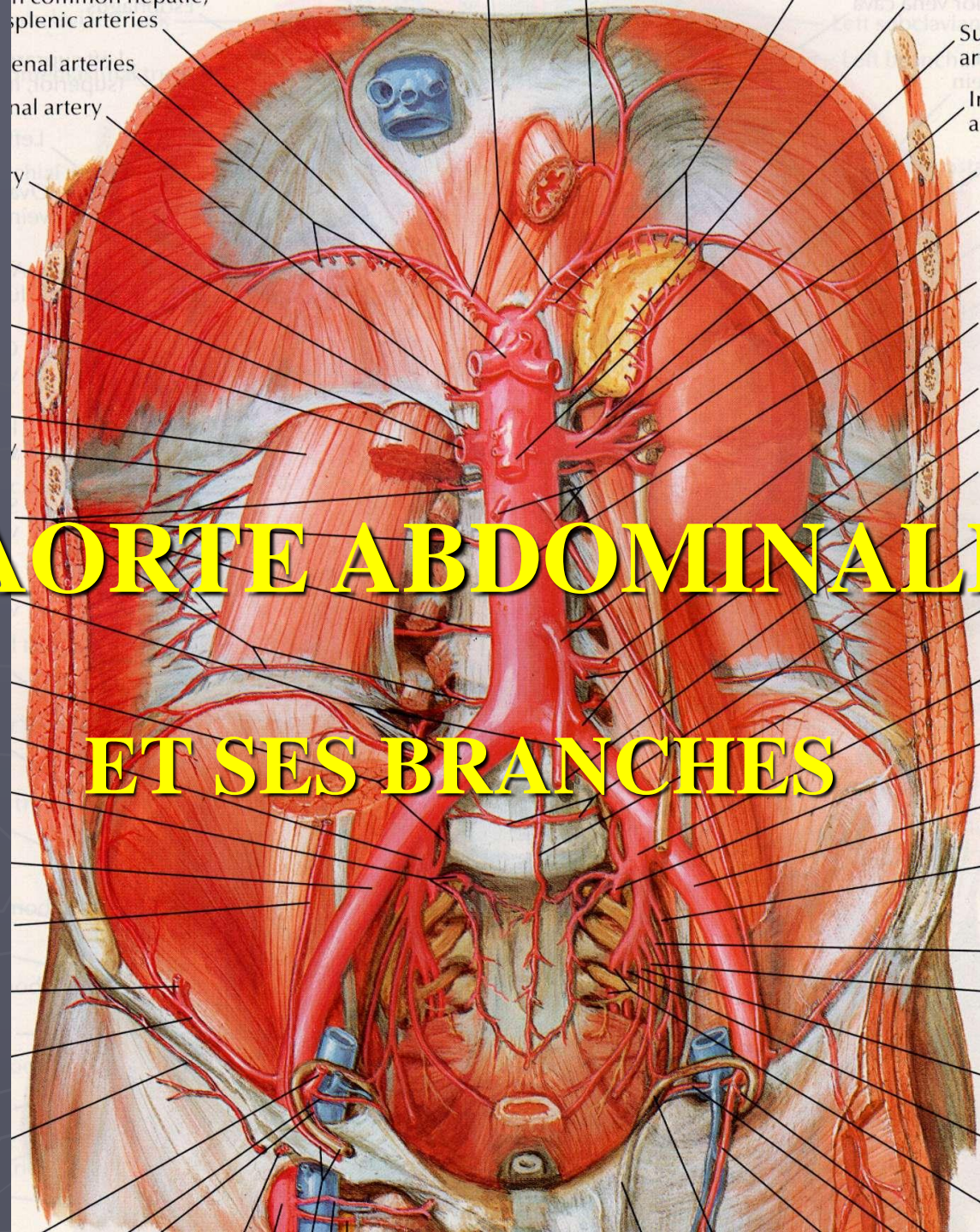




UNIVERSITÉ  
FRANÇOIS - RABELAIS  
TOURS

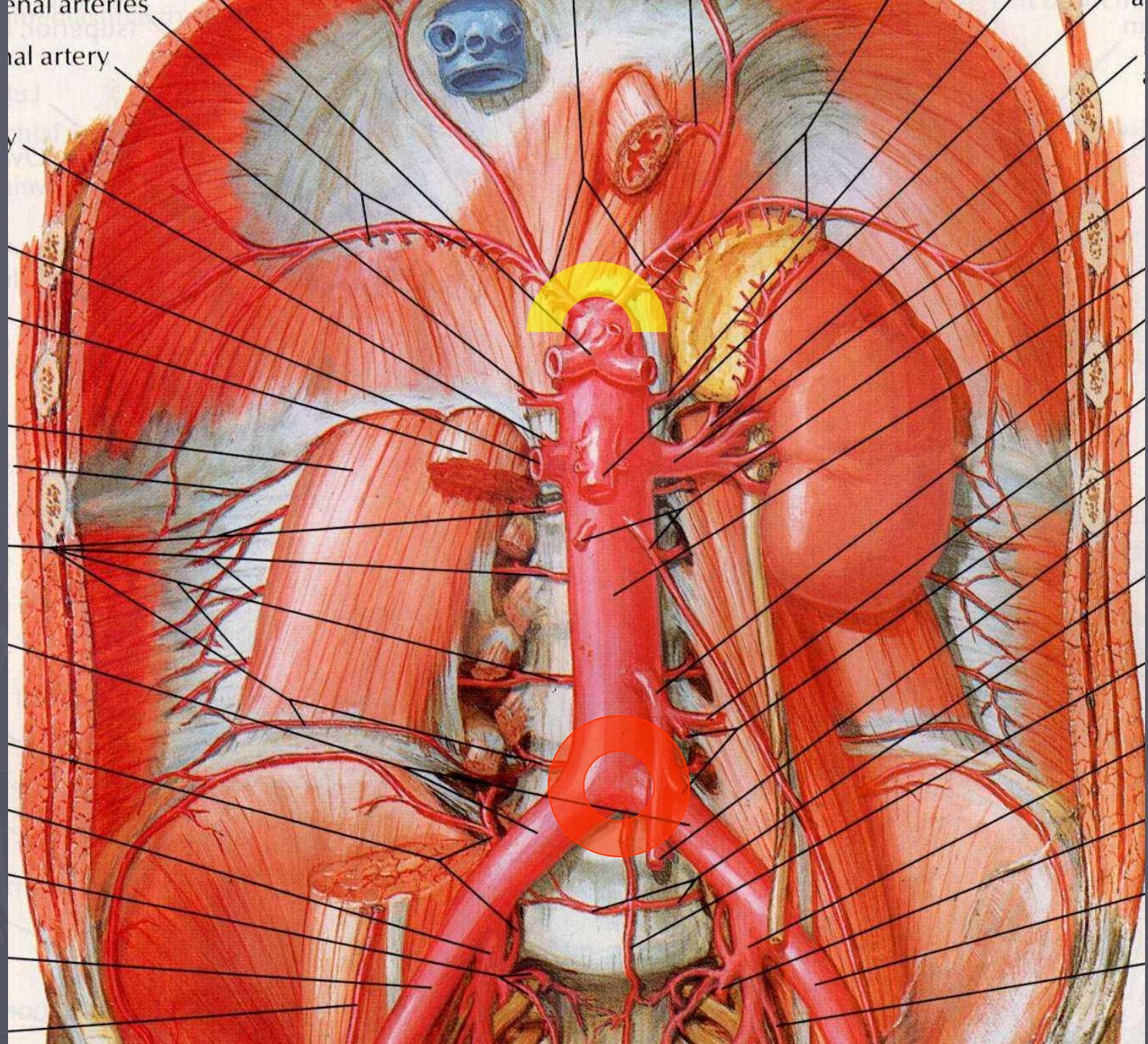
D. ALISON  
Avril 2014

# AORTE ABDOMINALE ET SES BRANCHES



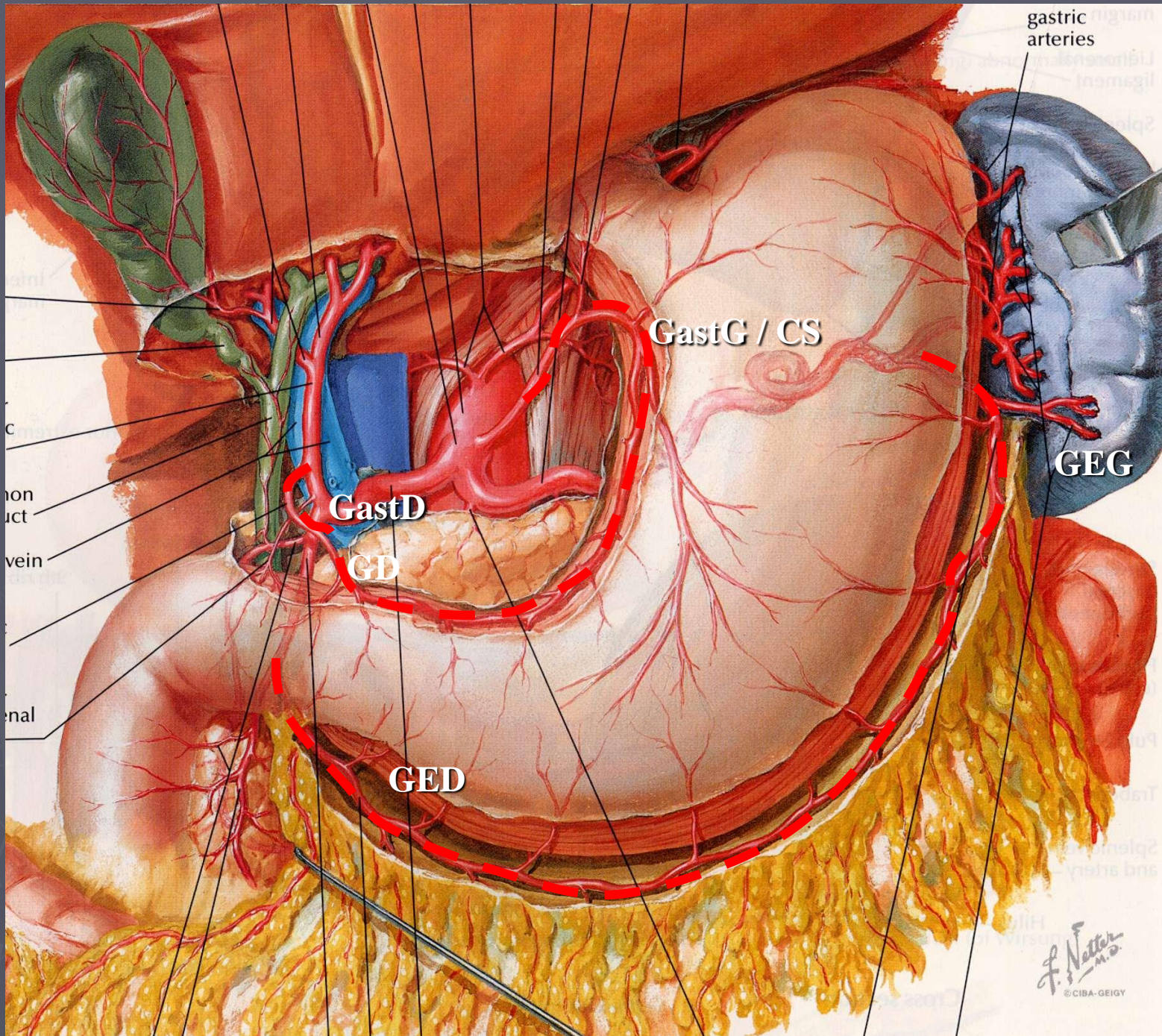
CHRU  
HÔPITAUX DE TOURS



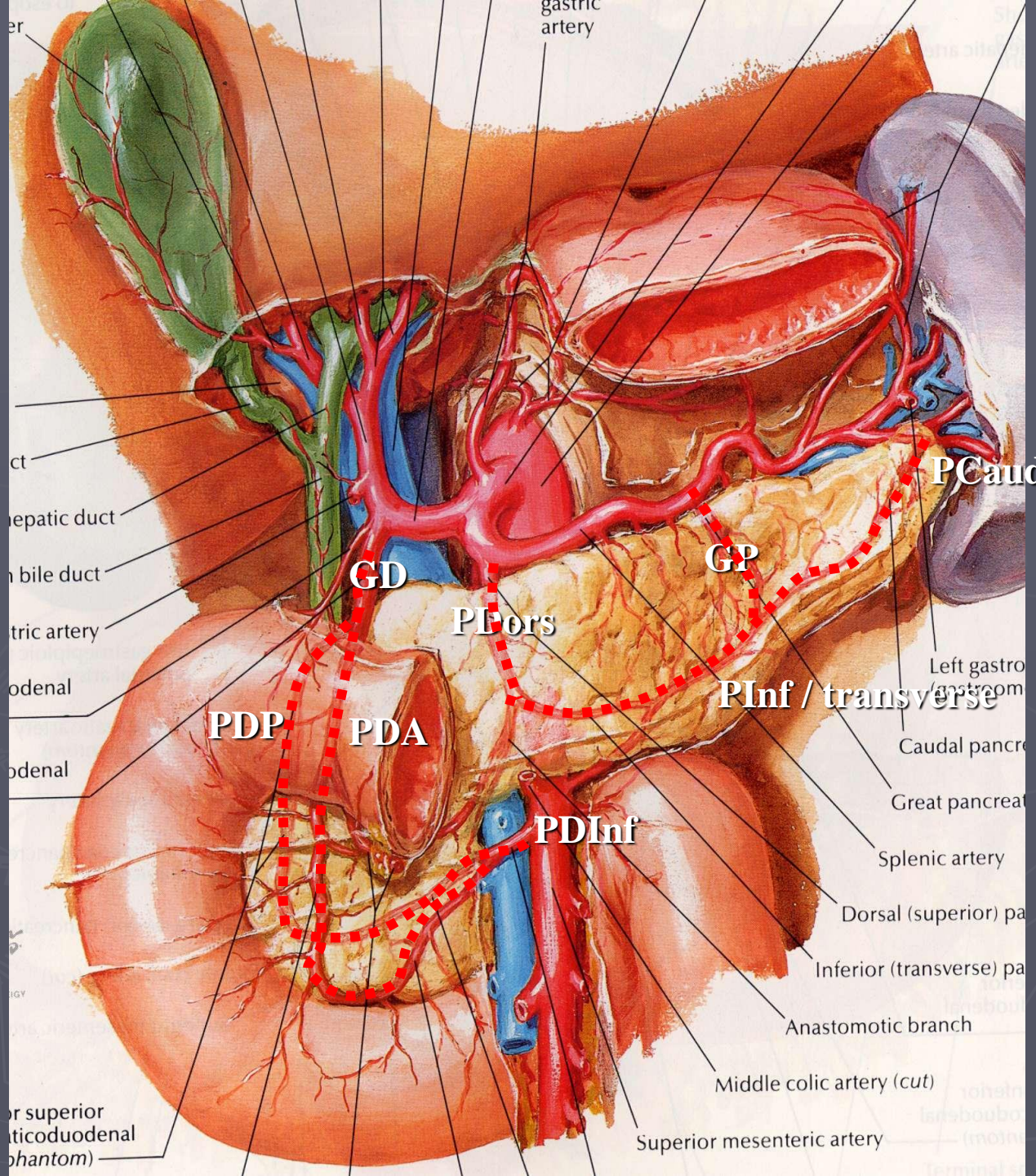


renal arteries  
al artery









er

gastric artery

ct

hepatic duct

n bile duct

tric artery

odenal

odenal

IGY

or superior  
tico, duodenal  
(phantom)

GD

PEors

PDP

PDA

PDIInf

GP

P, Inf / transverse

P, Caud

Left gastro  
antrum

Caudal pancre

Great pancreat

Splenic artery

Dorsal (superior) pa

Inferior (transverse) pa

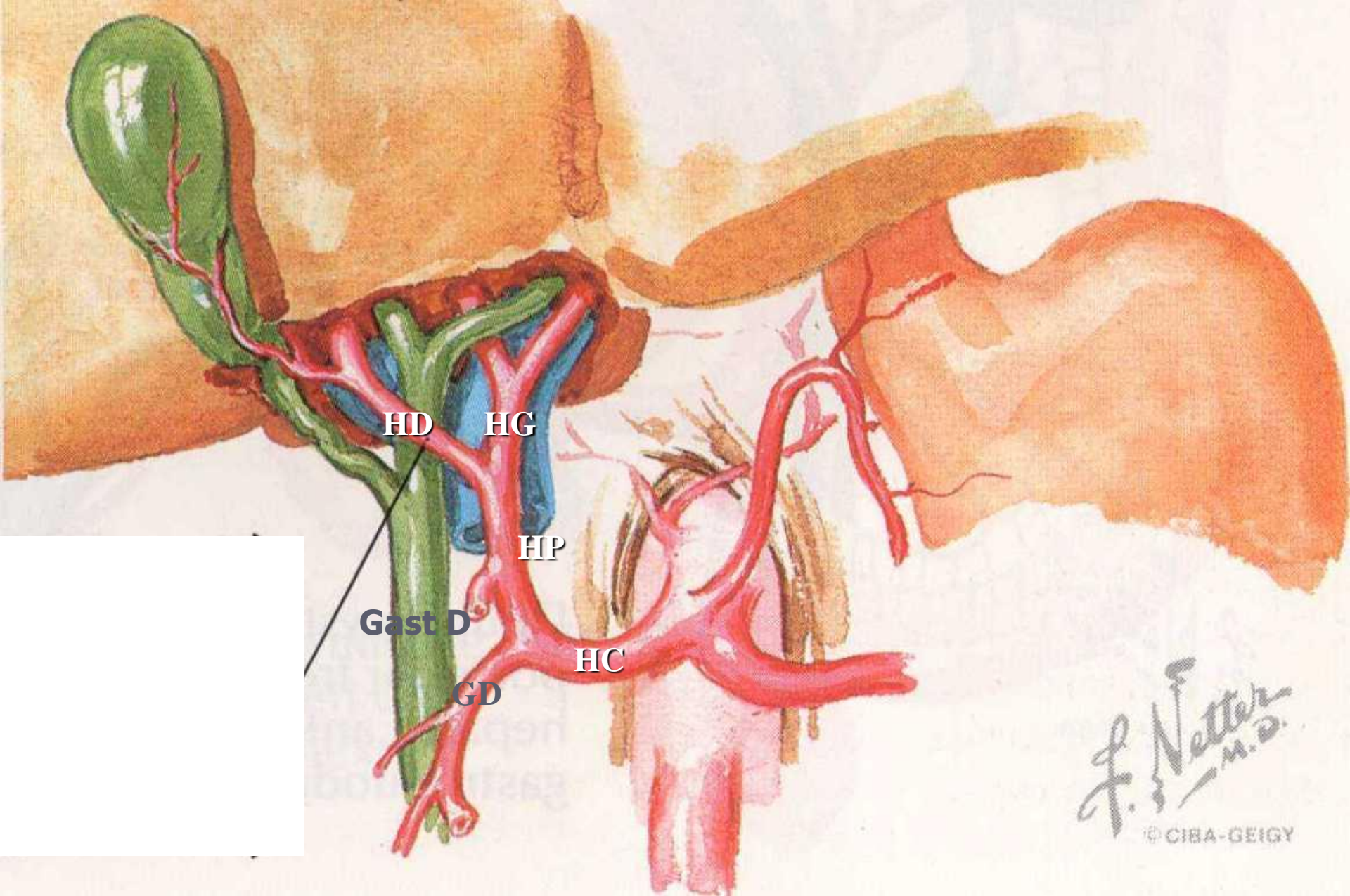
Anastomotic branch

Middle colic artery (cut)

Superior mesenteric artery



# A. Hepatique moyenne (TC) / foie total = 75%





**A.Hépatique moyenne**

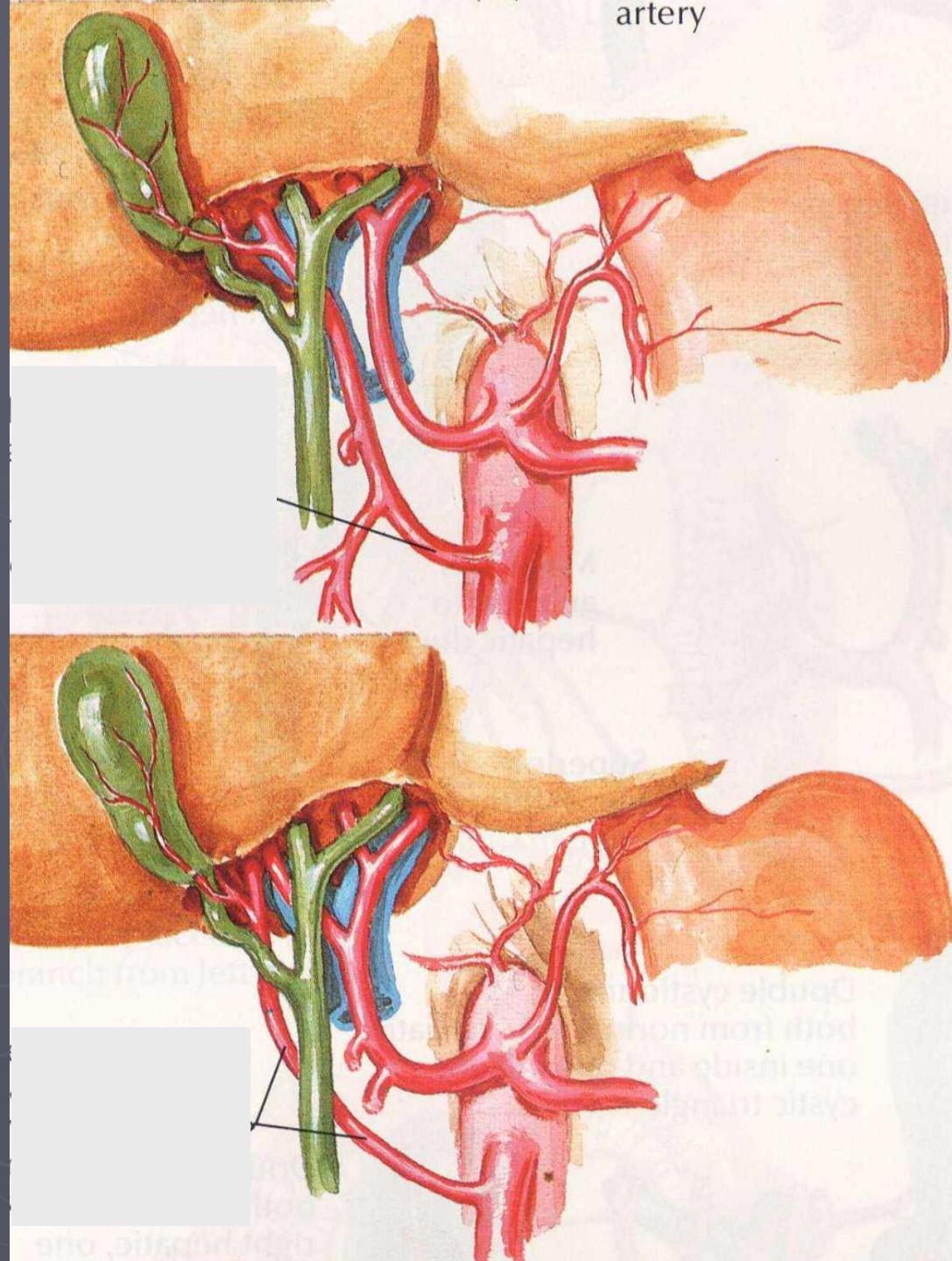
(TC)

+

**A.Hépatique droite**

(Mésentérique Sup.)

**= 20%**





**A. Hépatique moyenne**

**+**

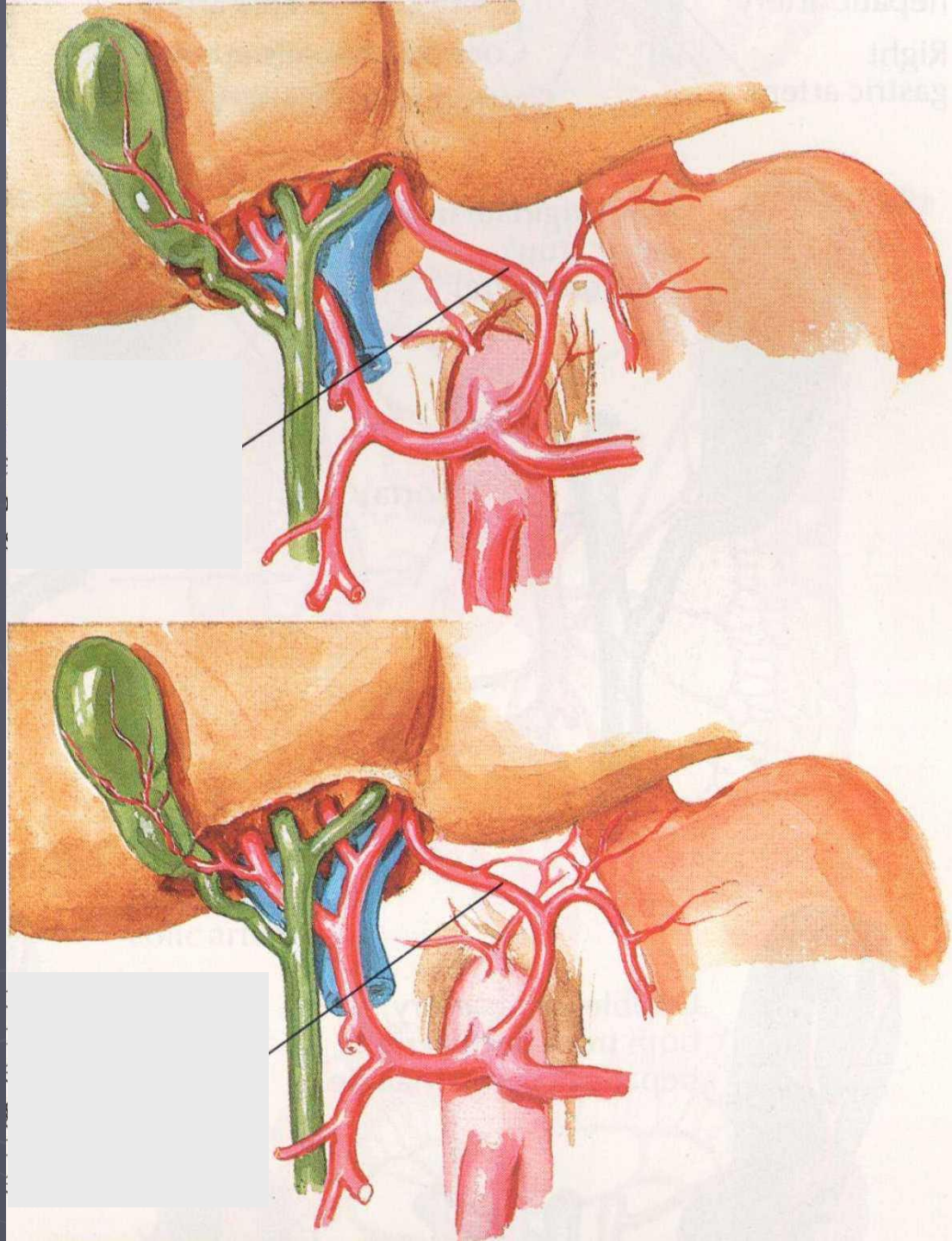
**A. Hépatique gauche**

**(Coronaire stom.)**

**ou**

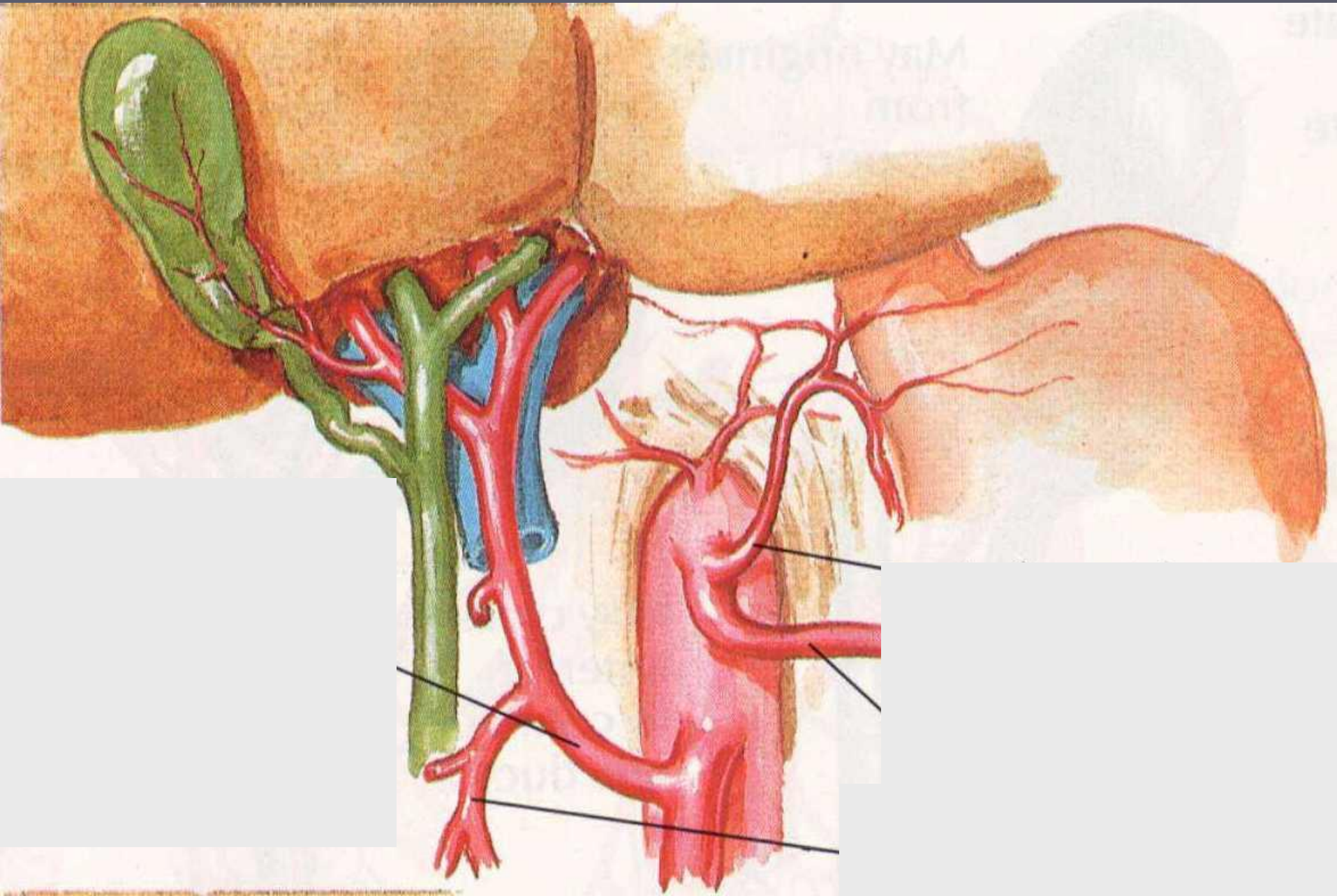
**Gastrique G**

**= 10%**

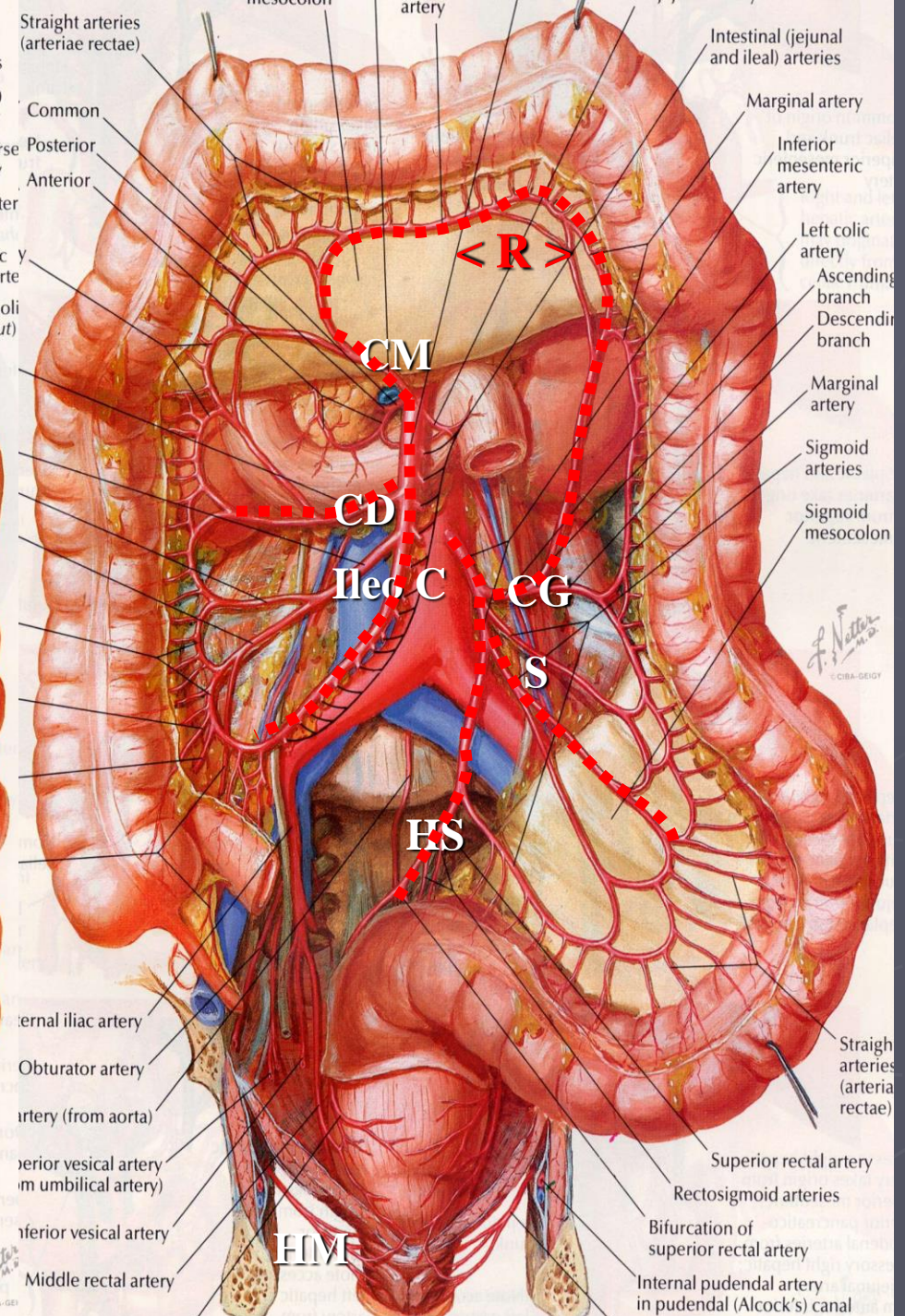
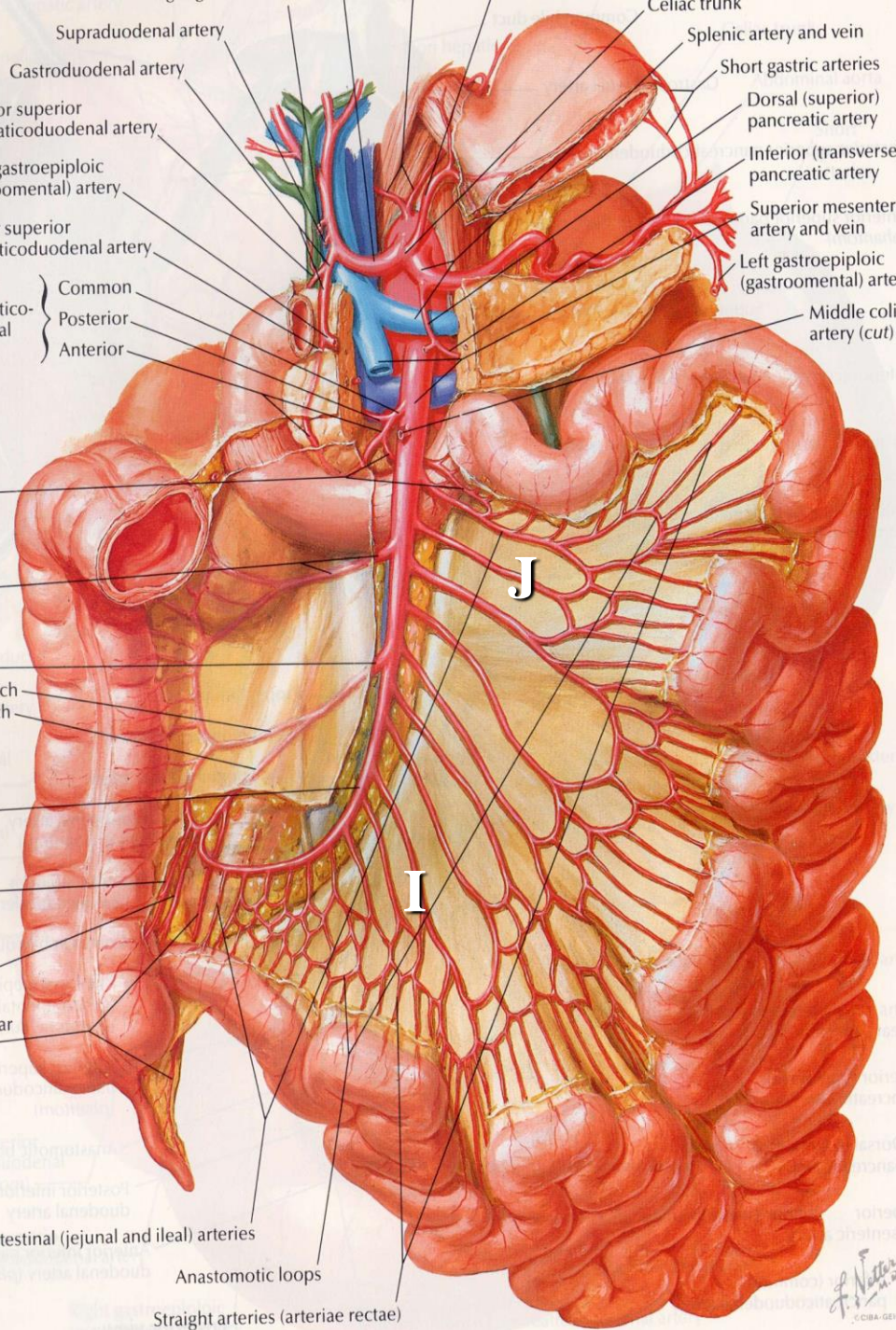




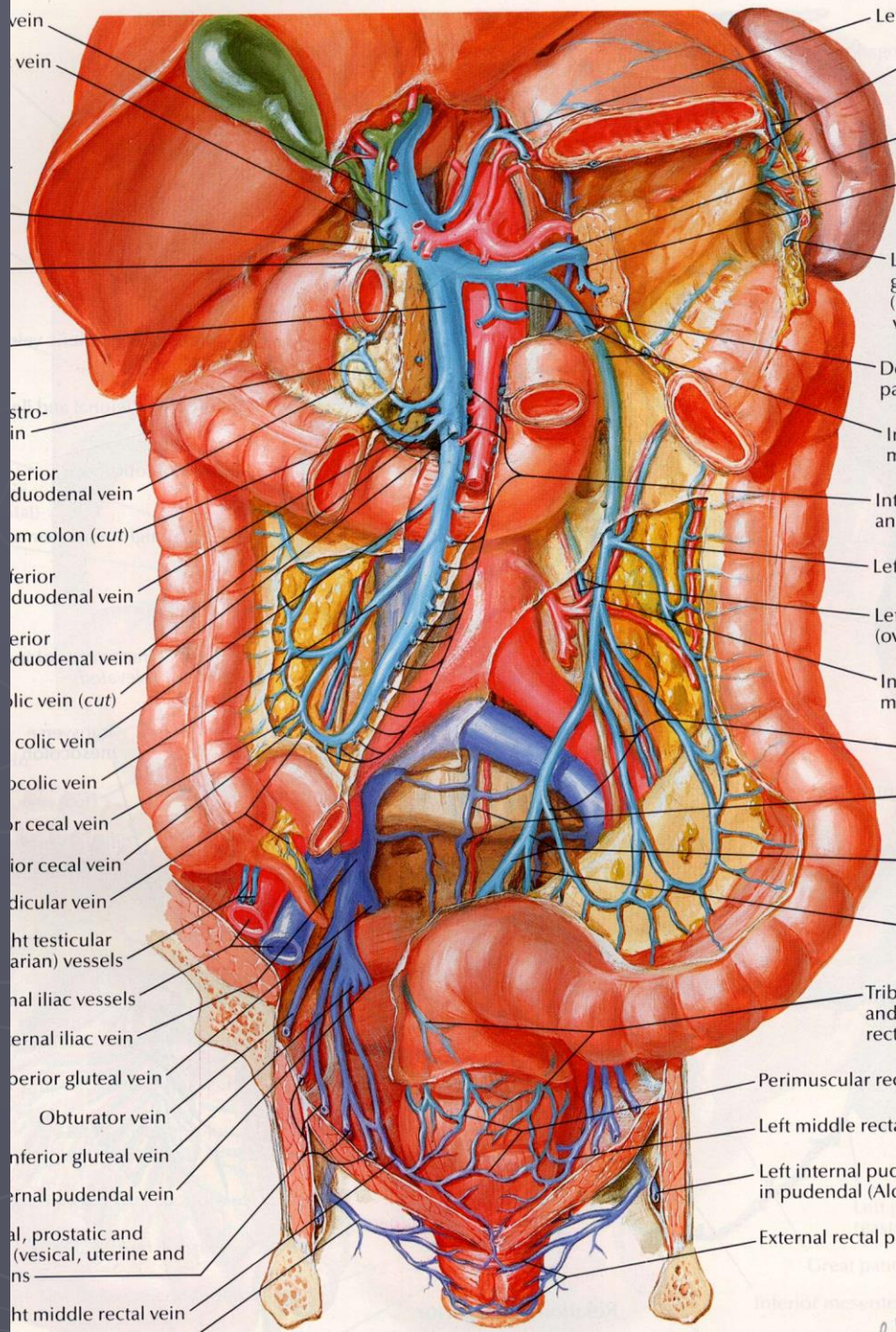
# A.hépatique droite, seule A.hépatique = 3%







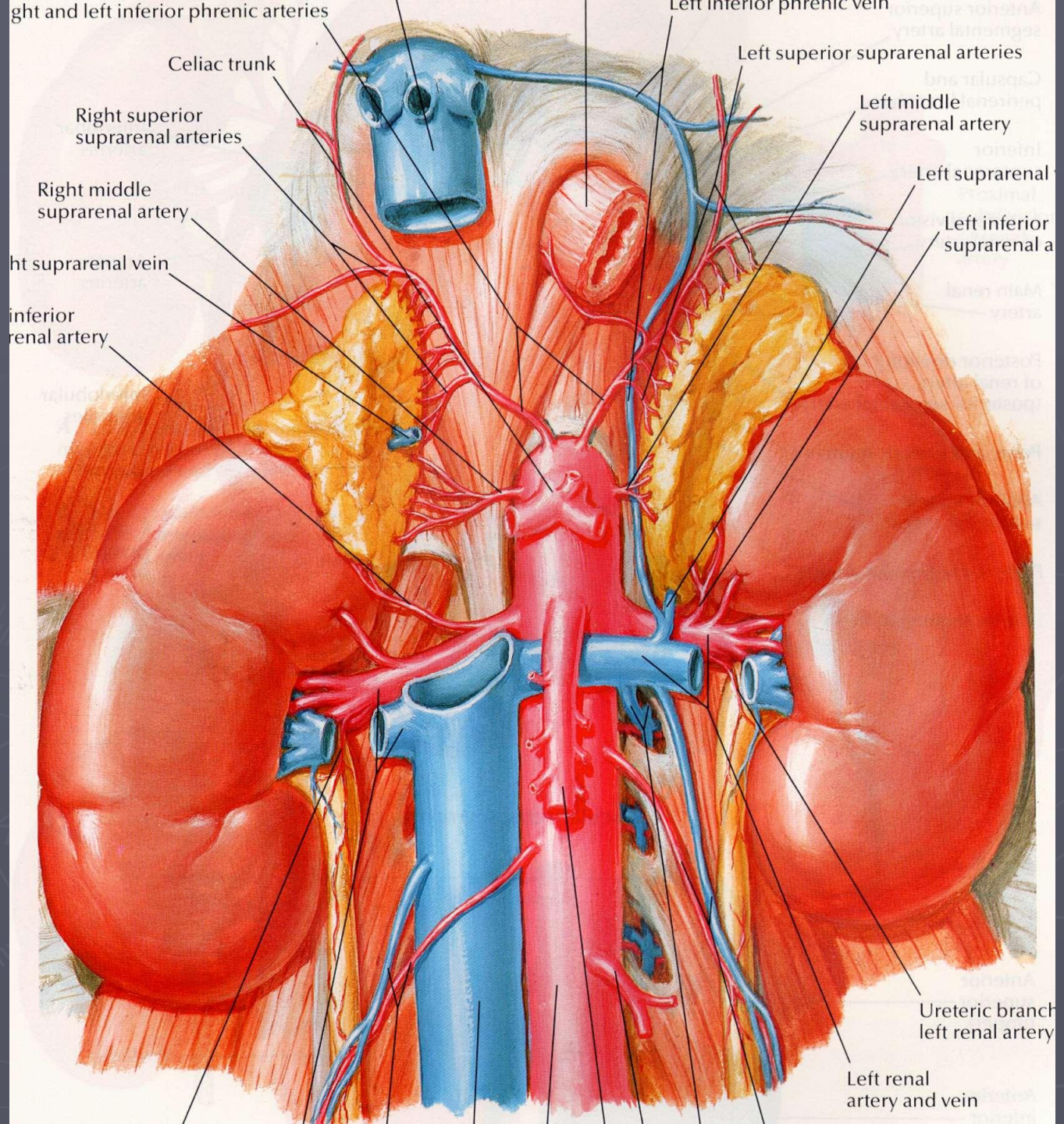




vein  
 vein  
 stro-  
 in  
 perior  
 duodenal vein  
 om colon (*cut*)  
 ferior  
 duodenal vein  
 erior  
 duodenal vein  
 ublic vein (*cut*)  
 colic vein  
 ocolic vein  
 or cecal vein  
 or cecal vein  
 idicular vein  
 ht testicular  
 (arian) vessels  
 nal iliac vessels  
 ernal iliac vein  
 oerior gluteal vein  
 Obturator vein  
 nferior gluteal vein  
 ernal pudendal vein  
 al, prostatic and  
 (vesical, uterine and  
 ns  
 ht middle rectal vein

Le  
 g  
 (V  
 Do  
 pa  
 In  
 m  
 Int  
 an  
 Left  
 Left  
 (ov  
 In  
 m  
 Trib  
 and  
 rect  
 Perimuscular rec  
 Left middle recta  
 Left internal pud  
 in pudendal (Alc  
 External rectal p







# EXPLORATIONS

## ► Techniques angiographiques pures

Rehaussement du sang circulant

= visualisation du flux circulant / images indirectes de la paroi

= cartographie des vaisseaux perméables

> **Artériographie / ARM**

## Techniques mixtes

= angiographie + paroi + environnement

> **Echo / Scanner / IRM**



# Techniques angiographiques pures

- ▶ Réhaussement du sang circulant (pdc)
- ▶ Effacement des structures adjacentes
- ▶ Images indirectes des lésions pariétales
- ▶ Manque les lésions non circulantes



# AORTOGRAPHIE GLOBALE





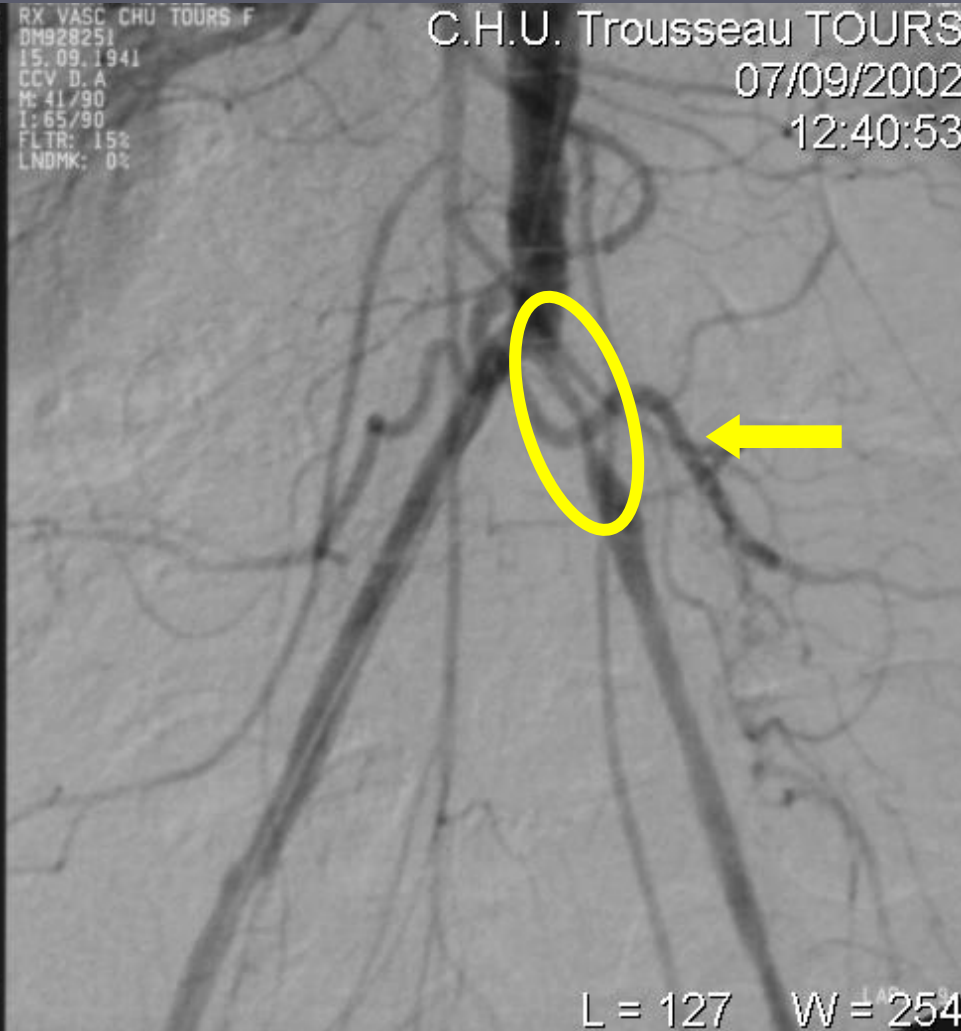
Ex. 1  
Se. 1  
Im. 97

29-Aou-02 RX VASC CHU TOURS F  
09:00:03 DM928251  
Scene: 1 15.09.1941  
W-B: 674 CCV D. A  
W-C: 62 M: 41/90  
X: 0.0 I: 65/90  
Y: 0.0 FLTR: 15%  
LNDMK: 0%

C.H.U. Trousseau TOURS  
07/09/2002  
12:40:53

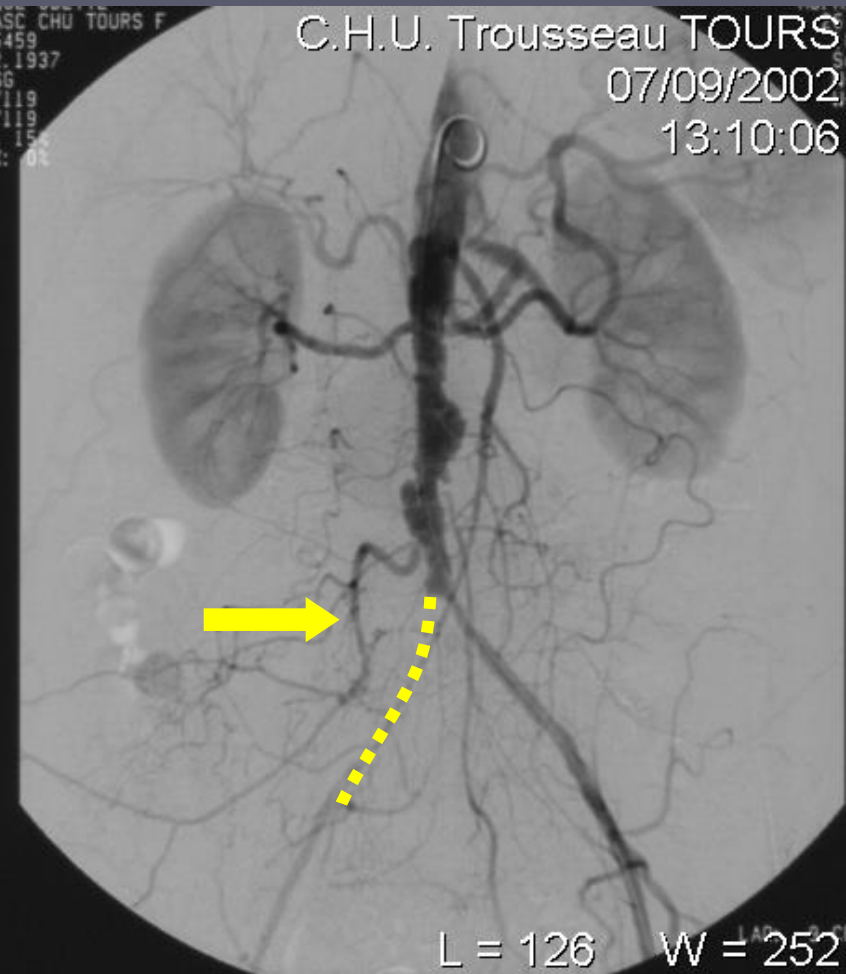
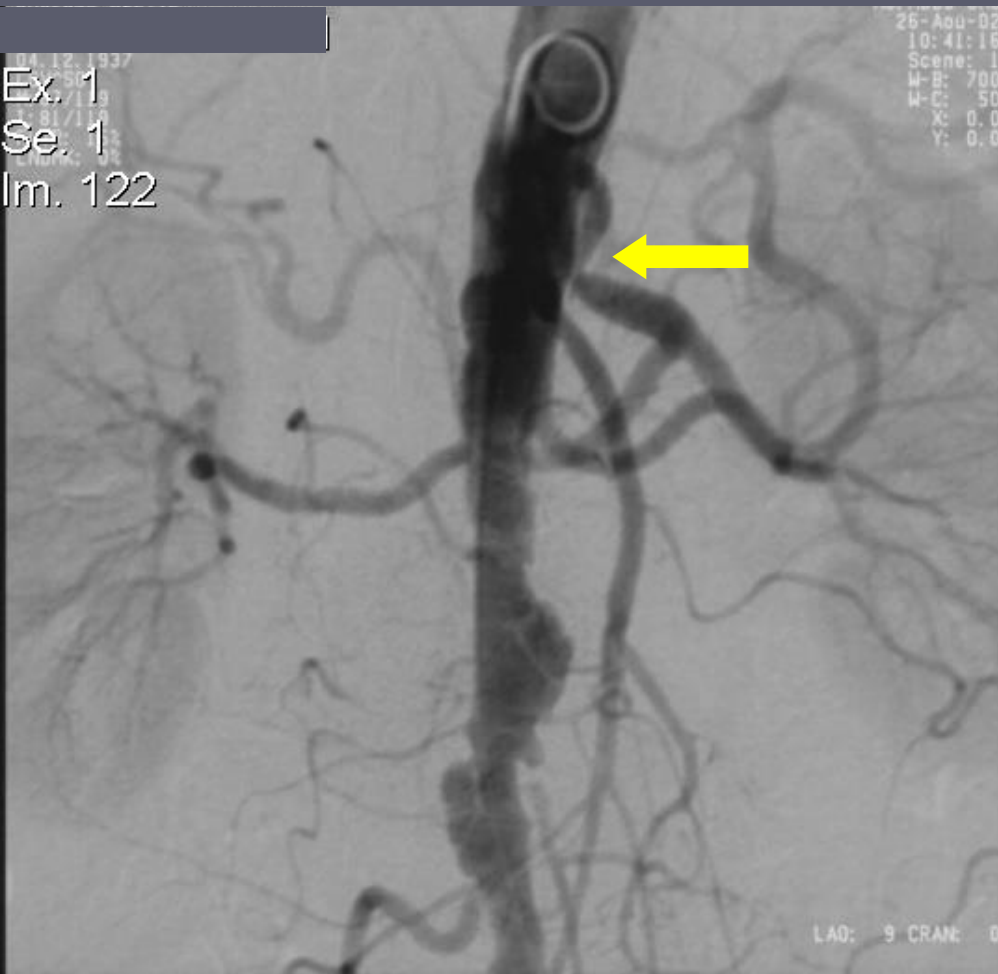


LAO: 9 CRAN: 0



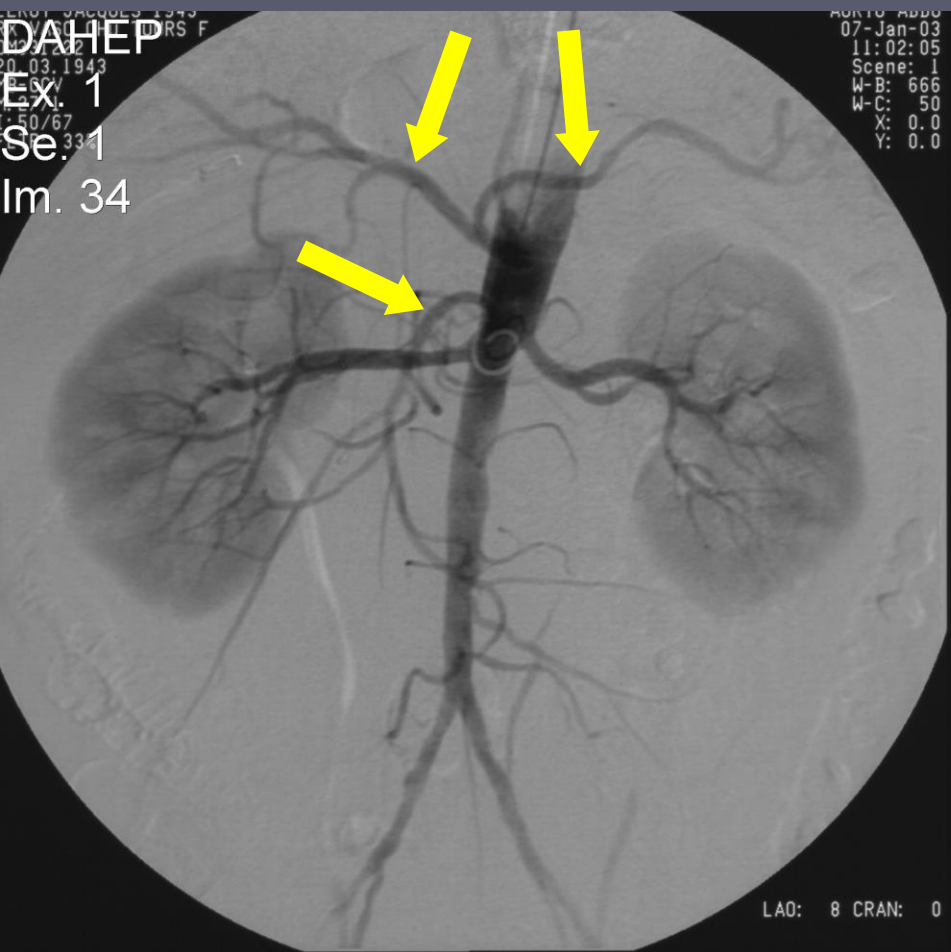
L = 127 W = 254





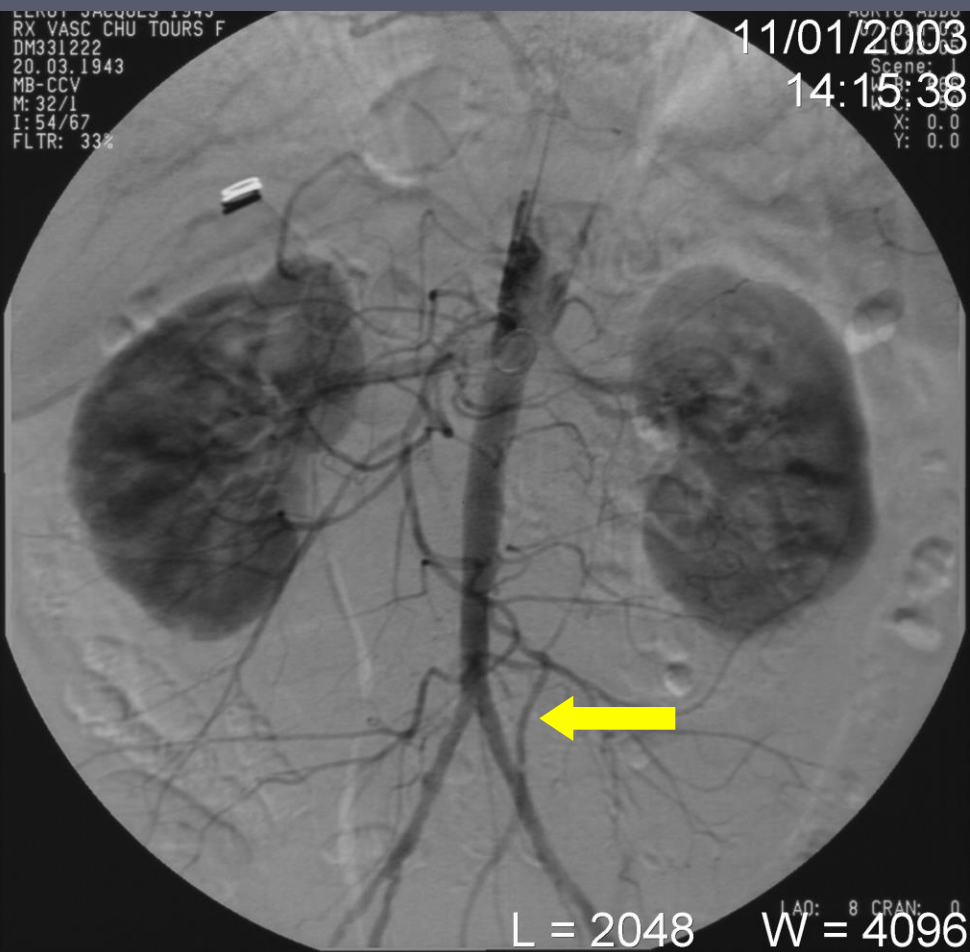


DAHEP  
Ex. 1  
Se. 1  
Im. 34



07-Jan-03 RX VASC CHU TOURS F  
11:02:05 DM331222  
Scene: 1 20.03.1943  
W-B: 666 MB-CCV  
W-C: 50 M: 32/1  
X: 0.0 I: 54/67  
Y: 0.0 FLTR: 33%

11/01/2003  
14:15:38



LAO: 8 CRAN: 0

L = 2048

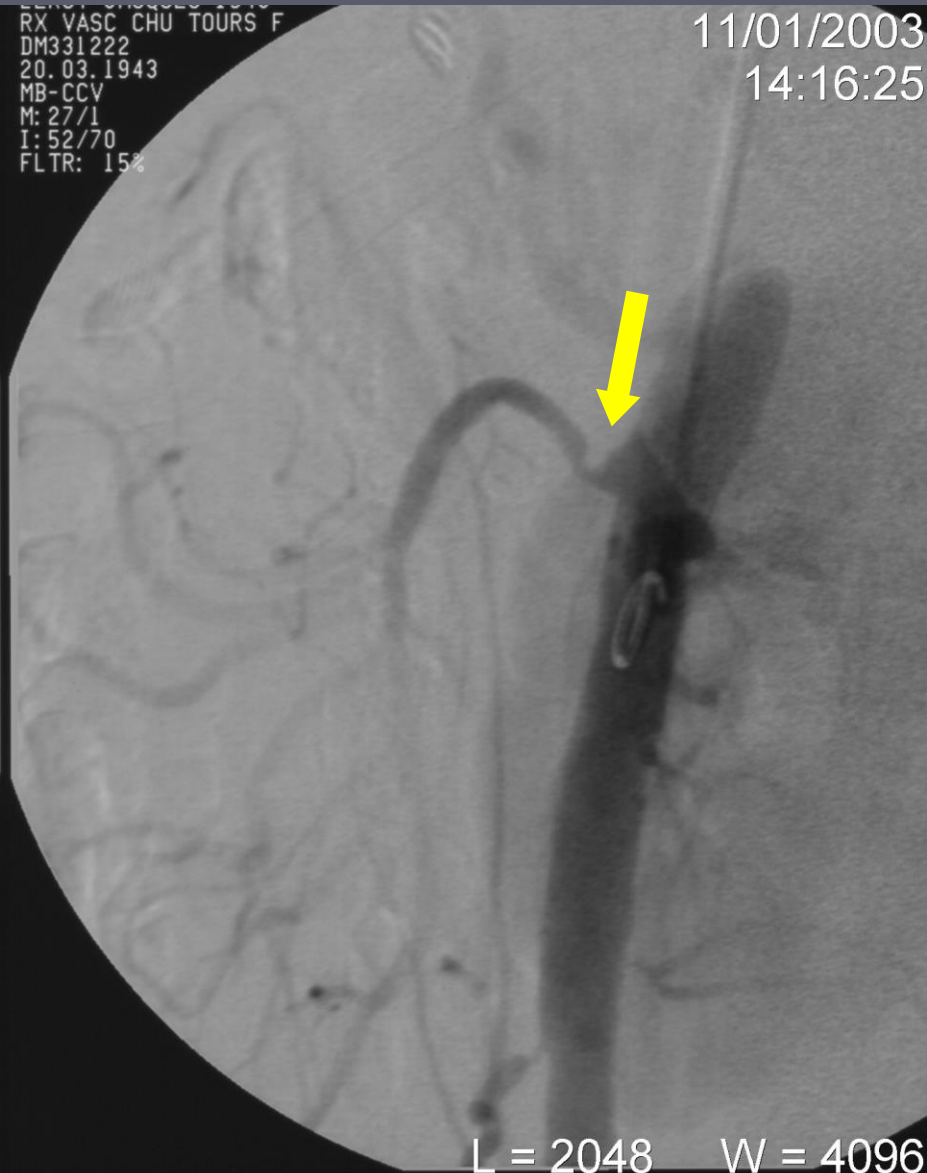
W = 4096



DAHEP  
Ex. 1  
Se. 1  
Im. 35

07-Jan-03 RX VASC CHU TOURS F  
11:05:19 DM331222  
Scene: 3 20.03.1943  
W-B: 642 MB-CCV  
W-C: 58 M: 27/1  
X: 0.0 I: 52/70  
Y: 0.0 FLTR: 15%

11/01/2003  
14:16:25

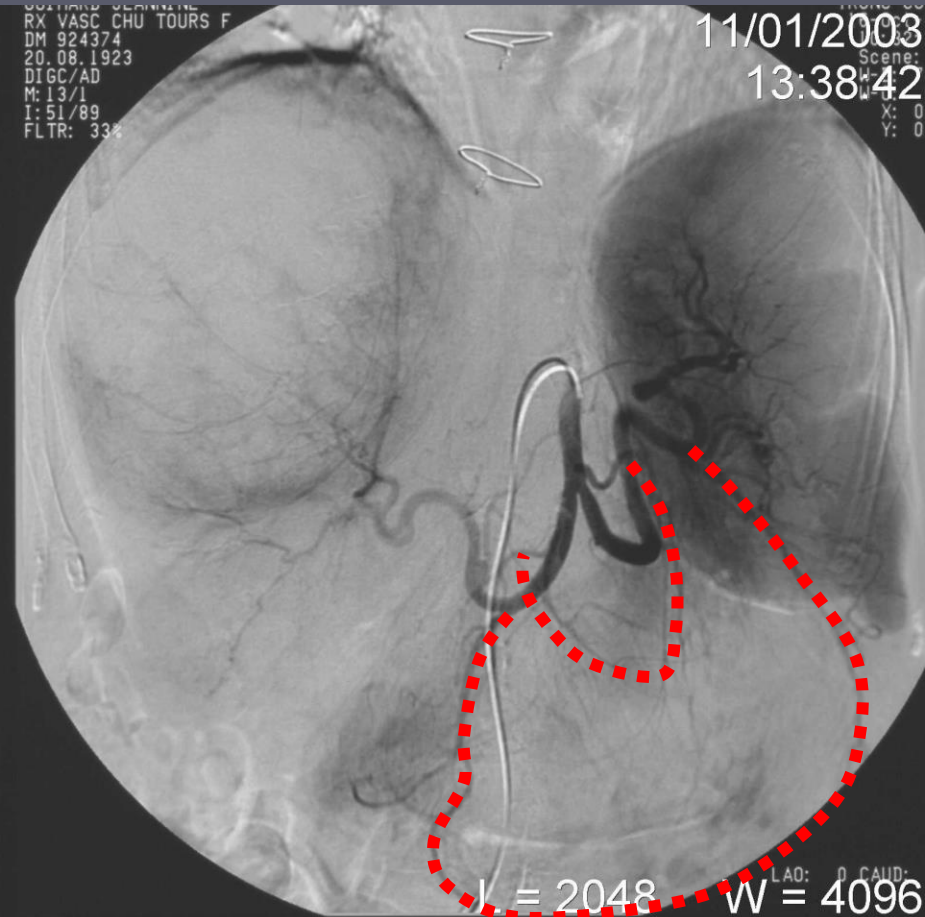
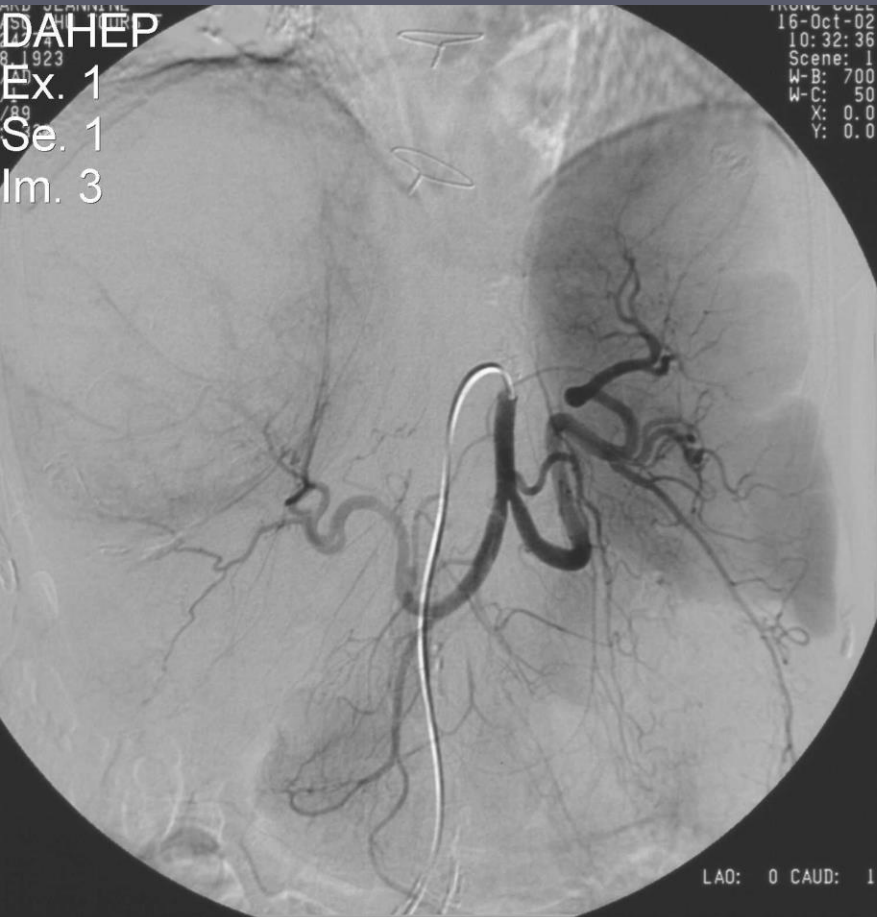


LAO: 90 CRAN: 0

L = 2048 W = 4096



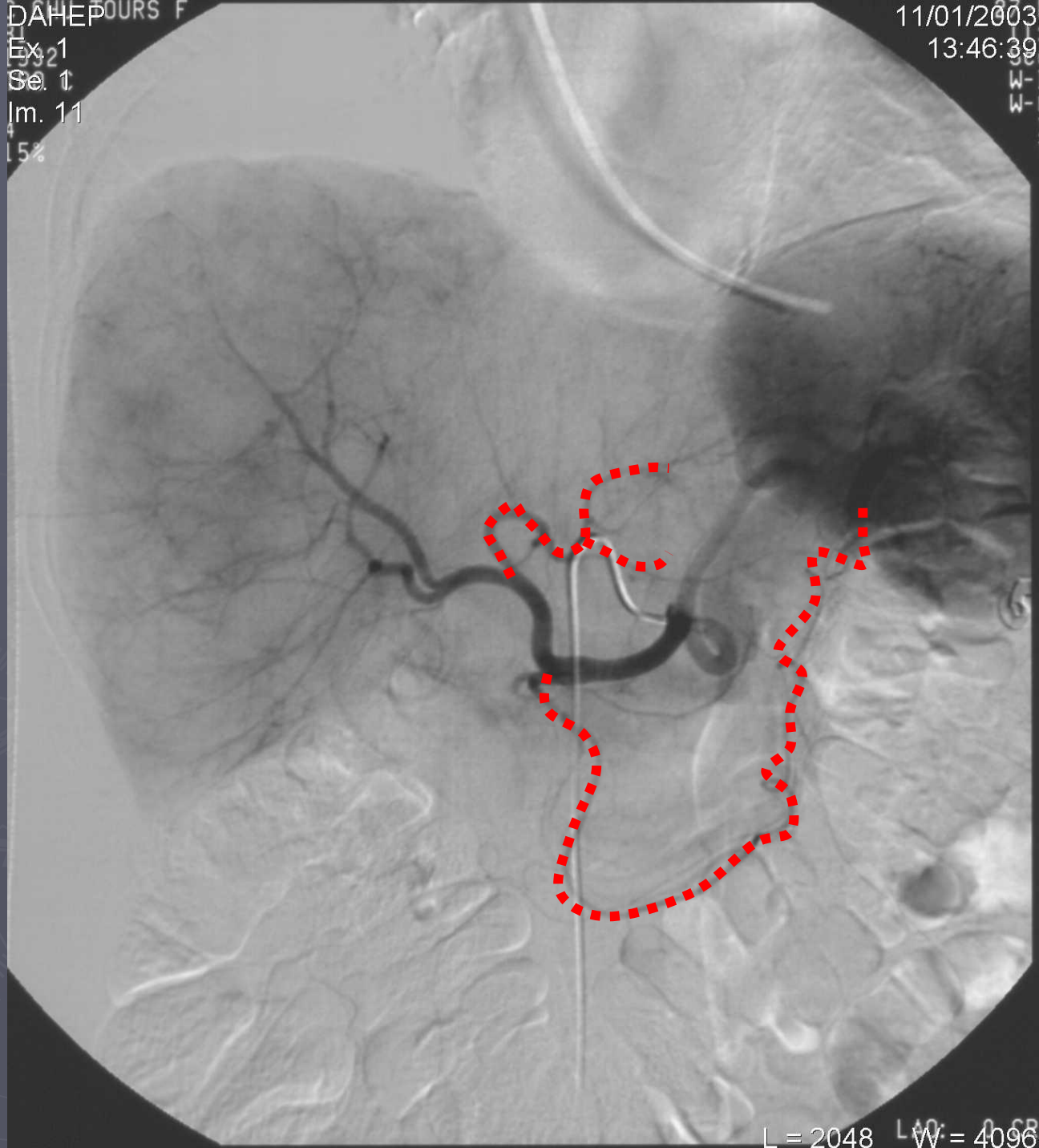
# ARTERIOGRAPHIE SELECTIVE





DAHEPOURS F  
Ex. 1  
Se. 1  
Im. 11  
15%

11/01/2003  
13:46:39



L = 2048 L A0: 0 CB  
W = 4096



CHU TOURS F  
1932  
C  
DAHEP

Ex. 1  
Se. 1  
Im. 12

27-NOV-02  
11:41:45  
Scene: 1  
W-B: 700  
W-C: 50  
X: 0.0  
Y: 0.0

RX VASC CHU TOURS F  
DM898481  
02.01.1932  
AD-GASTRO C  
M: 13/1  
I: 76/92  
FLTR: 30%

11/01/2003  
13:47:13



LAO: 0 CRAN: 0



L = 2048 W = 4096



DAHEP  
945  
Ex. 1  
Se. 1  
Im. 5

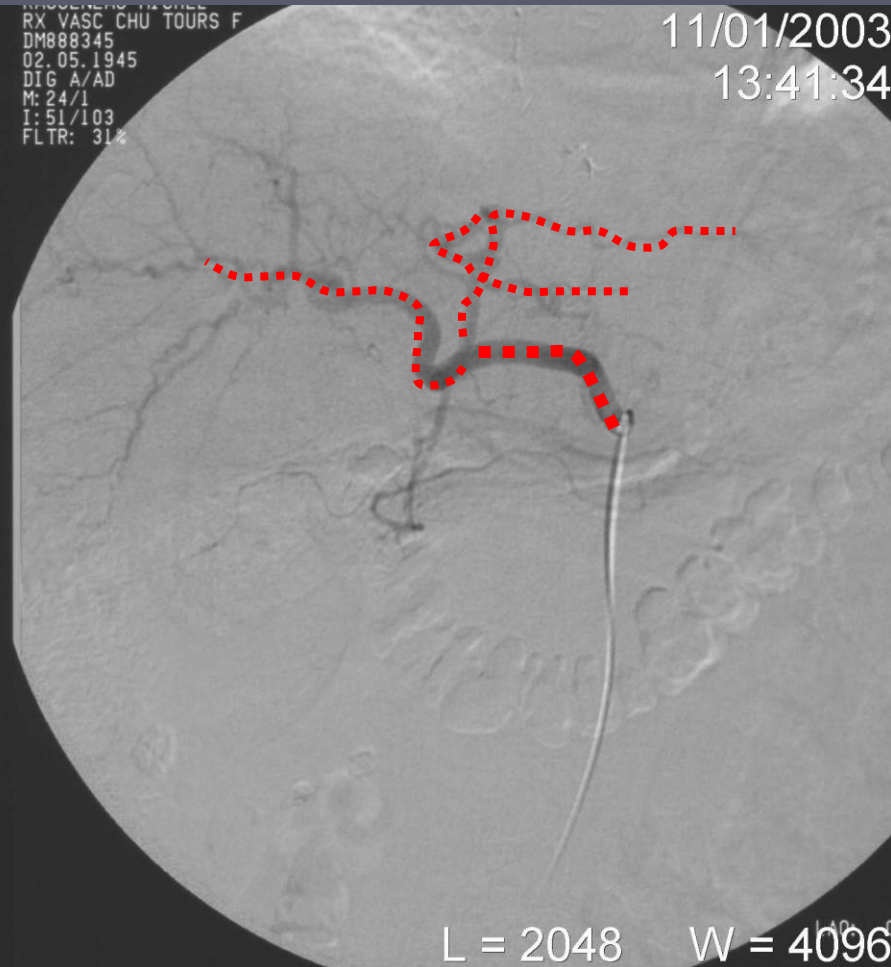
11-Dec-02  
09:27:44  
Scene: 1  
W-B: 682  
W-C: 54  
X: 0.0  
Y: 0.0

RX VASC CHU TOURS F  
DM888345  
02.05.1945  
DIG A/AD  
M: 24/1  
I: 51/103  
FLTR: 31%

11/01/2003  
13:41:34



LAO: 0 CAUD: 1

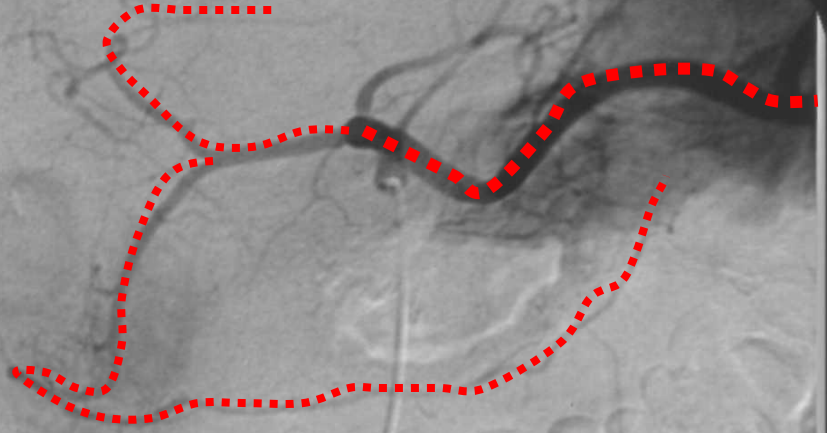


L = 2048 W = 4096

PATIENT: MICHEL  
DAHER  
EX. 119583  
CHU TOURS F  
19.00.1938  
Se. 1  
GAS C/AD  
Im 14  
I: 54/74  
FLTR: 31%

11/01/2003  
18:52:17  
Scene: 2  
W-B: 700  
W-C: 50  
X: 0.0  
Y: 0.0

?

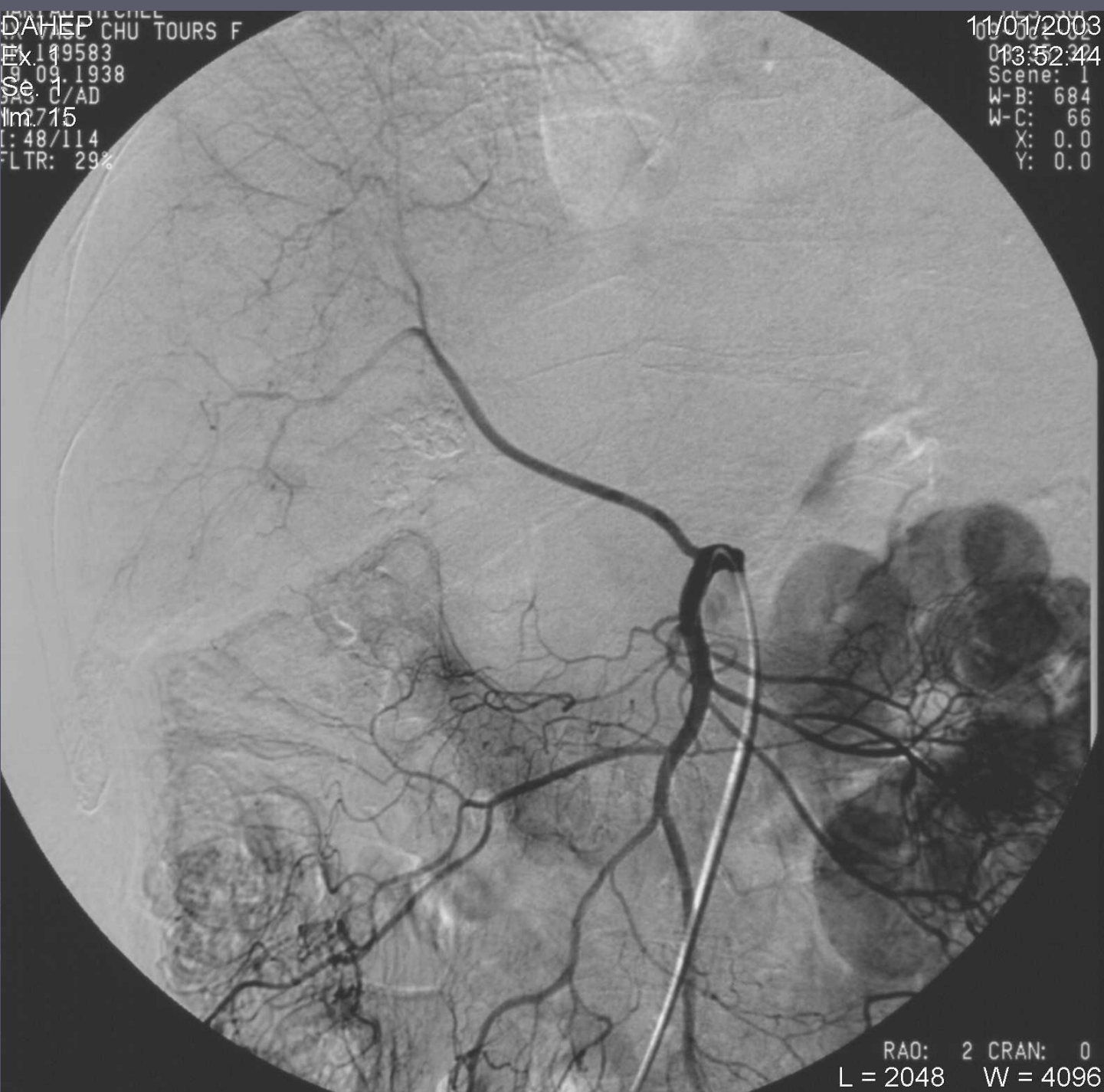


RAO: 2 CRAN: 0  
L = 2048 W = 4096



DAHEP  
CHU TOURS F  
Ex: 109583  
B: 09.1938  
Se: 1  
SAS: C/AD  
Im: 715  
I: 48/114  
FLTR: 29%

11/01/2003  
09:55:20  
13:52:44  
Scene: 1  
W-B: 684  
W-C: 66  
X: 0.0  
Y: 0.0



RAO: 2 CRAN: 0  
L = 2048 W = 4096

DAHEP CHU TOURS F  
PM 189583  
Ex: 1  
S: 09.1938  
Se: 1  
Im: 16  
I: 15/21  
FLTR: 30%

11/01/2003  
09:46:57  
13:53:40  
Scene: 3  
W-B: 686  
W-C: 60  
X: 0.0  
Y: 0.0



RAO: 2 CRAN: 0  
L = 2048 W = 4096



DAHER CHU TOURS F  
DM518880  
Ex 1  
02.03.1955  
Se 1  
FD-DIG C  
M: H/1  
Im: 19  
I: 40/106  
FLTR: 15%

11/01/2003  
09:58:02  
Scene: 1  
W-B: 654  
W-C: 54  
X: 0.0  
Y: 0.0



L = 2048 W = 4096

DAHER  
02.103.1955  
Se 1  
Im: 20  
FLTR: 15%

11/01/2003  
13:58:43  
W-B: 700  
W-C: 50  
X: 0.0  
Y: 0.0



L = 2048 W = 4096



DAHEP  
CHU TOURS F  
EX 1  
Se 1  
Im 125  
I: 42/112  
FLTR: 15%

11/01/2003  
14:03:08  
Scene: 3  
W-B: 700  
W-C: 50  
X: 0.0  
Y: 0.0



LAO: 0 CRAN: 0  
L = 2048 W = 4096

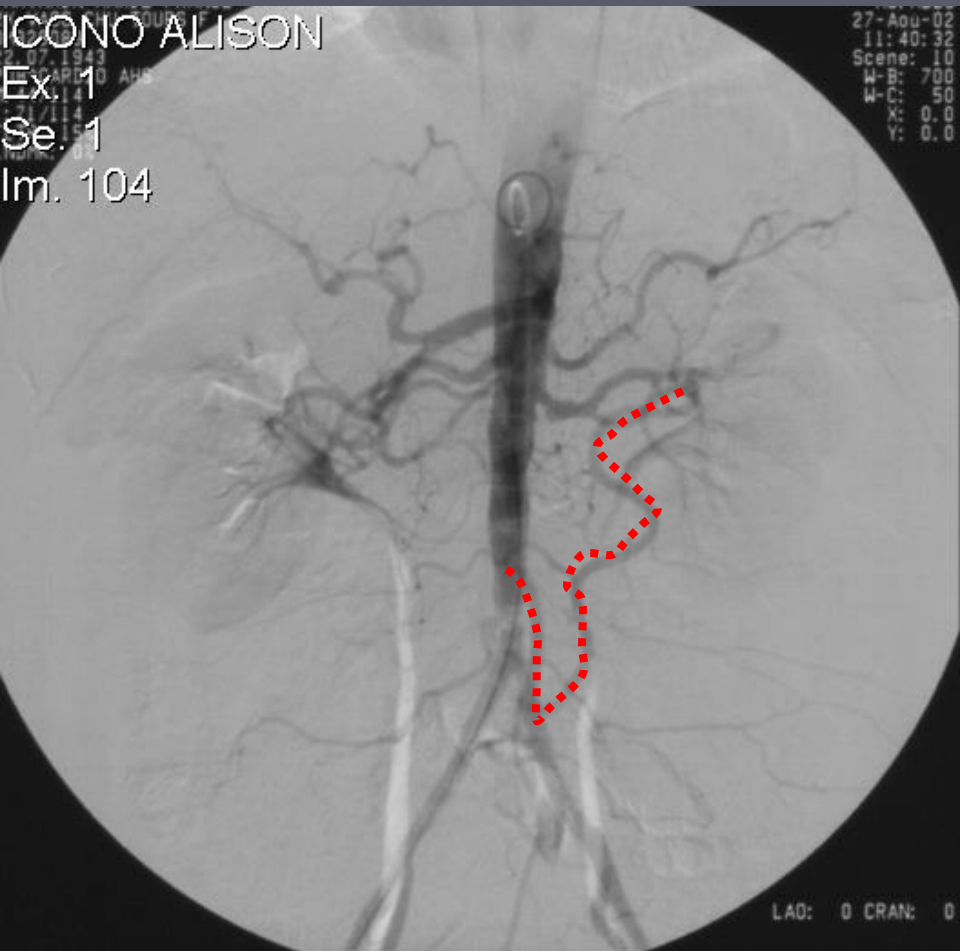
ALICIA ALICIA

Ex. 1  
Se. 1  
Im. 104

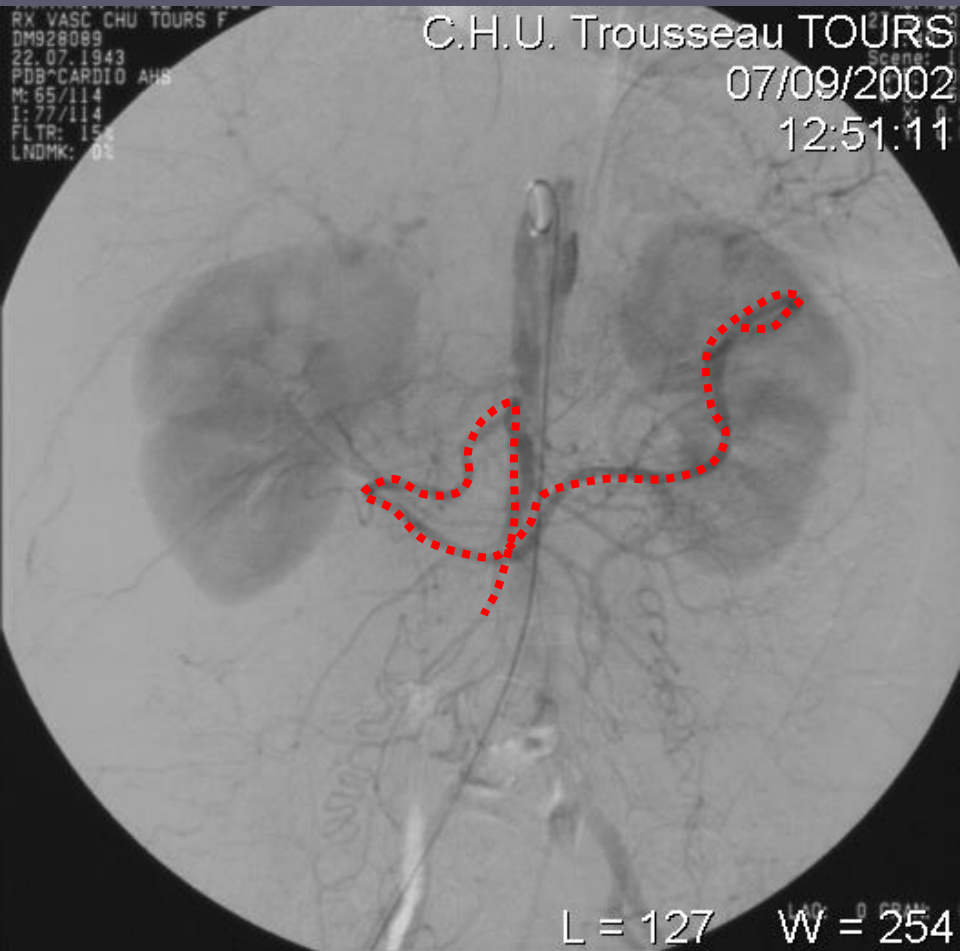
27-Aou-02 RX VASC CHU TOURS F  
11:40:32 DM928089  
Scene: 10 22.07.1943  
W-B: 700 PDB^CARDIO AHS  
W-C: 50 M: 65/114  
X: 0.0 I: 77/114  
Y: 0.0 FLTR: 15%  
LNDMK: 0%

C.H.U. Trousseau TOURS

07/09/2002  
12:51:11



LAO: 0 CRAN: 0



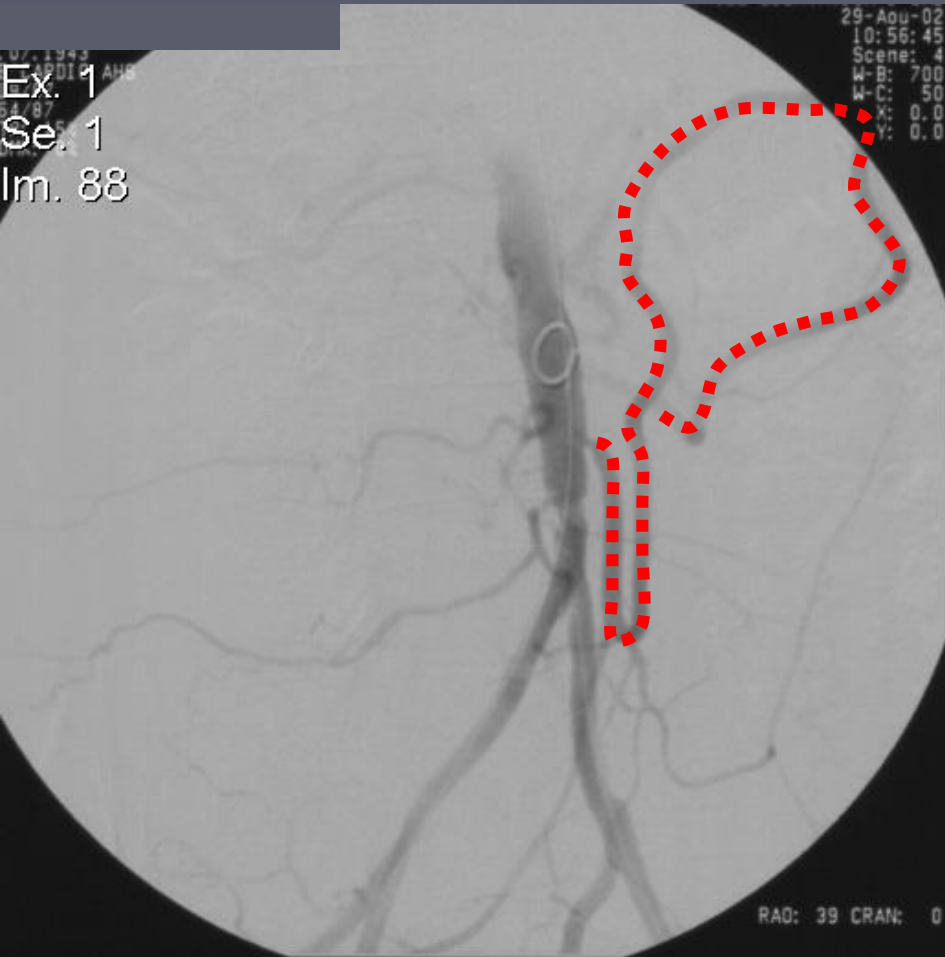
L = 127 W = 254



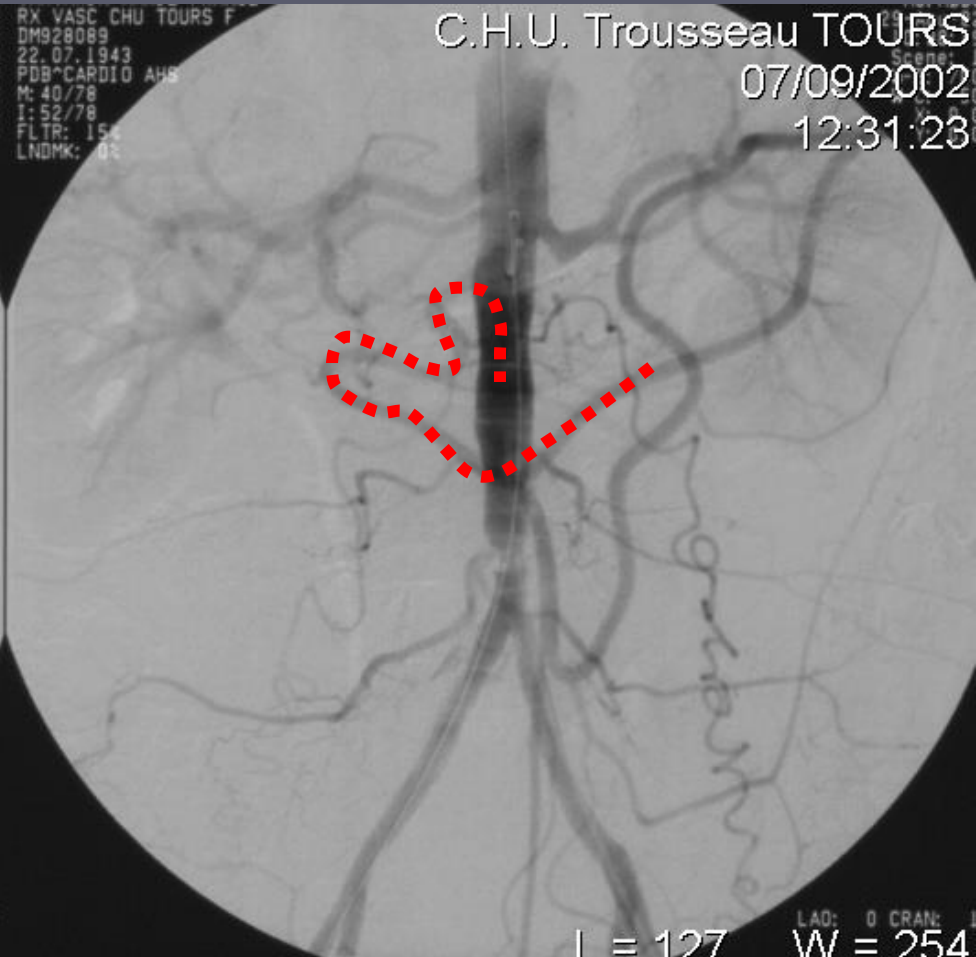
Ex. 1  
Se: 1  
Im. 88

29-Aou-02 RX VASC CHU TOURS F  
10:56:45 DM928089  
Scene: 4 22.07.1943  
W-B: 700 PDB\*CARDIO AHS  
W-C: 50 M: 40/78  
X: 0.0 I: 52/78  
Y: 0.0 FLTR: 15%  
LNDMK: 0%

C.H.U. Trousseau TOURS  
07/09/2002  
12:31:23



RAD: 39 CRAN: 0



L = 127 W = 254

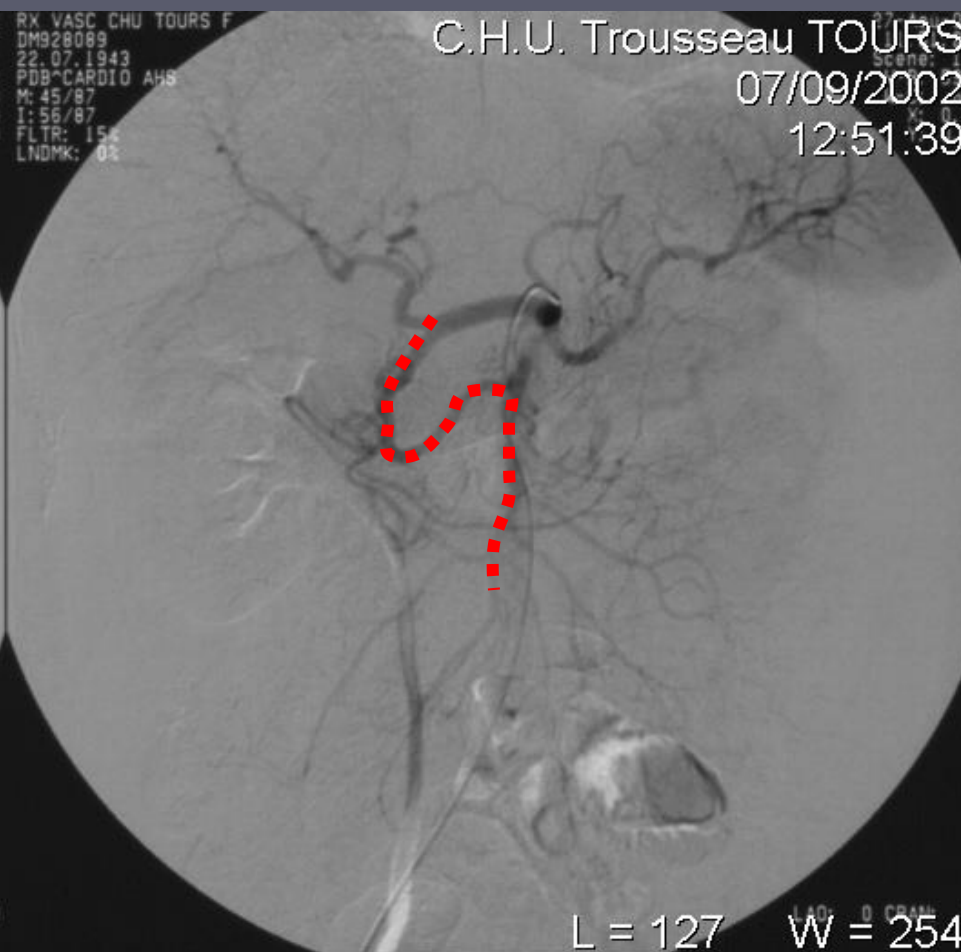
Ex: 1  
Se: 1  
Im: 105

27-Aou-02 RX VASC CHU TOURS F  
11: 51: 27 DM928089  
Scene: 11 22.07.1943  
W-B: 622 PDB~CARDIO AHS  
W-C: 58 M: 45/87  
X: 0.0 I: 56/87  
Y: 0.0 FLTR: 154  
LNDMK: 0%

C.H.U. Trousseau TOURS  
07/09/2002  
12:51:39



LAO: 0 CRAN: 0



L = 127 W = 254



Ex. 1  
Se. 1  
Im. 3

14/04/2003  
17:00:58



Classification1

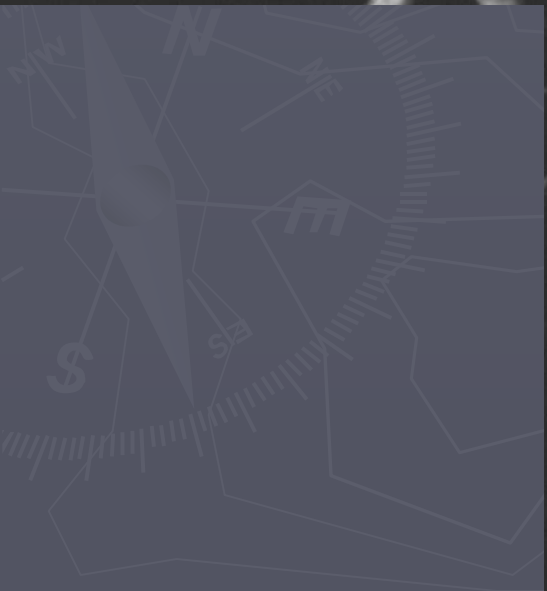
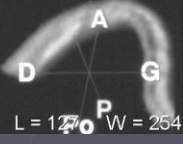
Ex. 1  
Se. 1  
Im. 4

Ex. 1  
Se. 1  
Im. 5

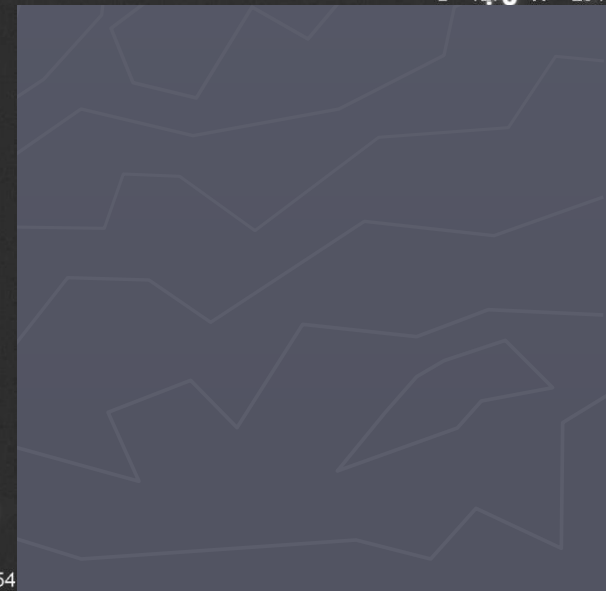
14/04/2003  
17:01:36



Classification1



Classification1



Ex. 1  
Se. 1  
Im. 7

17/02/2003  
Ex. 1  
Se. 1  
Im. 8

14/04/2003  
17:03:05



**MIP**



**Classification1**

ARM  
Ex. 1  
Se. 1  
Im. 4

07/05/2003  
17:48:42



**MIP**



alison.jcono  
Ex: 1  
Se: 1  
Im: 33.18.8(001)  
DFOV 24.2cm

30/10/2002  
17:22:29  
Oct 30 2002  
01:03:18 PM  
Mag = 1.77  
FL:  
ROT:

35  
R  
P  
I

L  
A  
S

OTHER:  
TR:3.9 GR.  
TE:1.4  
EC:1/

Syn-body  
FOV:43  
3.4thk/-1.7ov



WW: 222 WL: 75  
L = 128 W = 256

alison jcono  
Ex. 158  
Se. 1  
Im. 35  
52.5(001)  
DFOV 24.2cm

30/10/2002  
17:23:02  
Oct 30 2002  
01:03:18 PM  
Mag = 1.77  
FL:  
ROT:

35  
R  
P  
I

OTHER  
TR:3.9 GR.  
TE:1.4  
EC:1/

Syn-body  
FOV:43  
3.4thk/-1.7ov

L  
A  
S

ARJ

WWW: 222 WVL: 75  
L = 128 W = 256





alison-icomo  
Ex. 1  
Se. 1  
Im 39.5(ooi)  
DFOV 24.2cm

30/10/2002  
17:23:15  
Oct 30 2002  
01:03:18 PM  
Mag = 1.77  
FL:  
ROT:

35  
A  
-  
S

OTHER  
TR:3.9 GR  
TE:1.4  
EC:1/  
Syn-body  
FOV:43  
3.4thk/-1.7ov

P  
R  
I

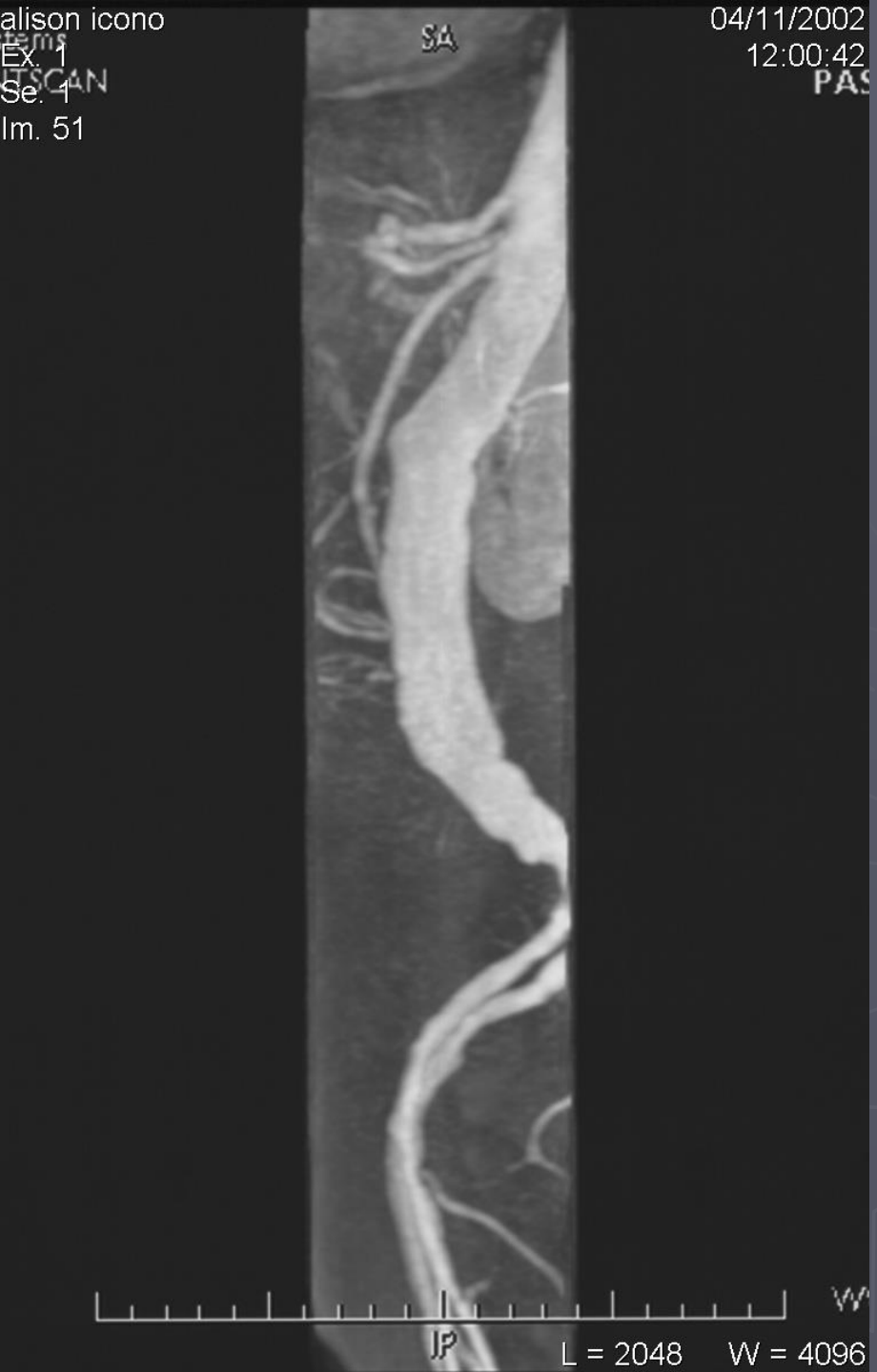
IRA

WW: 222 WL: 75  
L = 128 W = 256

alison icono  
Ex. 1  
LISCAN  
Se. 1  
Im. 50



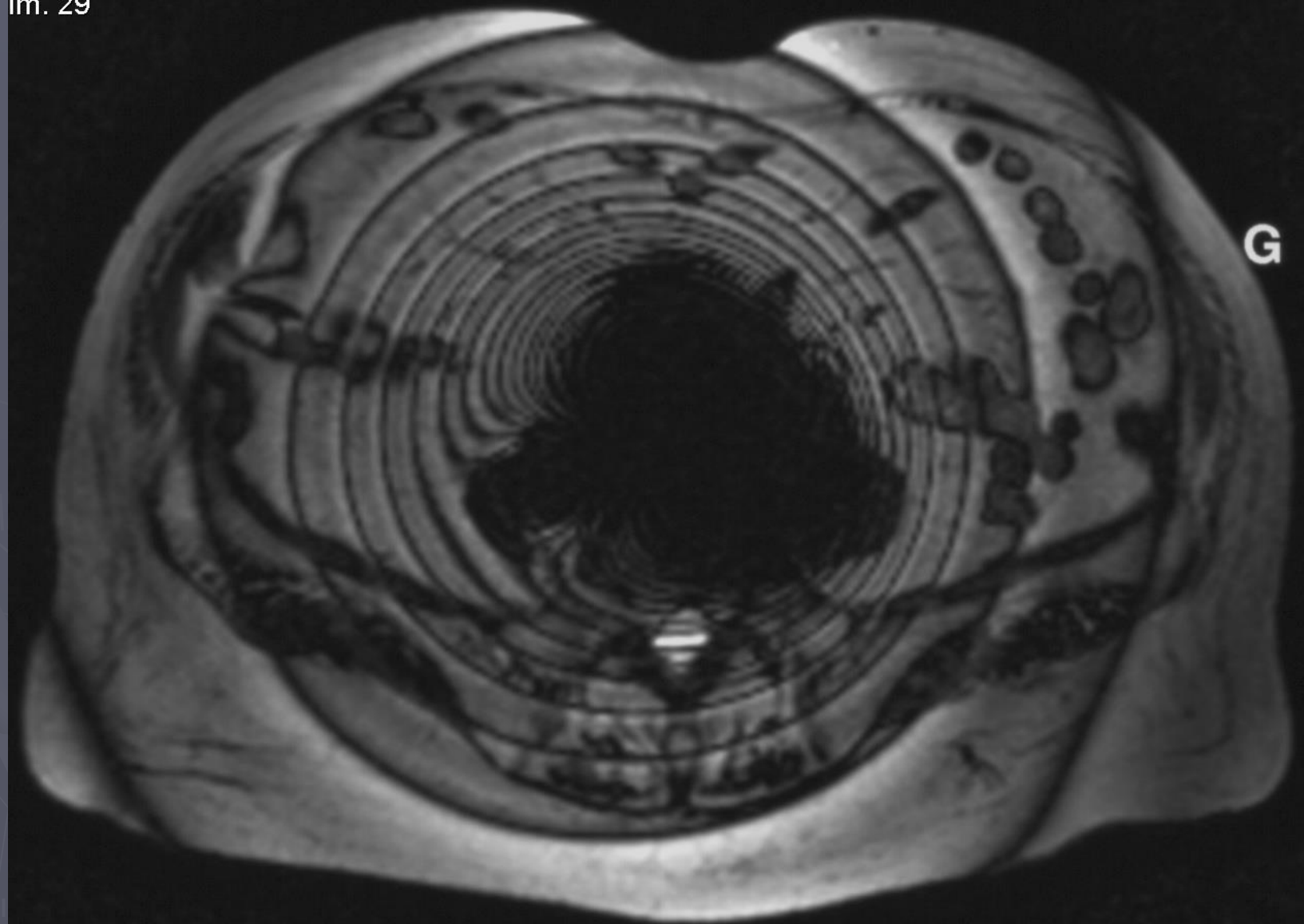
04/11/2002 12:00:25  
alison icono Ex. 1 LISCAN Se. 1 Im. 51





ARM DA  
Ex. 1  
Se. 1  
Im. 29

23/12/2002  
17:54:20



L = 127 W = 254

# Techniques mixtes

- ▶ Sang circulant (spontanné ou réhaussé)
- ▶ Paroi
- ▶ Environnement



# ECHOGRAPHIE

Pas de Pdc

Aléatoire (obésité, gaz...)

Incomplet



# ANGIO TDM

- ▶ Concentration d'iode
- ▶ Débit d'injection
- ▶ Acquisition rapide au maximum de l'opacification artérielle (déclenchement auto)
- ▶ Acquisition IV - / Acquisition plus tardive (?)



91153 F/89y  
3044 icono

Philips Brilliance 64  
29 Jan 2006 16:04:39.0

120kV, 228mAs  
Philips Brilliance 64

# ANGIOTDM

29 Jan 2006 16:04:39.0

91153 F/89y  
3044 icono

91153 F/89y  
3044 icono

Philips Brilliance 64  
29 Jan 2006 16:04:39.0

120kV, 228mAs  
SC 350.0 mm

91153 F/89y  
3044 icono

Philips Brilliance 64  
29 Jan 2006 16:04:39.0

120kV, 228mAs  
SC 350.0 mm  
SW 32.29 mm  
Z 1.00

R

R

R

R

A

F

P

A

F

P

A

F

P

A

F

P

R

L

P

10 cm

C1 147  
W1 609

91153 F/89y  
3044 icono

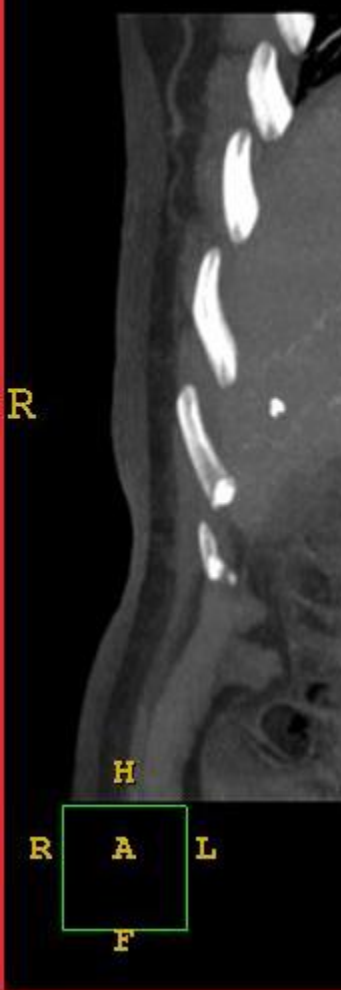
Philips Brilliance 64  
29 Jan 2006 16:04:39.0  
120kV, 228mAs  
SC 350.0 mm

91153 F/89y  
3044 icono

Philips Brilliance 64  
29 Jan 2006 16:04:39.0  
120kV, 228mAs  
SC 350.0 mm

91153 F/89y  
3044 icono

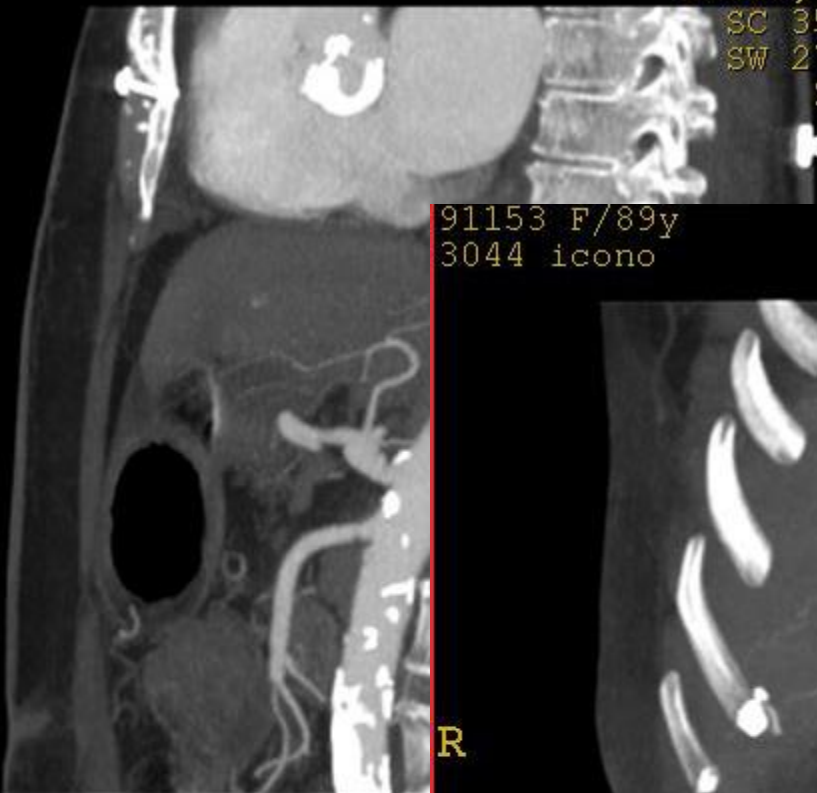
Philips Brilliance 64  
29 Jan 2006 16:04:39.0  
120kV, 228mAs  
SC 350.0 mm  
SW 45.45 mm  
Z 1.00





91153 F/89y  
3044 icono

Philips Brilliance 64  
29 Jan 2006 16:04:39.0  
120kV, 228mAs  
SC 350.0 mm  
SW 27.68 mm  
Z 1.00



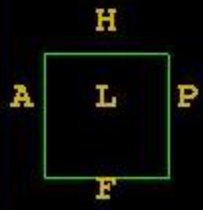
91153 F/89y  
3044 icono

Philips Brilliance 64  
29 Jan 2006 16:04:39.0  
120kV, 228mAs  
SC 350.0 mm  
SW 51.60 mm  
Z 1.00



A

R



10 cm

C1 231  
W1 767

91153 F/89y  
3044 icono

Philips Brilliance 64  
29 Jan 2006 16:04:39.0  
120kV, 228mAs  
SC 350.0 mm

91153 F/89y  
3044 icono

Philips Brilliance 64  
29 Jan 2006 16:04:39.0  
120kV, 228mAs  
SC 350.0 mm

91153 F/89y  
3044 icono

Philips Brilliance 64  
29 Jan 2006 16:04:39.0  
120kV, 228mAs  
SC 350.0 mm  
Z 1.00

R

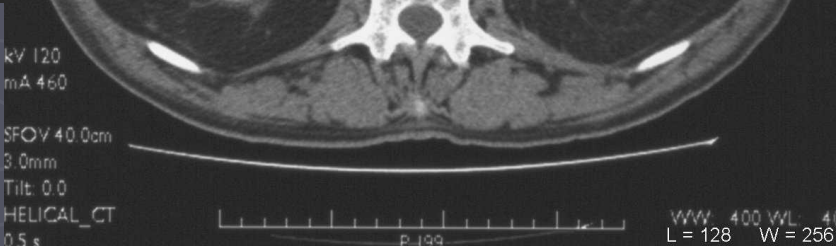
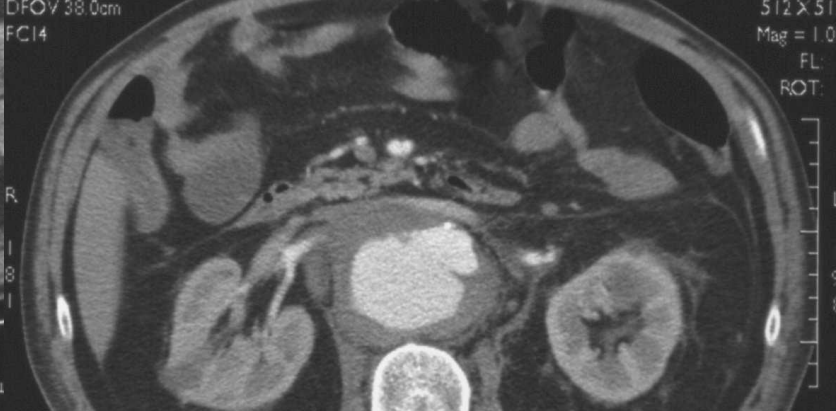
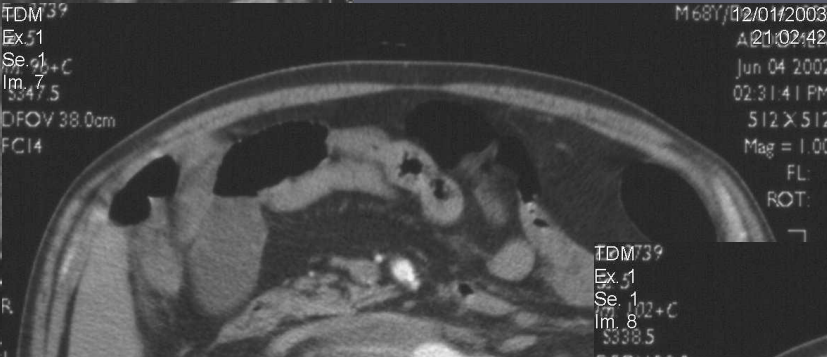
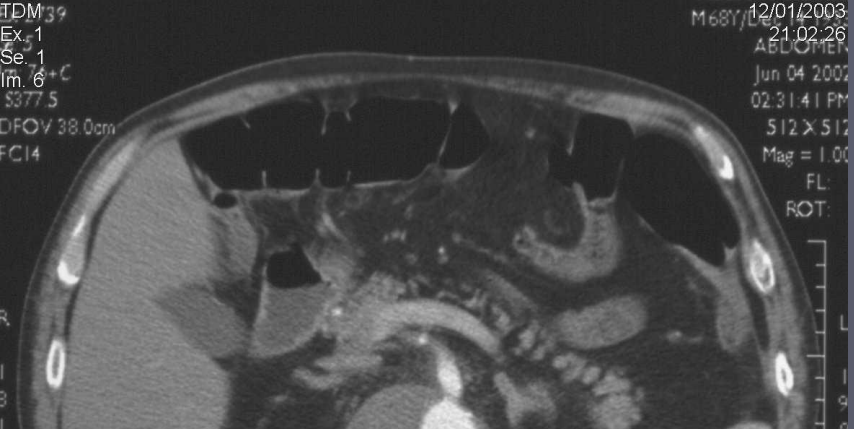
R

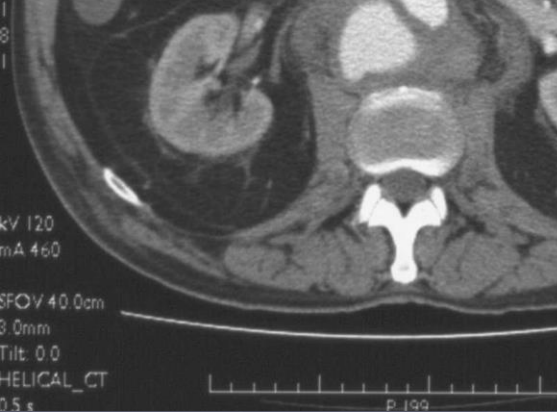
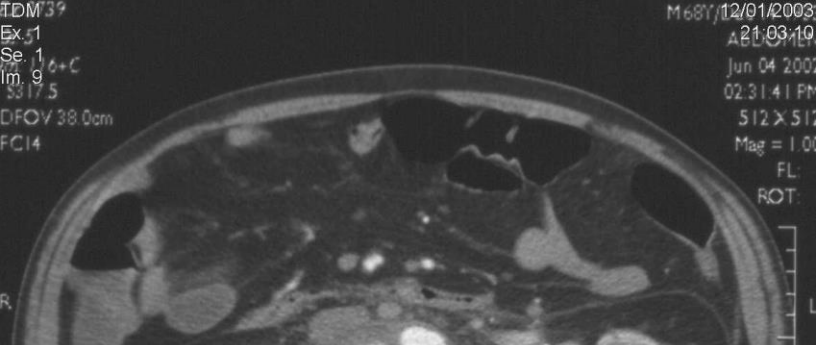
R



AFR











TDM  
Ex. 1  
Se. 1  
Im. 17

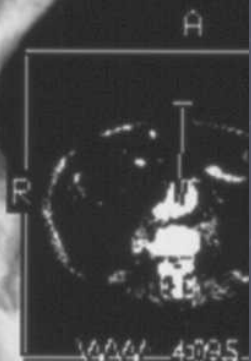
12/01/2003  
C.H.U. 21:05:57  
ALLARY  
M 88 AB  
Jun 0

49.8 cm

4

Shutter  
20  
50

mm/1.5sp  
: 0.0  
L: 41 PM  
40 L = 40

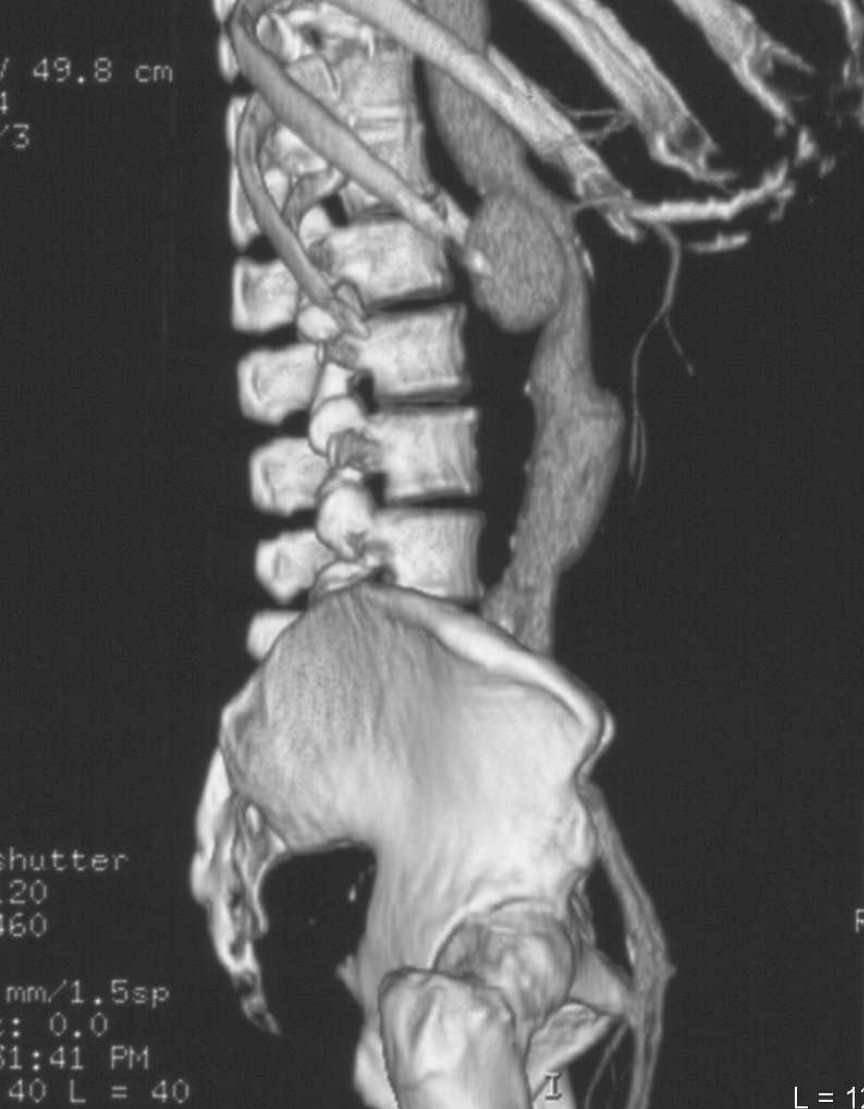


444 4095  
L = 128 W = 256





TDM  
Ex. 1  
Se. 1  
Im. 16  
12/01/2003  
21:05:46  
D.H.U. ...  
HLLARY  
M 68 AB  
Jun 0



shutter  
20  
160  
mm/1.5sp  
: 0.0  
11:41 PM  
40 L = 40

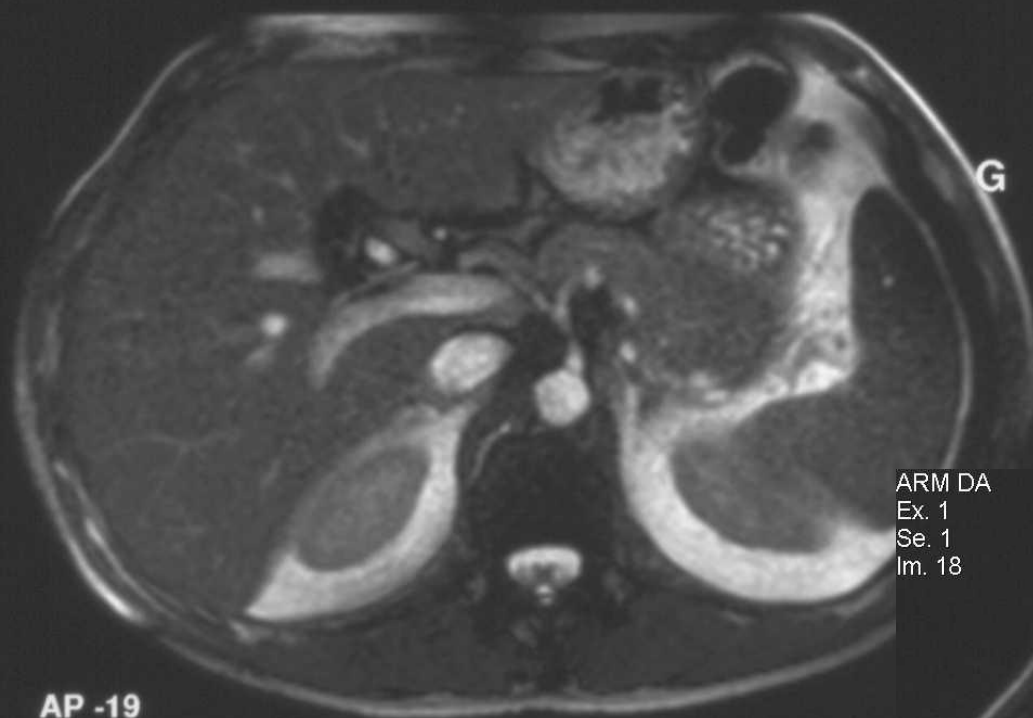
TDM  
Ex. 1  
Se. 1  
Im. 15



shutter  
20  
160  
mm/1.5sp  
: 0.0  
11:41 PM  
40 L = 40

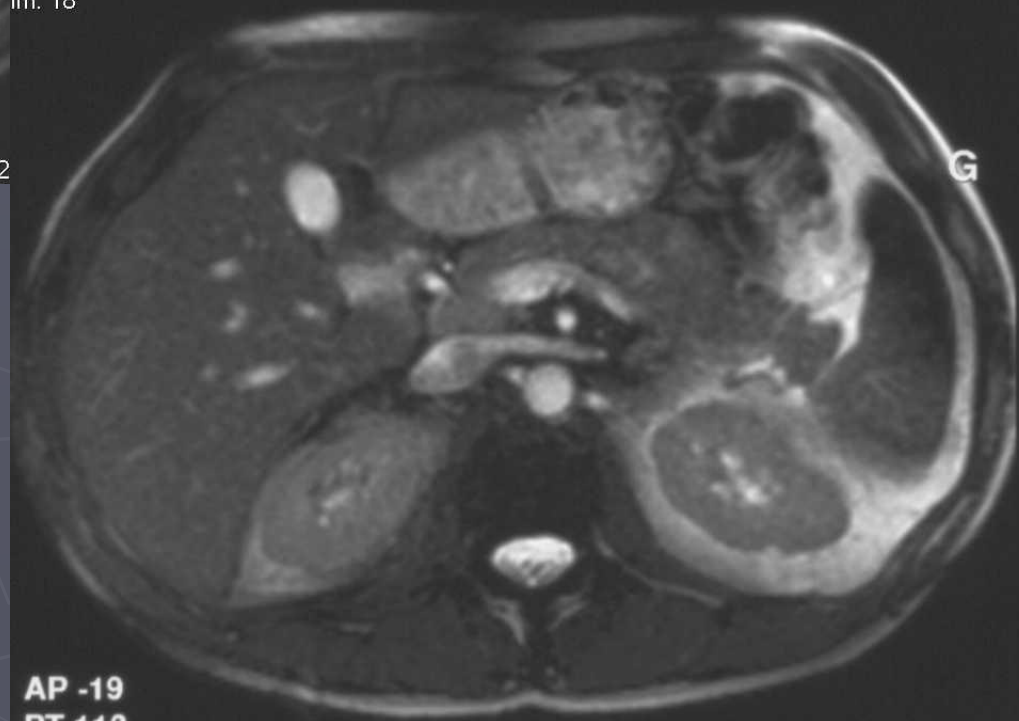


12/01/2003  
21:05:36  
D.H.U. ...  
HLLARY  
M 68 AB  
Jun 0  
shutter  
20  
160  
mm/1.5sp  
: 0.0  
11:41 PM  
40 L = 40  
L = 128 W = 256



# B-FFE (Philips)

## Echo de Gradient refocalisé



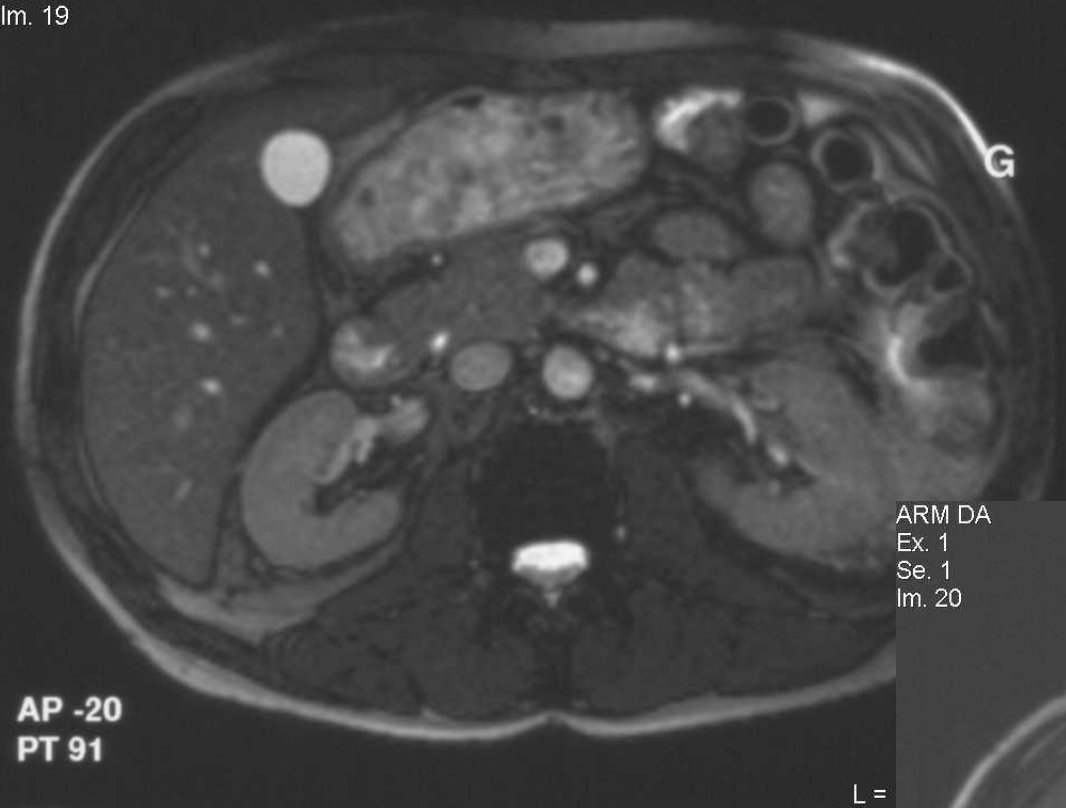
# FIESTA (GE)

# TRUE-FISP (Siemens)



ARM DA  
Ex. 1  
Se. 1  
Im. 19

23/12/2002  
17:46:47

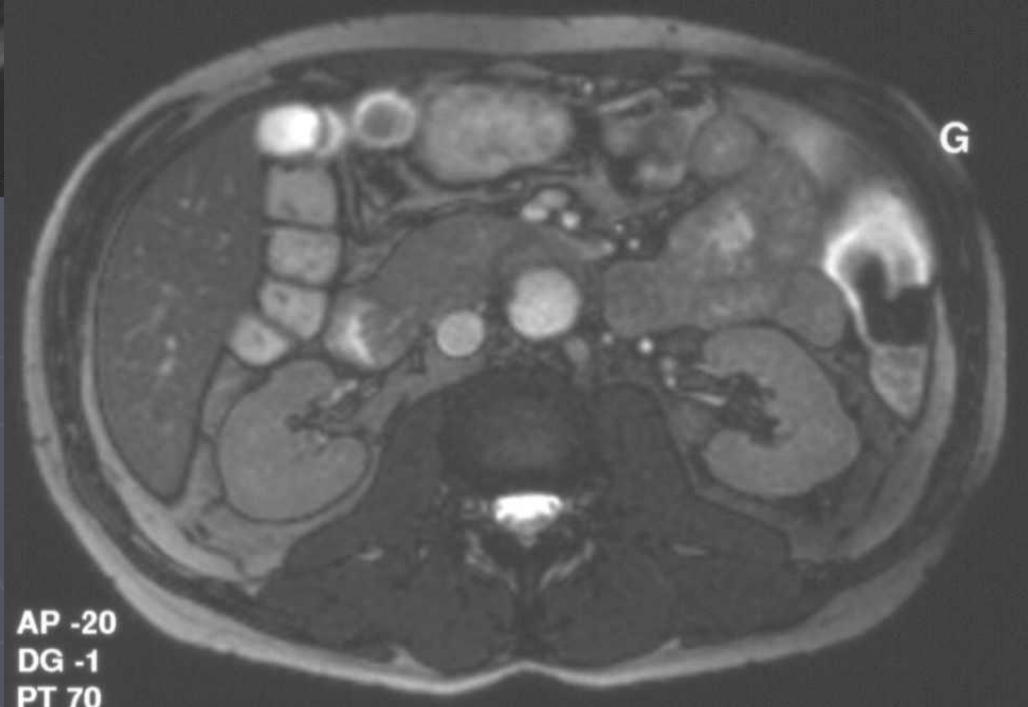


ARM DA  
Ex. 1  
Se. 1  
Im. 20

23/12/2002  
17:47:13

AP -20  
PT 91

L =

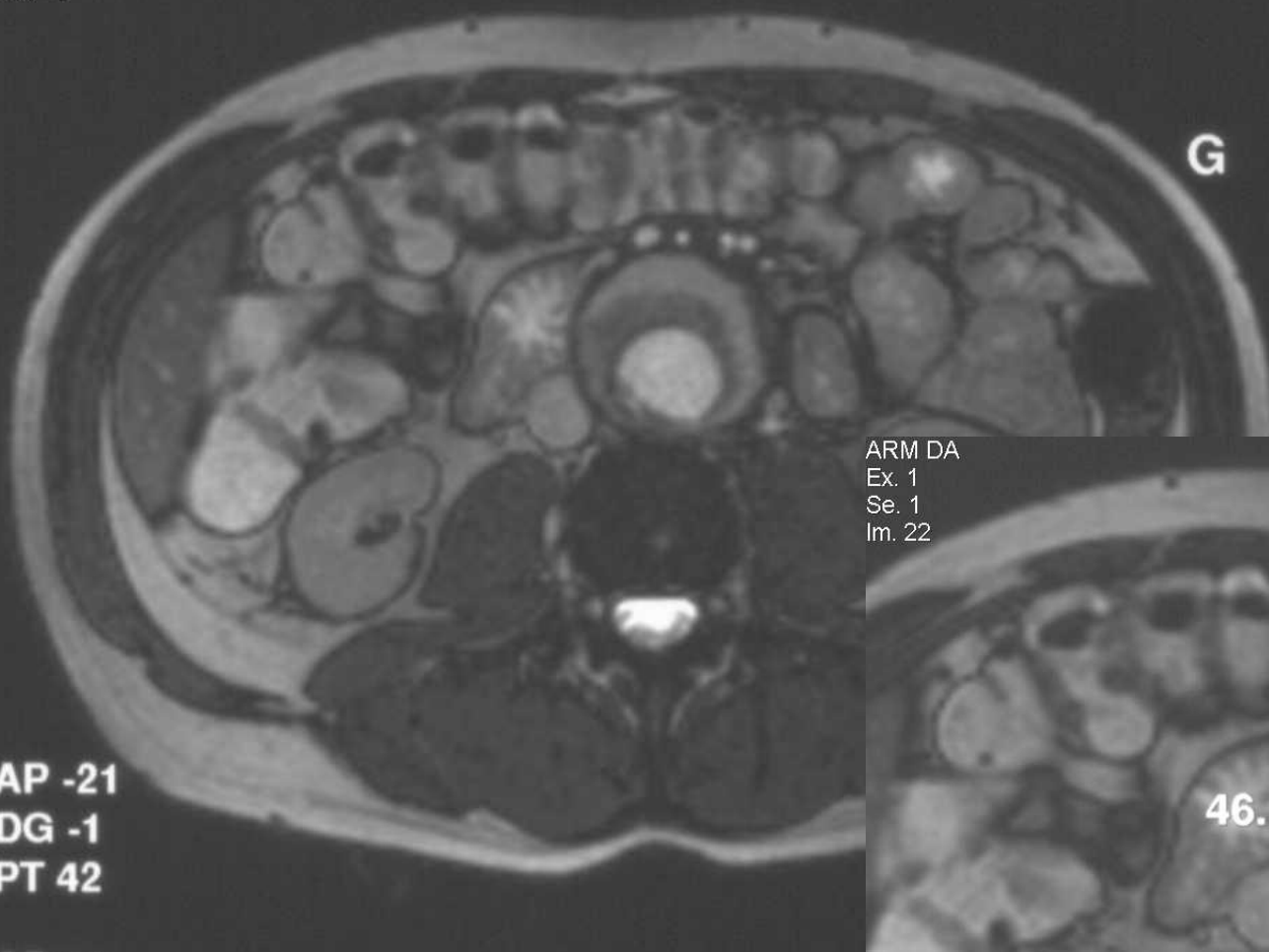


AP -20  
DG -1  
PT 70

L = 127 W = 254

ARM DA  
Ex. 1  
Se. 1  
Im. 21

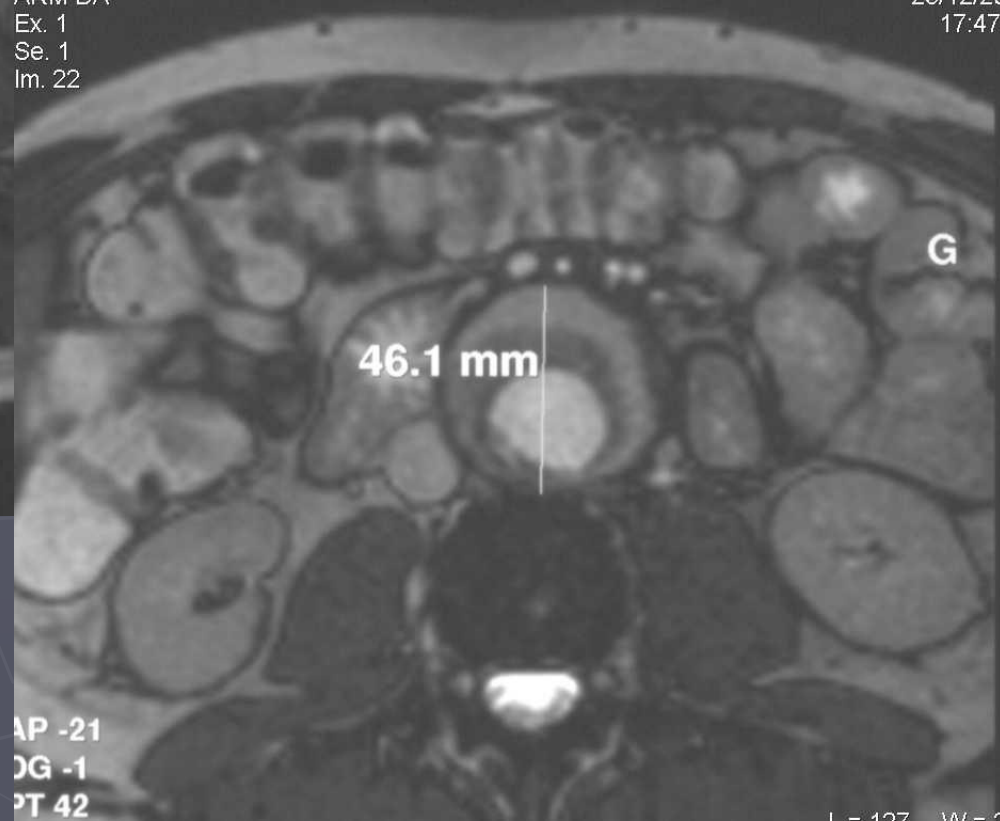
23/12/2002  
17:47:31



AP -21  
DG -1  
PT 42

ARM DA  
Ex. 1  
Se. 1  
Im. 22

23/12/2002  
17:47:56



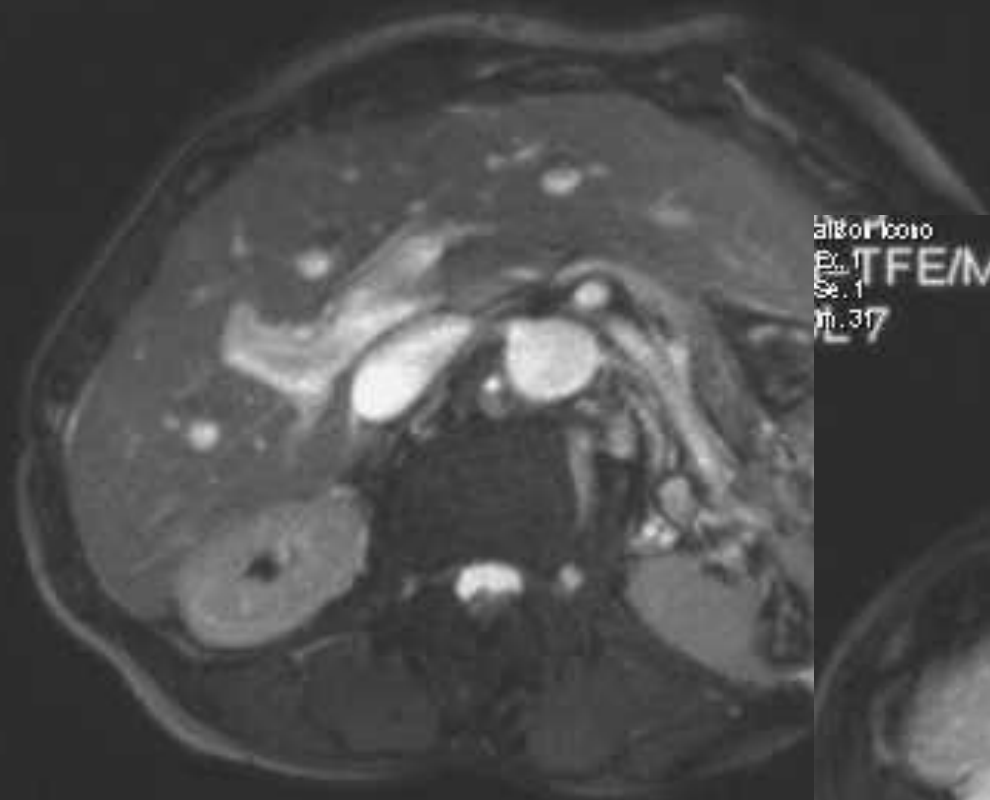
AP -21  
DG -1  
PT 42

alkor koto  
B.C. 9  
Se. 1  
m. 30  
TFE/M  
SL 18

A

30/10/2002  
17:18:36

**B-TFE**



alkor koto  
B.C. 9  
Se. 1  
m. 30  
TFE/M  
L7

A

30/10/2002  
17:19:00



S

10 cm

FH - 23 feet  
L-328 (10) 2-256





# Techniques angiographiques

## ► Artériographie:

2D, KT, iode, Rx, soustraction, opacification sélective possible, précision de la cartographie, possibilités thérapeutiques

## ► ARM:

3D, IV périph., Gado.,  $\pm$  soustraction, opacification globale, post-traitement aisé, pas de calcifications, pas d'os, artéfacts, branches proximales

# Techniques mixtes

## ▶ **Echo/Doppler**

pas de pdc, aléatoire, incomplet

## ▶ **Angioscanner**

3D, IV périph Iode, Rx,

opacification globale ( sens du flux?),

calcifications, post-traitement plus difficile (de - en -)

## ▶ **IRM**

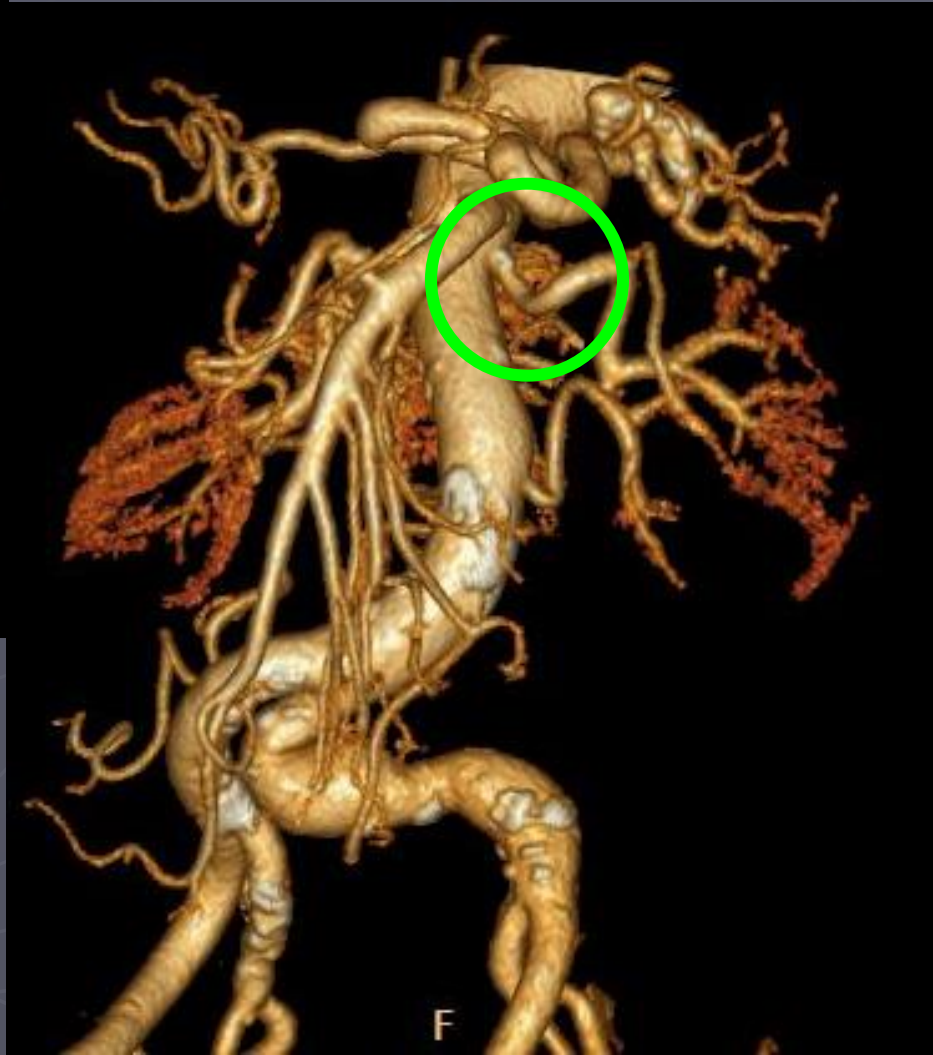
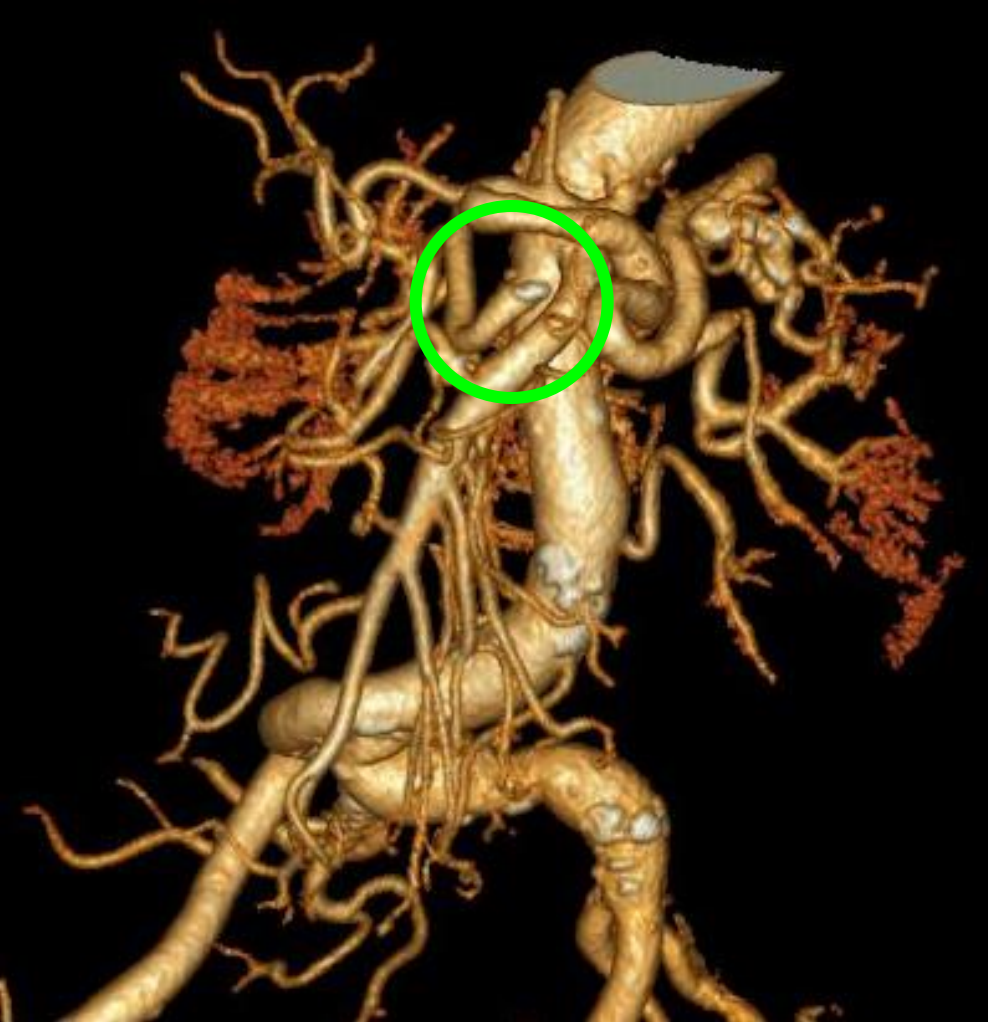
2D, pas de pdc, signal artériel et veineux

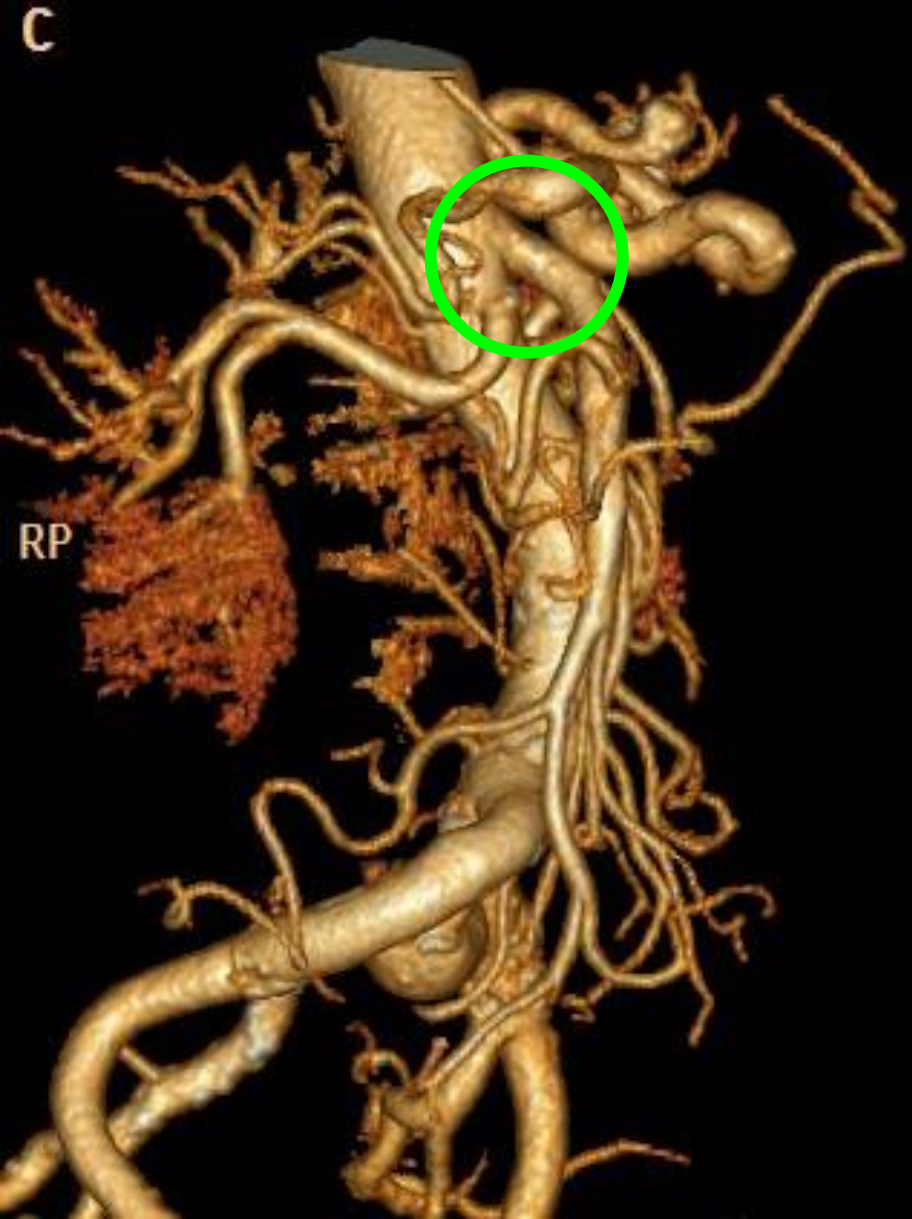


icono

2 Feb, 200





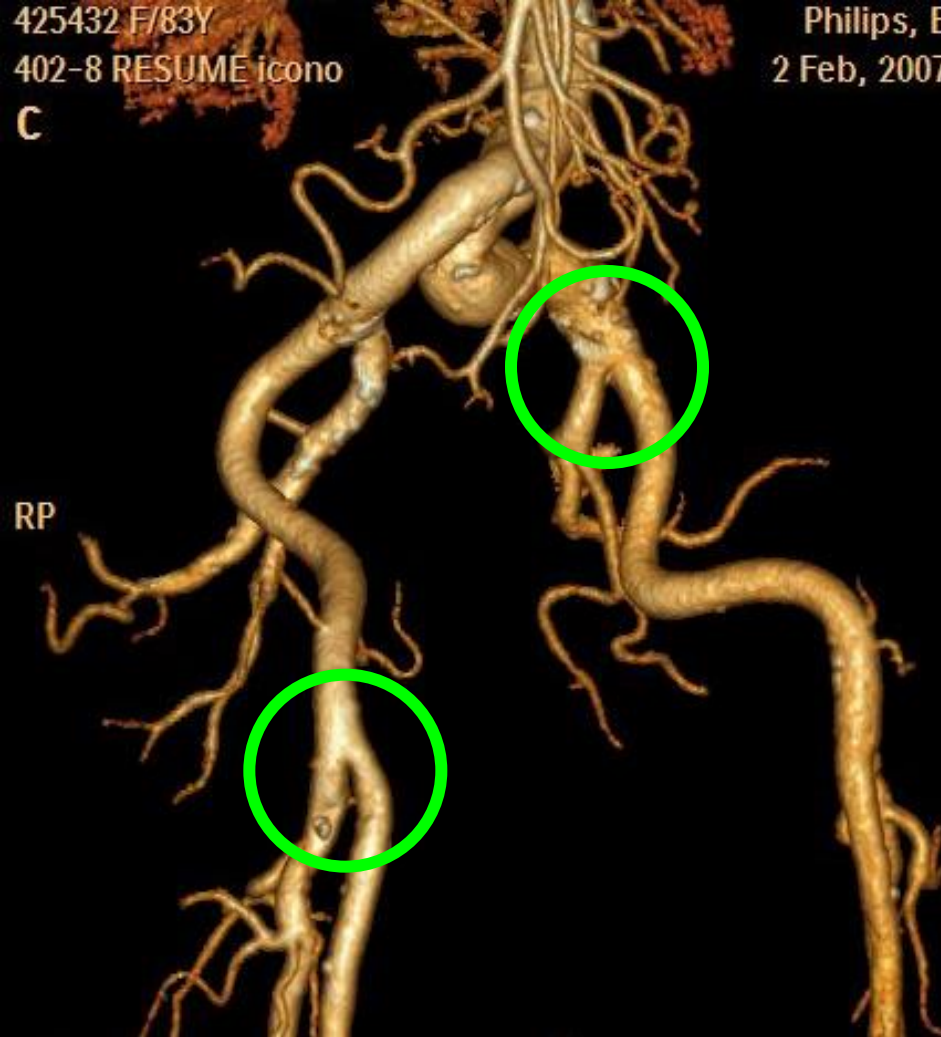




425432 F/83Y  
402-8 RESUME icono

Philips, Brilli  
2 Feb, 2007 16:

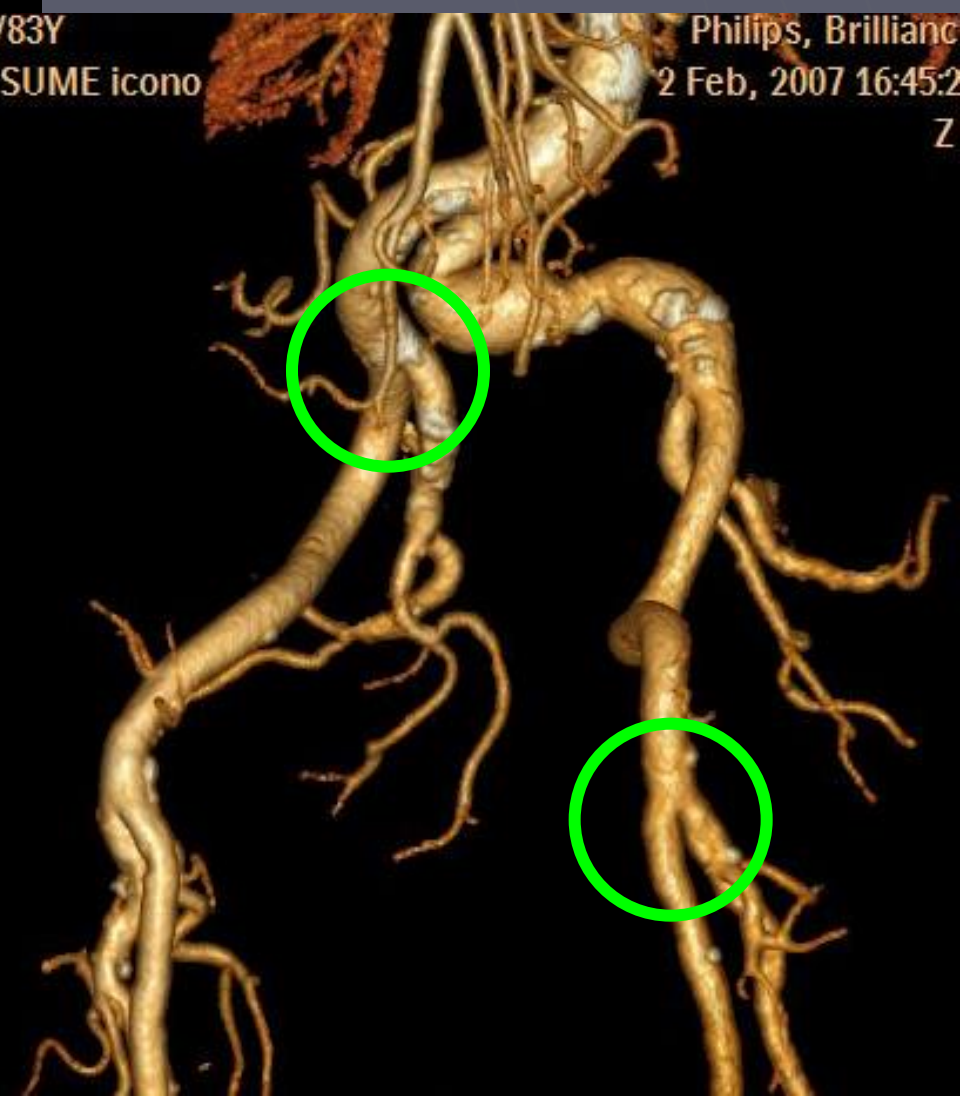
C

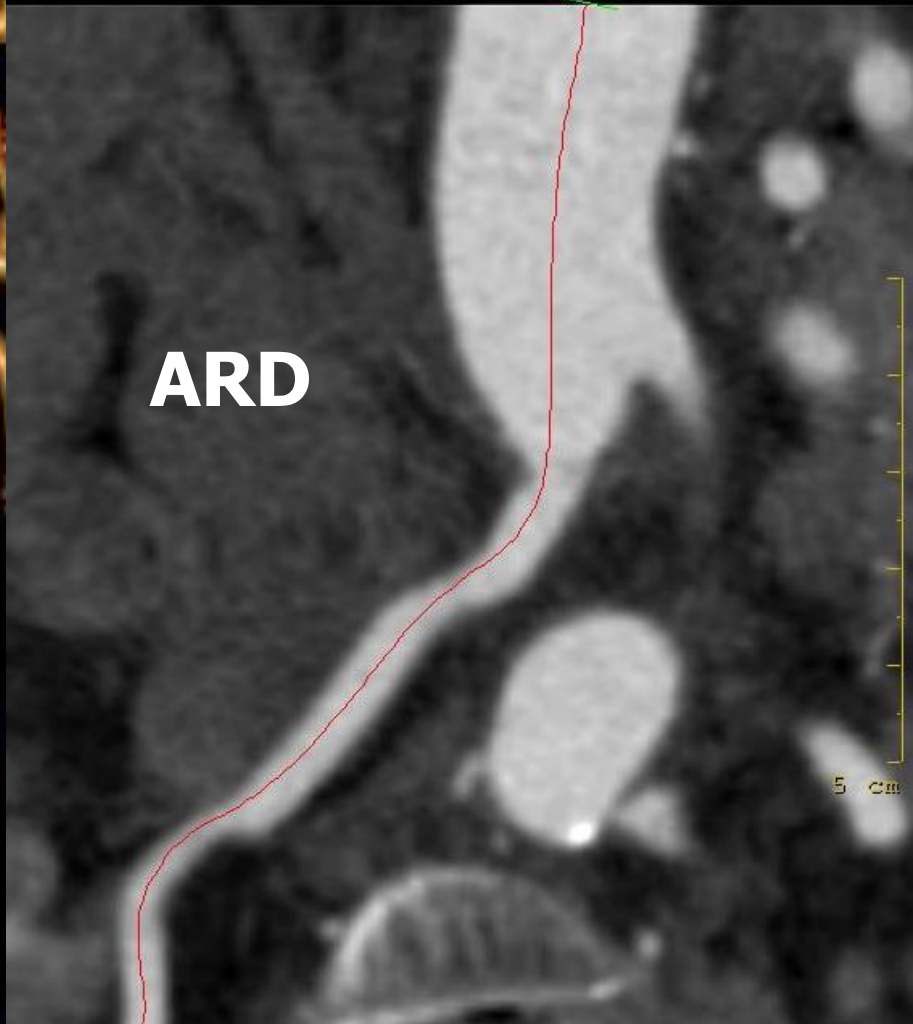


F/83Y  
ESUME icono

Philips, Brillanc  
2 Feb, 2007 16:45:2

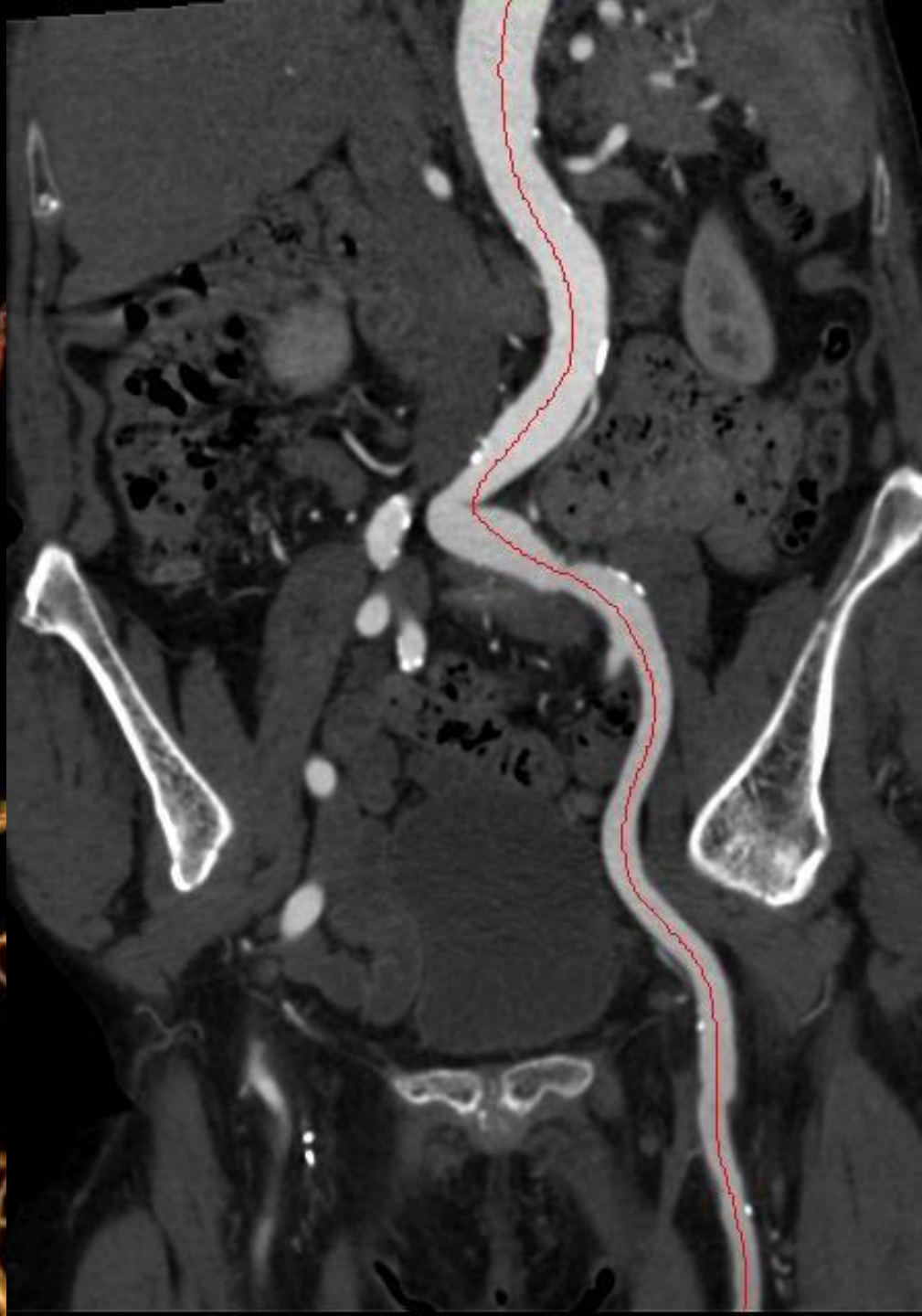
Z





**ARD**







# Choix de la technique

▶ **QUESTION POSEE**

▶ **MALADE**

▶ **DISPONIBILITE TECHNIQUE**

# Exploration de l'aorte et de ses branches



