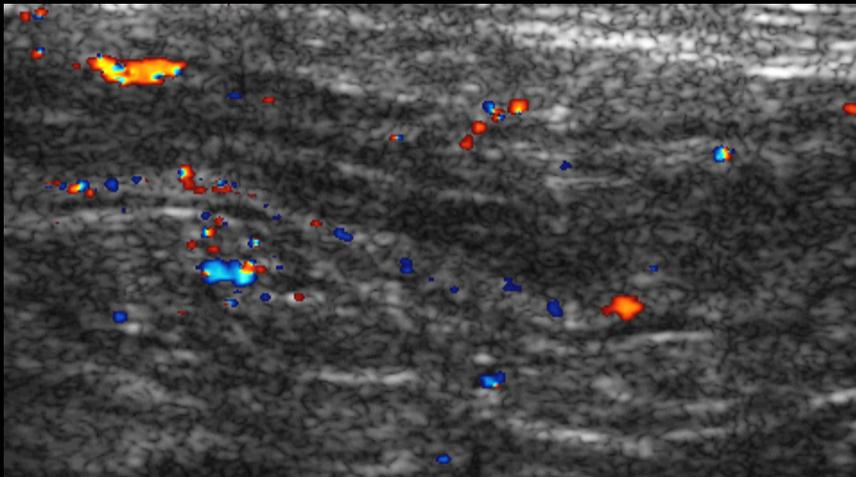
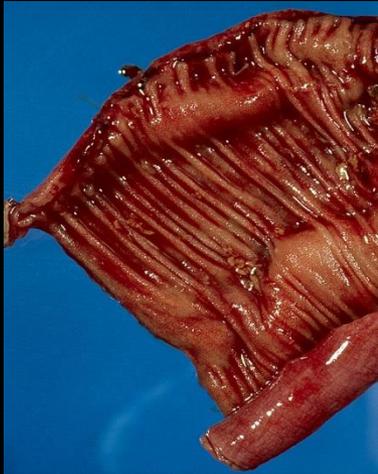






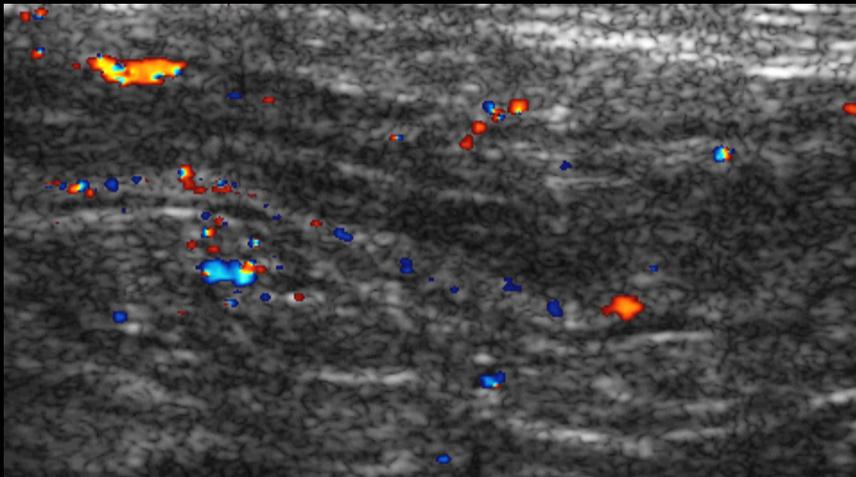


# Intestin grêle

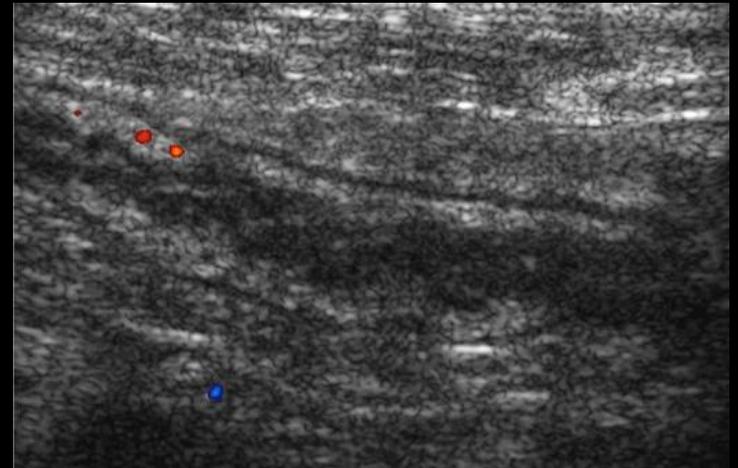


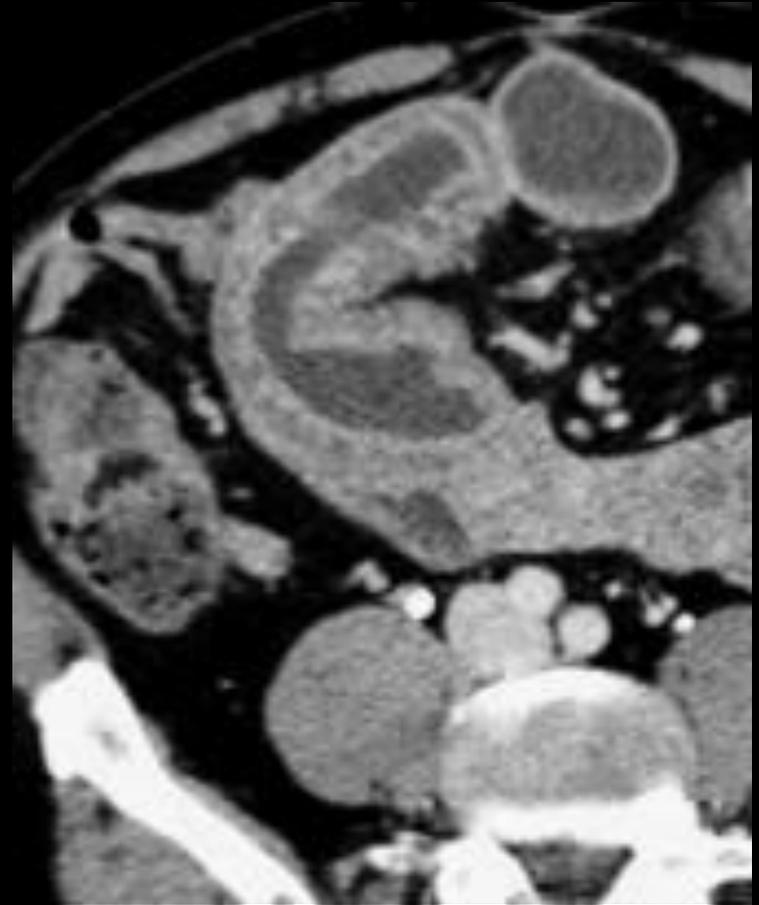
# Intestin grêle

Paroi < 3 mm



Stratification

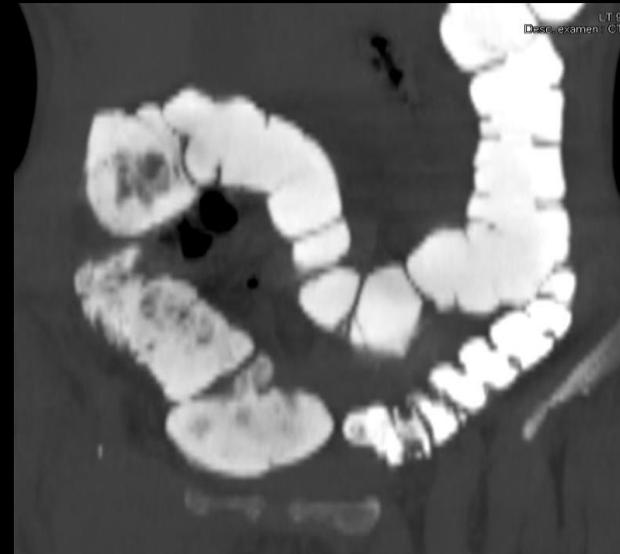




Jejunum

Ileon

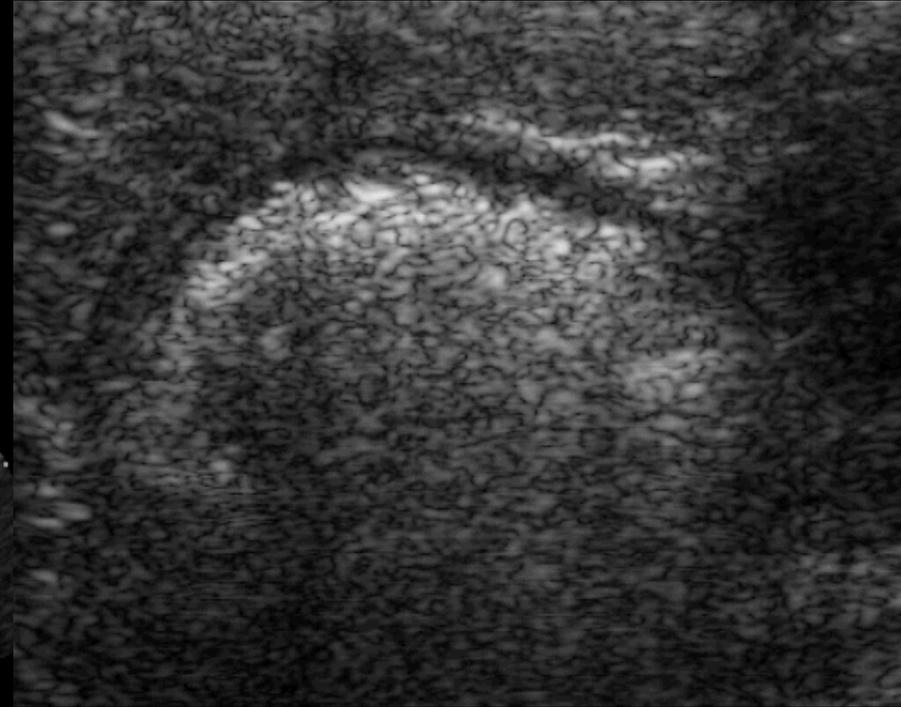
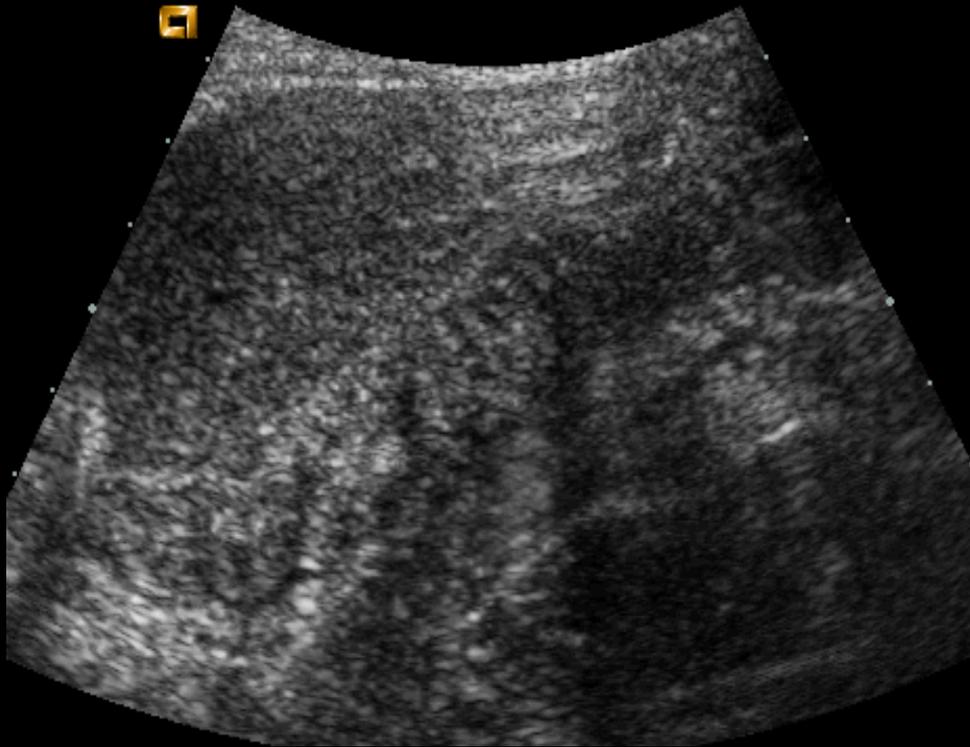
# Le colon normal



# Le colon normal



# Colon normal



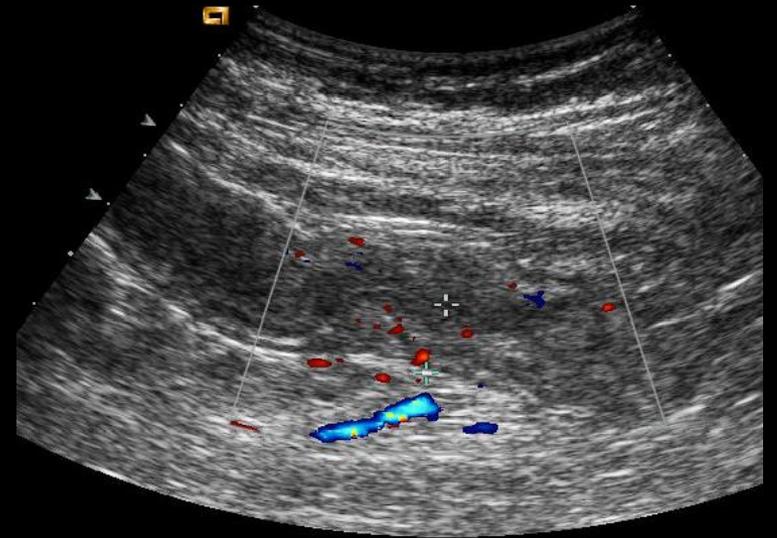
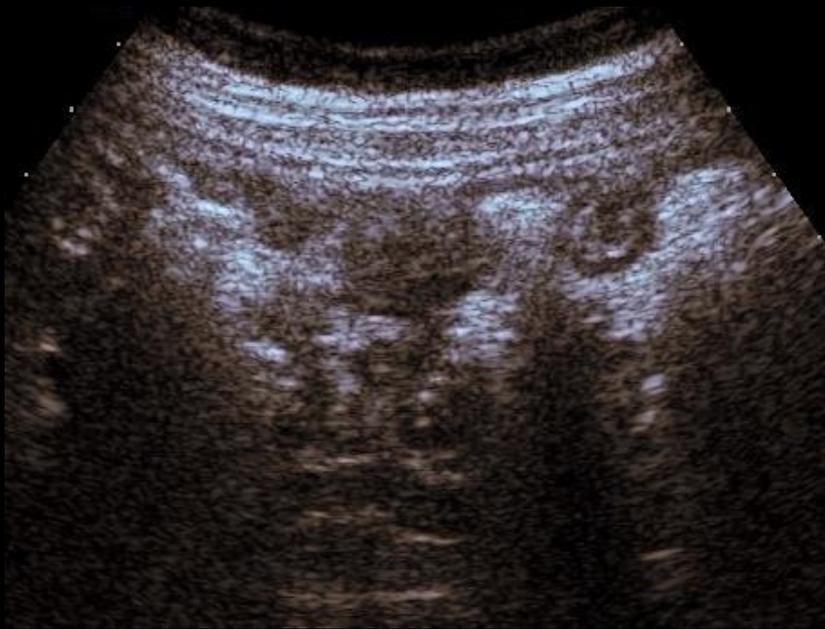
# Le colon normal

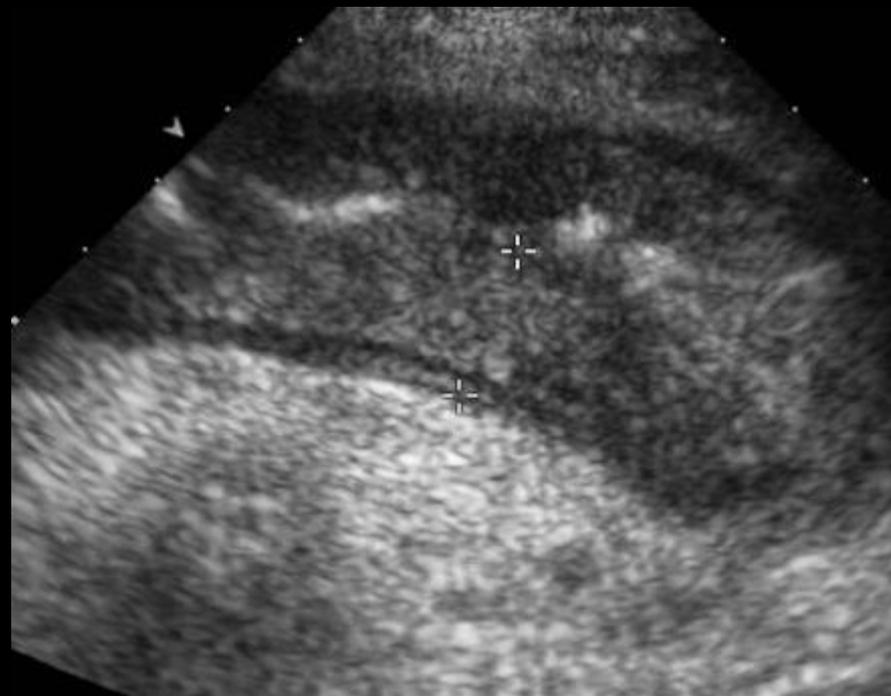
Epaisseur < 5 mm

Stratification

.

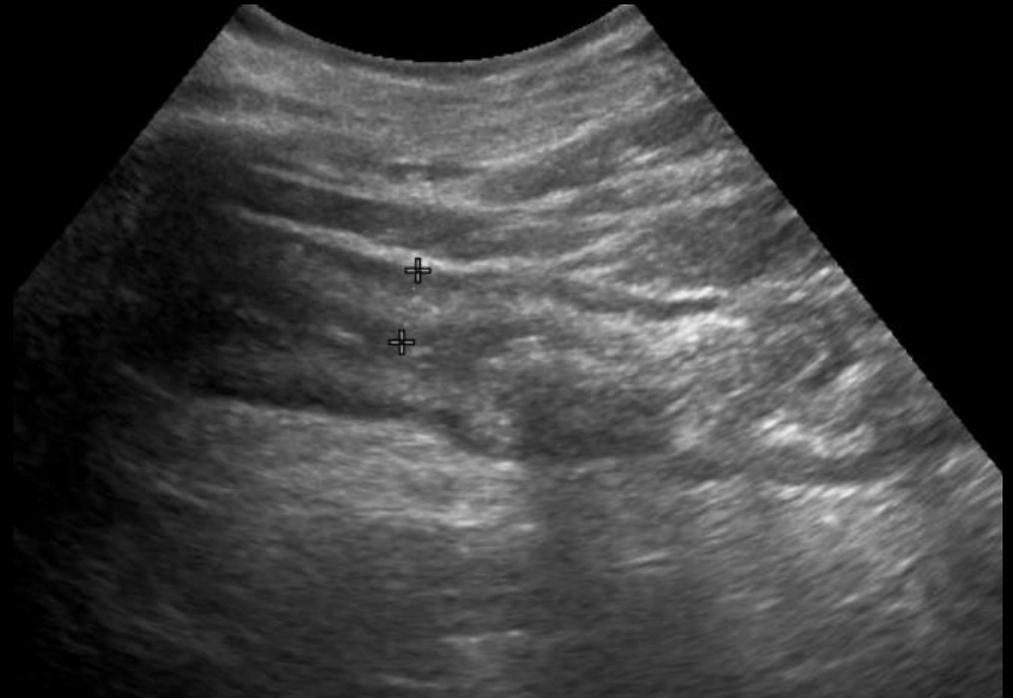
.



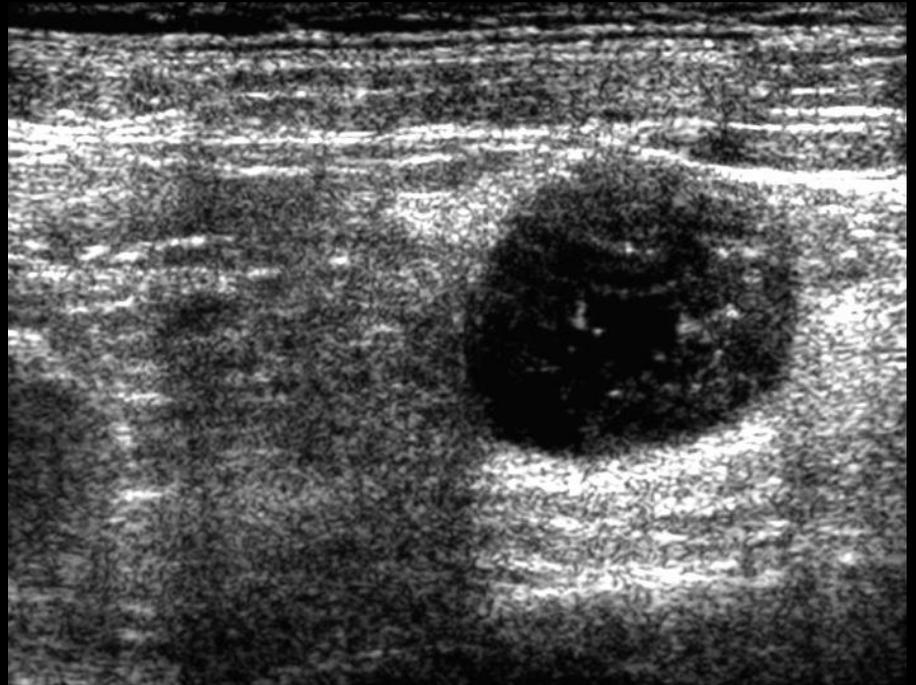
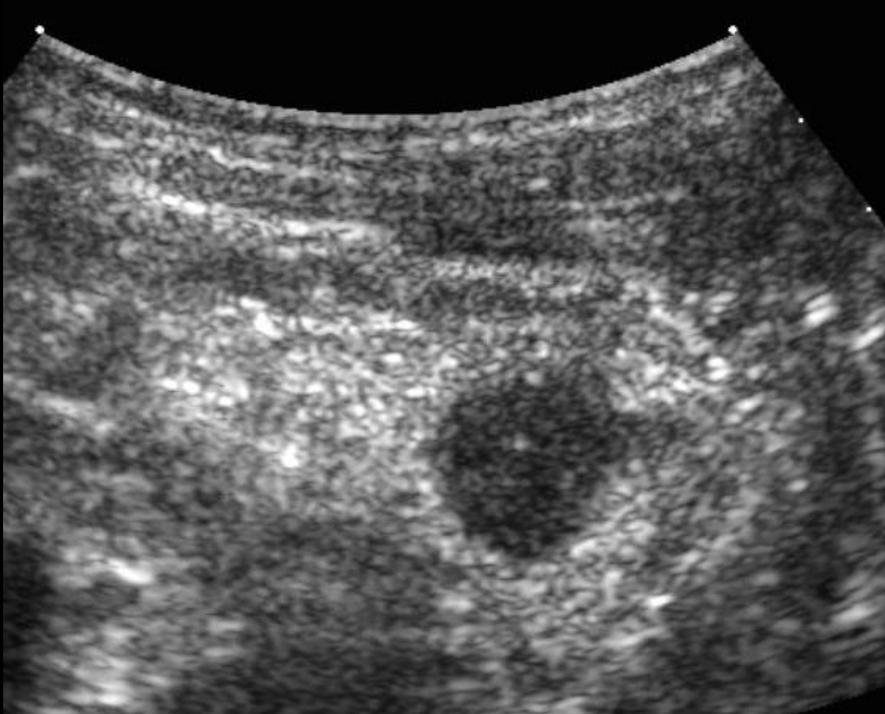


Dist = 1.57cm

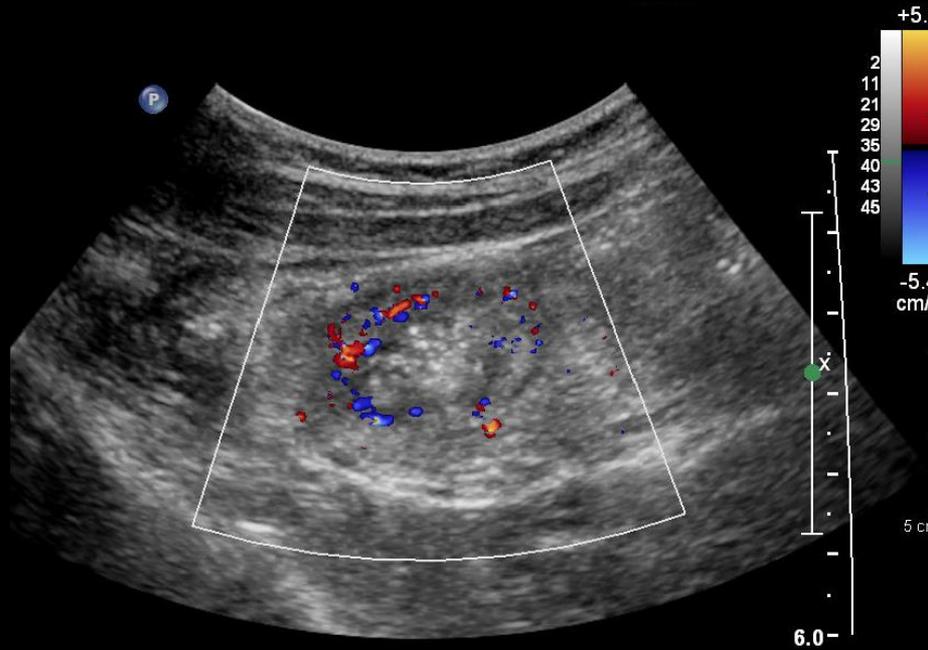
**Epaisseur normale < 5 mm**



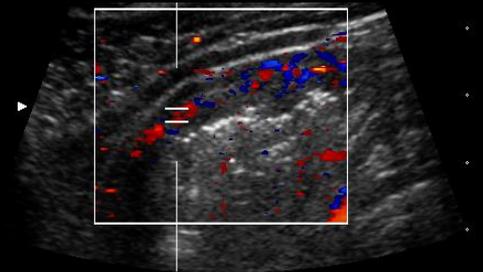
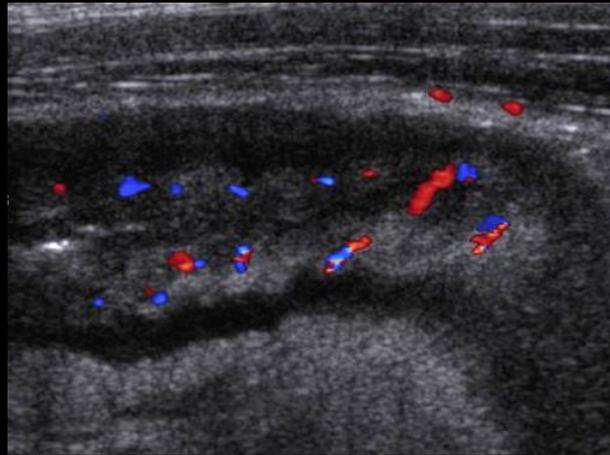
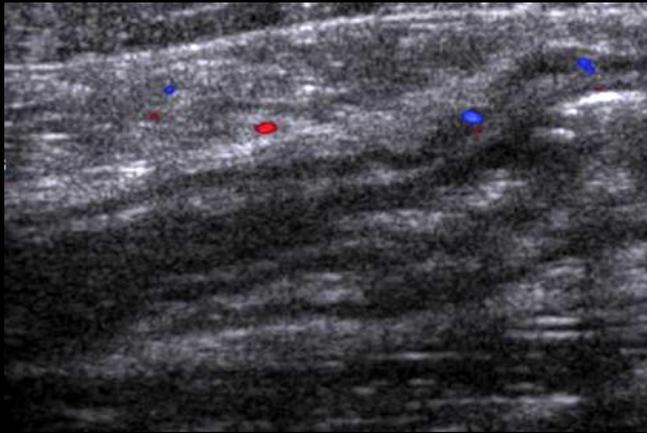
**Stratification**



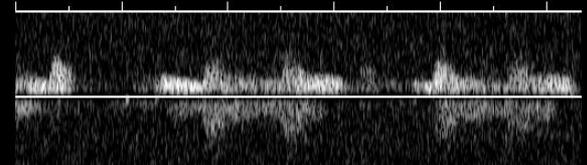
**Stratification**

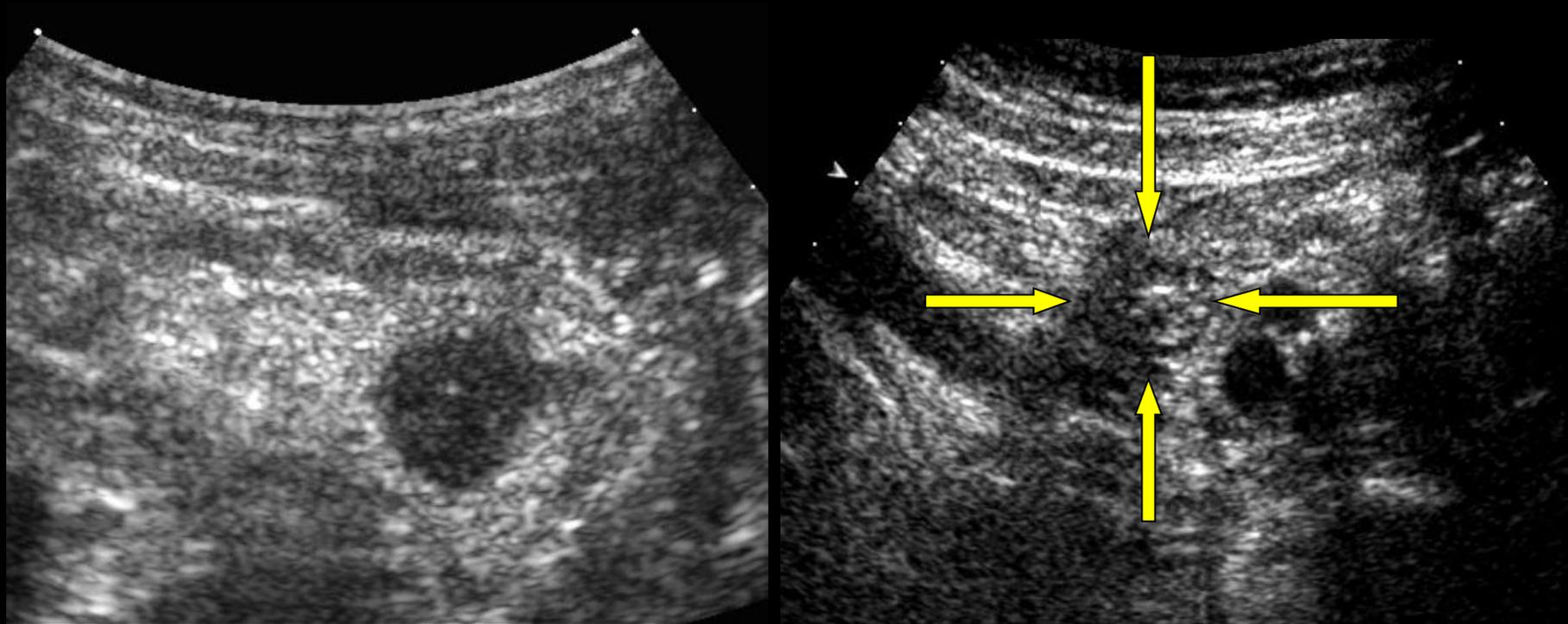


**Vascularisation**

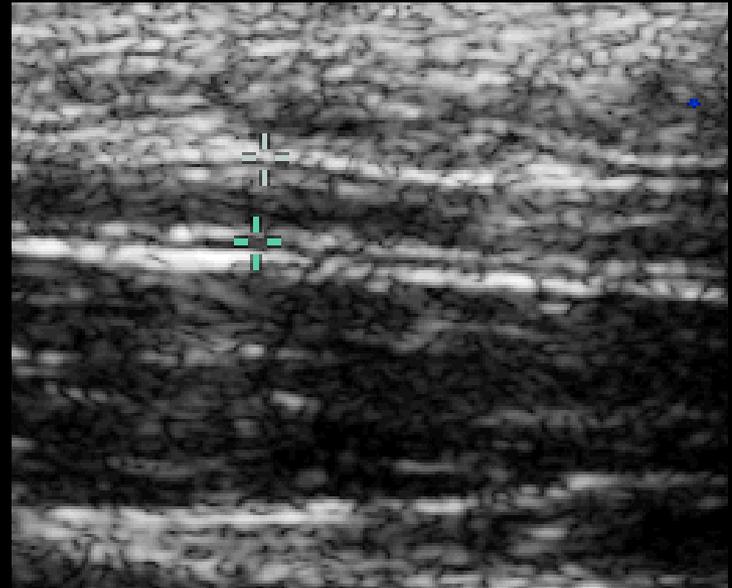
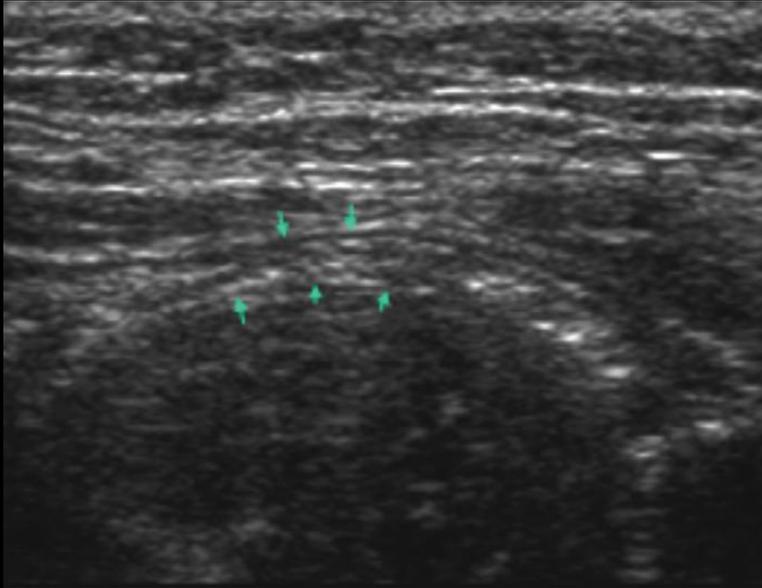


3000P  
52F  
53DG  
2SII  
0  
26SD



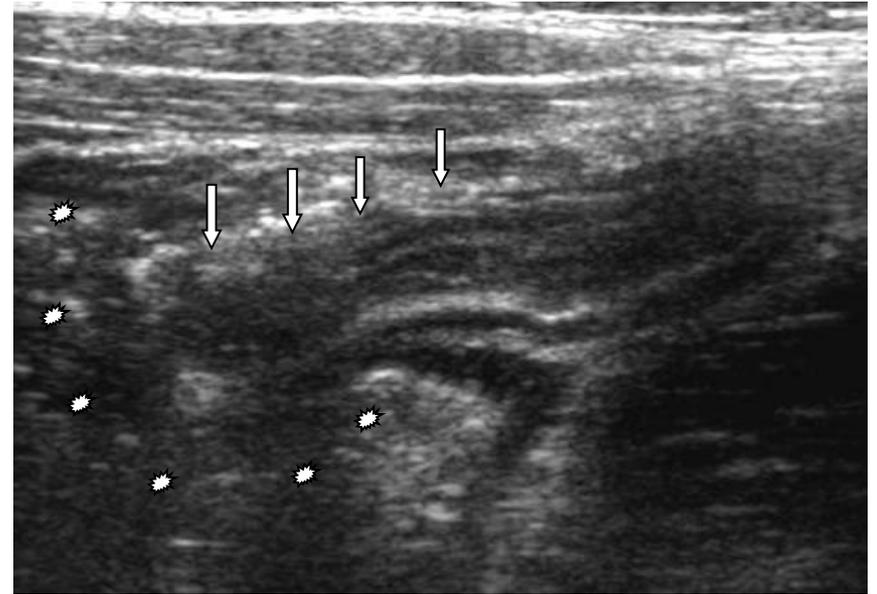
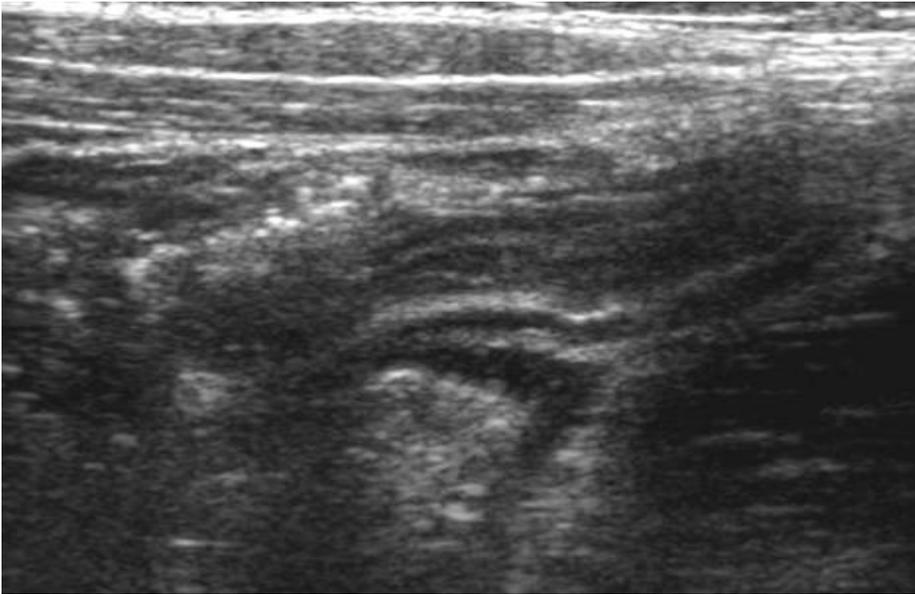
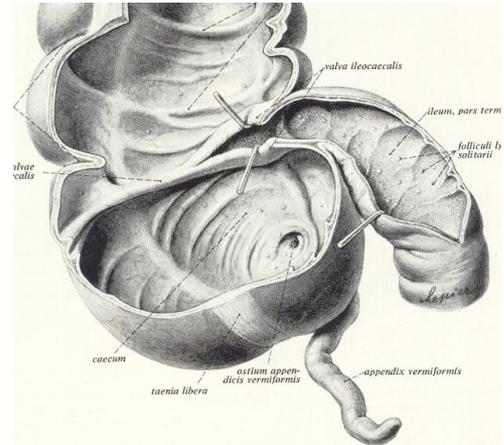
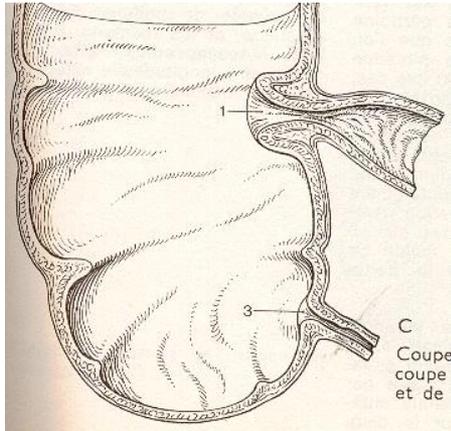


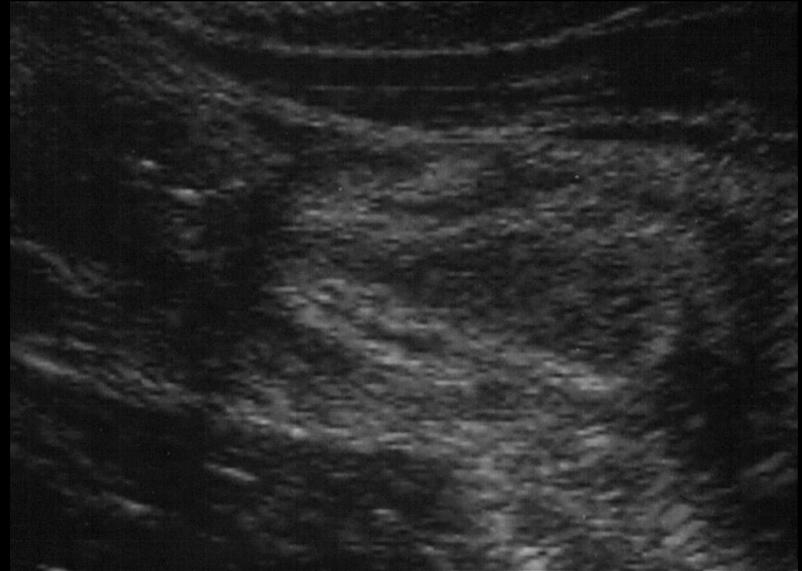
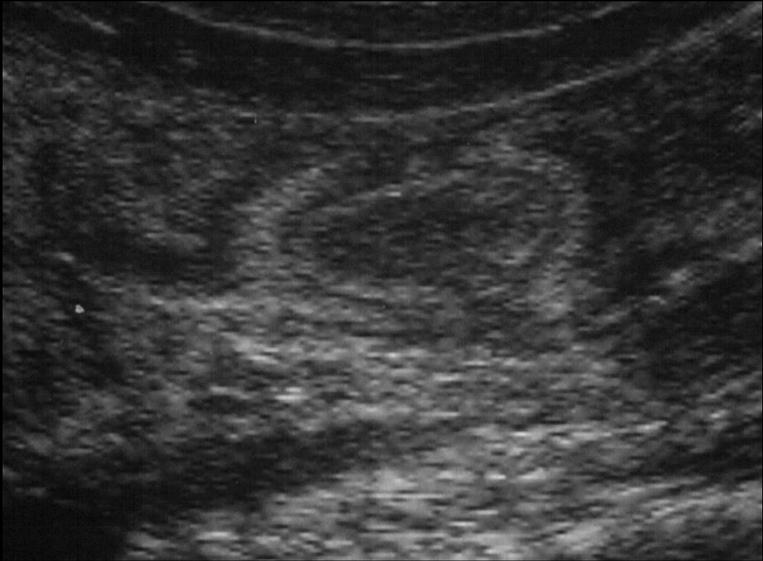
**Environnement graisseux péricolique**



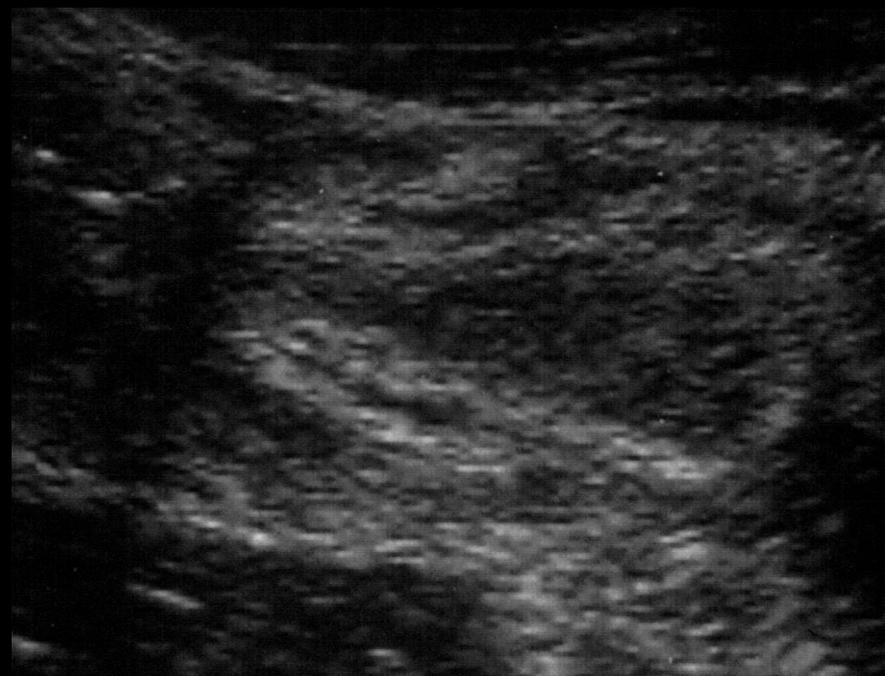
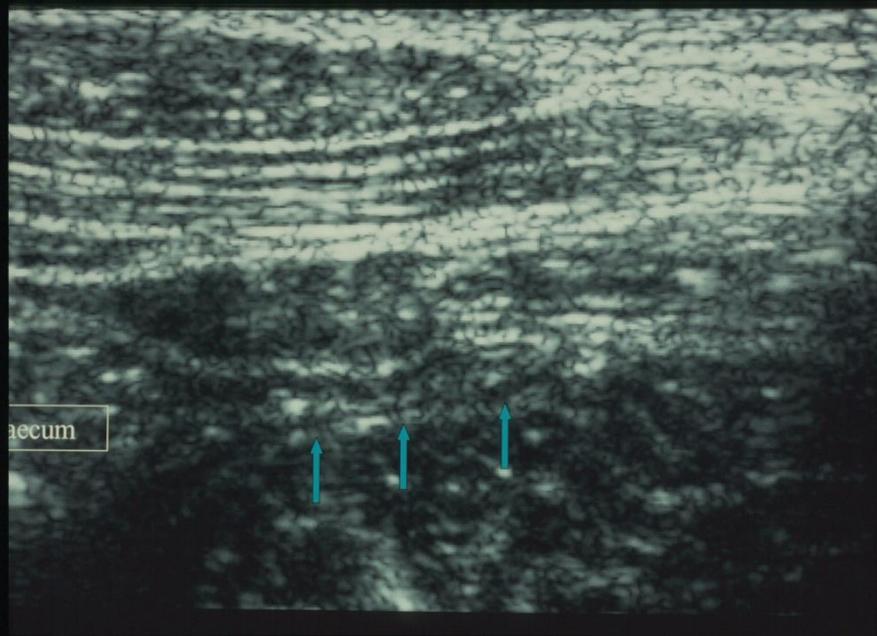
Appendice normal

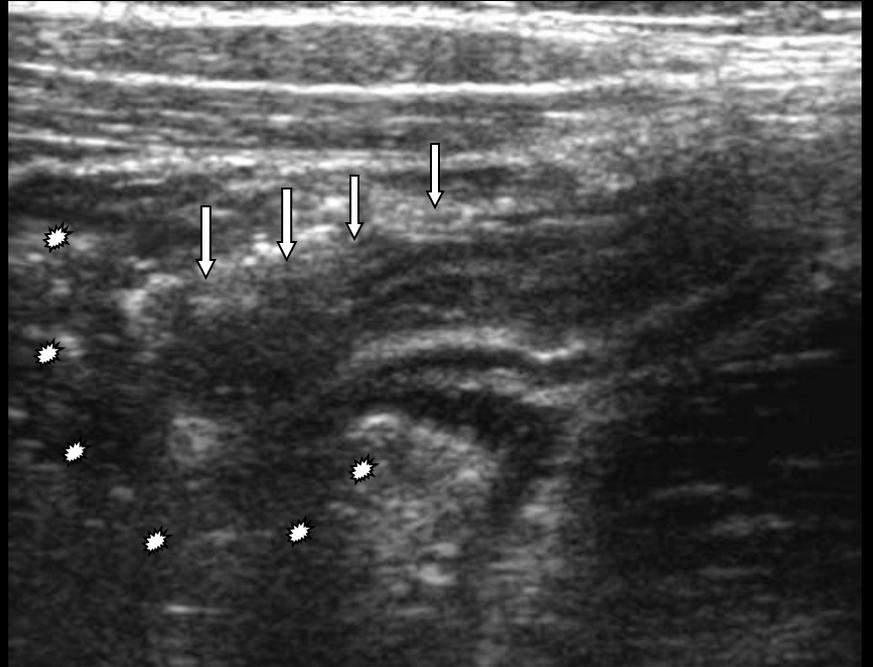
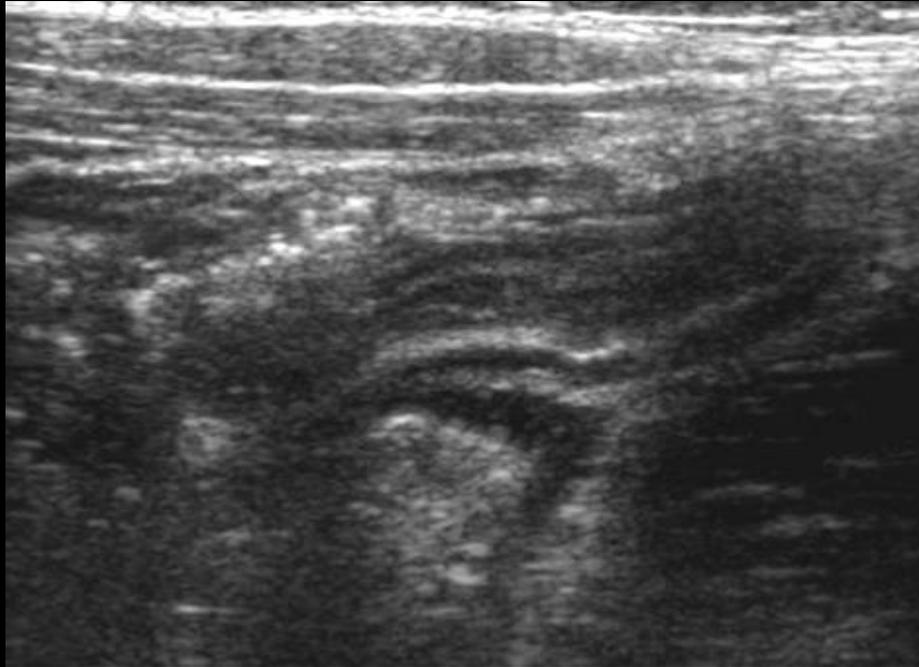


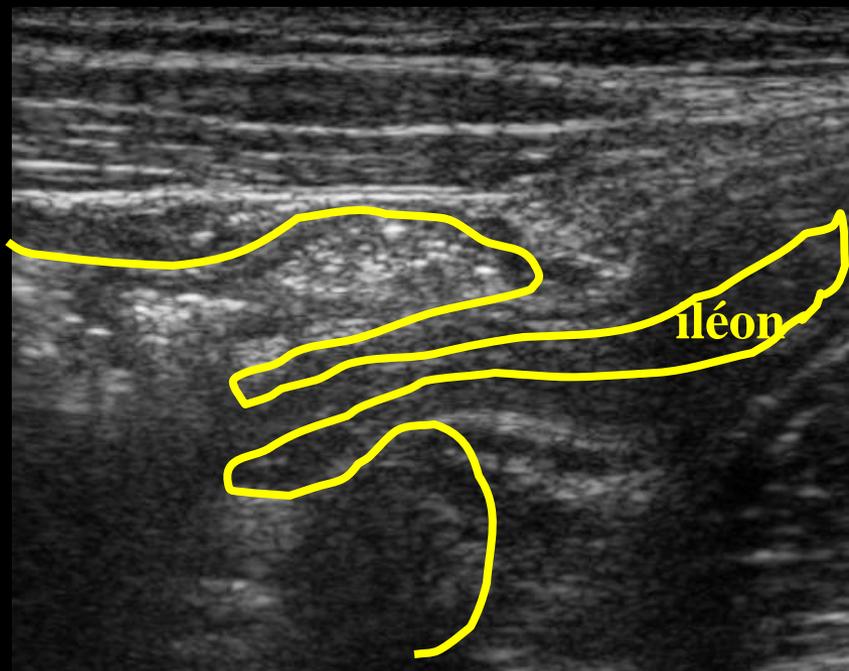
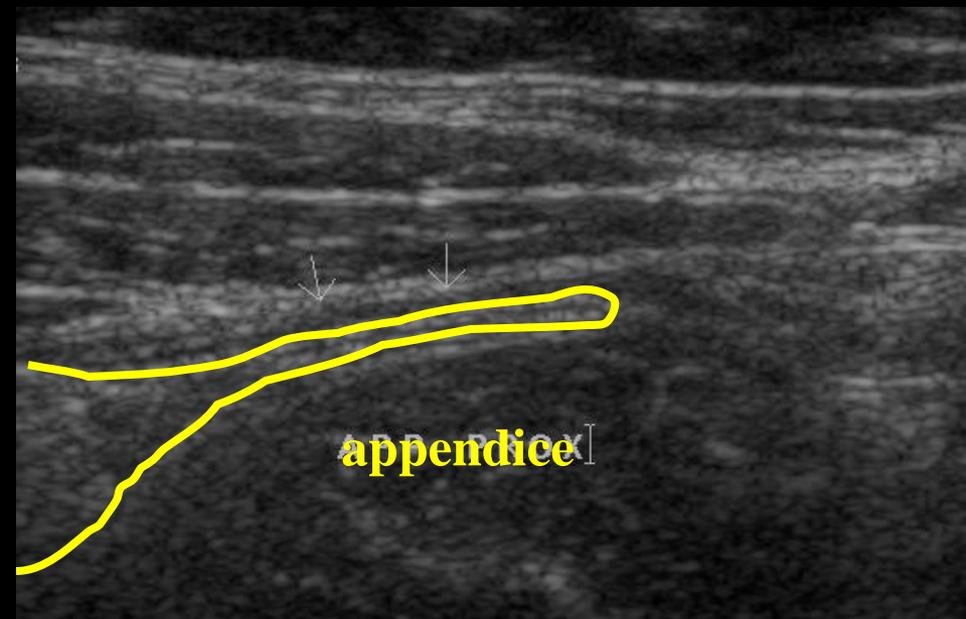


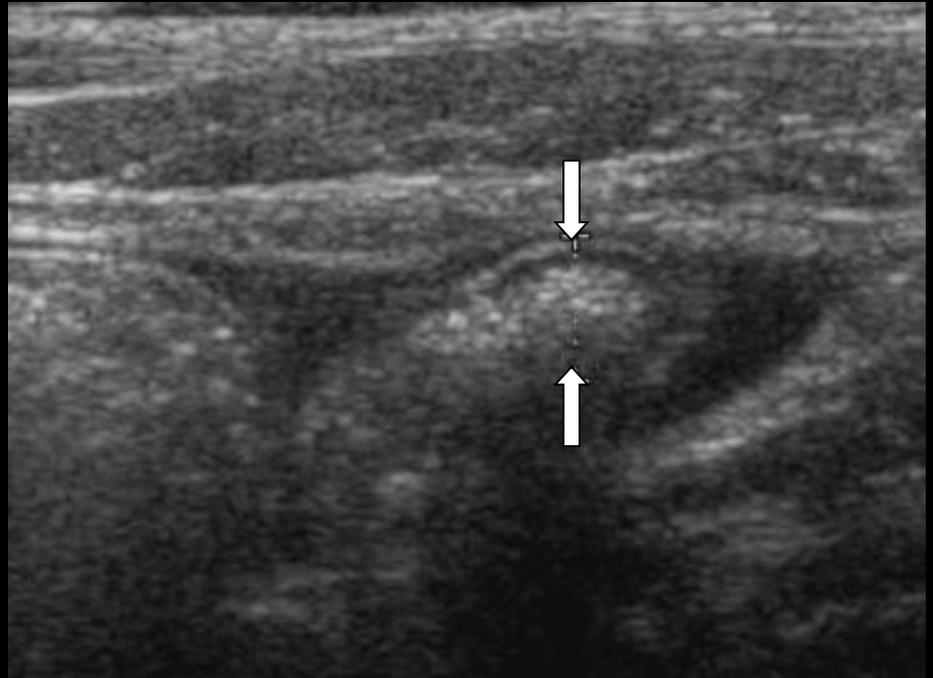
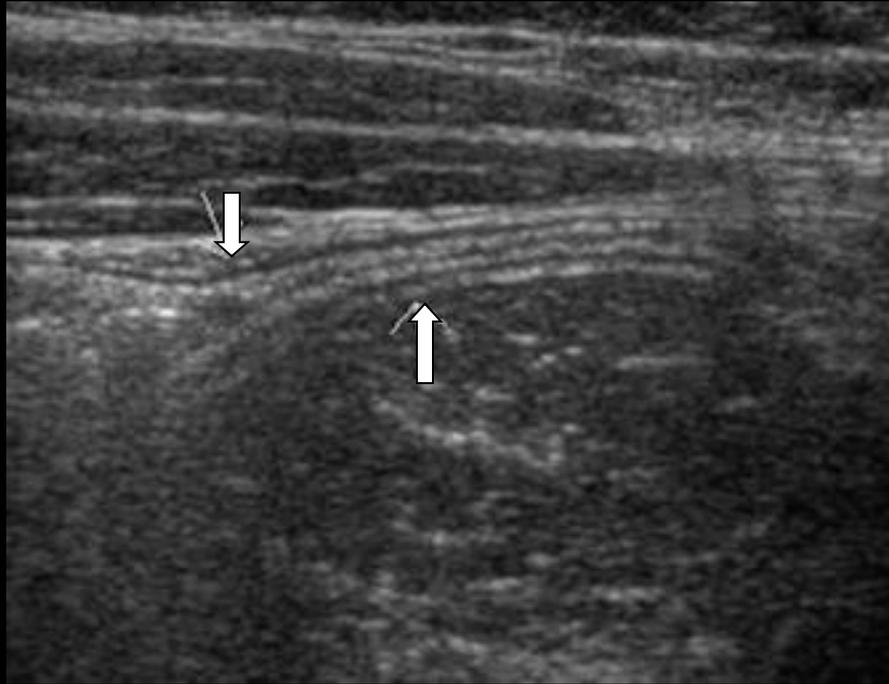


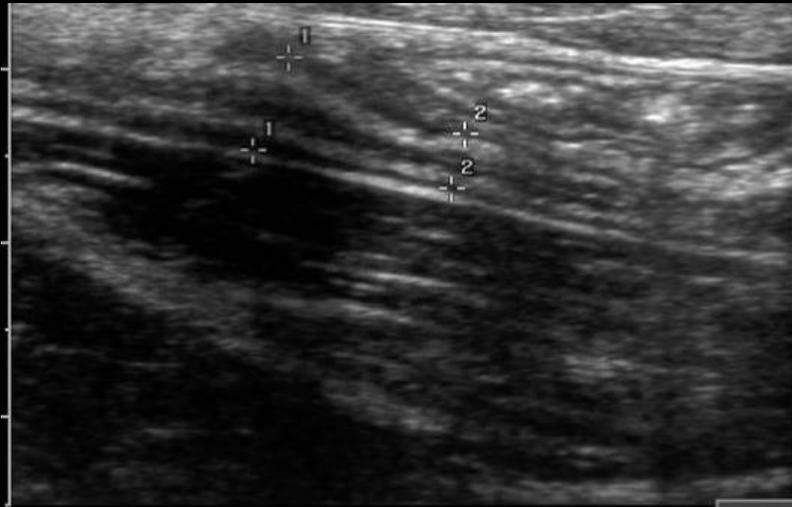
Carrefour iléo-caecal





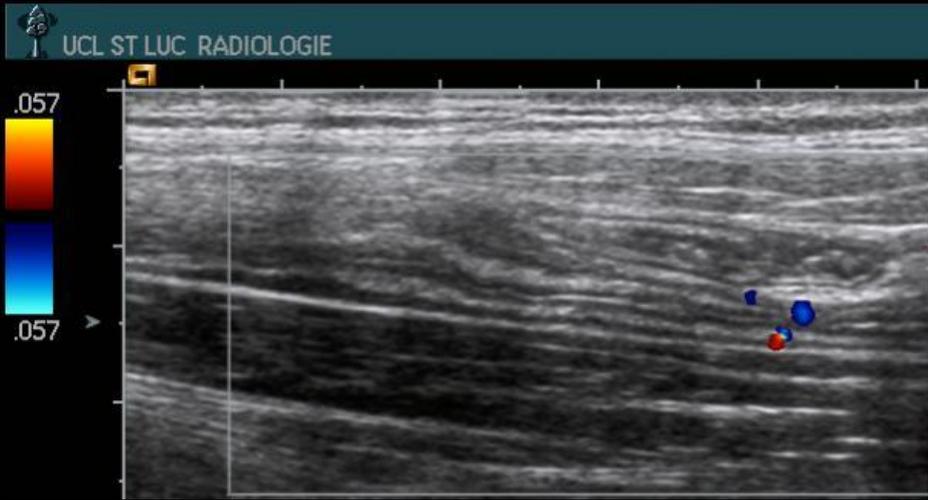






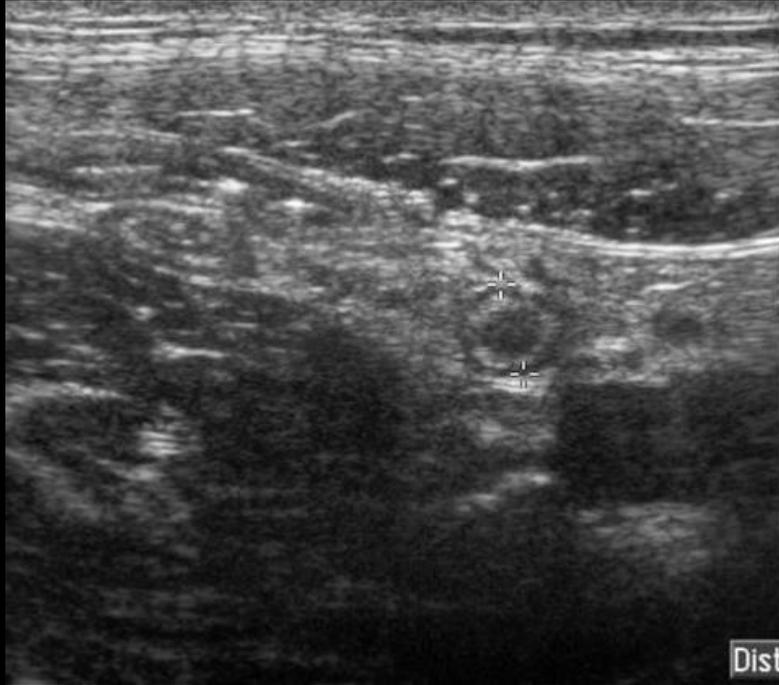
15L8w-:  
C10.0MH  
aAbdom  
NTHI Gen  
68dB  
Gain= 10

----1----  
Dist = 0.570cm  
----2----  
Dist = 0.322cm



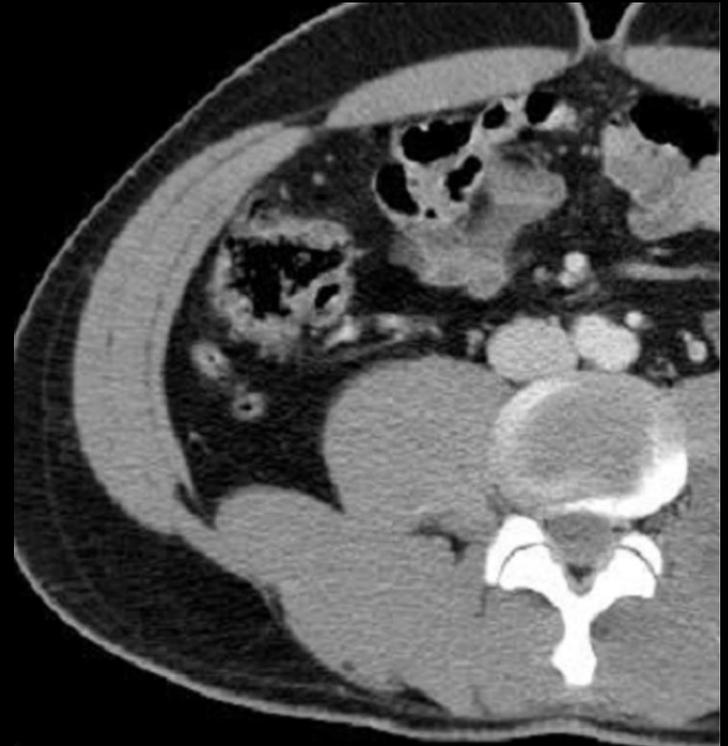
UCL ST LUC RADIOLOGIE

.057  
0.057

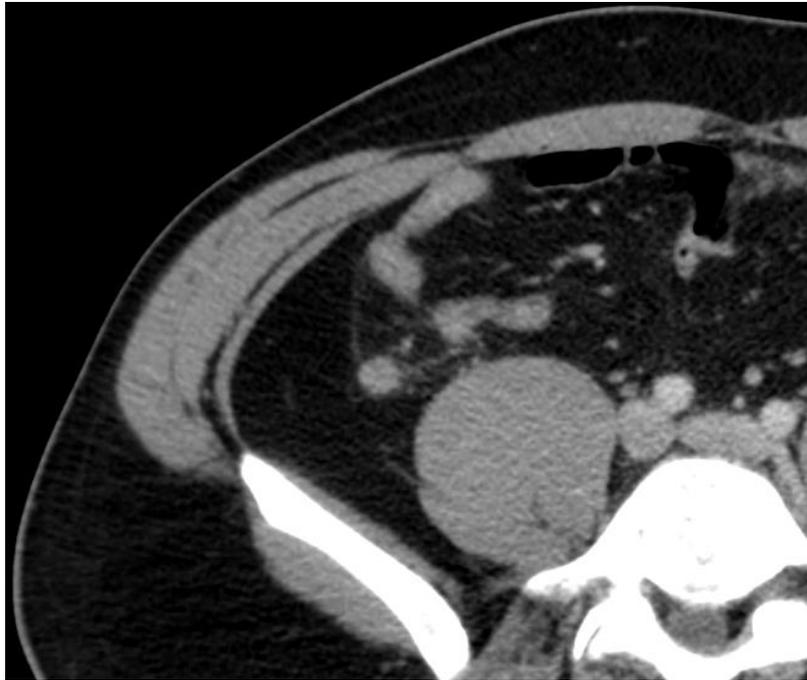
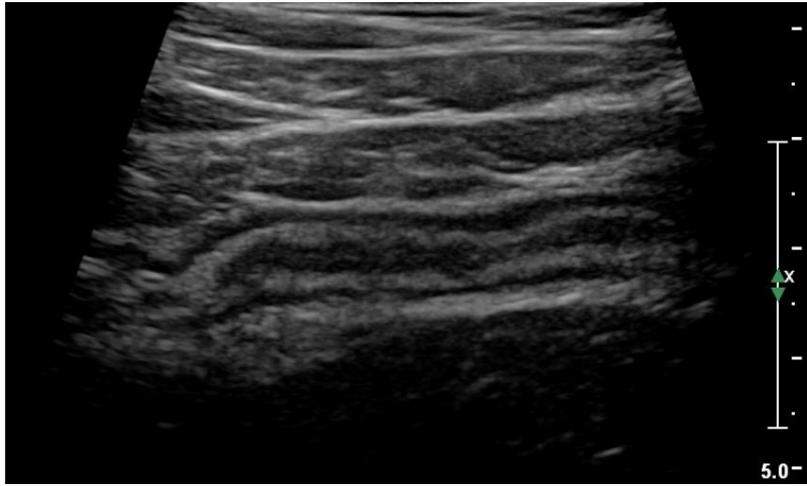


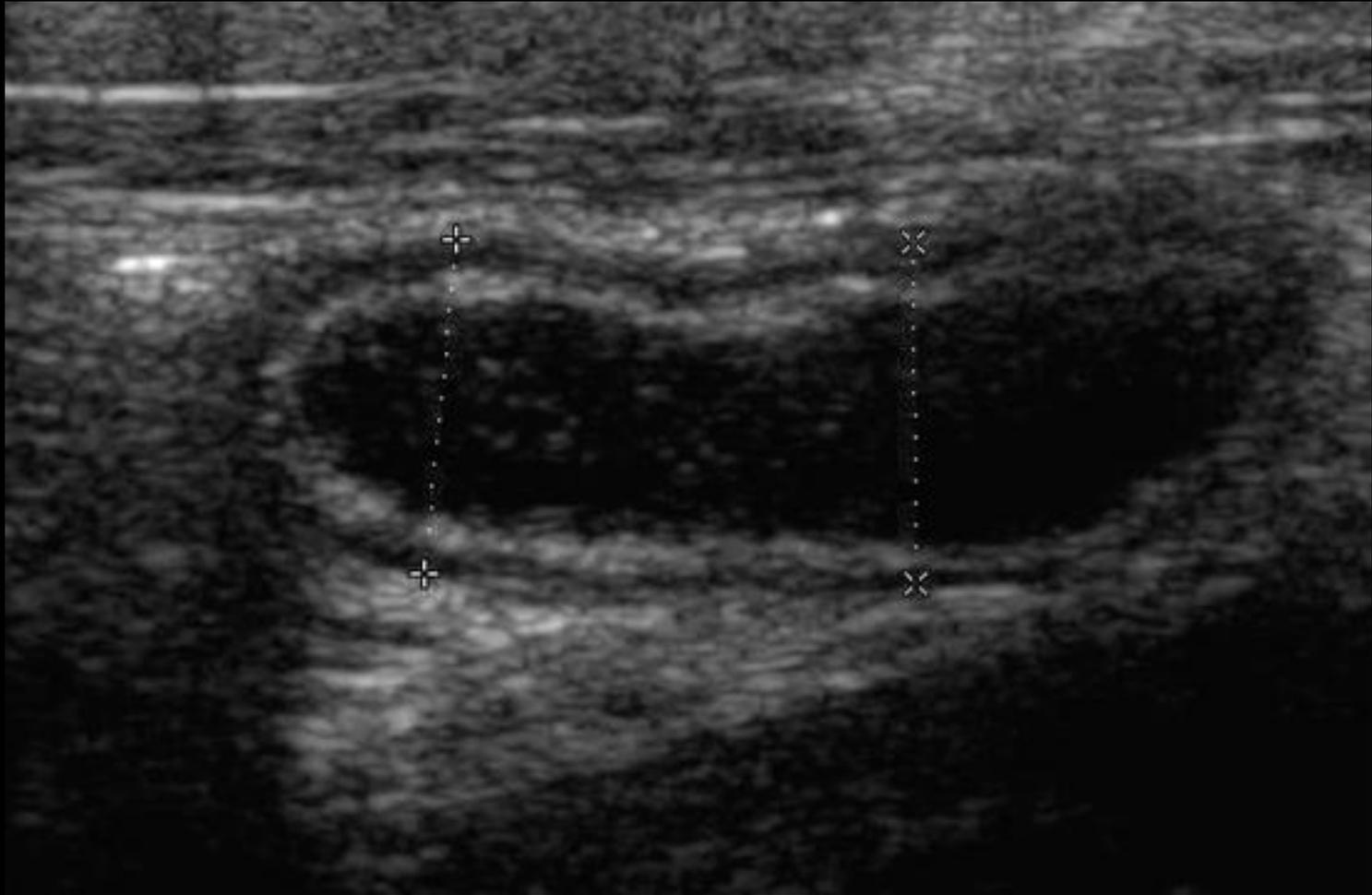
8L5  
8.0MHz  
ciAbdor  
NTHI Ge  
68dB  
Gain= 1

Dist = 0,458cm

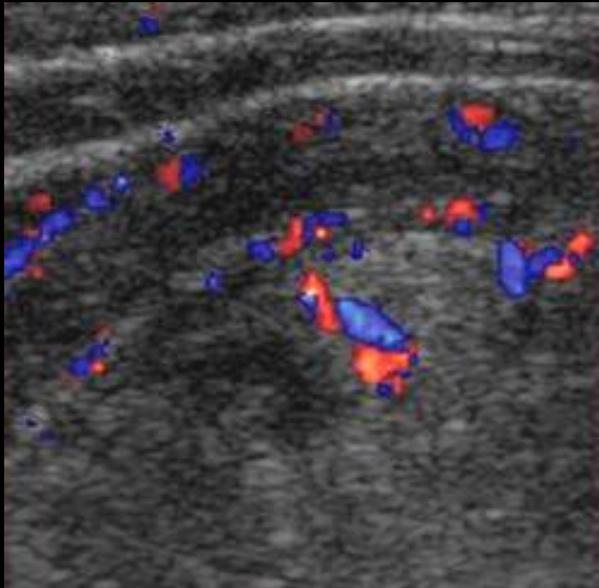


APPENDICE NORMAL US ET CT

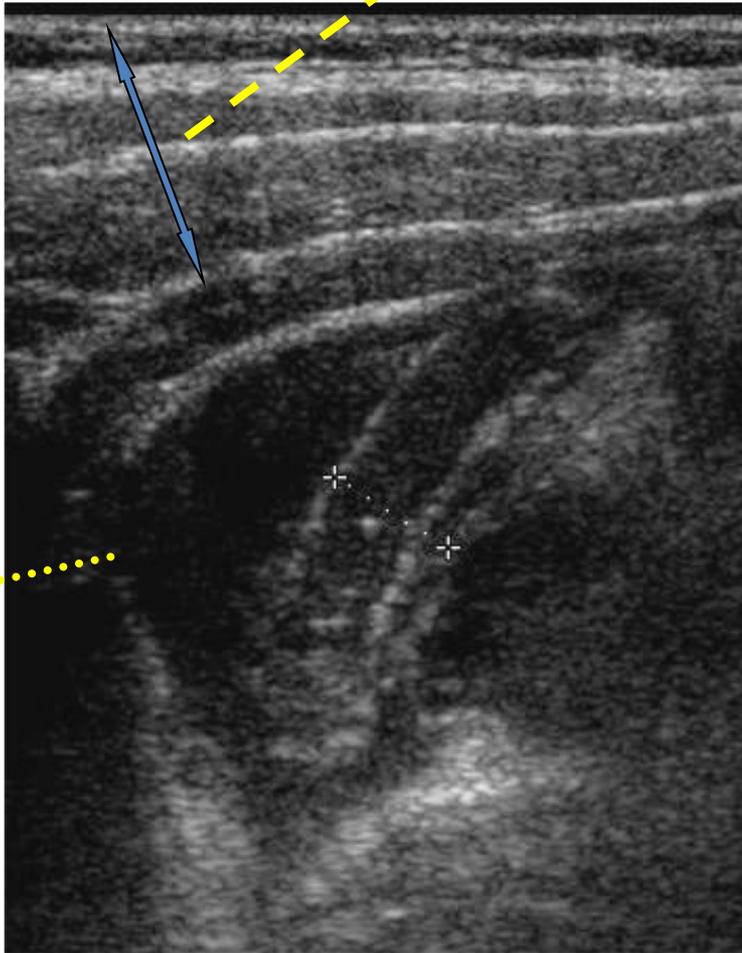




APPENDICITE

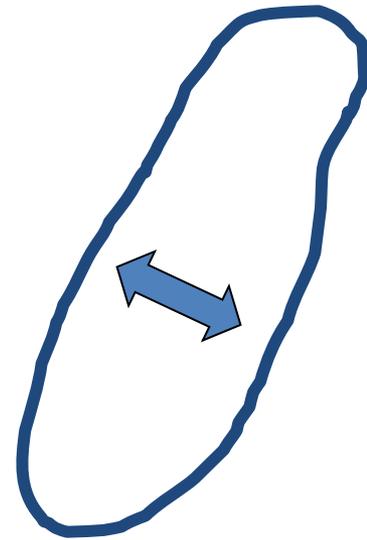


Vue échographique de la fosse iliaque droite, en coupe axiale

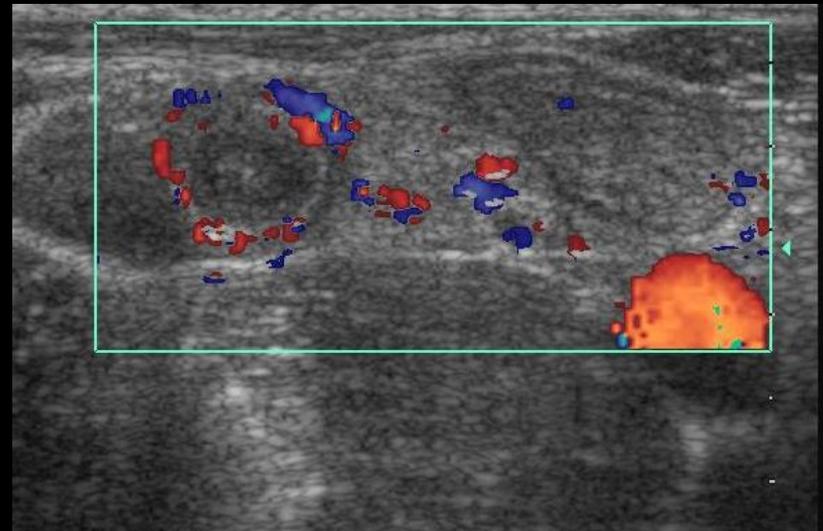
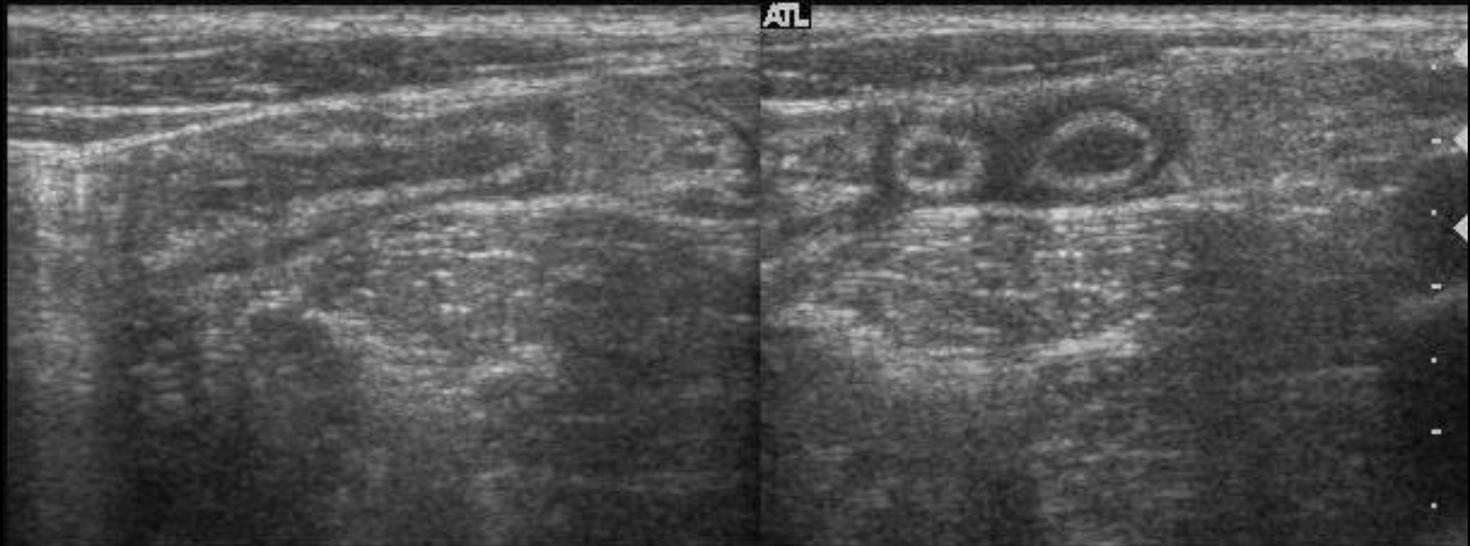


Paroi abdominale

Liquide

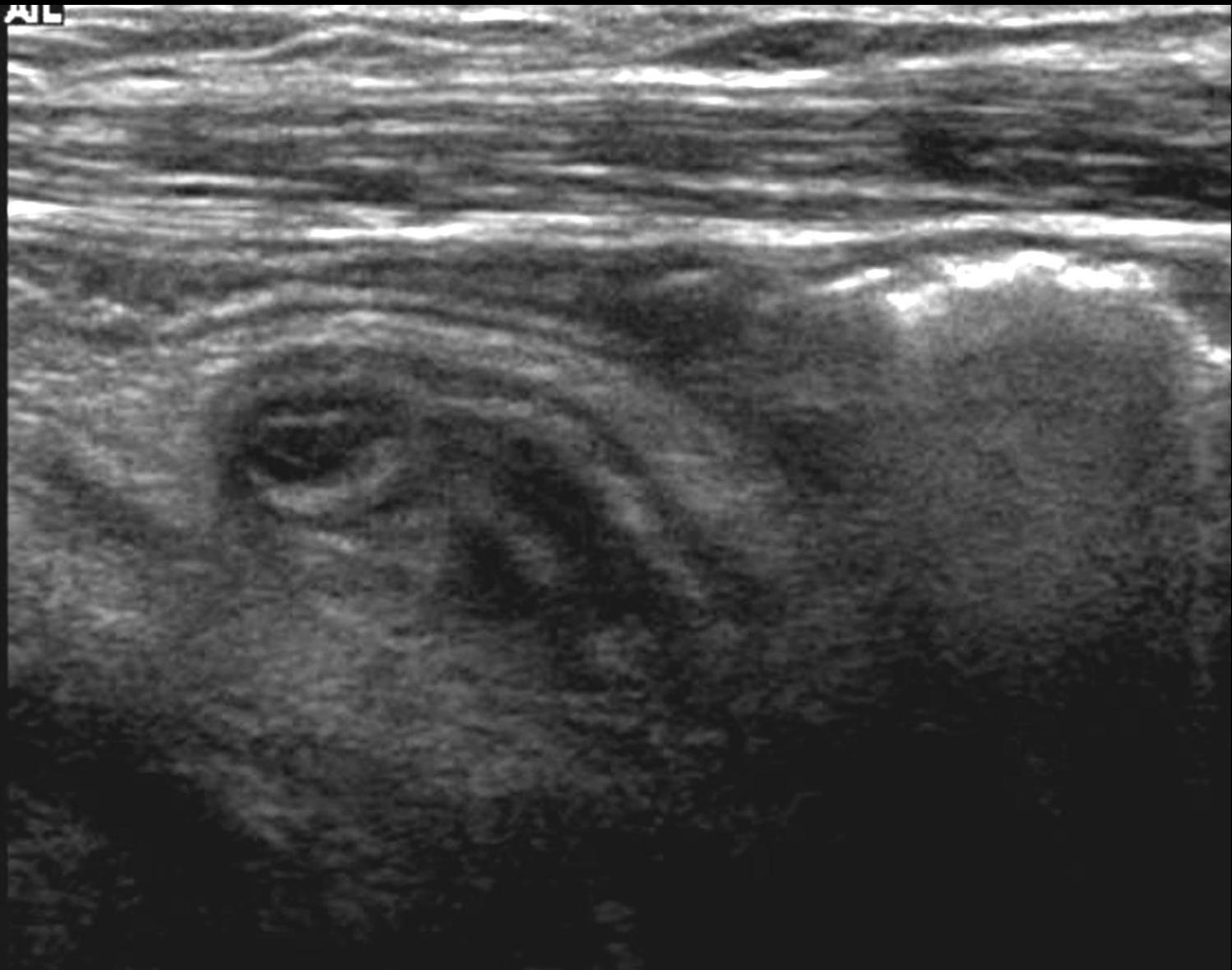


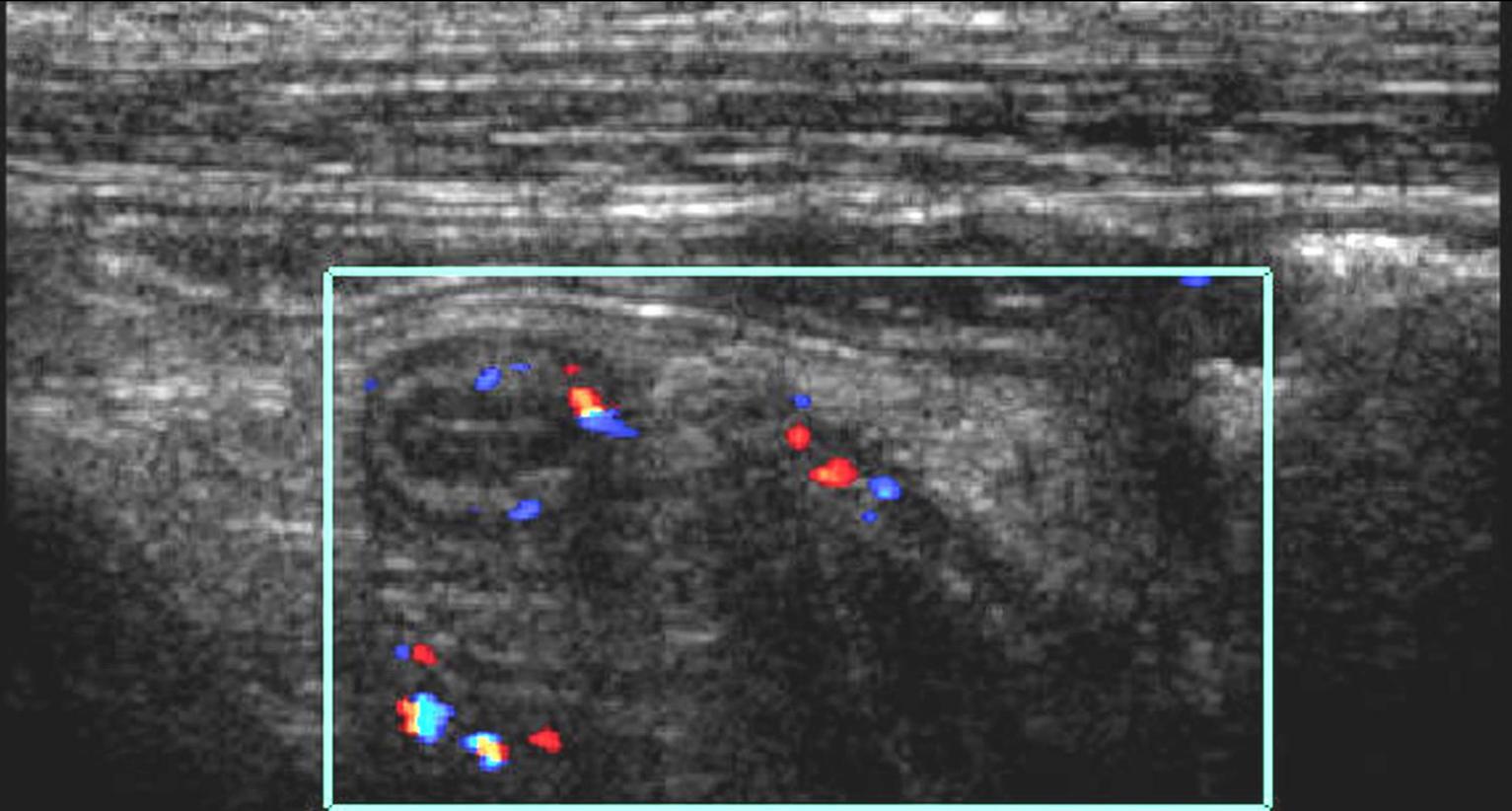
Appendice enflammé  
entouré de liquide

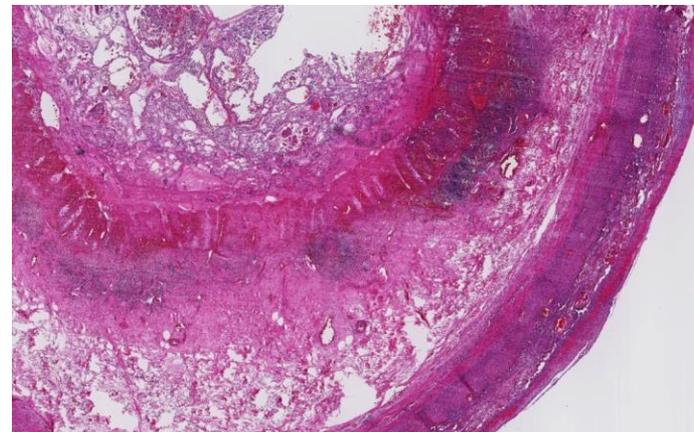
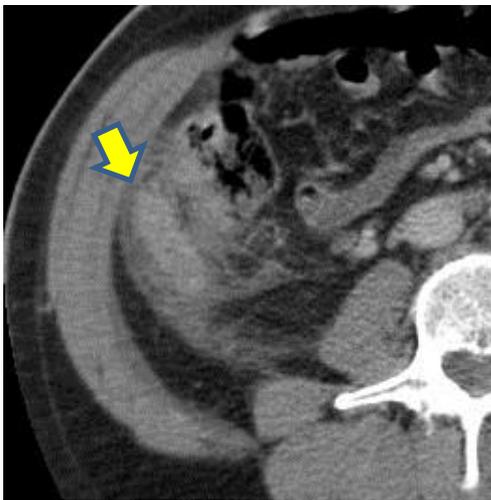
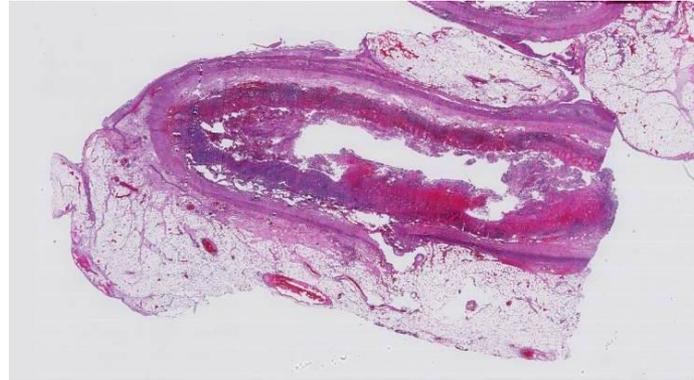
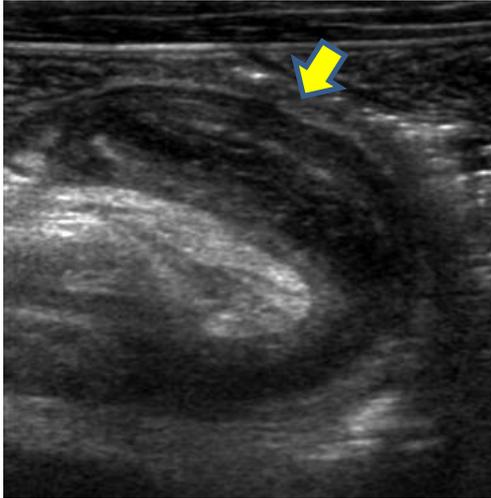


+ 6.4  
- 6.4  
cm/s

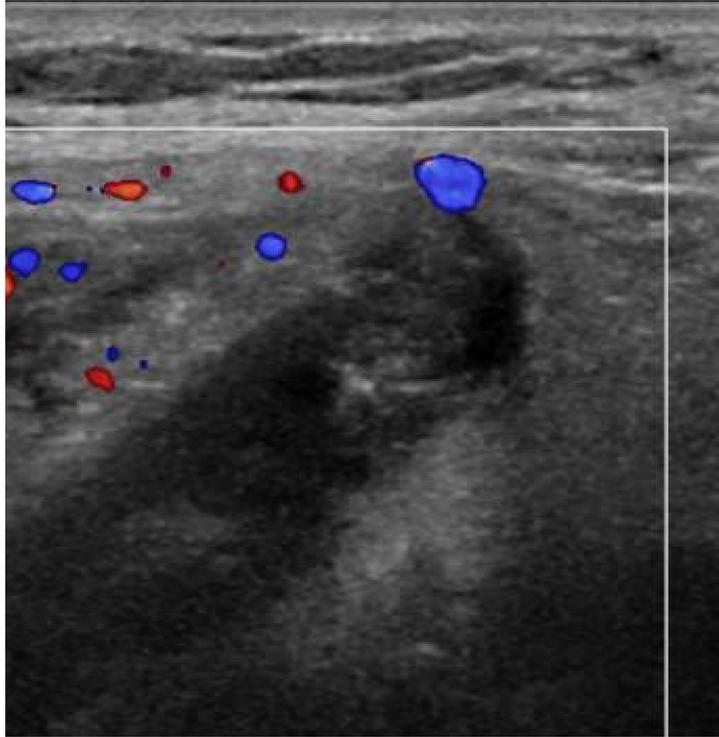
AL



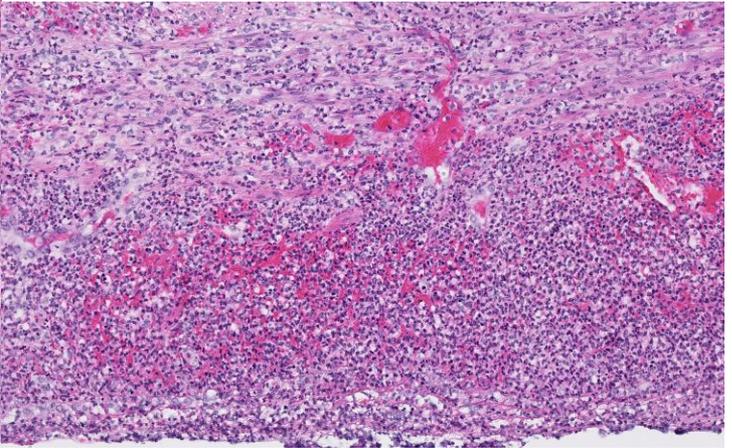
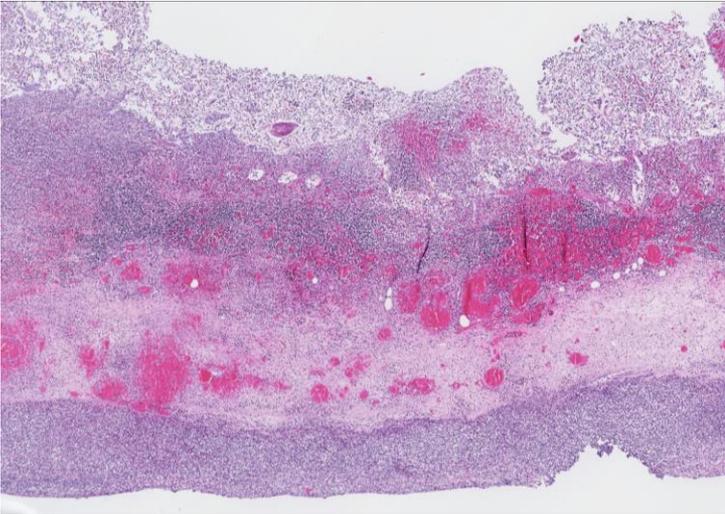
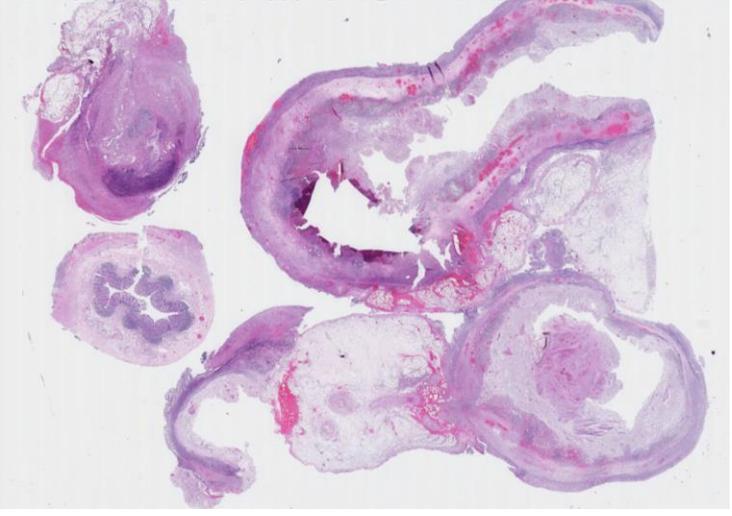
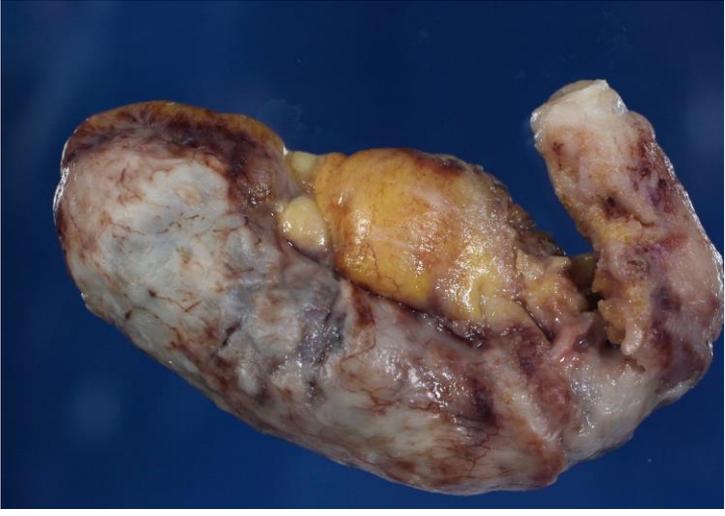


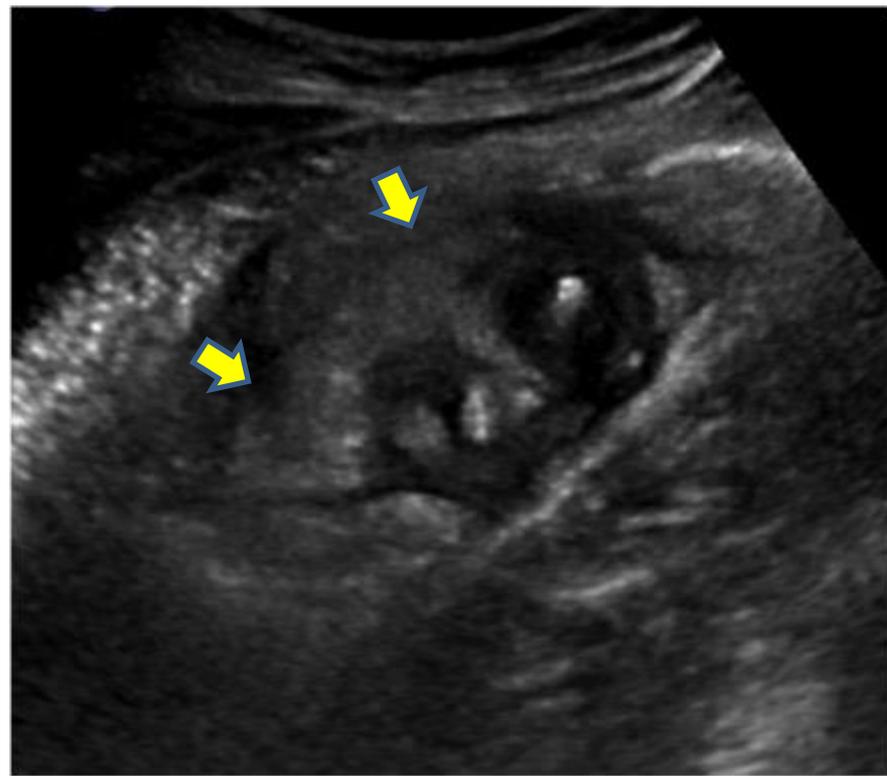
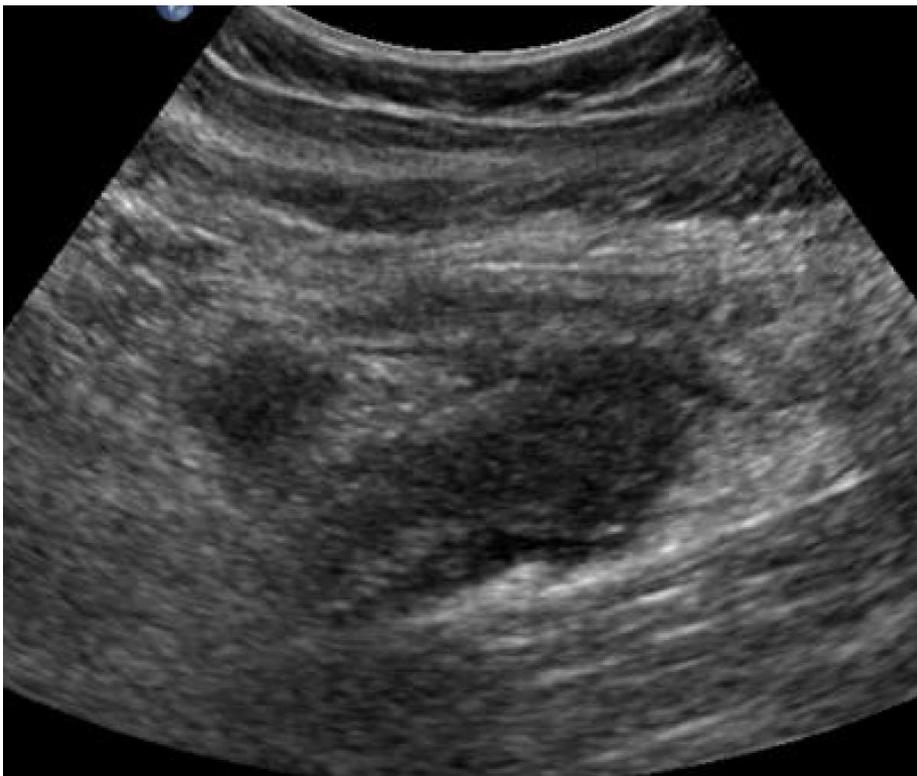


Appendicite aiguë :  
correspondance  
entre l'aspect  
échographique, le  
CT et l'histologie.  
L'appendice est  
épaissi, la graisse  
péricolique est  
infiltrée.

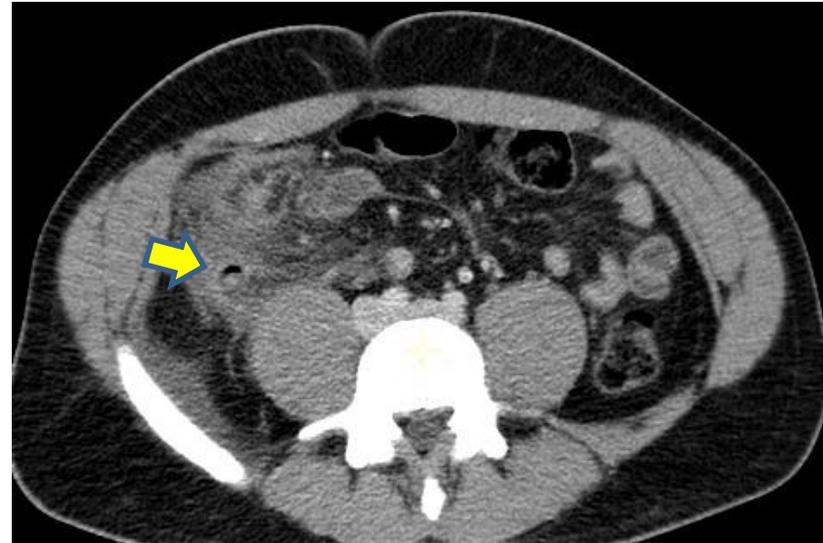
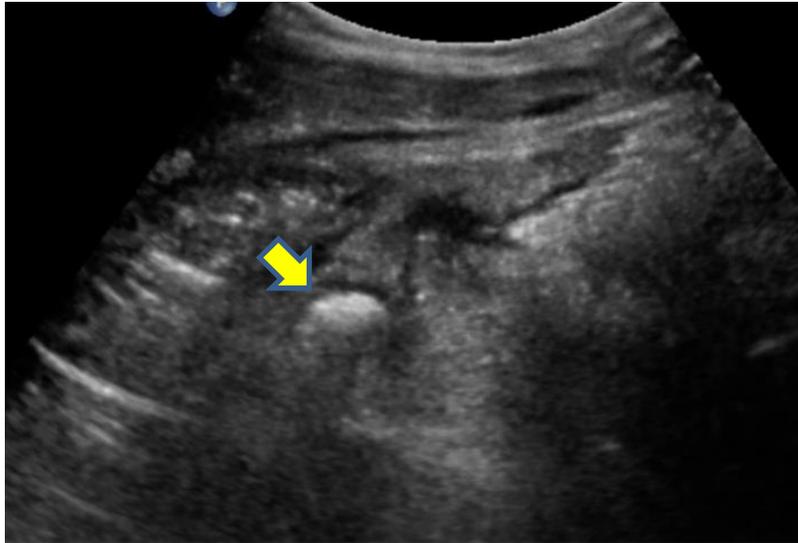


L'appendice est enflammé, les parois ne sont plus bien stratifiées et l'appendice apparaît nécrotique.





Appendicite « plastronnée » : boudin digestif épaissi avec une nette infiltration de la graisse péri digestive (flèche), sans collection

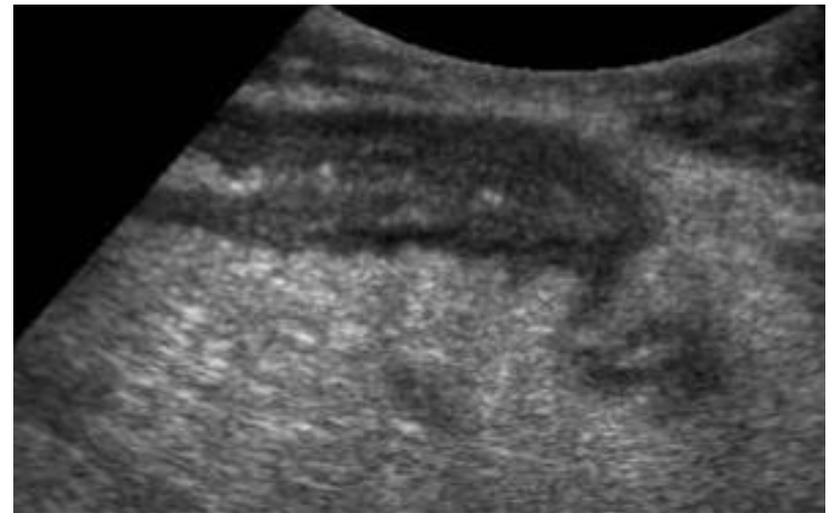
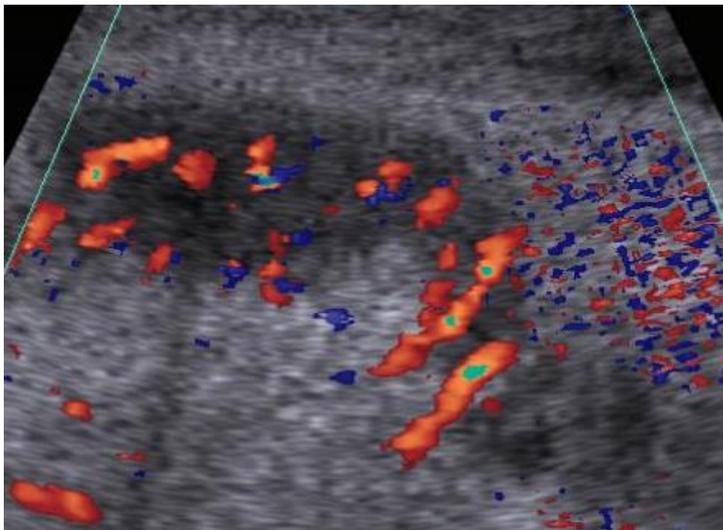
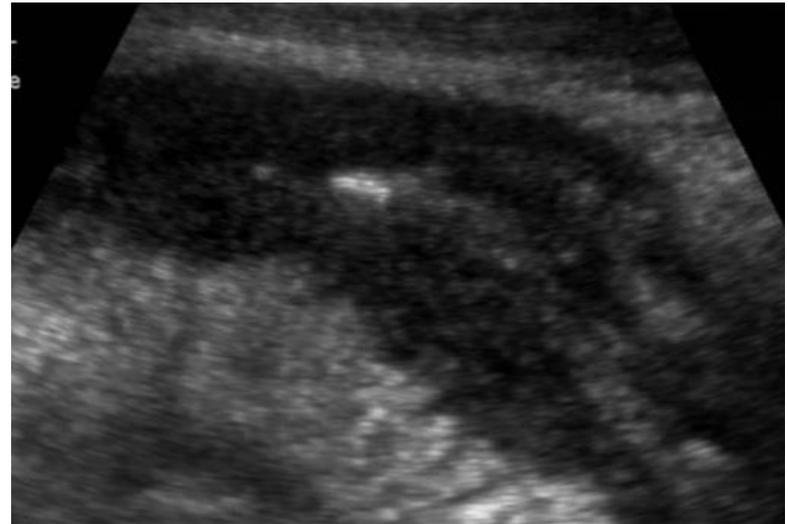
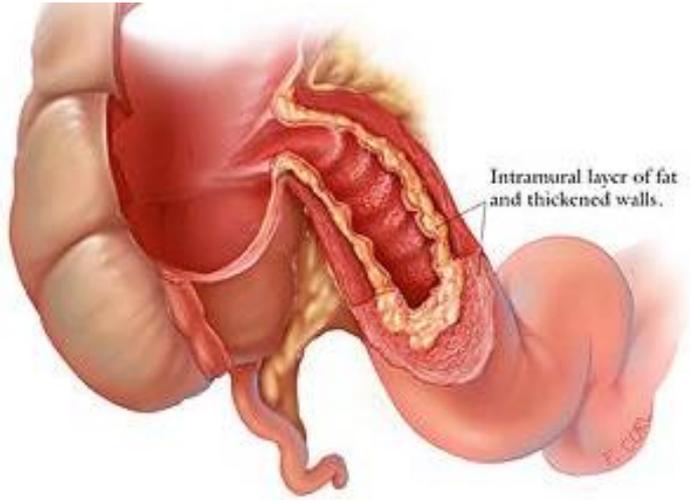


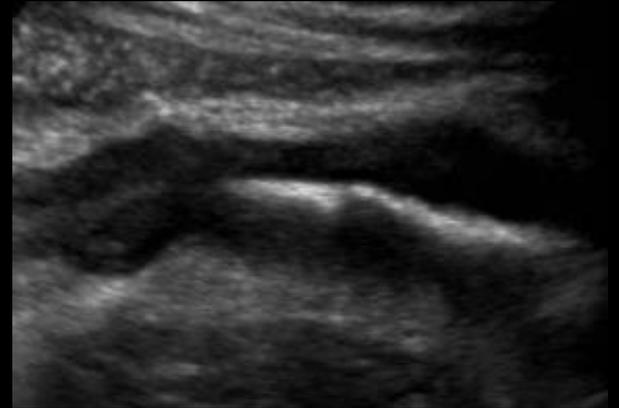
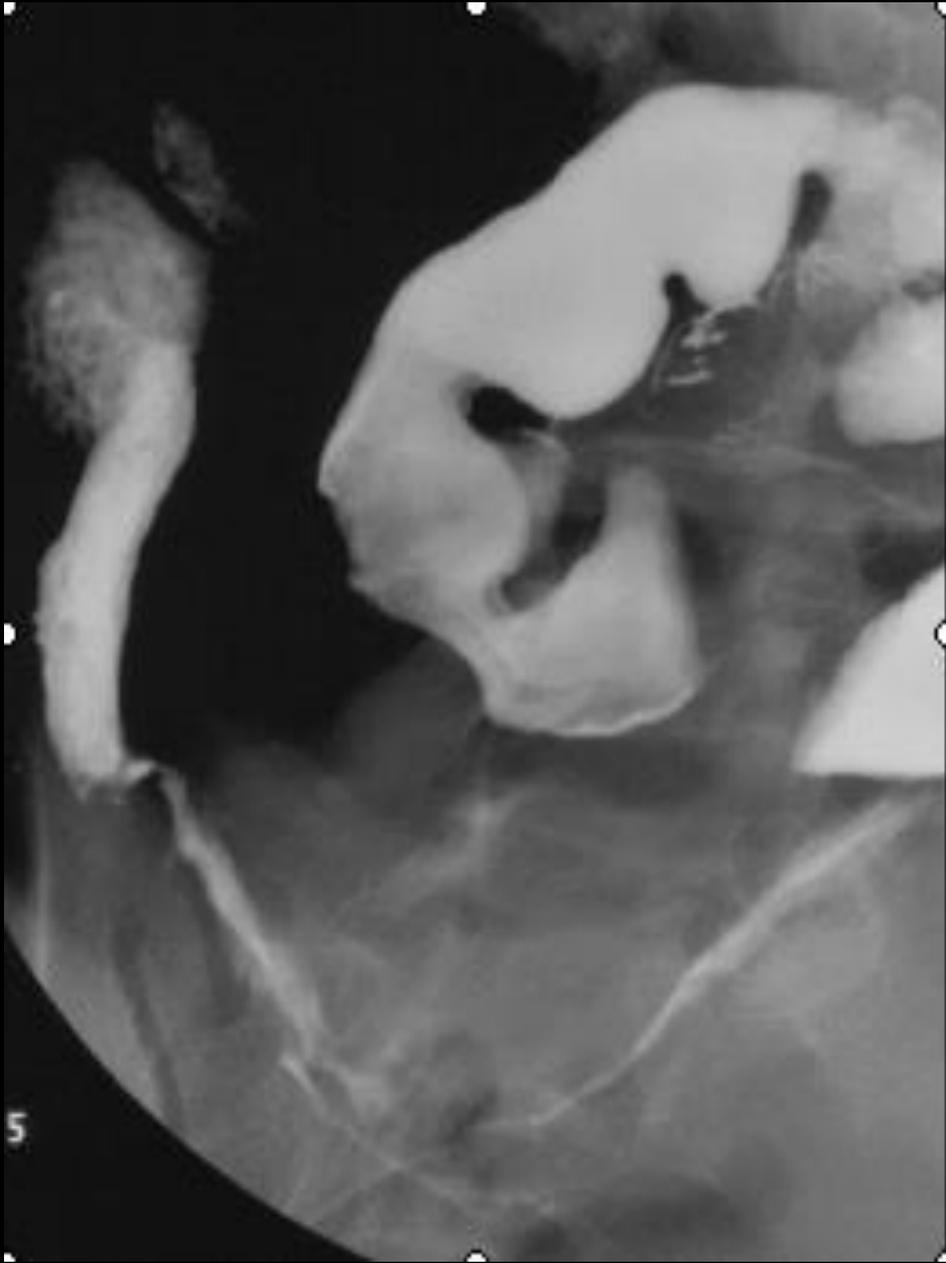
Appendicite difficile en US : on ne voit pas l'appendice avec certitude (peut-être en regard de la flèche) mais on identifie clairement la graisse péri digestive infiltrée.

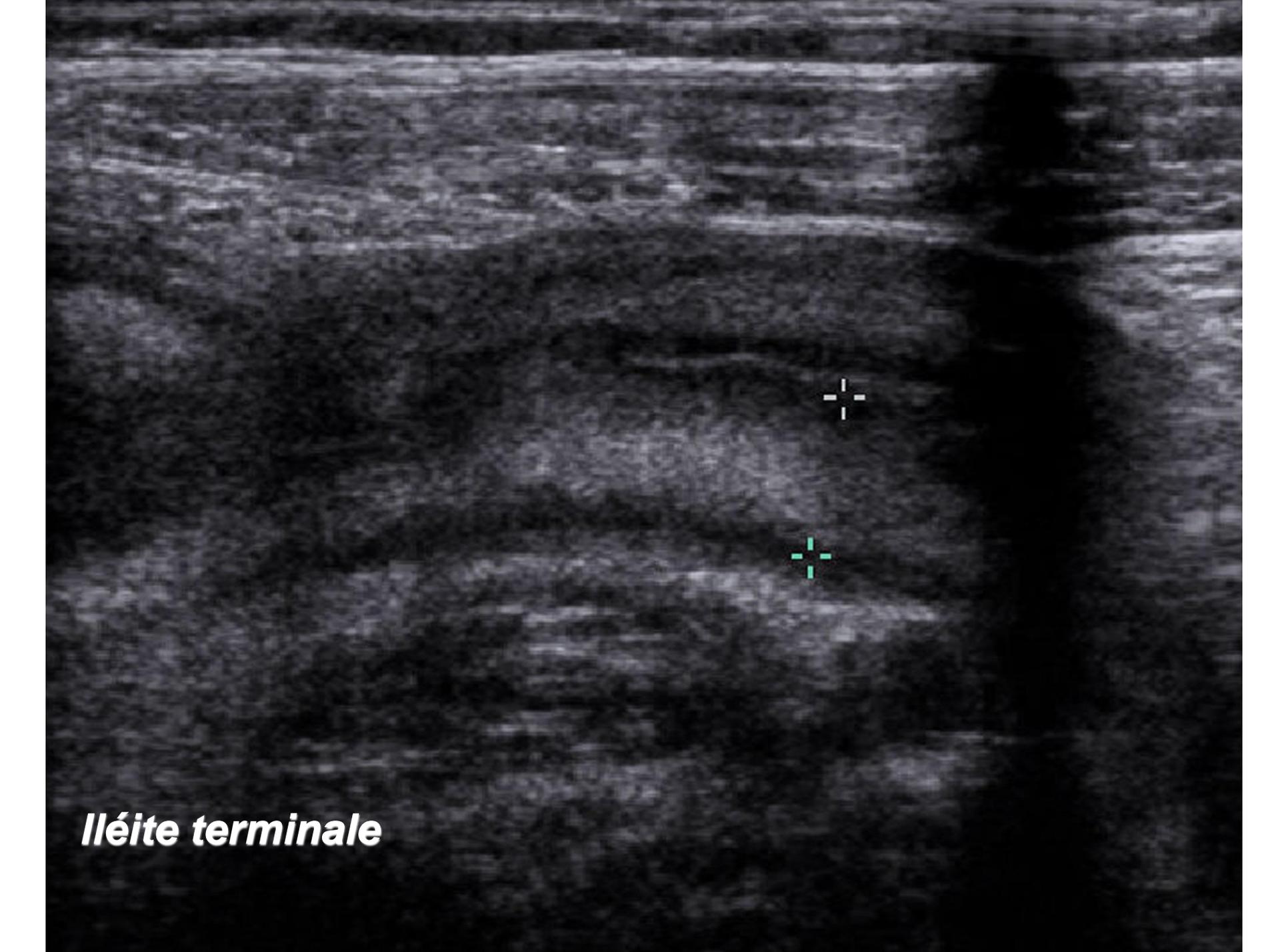
Au CT, on retrouve un segment appendiculaire (flèche) et une importante infiltration de la graisse péricæcale .

# US et CROHN

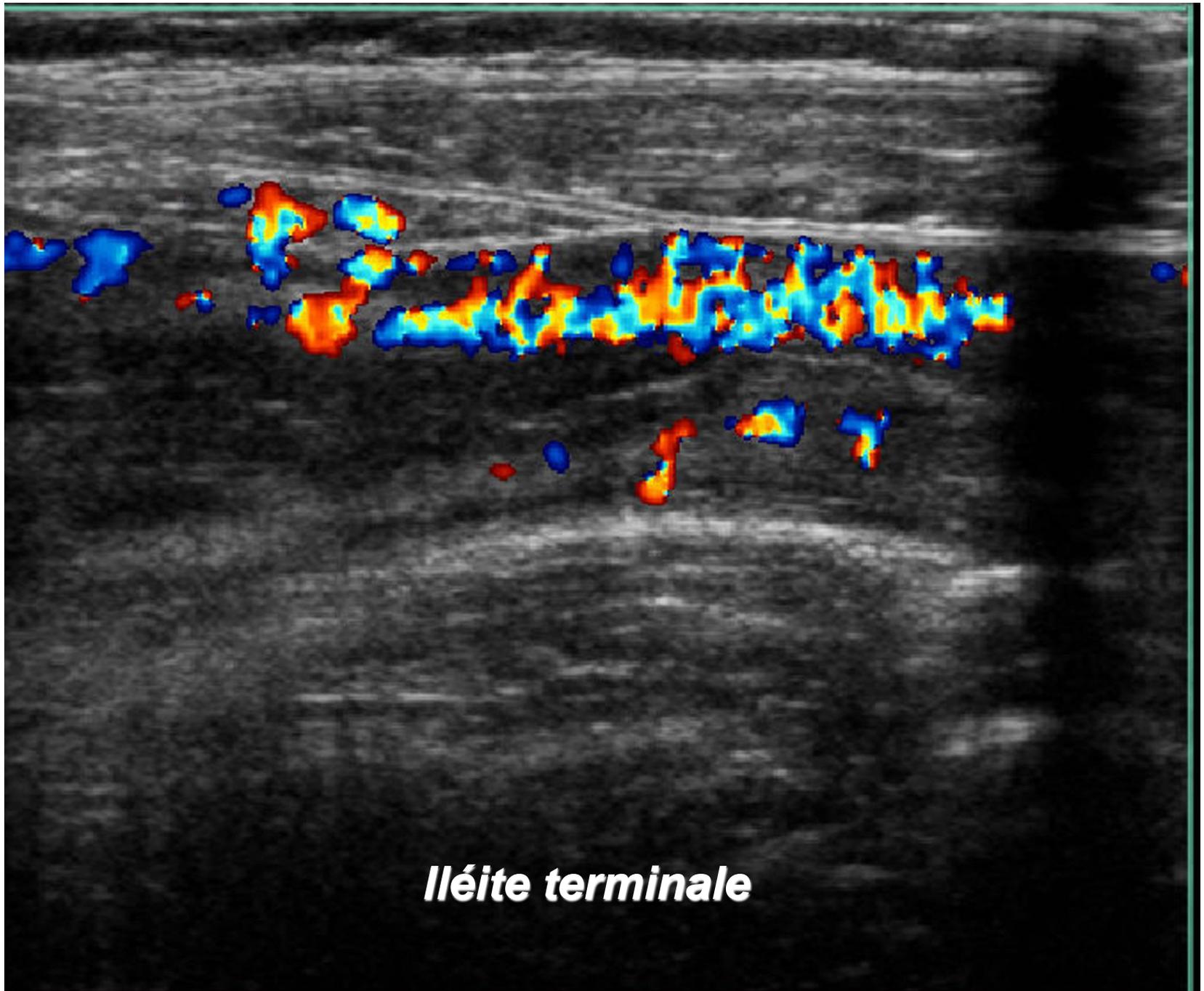
- Diagnostic : iléite vs appendicite
- Extension
- Complications: fistules, abcès
- Activité : réponse thérapeutique
- Pronostic





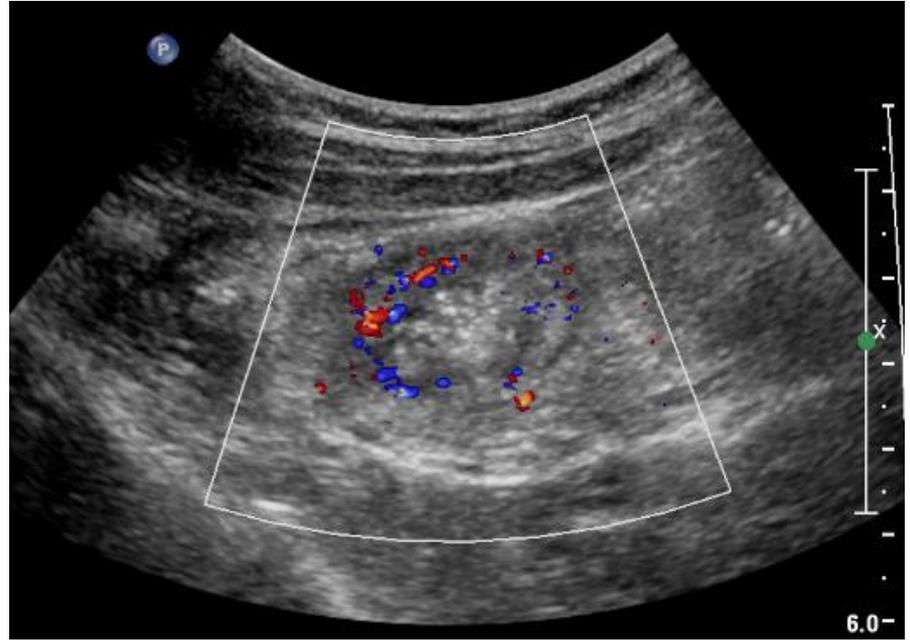
A grayscale B-mode ultrasound image showing a longitudinal section of the terminal ileum. The lumen is on the left, and the bowel wall is on the right. Two crosshair markers are present: a white one in the upper right and a red one in the lower right. The text 'Iléite terminale' is located in the bottom left corner.

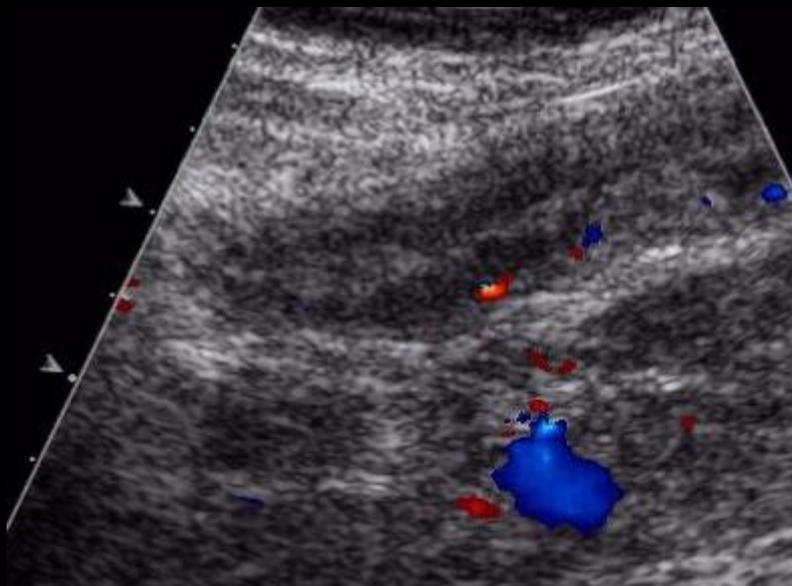
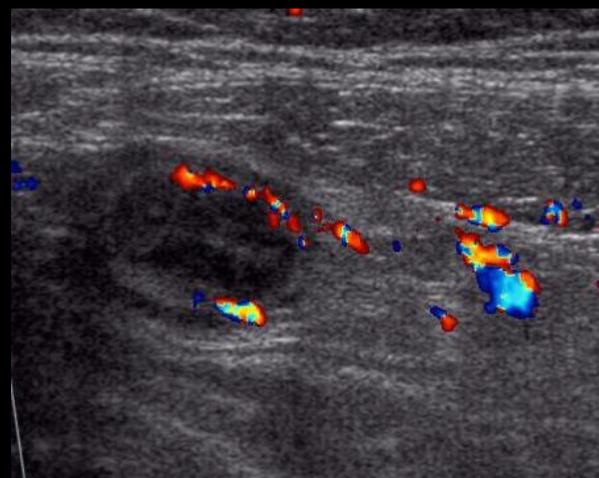
***Iléite terminale***

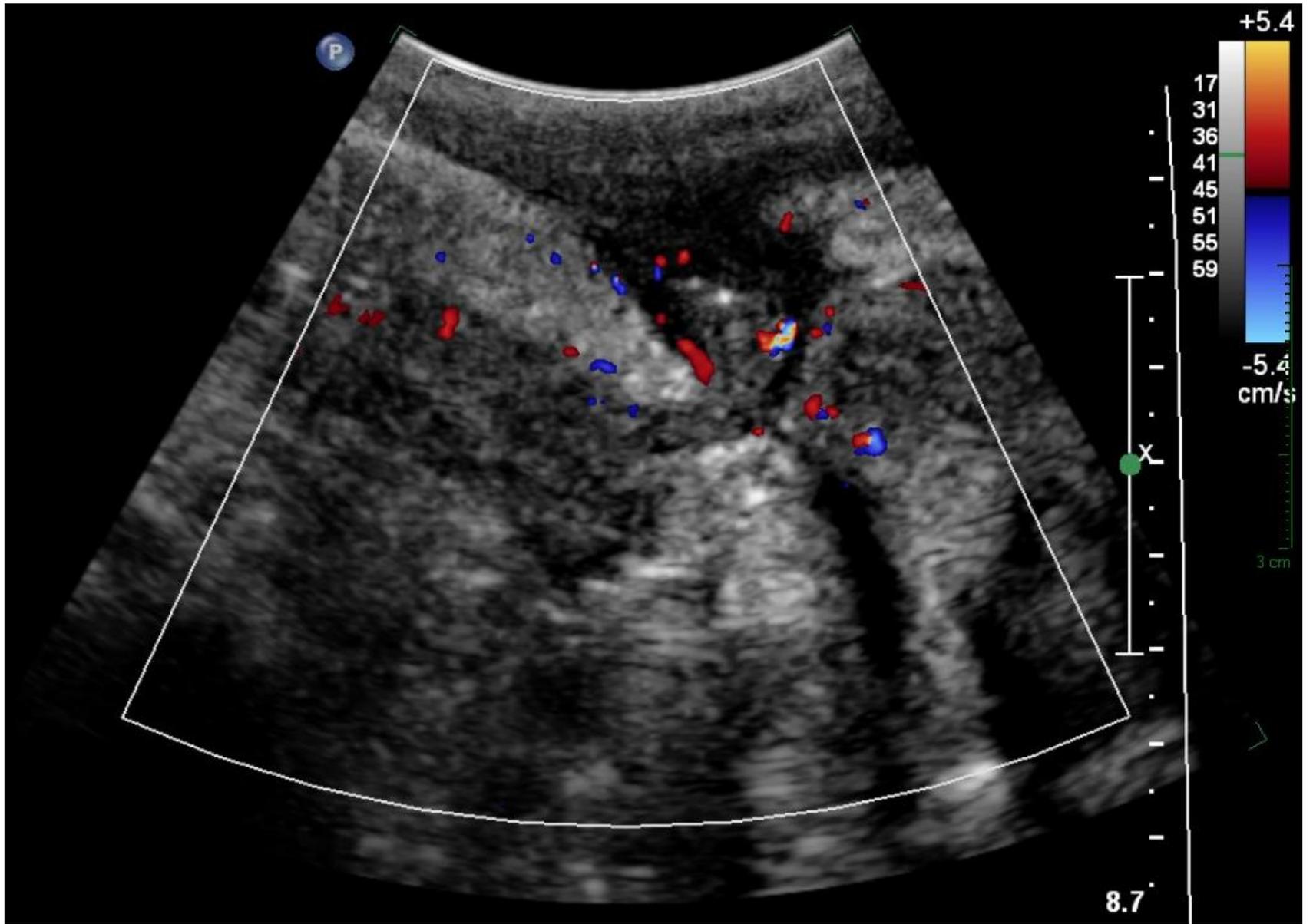


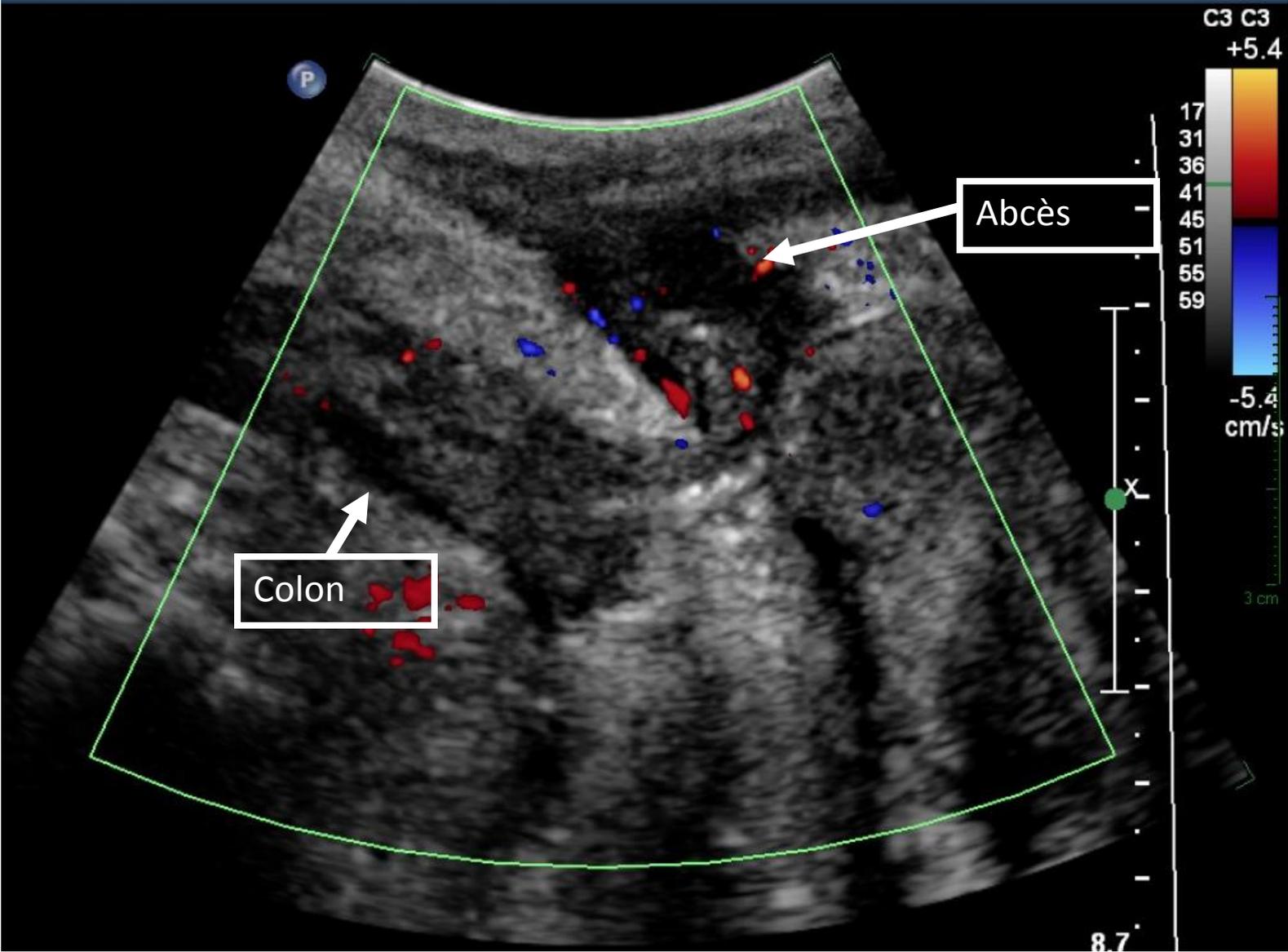
***Iléite terminale***

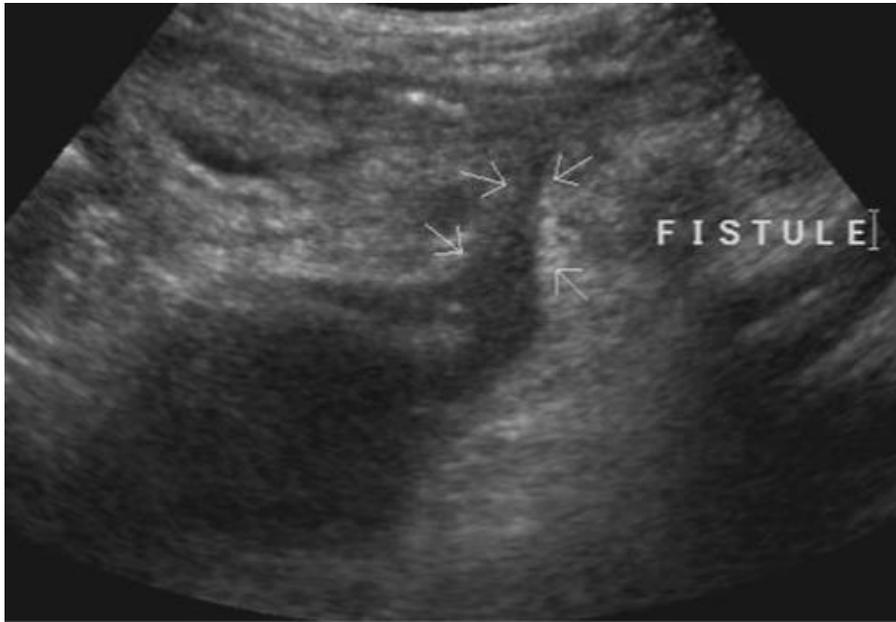


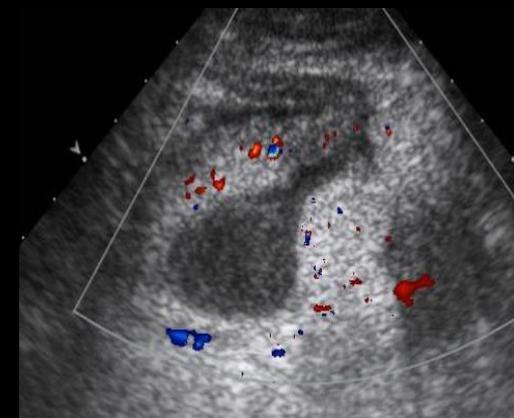
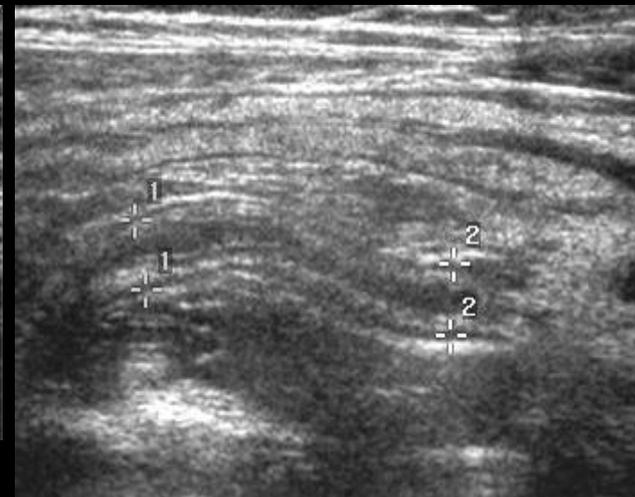
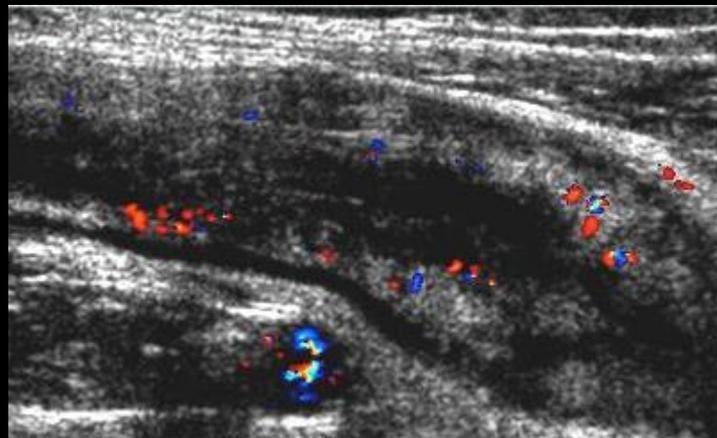
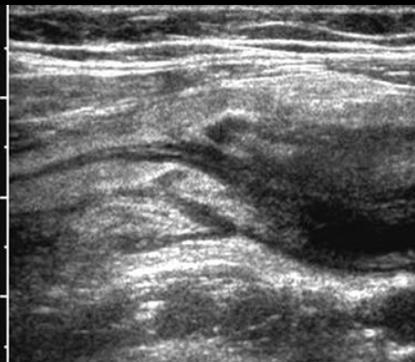












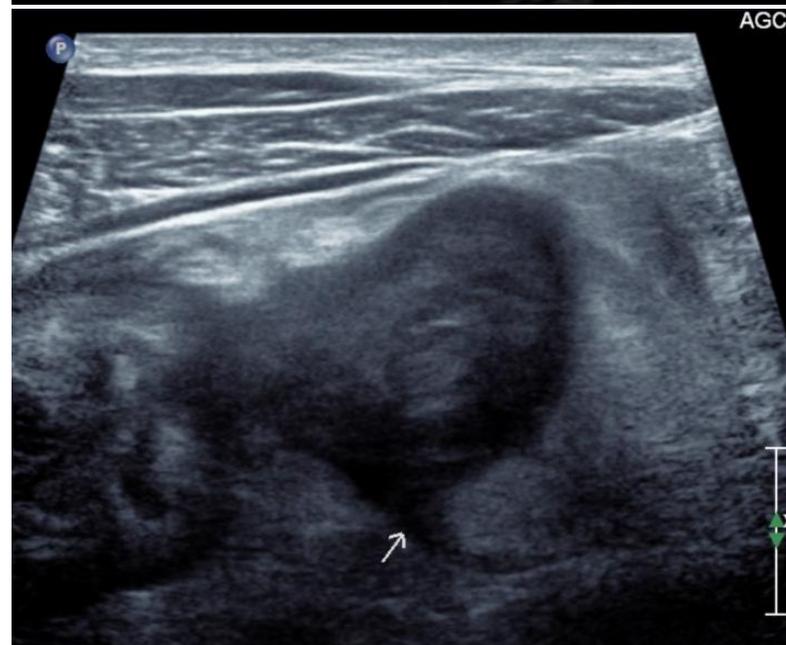
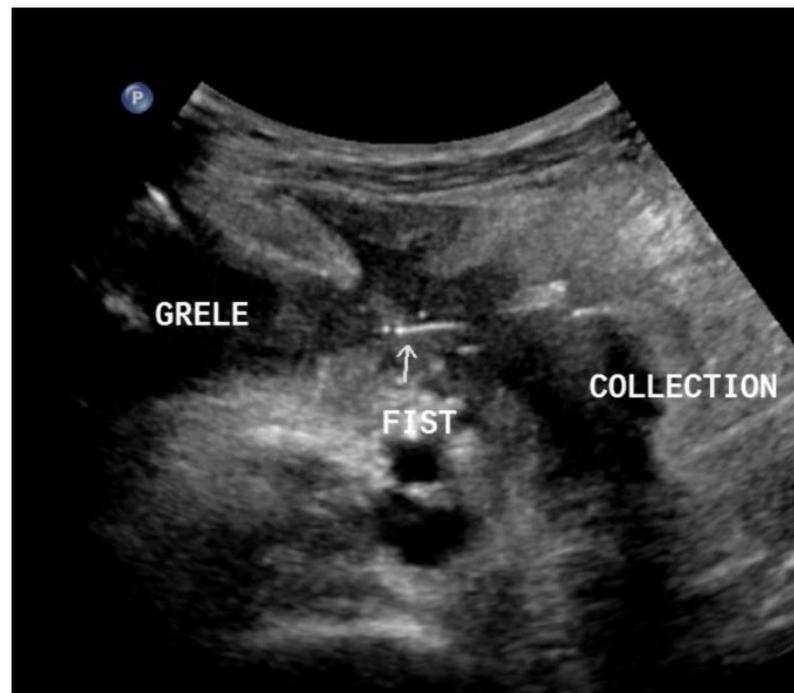
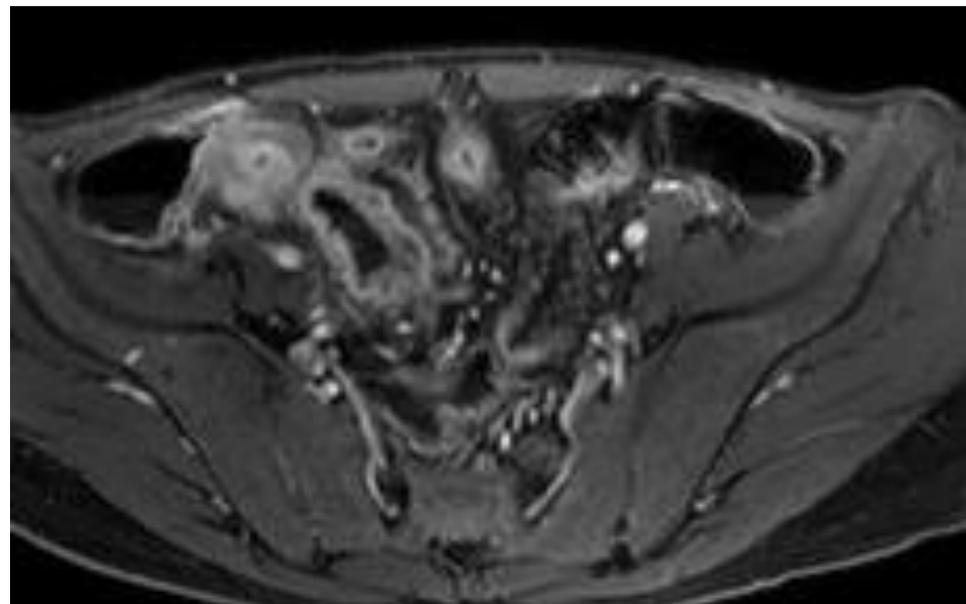
- **Épaississement iléal en cas de Crohn**

- Sous-muqueuse hypoE : 68 %
- Prolifération graisseuse: 74 %
- Atteinte appendiculaire: 8.5 %

*Sturm et al, Eur Radiol 2004*

# US et CROHN

- Diagnostic : iléite vs appendicite
- Extension
- Complications: fistules, abcès
- Activité : réponse thérapeutique
- Pronostic



## Complications :

- Fistules ou abcès ( > ou < 2 cm )
- Occlusion
- Perforation

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# Bowel Wall Thickness at Abdominal Ultrasound and the One-Year-Risk of Surgery in Patients with Crohn's Disease

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Fabiana Castiglione, M.D., Ilario de Sio, M.D., Antonio Cozzolino, M.D., Antonio Rispo, M.D.,  
Francesco Manguso, M.D., Giovanna Del Vecchio Blanco, M.D., Elena Di Girolamo, M.D.,  
Luigi Castellano, M.D., Carolina Ciacci, M.D., and Gabriele Mazzacca, M.D.

*Divisions of Gastroenterology, University of Naples "Federico II"; and The Second University of Naples,  
Naples, Italy*

**OBJECTIVES:** Abdominal ultrasound can assess the extent and localization of Crohn's disease, and an increased bowel wall thickness is the most common finding. Our aim was to correlate bowel wall thickness at ultrasound, with the risk of short-term surgical outcome in patients with Crohn's disease.

**MATERIALS AND METHODS:** From 1997 to 2000 we performed ultrasound in 174 consecutive patients with Crohn's disease. Surgical operations were recorded over a 1-yr follow-up. Logistic regression analysis was performed to identify clinical and ultrasound risk factors for surgery.

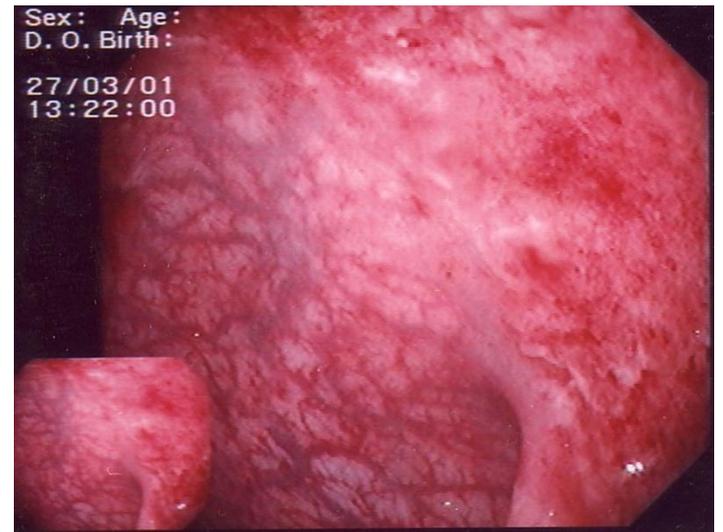
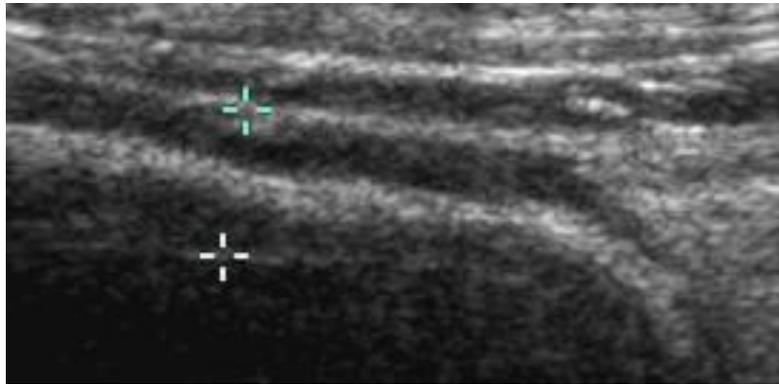
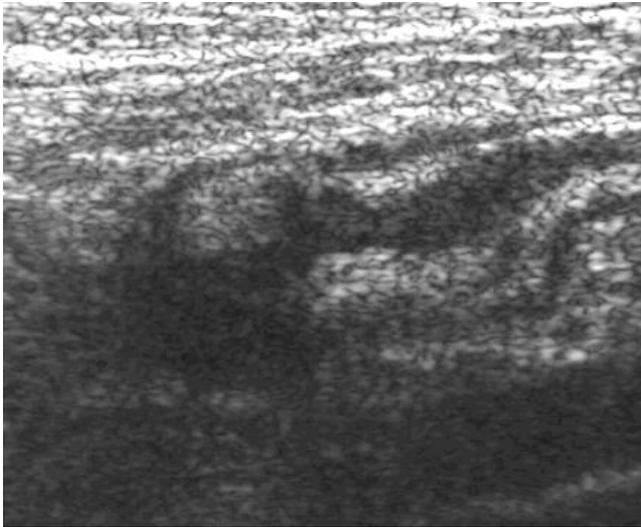
**RESULTS:** Fifty-two patients underwent surgery within 1 yr. Indication for surgery was strictures in most of the cases. Median bowel wall thickness was higher in patients with surgery (8 mm) than those without surgery (6 mm) ( $p < 0.0001$ ). A receiver operating characteristic (ROC) curve was constructed taking into account bowel wall thickness for selecting patients with a high risk of surgery. The optimized cut-off for equally important sensitivity and specificity was calculated at 7.008 mm. The binary regression analysis showed that CDAI  $> 150$ , absence of previous surgery, stricturing-penetrating pattern, the presence of intestinal complications, and intestinal wall thickness  $> 7$  mm were associated with an increased risk of surgery. Patients with intestinal wall thickness  $> 7$  mm at ultrasound had the highest risk (OR: 19.521; 95% CI: 5.362-71.065).

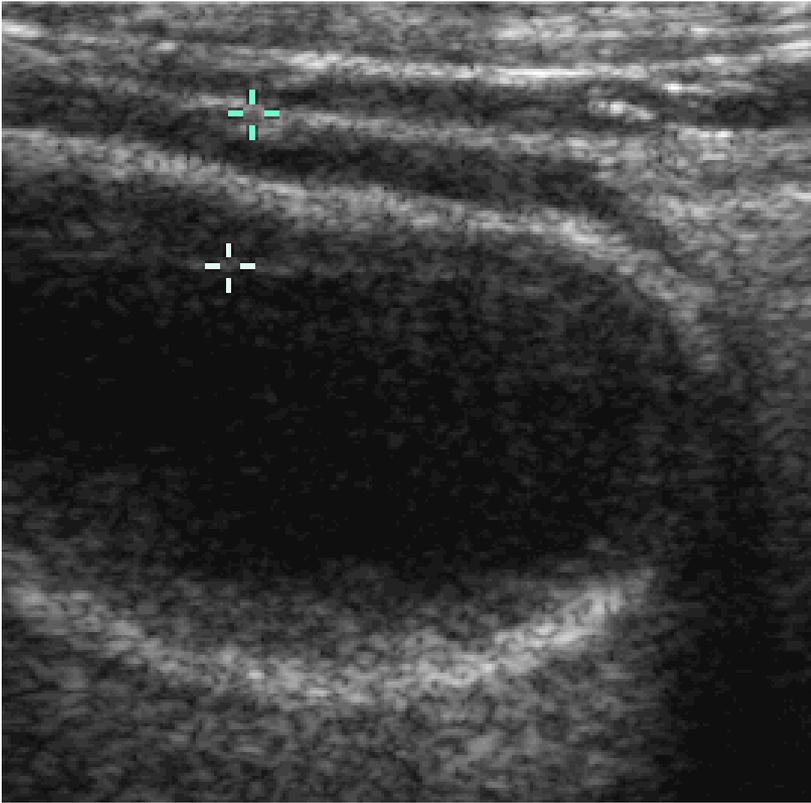
**CONCLUSIONS:** Data suggest that bowel wall thickness  $> 7$  mm at ultrasound is a risk factor for intestinal resection over a short period of time. Routine use of abdominal ultrasound during evaluation of patients with Crohn's disease may identify a subgroup that is at high risk for surgery.

(Am J Gastroenterol 2004;99:1977-1983)

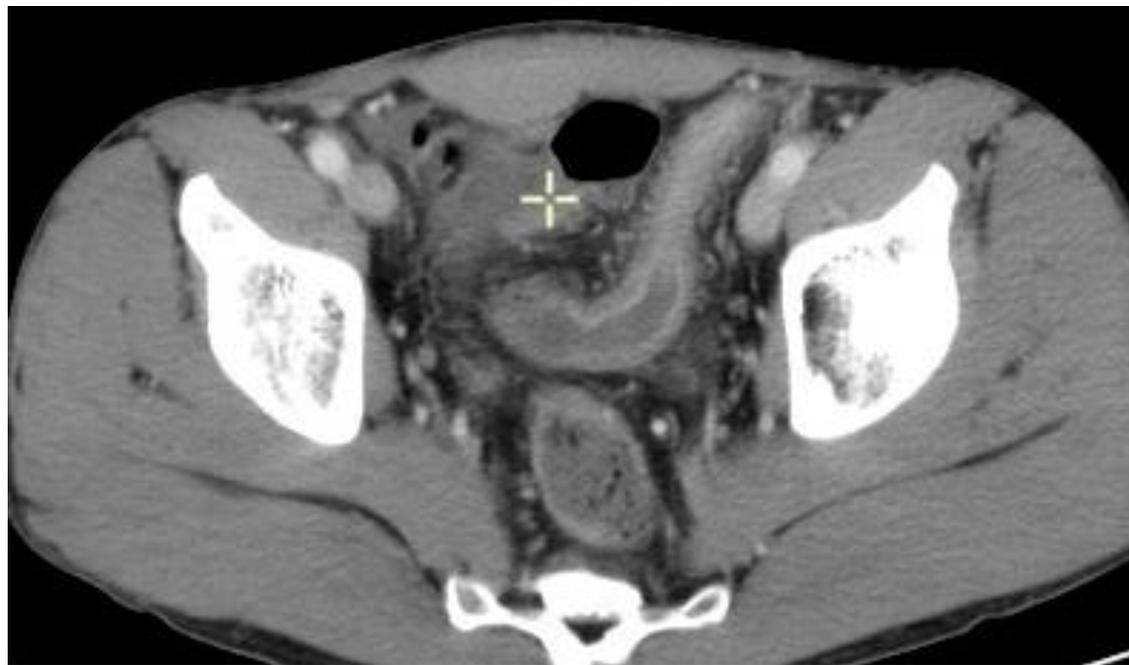
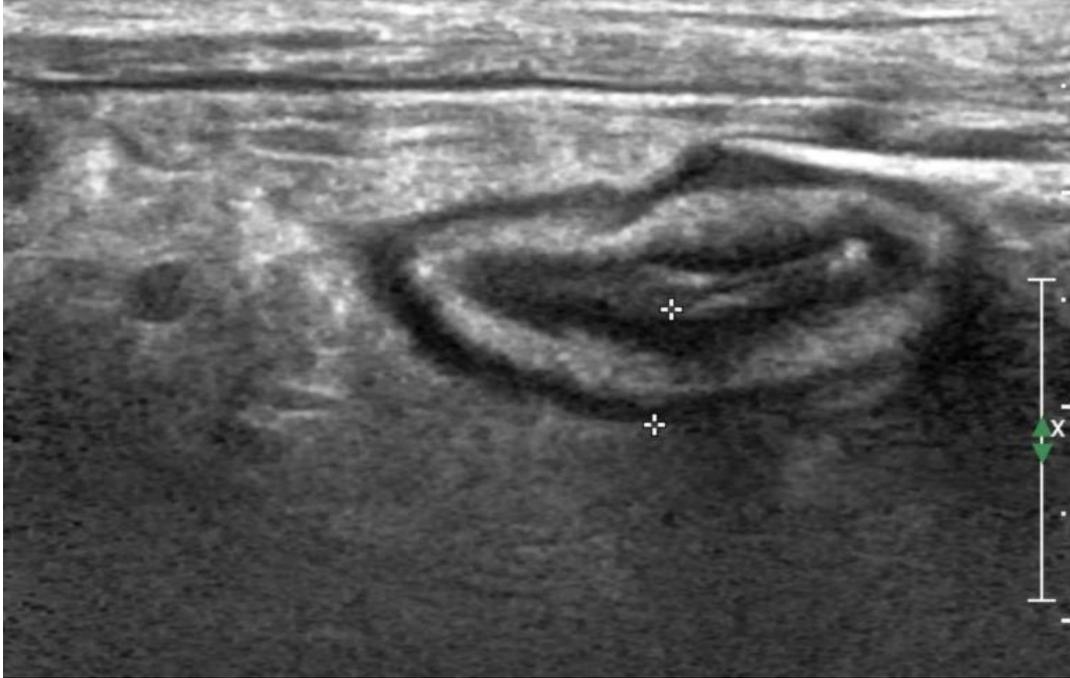
# RCUH vs Crohn

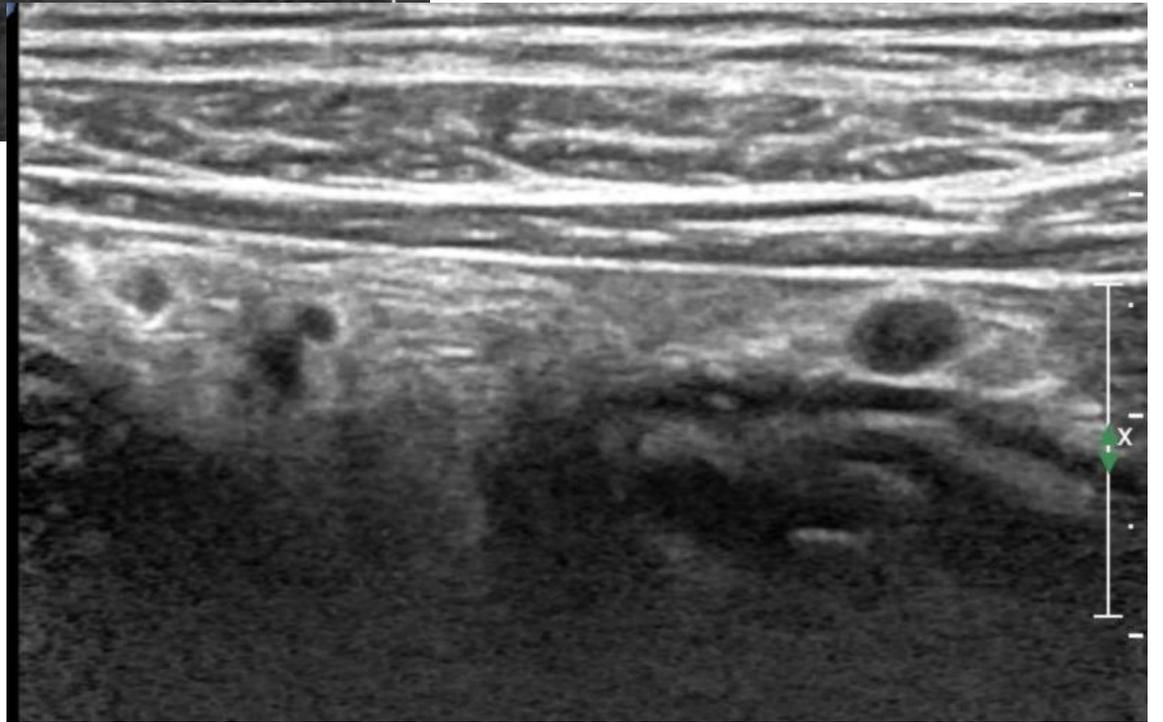
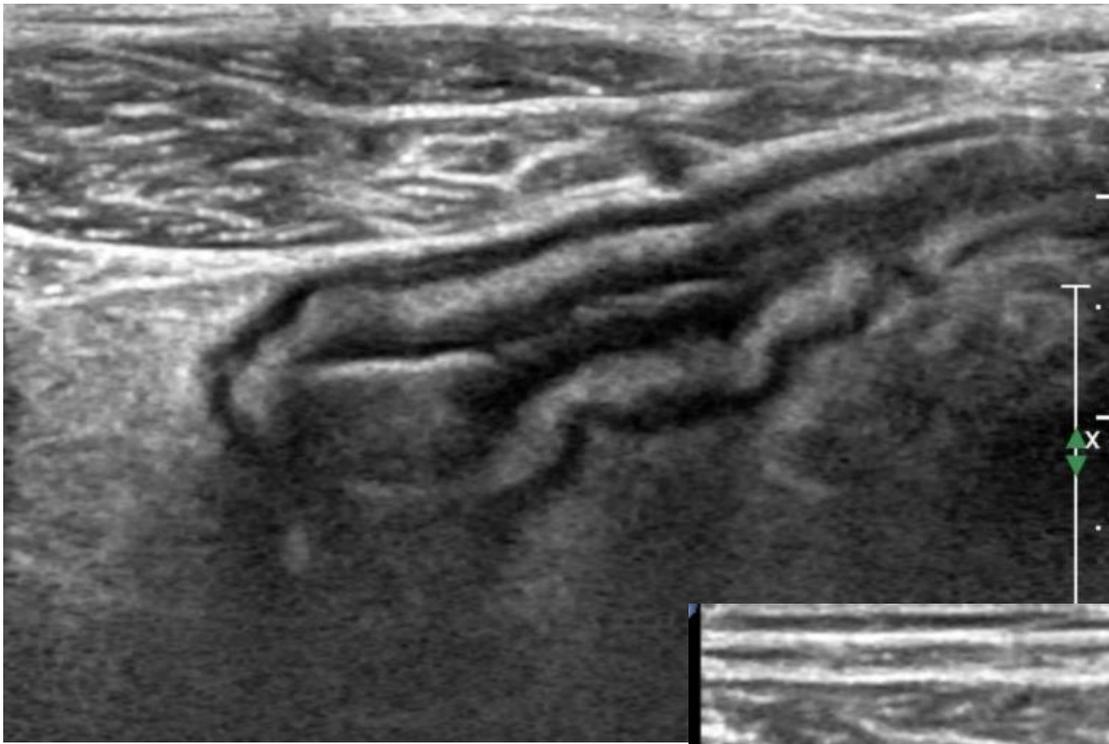
- Aspect de la paroi
- Topographie des lésions
- Anomalies péridigestives
  - Fistules
  - Abscès

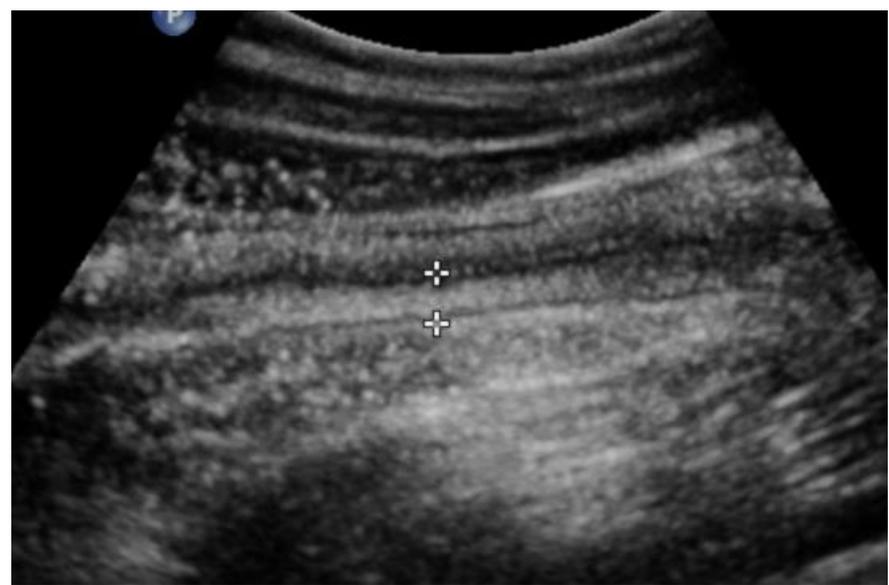
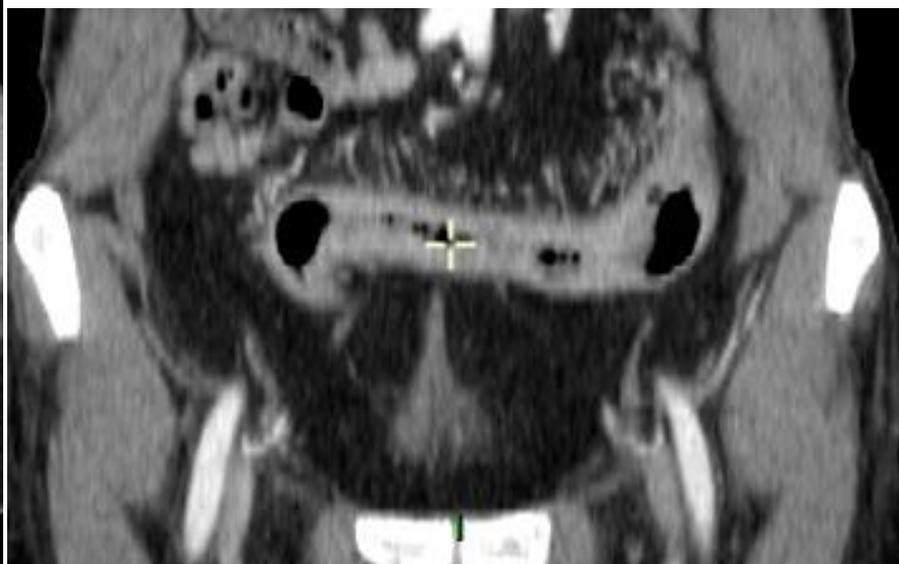
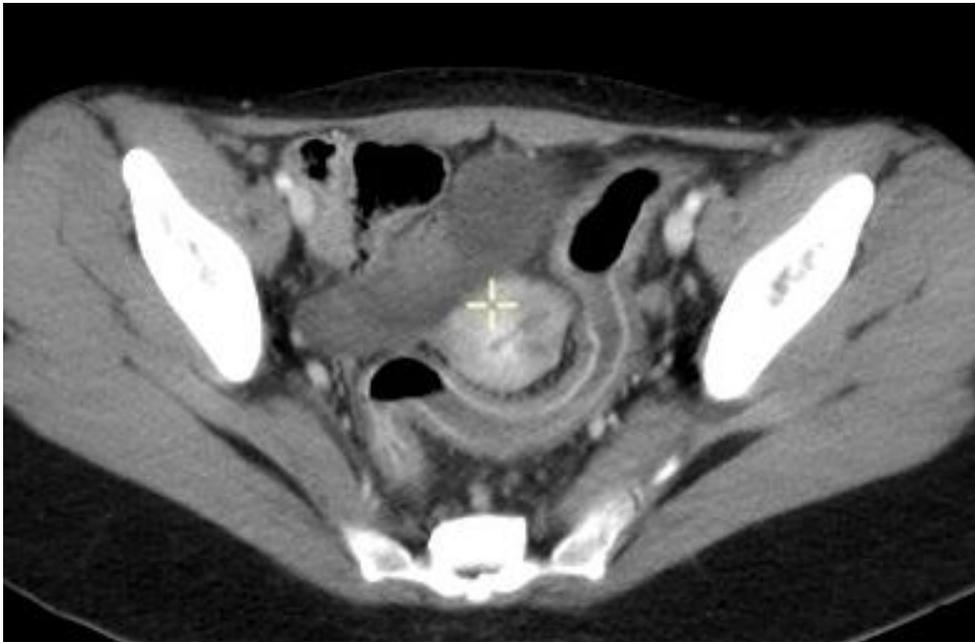












# US et IBD

- Diagnostic :
  - iléite vs appendicite
  - Crohn vs RCUH
- Extension
- Complications: fistules, abcès, sténose
- Activité : réponse thérapeutique
- Pronostic

**Douleur de la FIG:**



**exclure une diverticulite**

# Colon

## maladie diverticulaire

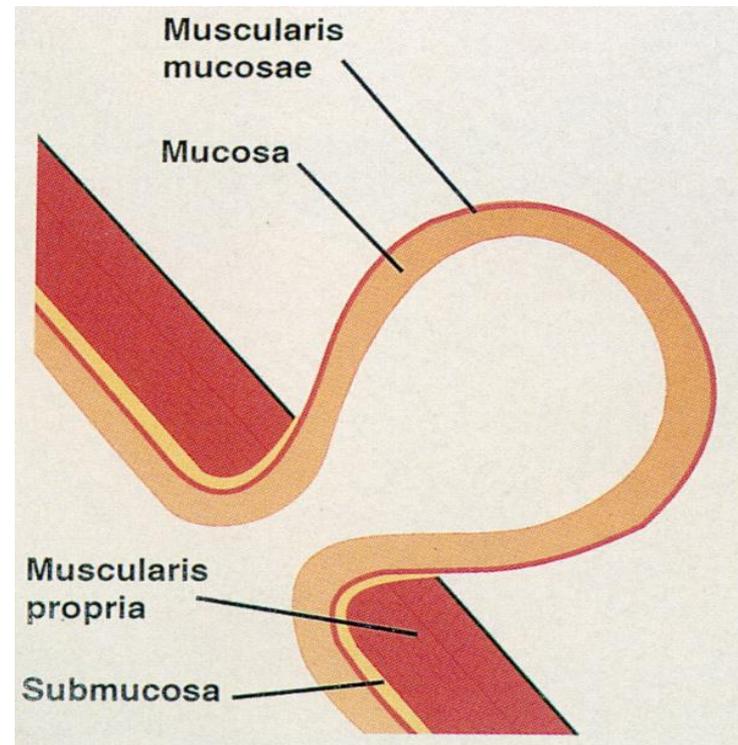
- sujets âgés, monde occidental, régime pauvre en fibres
- sigmoïde

résidus insuffisants

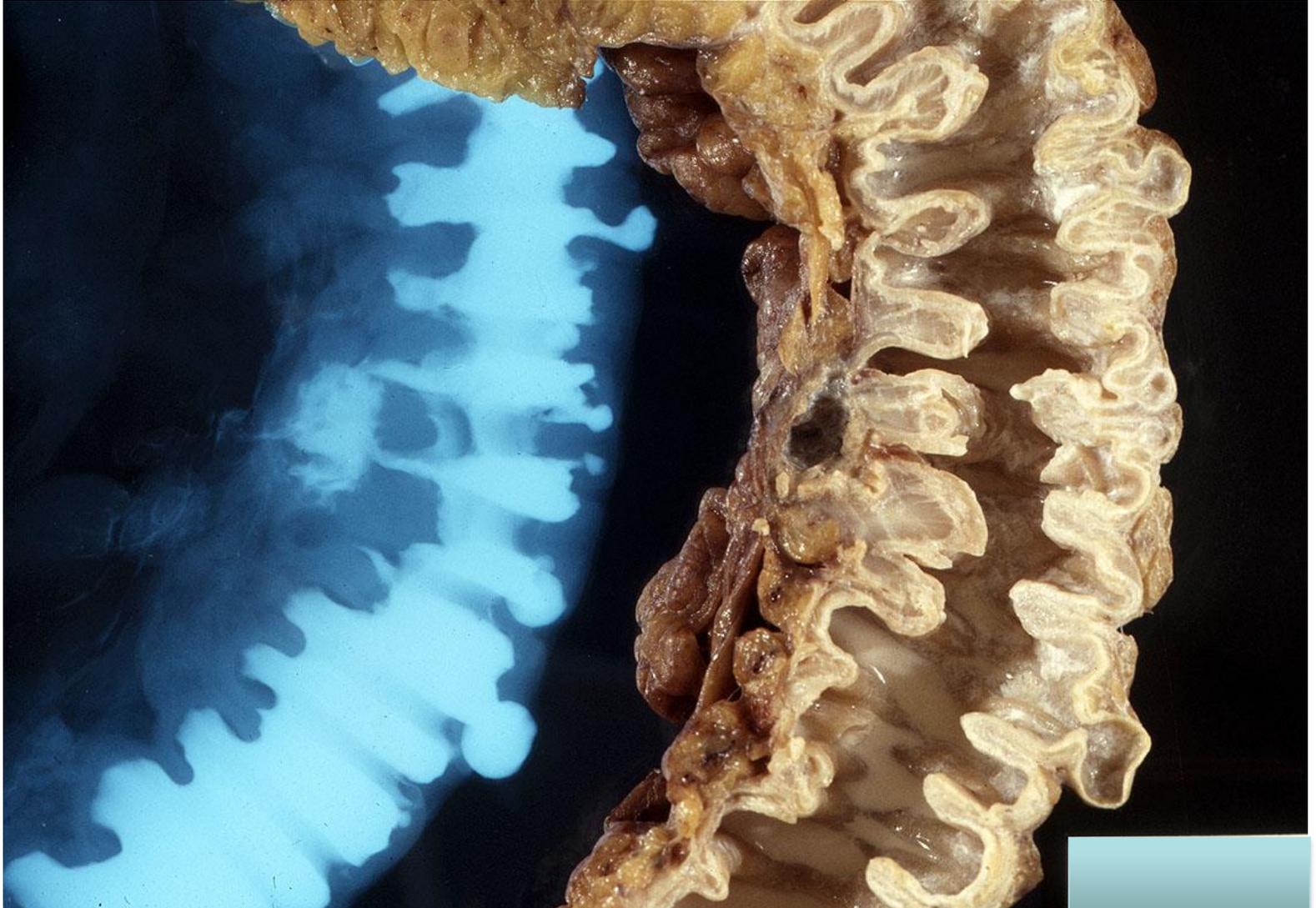
contraction ↓ prolongée

augmentation ↓ de la  
pression endoluminale

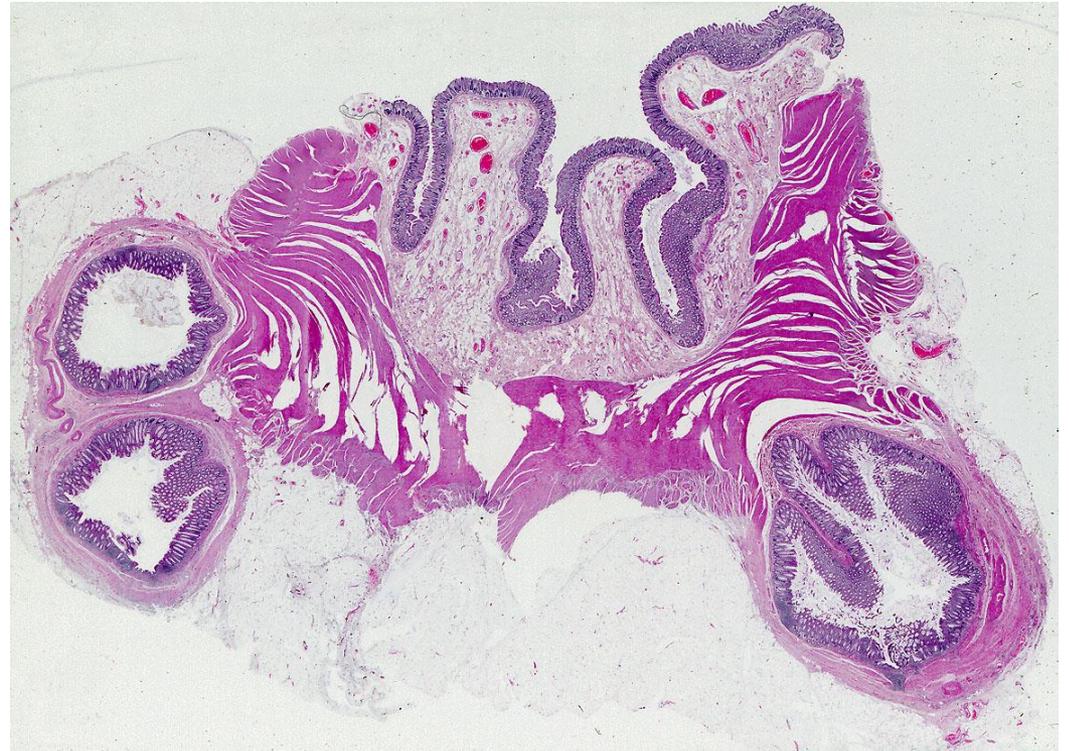
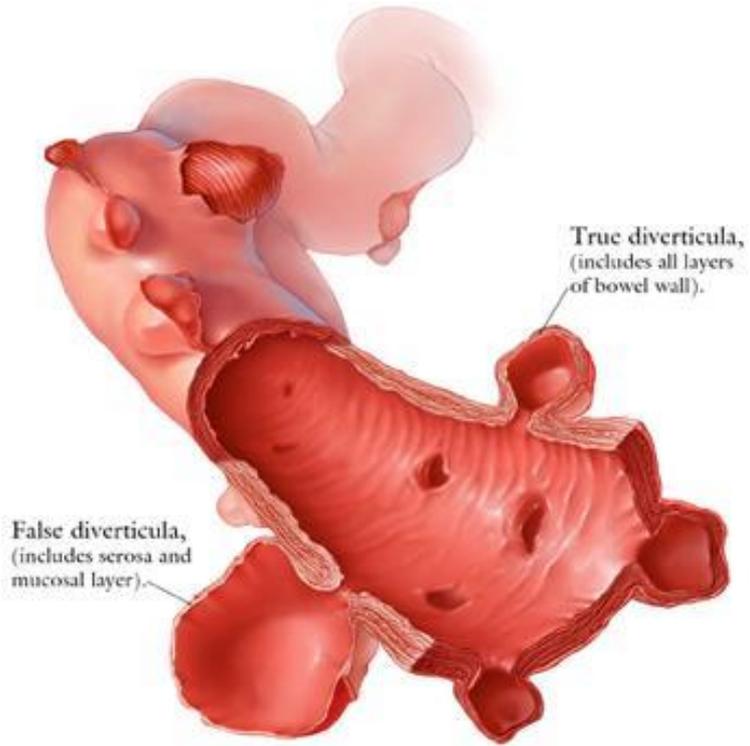
herniation de ↓ la muqueuse



# Maladie diverticulaire

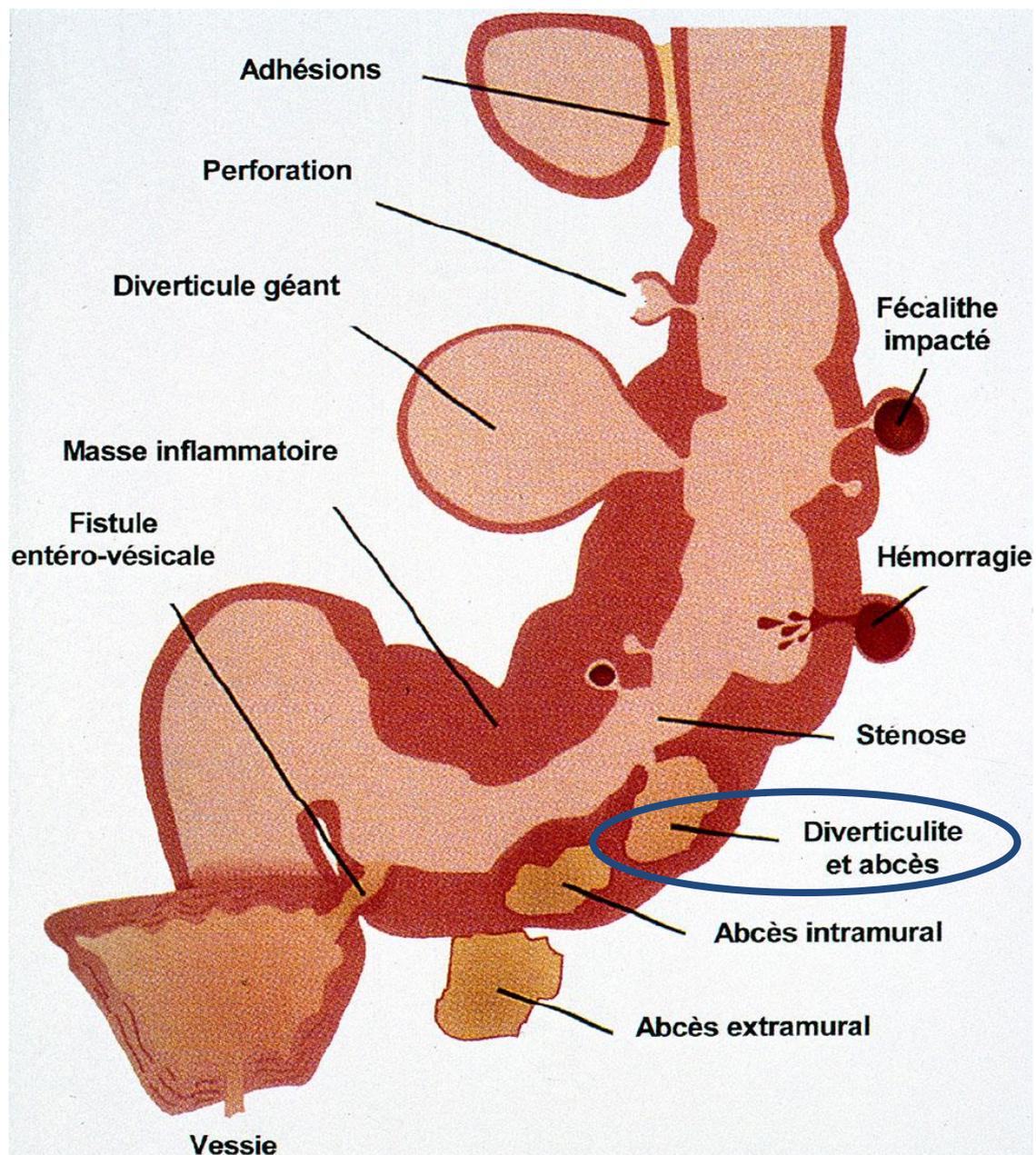


# Diverticulose



# Complications

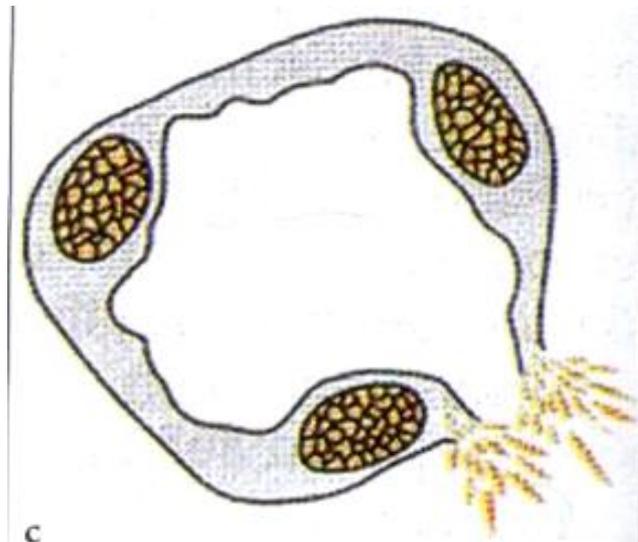
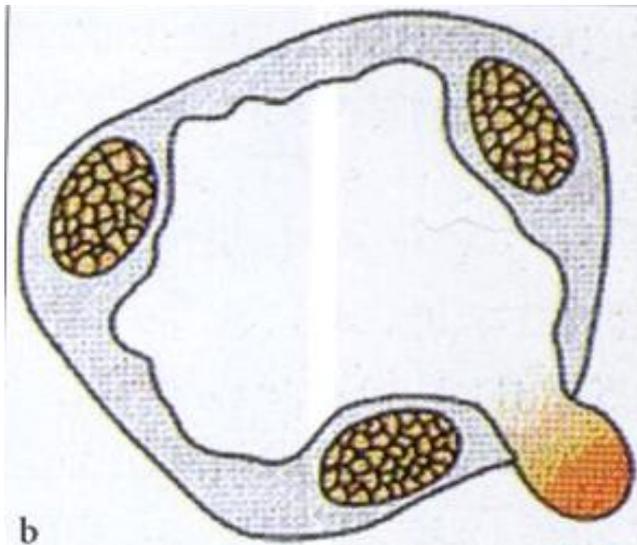
- Inflammation
  - Diverticulite
  - Absès
  - Fistule
  - Perforation
  - Peritonite
- 
- Hémorragie



Tiré de : "Gastrointestinal pathology", C.M. Fenoglio-Preiser,  
Ed. Lippincott-Raven, 1998

# Douleur de la FIG: exclure une diverticulite

- Clinique: 60 % de faux positifs
- Echo et TDM:
  - Paroi épaissie
  - Diverticule inflammatoire
  - Infiltration de la graisse de voisinage
  - Abscès
  - pyléphlébite

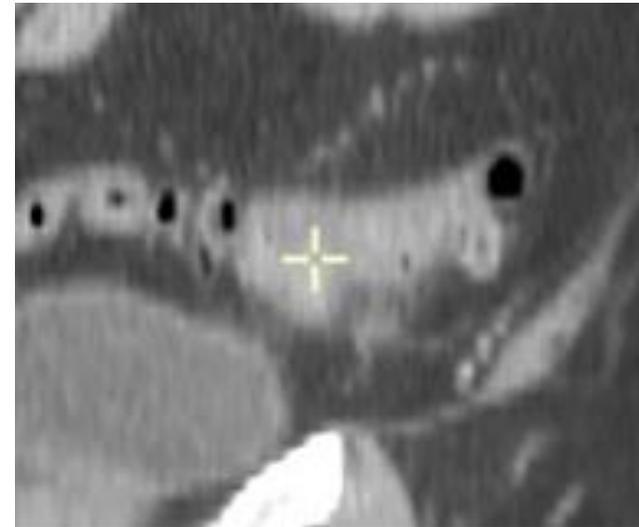
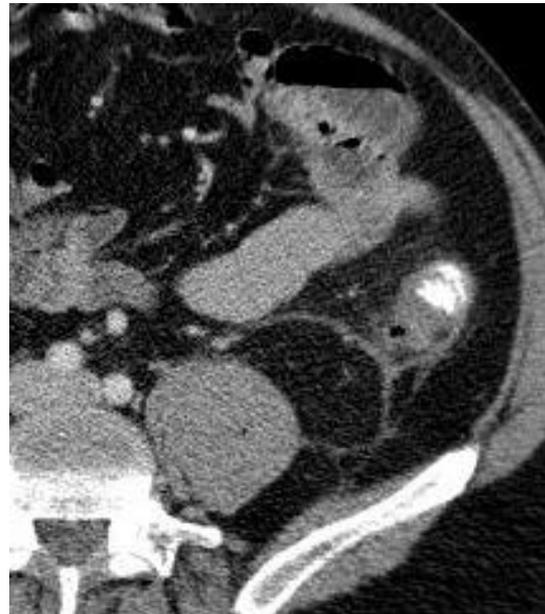
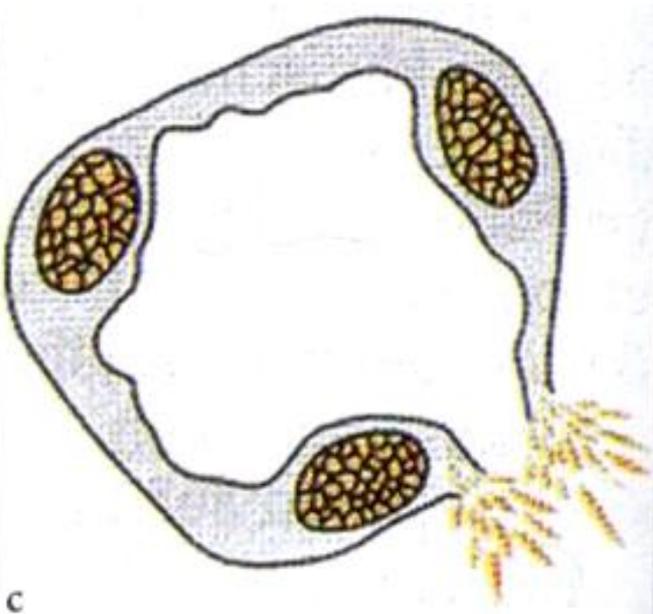
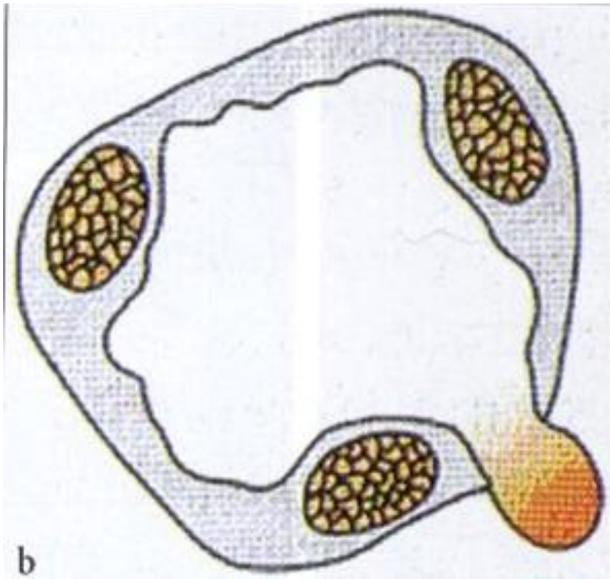


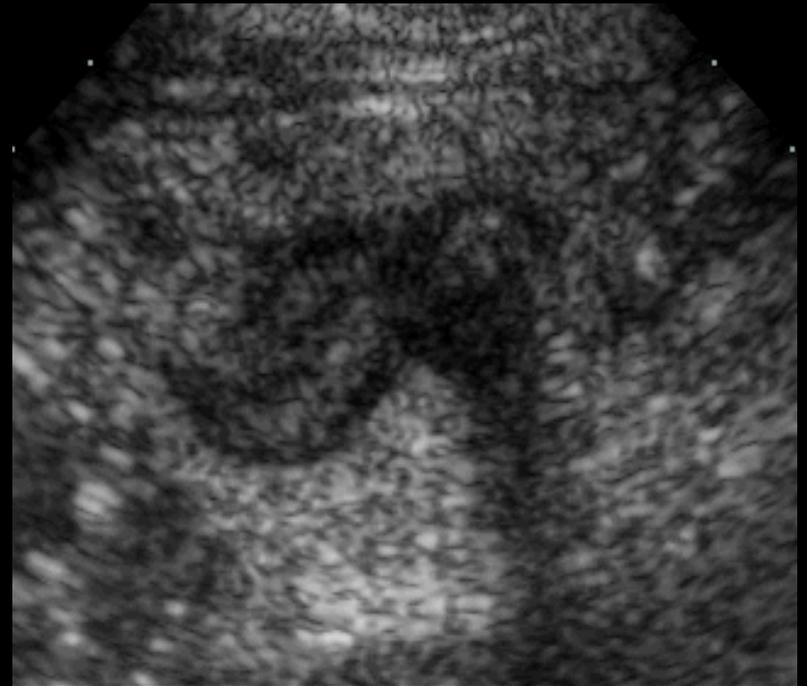
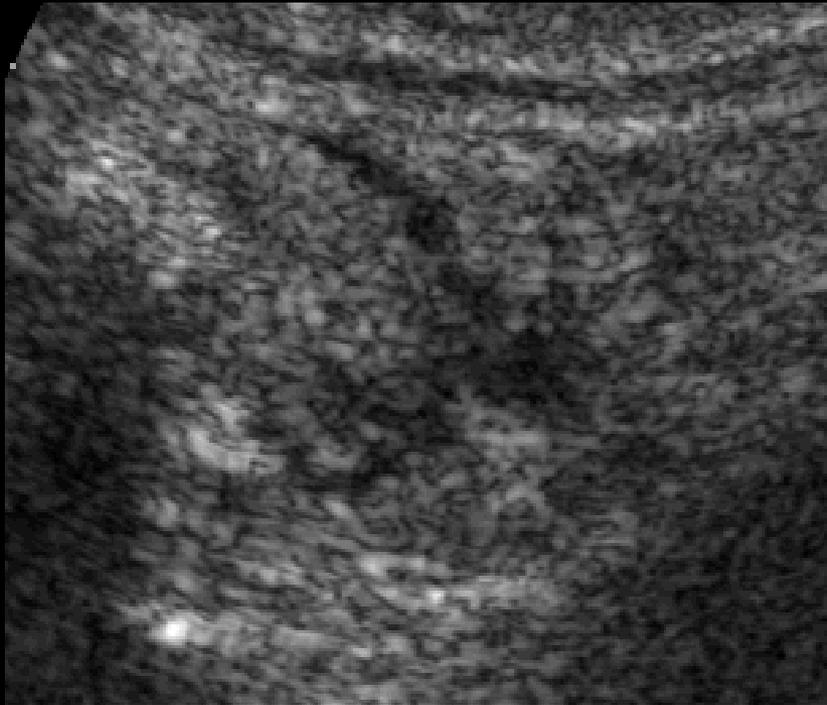
# Diverticulite



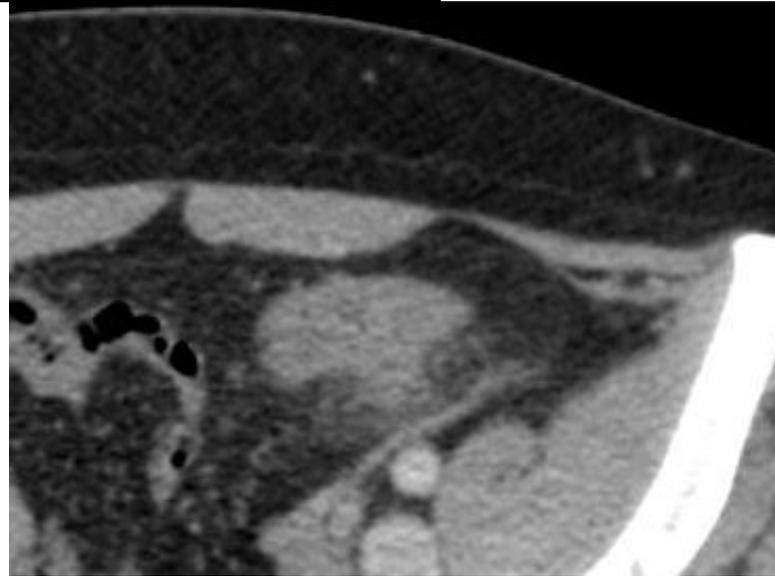
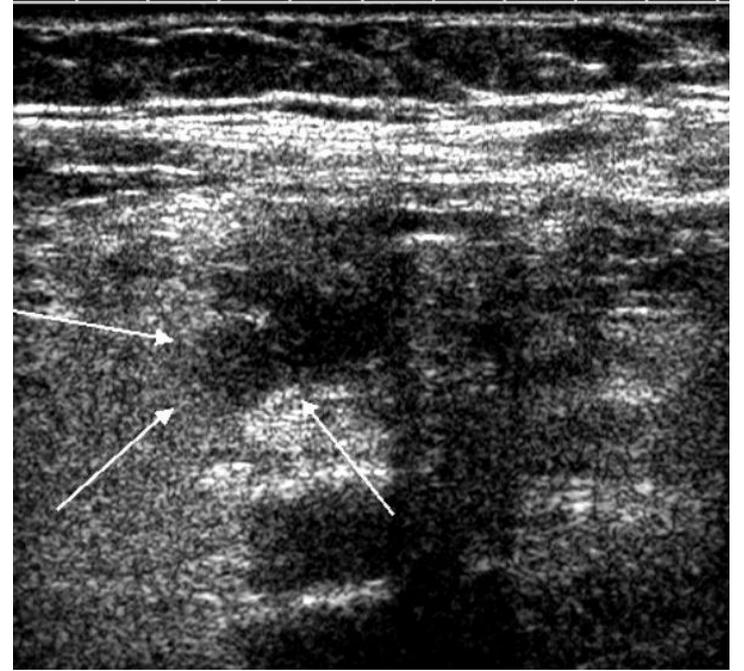
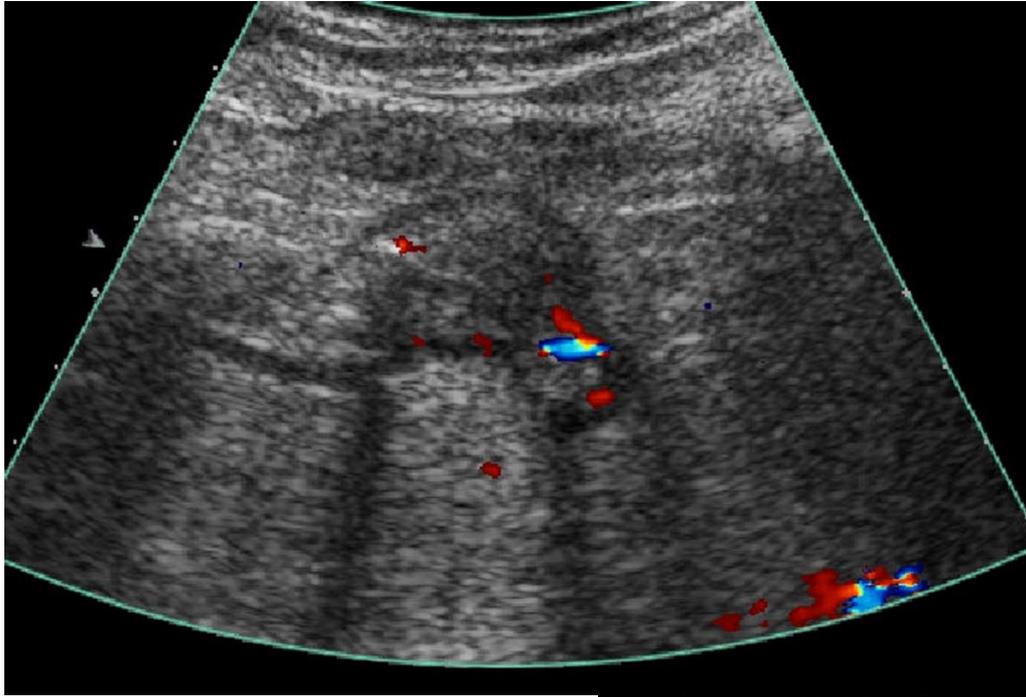
# DIVERTICULITE

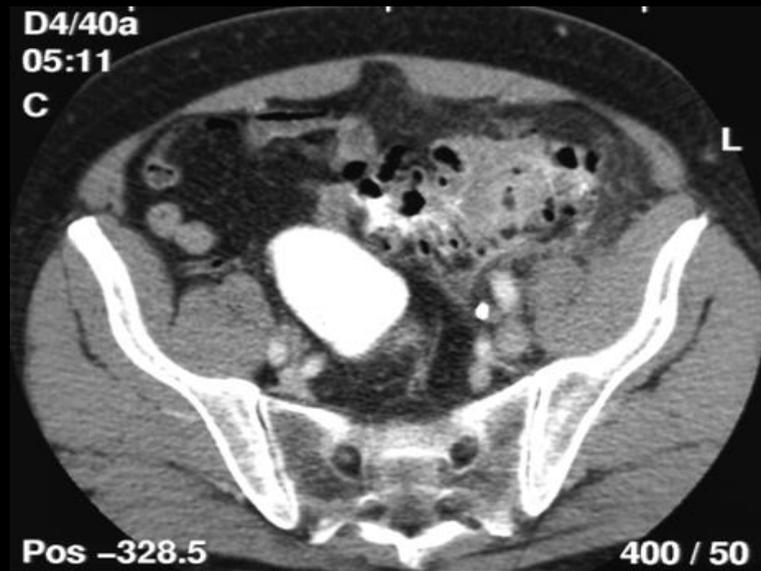
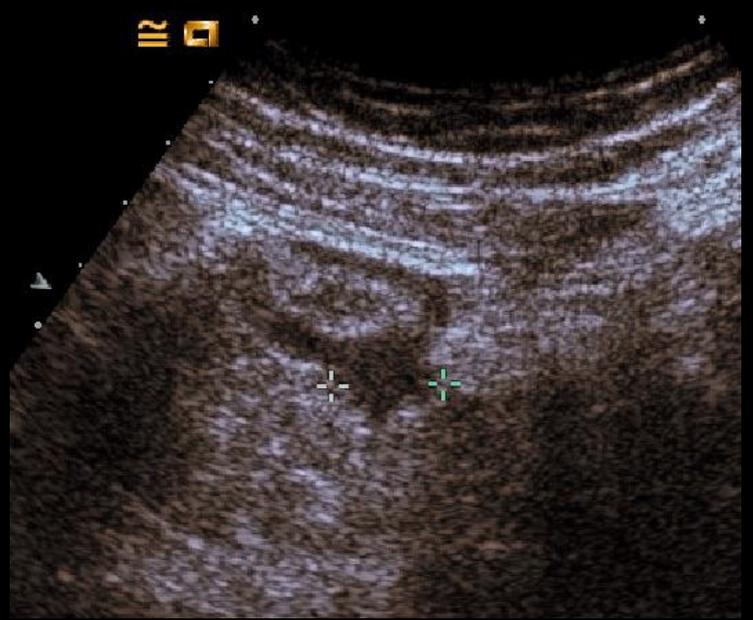
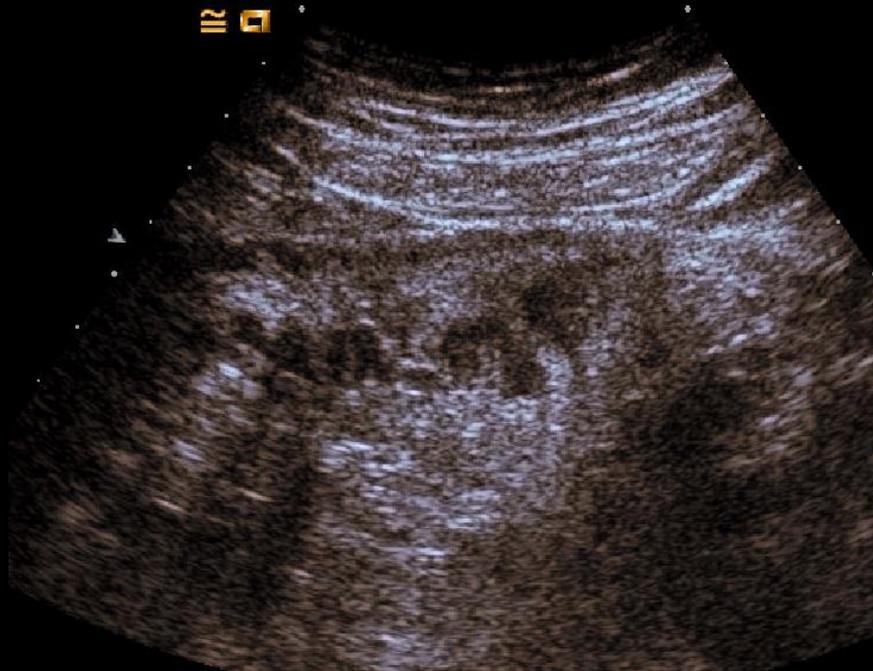
- Echographie :
  - Sensibilité : 84 à 94 %
  - Fiabilité: 98 %
- TDM :
  - Sensibilité 93 - 97 % - Spécificité 98 - 100 %
  - Fiabilité de 98 %
  - Prédiction de l'évolution
    - Collection de plus de 5 mm
  - DD cancer colique & détection du cancer sous-jacent





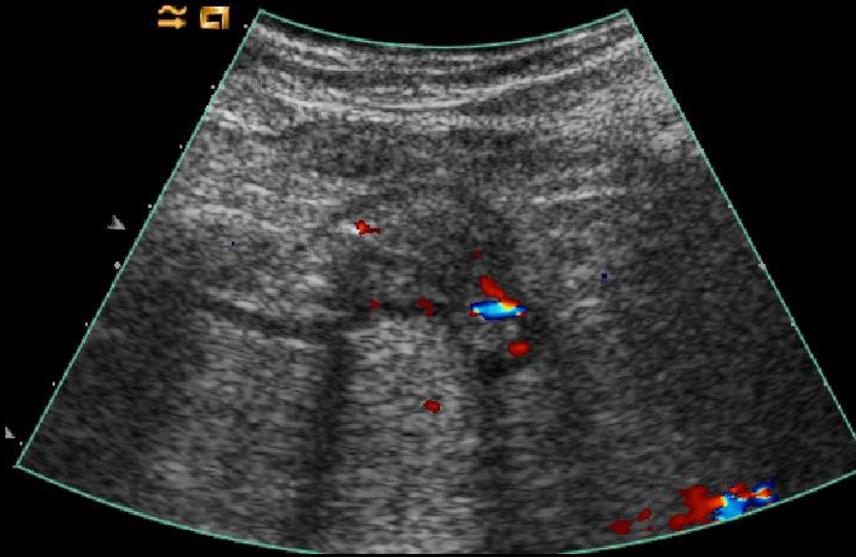
DIVERTICULITE

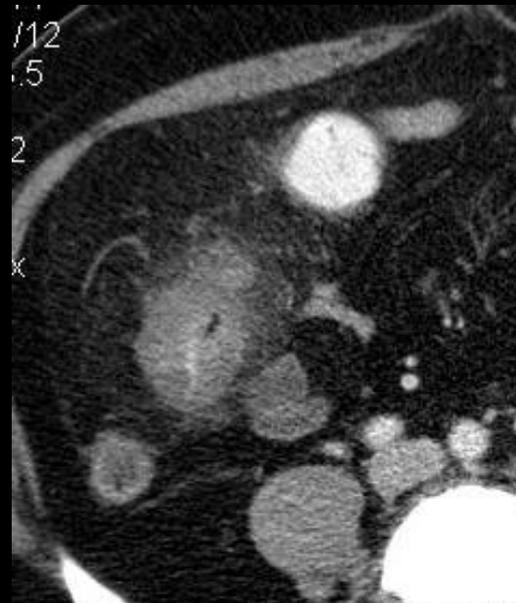
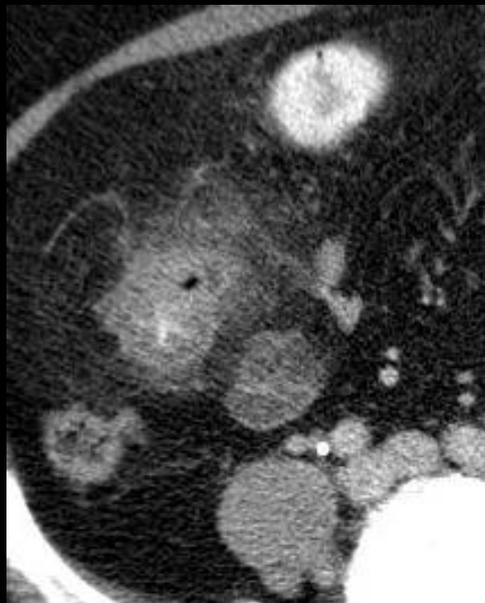
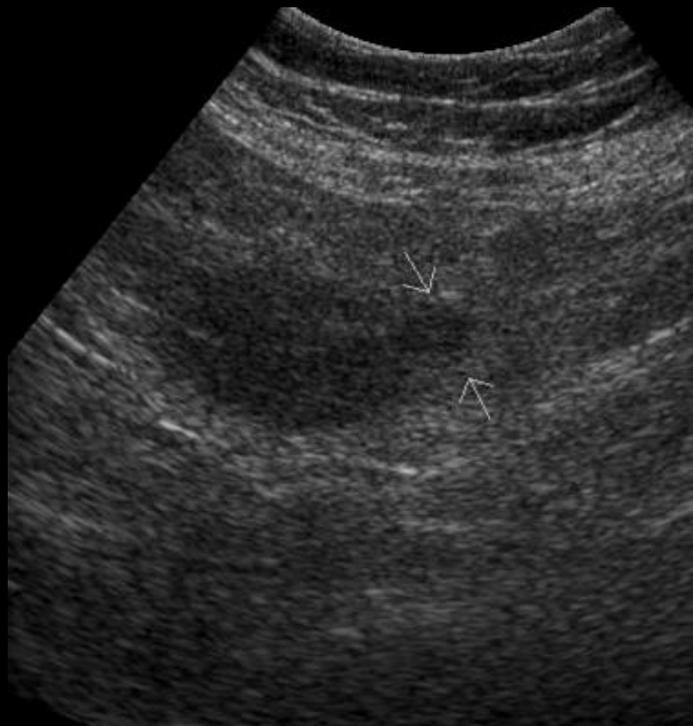


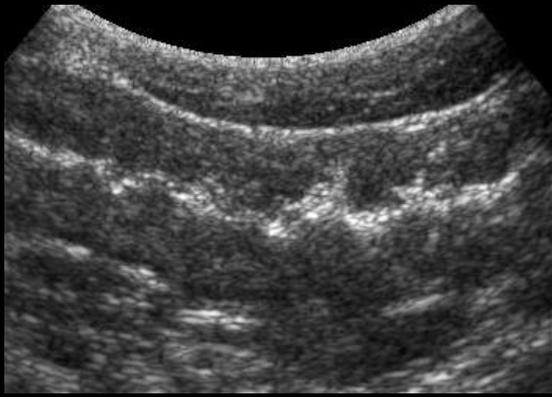




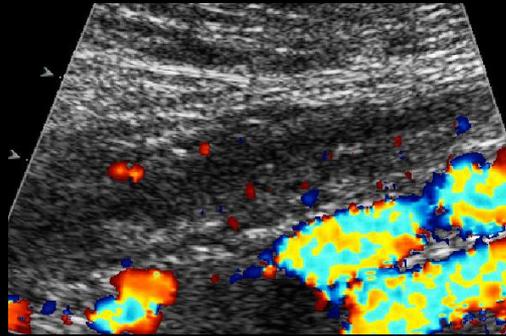
# Diverticulite



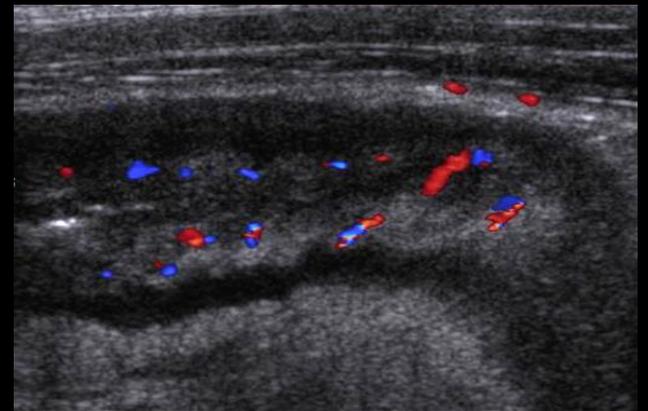




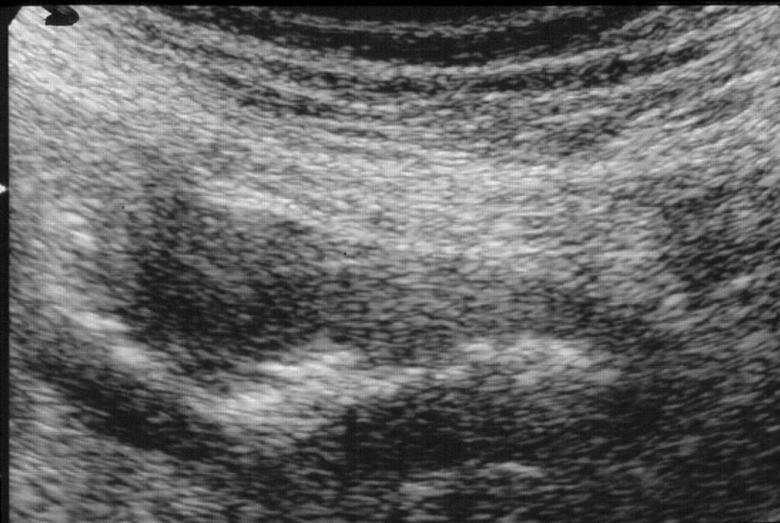
**infection**



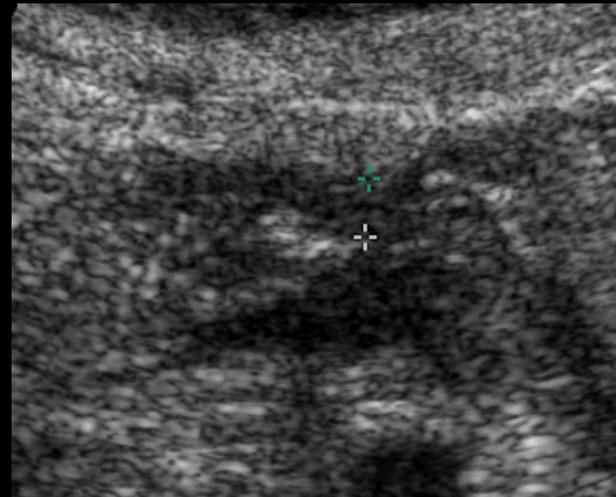
**RCUH**



**Crohn**

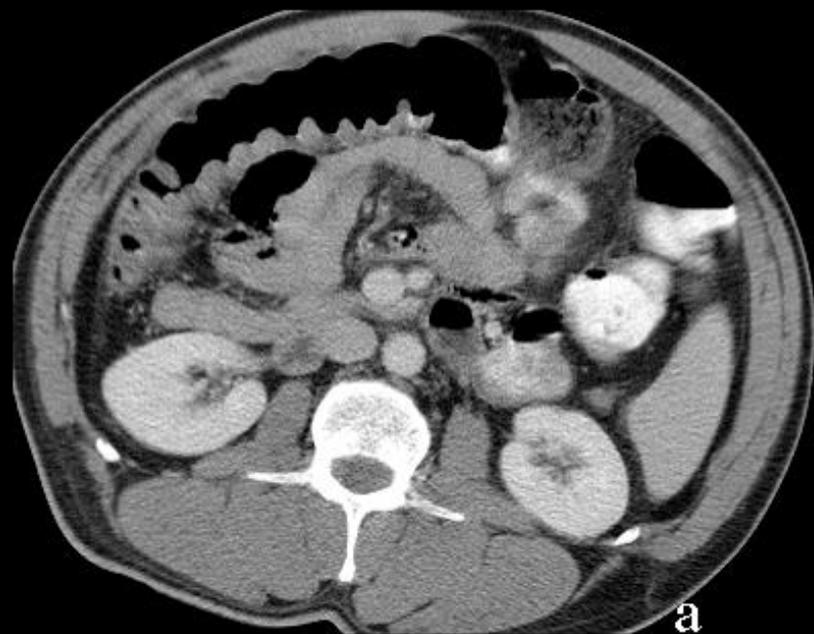
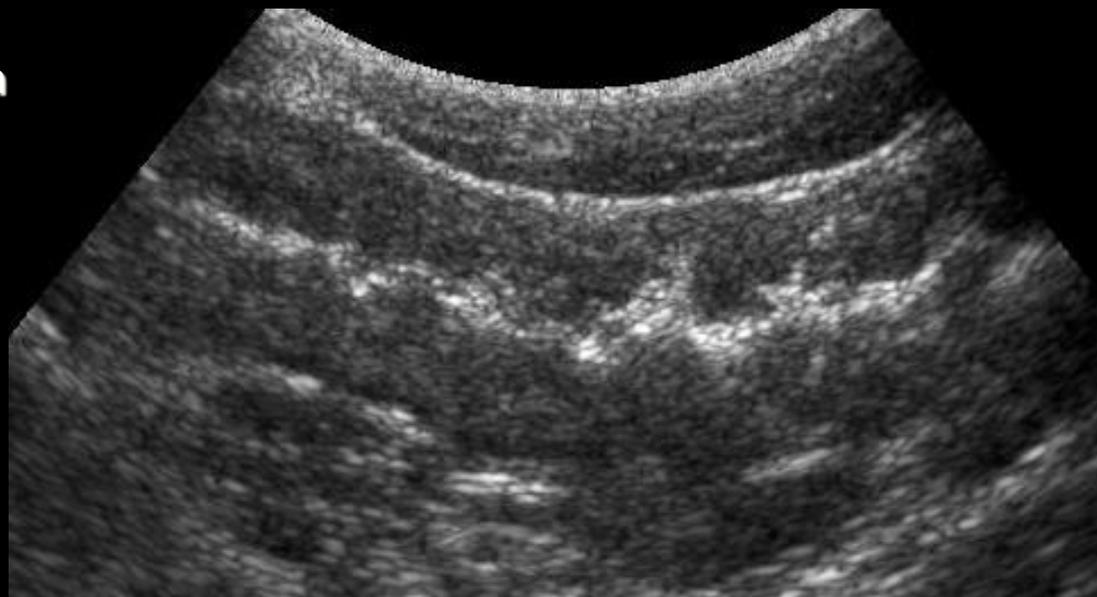


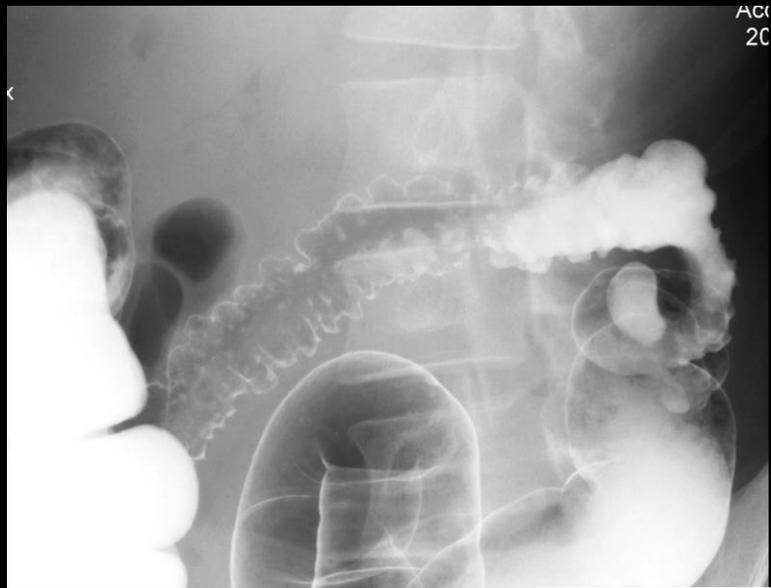
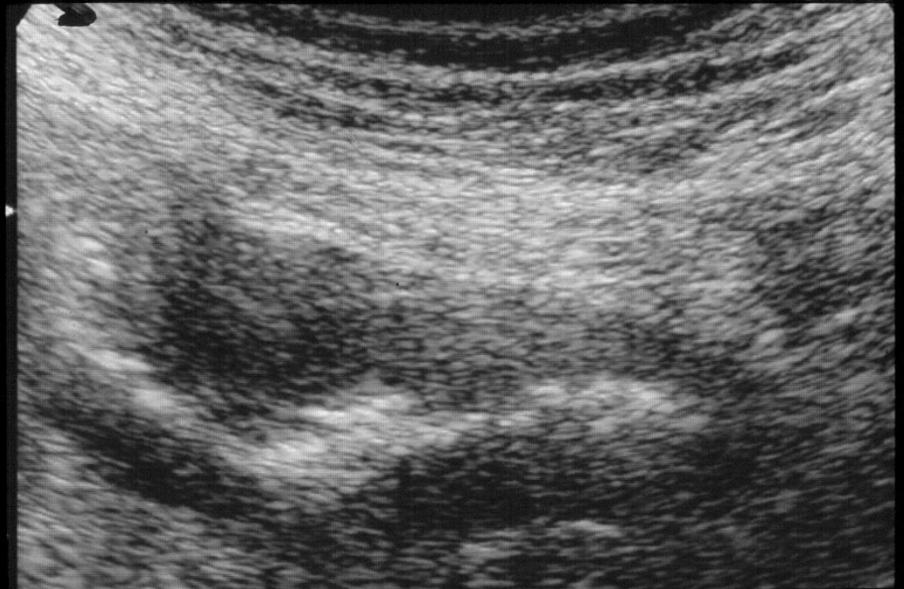
**ischémie**



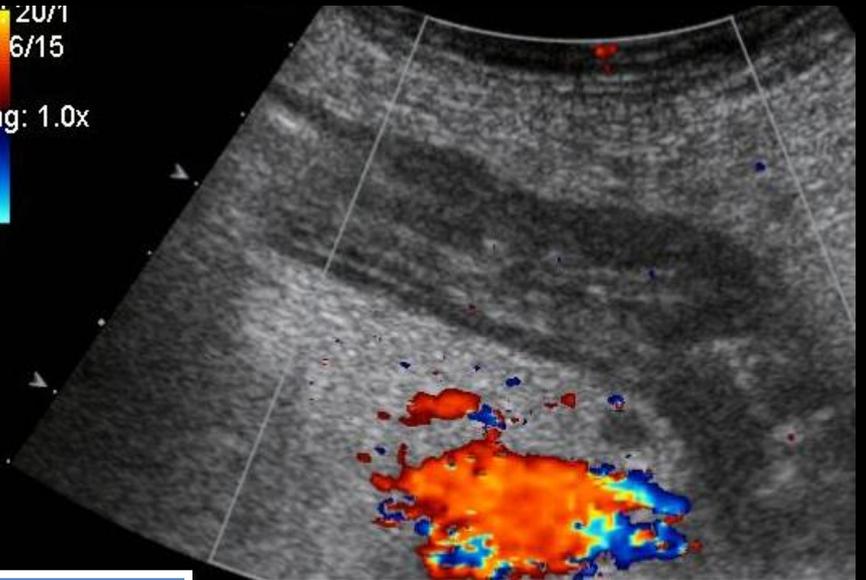
**Néoplasie**

**infection**

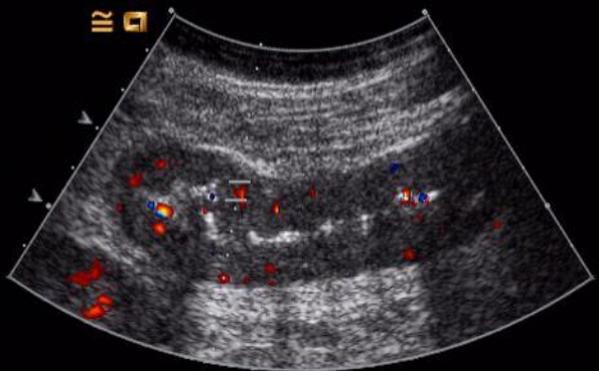




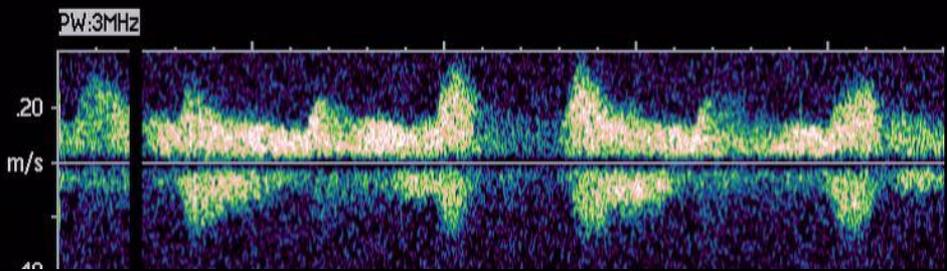
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Im: 6/15  
Mag: 1.0x  
.11



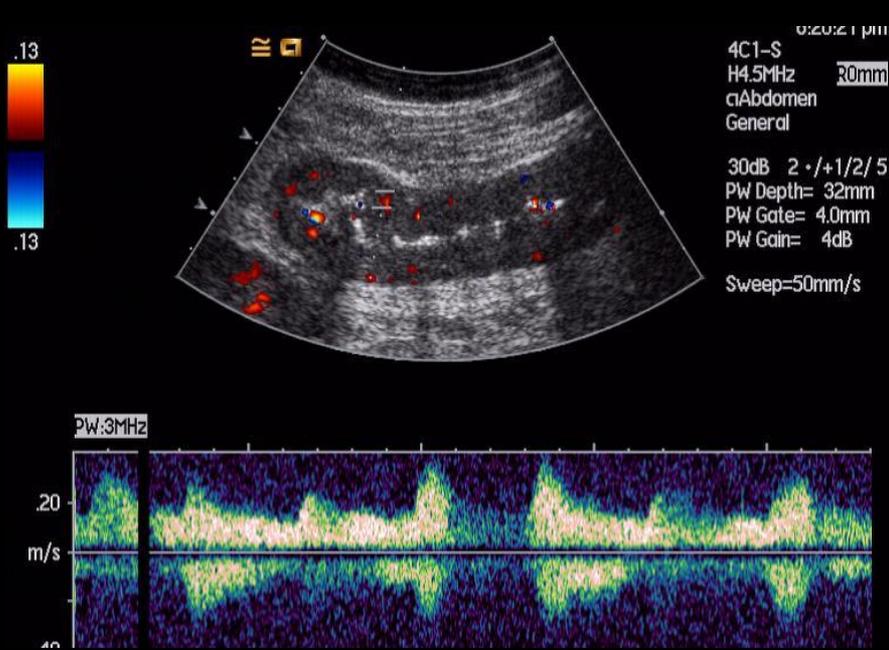
ischémie



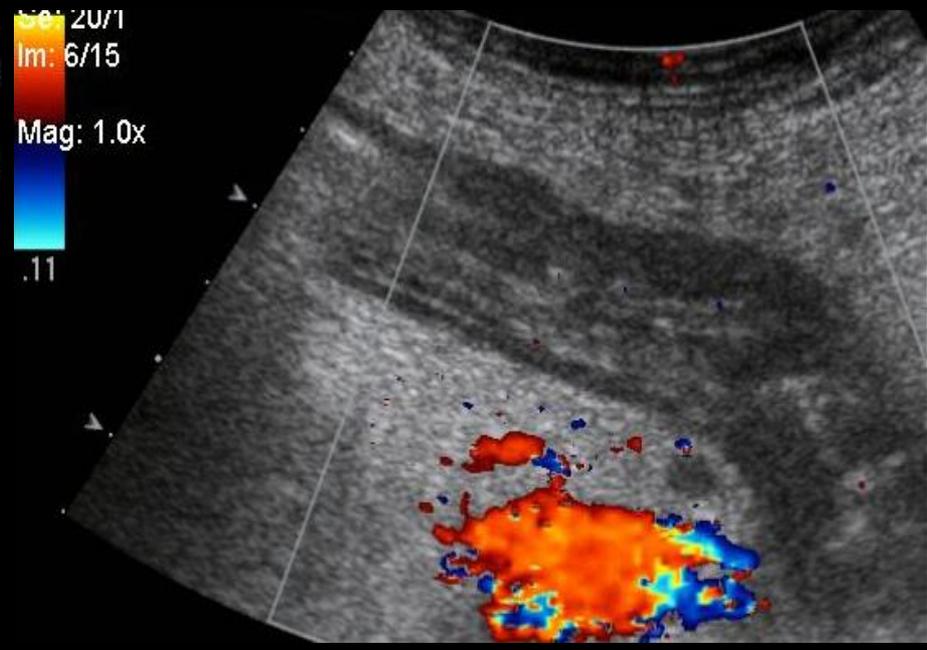
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H4.5MHz 20mm  
ciAbdomen  
General  
30dB 2 · +/-1/2/5  
PW Depth= 32mm  
PW Gate= 4.0mm  
PW Gain= 4dB  
Sweep=50mm/s



ischémie



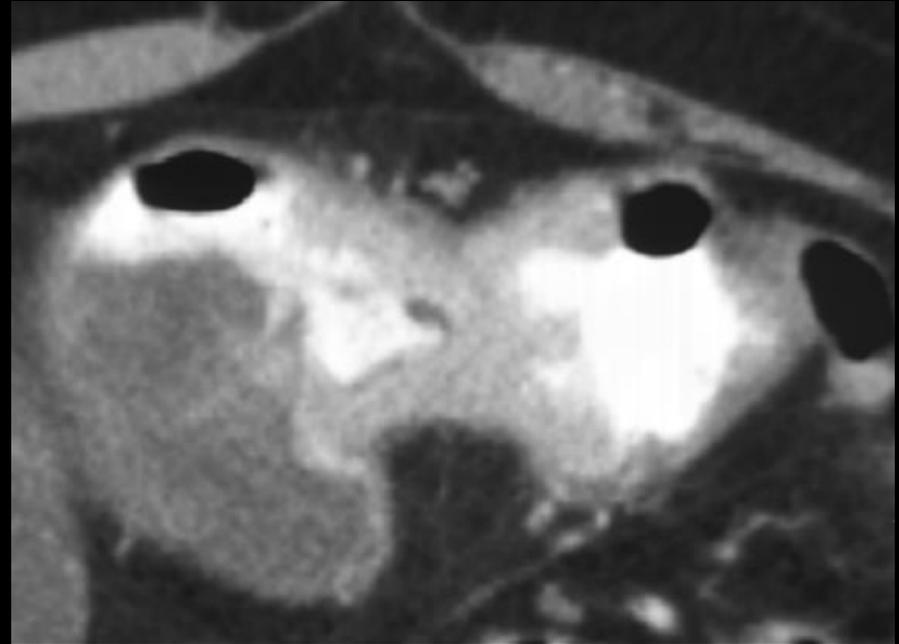
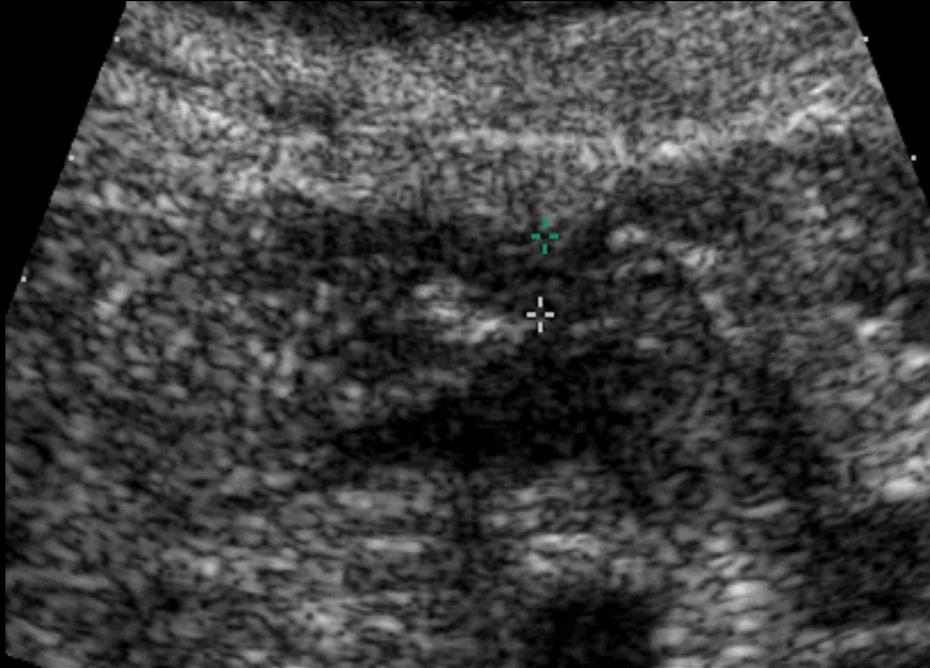
**Bon pronostic**



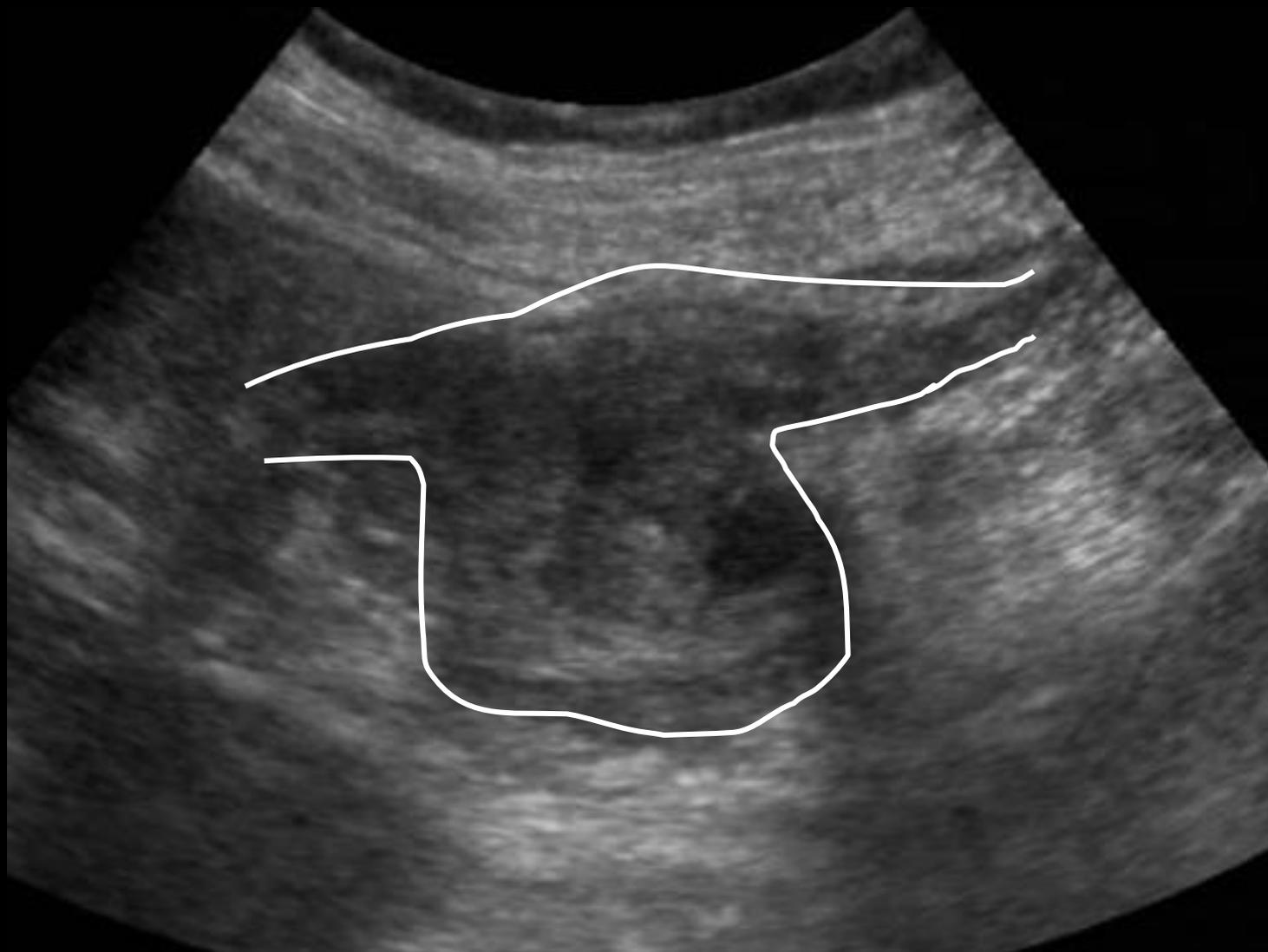
**Mauvais pronostic**

**ischémie**

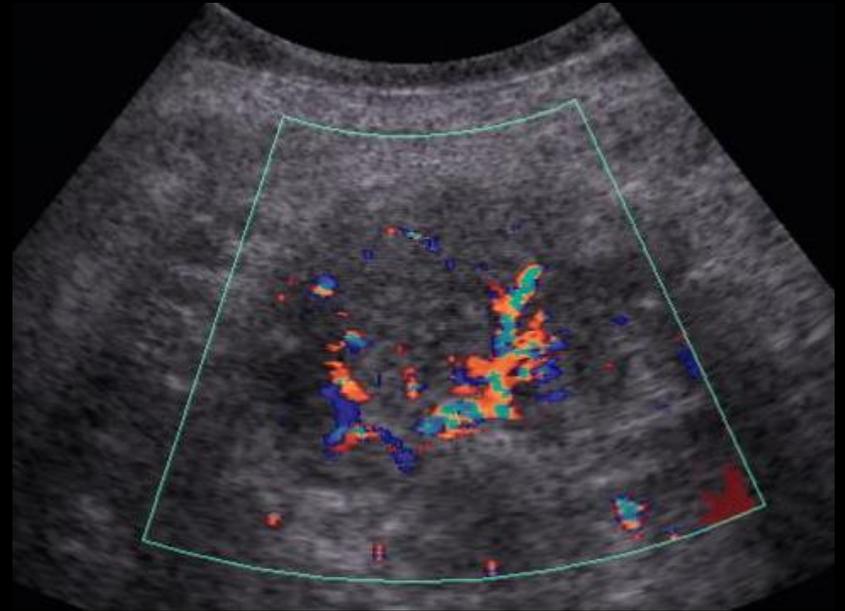
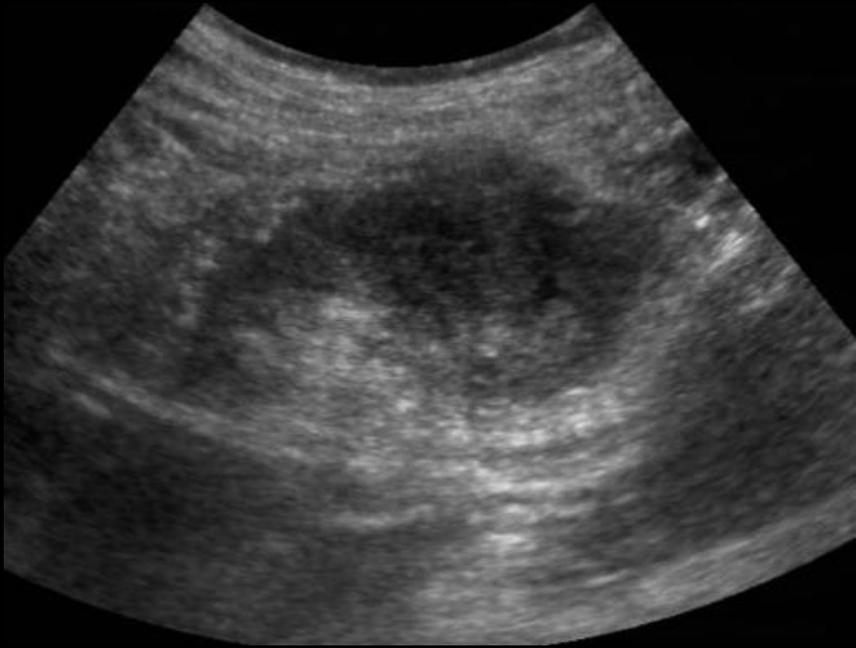
# Cancer colique



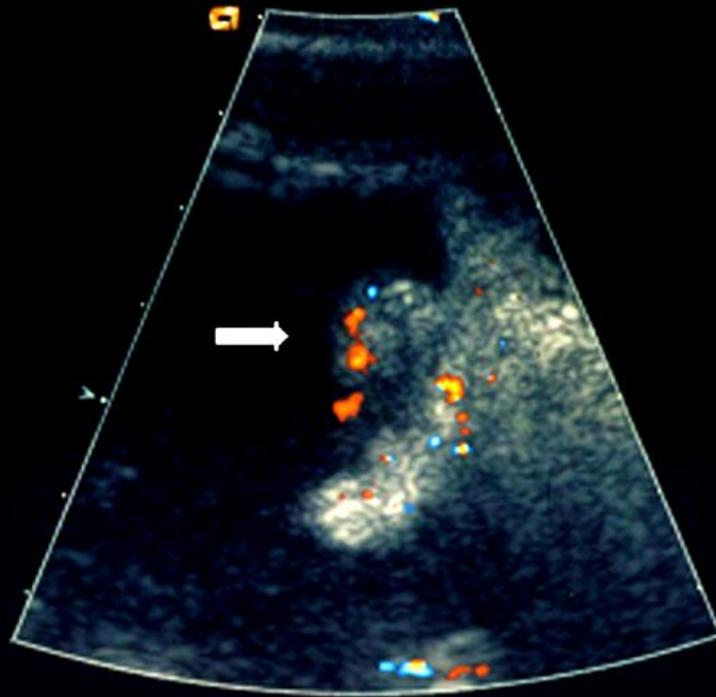
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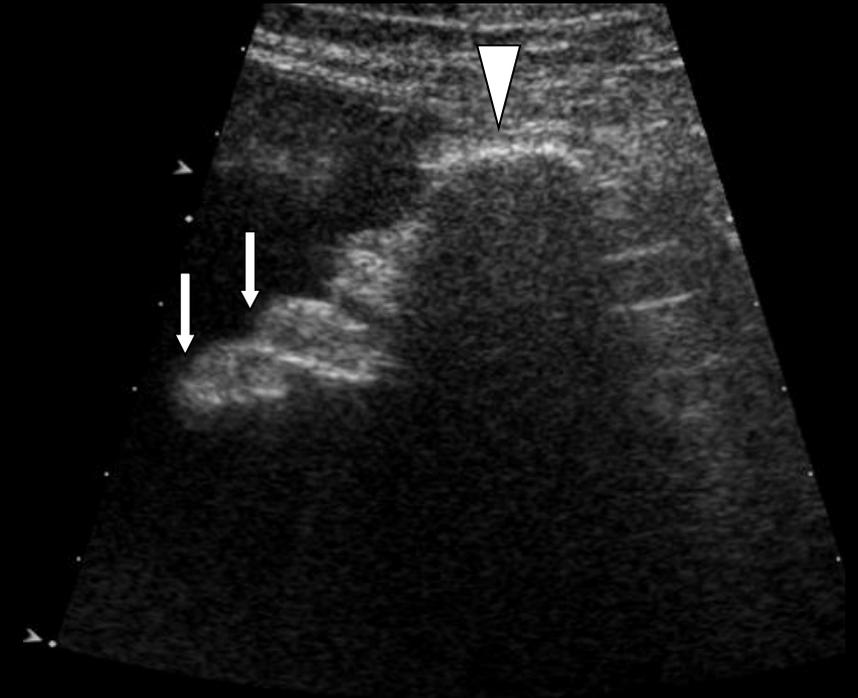
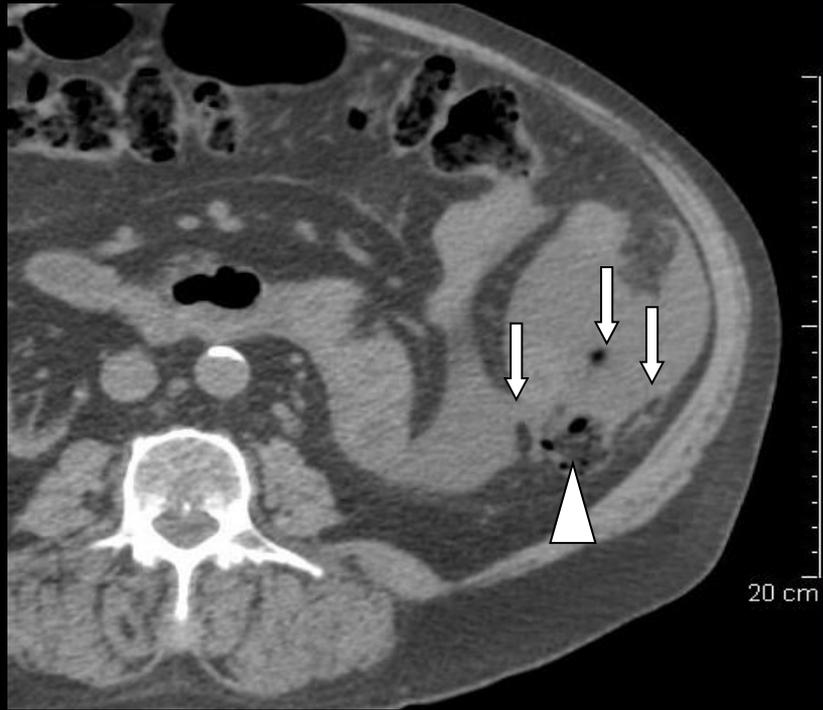


# Cancer colique

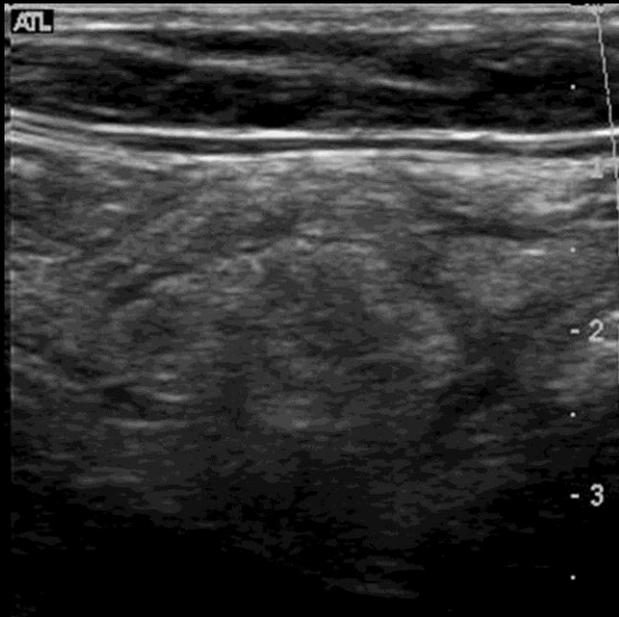


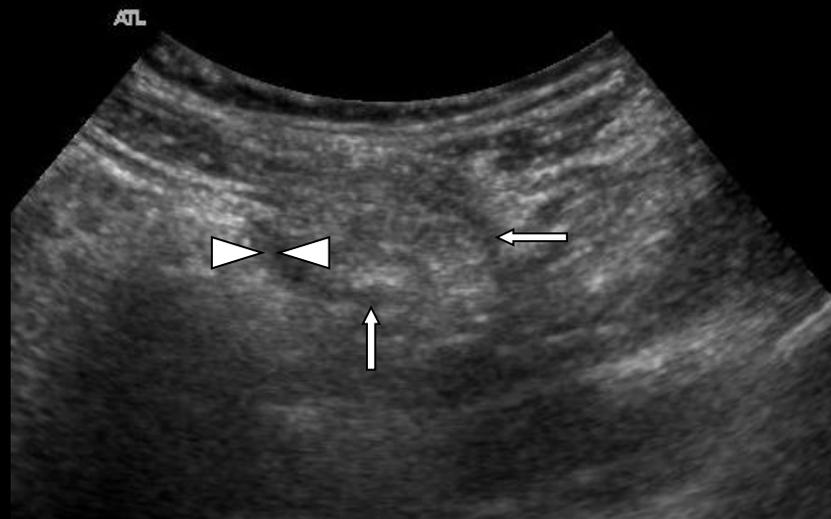
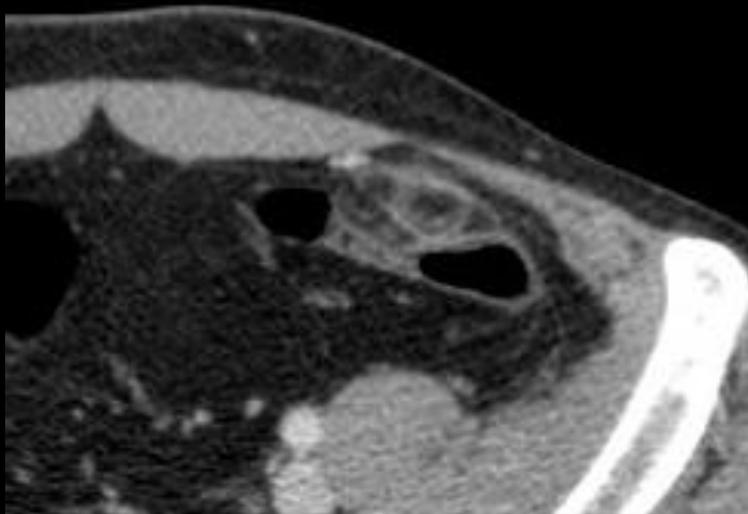
# Appendagite

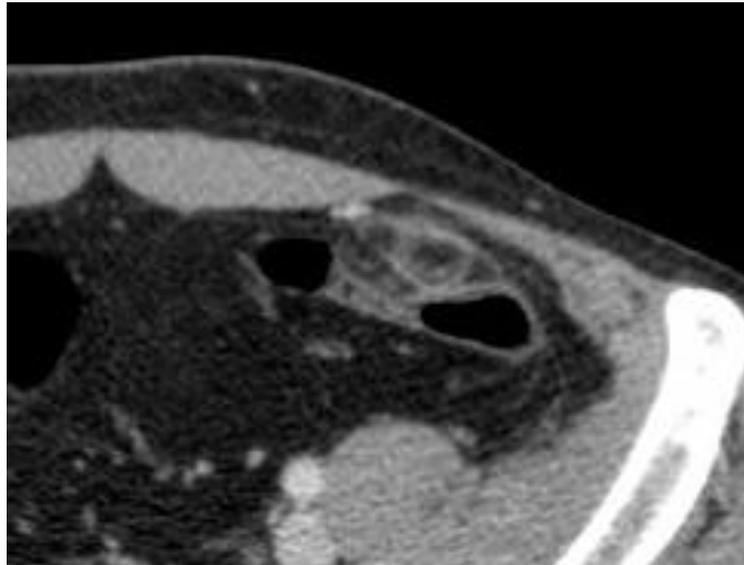
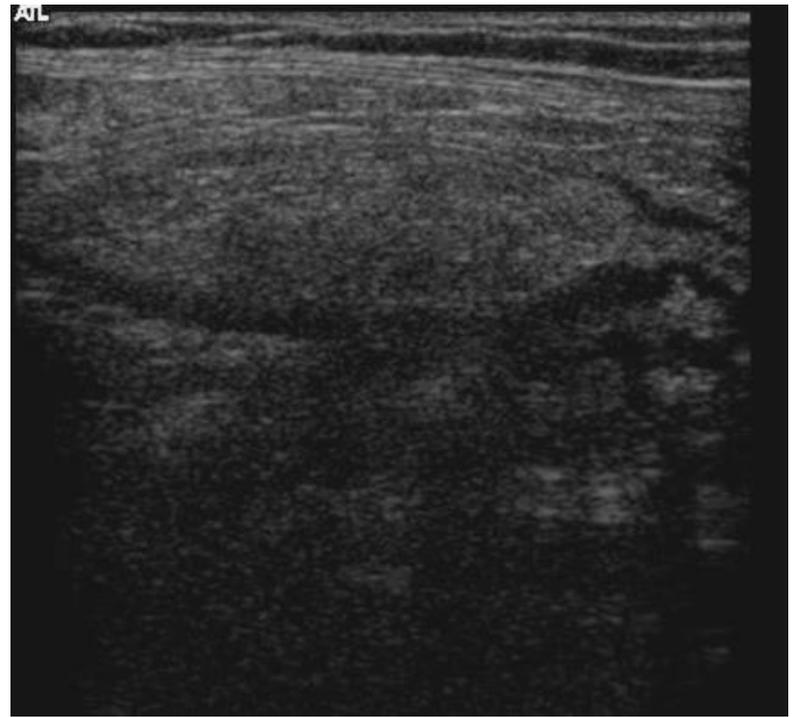
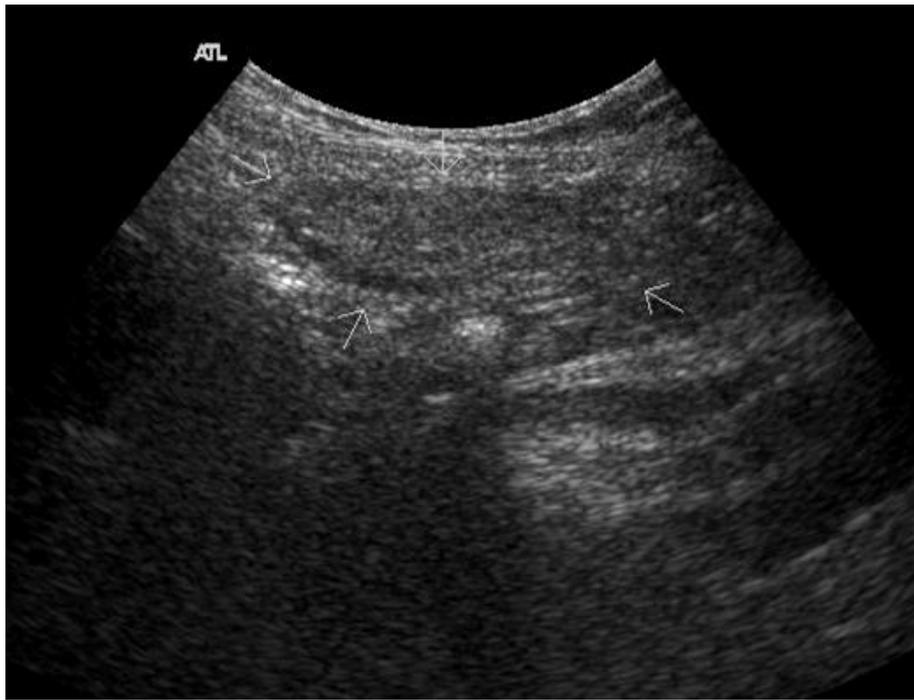




# Appendagite







	<u>Épaisseur</u> mm	<u>Strates</u>	<u>Flux</u> <u>artériel</u>	<u>Sous-muqueuse</u> <u>hyperéchogène</u>	<u>Anomalies</u> <u>de voisinage</u>	<u>Atteinte</u> <u>colique</u>	<u>Longueur</u> <u>du segment</u>
<u>Ischémie</u>	9 (4-20)	Disparition en fonction de la sévérité	Absent dans les formes sévères	Si <u>forme mineure</u>	<u>ascite</u>	+	> 30 cm
<b>Infection</b>	7	+	+	+	<u>adénopathies</u>	+	
<b>MICI</b>	8	+	+	Si <u>forme aiguë</u>	<u>adénopathies</u> <u>abcès</u> <u>fistules</u>	+	
<u>Néo</u>	> 3	Absente	-	-	<u>adénopathies</u>		< 10 cm

Tableau : Epaisseur du grêle en échographie : aide au diagnostic différentiel

# Affections coliques À et échographie

- Colite infectieuse:
  - Localisation droite, paroi peu ou très épaisse, vascularisée, atteinte iléale éventuelle, ggls.
- Colite inflammatoire (Crohn)
  - Paroi épaisse (11 mm), hétérogène, atteinte colique droite et association iléale, fistules & abcès, prolifération graisseuse de voisinage
- Colite ischémique:
  - Souvent gauche, peu stratifiée et sans vascularisation
  - Sténose des troncs artériels
- Néoplasie:
  - Paroi > 12 mm, peu stratifiée, atteinte asymétrique, segmentaire, sans modification du tissu graisseux de voisinage

# Affections coliques Ä et échographie

	<b>Topo</b>	<b>Épaisseur mm</b>	<b>Stratification</b>	<b>Flux DC</b>	<b>Haustrations</b>
Crohn	D	< 13	Ä Sf Crohn avancé	100 %	+ Sf Crohn avancé
RCUH	G	< 9	Ä	100 %	
PSM	G	11	-	-	+
Infection	D	9	+ Sf c.neutrop.	90 %	+ Sf c.neutrop.
Ischémie	G>D	9	50 %	60 %	-
Néoplasie	...	> 12	20 %	80 %	

# ÉCHOGRAPHIE ABDOMINALE de l'adulte

Etienne DANSE

