Affections vasculaires de l’abdomen du patient adulte

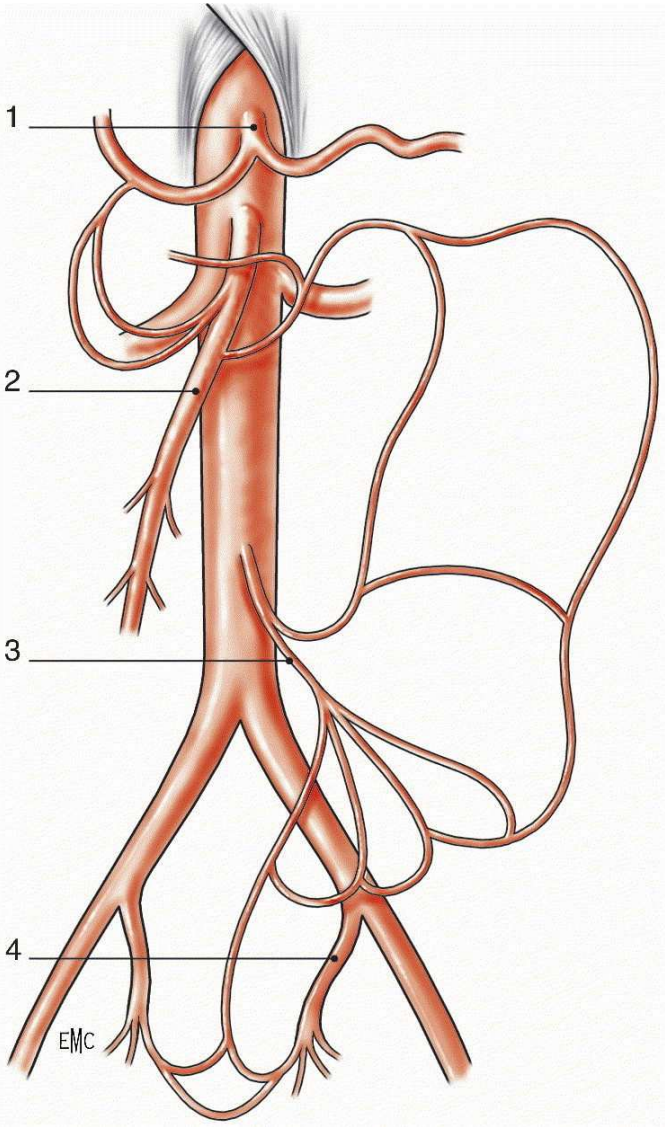
E Danse et coll

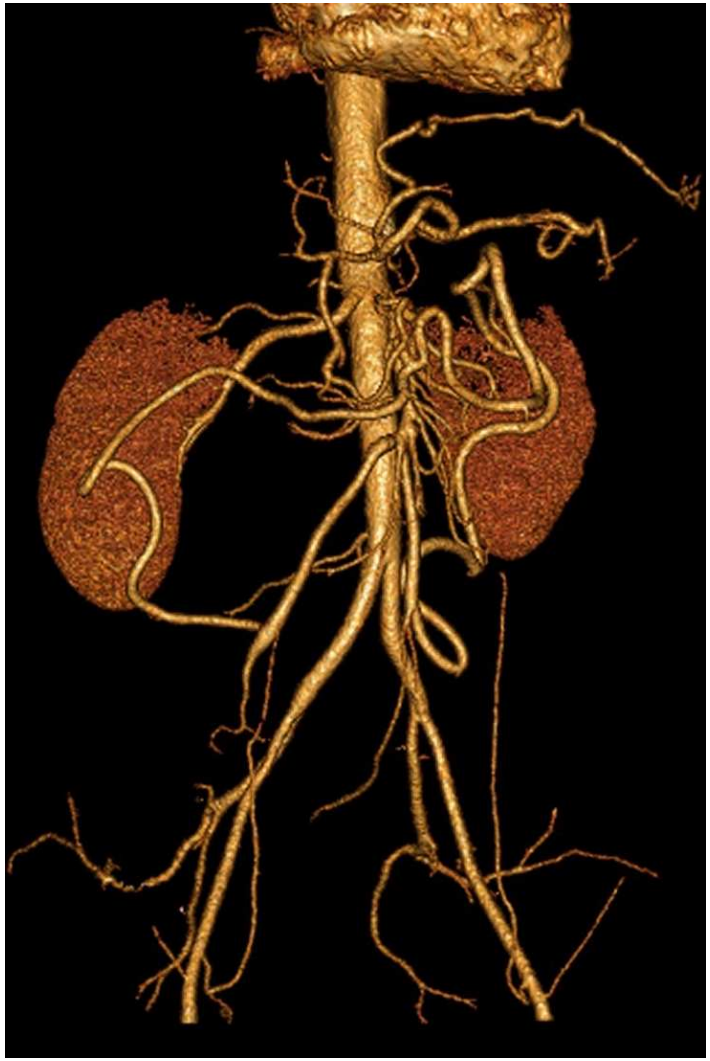
janvier 2016

Plan

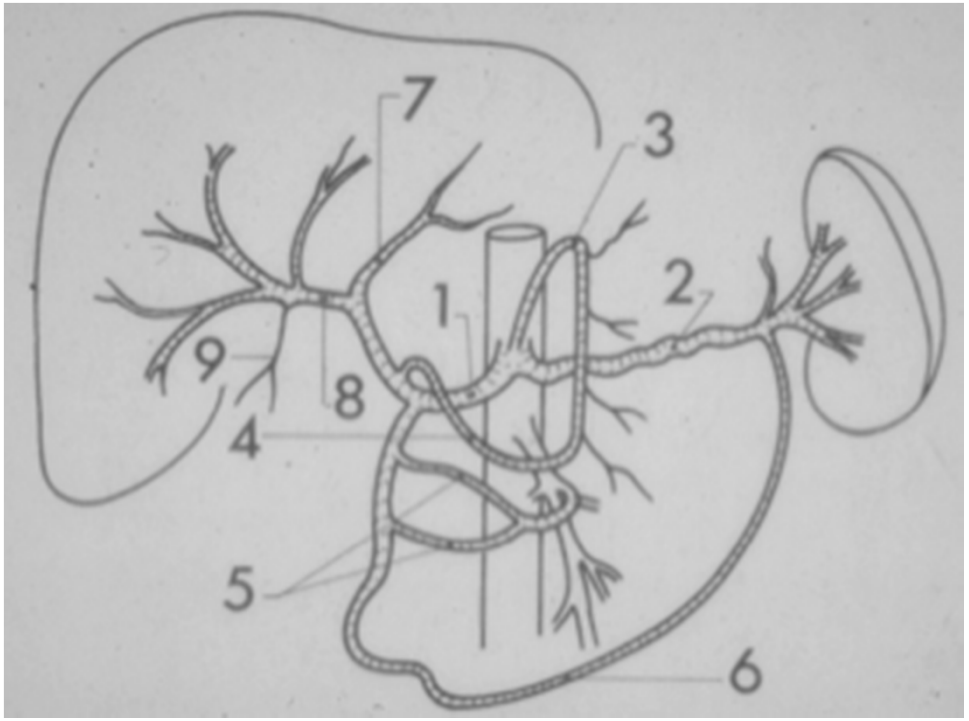
- anatomie de base
- Ischémie intestinale aiguë
- Autres anomalies
  - tronc coeliaque
  - artère mésentérique supérieure
  - artère mésentérique inférieure

Notions anatomiques élémentaires



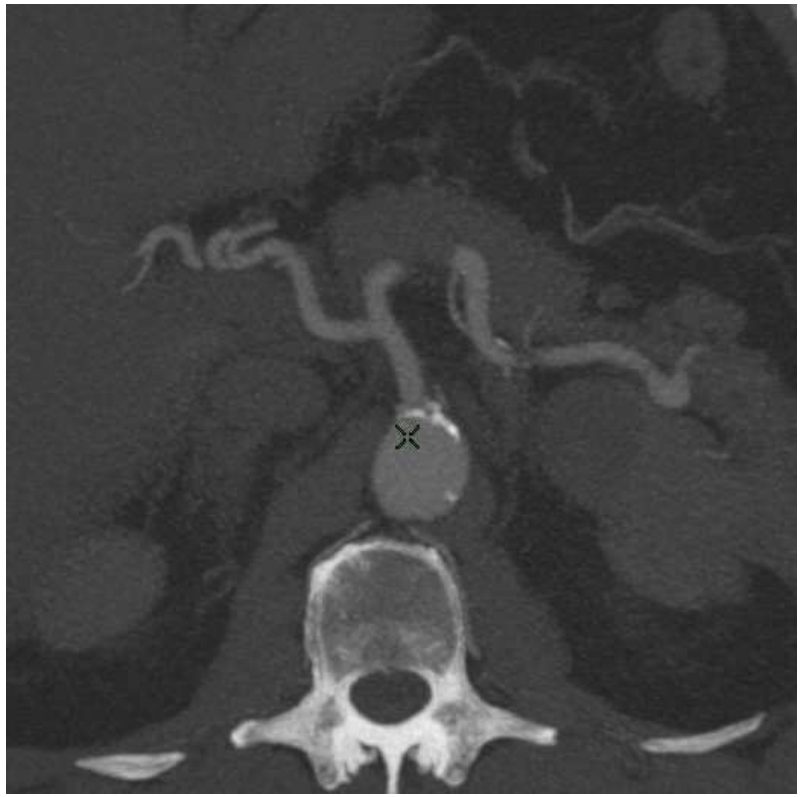


Tronc coeliaque

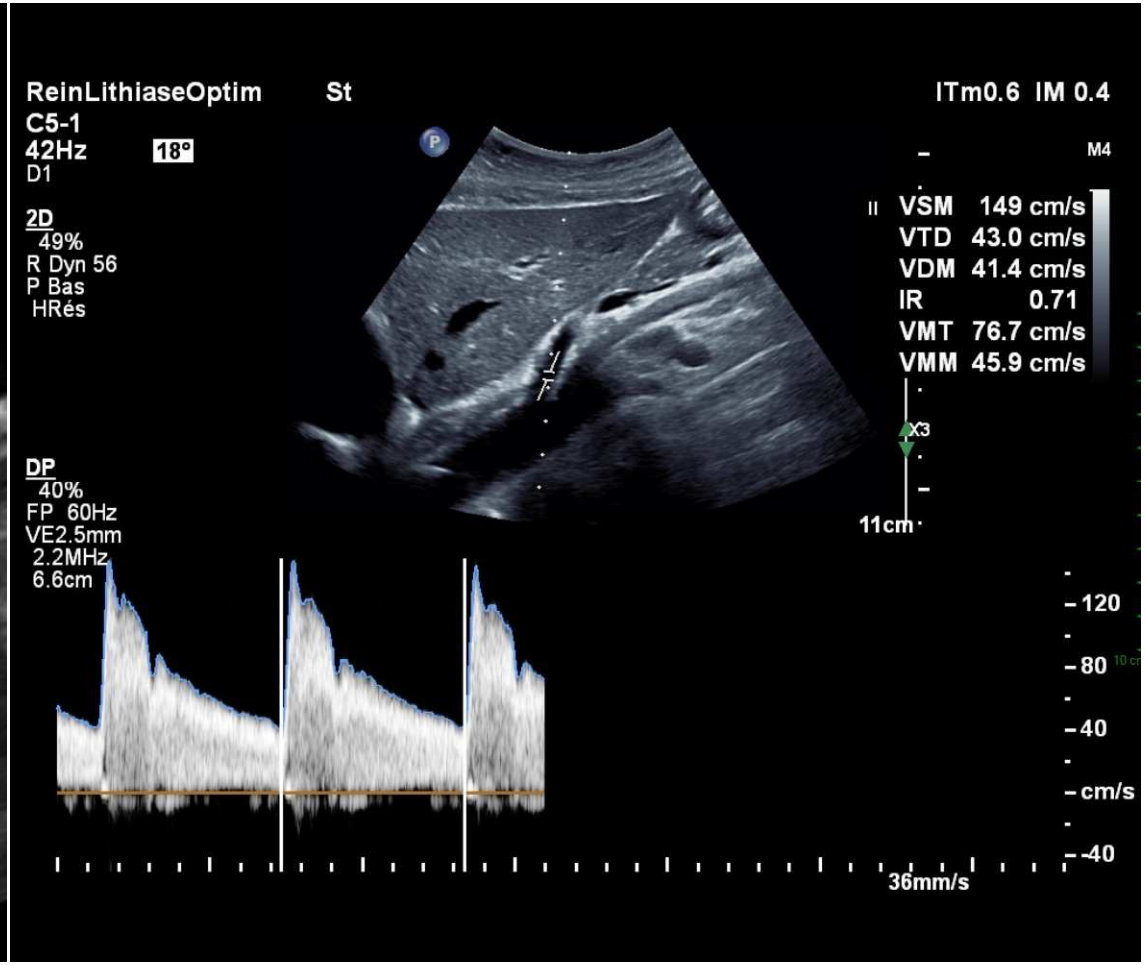


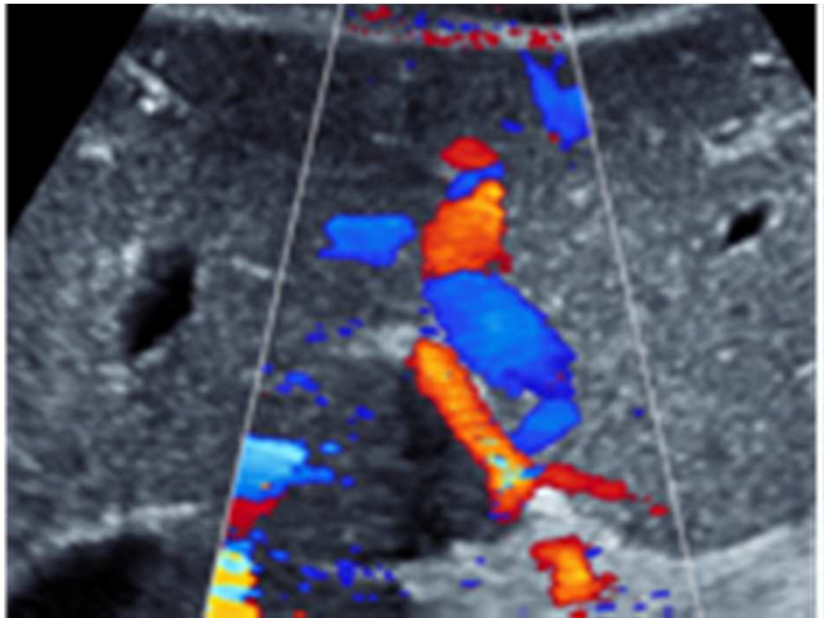
Origine : D_{12}-L_1
Artère hépatique commune
Artère gastrique gauche
Artère splénique

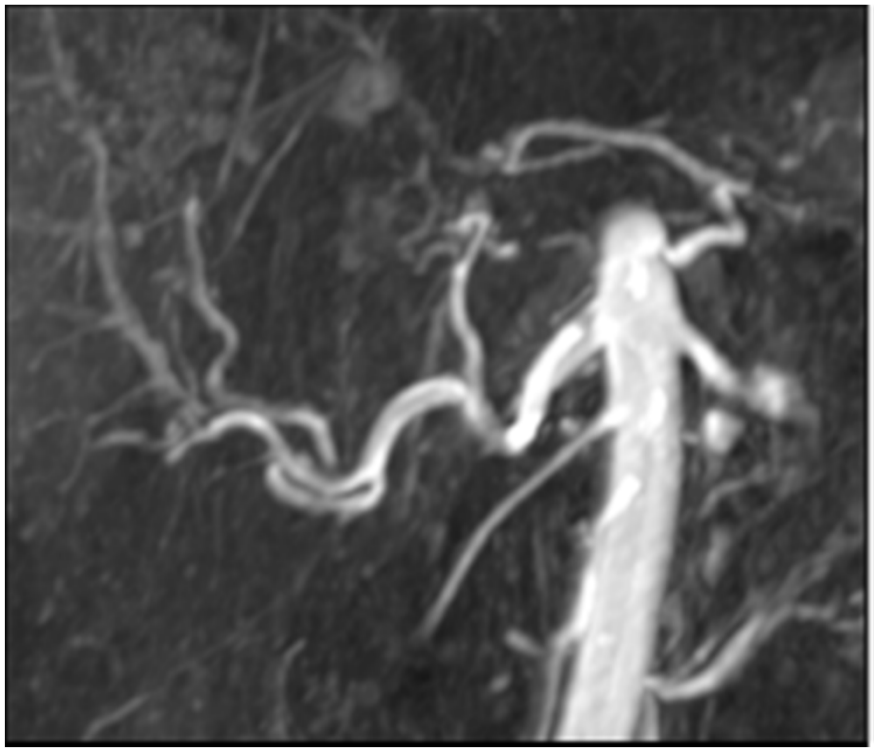
Tronc coeliaque

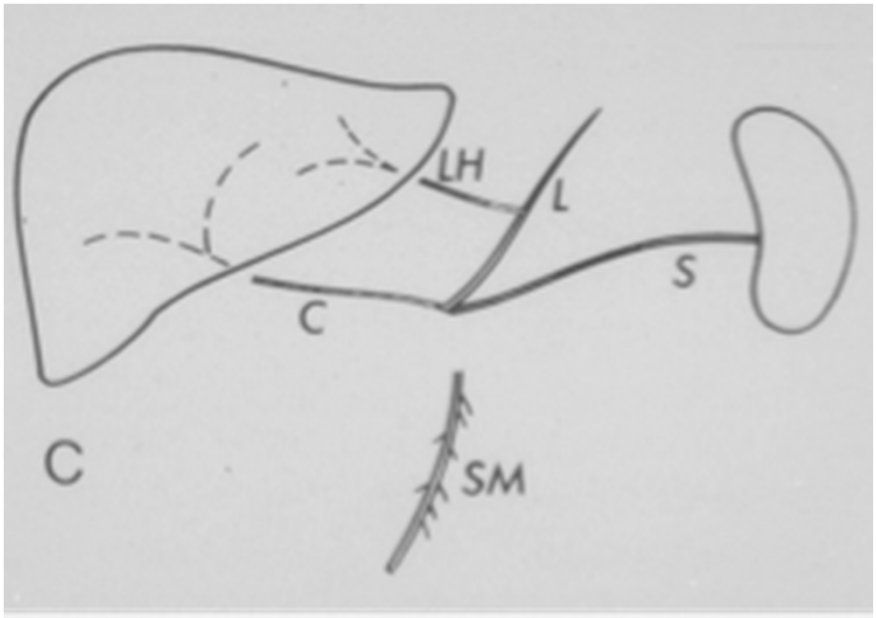


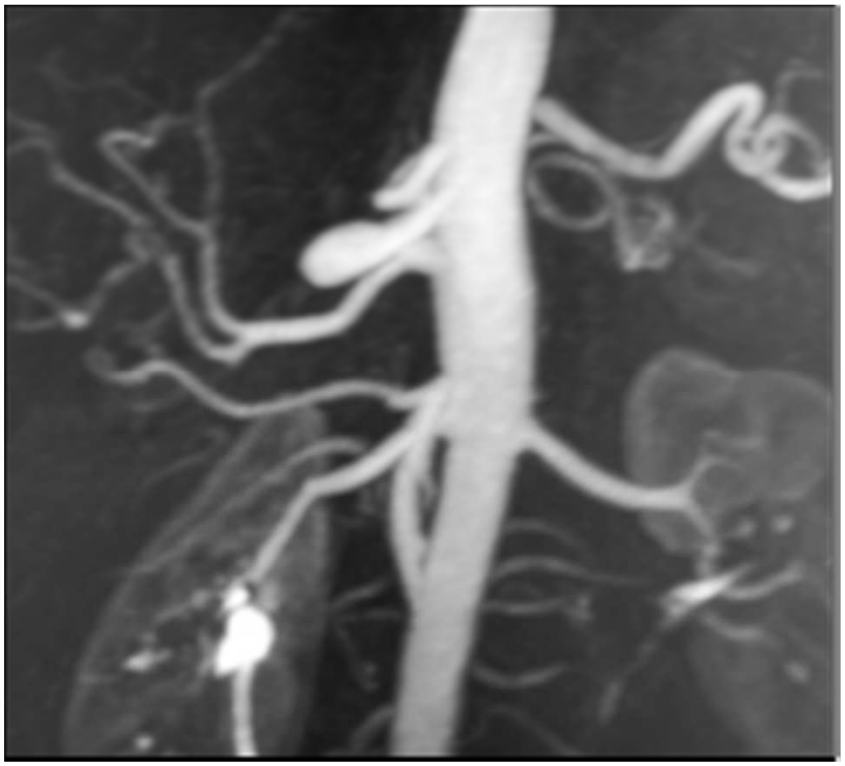
Tronc coeliaque

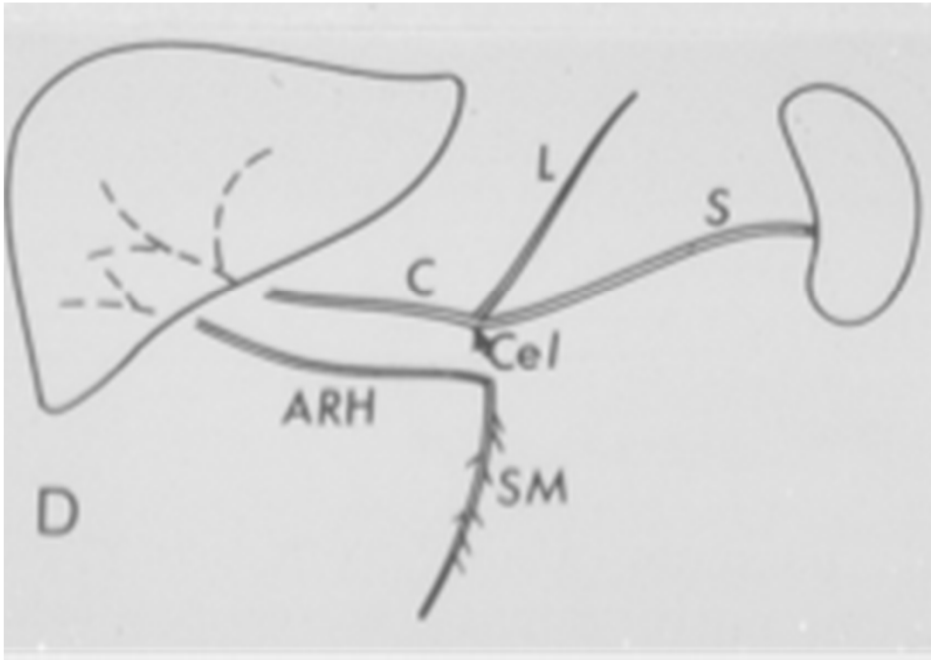




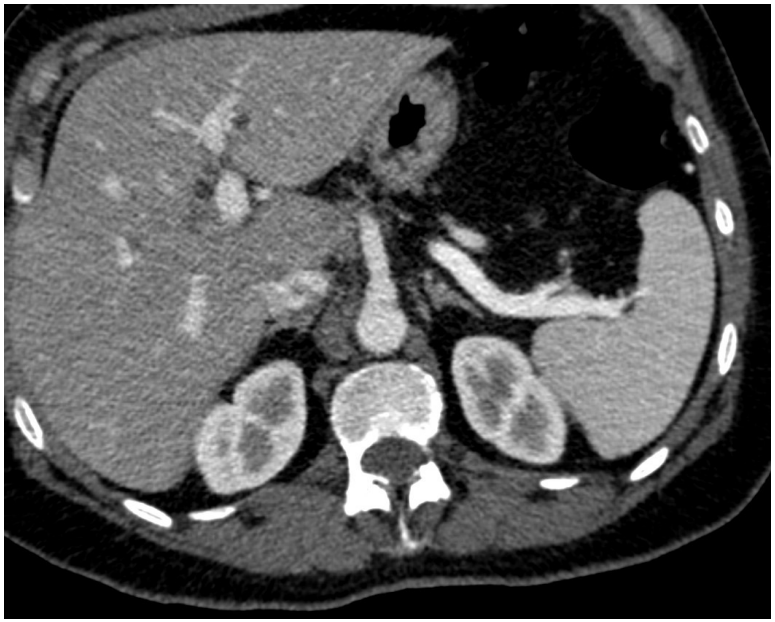


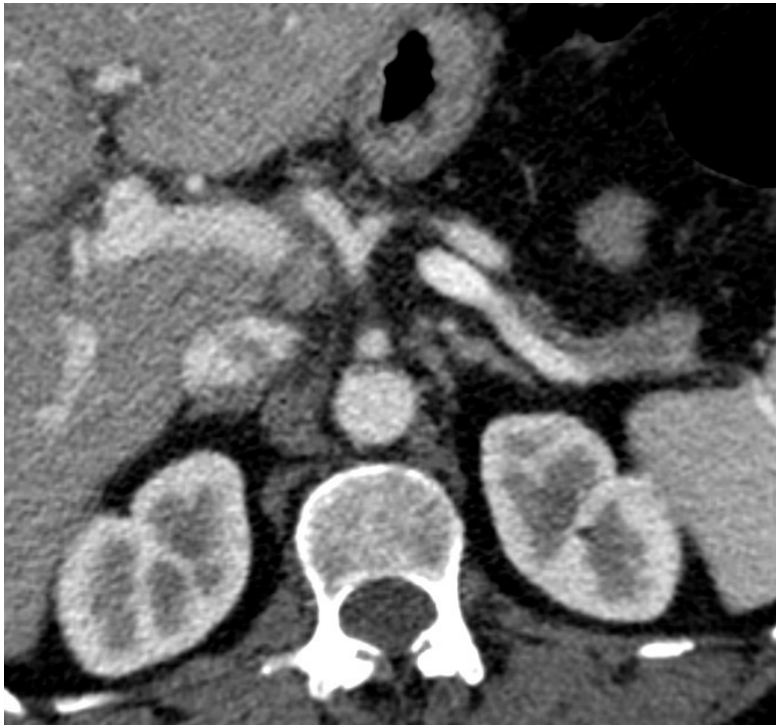

LH
L
S
C
C
SM

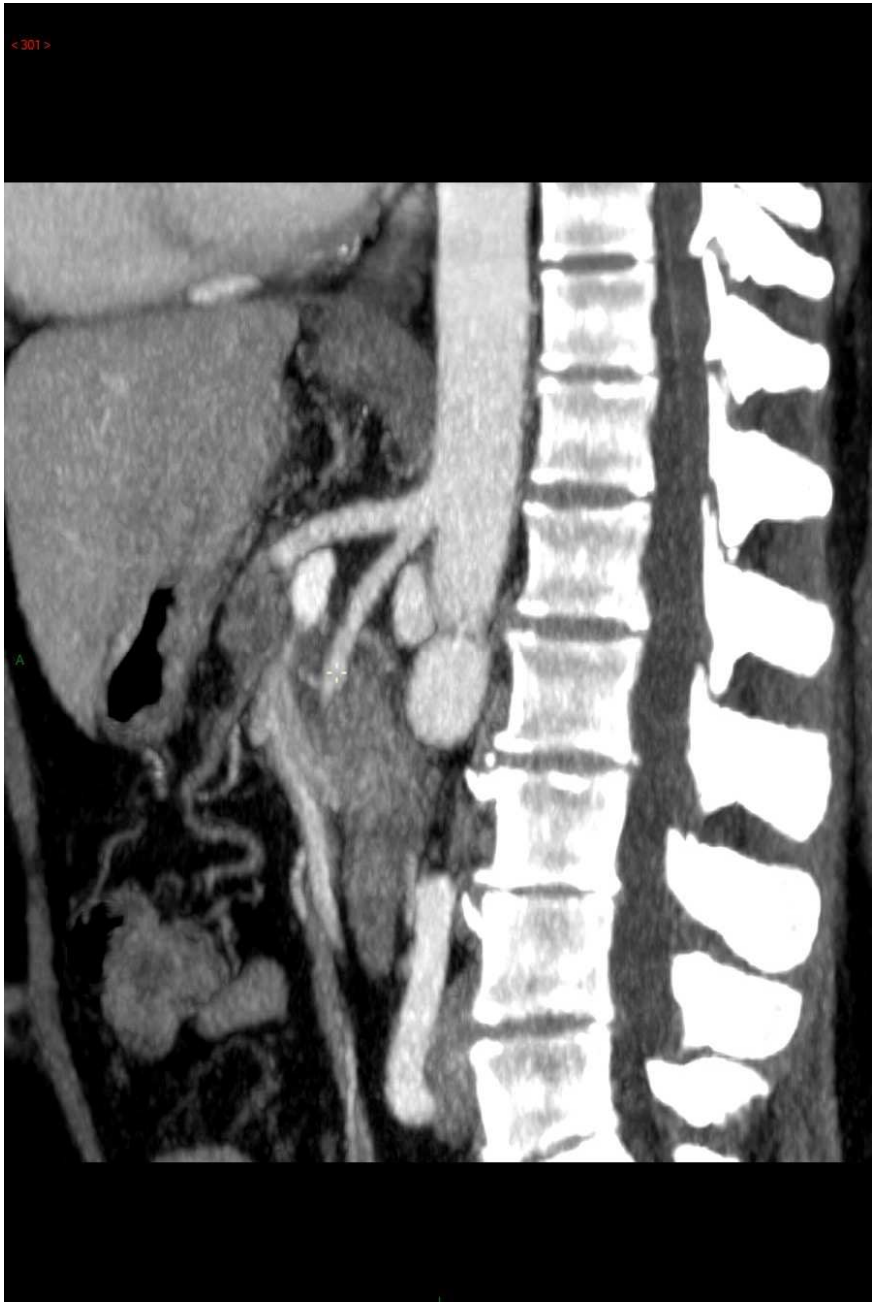




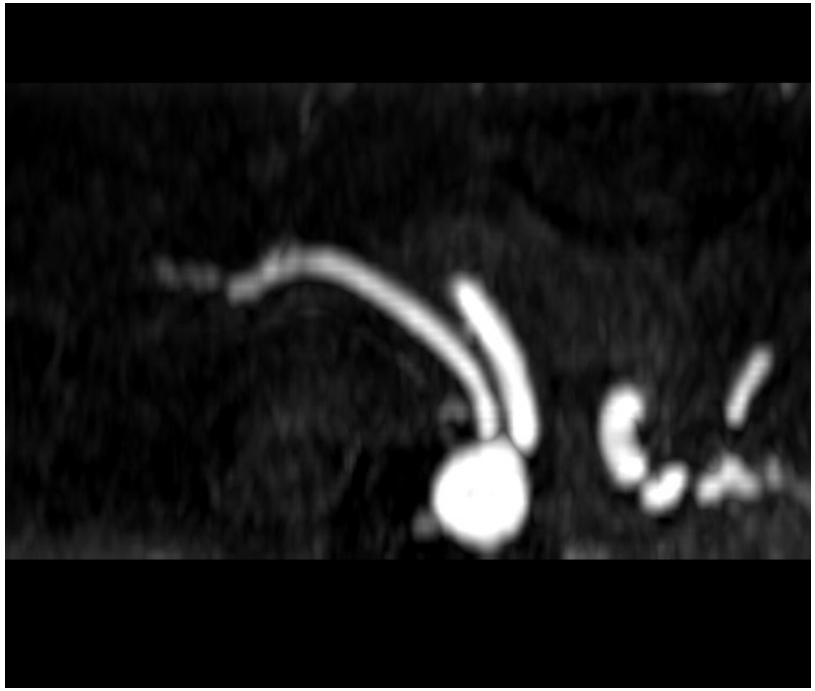
- Variantes les plus fréquentes
  - Artère hépatique droite venant de l'artère mésentérique supérieure
    - Alors l'artère hépatique propre et commune est plus fine (on le voit en analysant le tronc coeliaque)



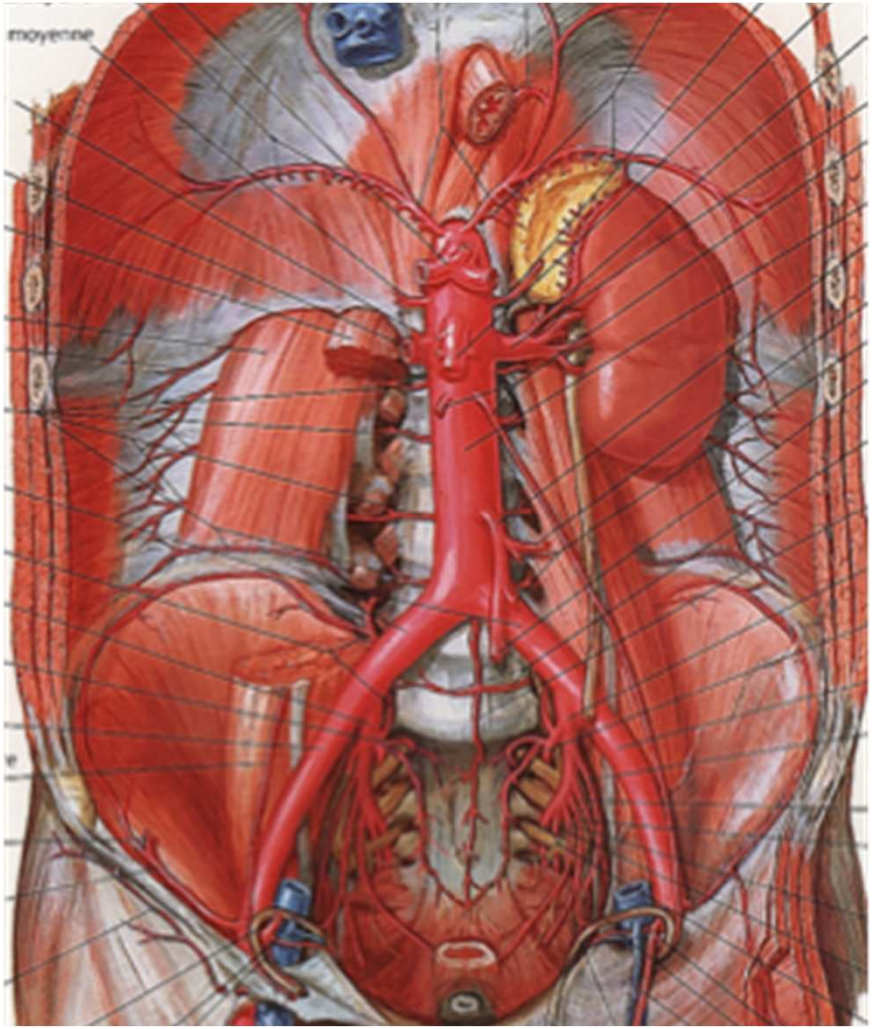



< 301 >


10 cm

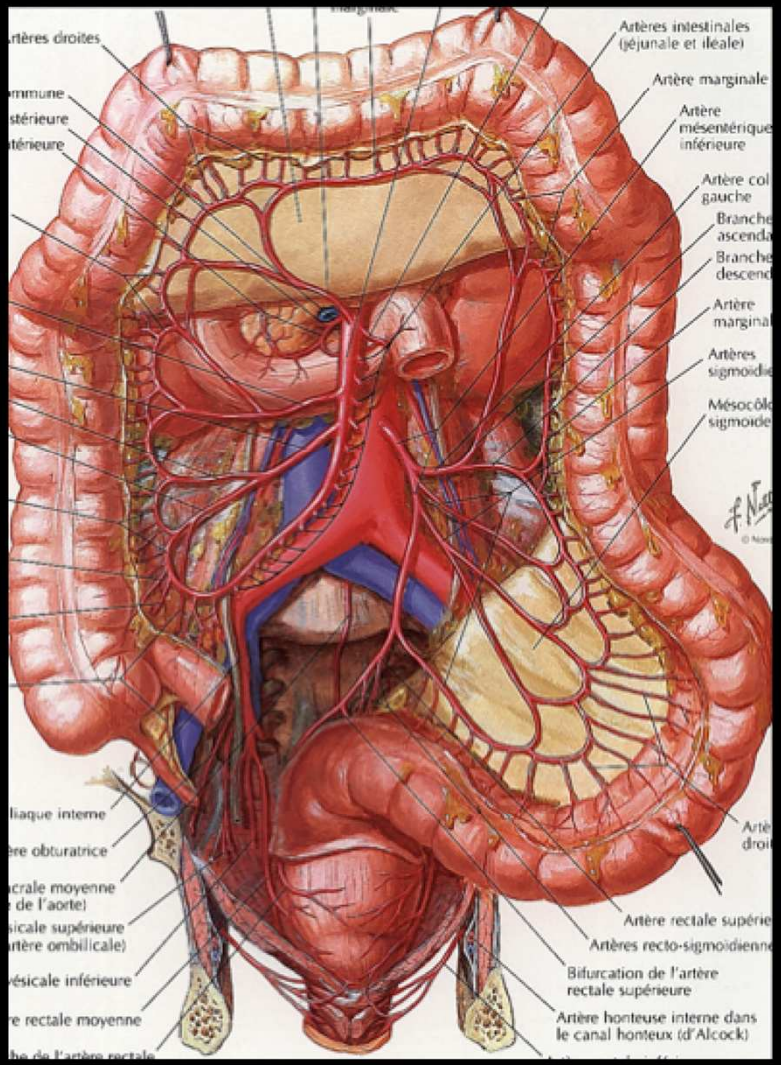


AMS

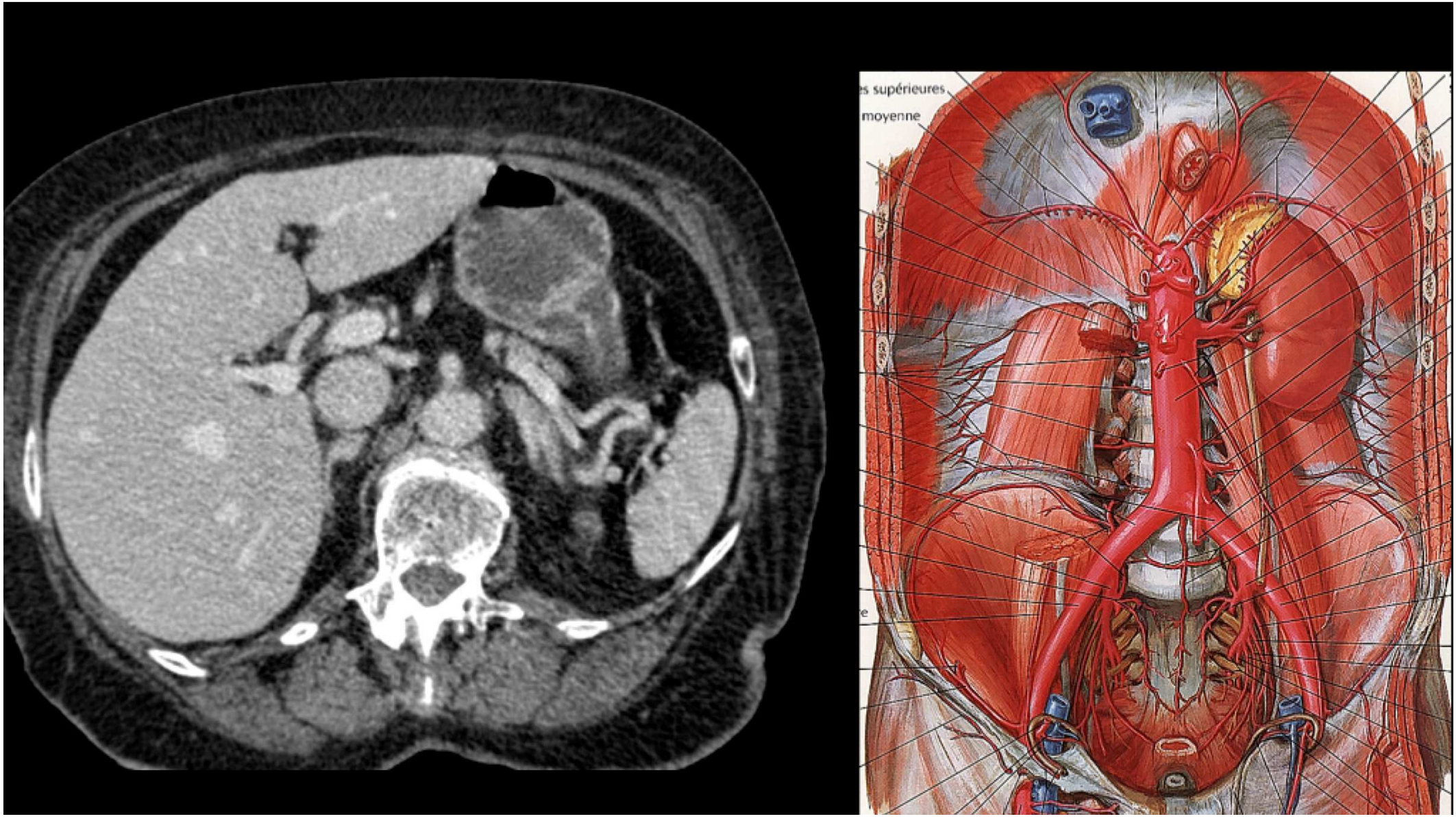


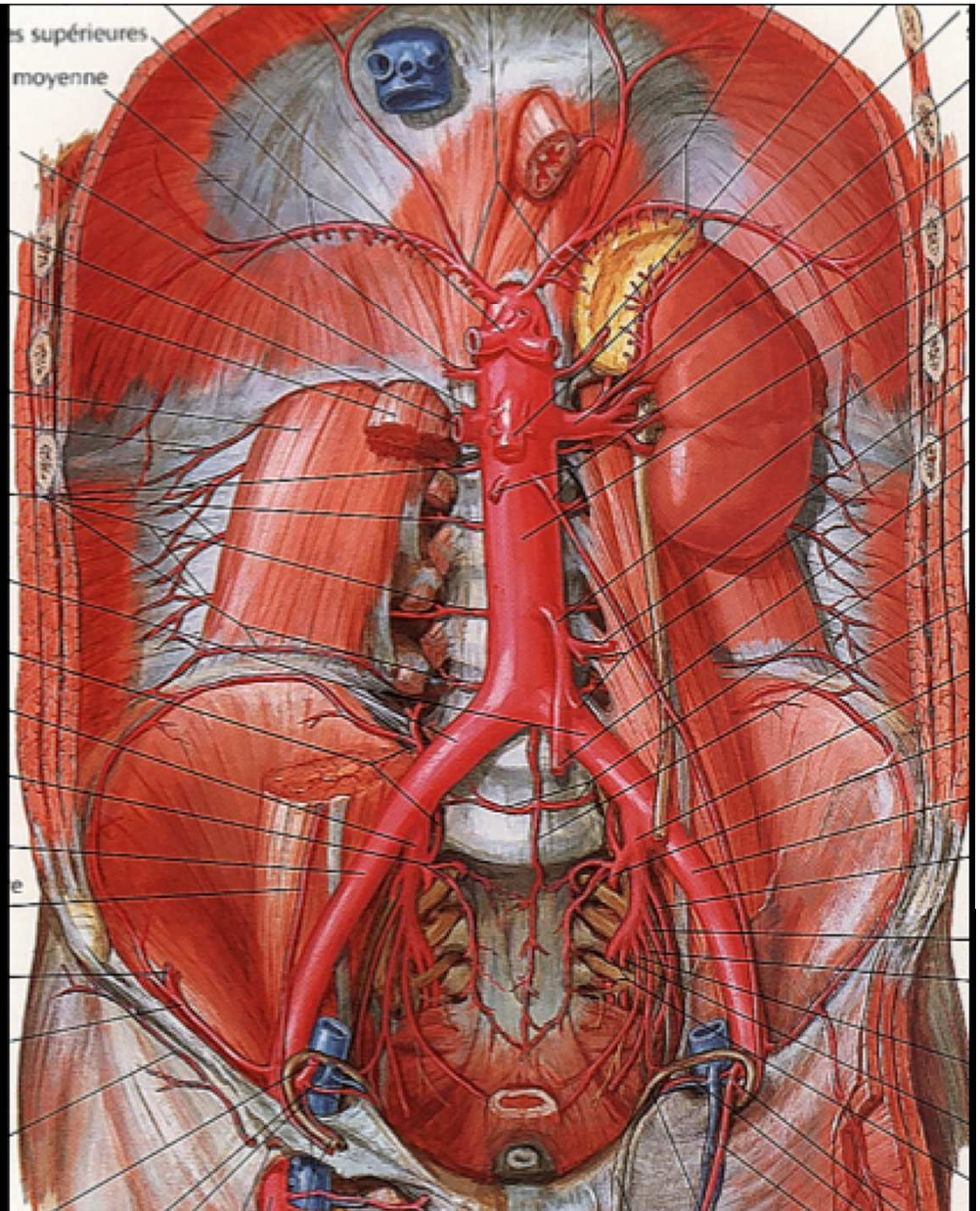
Artère mésentérique supérieure

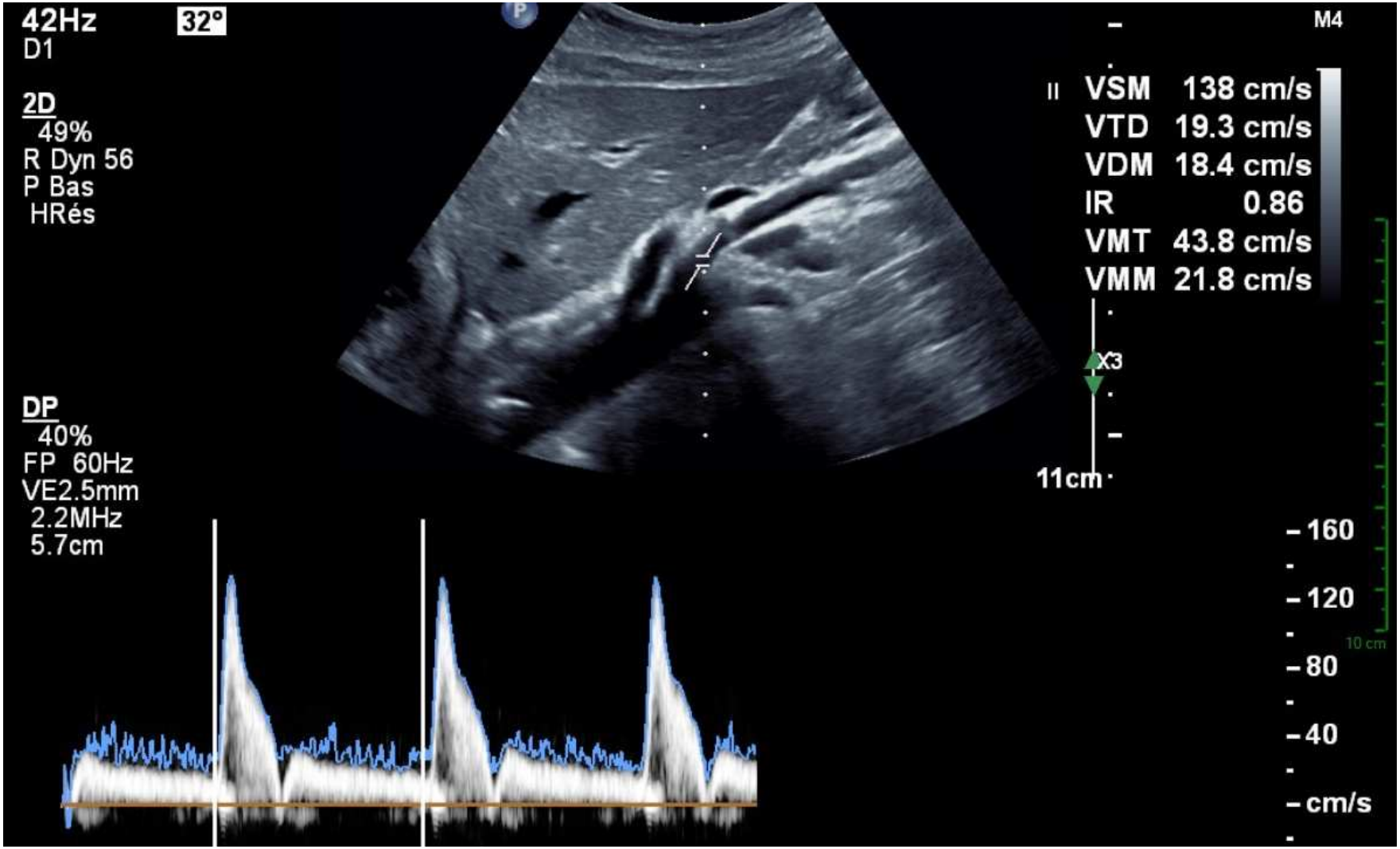
- Origine : à hauteur de L_1, environ 2 cm sous le tronc coeliaque
- Artères pancréatico-duodénales inférieures
- Artères jéjuno-iléales (à gauche)
- Artères coliques droites (à droite)



In Netter, Atlas d'anatomie humaine, 4ème édition, 2007

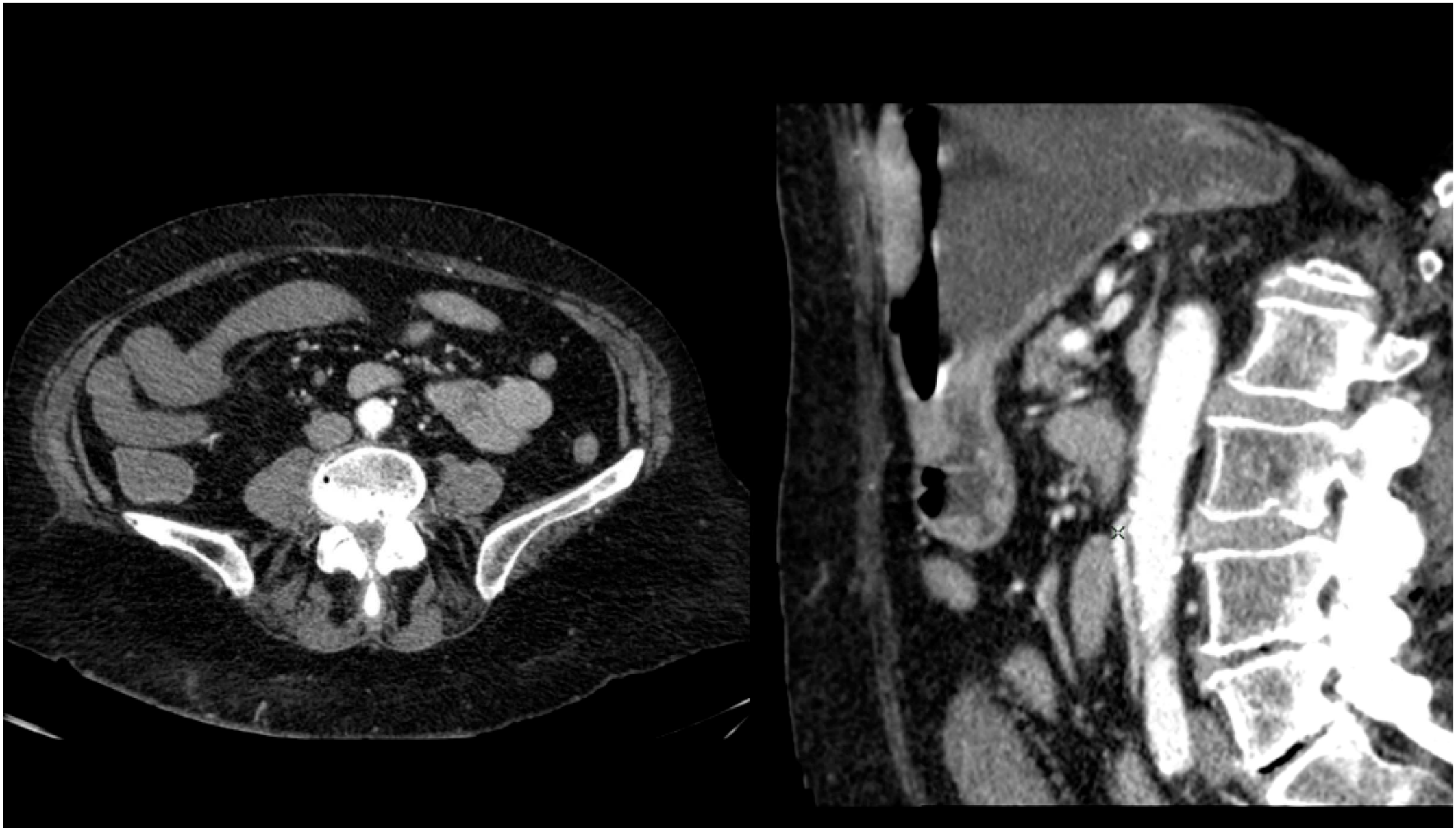

s supérieures
moyenne


s supérieures
moyenne


42Hz
D1
32°
2D
49%
R Dyn 56
P Bas
HRés
DP
40%
FP 60Hz
VE2.5mm
2.2MHz
5.7cm
M4
VSM 138 cm/s
VTD 19.3 cm/s
VDM 18.4 cm/s
IR 0.86
VMT 43.8 cm/s
VMM 21.8 cm/s
X3
11cm
160
120
80
40
cm/s
10 cm

Artère mésentérique inférieure

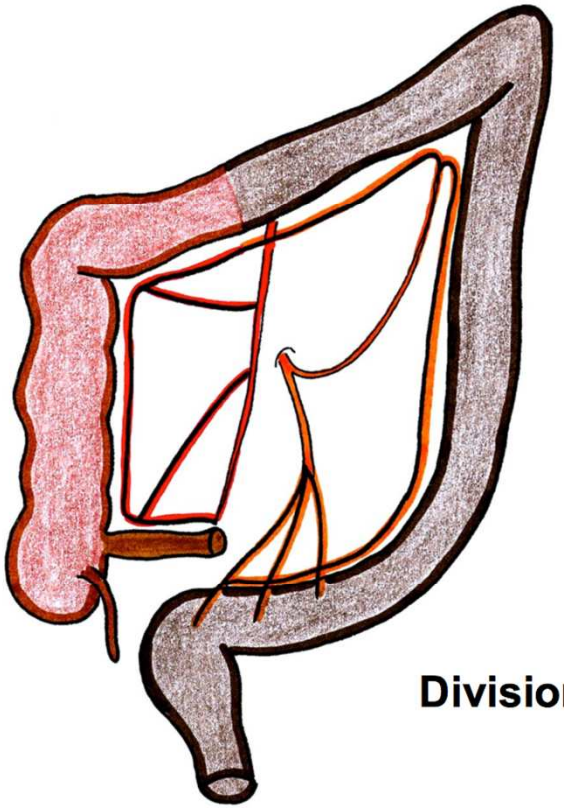
- Origine : L_3-L_4
- Artères coliques gauches
- Artères rectales supérieures : anastomoses avec les artères rectales moyennes, branches des iliaques internes et des artères rectales inférieures, branches des artères honteuses internes



Les colons: division fonctionnelle & embryologique

Colon droit

A. Mésent sup



Colon gauche

A. Mésent inf

Division: physiologique

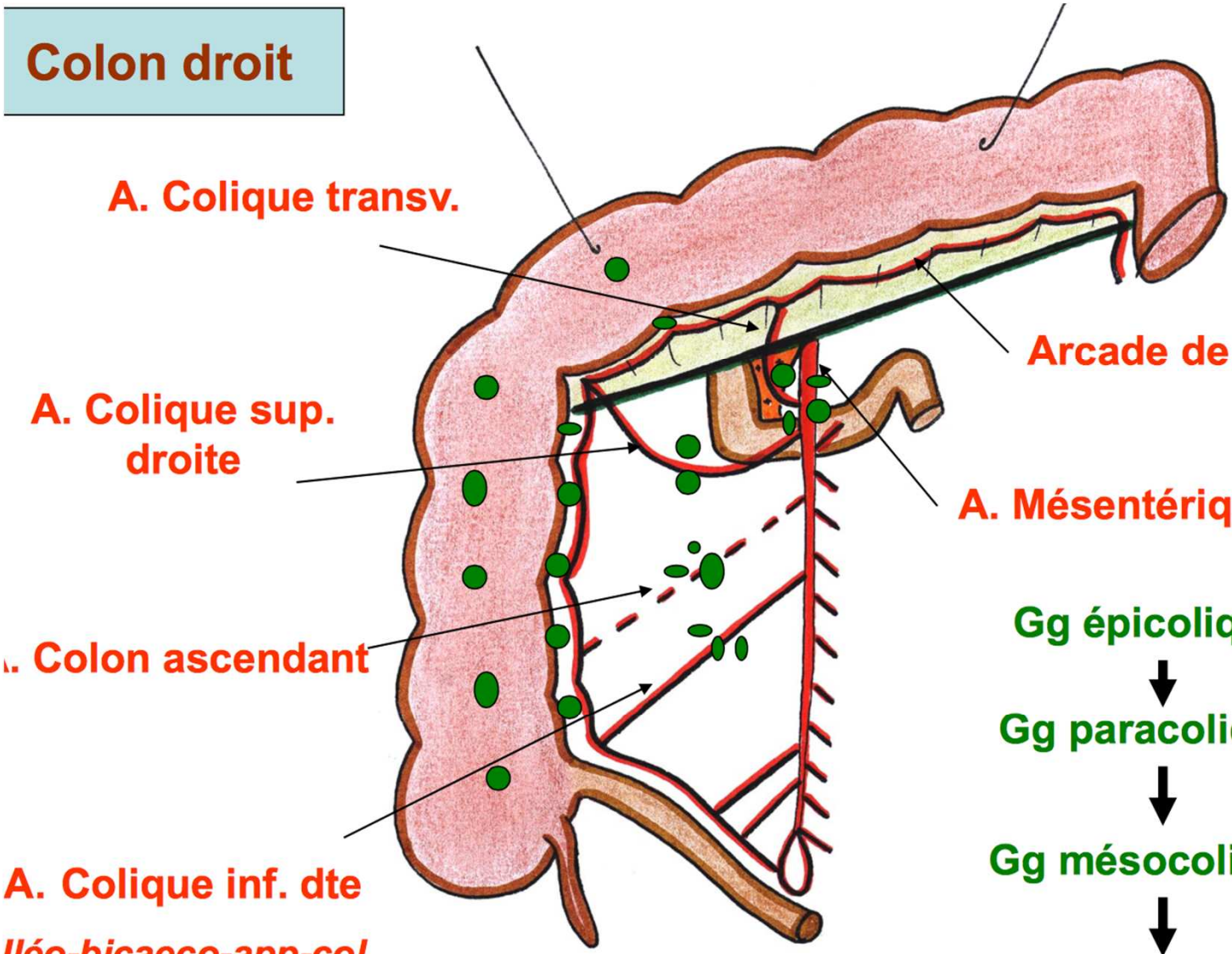
pathologique

chirurgicale

(hémicolectomie dte ou gche)

http://www.uvp5.univ-paris5.fr/wikinu/docvideos/Grenoble_1011/passagia_jean_guy/passagia_jean_guy_p03/passagia_jean_guy_p03.pdf

Colon droit



Gg épicoliques

↓

Gg paracoliques

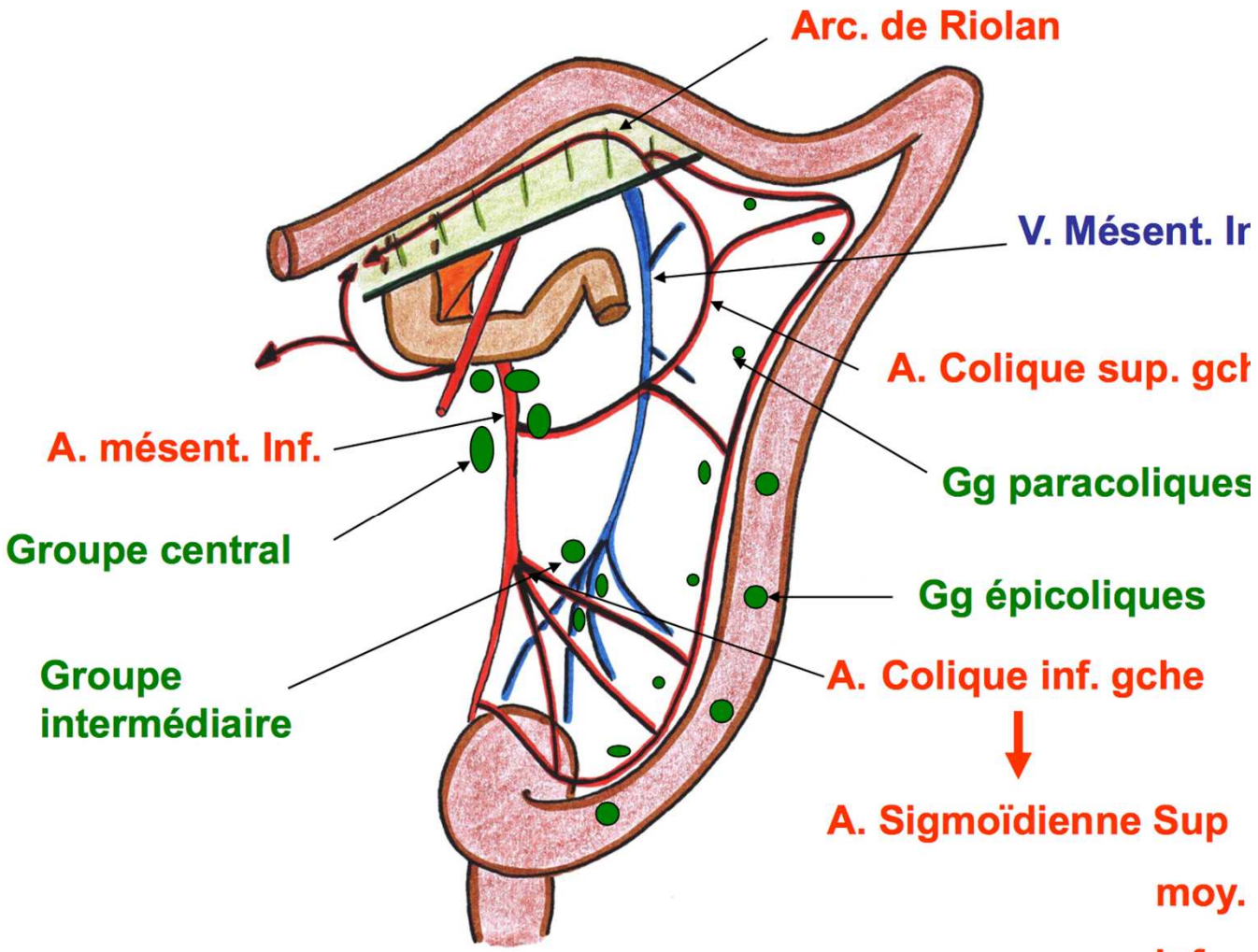
↓

Gg mésocoliques

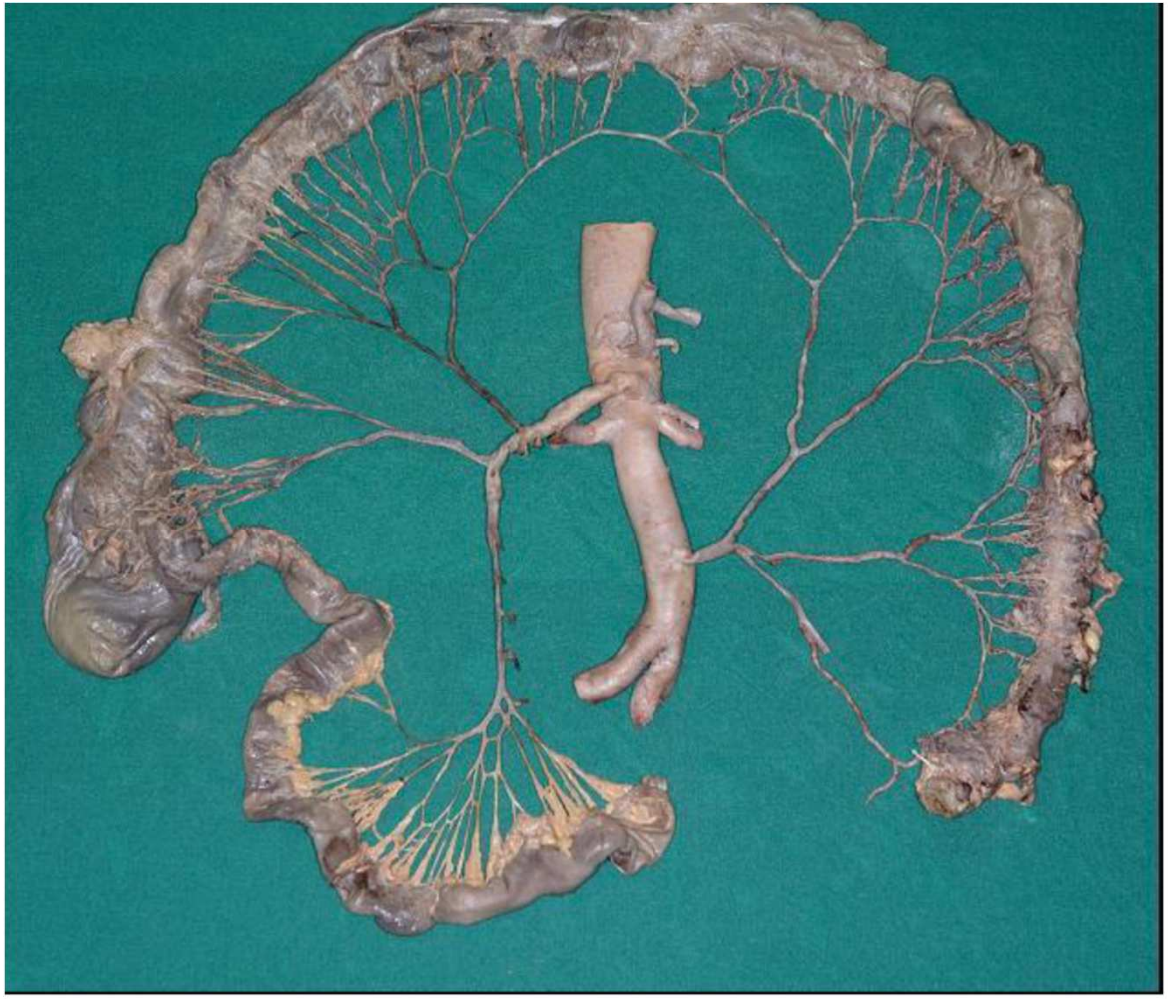
↓

Gg mésent. Sup.

(Centraux)



Vaisseaux mésentériques inf.



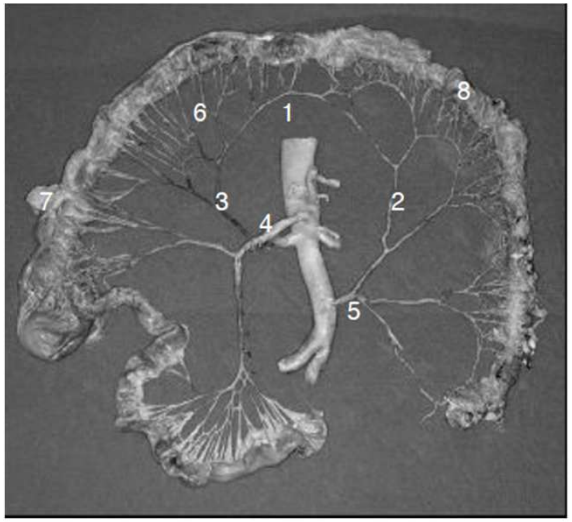
2013-2014

UNIVERSITE DE NANTES

L'arcade de Riolan

Par

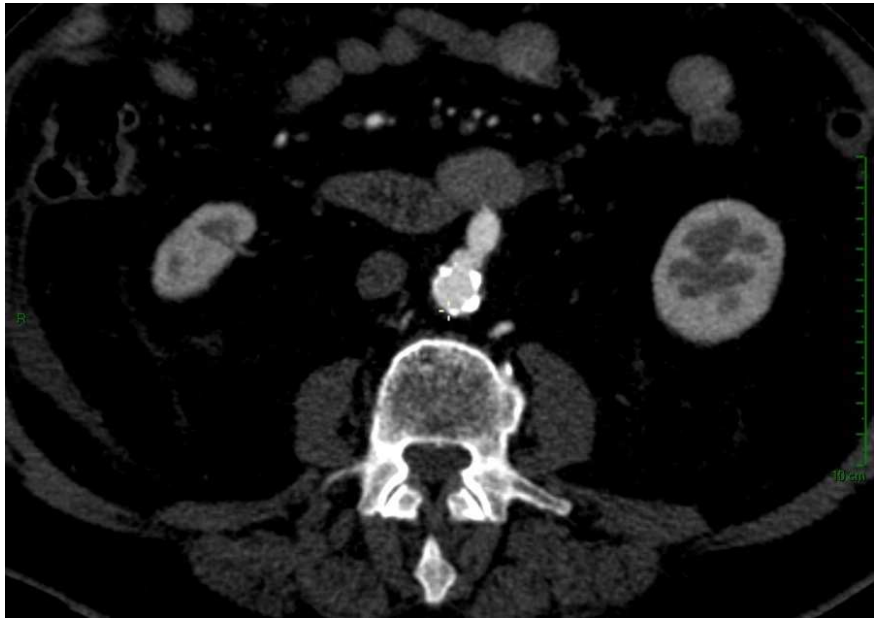
Pierre GUEROULT

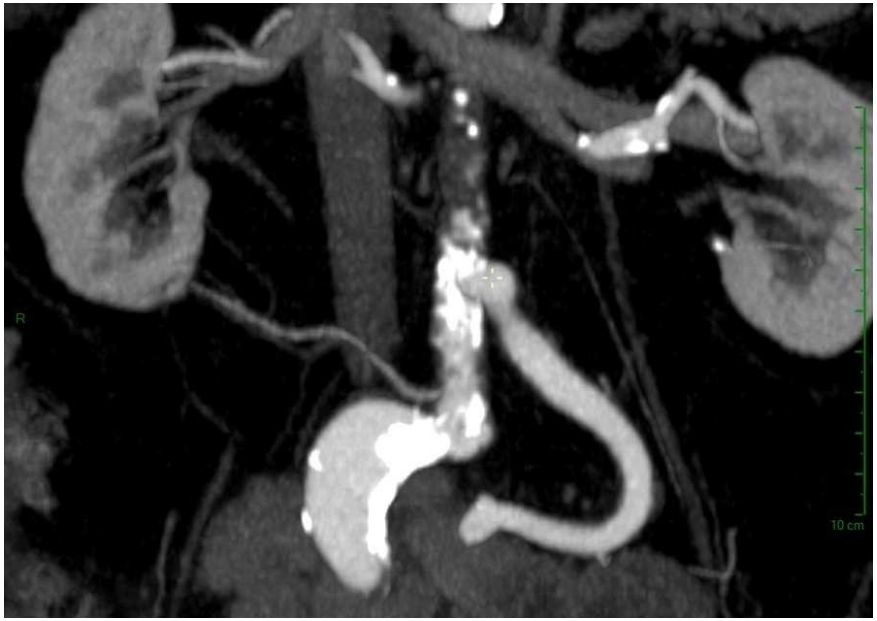


Crânial

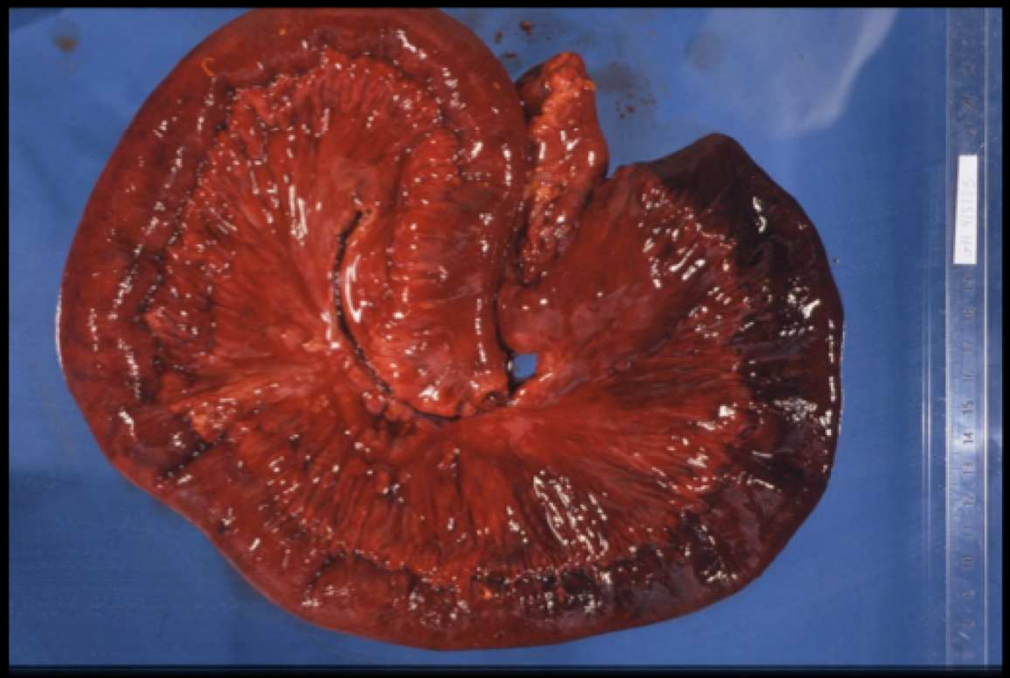
G

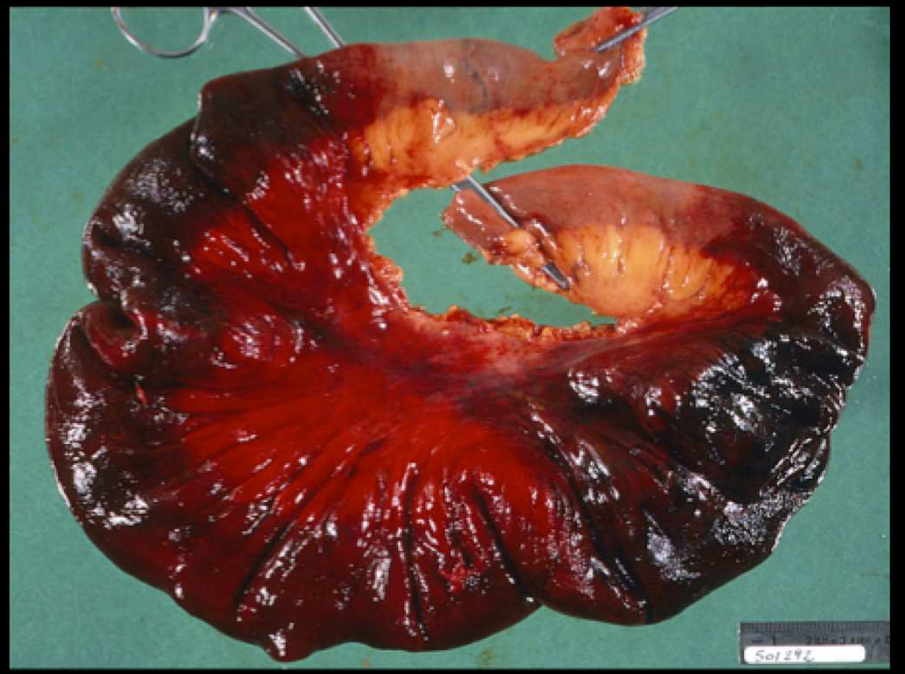
1- Arcade de Riolan
2- Branche ascendante de l'artère colique supérieure gauche
3- Artère colique moyenne
4- Artère mésentérique supérieure
5- Artère mésentérique inférieure
6- Arcade bordante du côlon transverse et rameaux coliques
7- Angle colique droit
8- Angle colique gauche





Pathologie Vasculaire aiguë et chronique du tube digestif





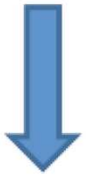
Contexte des urgences abdominales

- Ischémie intestinale : faible fréquence
- Redoutée et redoutable
  - Morbidité
  - Mortalité : 50 à 100 %
- Suspicion clinique, confirmée : 41 %
- Apport de la radiologie
  - Réduction de la morbidité et de la mortalité

Terminologie

Ischémie intestinale

Anomalies du réseau vasculaire splanchnique



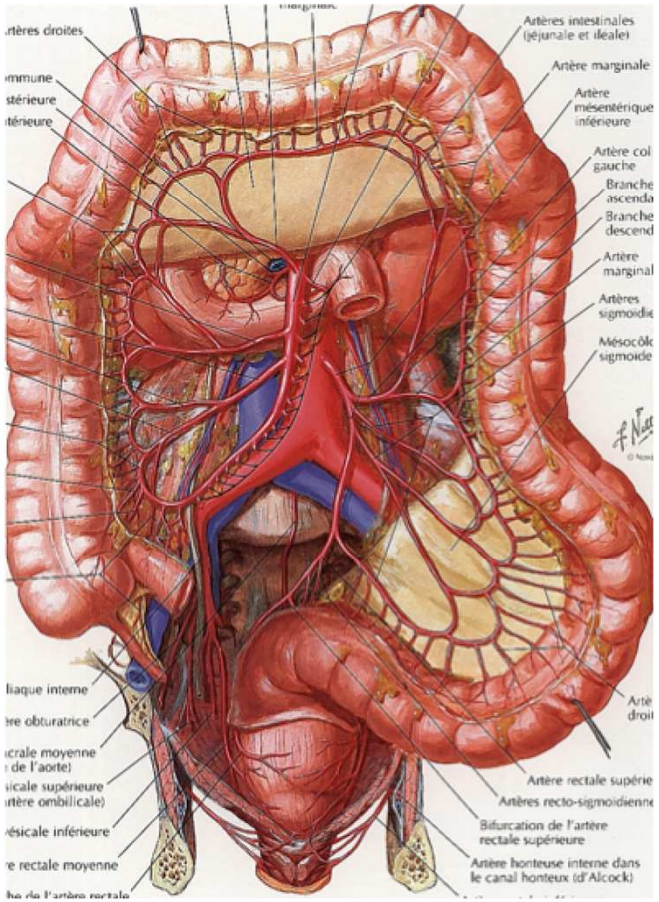
Défaut de perfusion des parois intestinales

Terminologie

- Ischémie intestinale = défaut de perfusion
- Atteinte grêle :
  - Infarctus mésentérique: cause artérielle
  - Infarcissement mésentérique: cause veineuse
- Atteinte colique:
  - Colite ischémique: cause artérielle

Infarctus mésentérique: anomalies artérielles

- Occlusion artérielle aiguë :
  - Artère mésentérique supérieure
- Lésions artérielles préexistantes:
  - Sténoses significatives (> 50 %)
  - Occlusions « anciennes »

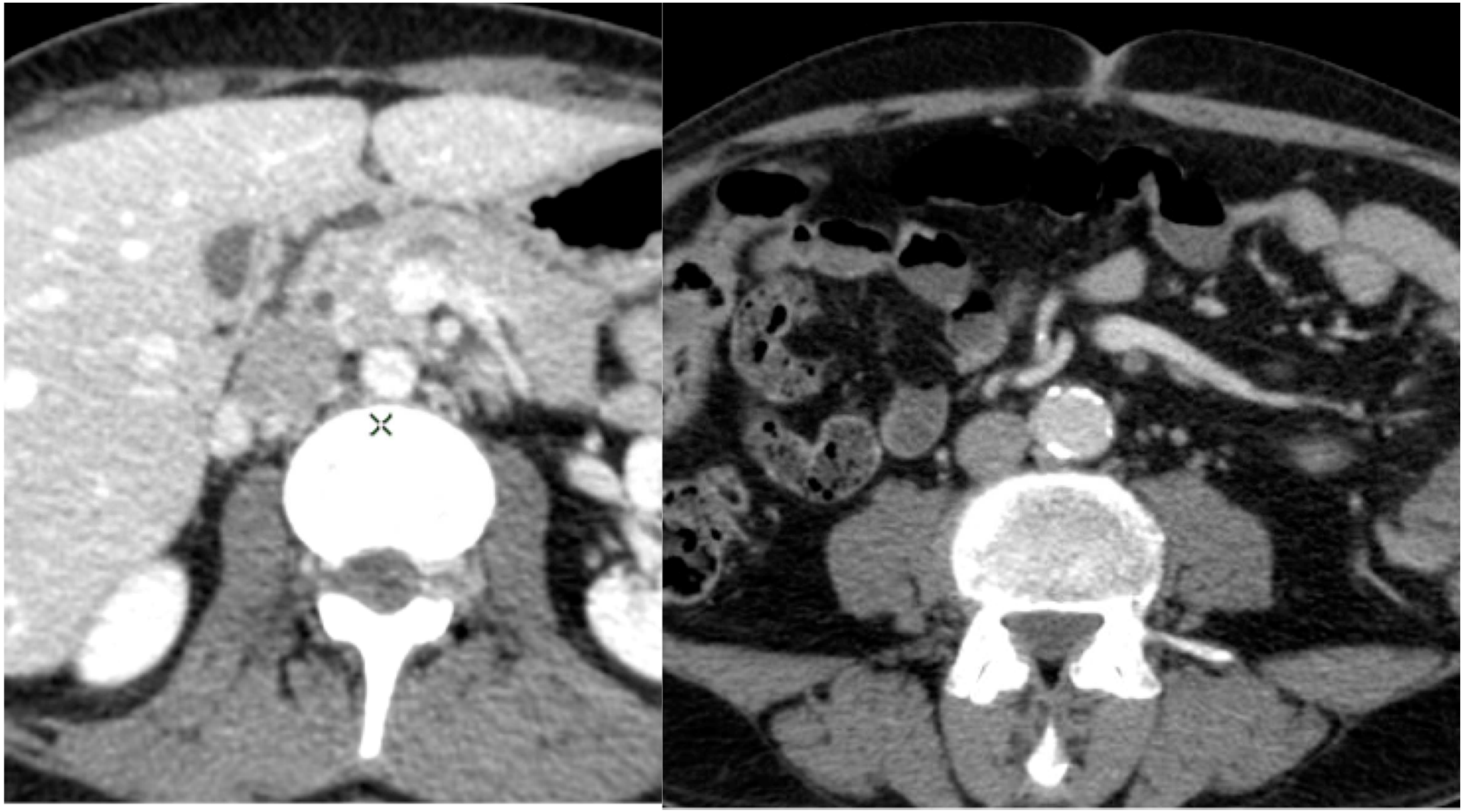


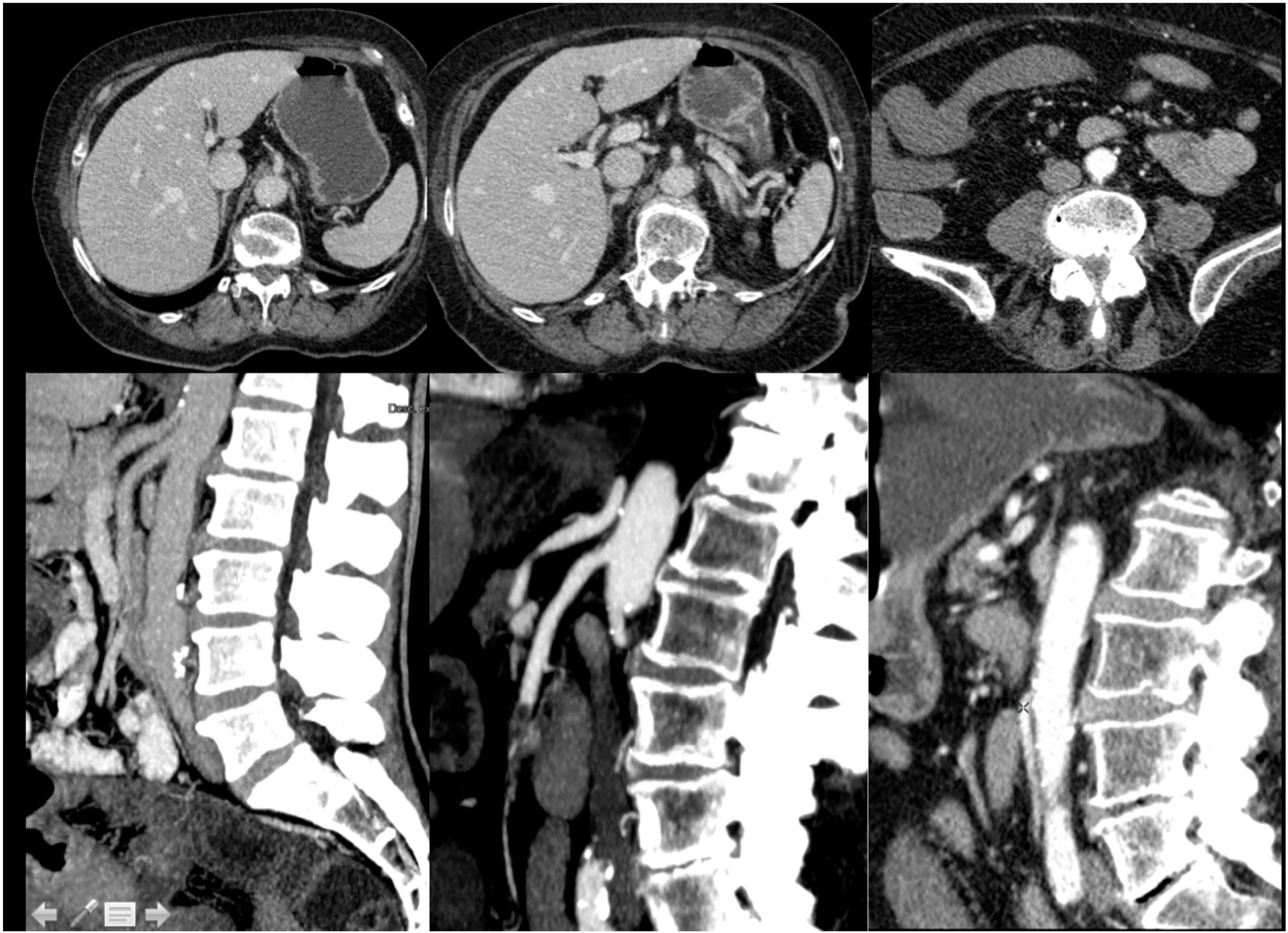
	Sensibilité (%)	Spécificité (%)
Pneumatose intestinale	42	100
Aéroportie	12	100
Occlusion de l'AMS ou occlusion combine TC-AMI	19	100
Thrombose de la veine porte et/ou de la VMS	15	94
Epaississement intestinal	85	72
Rehaussement de la paroi intestinale - Absence localisée de rehaussement de la paroi intestinale - hyperhémie de la paroi intestinale + épaississement - rehaussement de la muqueuse	18,42,62 33 46	96,97 71 81
Ascite *- En cas d'ischémie veineuse*	73 *75*	33 *76*
Infiltration de la graisse mésentérique *- En cas d'ischémie veineuse*	88 *58*	61 *79*
Liquide mésentérique *- En cas d'ischémie veineuse*	 *58*	 *79*
Infarctus d'un organe plein	15	94
Obstruction intestinale	12	94
Dilatation intestinale	65	83
Air péritonéal libre	19	94

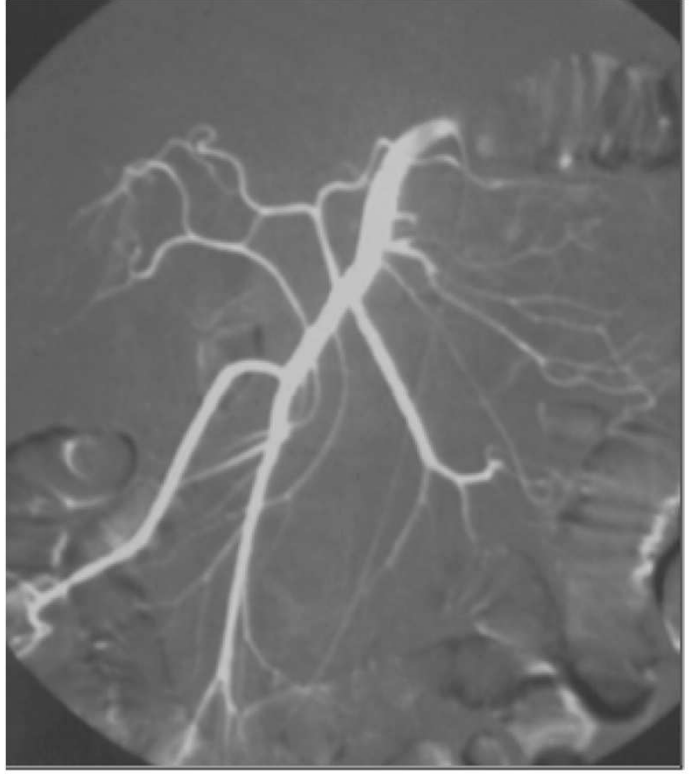
Tableau 1 : Signes CT observés en cas d'ischémie intestinale aiguë .

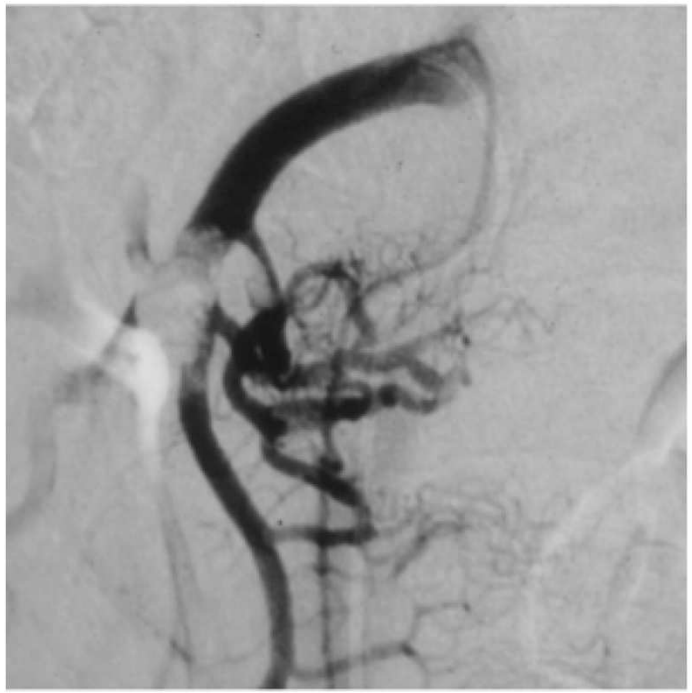
Que chercher ?

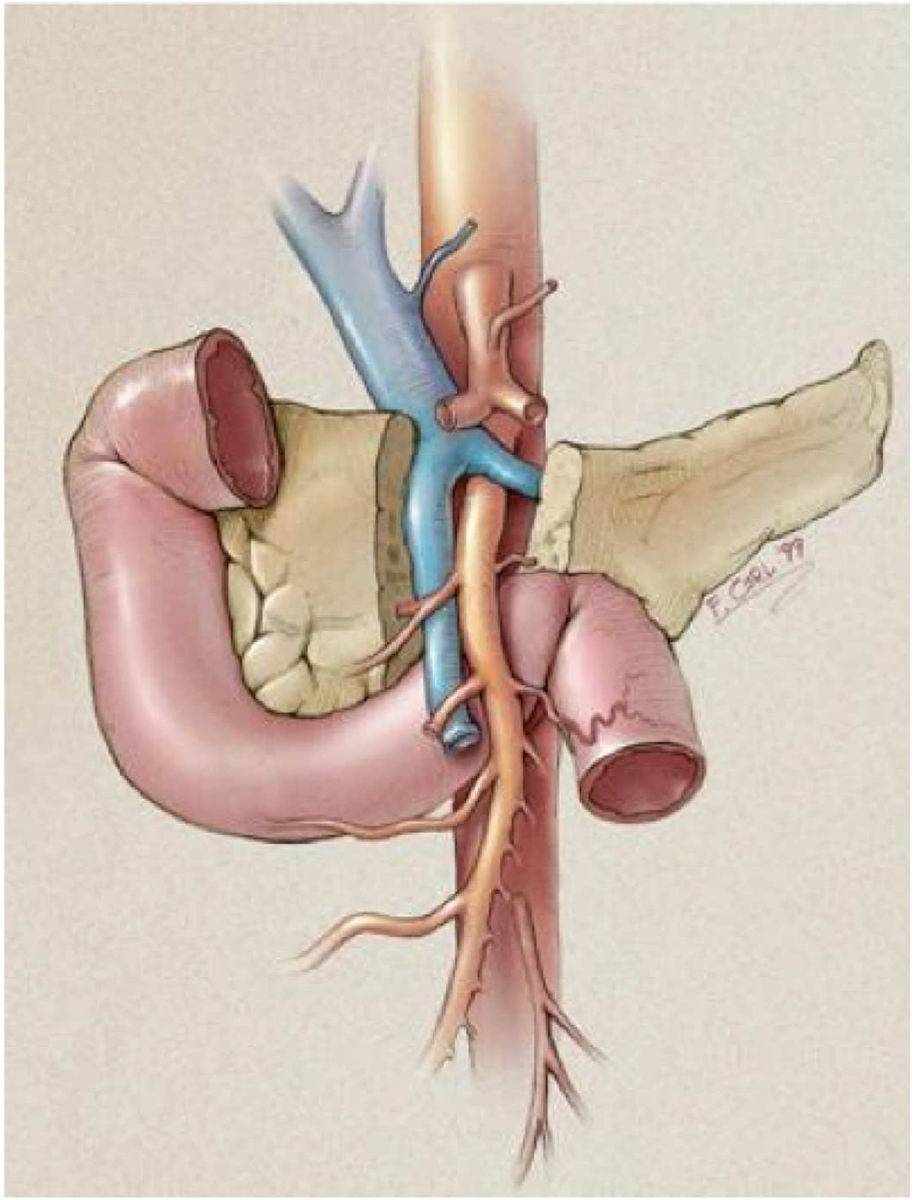
- En Aigu:
  - Vaisseaux
    - Occlusion, sténose
  - Paroi intestinale
    - Grêle - Colique
- En Chronique
  - Vaisseaux
    - Occlusion, sténose



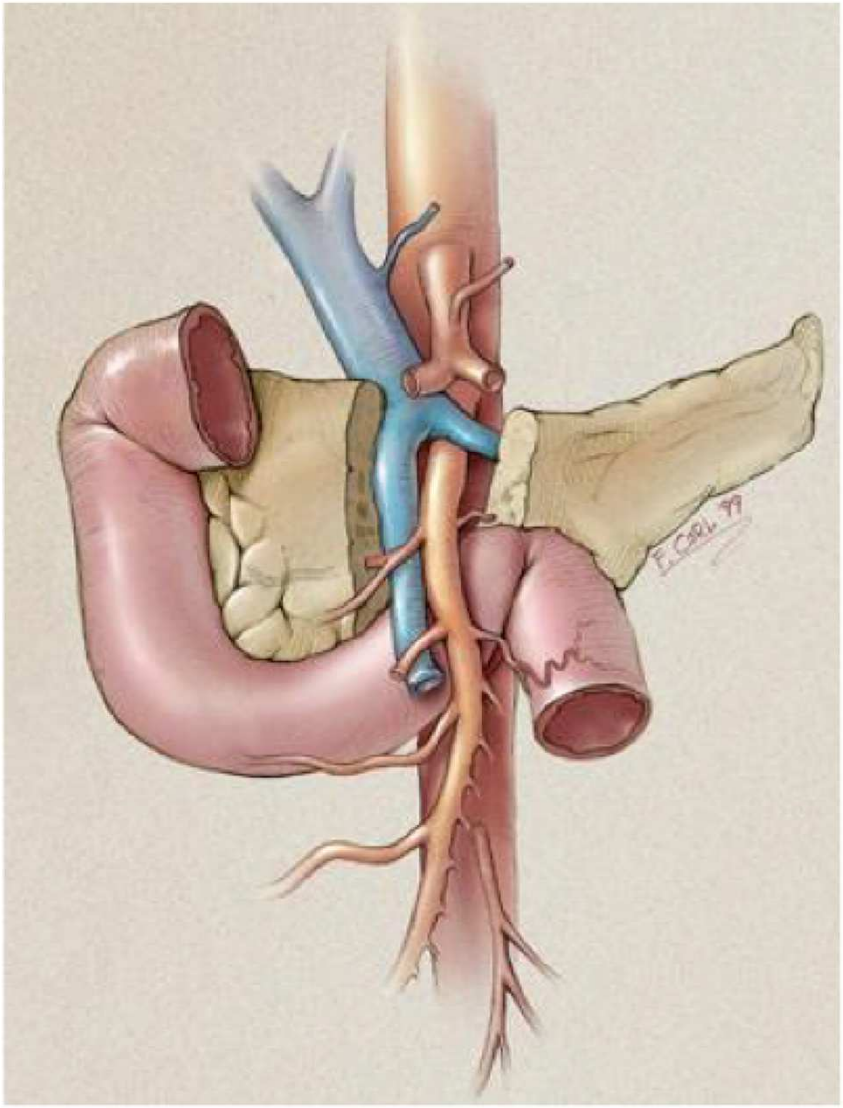


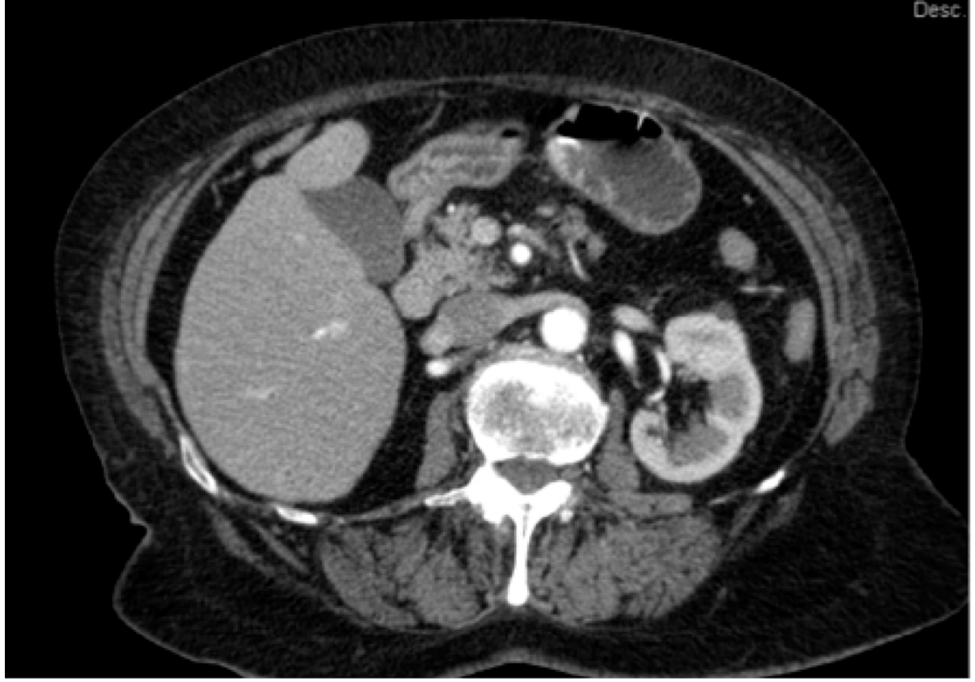


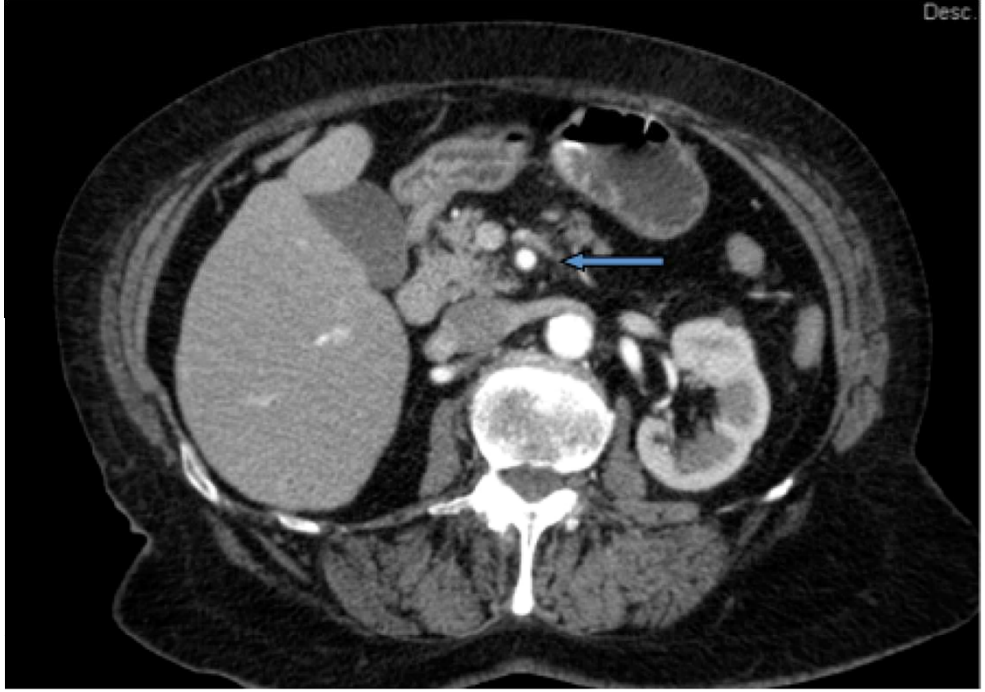


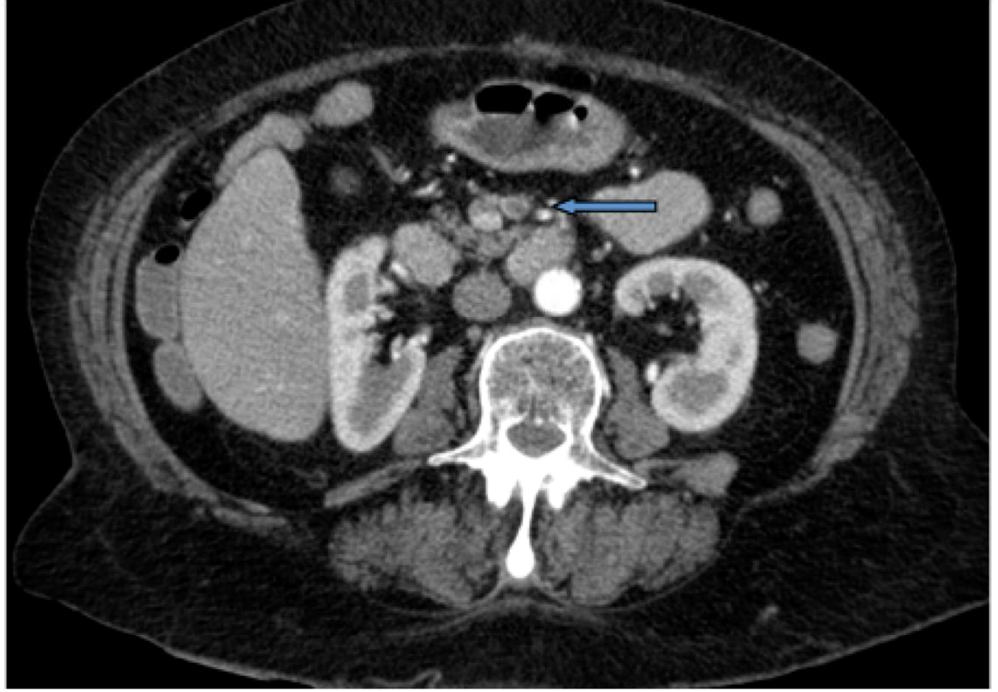


Infarctus mésentérique: anomalies artérielles

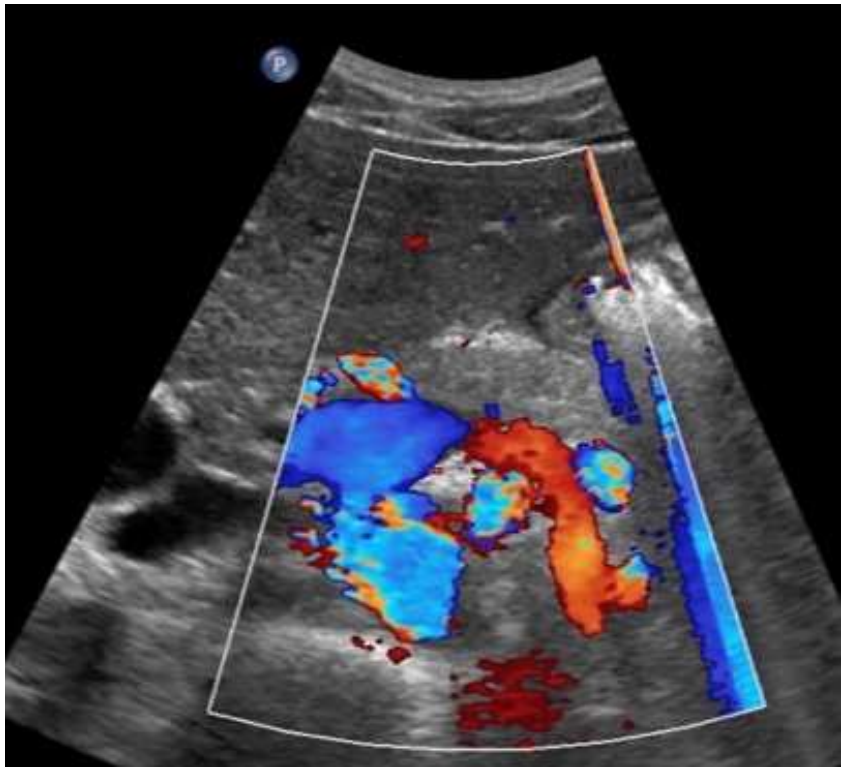


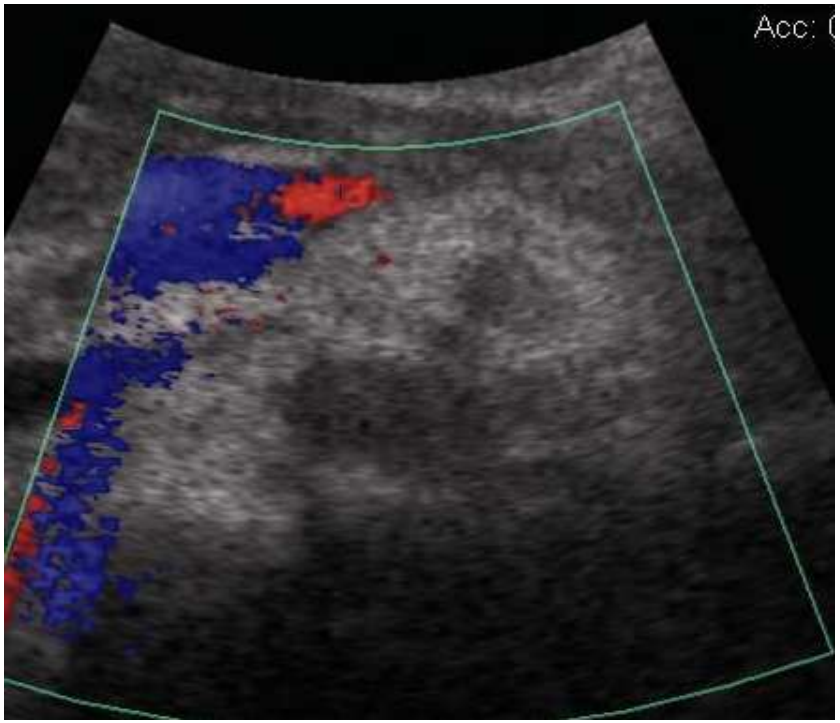

Desc


Desc.



	Peak systolic velocity (m/sec)	p
Acute ischemia	0.33 ± 0.46	<0.001
Chronic ischemia	3.4 ± 0.82	<0.01
Inflammation	1.89 ± 0.85	
Infection	1.64 ± 0.46	
Control Subjects	1.69 ± 0.48	



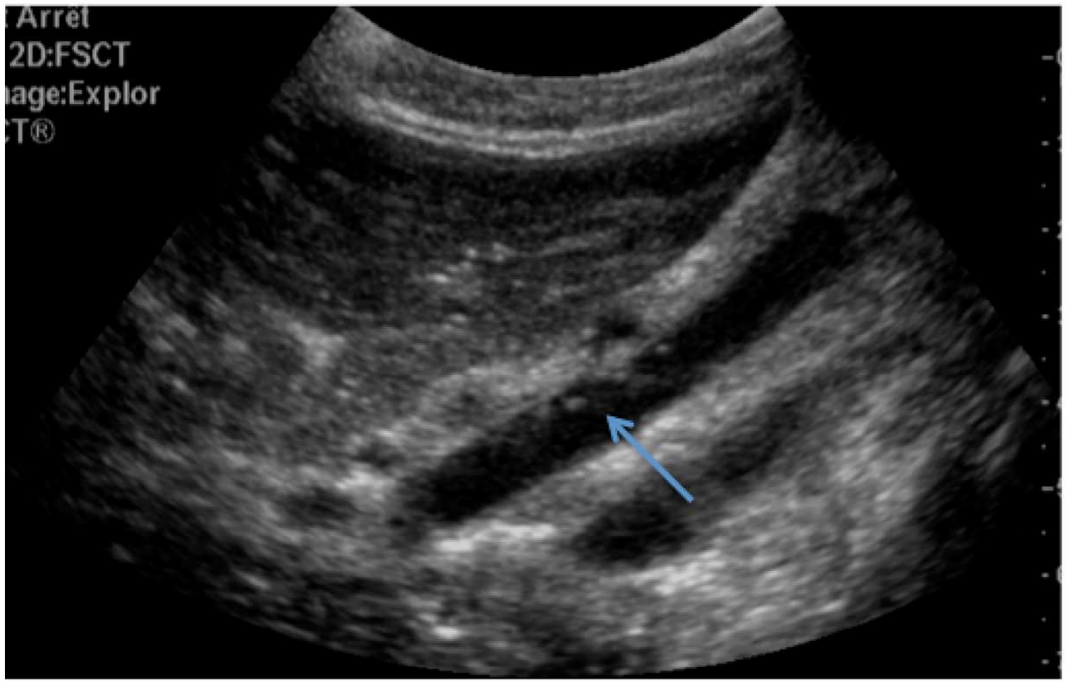

Acc:

Infarctus mésentérique: parois intestinales

- Parois fines
  - « papier » à cigarette
  - pneumatose
- Parois épaissies
- Modification de leur perfusion

Infarctus mésentérique: parois intestinales

- Parois fines
  - « papier » à cigarette & pneumatose


Arret
2D:FSCT
age:Explor
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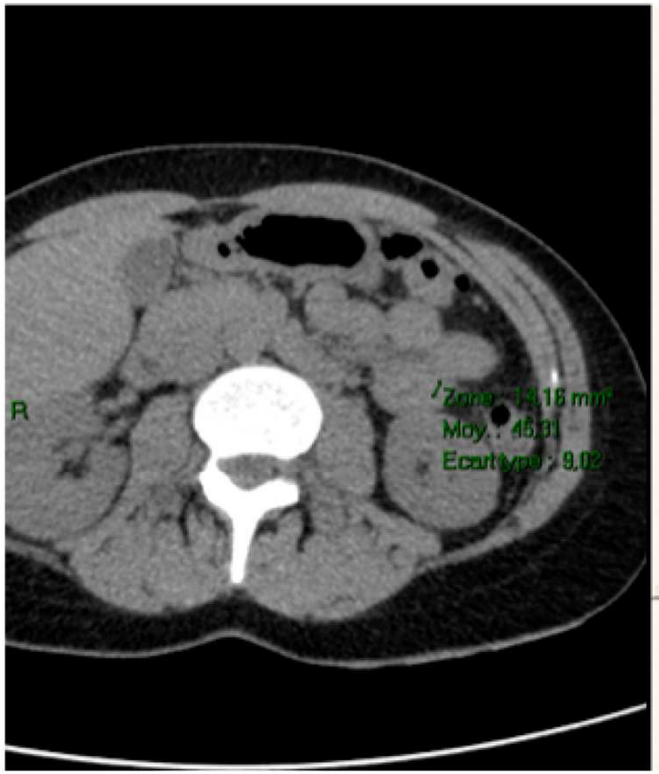
Infarctus mésentérique: parois intestinales

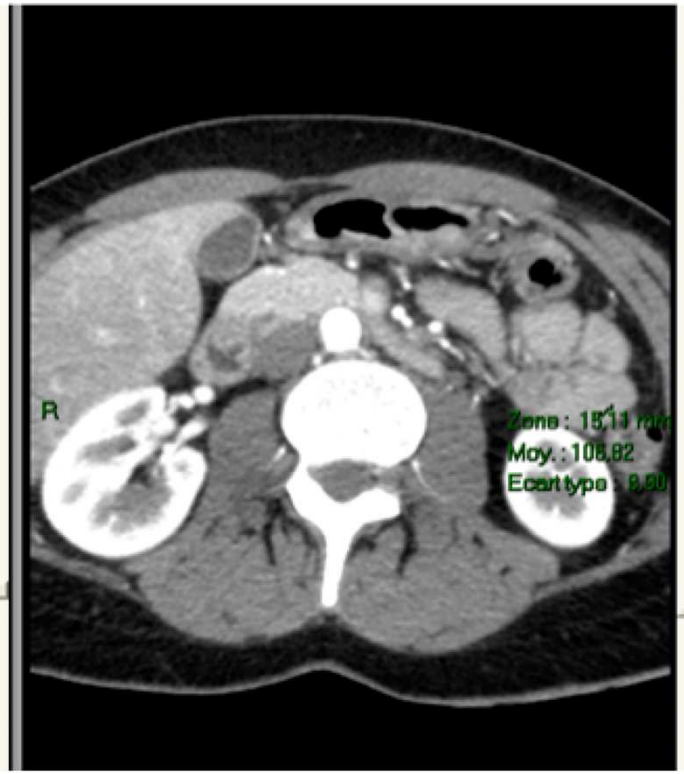
- Parois épaissies
- Modification de leur perfusion

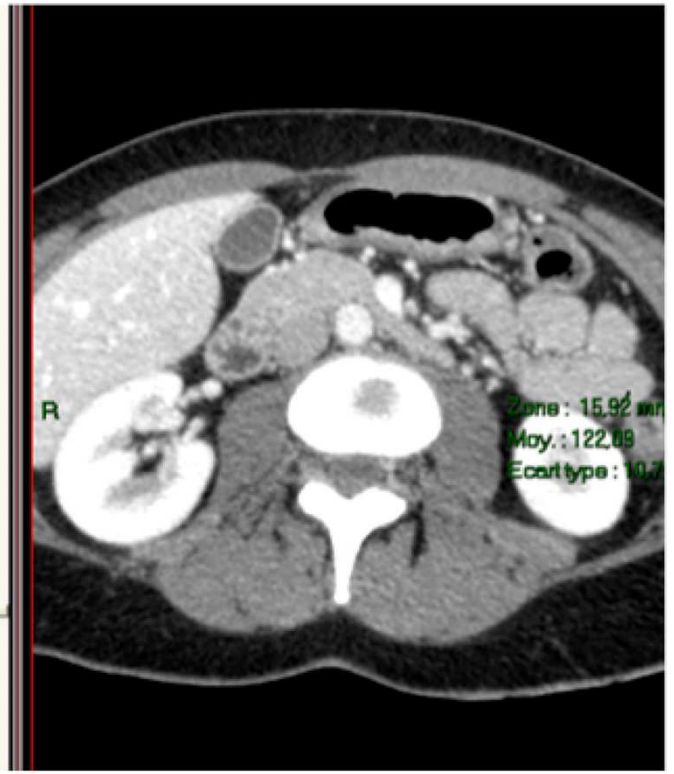
45 HU

109 HU

123 HU







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CT Evaluation of the Small Bowel

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Small Bowel Learning Module Home

Small Bowel
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- Lectures
- Protocols
- Gallery

Elliot K. Fishman, MD
Melissa R. Garland, MS
Karen M. Horton, MD
The Russell H. Morgan Department of Radiology
Johns Hopkins University

Pearls

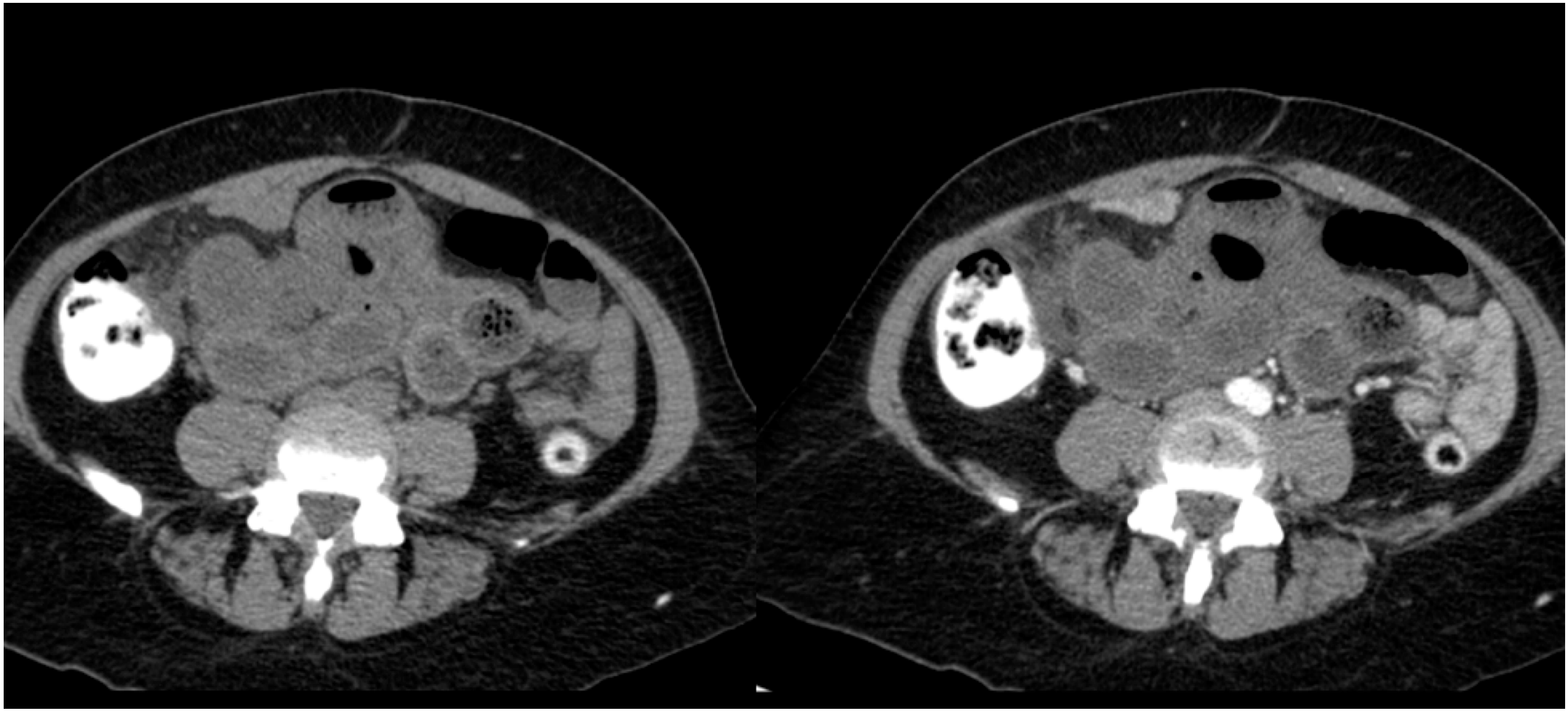
Normal Small Bowel Enhancement

Arterial Phase

- Duodenum 120 +/- 5 HU
- Jejunum 119 +/- 5 HU
- Ileum 118 +/- 5HU

Portal Phase

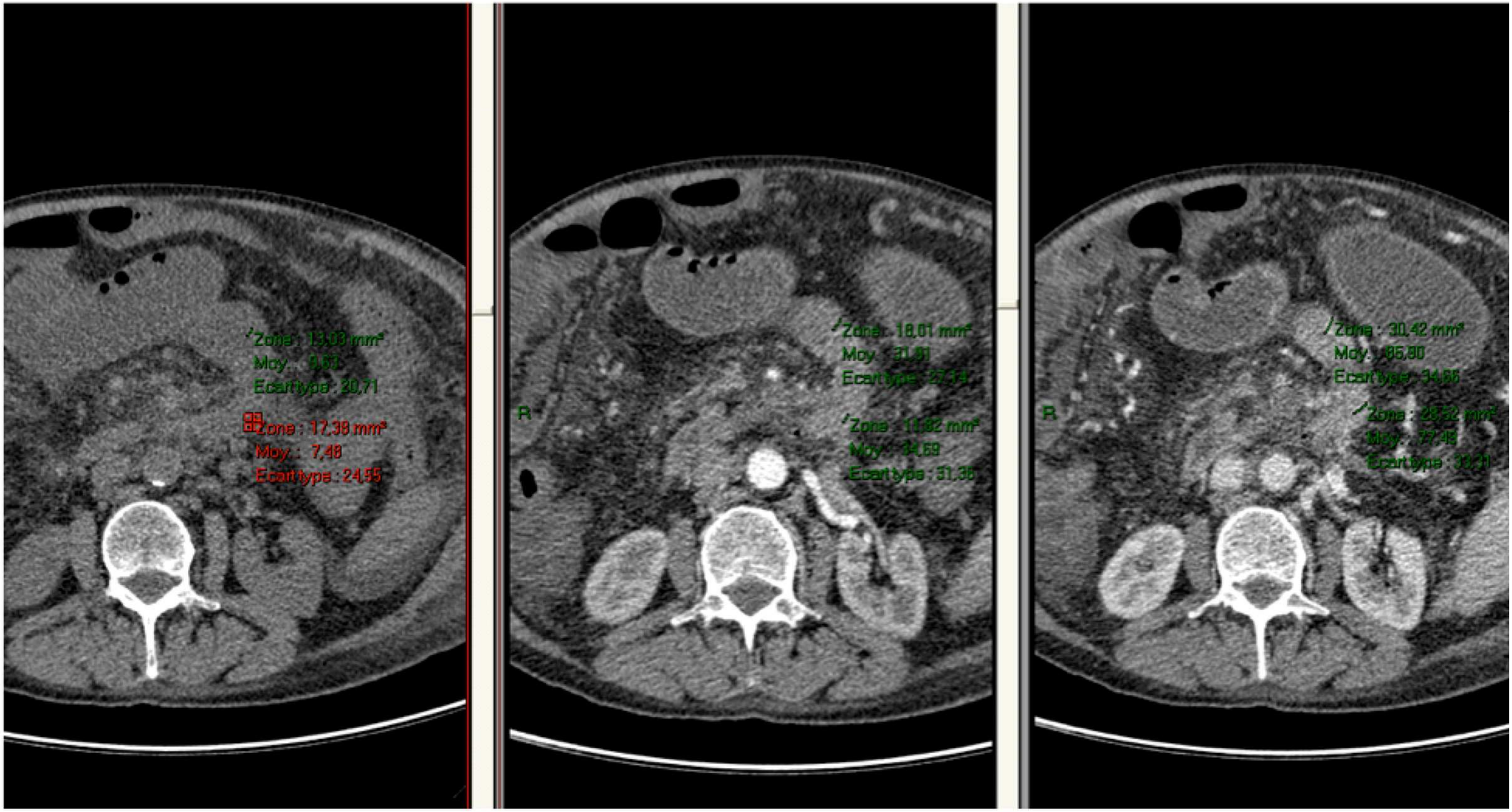
- Duodenum 111 +/- 4 HU
- Jejunum 111 +/- 3 HU
- Ileum 107 +/- 3HU



7-10 HU

35 HU

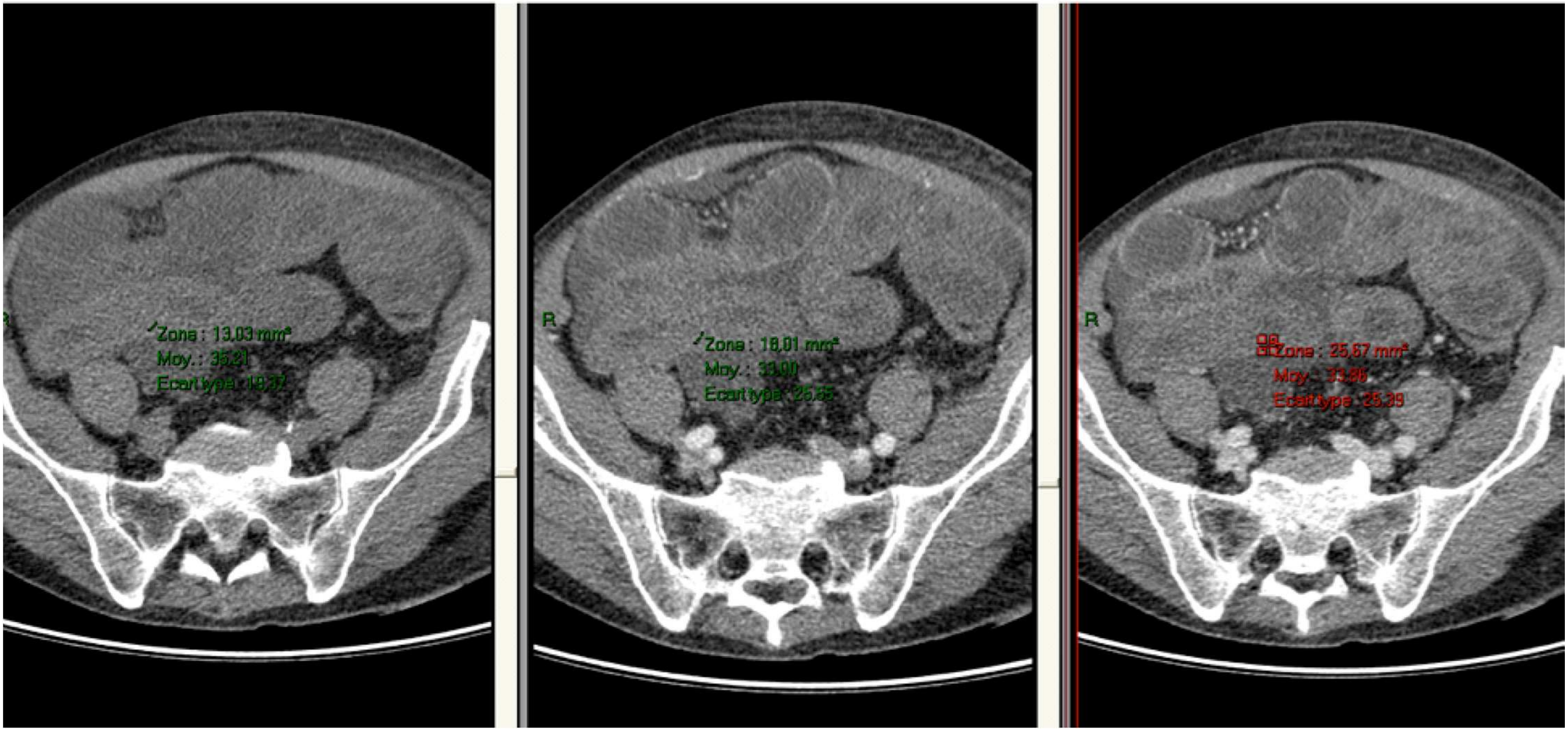
87 HU

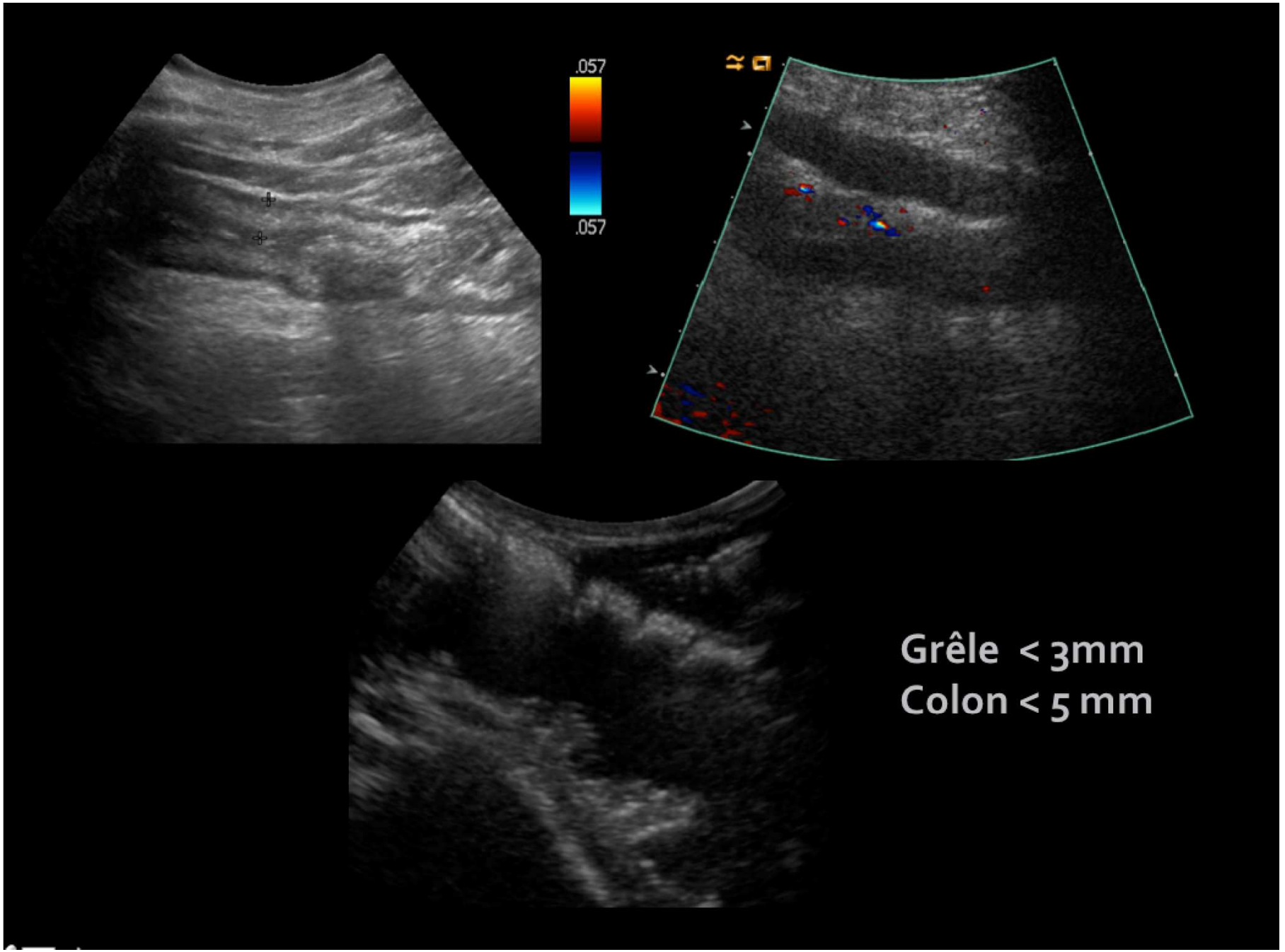


35 HU

34 HU

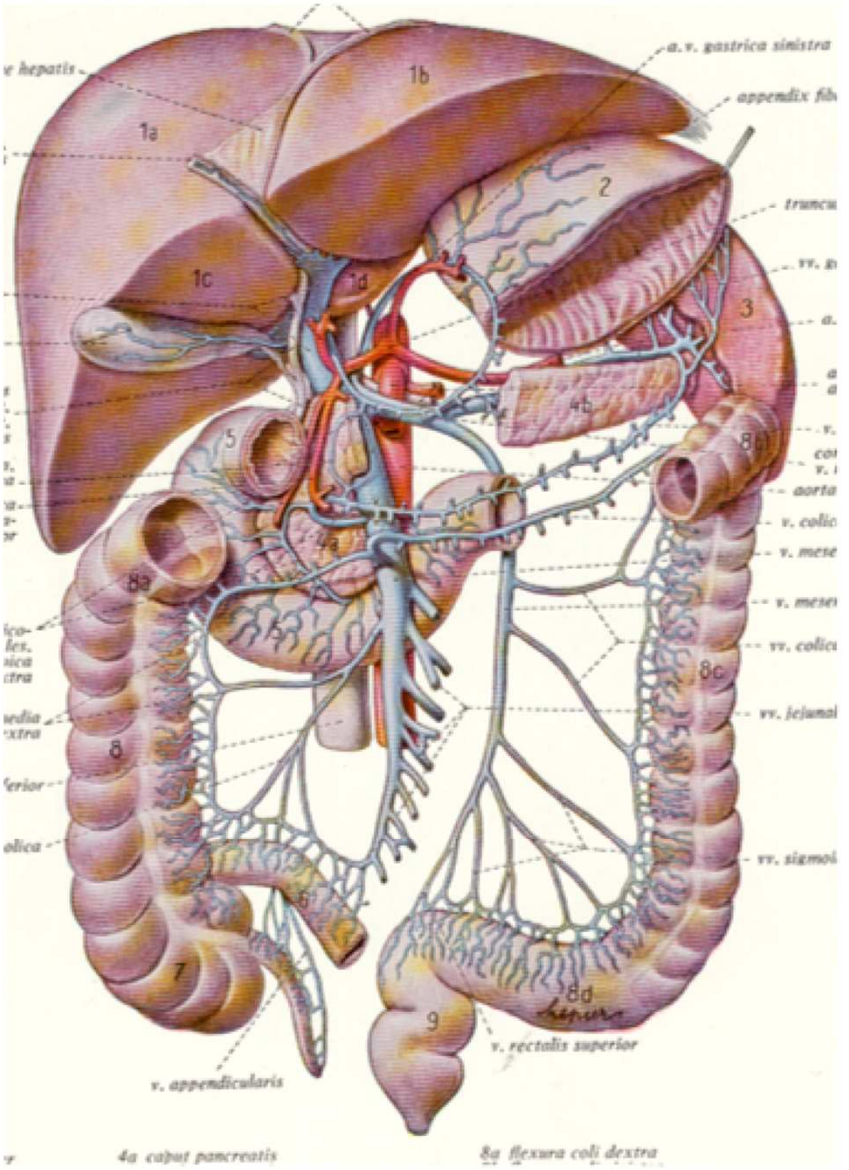
34 HU




.057
.057
Grêle < 3mm
Colon < 5 mm

Infarcissement mésentérique: anomalies veineuses

- Occlusion veineuse aiguë :
  - Veine mésentérique supérieure +- extension porte et splénique

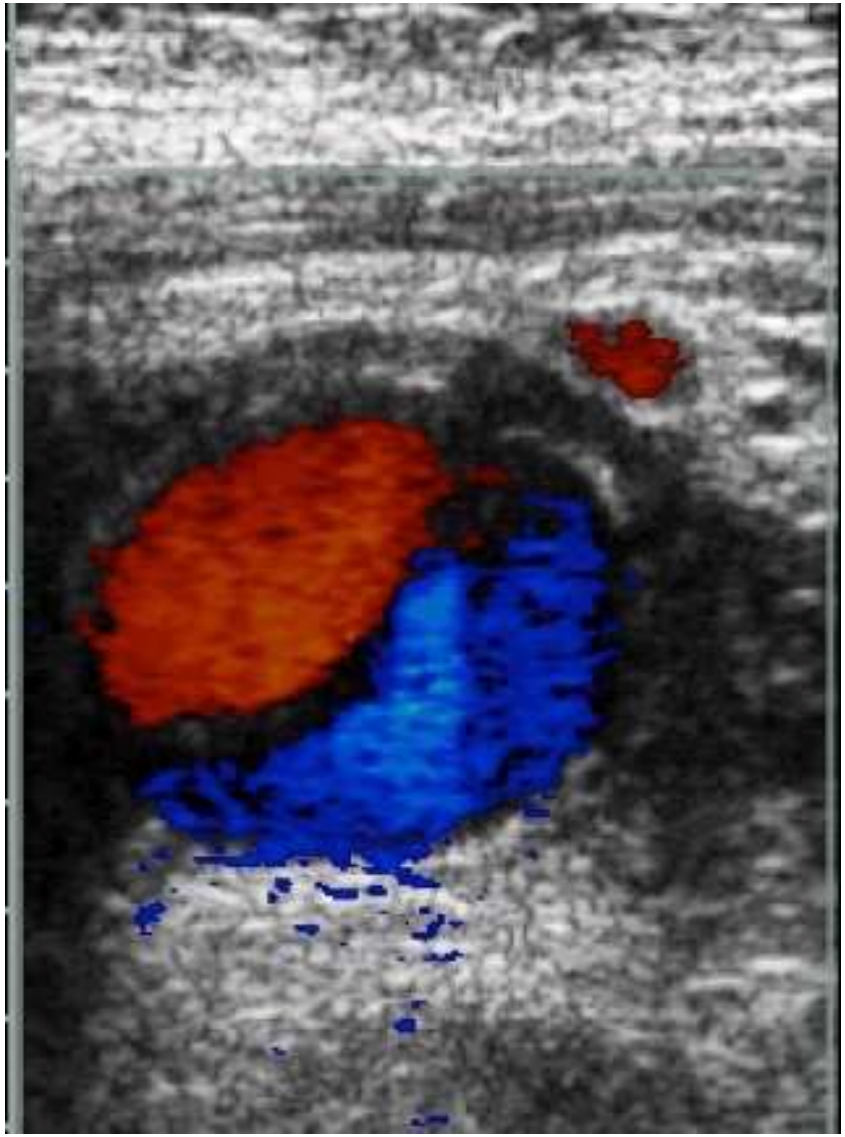


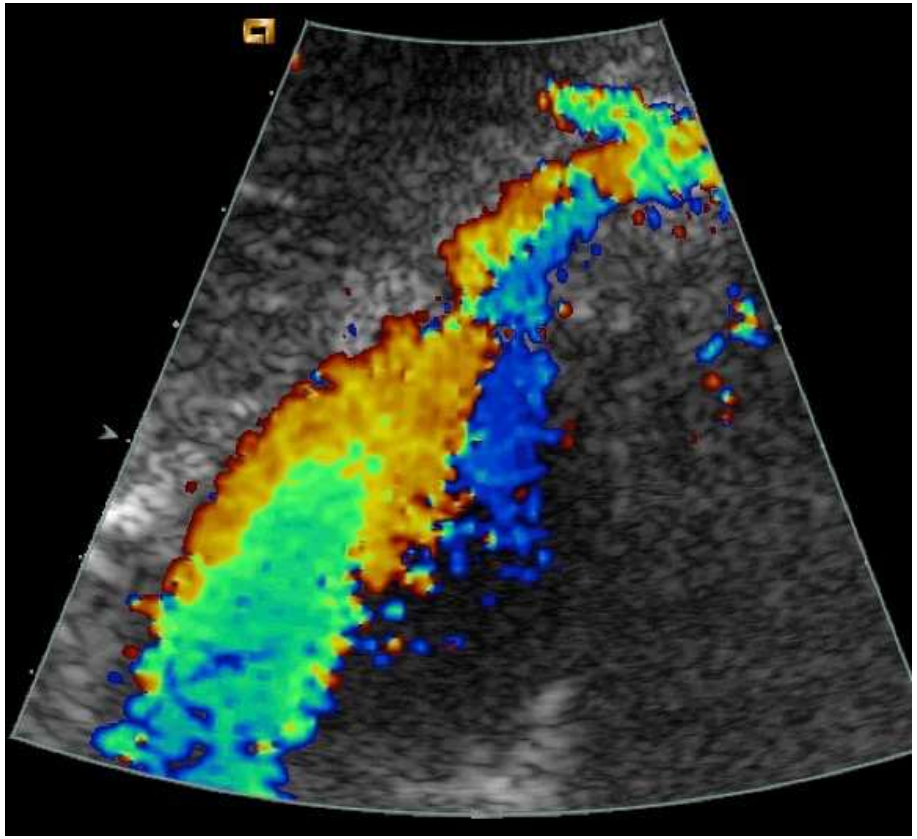
Ischémie intestinale

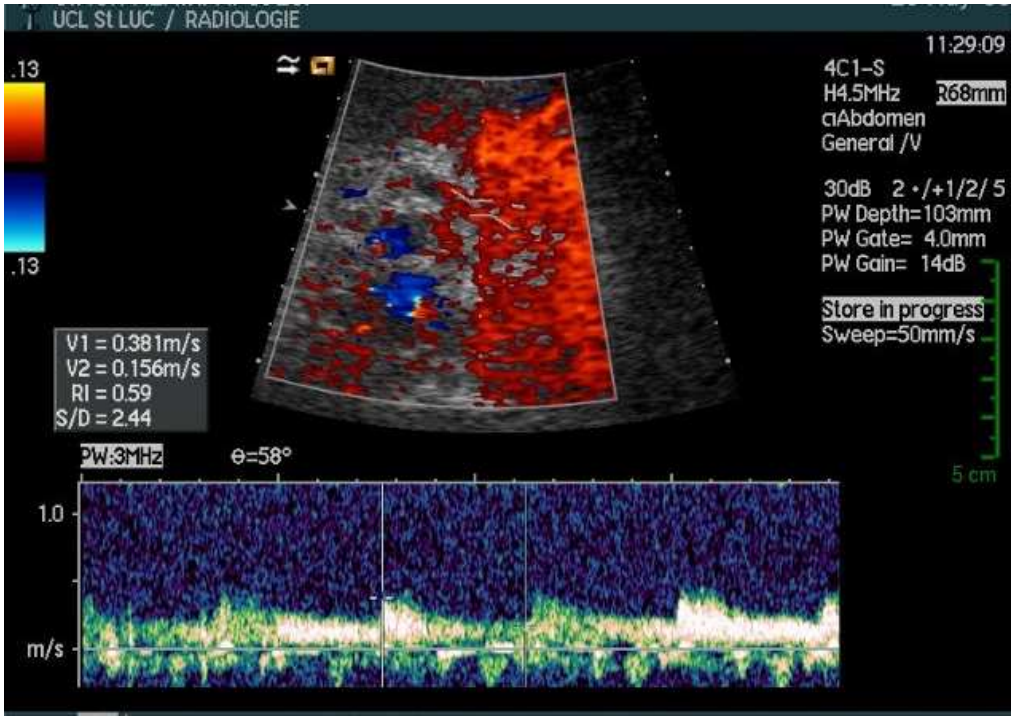
- Aide de l'imagerie
- VX
- Parois
- Pronostic

Affections vasculaires artérielles coeliaques et hépatiques

- Tronc coeliaque
  - Dissection
  - Thrombose
  - Anévrisme
  - Osler Rendu

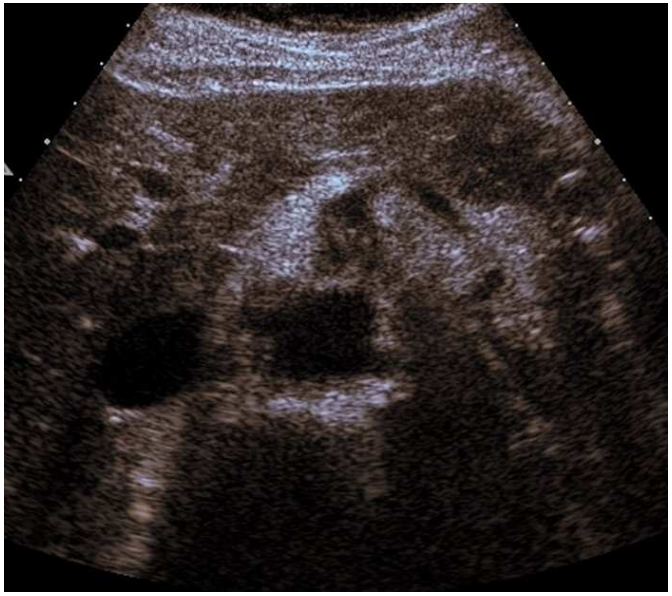


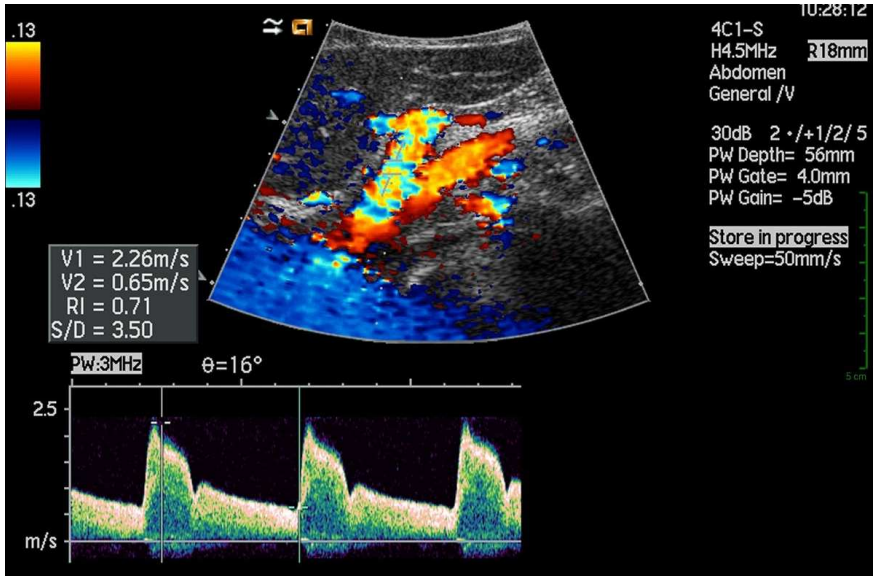



UCL St LUC / RADIOLOGIE
11:29:09
.13
.13
4C1-S
H4.5MHz
R68mm
abdomen
General /V
30dB 2 •/+1/2/ 5
PW Depth=103mm
PW Gate= 4.0mm
PW Gain= 14dB
Store in progress
Sweep=50mm/s
V1 = 0.381m/s
V2 = 0.156m/s
RI = 0.59
S/D = 2.44
PW:3MHz
θ=58°
5 cm
1.0
m/s

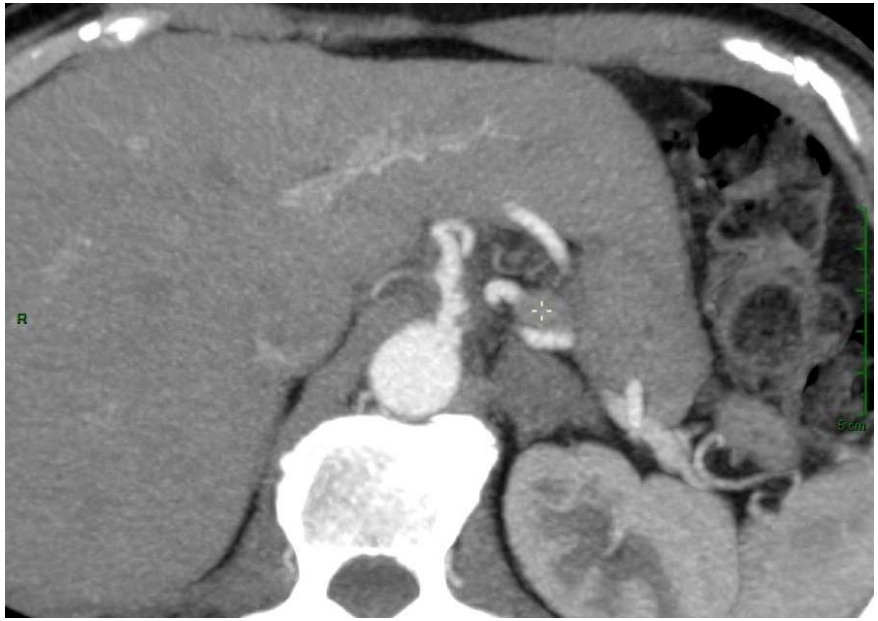

Study Desc: Artériographie aorte abdomin

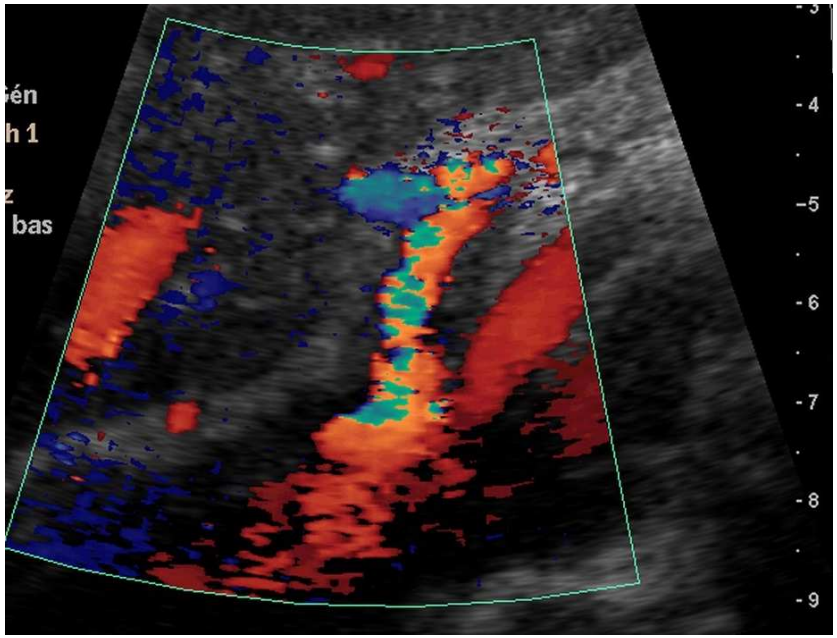

NTHI G
72dB
Gain=
Store i




.13
.13
10:28:12
4C1-S
H4.5MHz
R18mm
Abdomen
General /V
30dB 2 •/+1/2/ 5
PW Depth= 56mm
PW Gate= 4.0mm
PW Gain= -5dB
Store in progress
Sweep=50mm/s
V1 = 2.26m/s
V2 = 0.65m/s
RI = 0.71
S/D = 3.50
PW:3MHz
θ=16°
2.5
m/s


R




- 4
- 5
- 6
- 7
- 8
- 9

Troncs digestifs : TC Coeliaque

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Isolated Hepatic Artery Thrombosis Leading to Multiple Liver Infarcts in a Non-transplant Patient

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

DEF 1 Tarek Almouradi
E 2 Paul Co
E 1 William Riles
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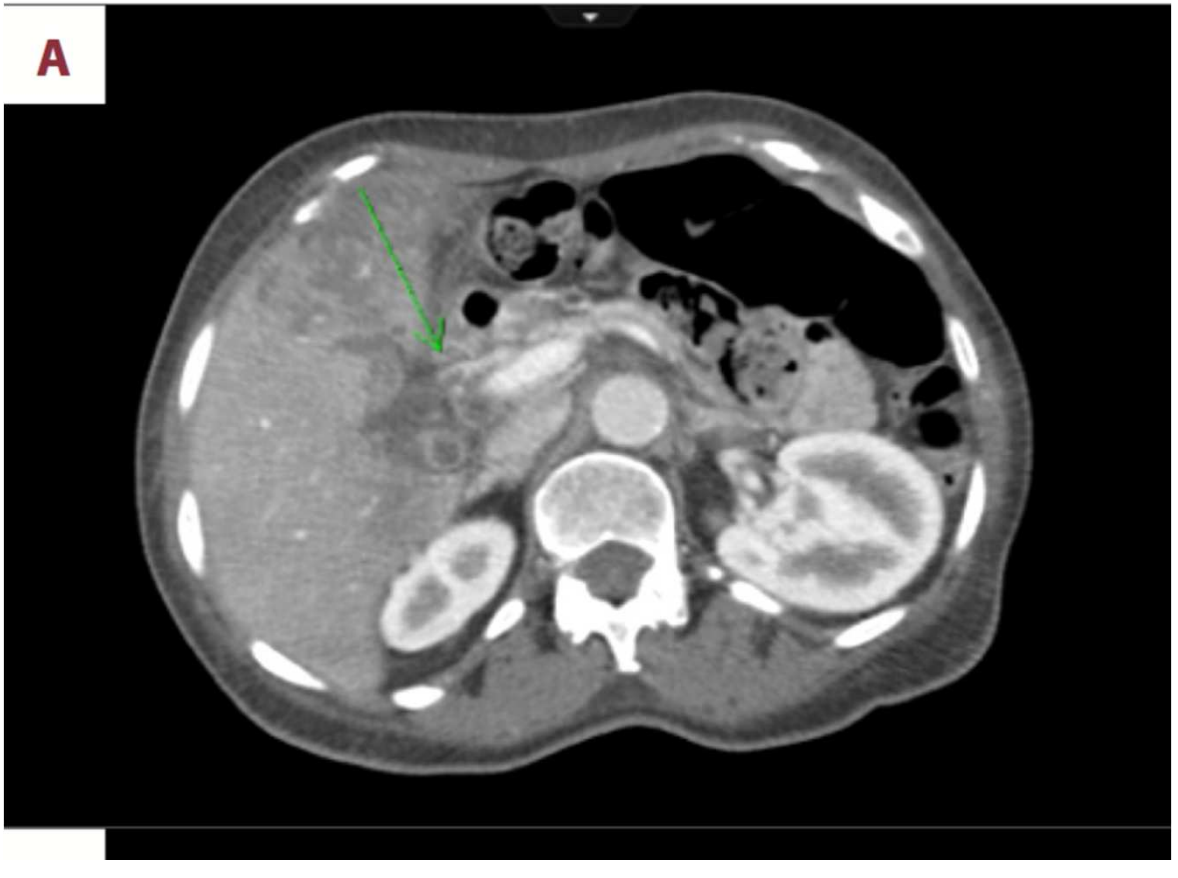
2 Department of Medicine, John H. Stroger Hospital of Cook County, Chicago, IL, U.S.A.



Multidetector CT of Vascular Compression Syndromes in the Abdomen and Pelvis[1]

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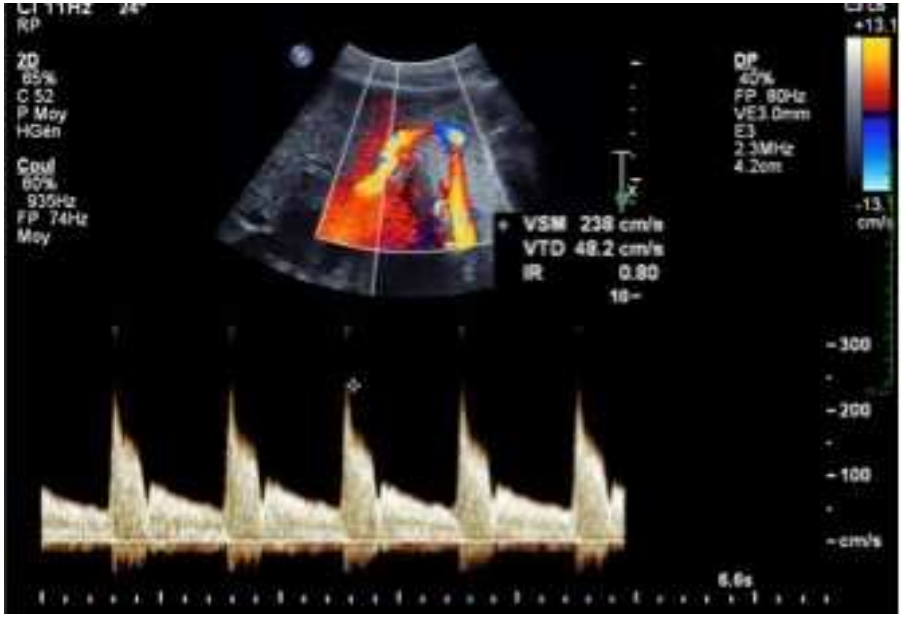
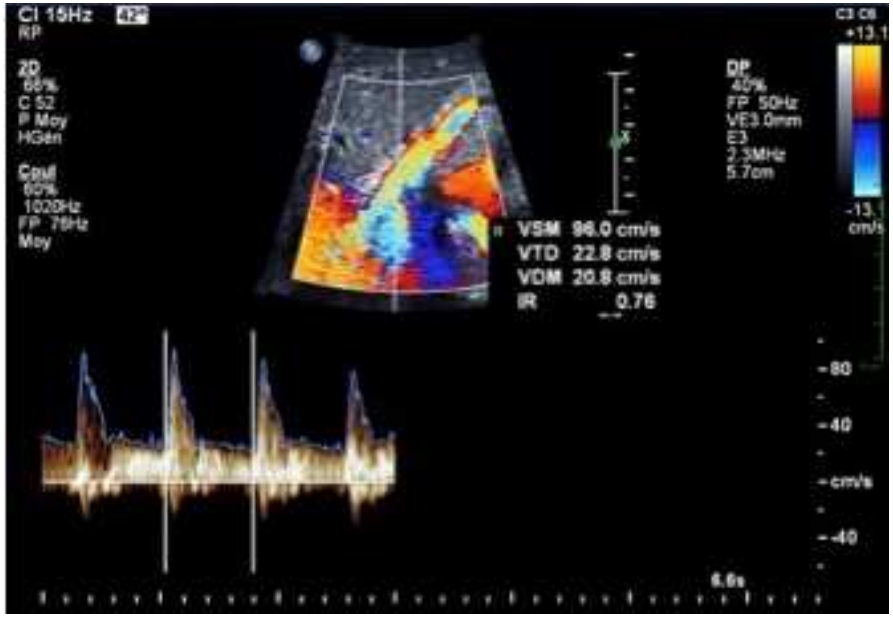
Certain abdominopelvic vascular structures may be compressed by adjacent anatomic structures or may cause compression of adjacent hollow viscera. Such compressions may be asymptomatic; when symptomatic, however, they can lead to a variety of uncommon syndromes in the abdomen and pelvis, including median arcuate

RadioGraphics 2014; 34:93–115





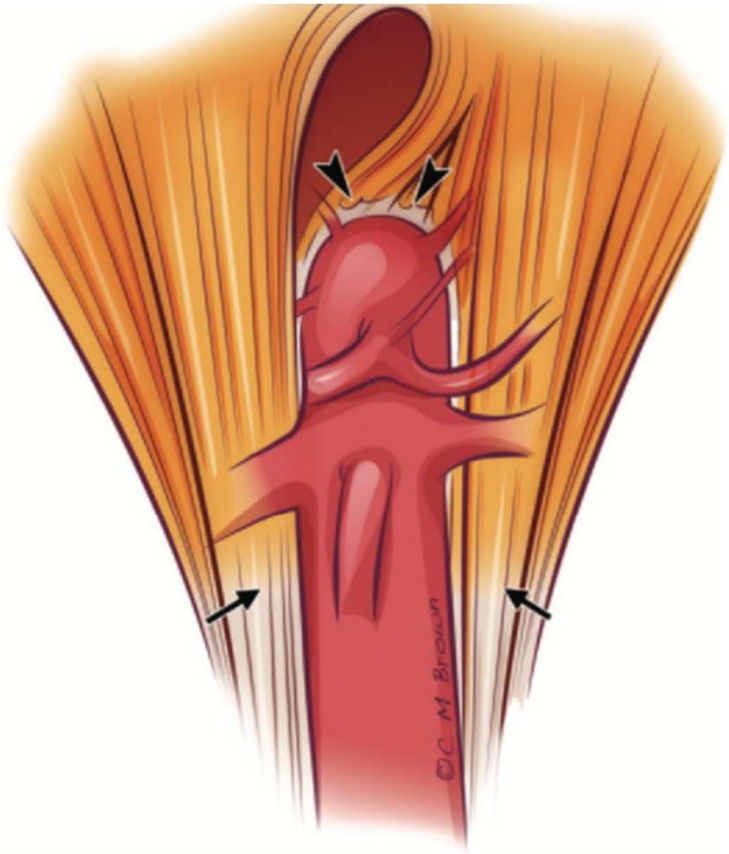
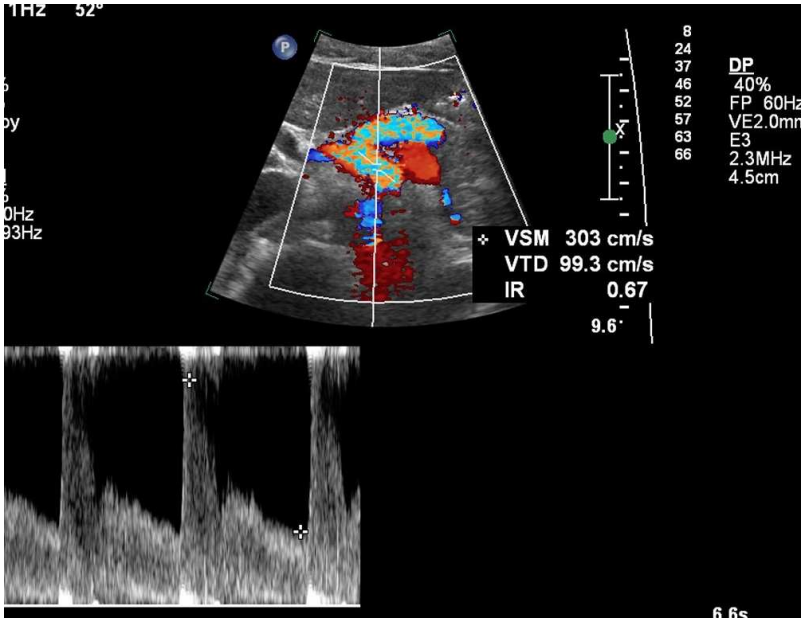


Figure 1. Drawing illustrates the anatomy of the median arcuate ligament (arrowheads), which connects the right and left crura of the diaphragm (arrows) at the level of the aortic hia-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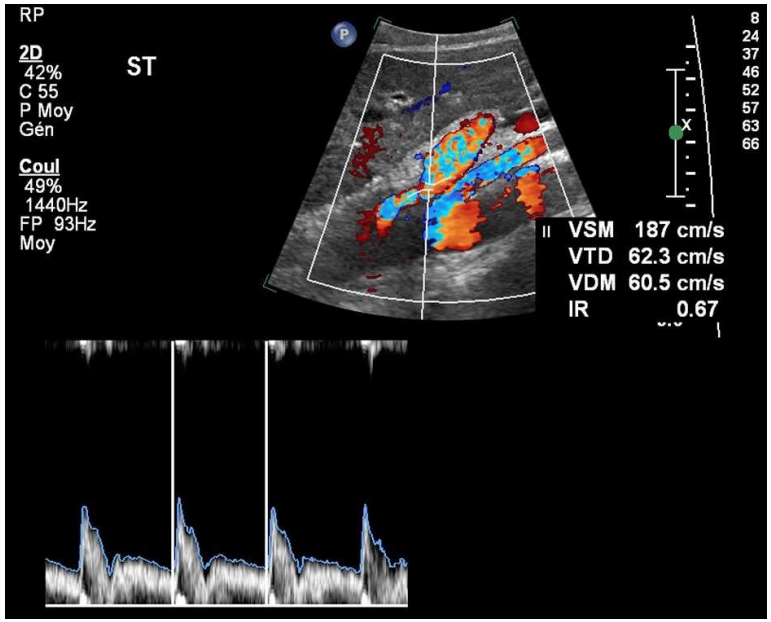
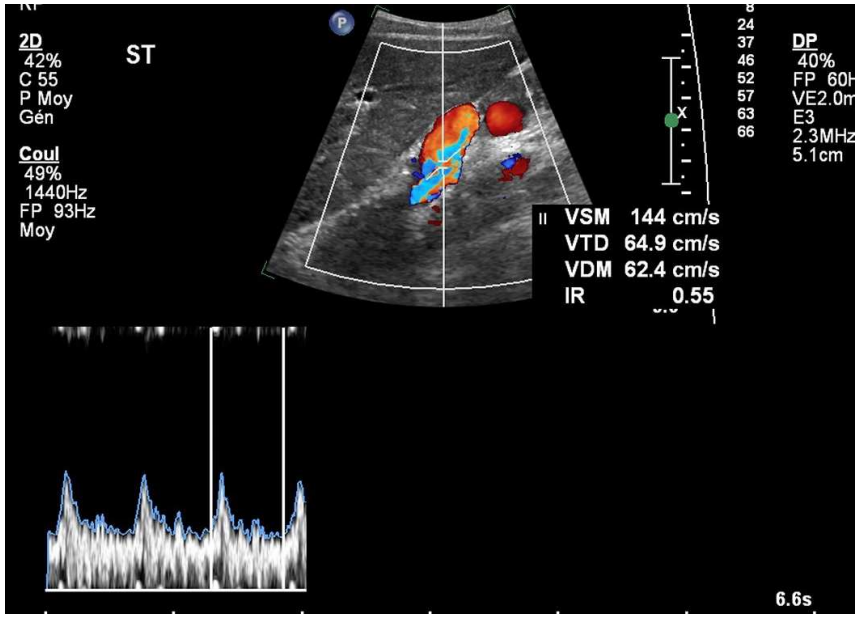
VTD 99.3 cm/s
IR 0.67
6.6s

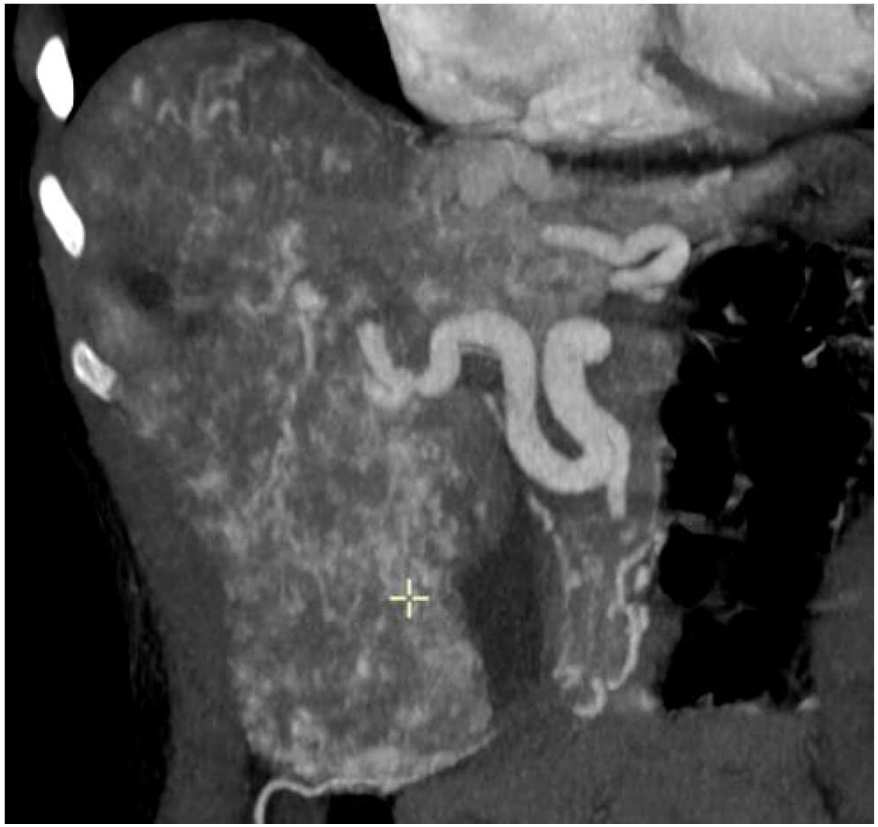

RP
2D
42%
C 55
P Moy
Gén
Coul
49%
1440Hz
FP 93Hz
Moy
ST
VSM 187 cm/s
VTD 62.3 cm/s
VDM 60.5 cm/s
IR 0.67


2D
42%
C 55
P Moy
Gén
Coul
49%
1440Hz
FP 93Hz
Moy
ST
DP
40%
VSM 144 cm/s
VTD 64.9 cm/s
VDM 62.4 cm/s
IR 0.55
6.6s

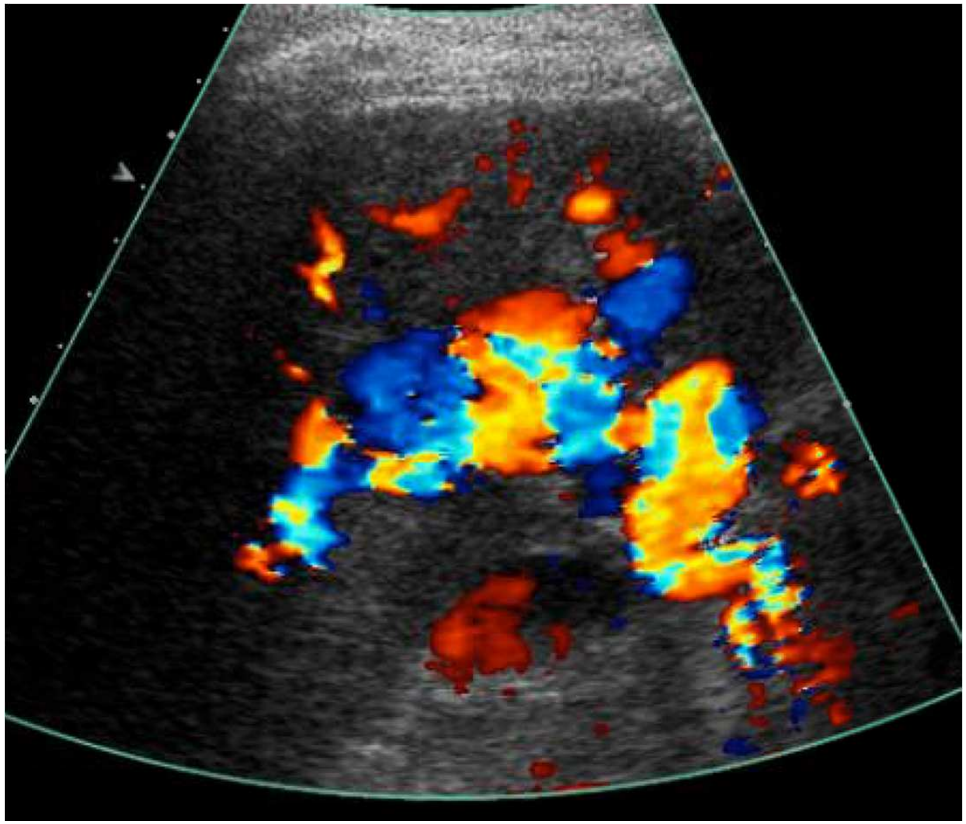

P
9.6

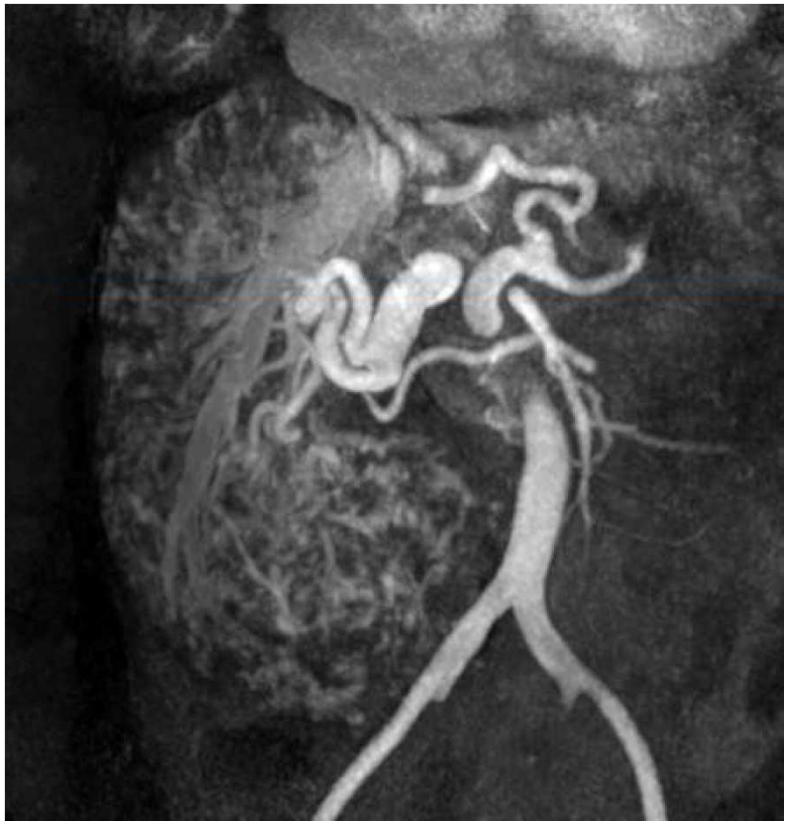

*****
48A 1M,M,*****
Nº dem. : D136177213
Pos. patient : FFS
Desc. examen : CT ABDOMEN
Desc. série : MPR - arteriel, iDose
< 501 >
UCL St Luc
MAYAUX MICHEL
Actuel
[21/10/2014 ,14:02:45]
Philips Brilliance 64
120kV, 121mAs
MipPR 10,0 mm
RD : 337,00
2,14
10 cm
C 157
L 444

Osler Rendu



Osler Rendu

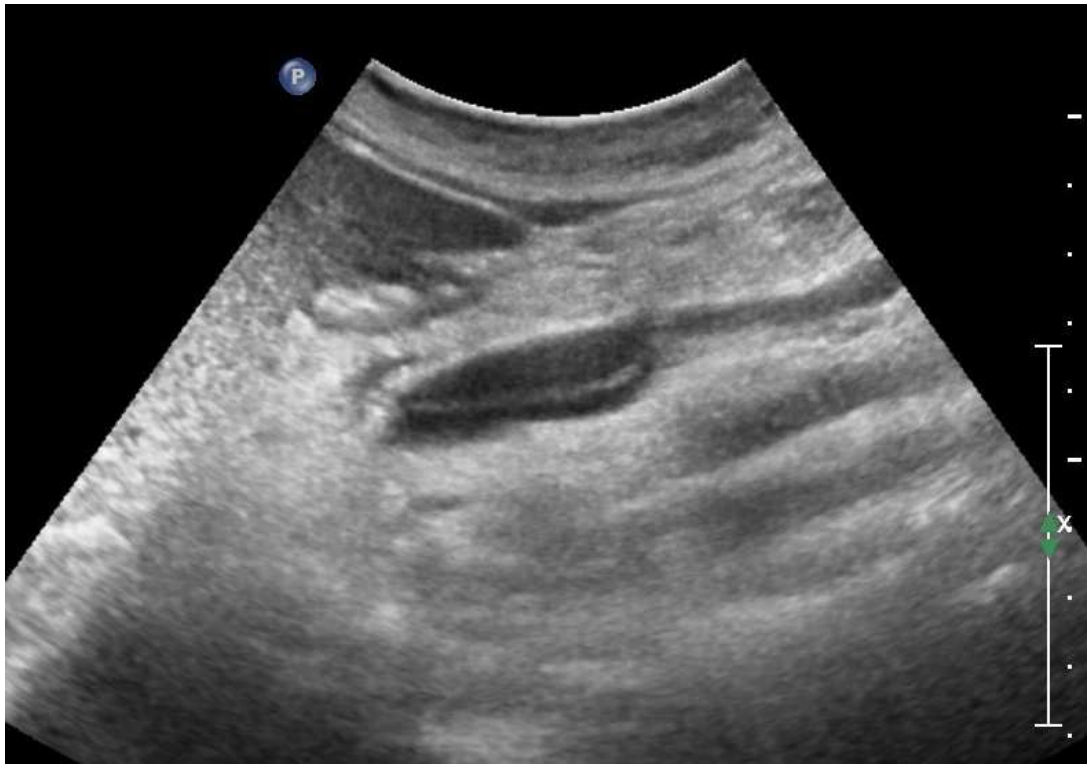


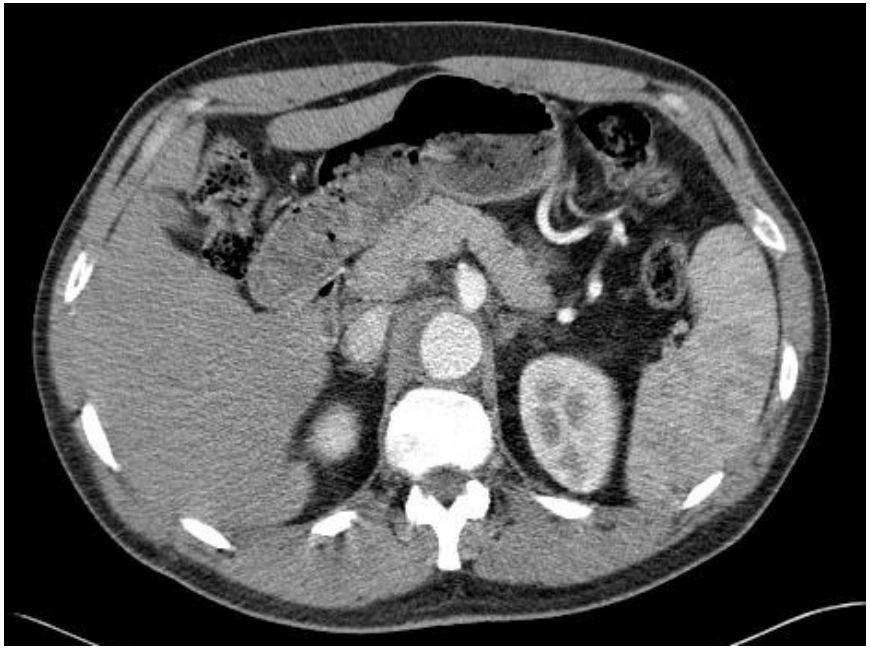


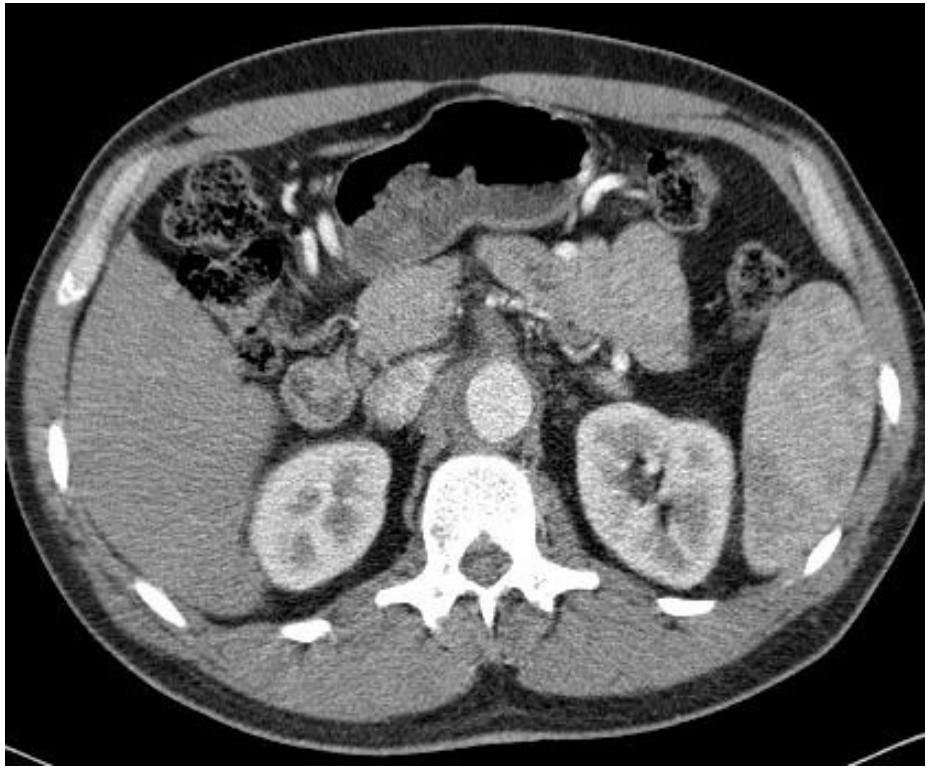
Osler Rendu

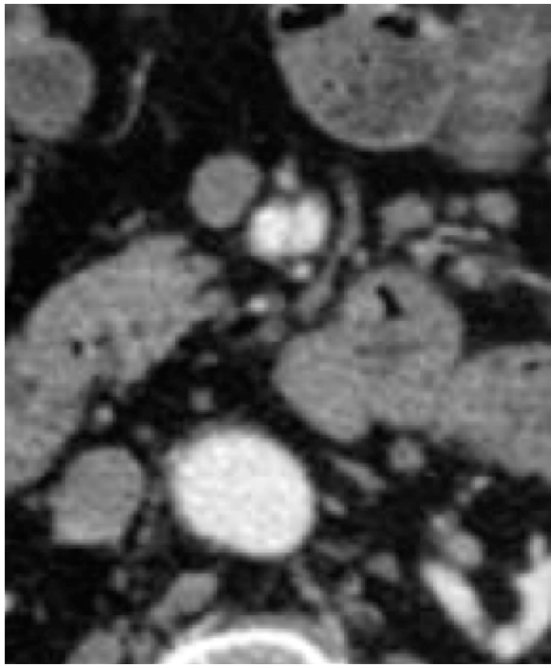
Troncs digestifs :
Artère mésentérique supérieure

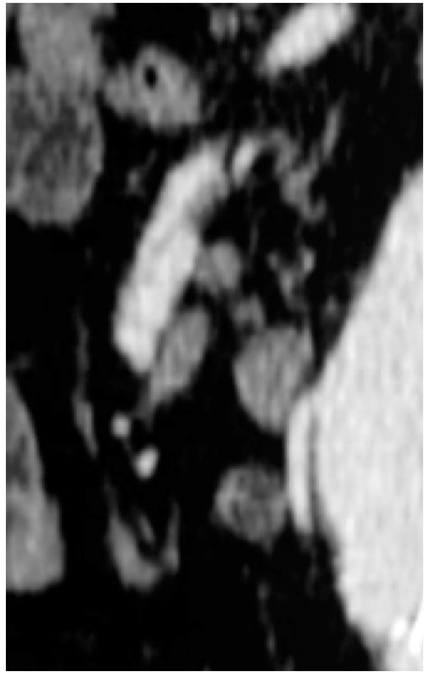
- Sténose / Thrombose
- Dissection
- Pince mésentérique
- Nut-Cracker

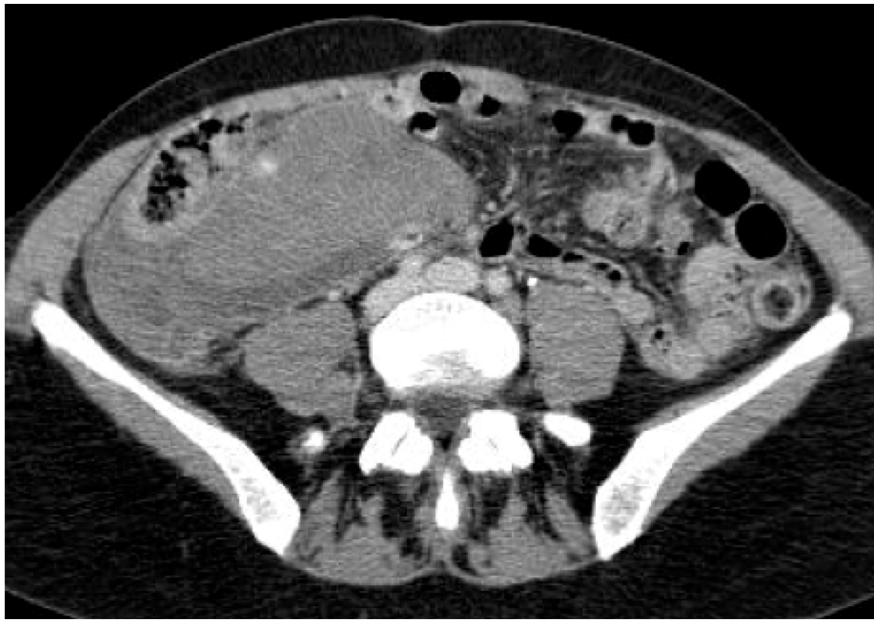


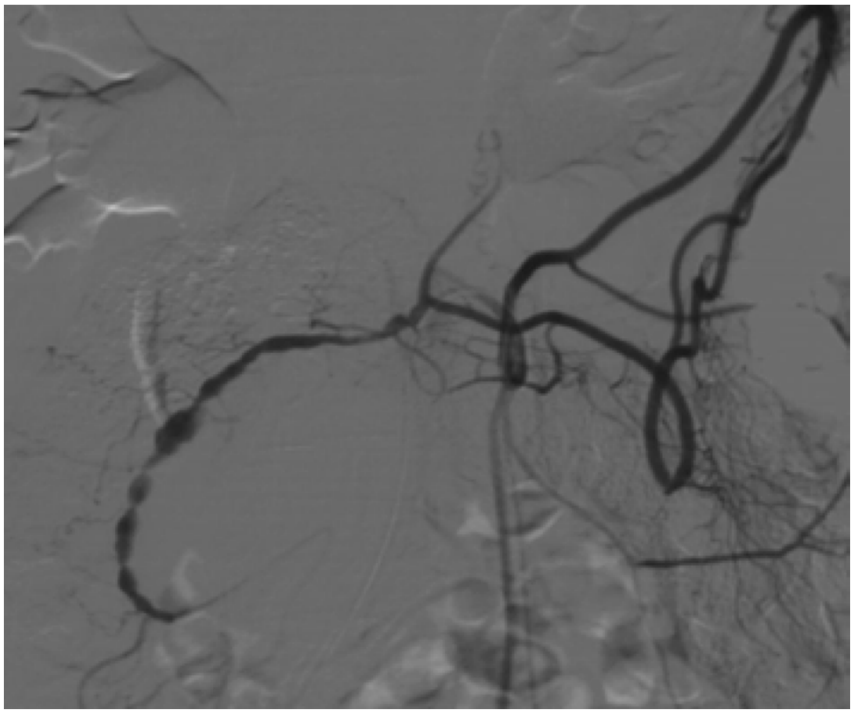












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Review

Digestive Surgery

Dig Surg 2007;24:149–156
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Published online: April 27, 2007

Recalling Superior Mesenteric Artery Syndrome

Thilo Welsch Markus W. Büchler Peter Kienle

Department of General, Visceral and Transplantation Surgery, University of Heidelberg, Heidelberg, Germany

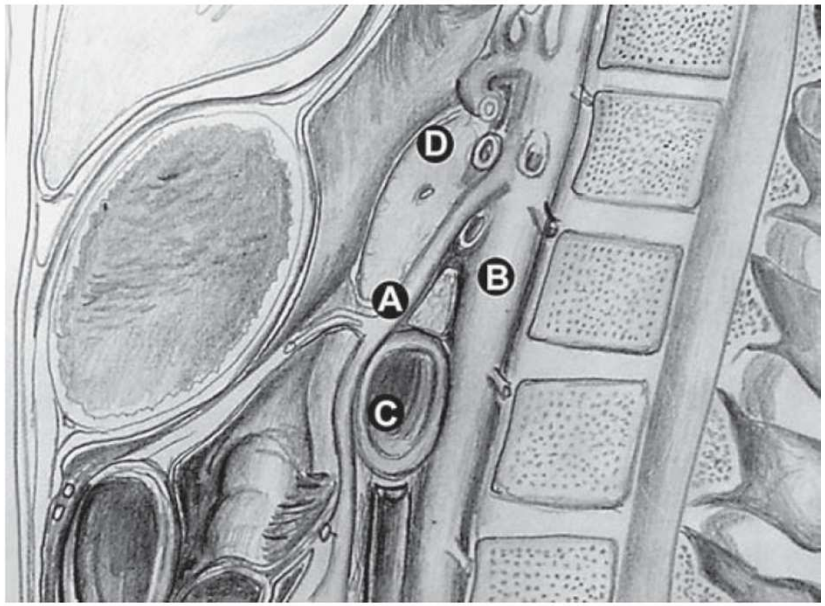

Fig. 2. The superior mesenteric artery leaves the aorta at an acute angle that is sustained by the left renal vein and the uncinate process of the pancreas embedded in retroperitoneal fat and lymph tissue. A low aortomesenteric angle can lead to vascular compression of the duodenum. A = Superior mesenteric artery, B = aorta, C = third part of the duodenum, D = pancreas.

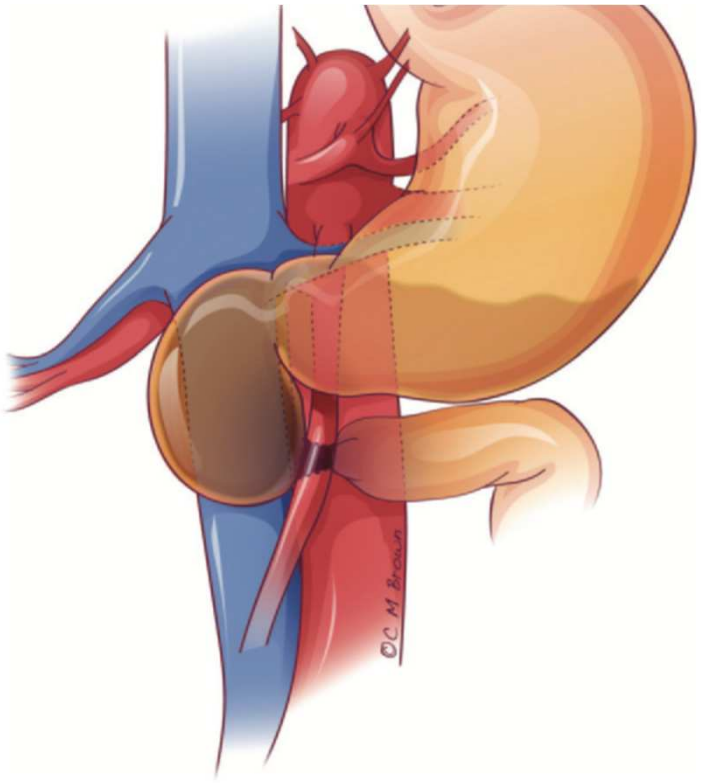

Figure 7. Drawing illustrates SMA syndrome, with compression of the mid-transverse duodenum between

Pince mésentérique

- Angle AMS/aorte
  - nl : 38 à 56 °
  - Pince : 6-16°
- Distance aorto-mésentérique
  - Nl: 10-28 mm
  - Pince : 2-8 mm

Review

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Pince mésentérique

- OEDT
  - Critères nécessaires
    - Dilatation D2 et D3 sans ou avec dilatation gastrique
    - Compression verticale ou oblique des plis muqueux
    - Flux antipéristaltique
    - Délai de transit de 4 à 6 h
    - Disparition des anomalies sur le ventre, genou/thorax, DLG
- CT
  - Angle AMS/AO: < 22-25°
  - Distance < 8 mm

Review

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Recalling Superior Mesenteric Artery Syndrome

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Department of General, Visceral and Transplantation Surgery, University of Heidelberg, Heidelberg, Germany

Table 1. Predisposing conditions for development of superior mesenteric artery syndrome

Chronic wasting disease
Cancer [5, 6, 26]
Cerebral palsy [27]
Paraplegia [28]
Juvenile rheumatoid arthritis [5]
Cardiac cachexia [29]
Drug abuse [30]
Trauma
Burn injury [31]
Brain injury [5, 6, 27, 32]
Multiple injuries [33]
Dietary disorders
Anorexia nervosa [34, 35]
Malabsorption [5]
Postoperative states
Bariatric surgery [36, 37]
Proctocolectomy and ileoanal pouch anastomosis [38, 39]
Nissen fundoplication [27]
Aortic aneurysm repair [40, 41]
Spinal instrumentation, scoliosis surgery or body casting [9, 27, 42–45]
Anatomy and congenital anomalies
High insertion of the ligament of Treitz [44]
Intestinal malrotation, peritoneal adhesions [46]
Low origin of the superior mesenteric artery [26]
Increased lumbar lordosis [4]
Intestinal malrotation [16]
Local pathology
Neoplastic growth in the mesenteric root [47]
Dissecting aortic aneurysm [48]

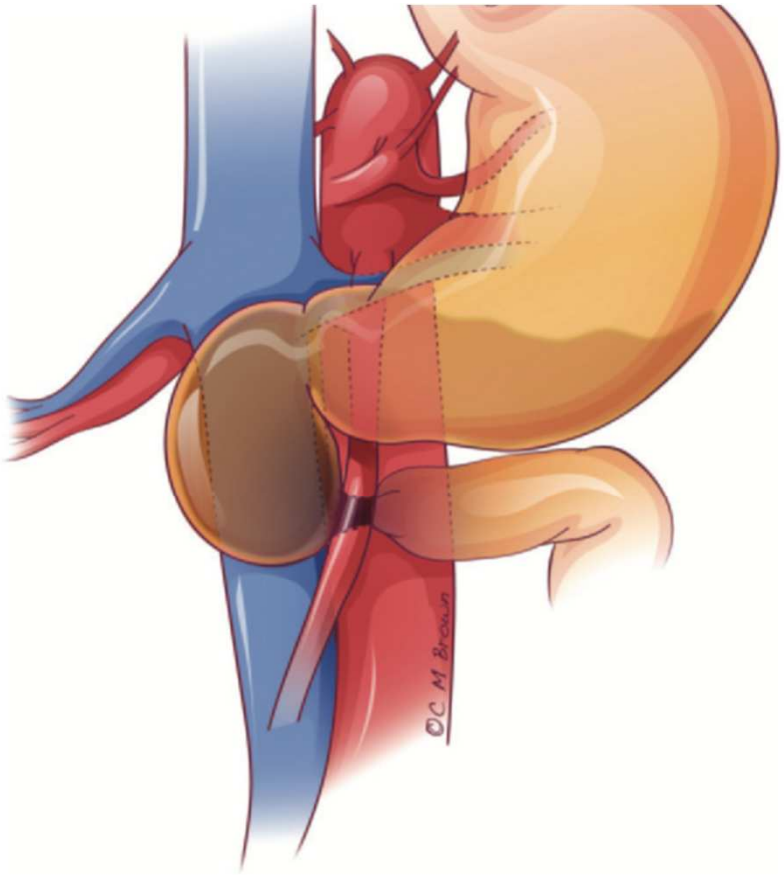
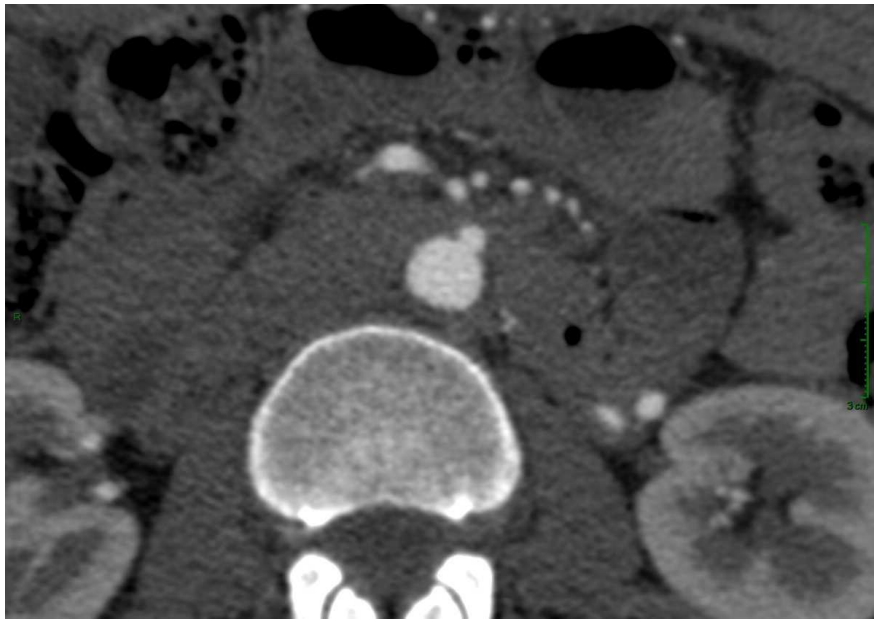
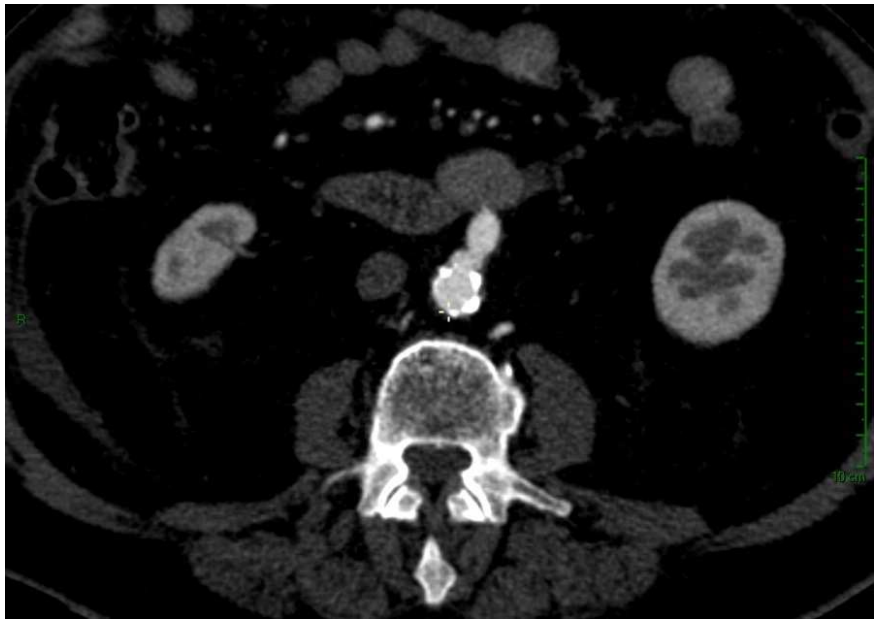


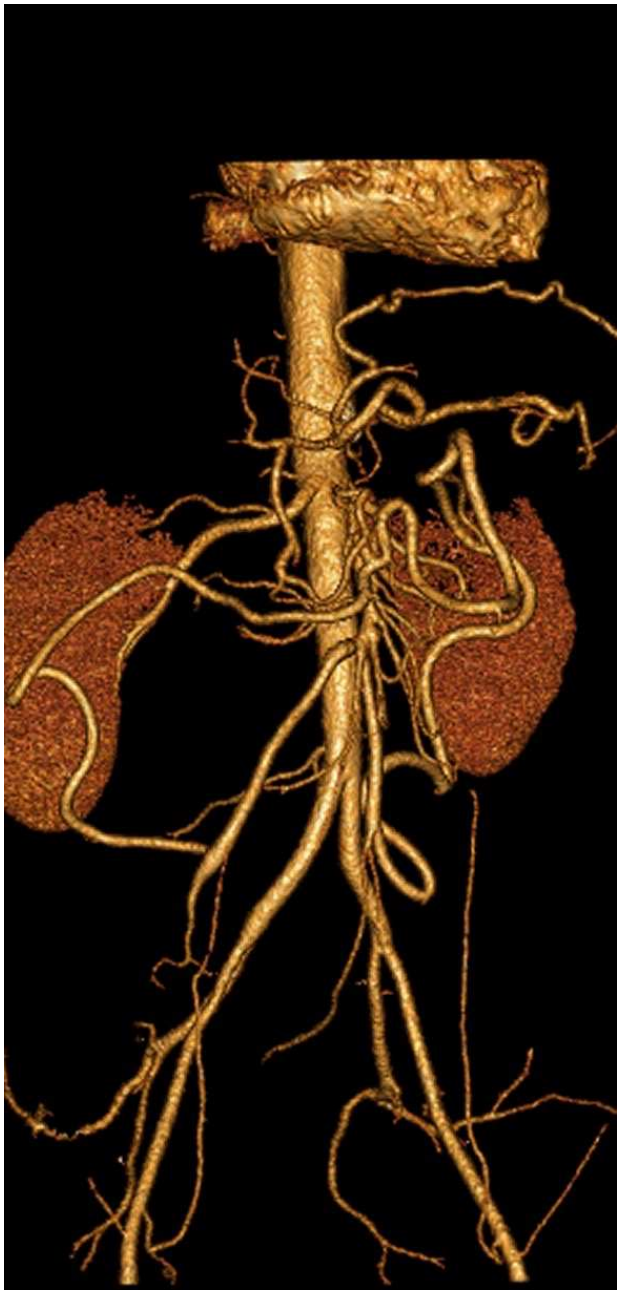
Figure 7. Drawing illustrates SMA syndrome, with compression of the mid-transverse duodenum between

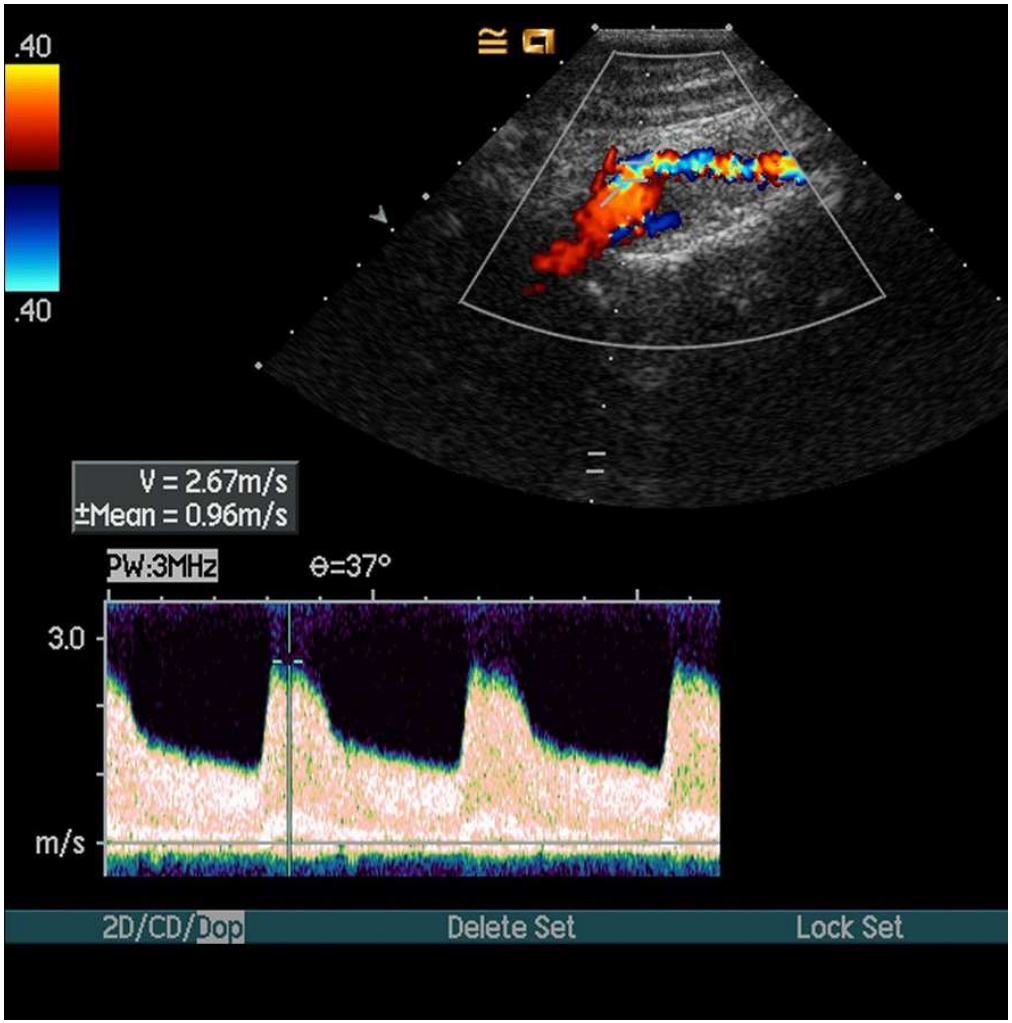
Troncs digestifs :
Artère mésentérique inférieure

- Sténose / Thrombose
- Rôle de collatérale
  - arcades digestives
  - « pont » iliaque





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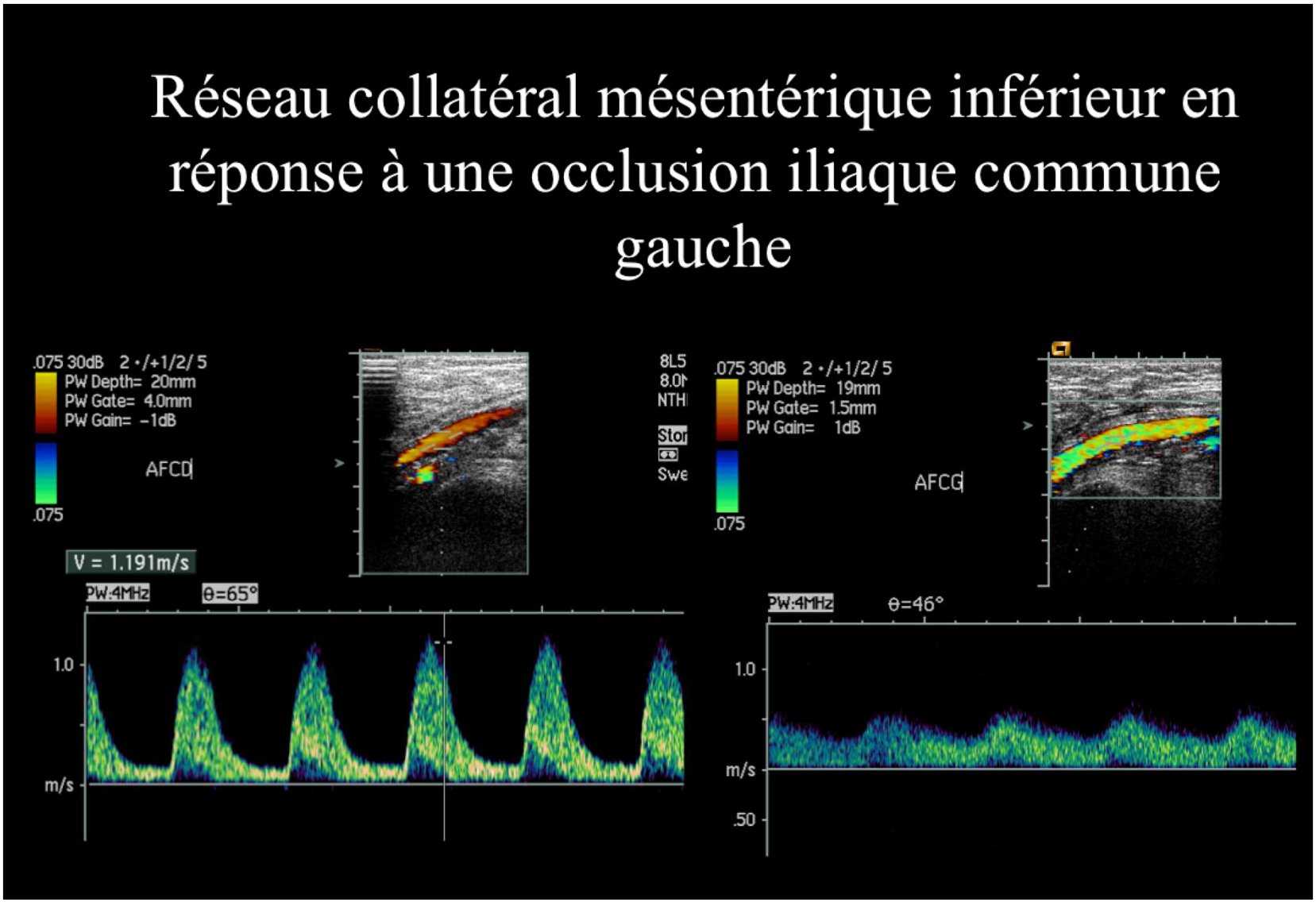
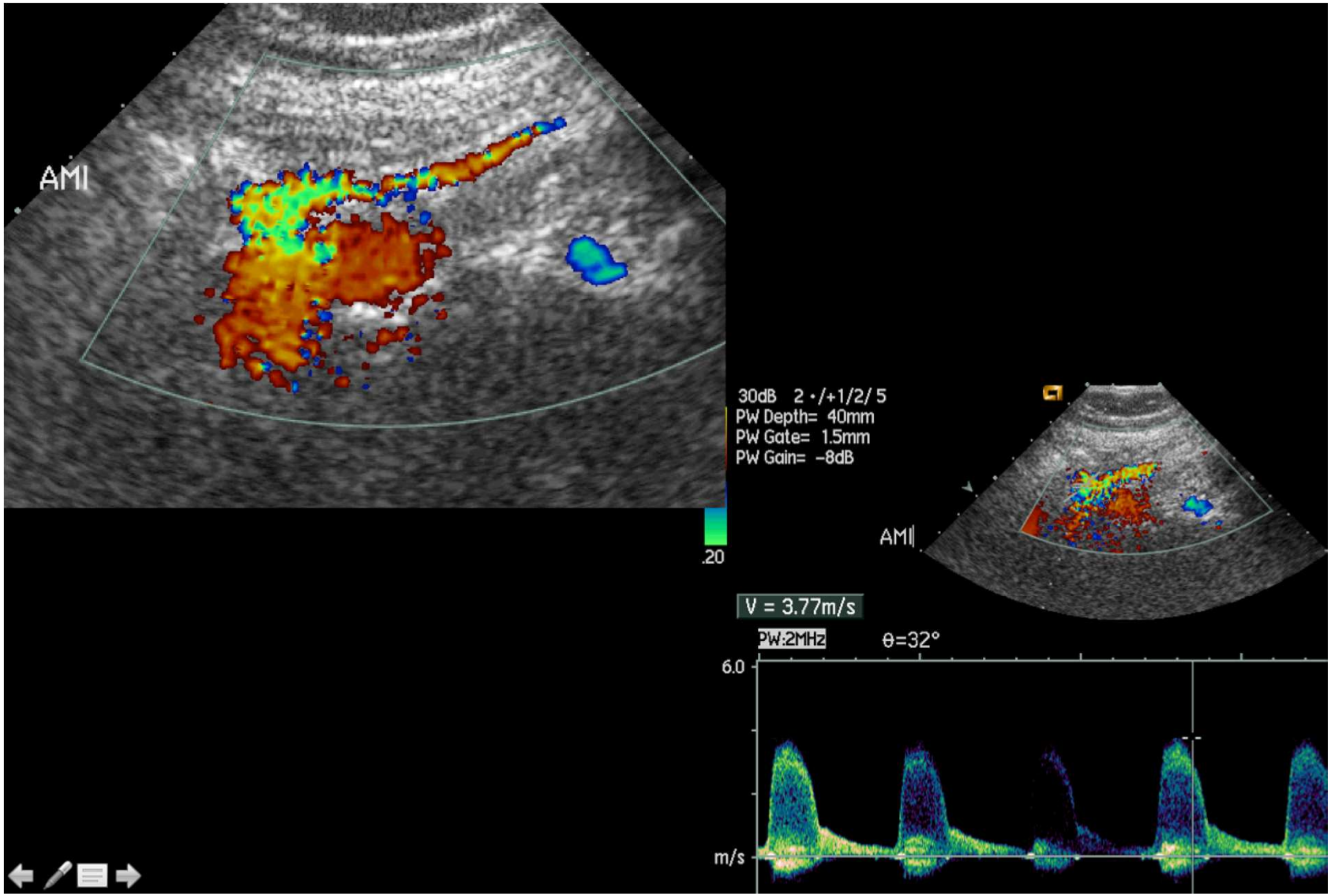
±Mean = 0.96m/s
PW:3MHz
θ=37°
3.0
m/s
2D/CD/Dop
Delete Set
Lock Set

Réseau collatéral mésentérique inférieur en réponse à une occlusion iliaque commune gauche

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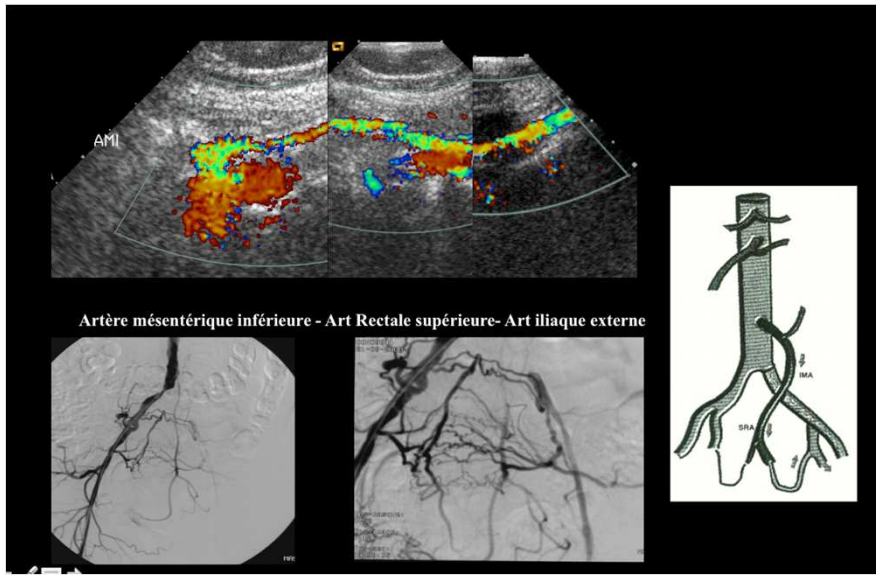
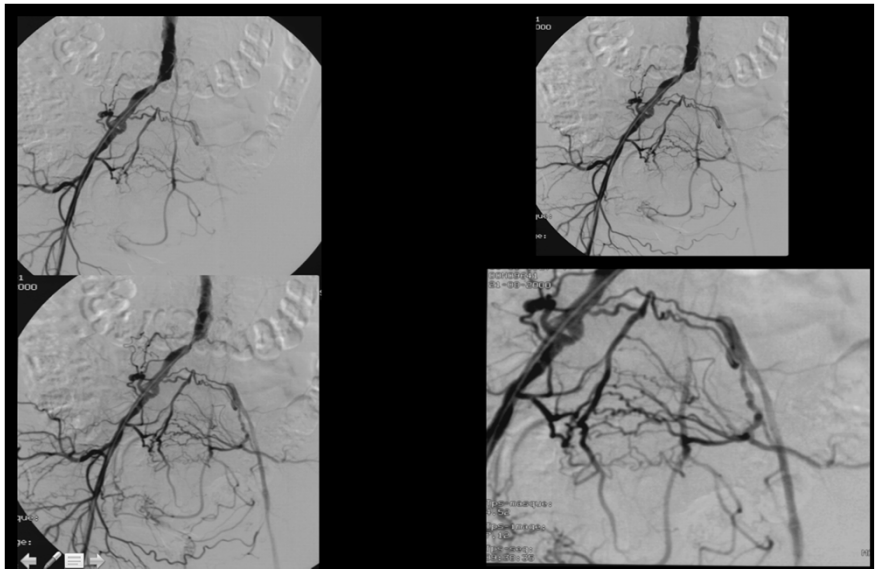
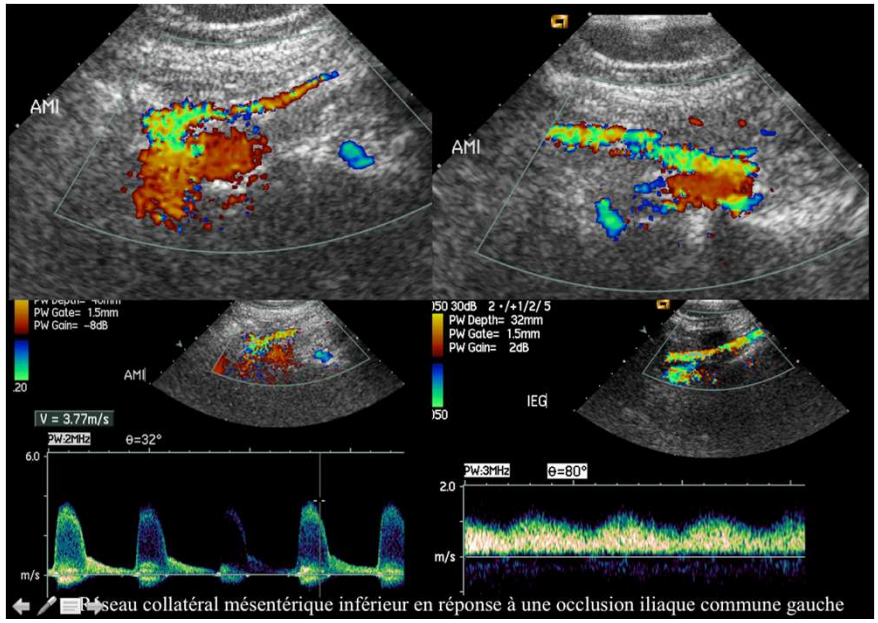
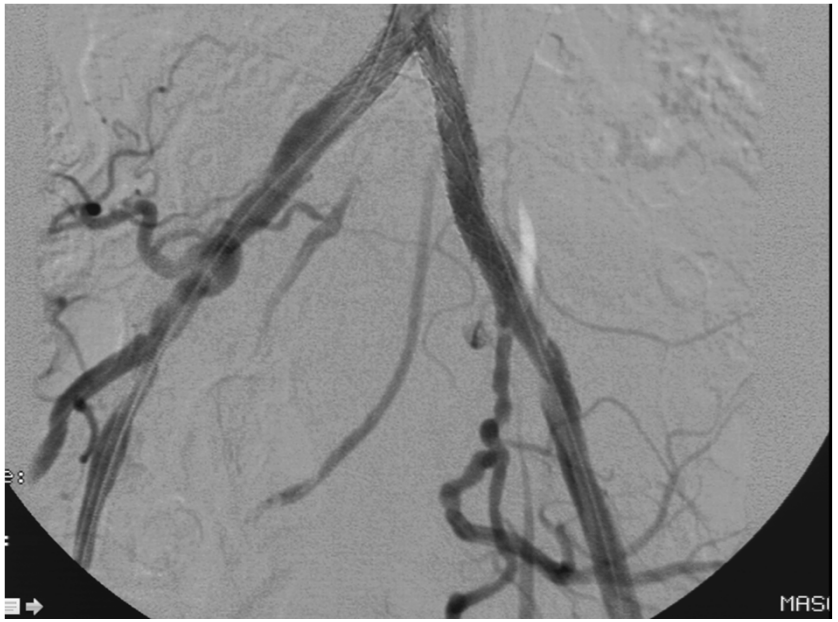
6.0
m/s







Réseau collatéral mésentérique inférieur en réponse à une occlusion iliaque commune gauche



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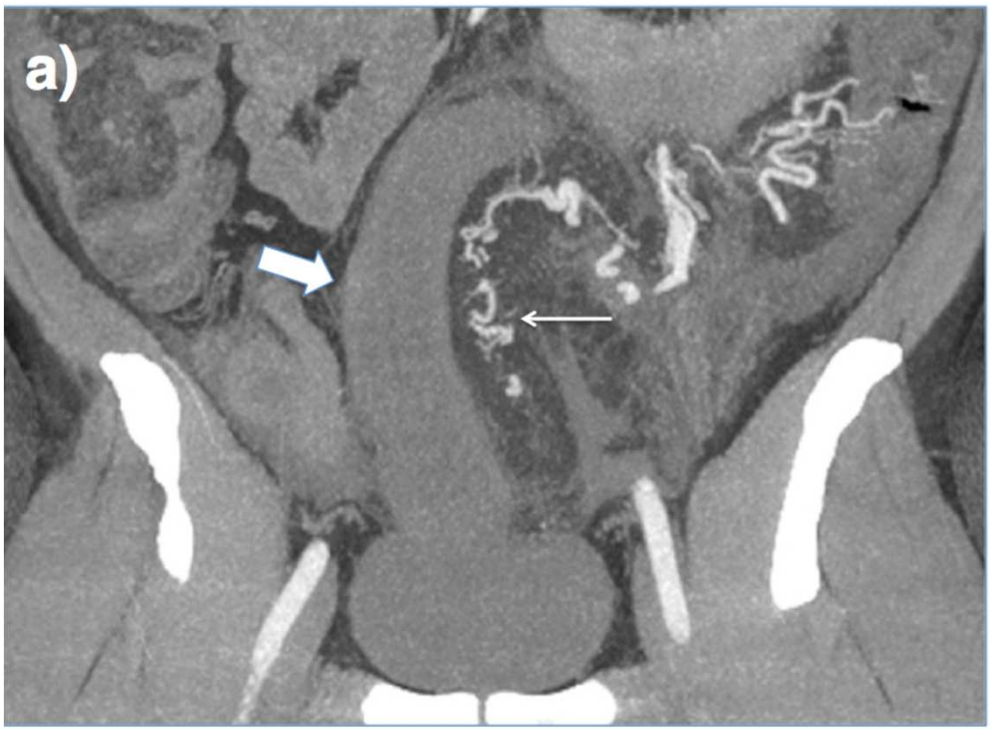
BMC Gastroenterology

CASE REPORT Open Access

Massive mesenteric panniculitis due to fibromuscular dysplasia of the inferior mesenteric artery: a case report

Andrew Mitchell[1*], Véronique Caty[2] and Yves Bendavid[3]



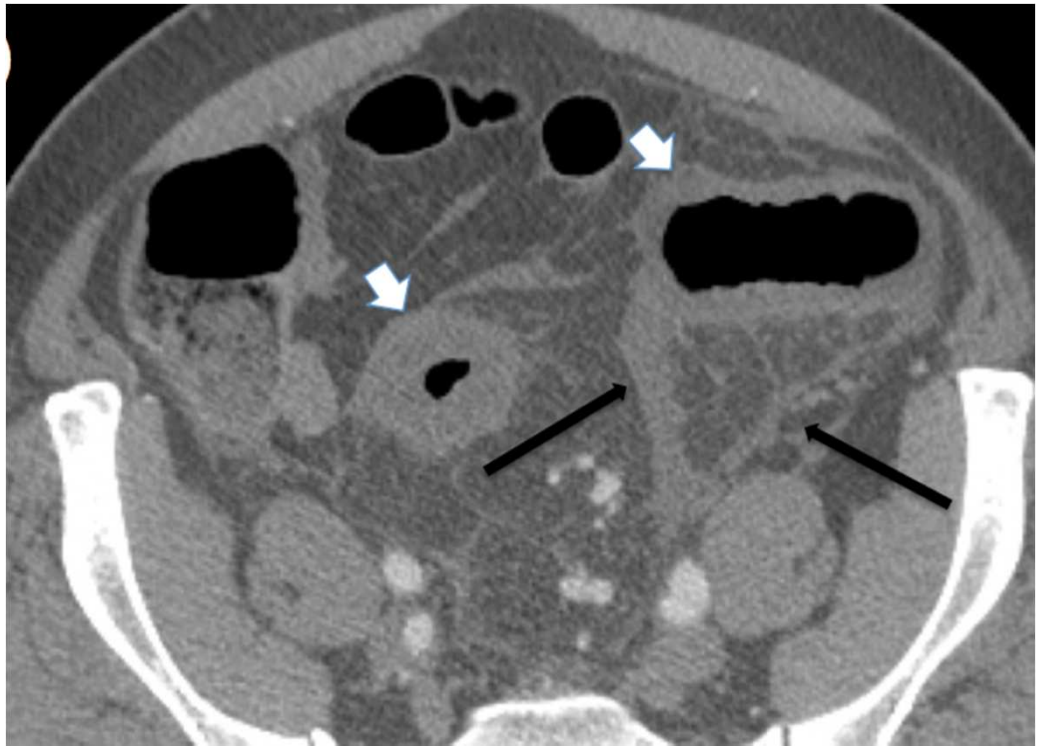


Table 2 Summary of reported cases of visceral fibromuscular dysplasia

	Male	Female
Number of cases[a]	25	50
Artery		
Celiac	3	9
SMA	5	12
IMA	1	-
Any combination of Celiac, SMA, IMA	6	21
Other[b]		
Hepatic	2	4
Splenic	5	1
Hepatic and splenic	-	1
Jejunal	1	1
Jejeunal and sigmoid	1	-
Middle colic	1	-
Superior rectal	-	1
Cephalocervical/renal involvement		
None	17	10
Cephalocervical	1	2
Renal	5	36
Both	2	2
Vessel layer		
Intima	7	3
Media	9	7
Intima and media	2	4

Plan

- anatomie de base
- Ischémie intestinale aiguë
- Autres anomalies
  - tronc coeliaque
  - artère mésentérique supérieure
  - artère mésentérique inférieure