

Radiology of the
ABDOMEN, PELVIS
AND PERINEUM

X-RAY



AIR

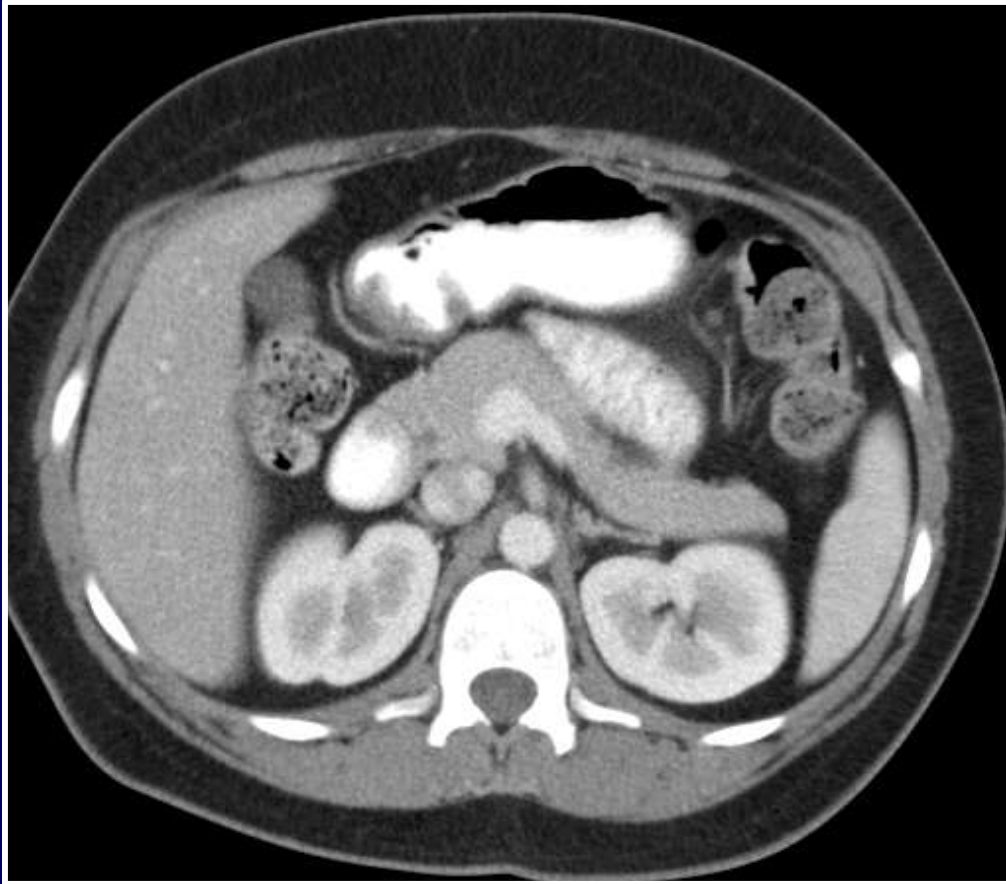
FAT

SOFT TISSUES

BONE

CONTRAST

CT



AIR

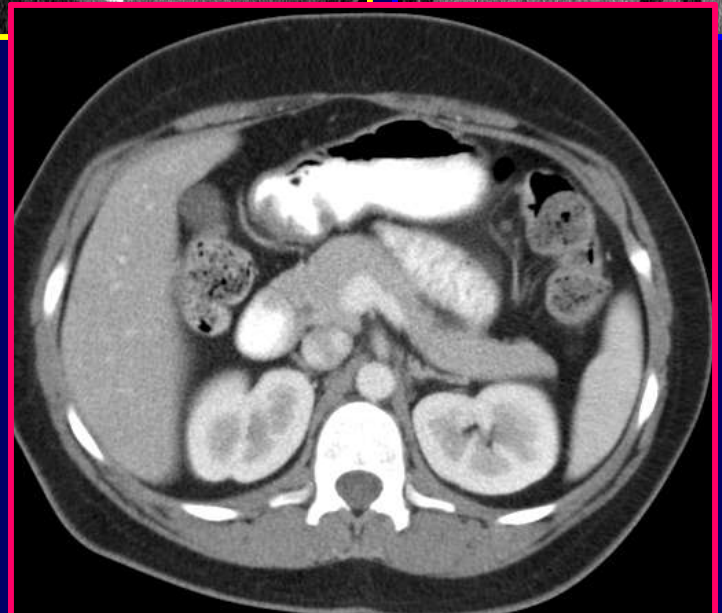
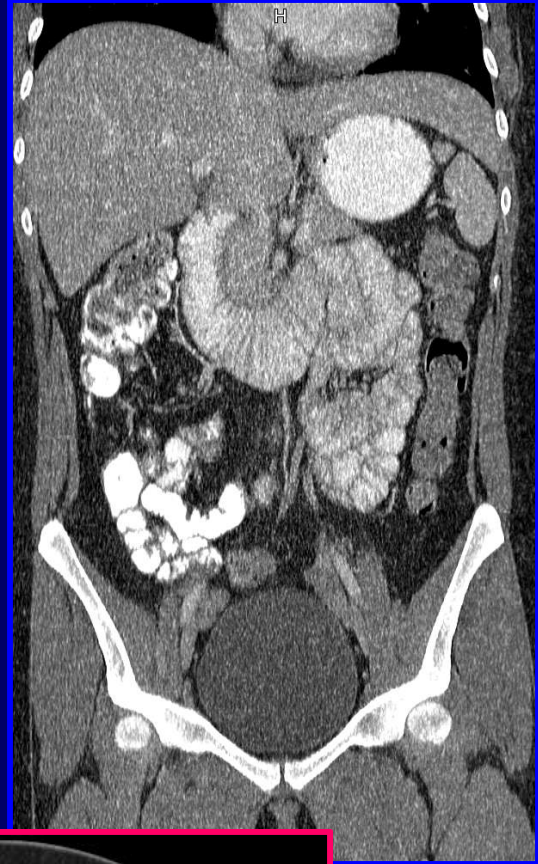
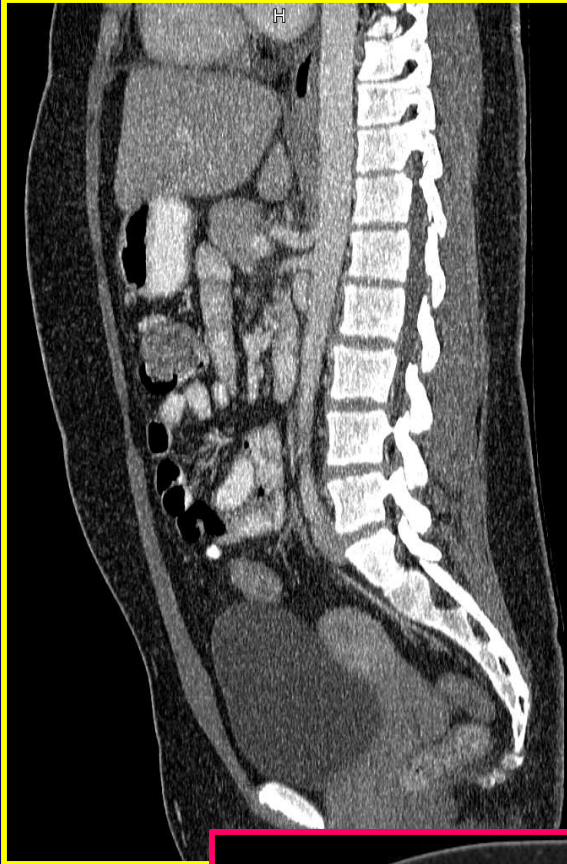
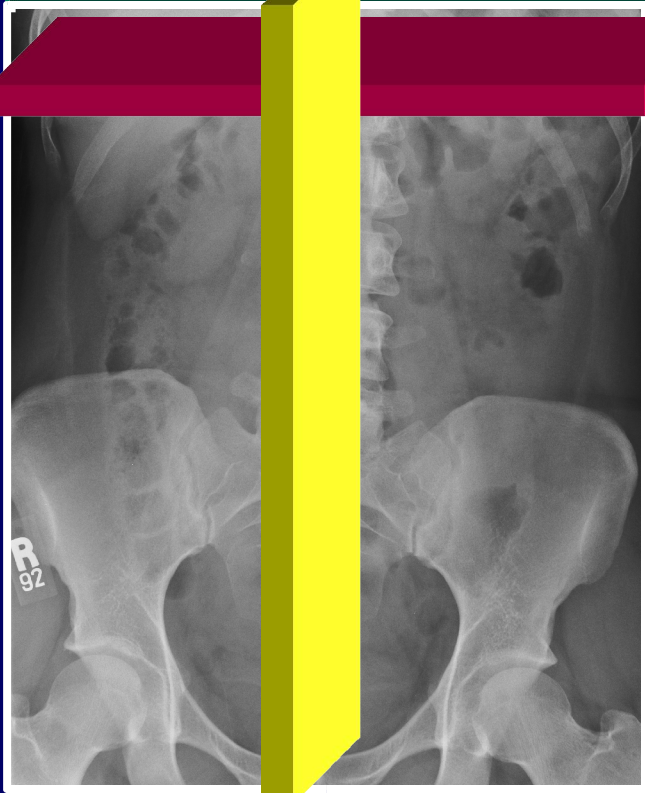
FAT

WATER

SOFT TISSUES

BONE

CONTRAST

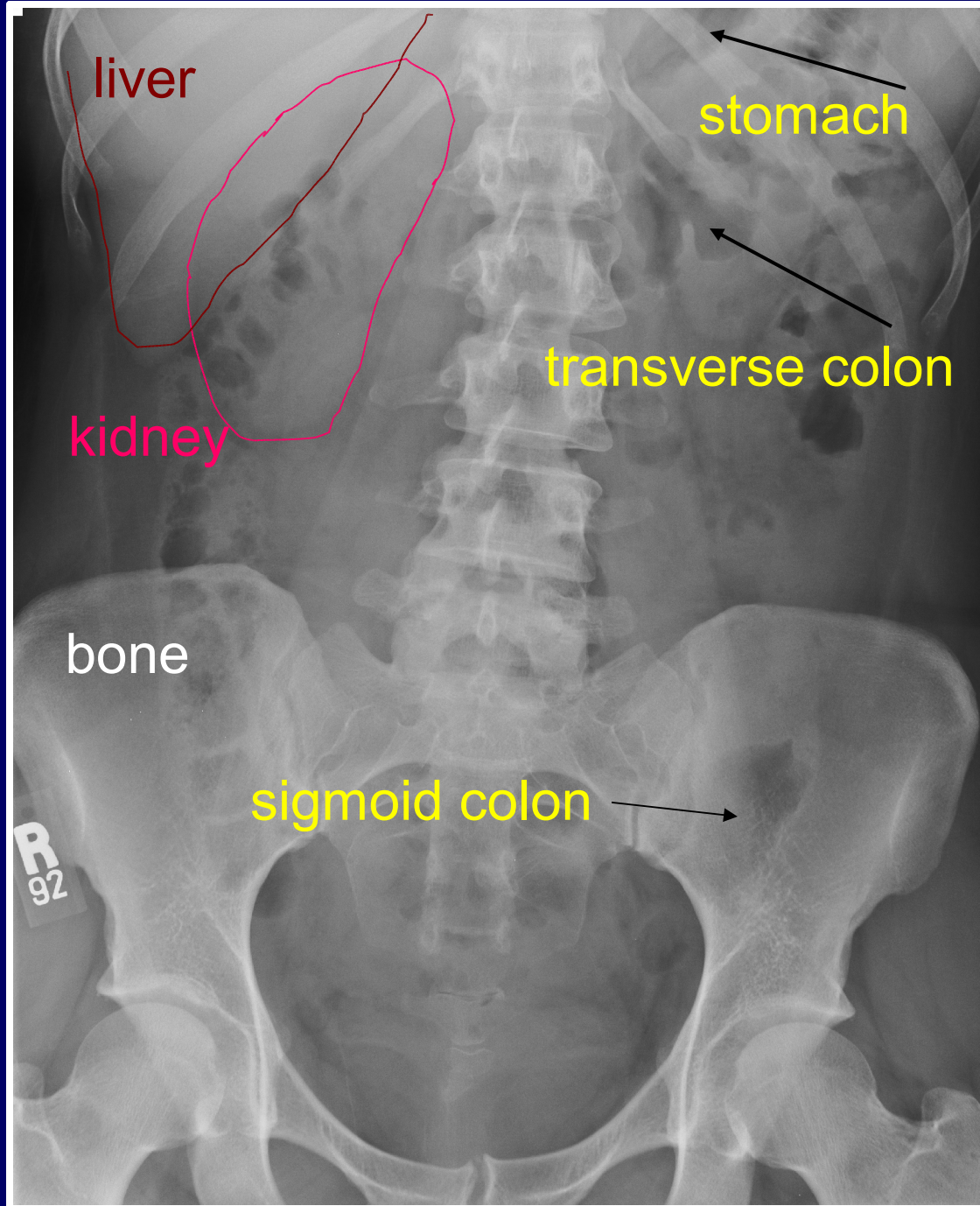


SAGITTAL

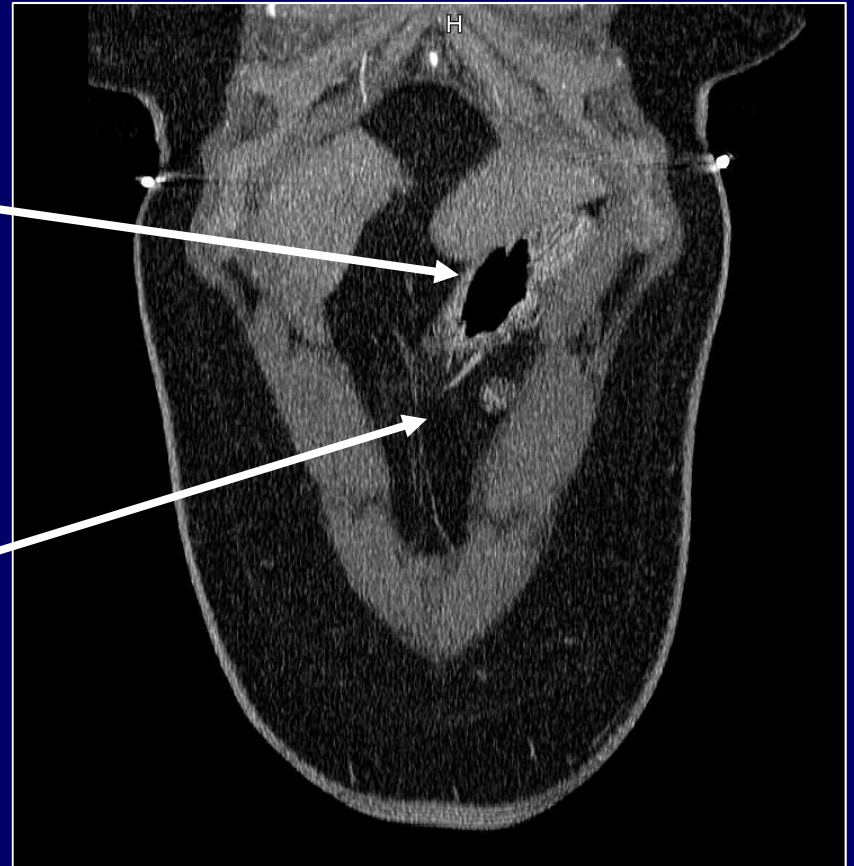
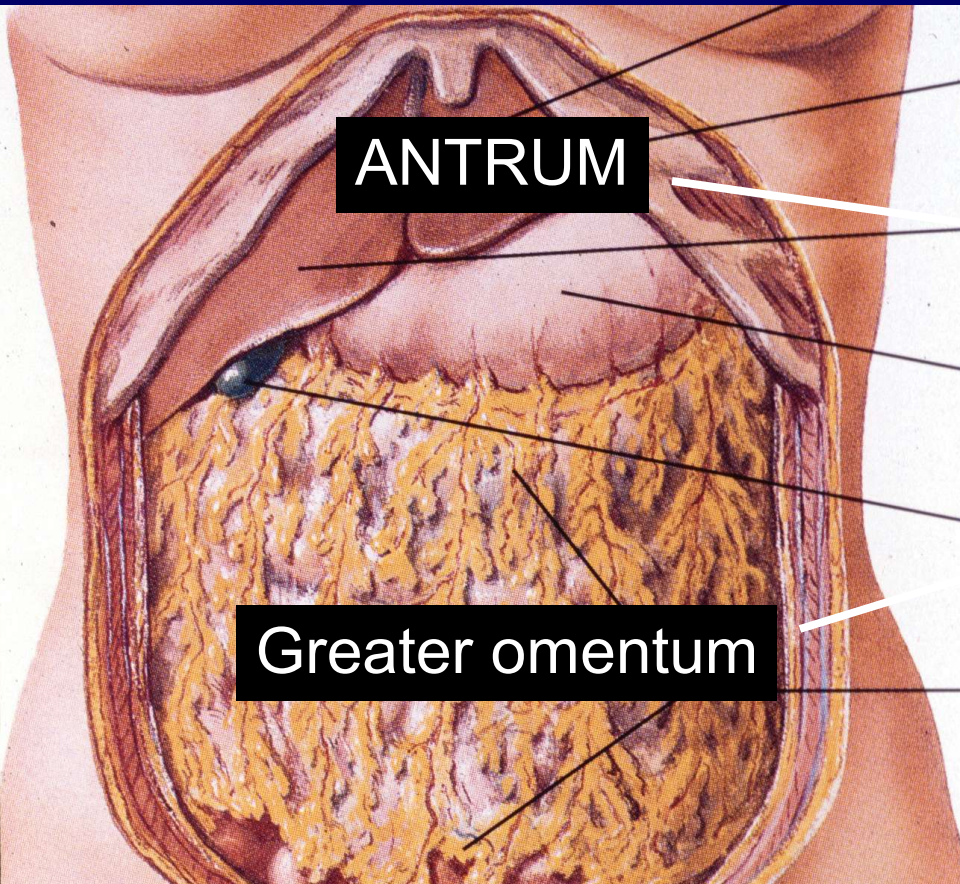
CORONAL

AXIAL

PLAIN
X-RAY
of the
ABDOMEN
and
PELVIS
(KUB)

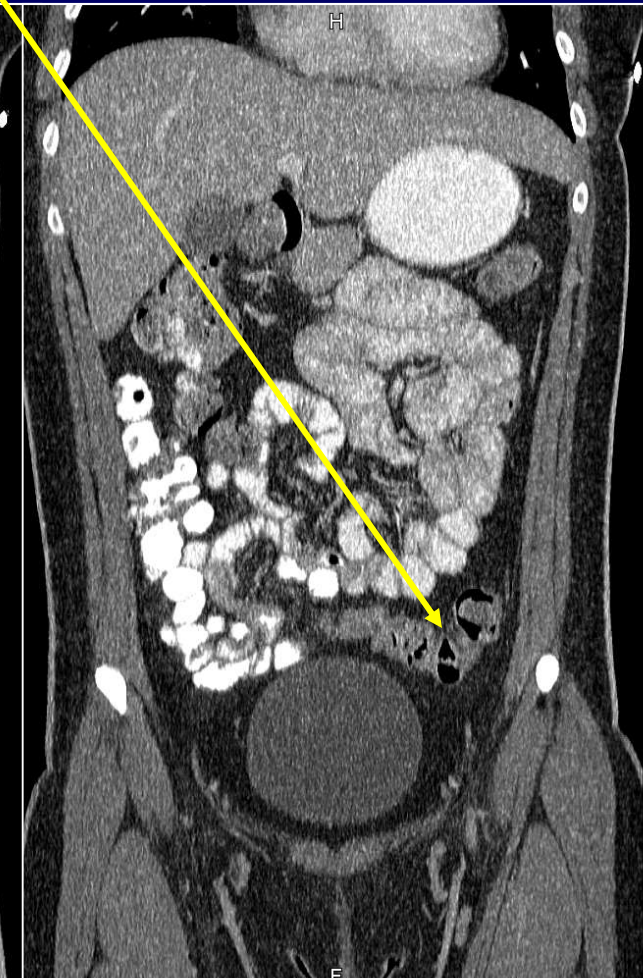
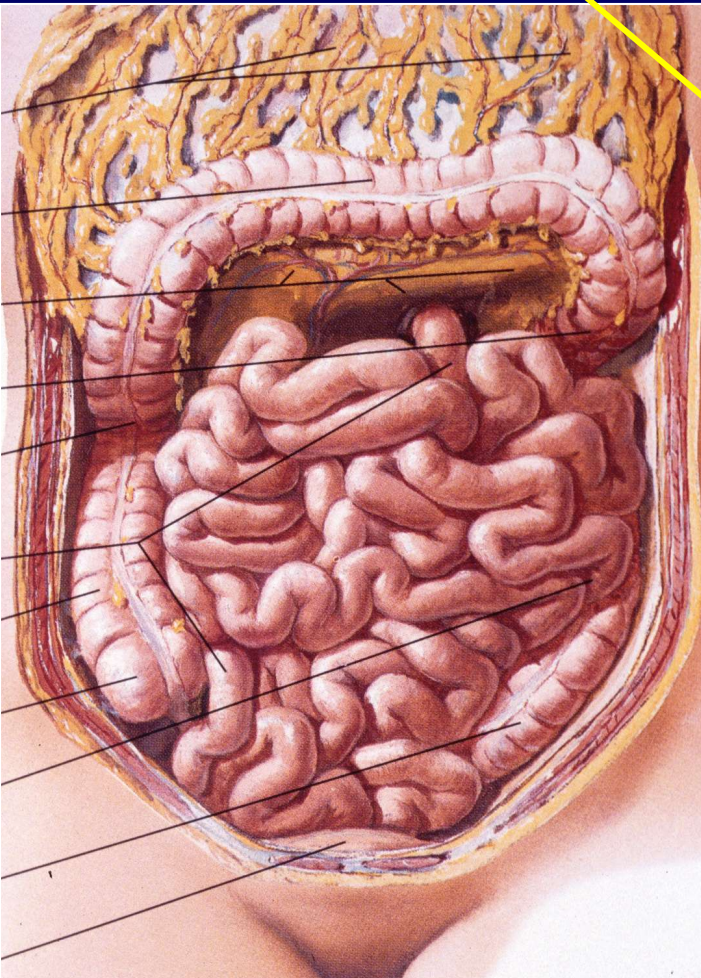


GASTRIC ANTRUM: is very anterior

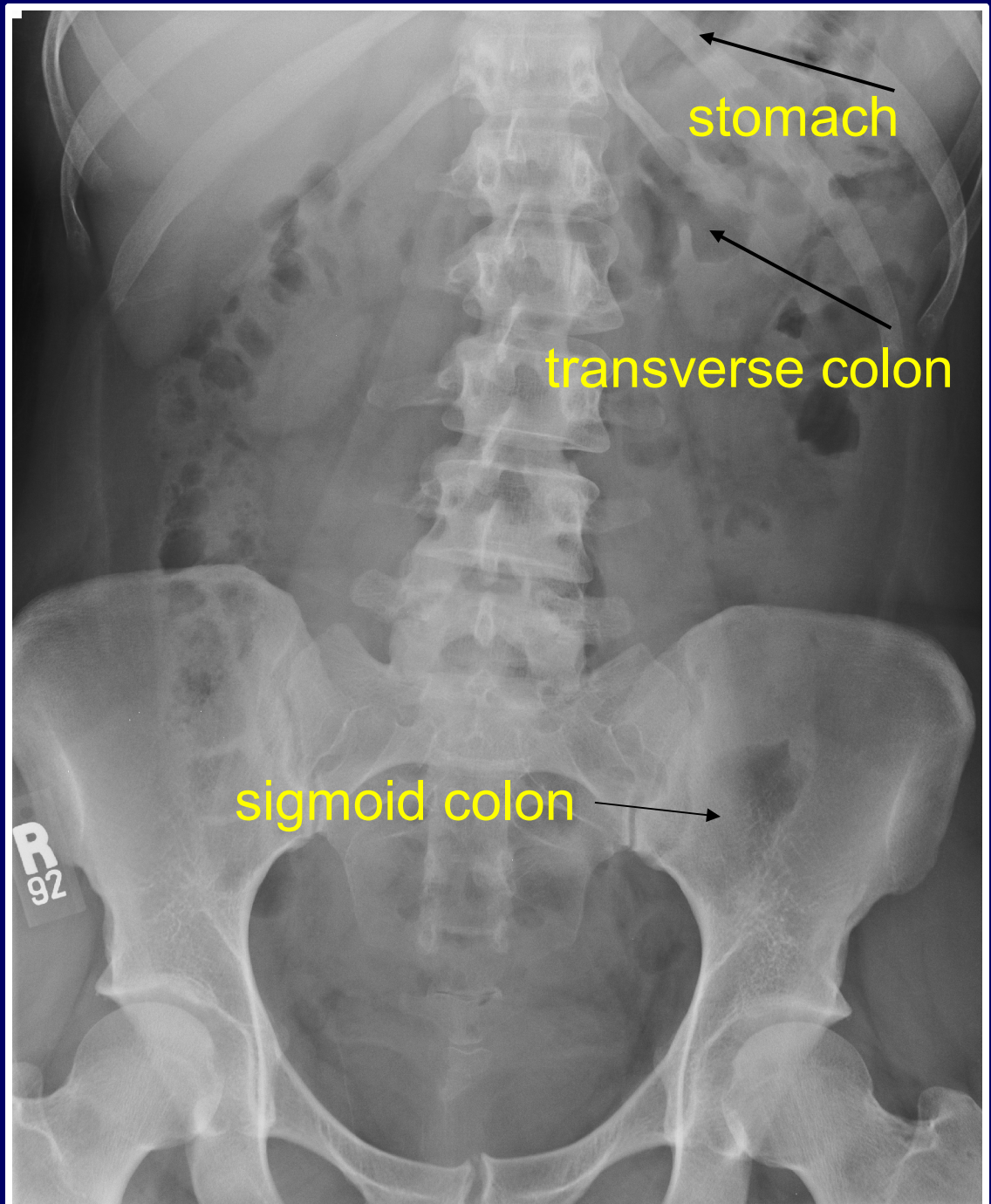


Layers of peritoneum attaches greater curvature to transverse colon and contains fat

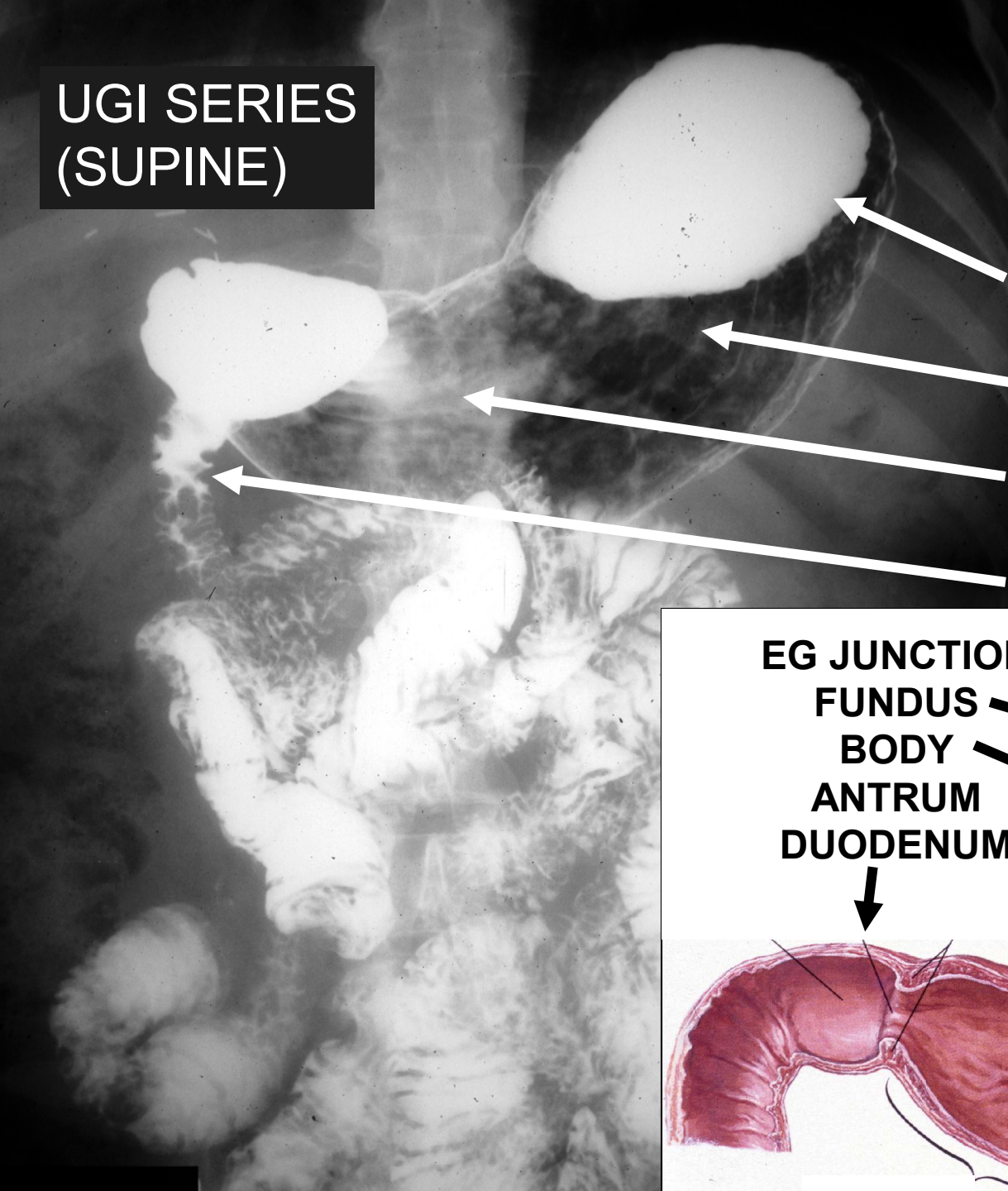
The **transverse** and proximal **sigmoid** colons are very anterior



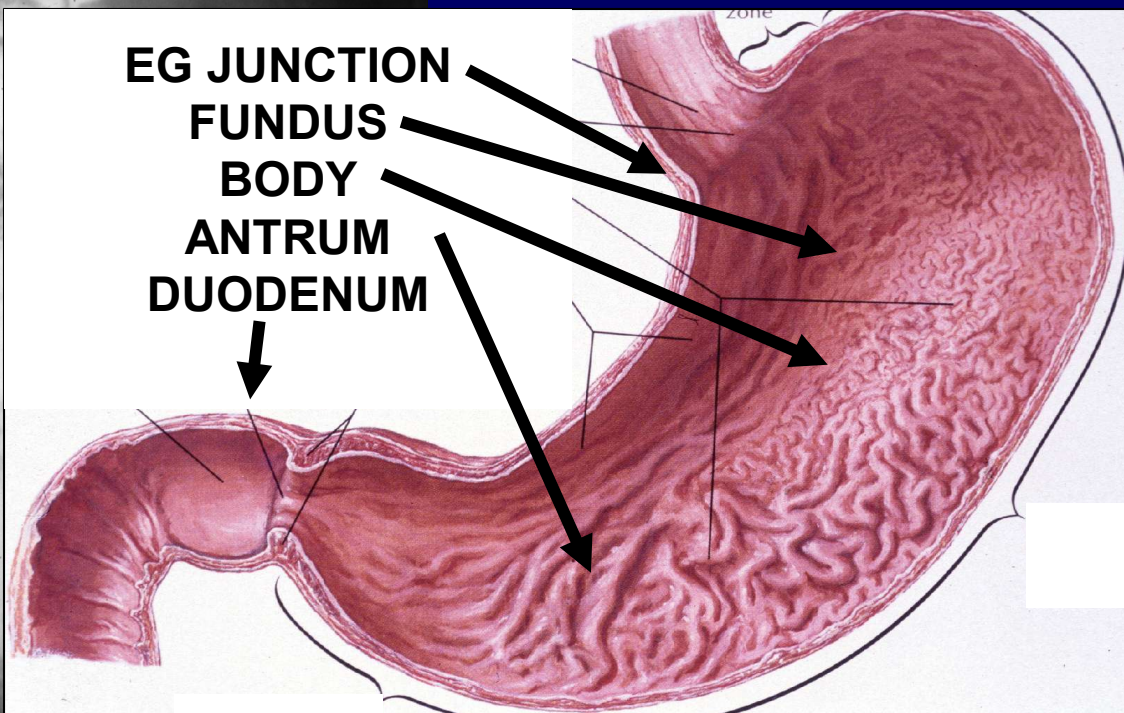
**ON A SUPINE
FILM, GAS WILL
RISE TO THE
LEAST
DEPENDENT
POINTS (i.e.
ANTERIOR
STRUCTURES**



**UGI SERIES
(SUPINE)**

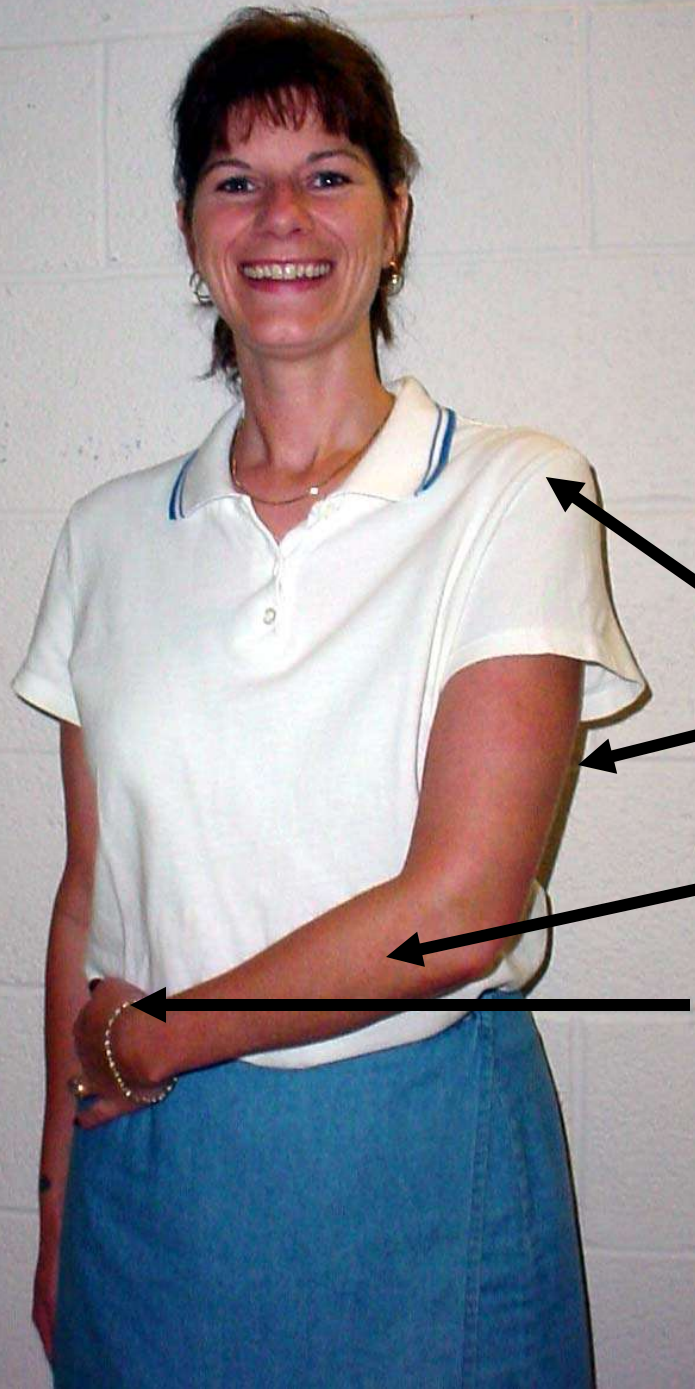


FUNDUS
BODY
ANTRUM
DUODENUM



EG JUNCTION
FUNDUS
BODY
ANTRUM
DUODENUM

**LEFT HAND RULE:
PLACE LEFT HAND ON
RIGHT HIP**

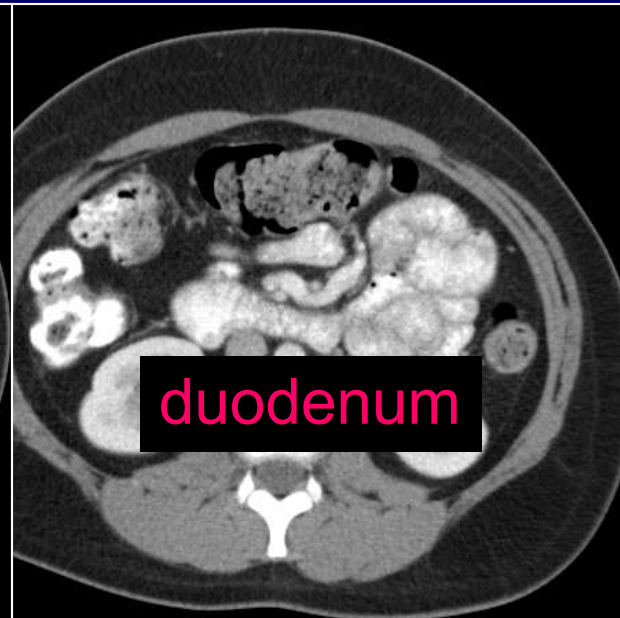
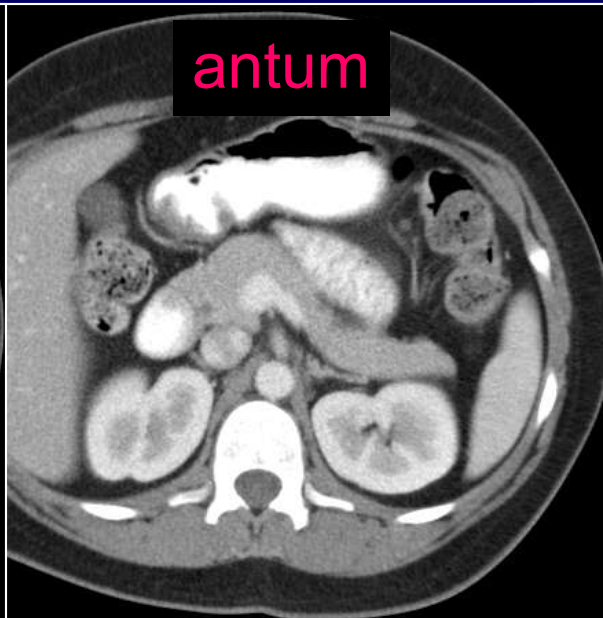
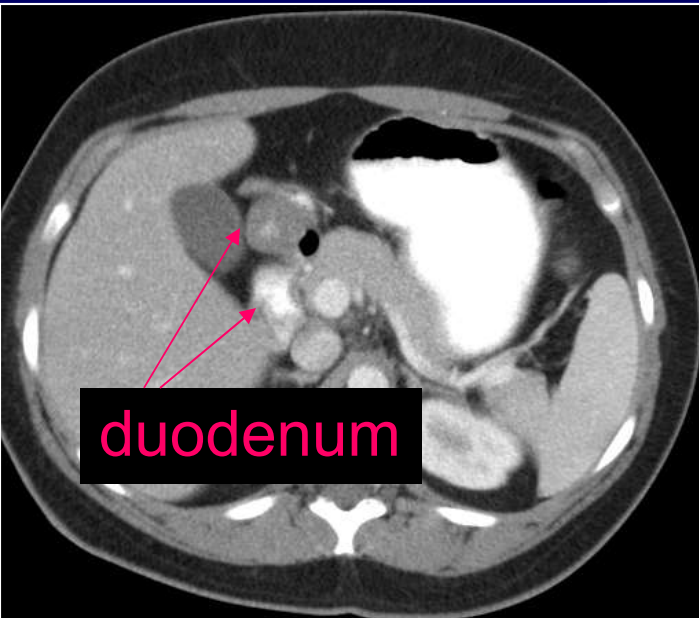
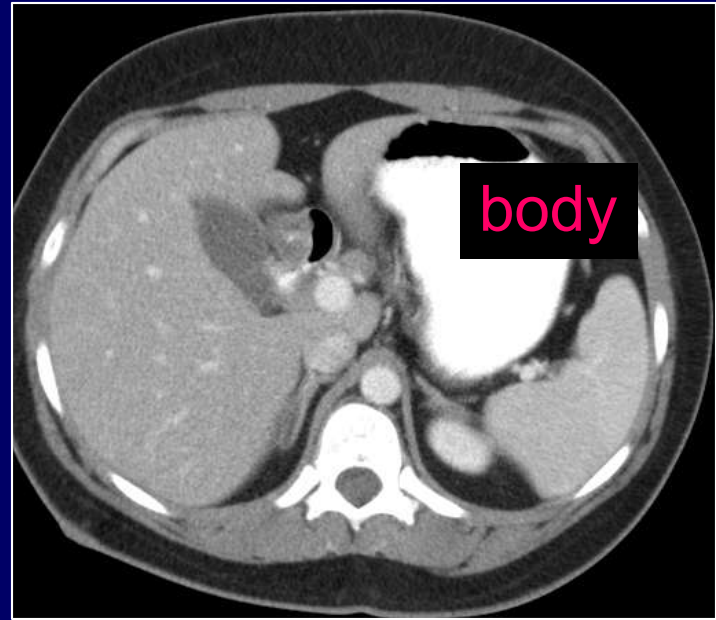
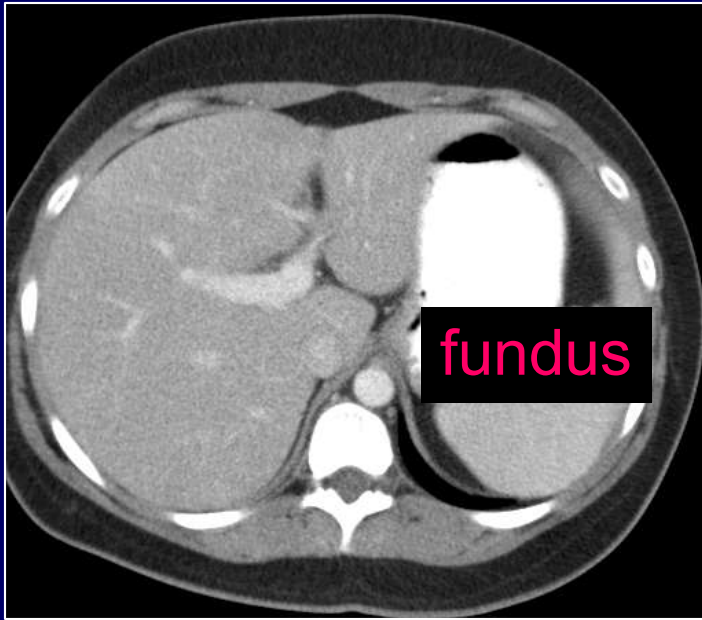


FUNDUS

BODY

ANTRUM

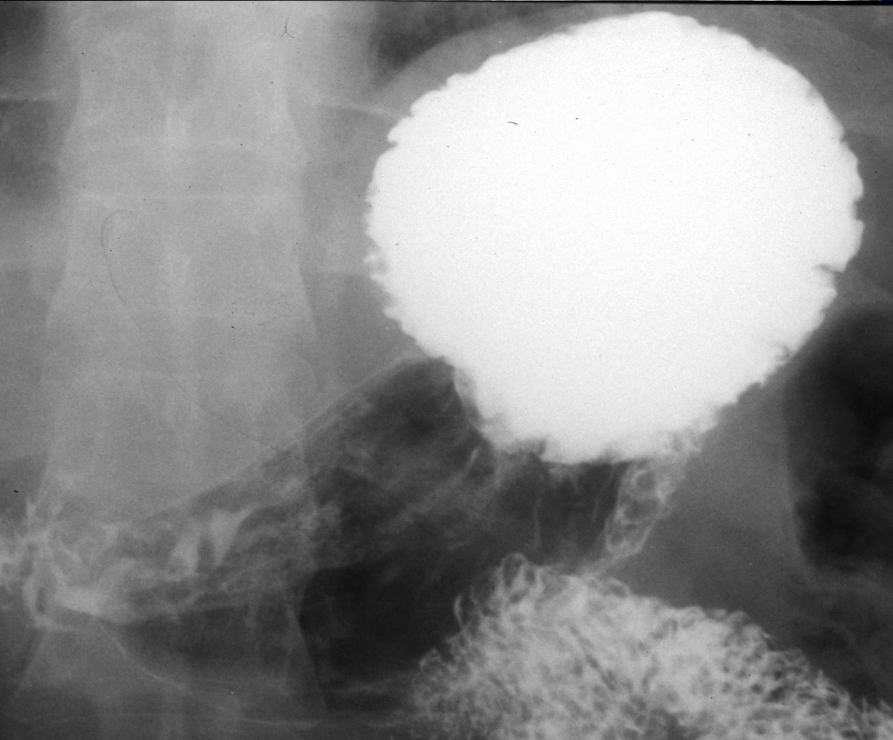
DUODENUM





**SAME PATIENT WHICH
IS PRONE AND WHICH
IS SUPINE?**

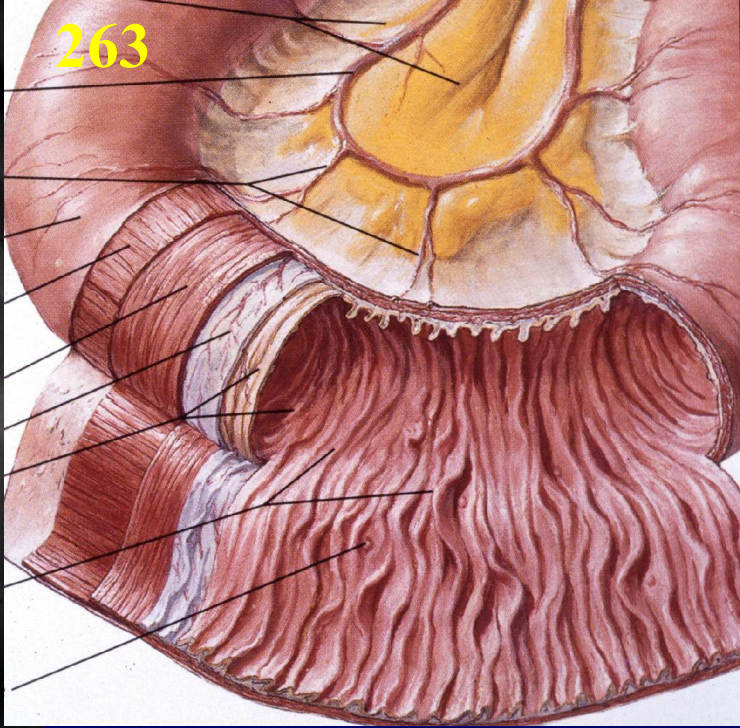
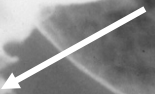
PRONE



SUPINE

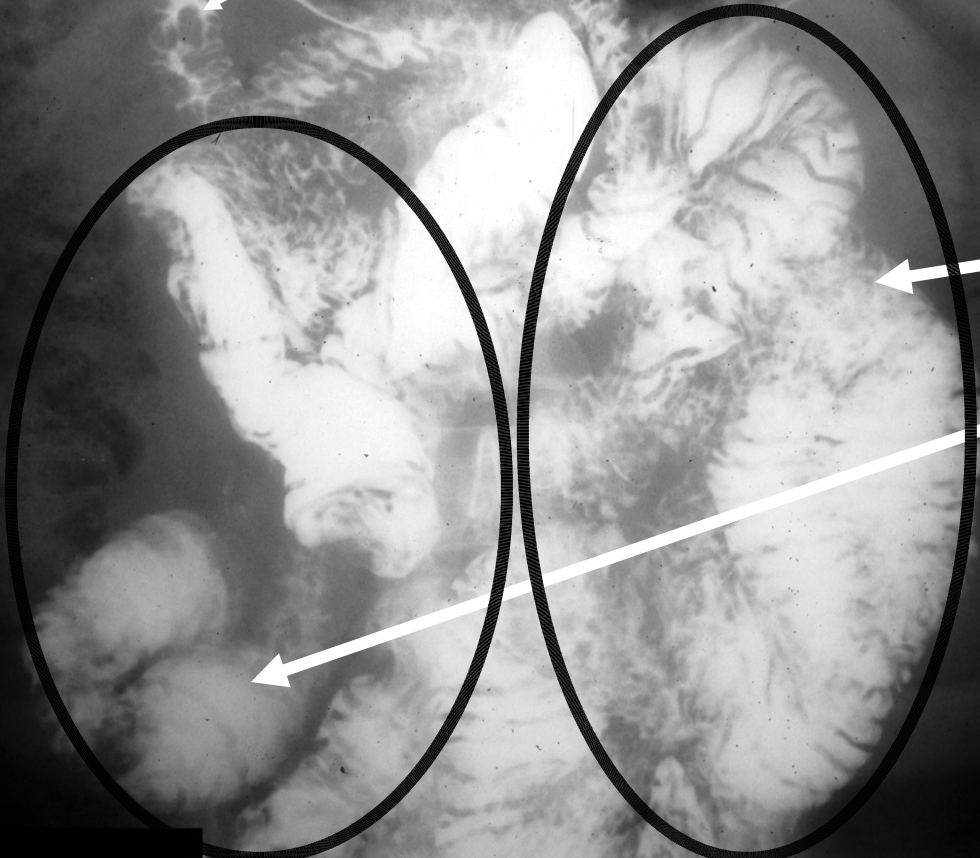
SMALL BOWEL

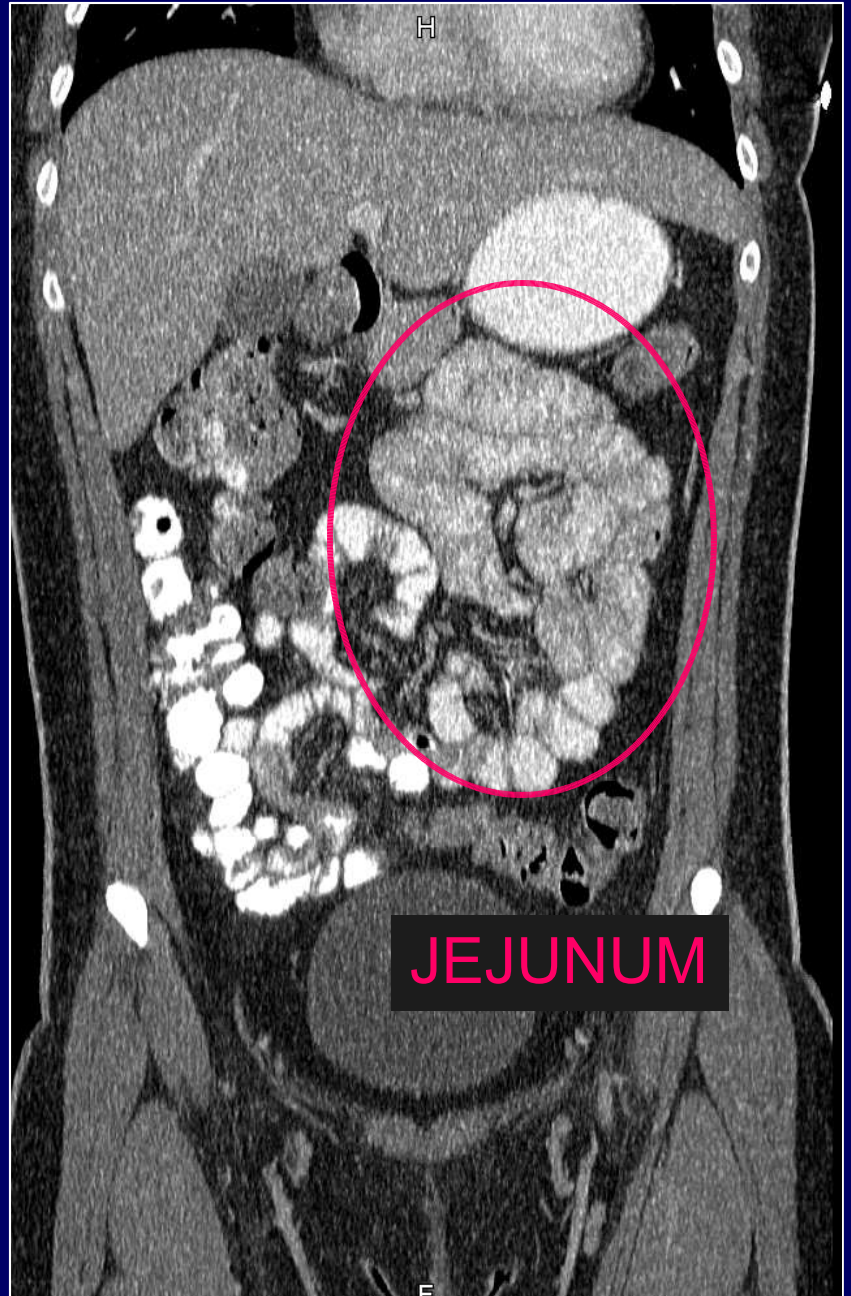
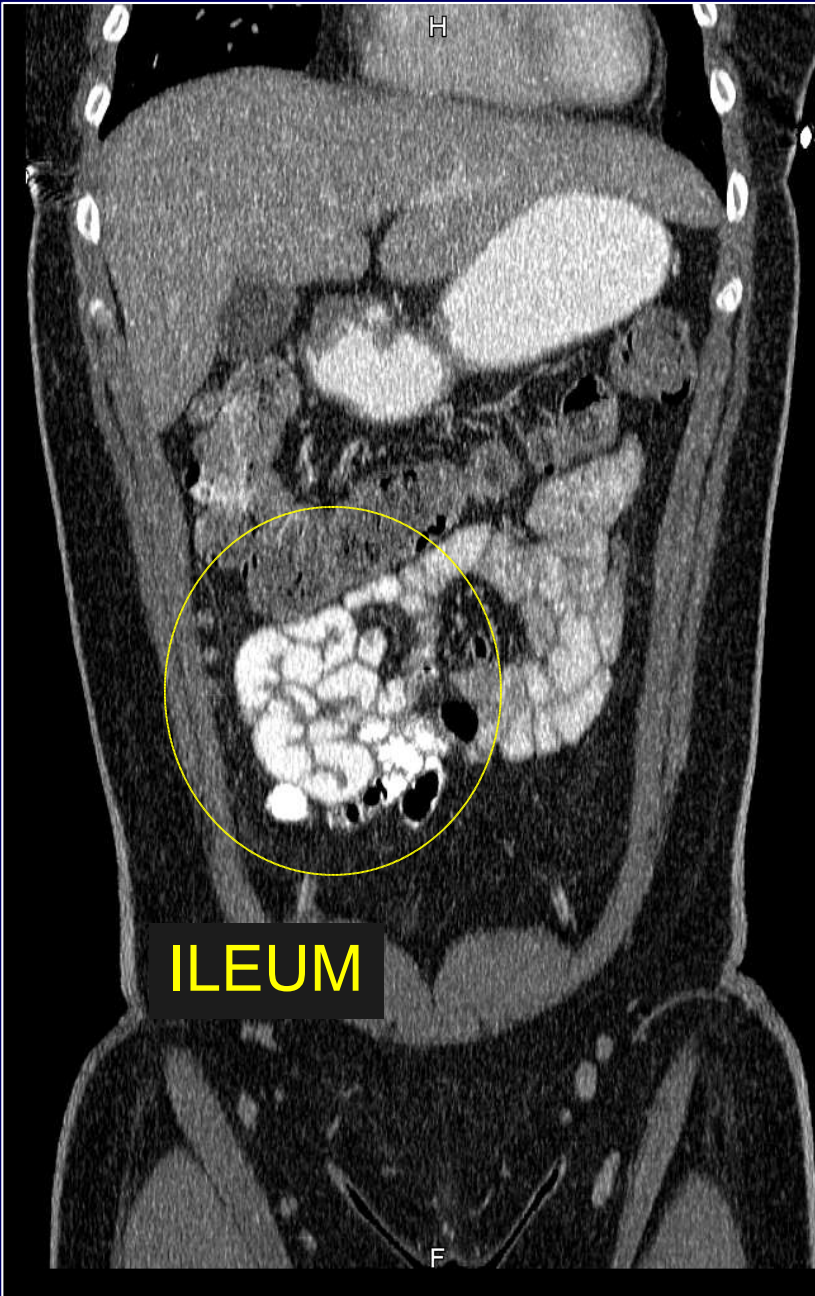
DUODENUM



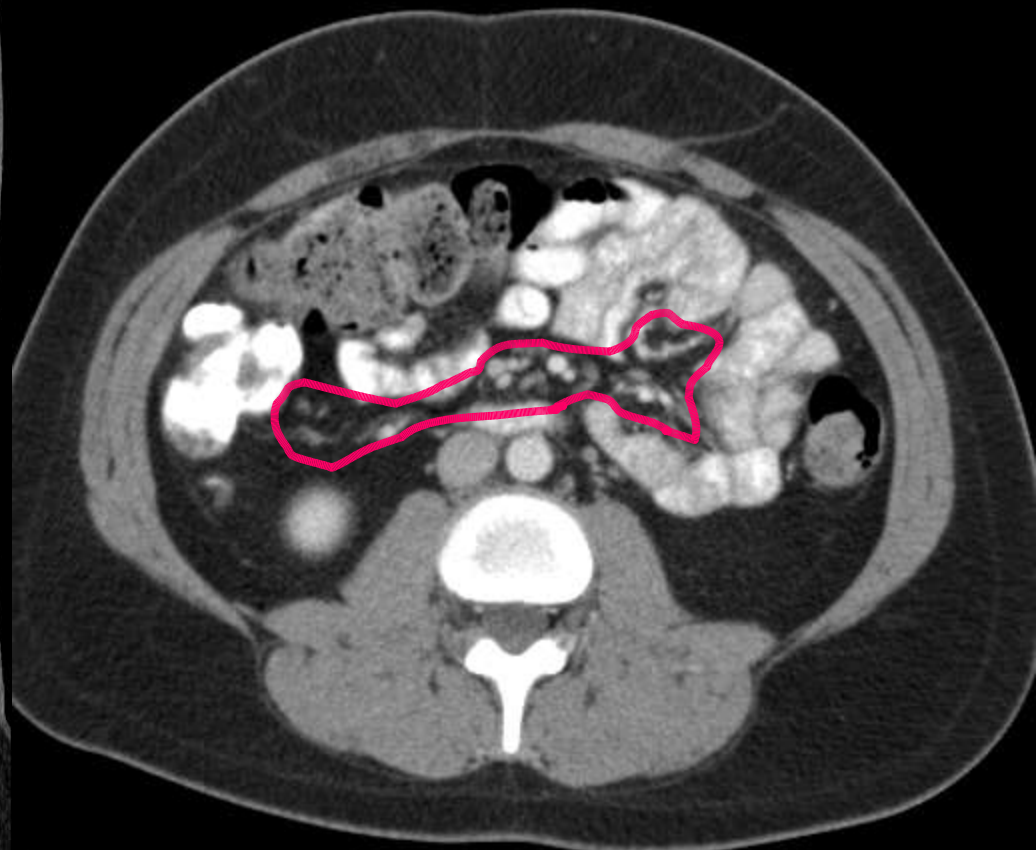
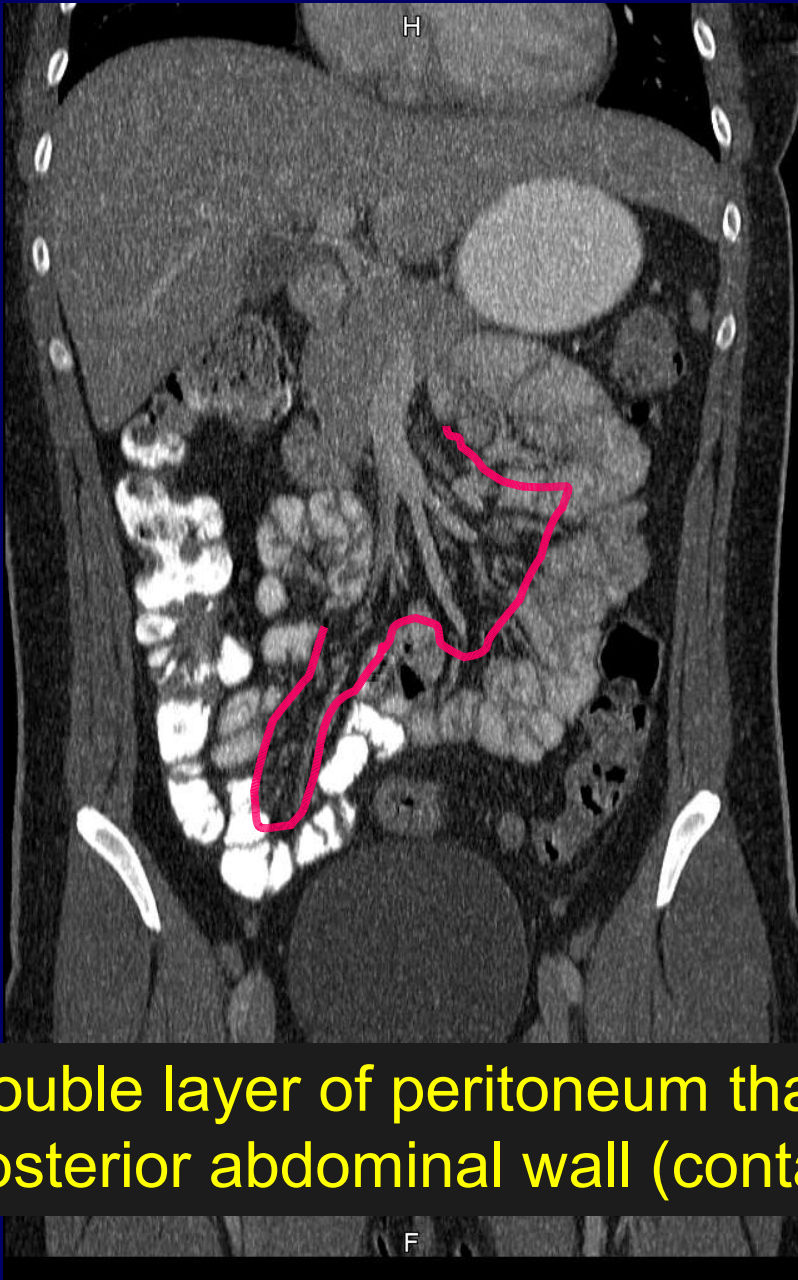
JEJUNUM

ILEUM

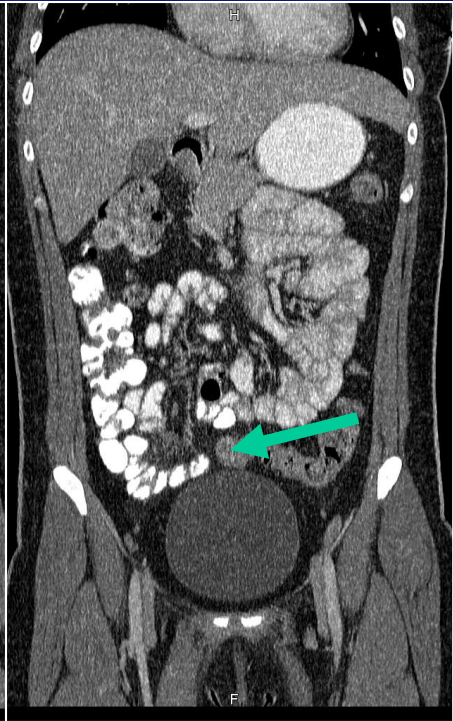
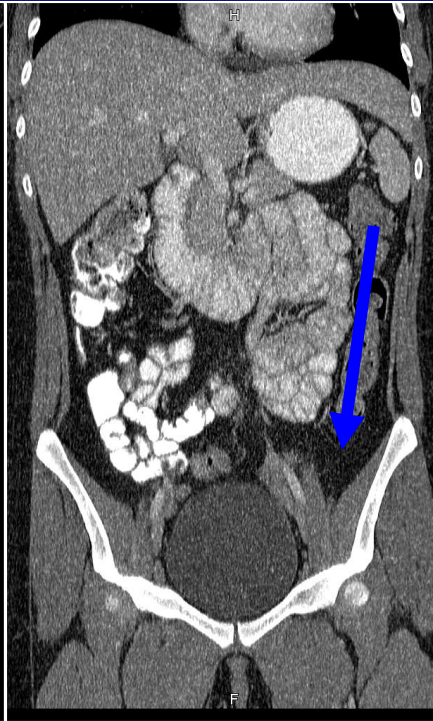
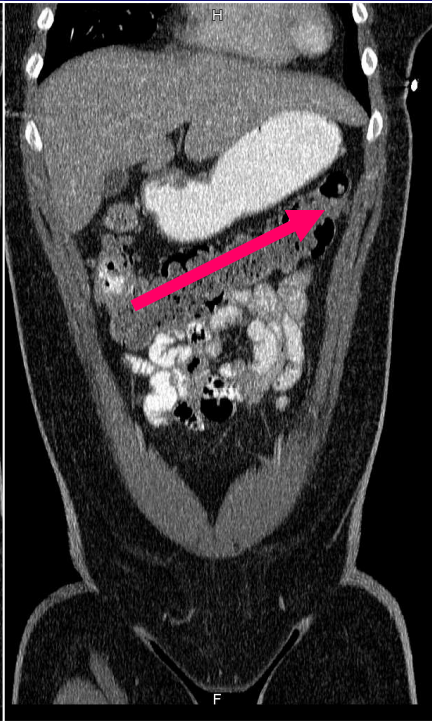
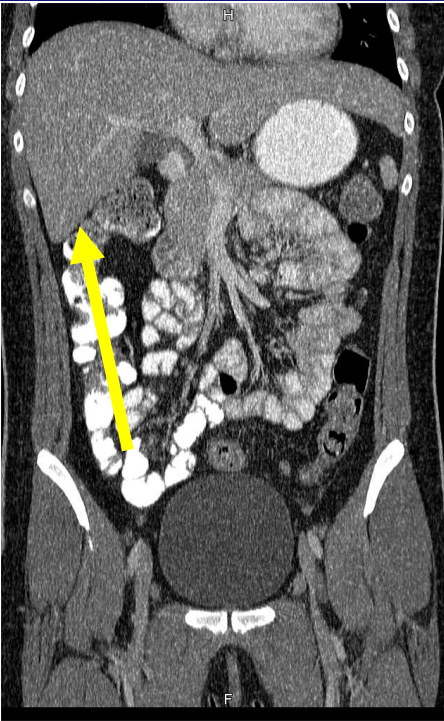




MESENTERY, Small bowel



Double layer of peritoneum that suspends intestines from posterior abdominal wall (contains fat, vessels)

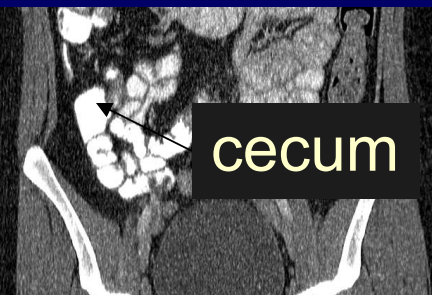


ascending

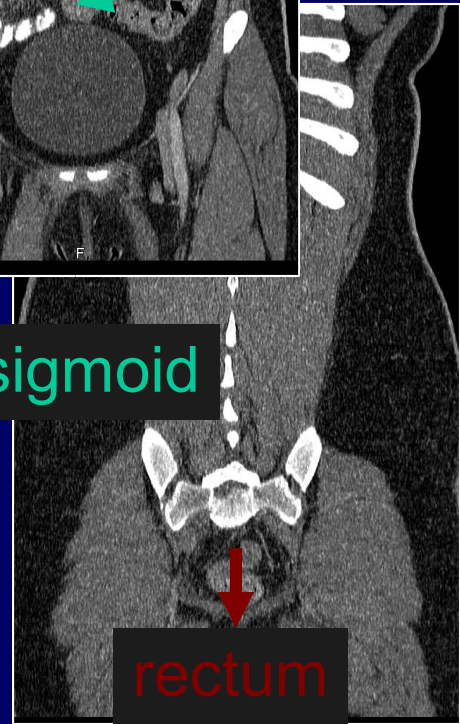
transverse

descending

sigmoid



cecum



rectum

BARIUM ENEMA

CECUM

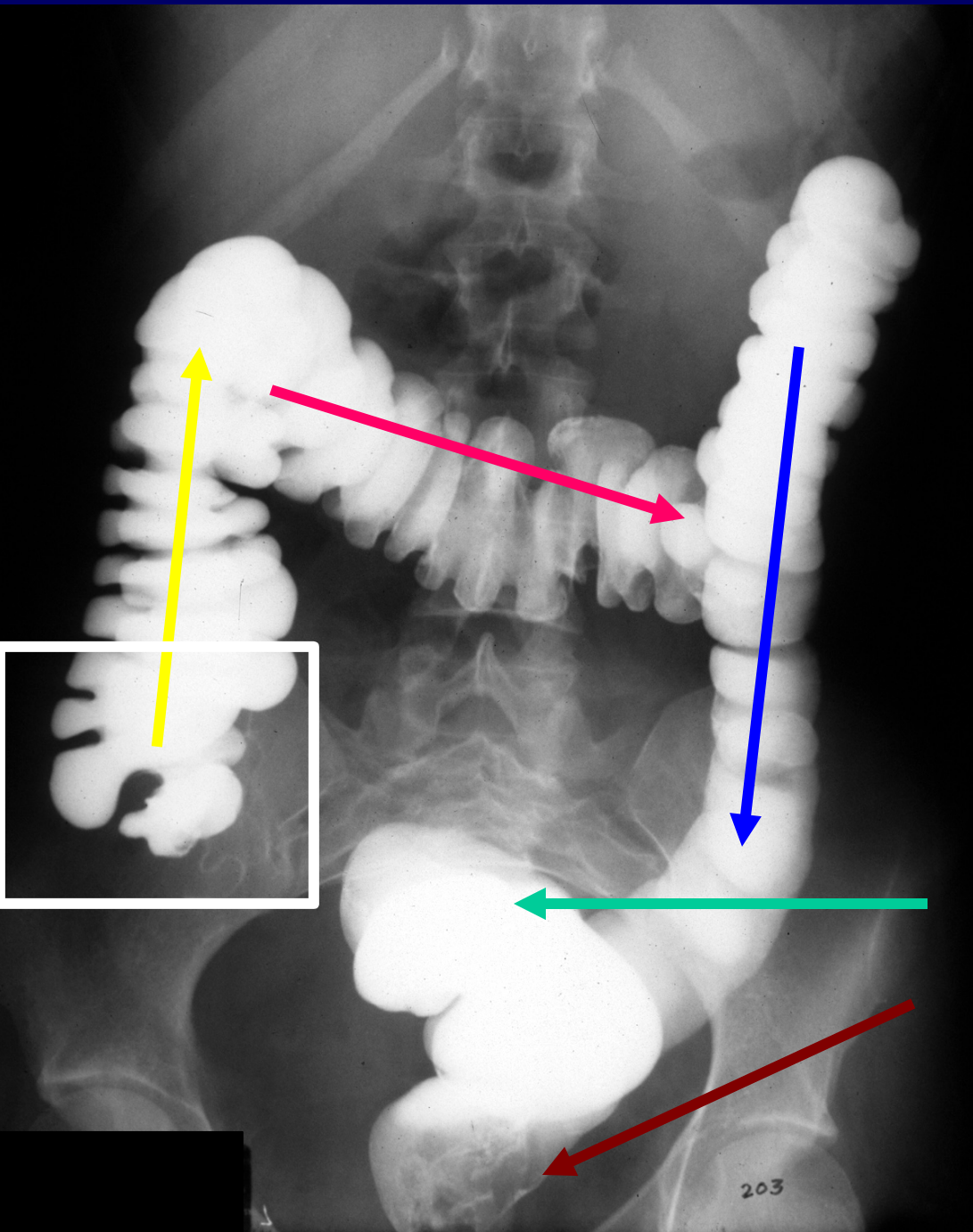
**ASCENDING
COLON**

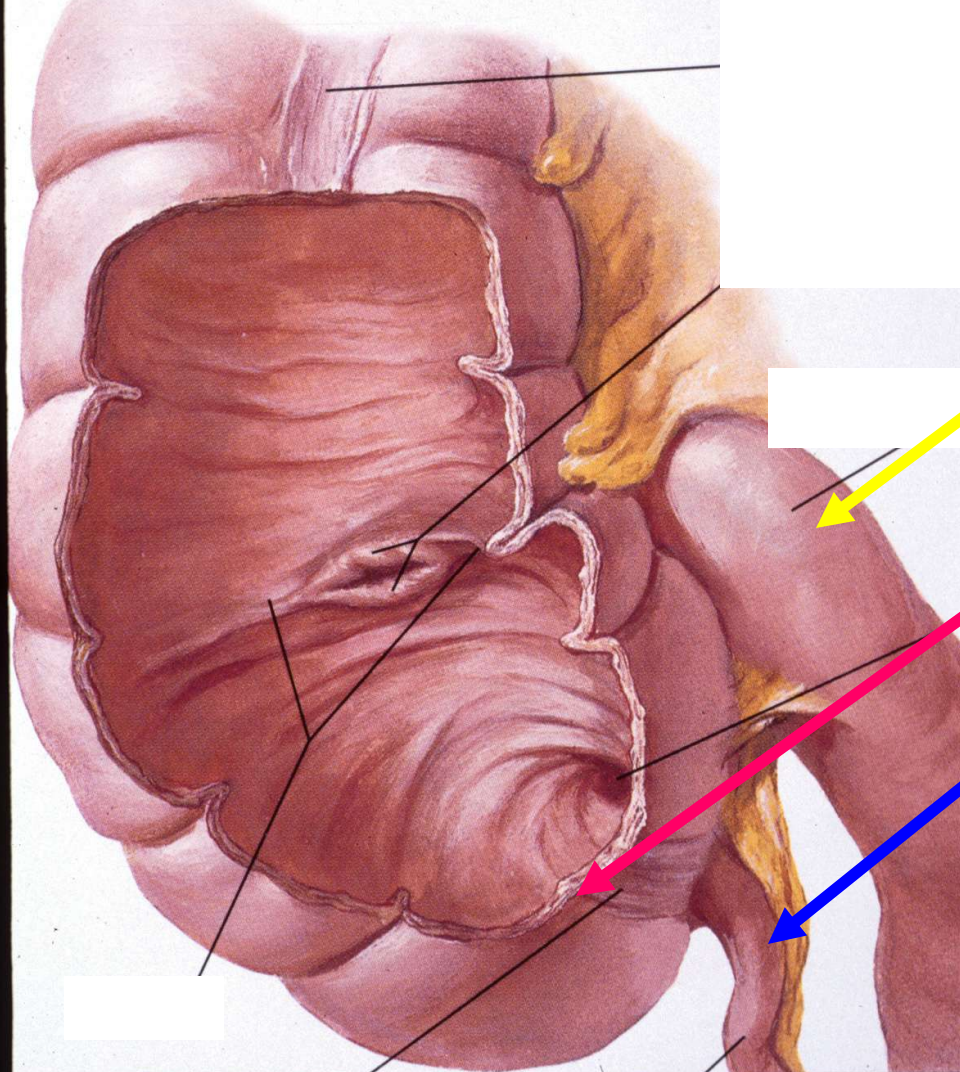
**TRANSVERSE
COLON**

**DESCENDING
COLON**

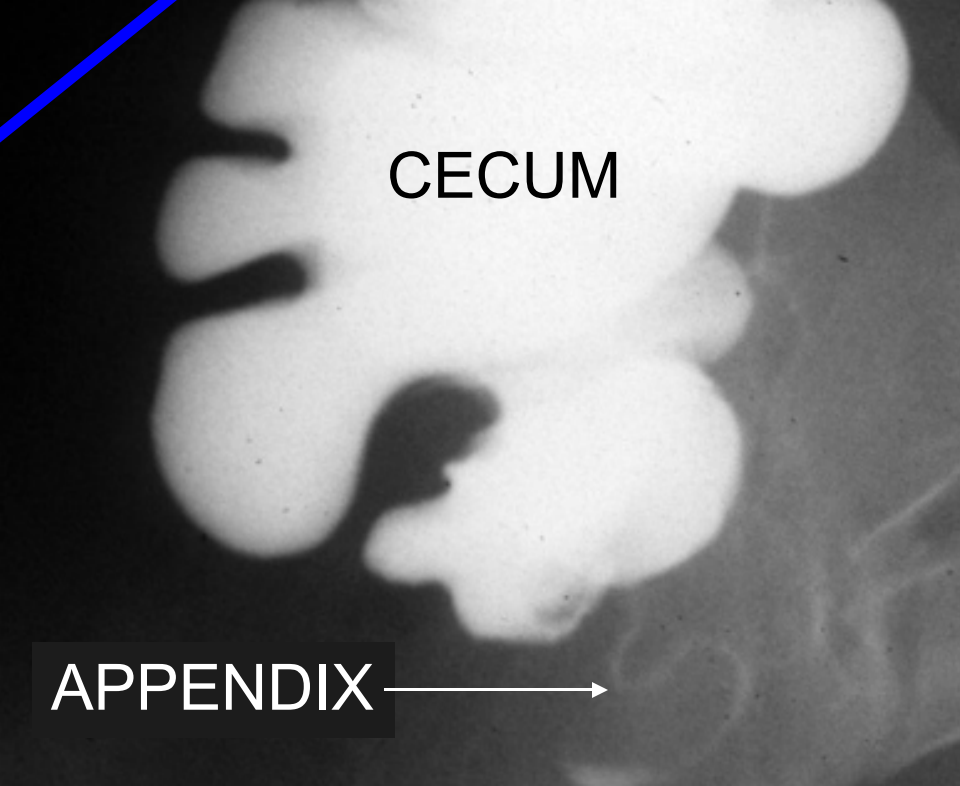
SIGMOID COLON

RECTUM

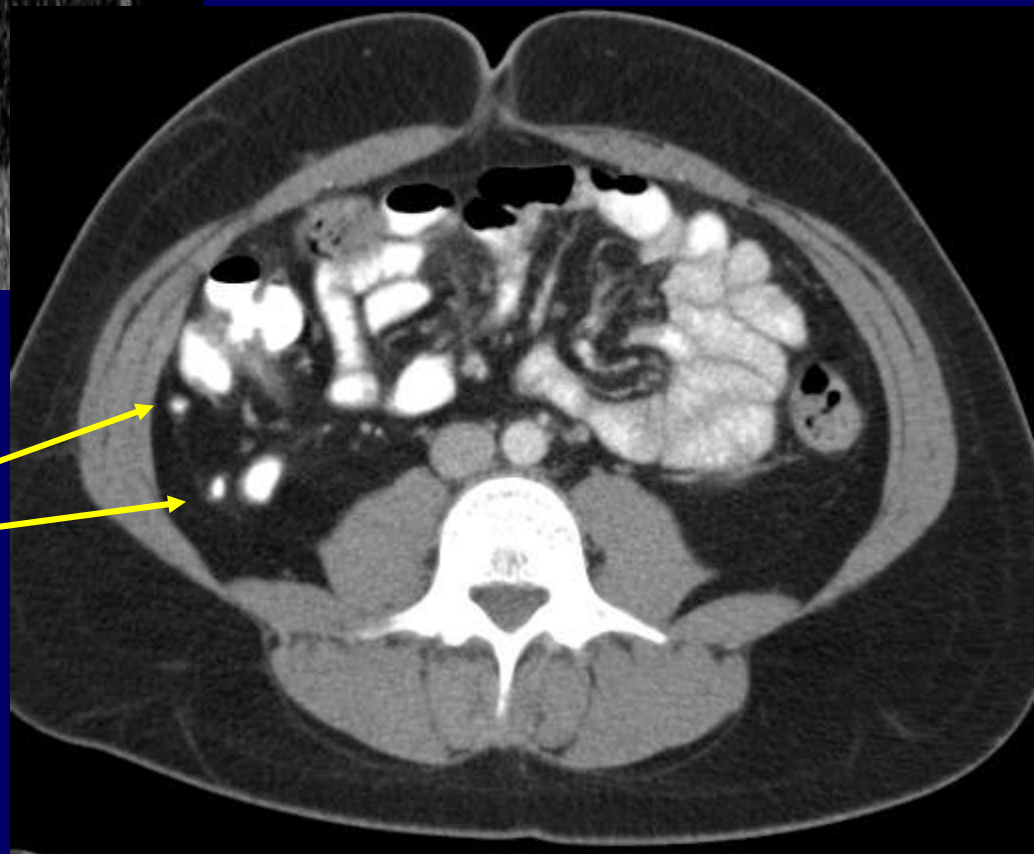
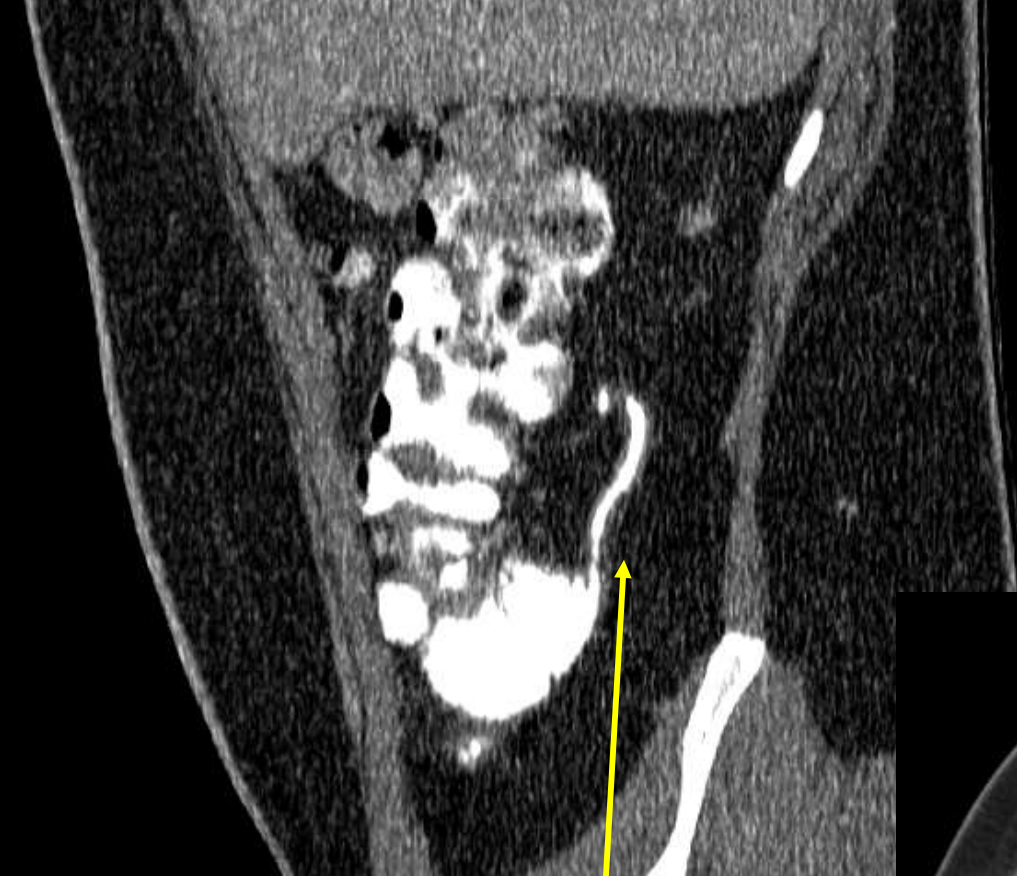




TERMINAL ILEUM
CECUM
APPENDIX

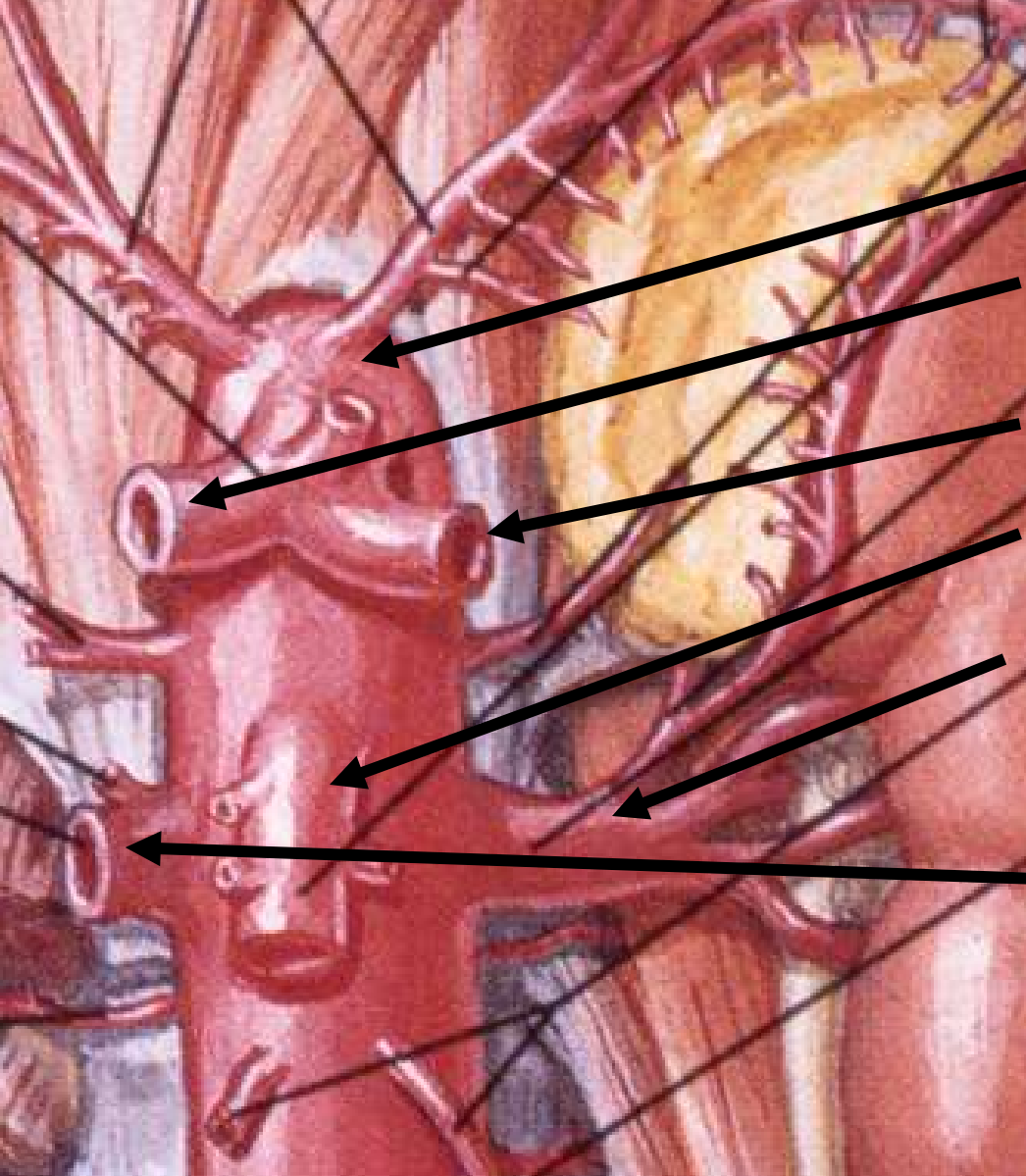


APPENDIX →



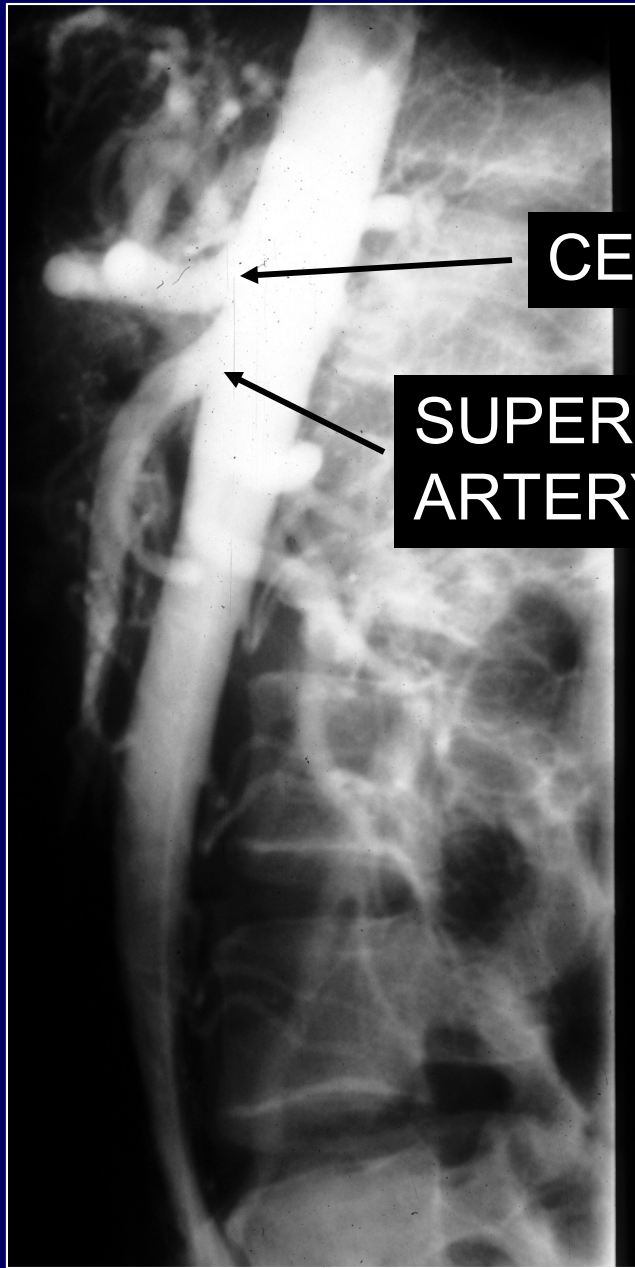
APPENDIX

**ANGIOGRAPHIC
ANATOMY
OF THE
ABDOMEN**



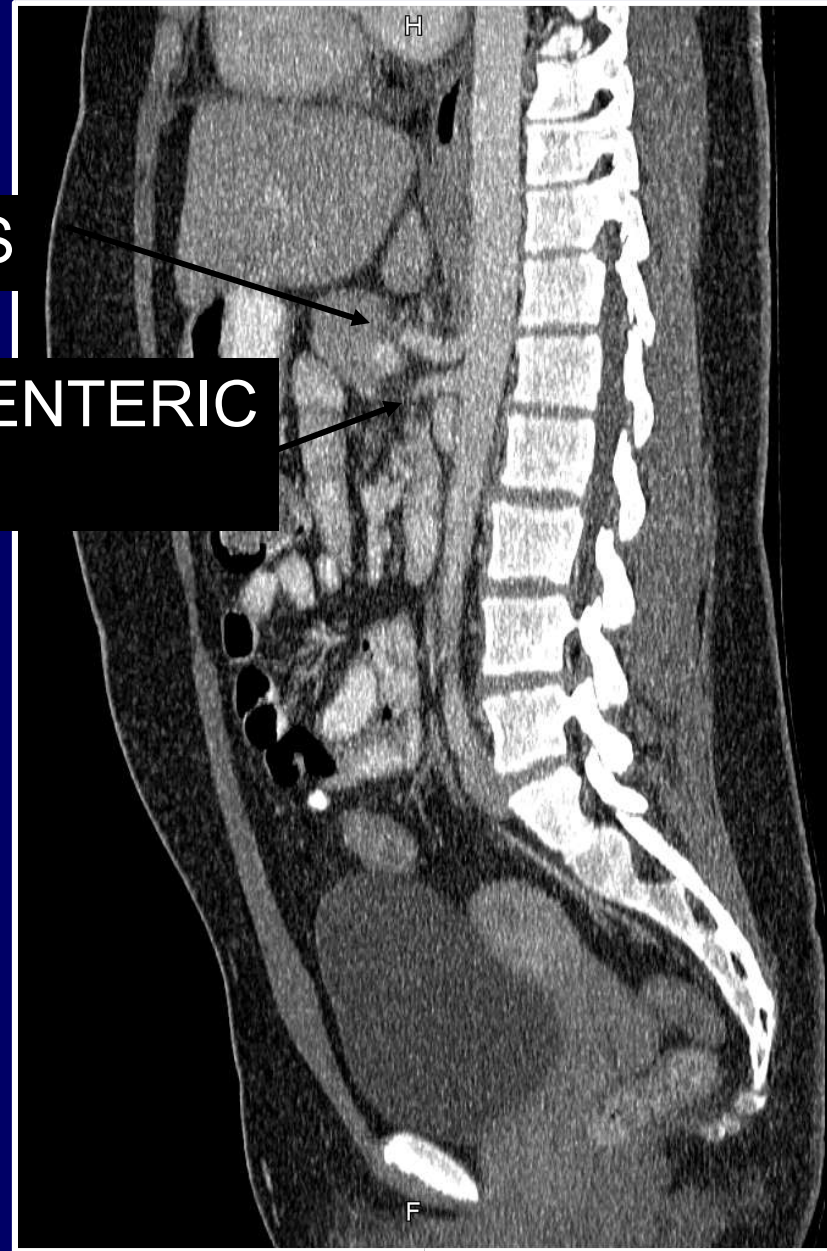
CELIAC TRUNK
HEPATIC ARTERY
SPLenic ARTERY
SMA
**LEFT RENAL
ARTERY**
**RIGHT RENAL
ARTERY**

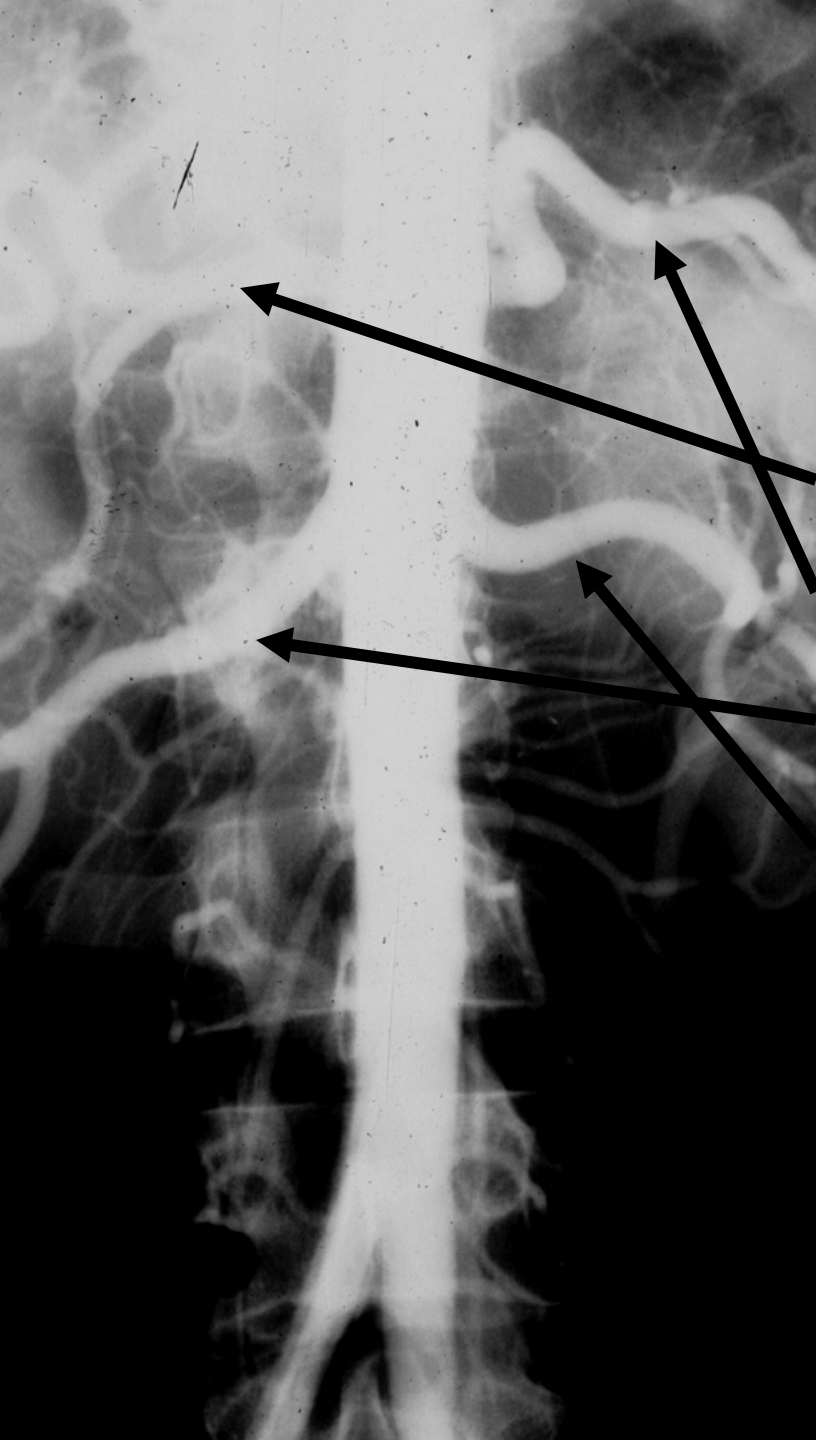
NORMAL AORTOGRAM (SAGITTAL)



CELIAC AXIS

SUPERIOR MESENTERIC ARTERY (SMA)





**NORMAL
AORTOGRAM
(FRONTAL)**

HEPATIC ARTERY

SPLenic ARTERY

RIGHT RENAL ARTERY

LEFT RENAL ARTERY

CELIAC ARTERIOGRAM (ARTERIAL)

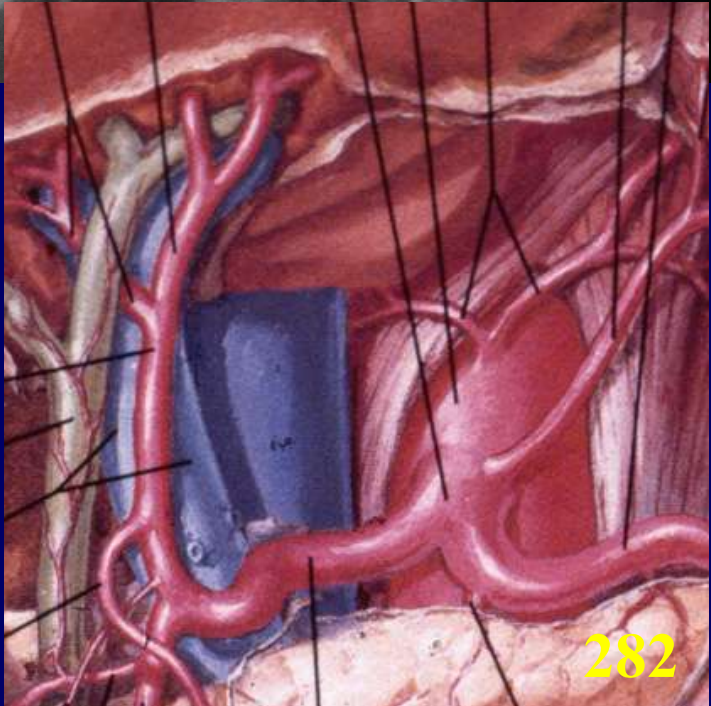
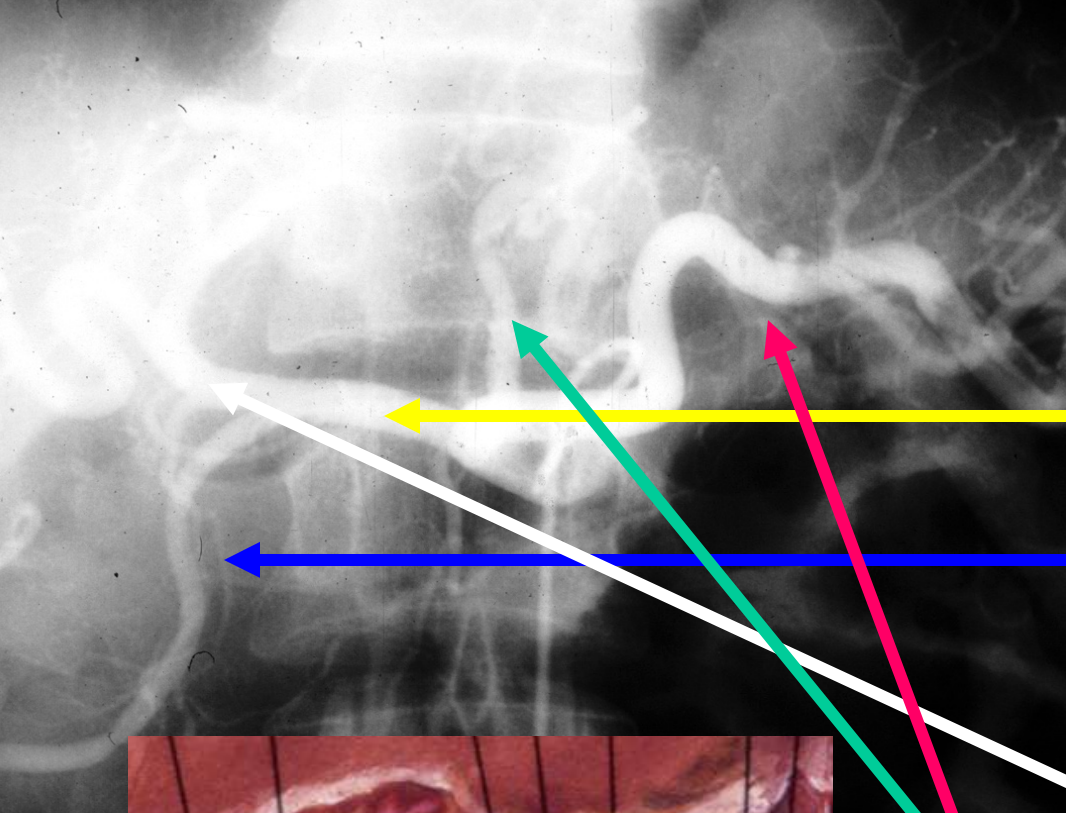
MAIN HEPATIC A.

**GASTRODUO-
DENAL ARTERY**

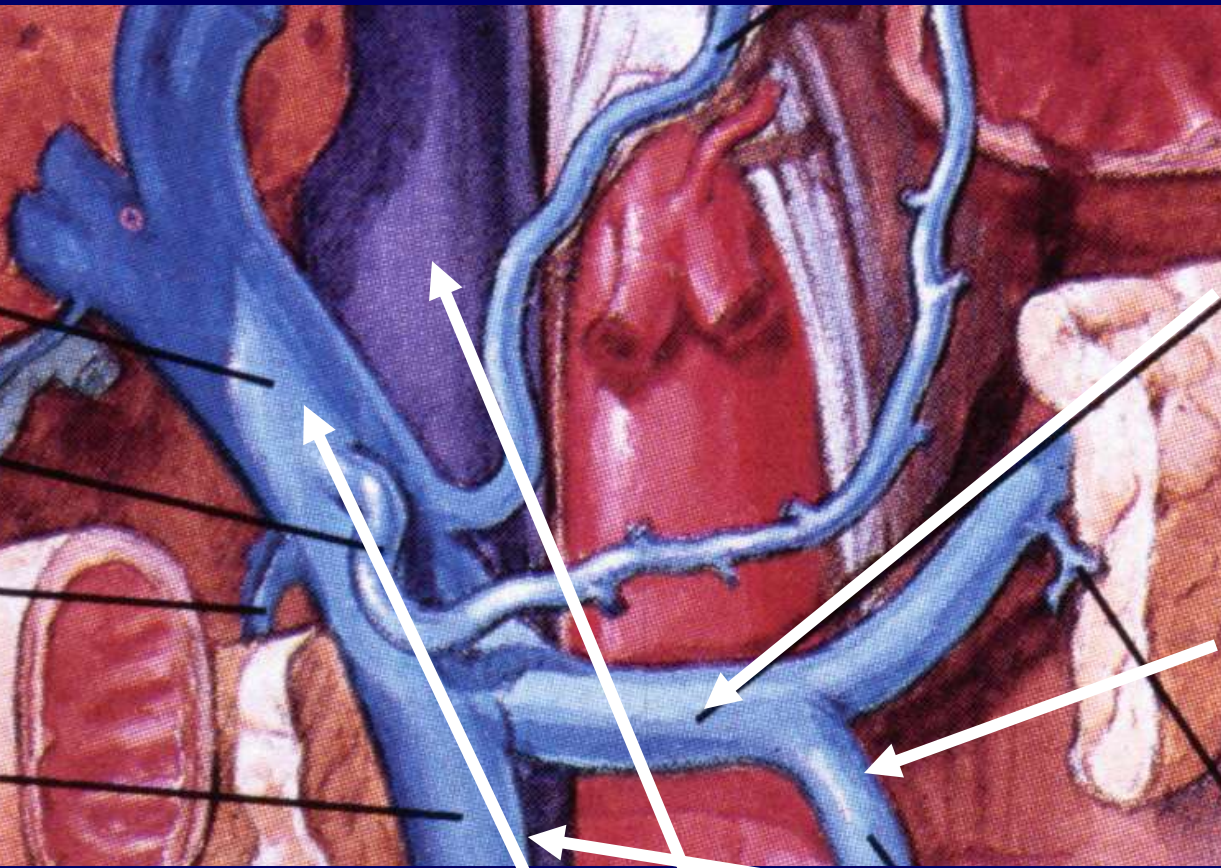
**HEPATIC PROPER
ARTERY**

LEFT GASTRIC A

SPLENIC ARTERY



PANCREAS AND STOMACH CUT



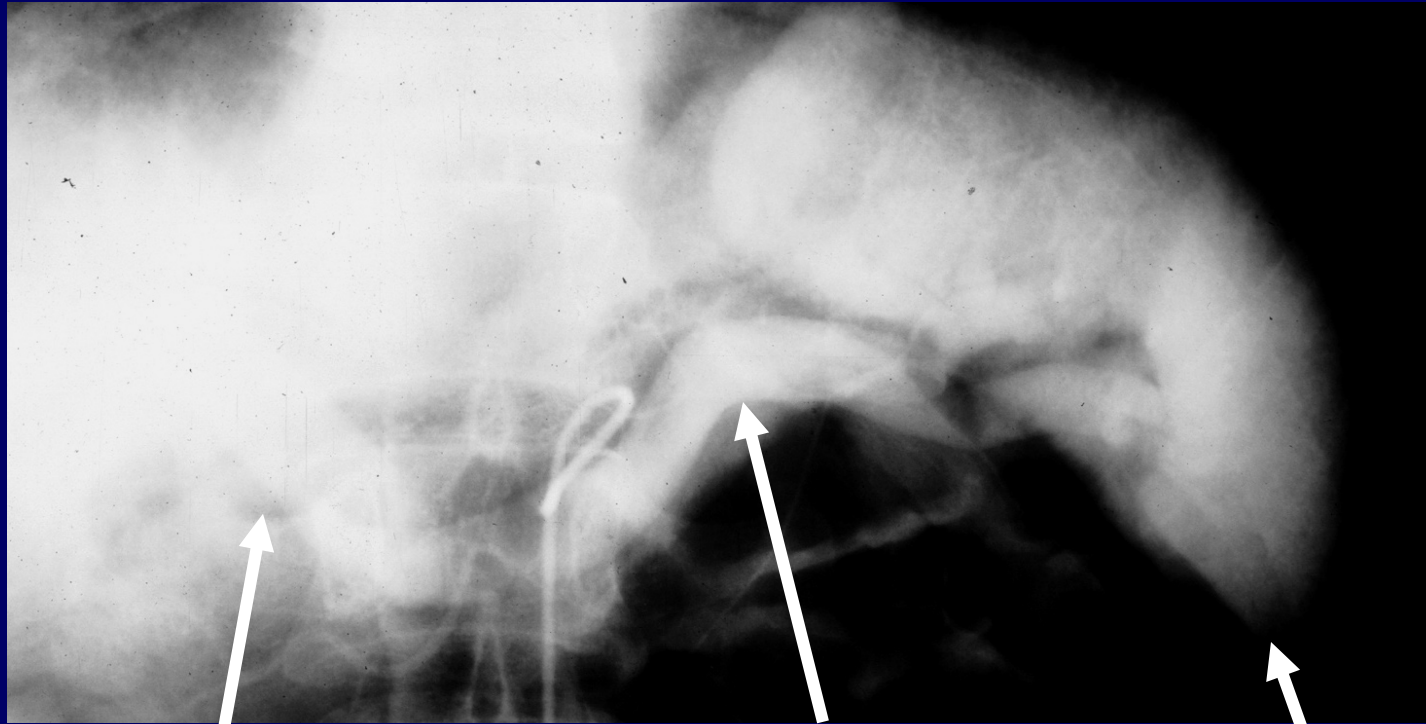
SPLenic VEIN

**INFERIOR
MESENTERIC
VEIN**

**IVC
PORTAL VEIN**

**SUPERIOR
MESENTERIC
VEIN**

CELIAC ARTERIOGRAM (VENOUS PHASE)



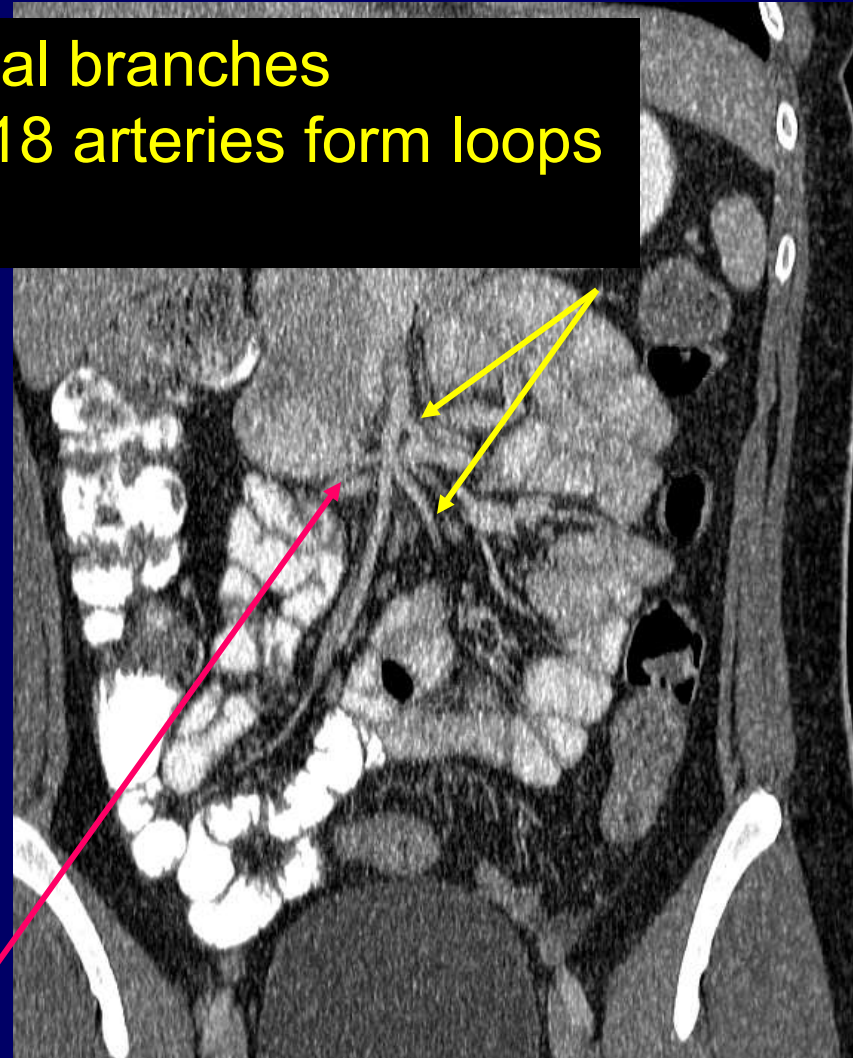
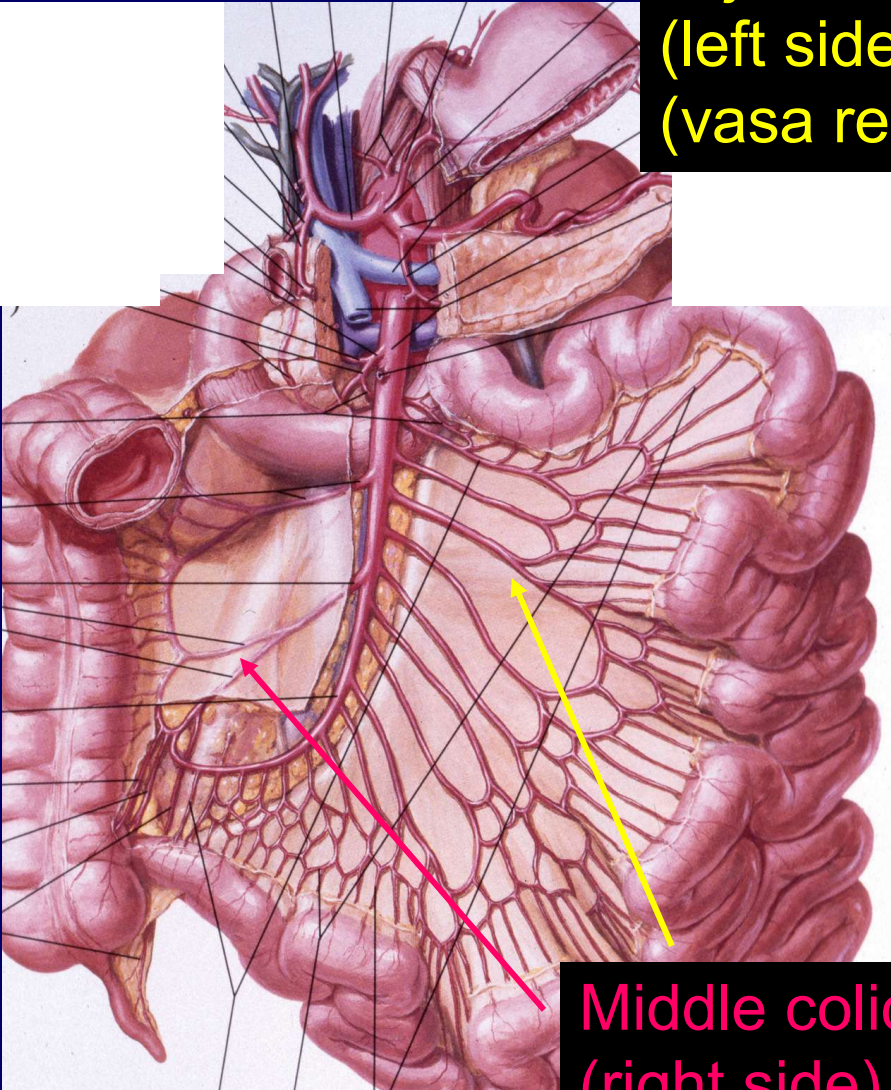
PORTAL VEIN

SPLenic VEIN

SPLEEN

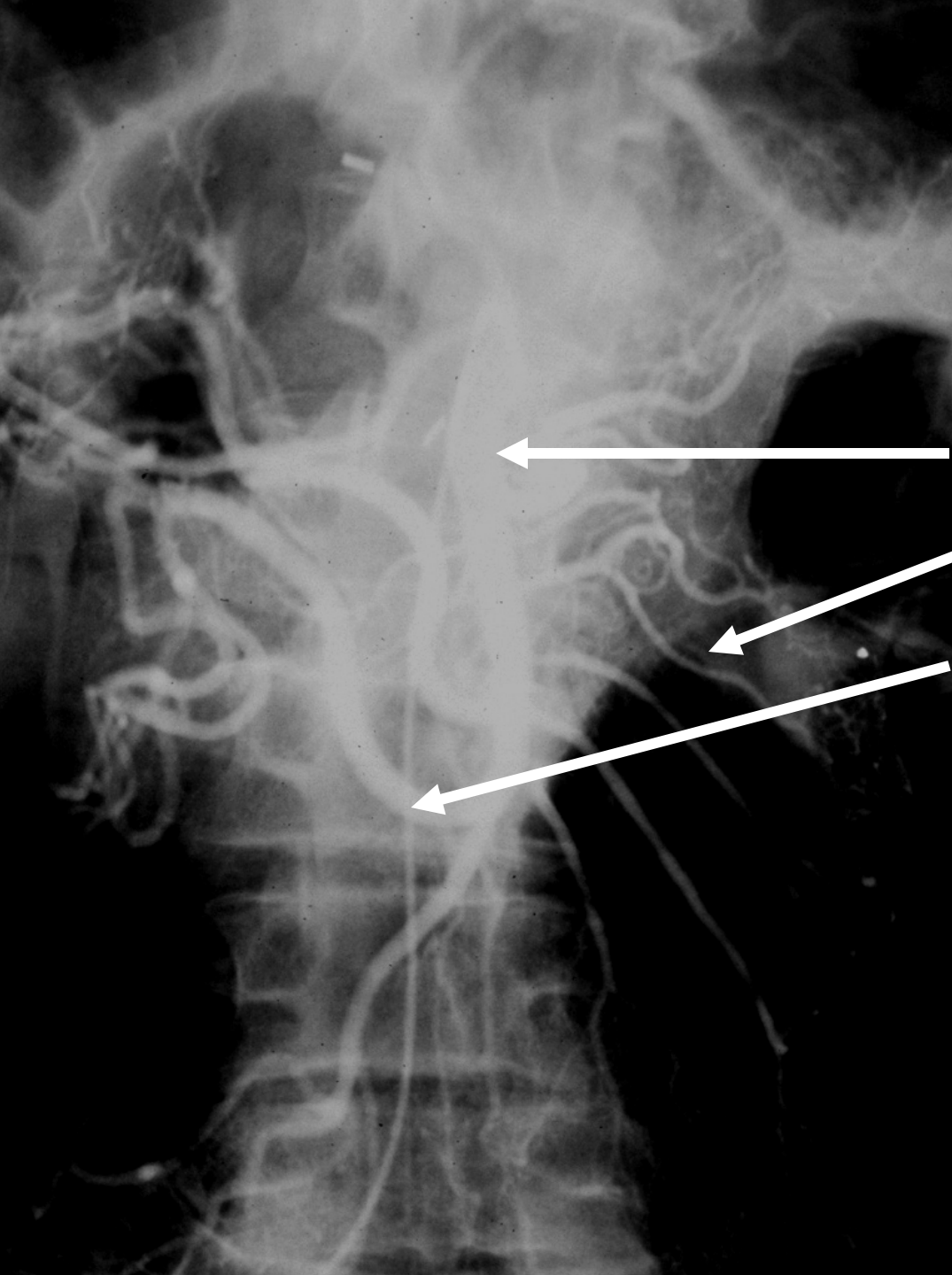
SMA

Jejunal and ileal branches
(left side); 15-18 arteries form loops
(vasa recta)



Middle colic, ileocolic, and right colic branches
(right side)

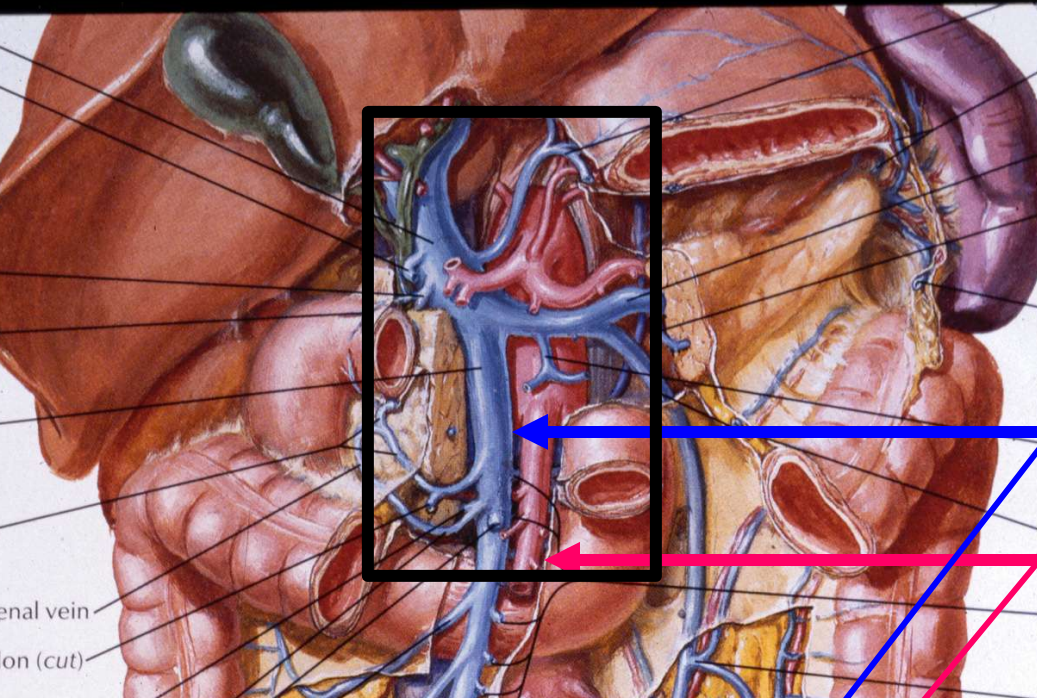
**SUPERIOR
MESENTERIC
ARTERIOGRAM**



SMA

JEJUNAL BRANCH

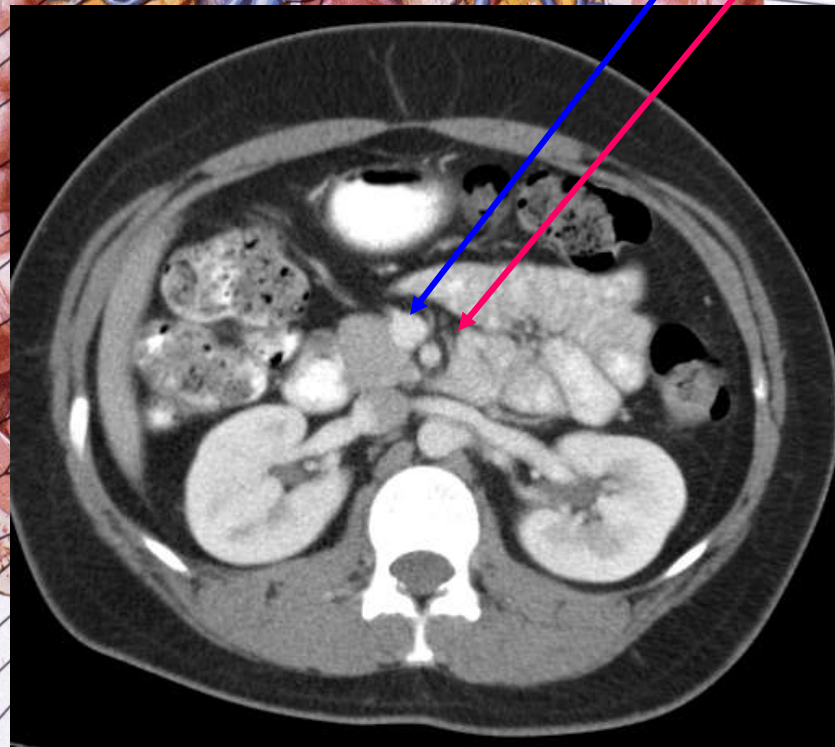
**ILEOCOLIC
ARTERY**



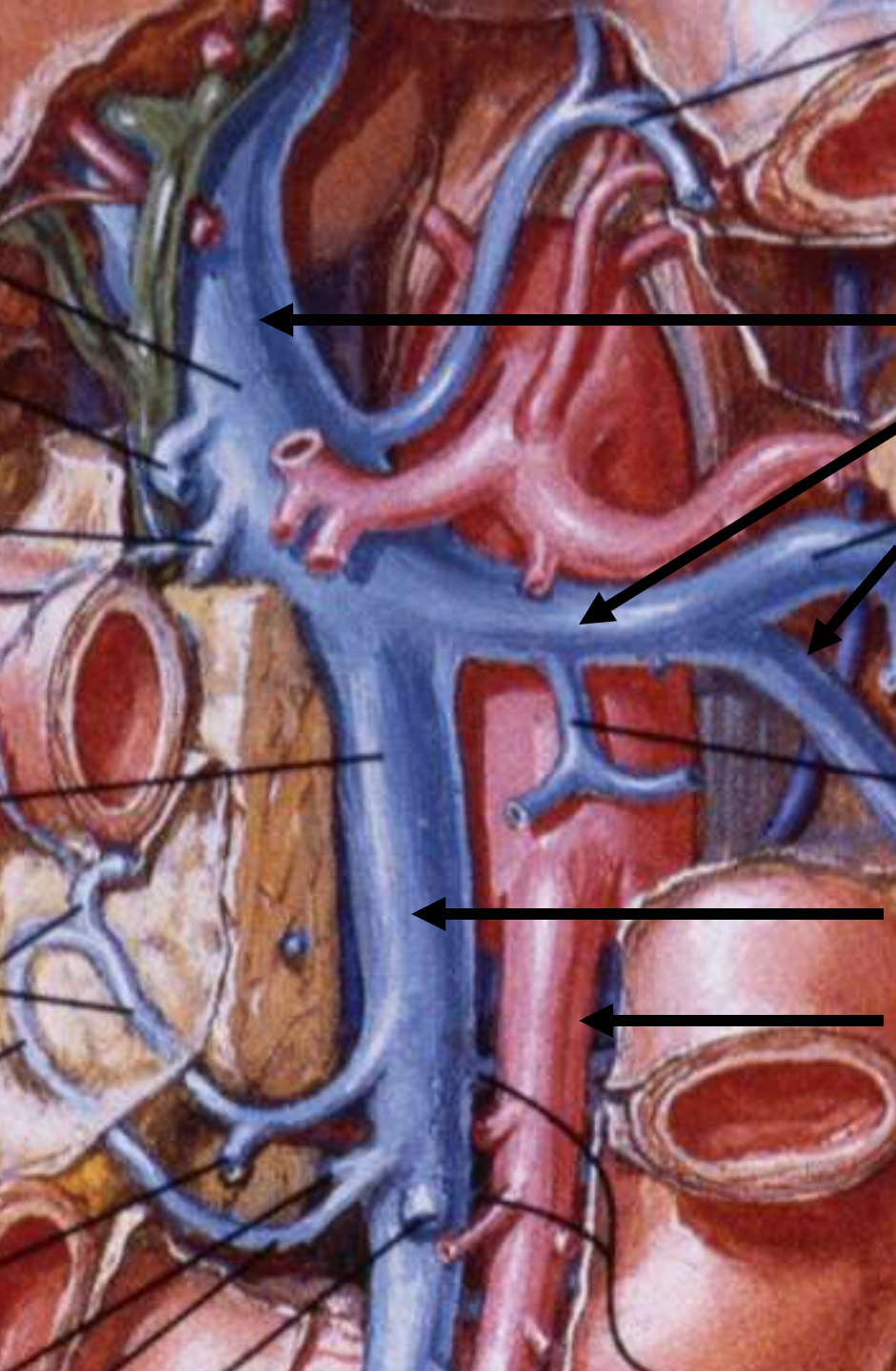
SMV

SMA

renal vein
on (cut)
renal vein
renal vein
n (cut)
vein
vein
l vein
cal vein
vein
icular
vessels
c vessels
liac vein
gluteal vein
otunt vein
gluteal vein



**SUPERIOR MESENTERIC
VEIN RUNS TO THE RIGHT
OF THE SUPERIOR
MESENTERIC ARTERY**



PORTAL VEIN

SPLENIC VEIN

IMV

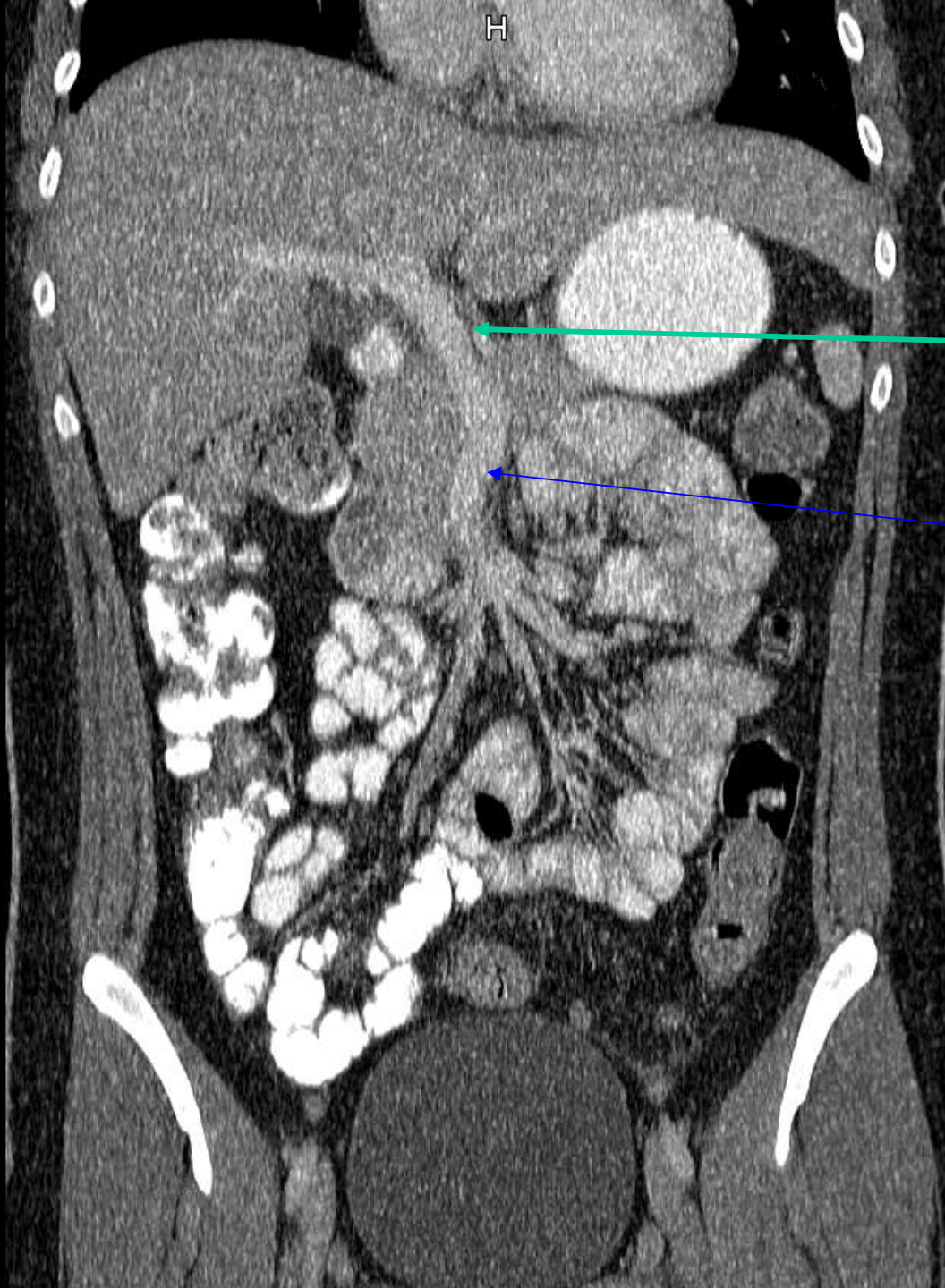
SMV

SMA

**PORTAL VEIN
IS FORMED WHEN
THE SPLENIC VEIN
JOINS SUPERIOR
MESENTERIC VEIN**



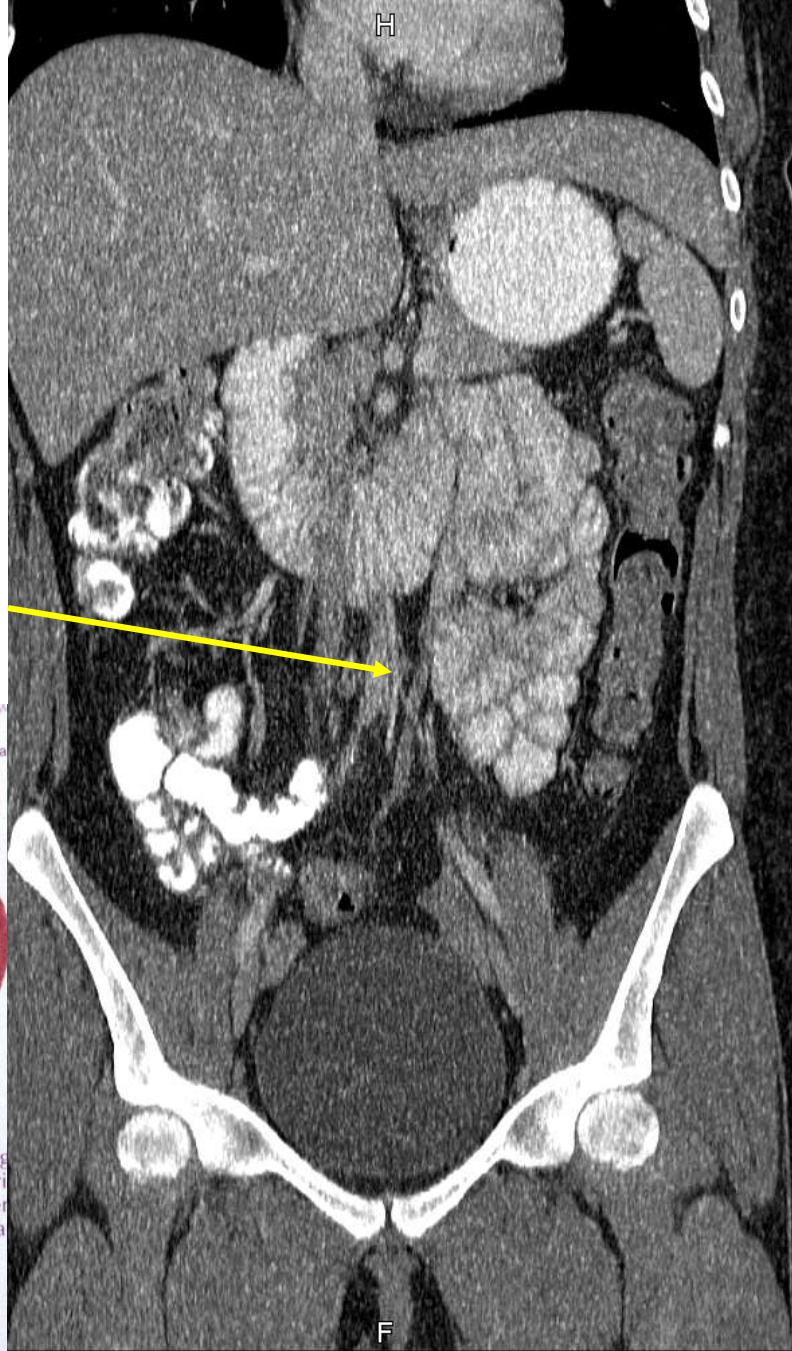
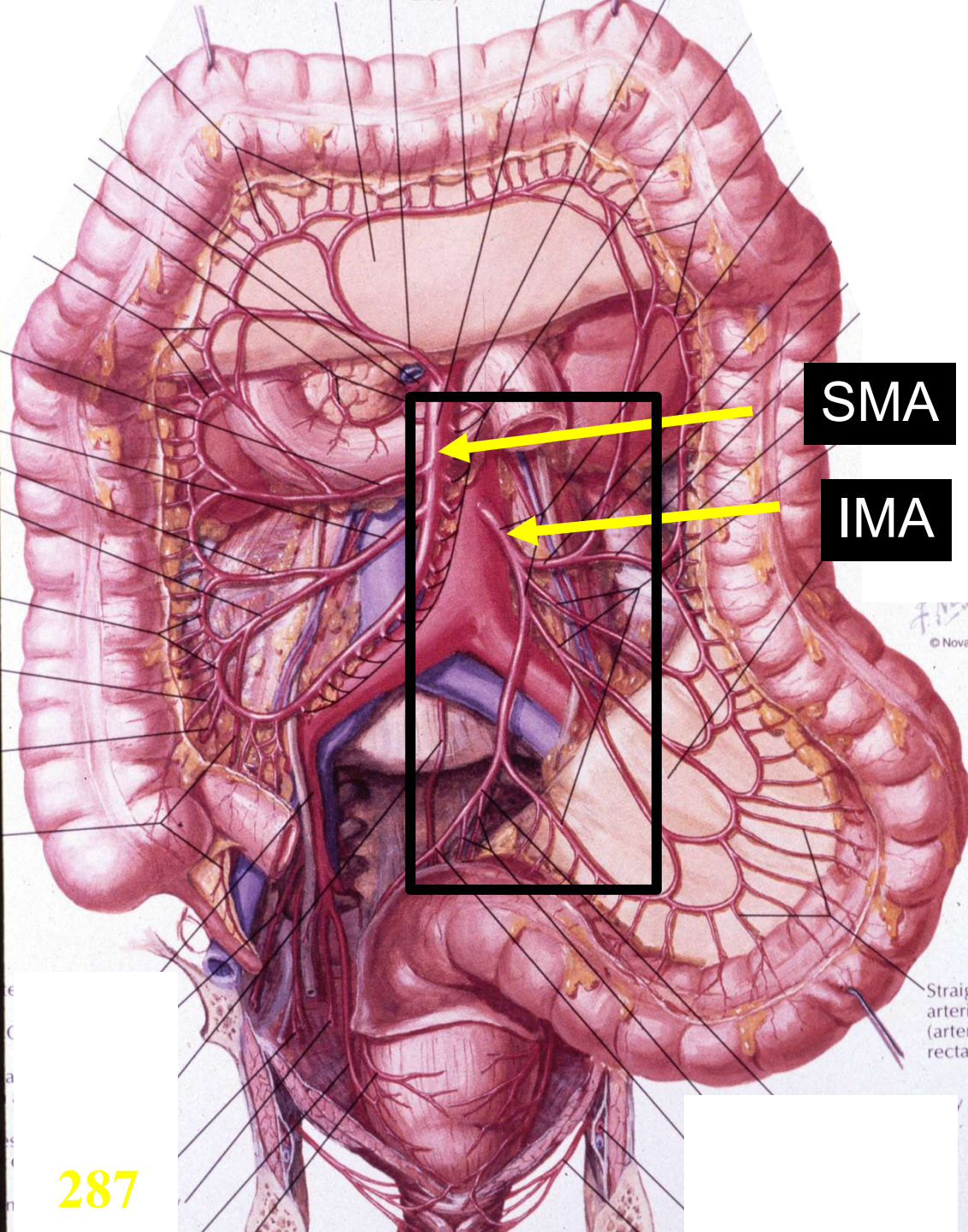
**SMA
(VENOUS
PHASE)**

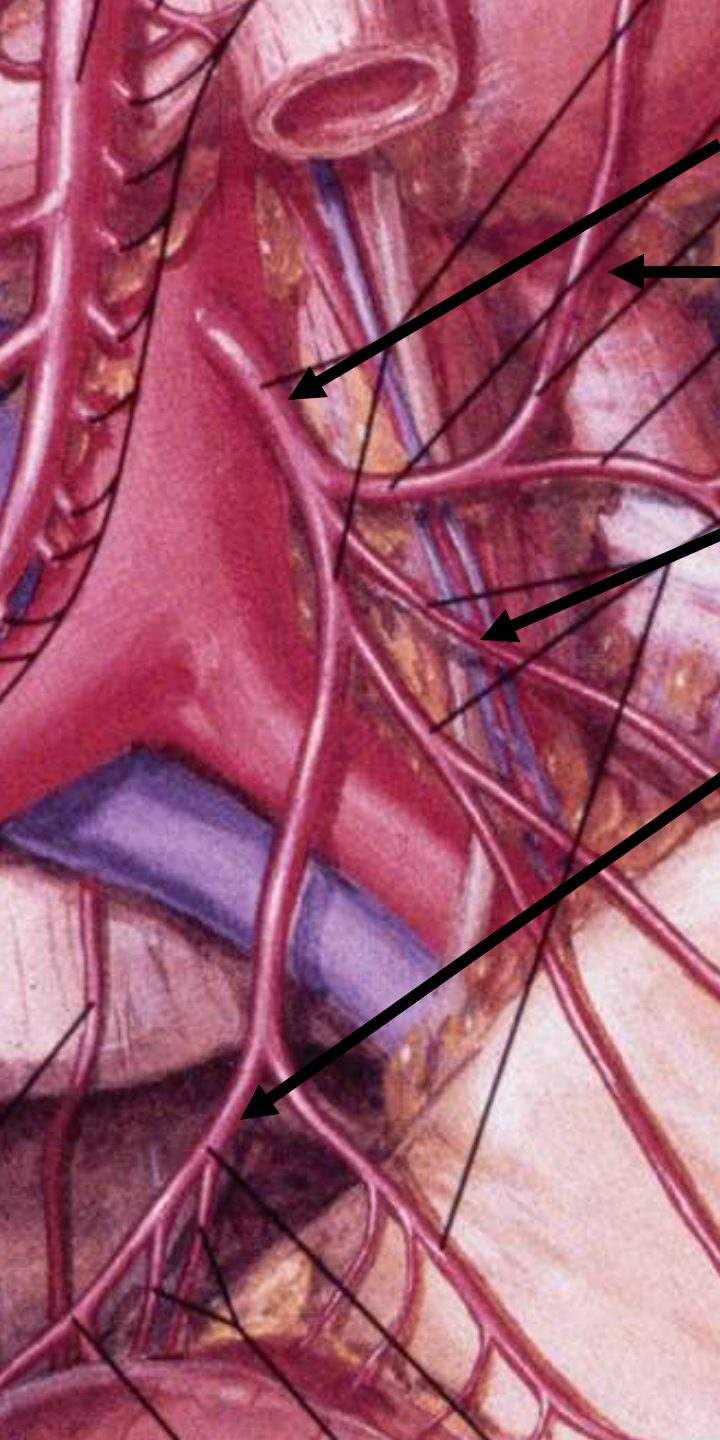


H

Portal Vein

SMV



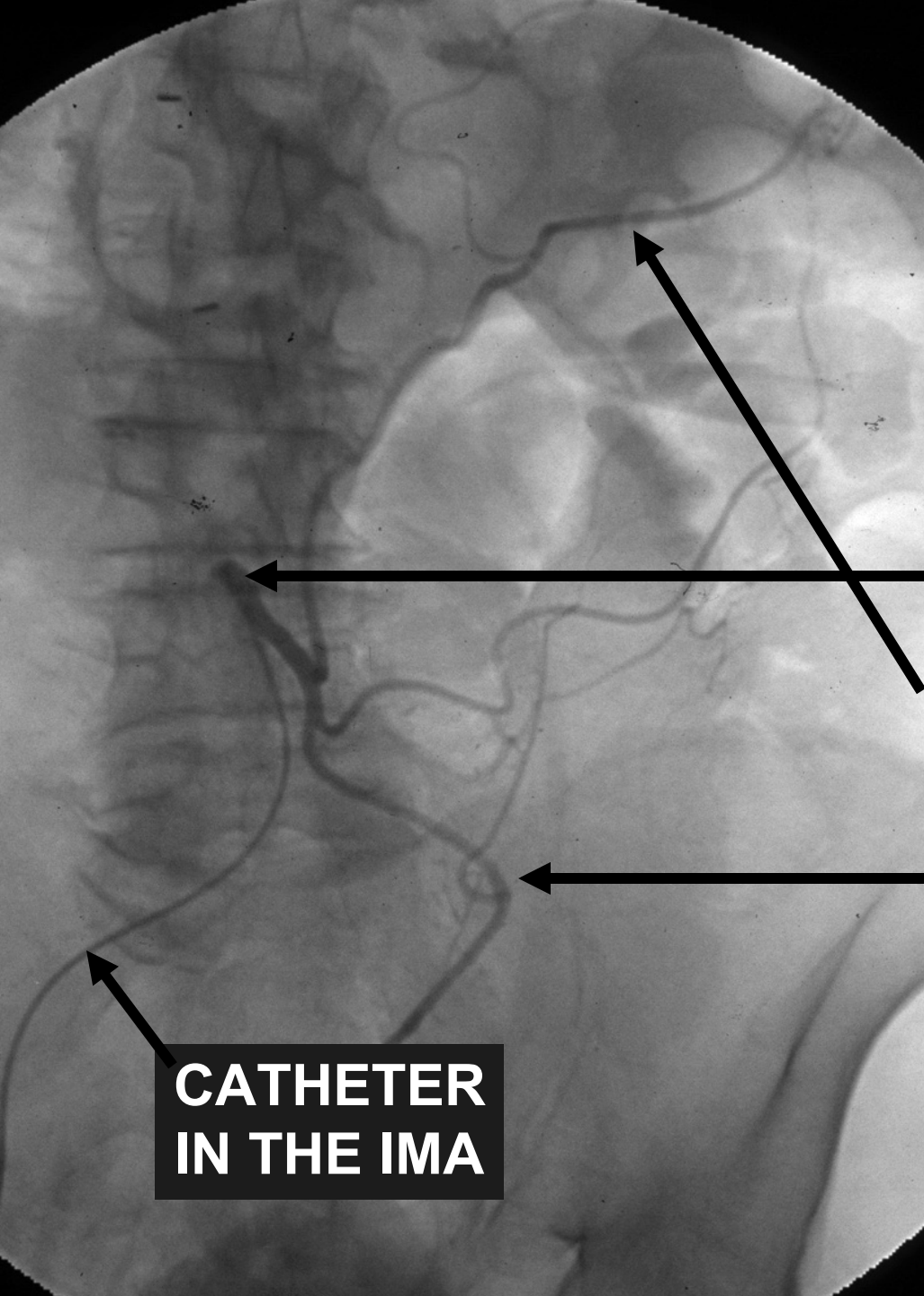


IMA

LEFT COLIC ARTERY

SIGMOID ARTERIES

**SUPERIOR RECTAL
ARTERY**



**INFERIOR
MESENTERIC
ARTERIOGRAM**

IMA

**LEFT COLIC
ARTERY**

**SUPERIOR RECTAL
ARTERY**

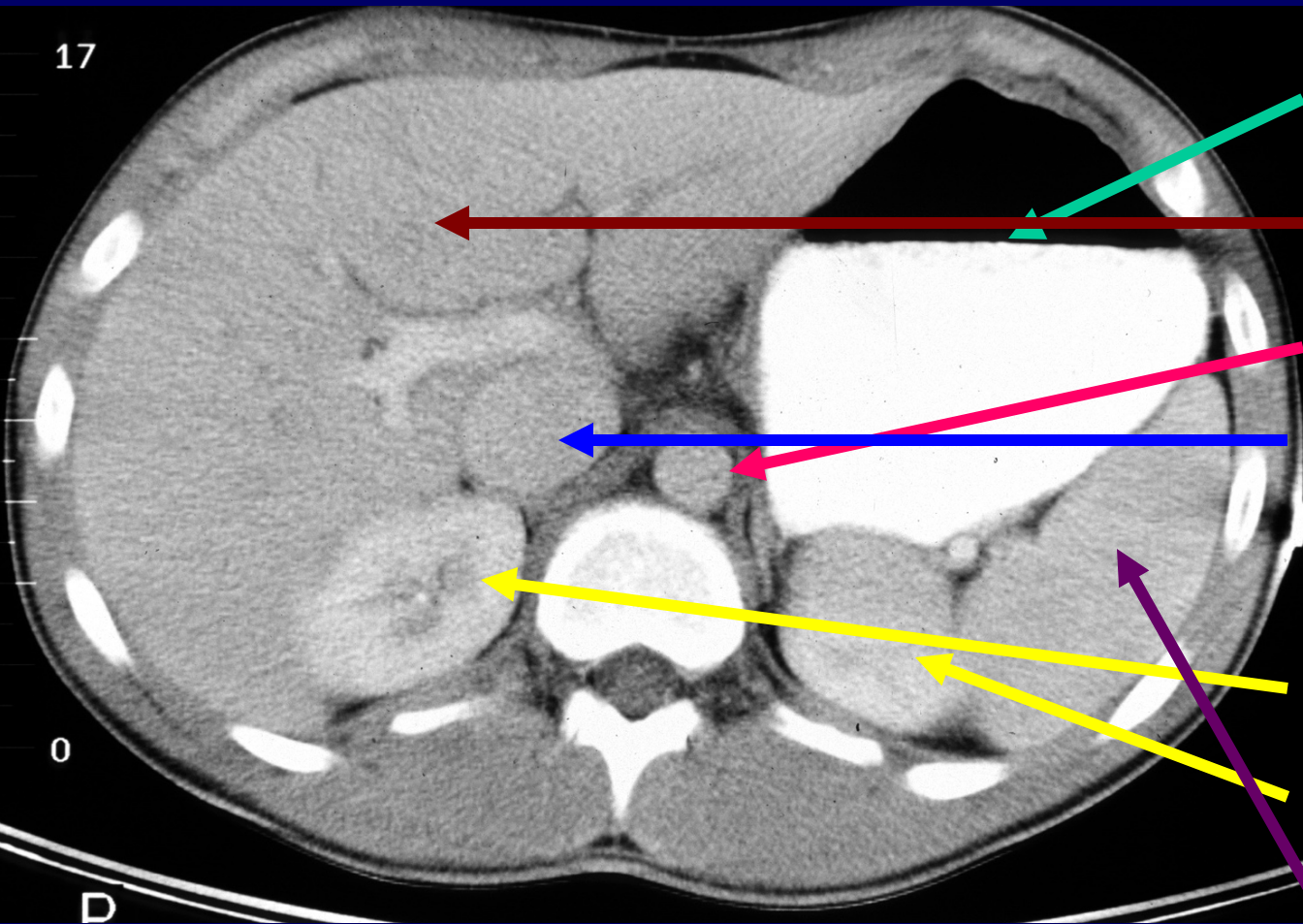
**CATHETER
IN THE IMA**

CT ANATOMY

CUT 1. ABOVE CELIAC AXIS



ON ALL SCANS IDENTIFY:



STOMACH

LIVER

AORTA

**INF VENA
CAVA**

RT KIDNEY

LT KIDNEY

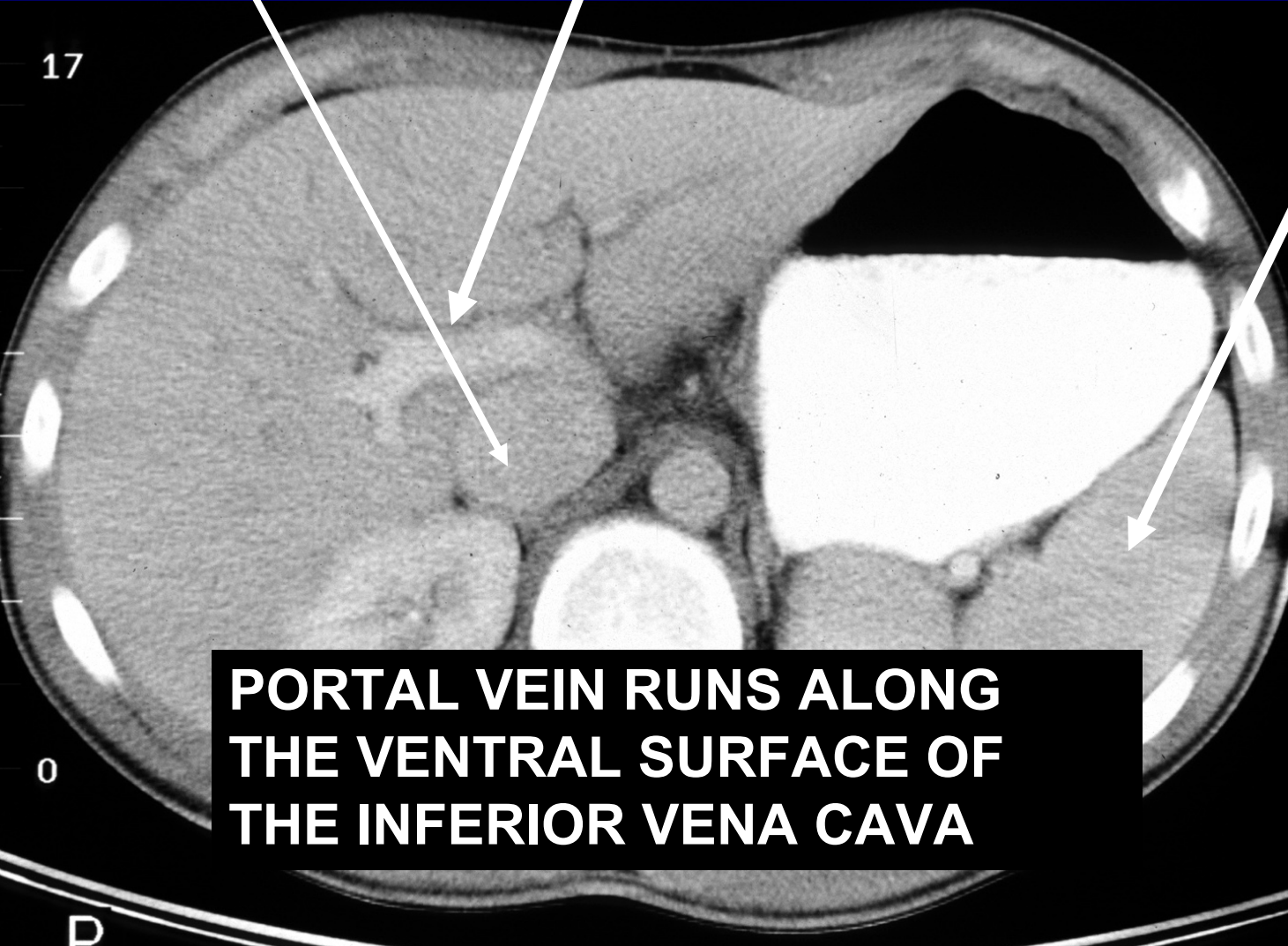
SPLEEN

PORTAL VEIN

IVC

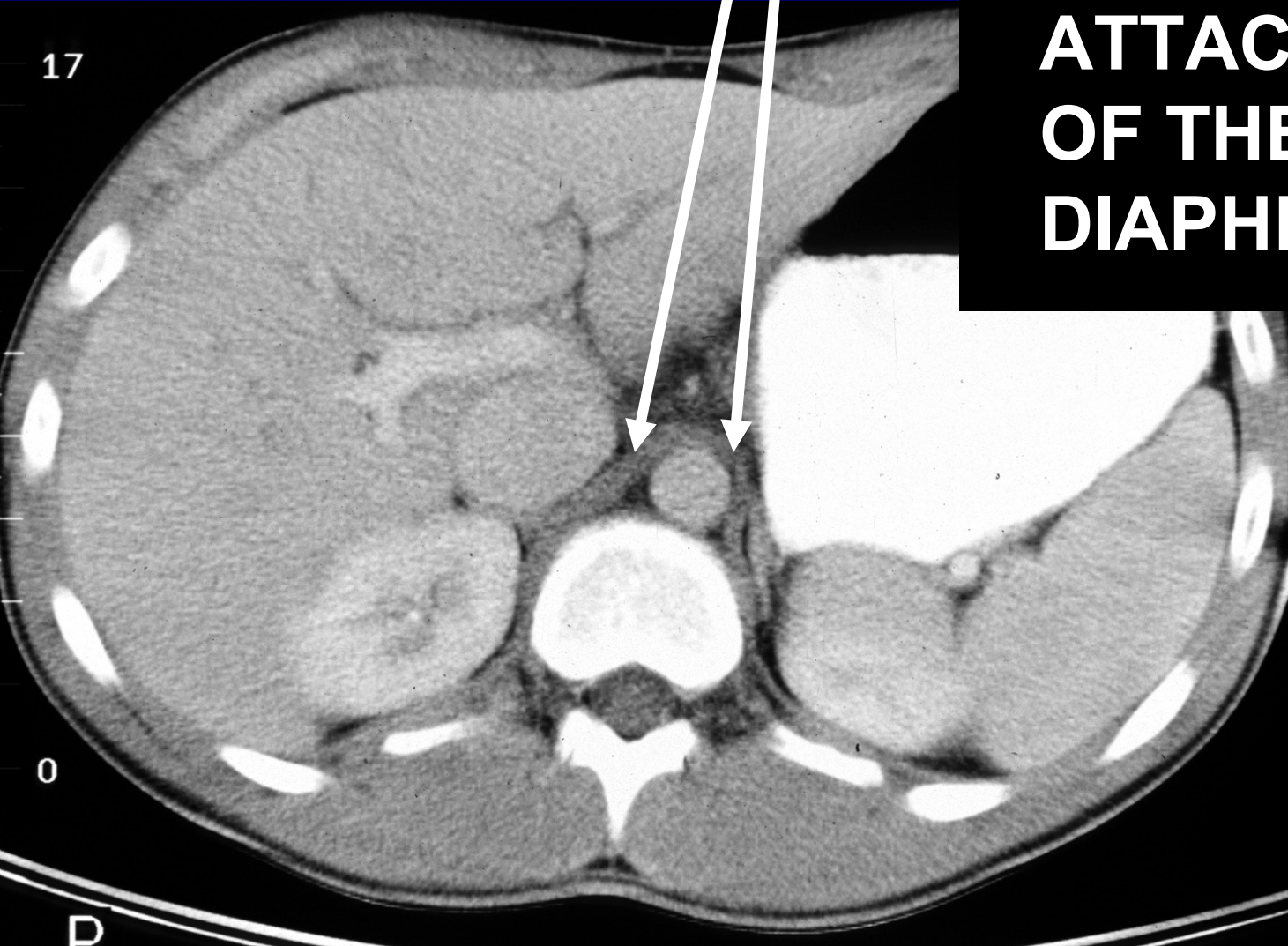
SPLEEN

**PORTAL VEIN RUNS ALONG
THE VENTRAL SURFACE OF
THE INFERIOR VENA CAVA**



DIAPHRAGMATIC CRURA

**FIBROUS
ATTACHMENT
OF THE
DIAPHRAGM**

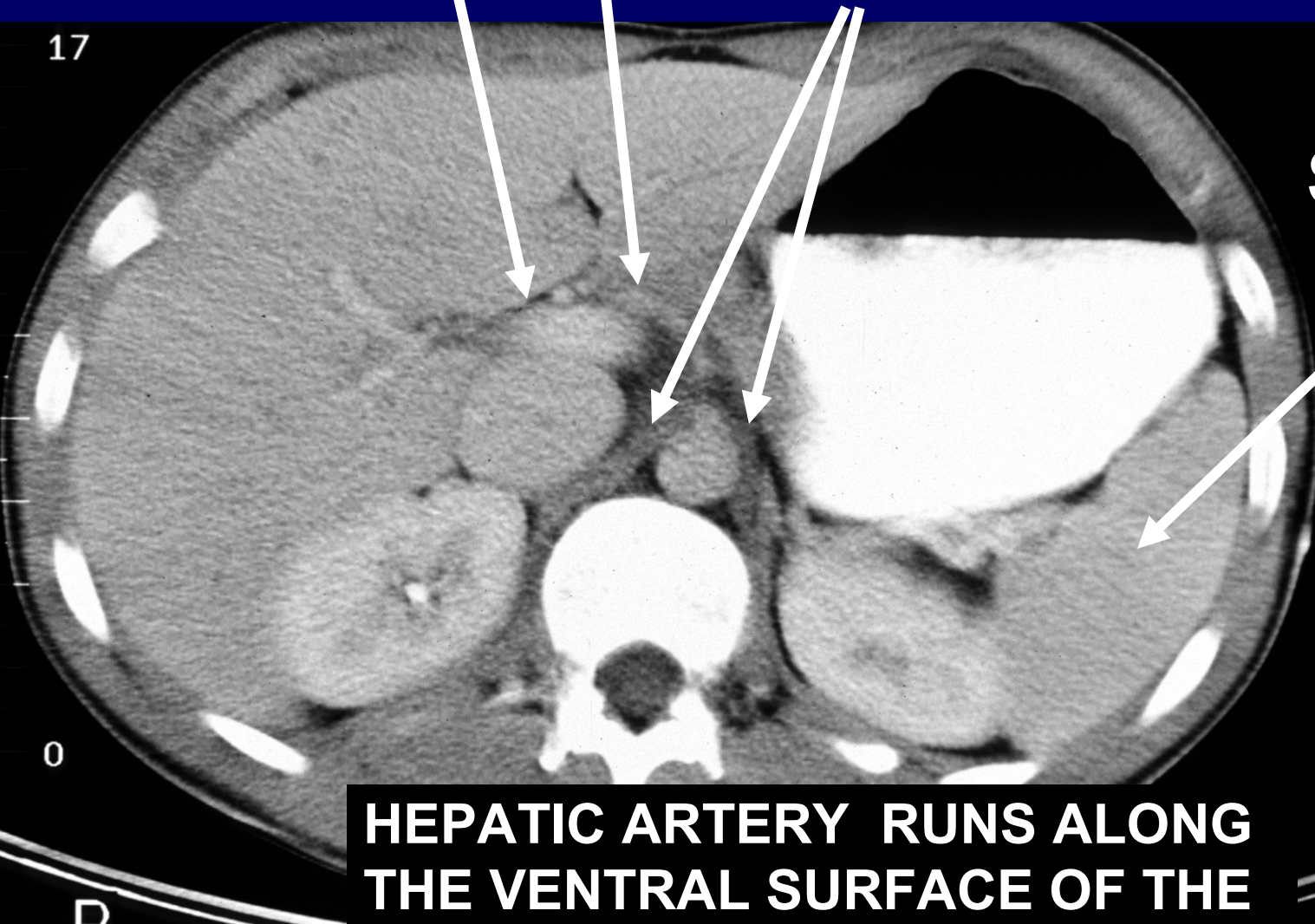


HEPATIC ARTERY

PORTAL VEIN

CRURA

SPLEEN



HEPATIC ARTERY RUNS ALONG THE VENTRAL SURFACE OF THE PORTAL VEIN

CUT 3. THROUGH THE CELIAC AXIS



**CELIAC AXIS IS THE
FIRST MAJOR BRANCH OFF OF THE AORTA**

PORTAL VEIN

CELIAC AXIS

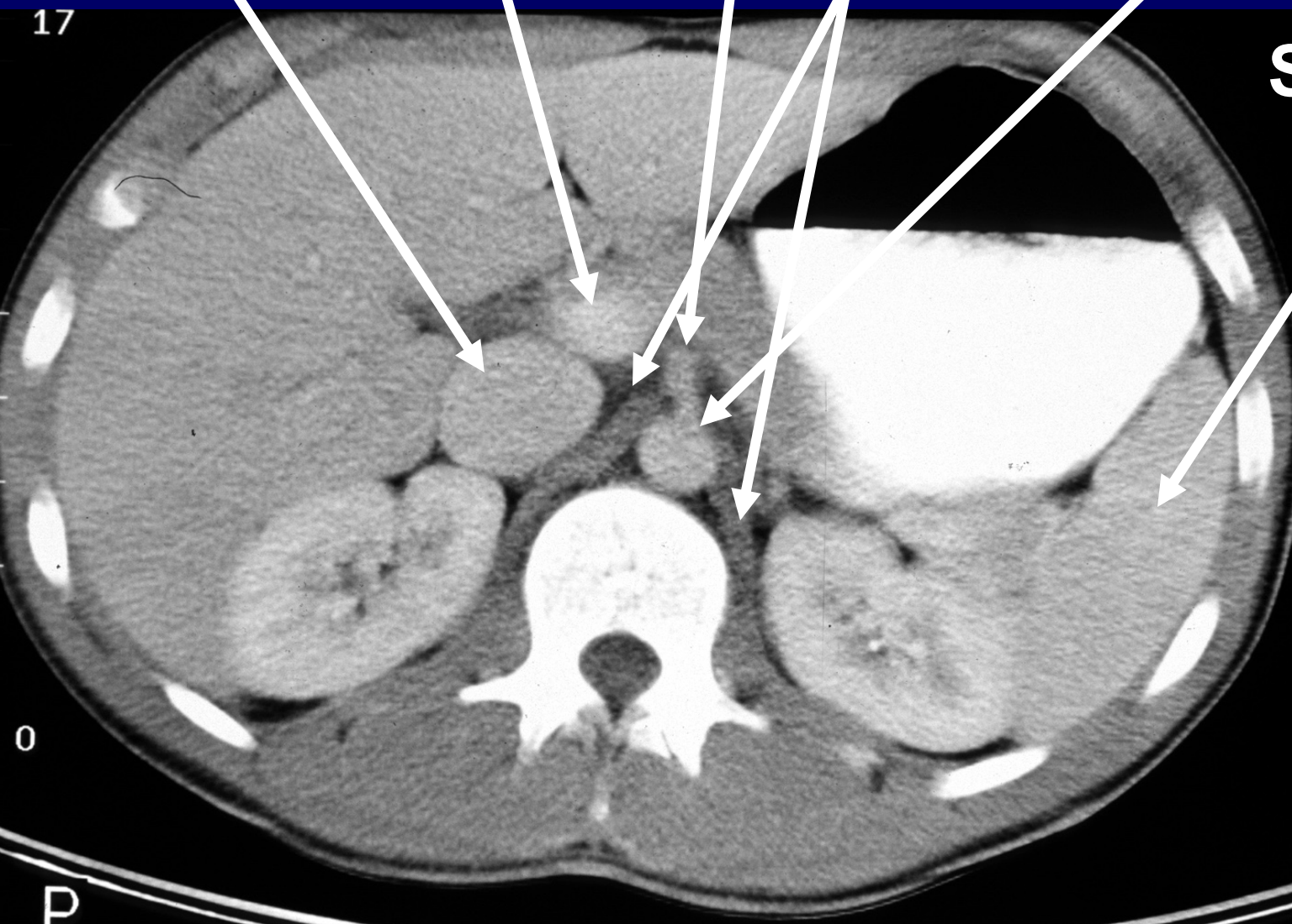
AORTA

IVC

CRURA

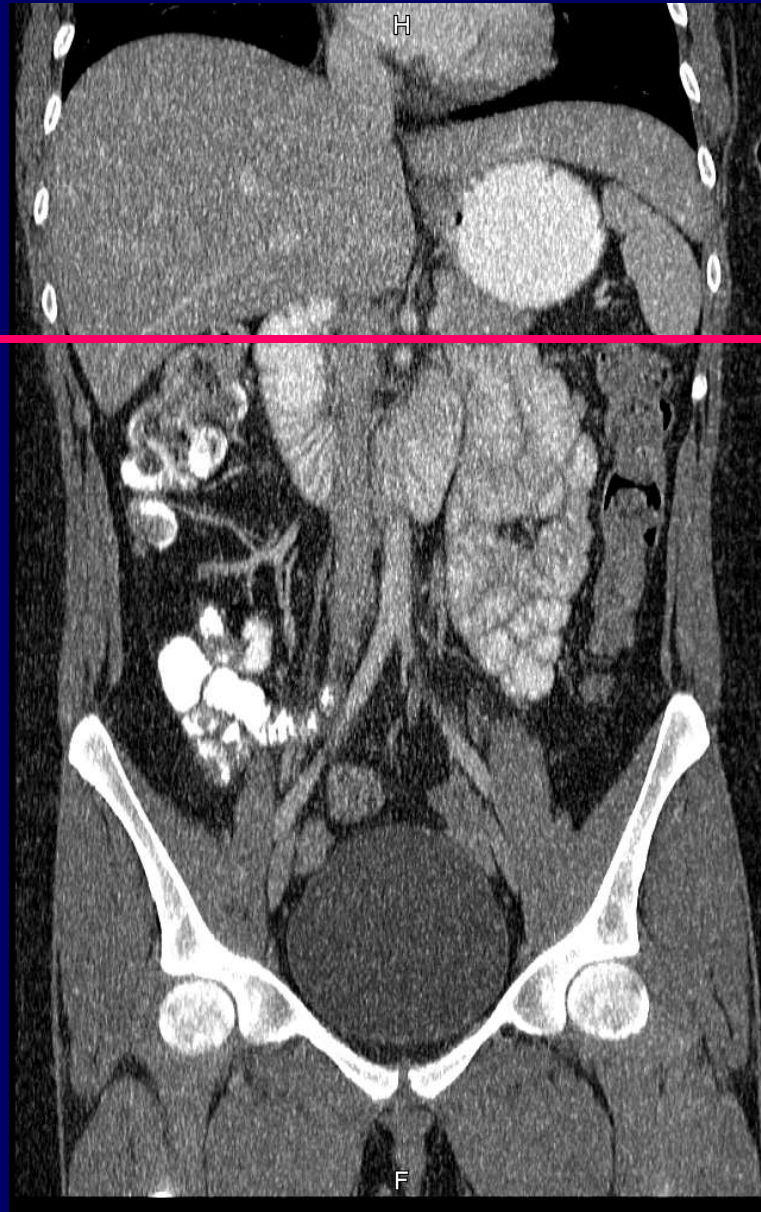
SPLEEN

17

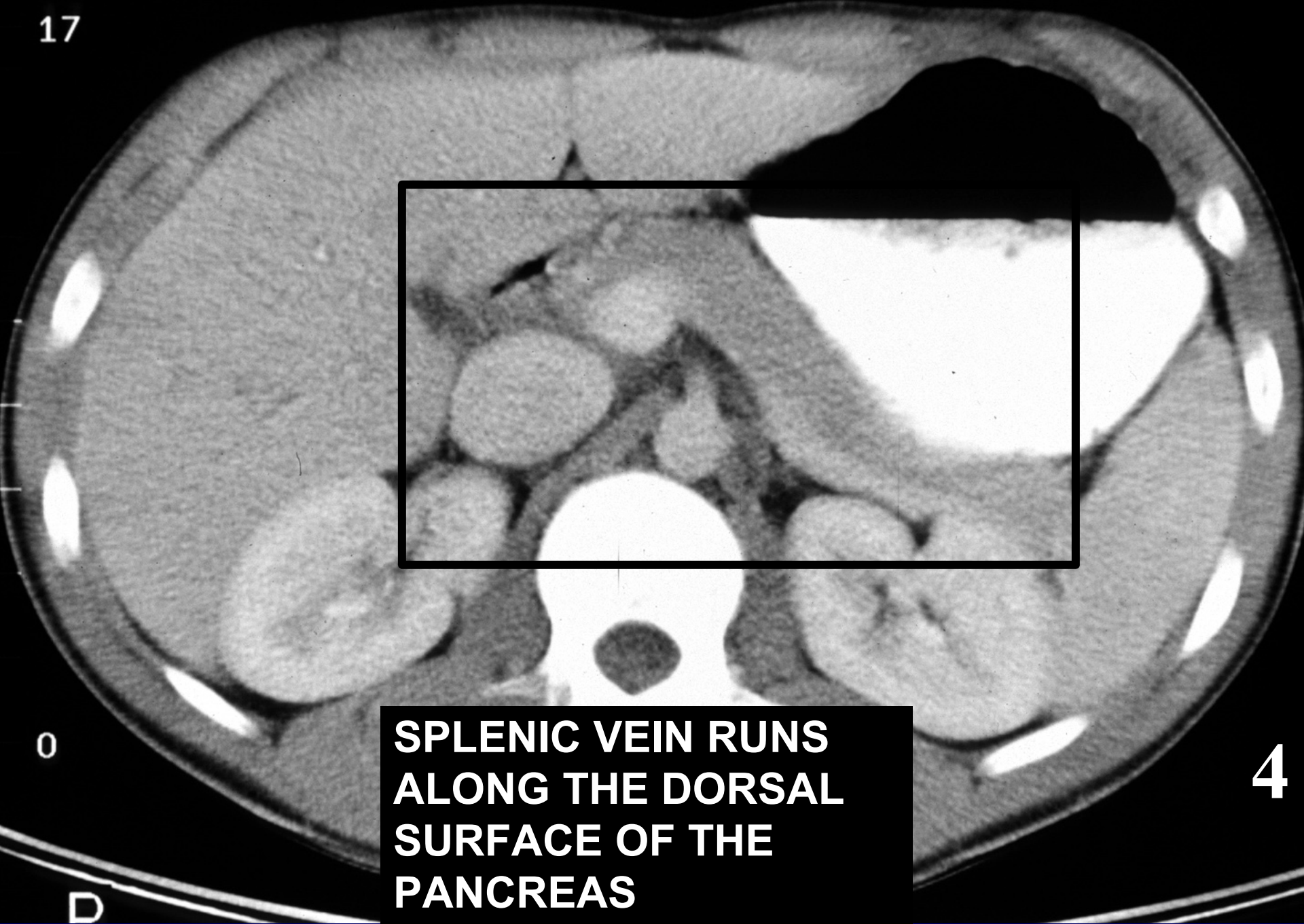


3

CUT 4. BETWEEN THE CELIAC AND SMA



17



**SPLENIC VEIN RUNS
ALONG THE DORSAL
SURFACE OF THE
PANCREAS**

0

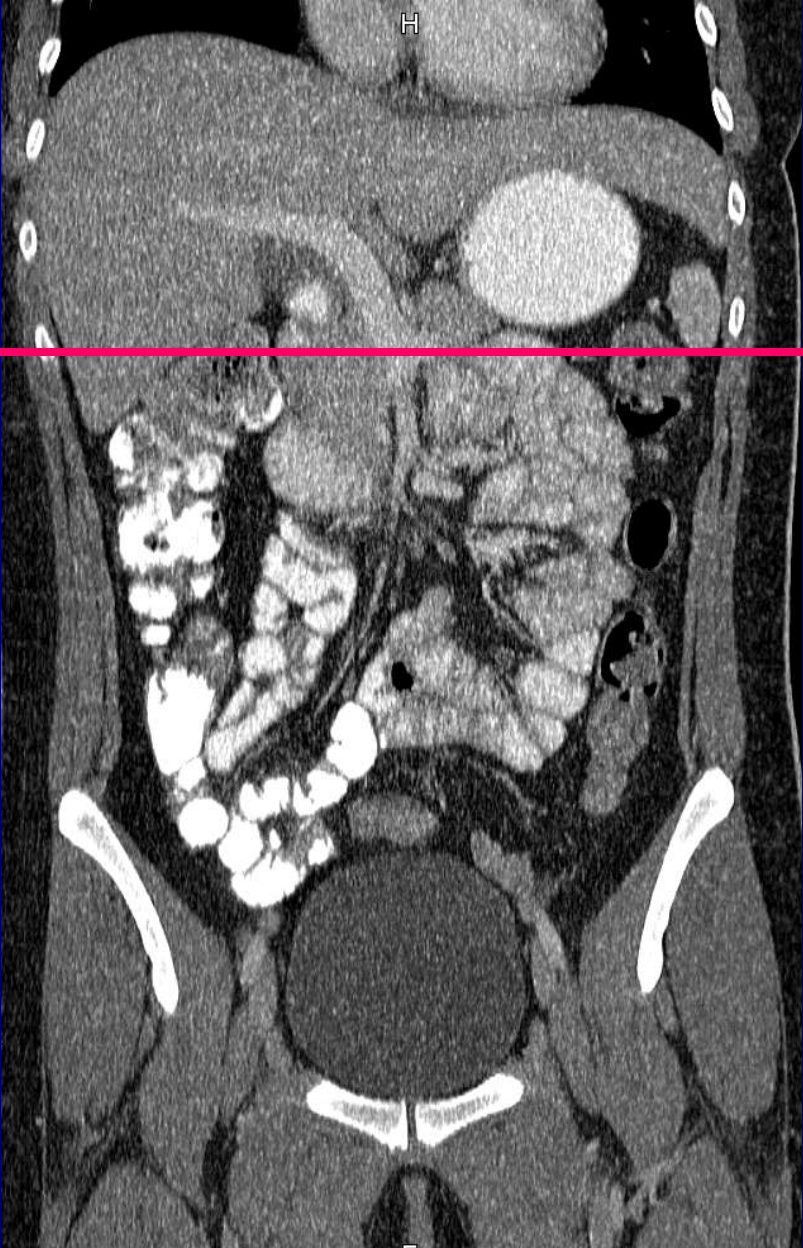
D

4

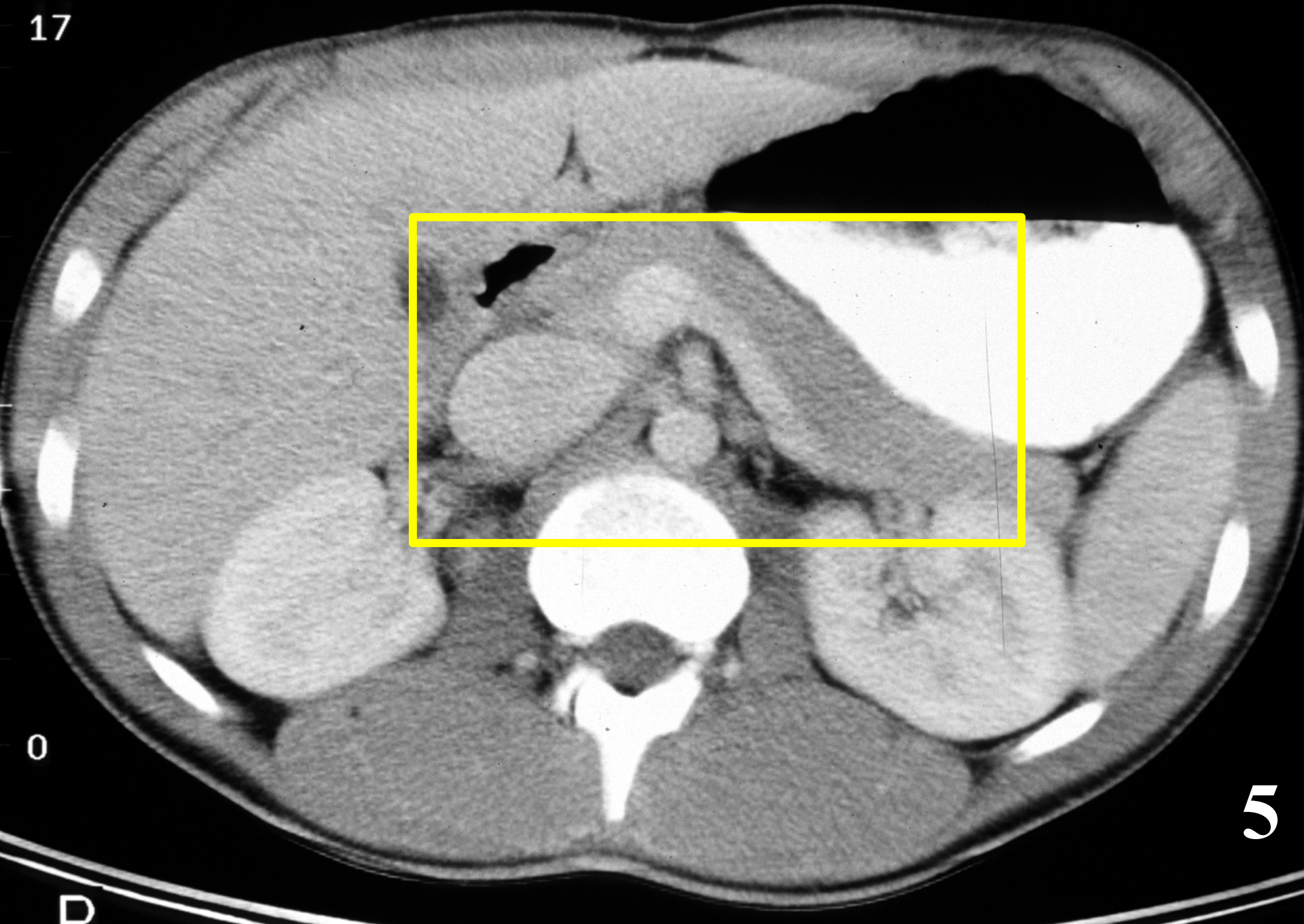
IVC **PORTAL VEIN** **PANCREAS**
SPLenic VEIN



CUT 5. SMV AND SPLENIC FORM PORTAL V



17

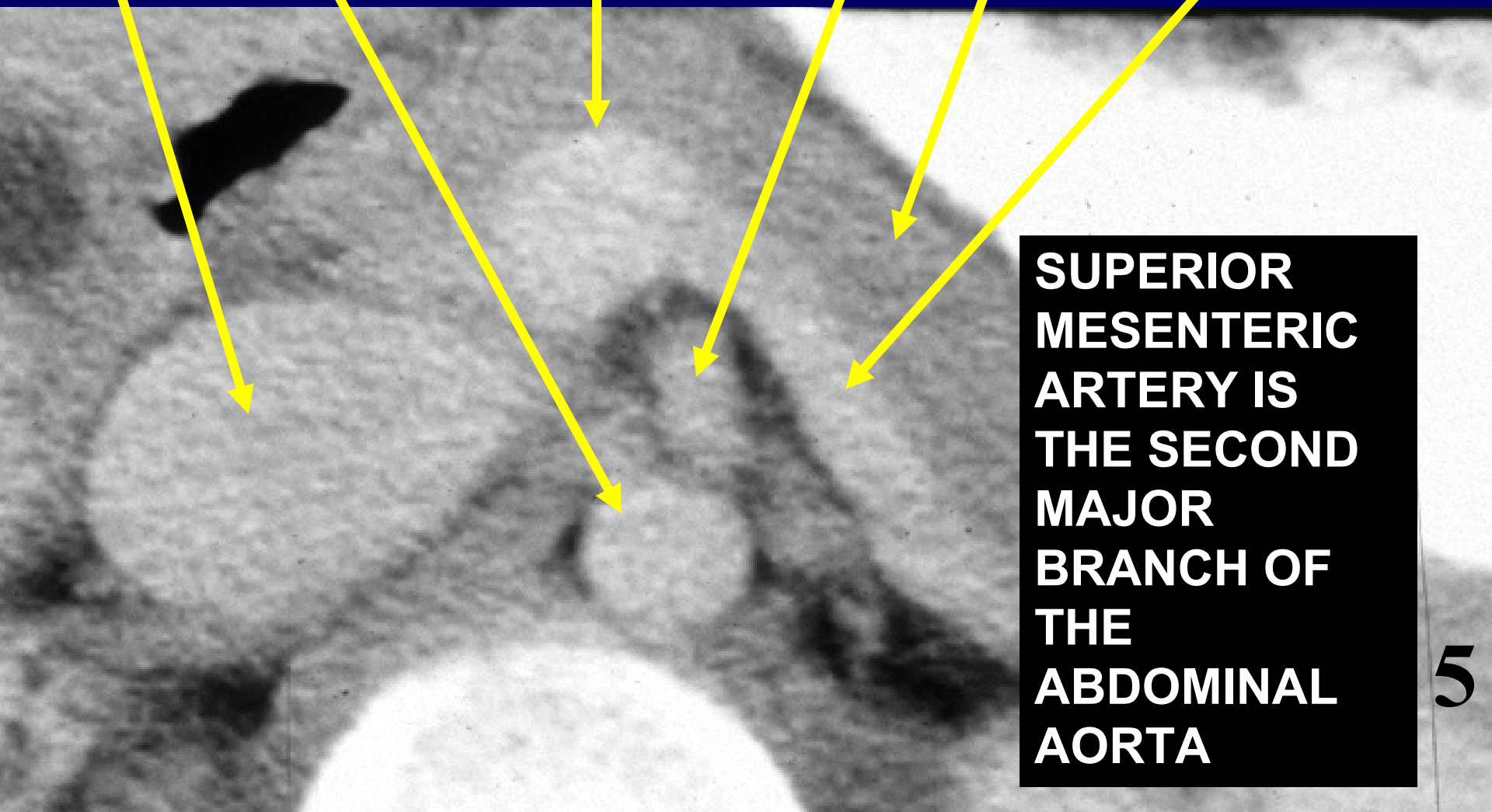


0

D

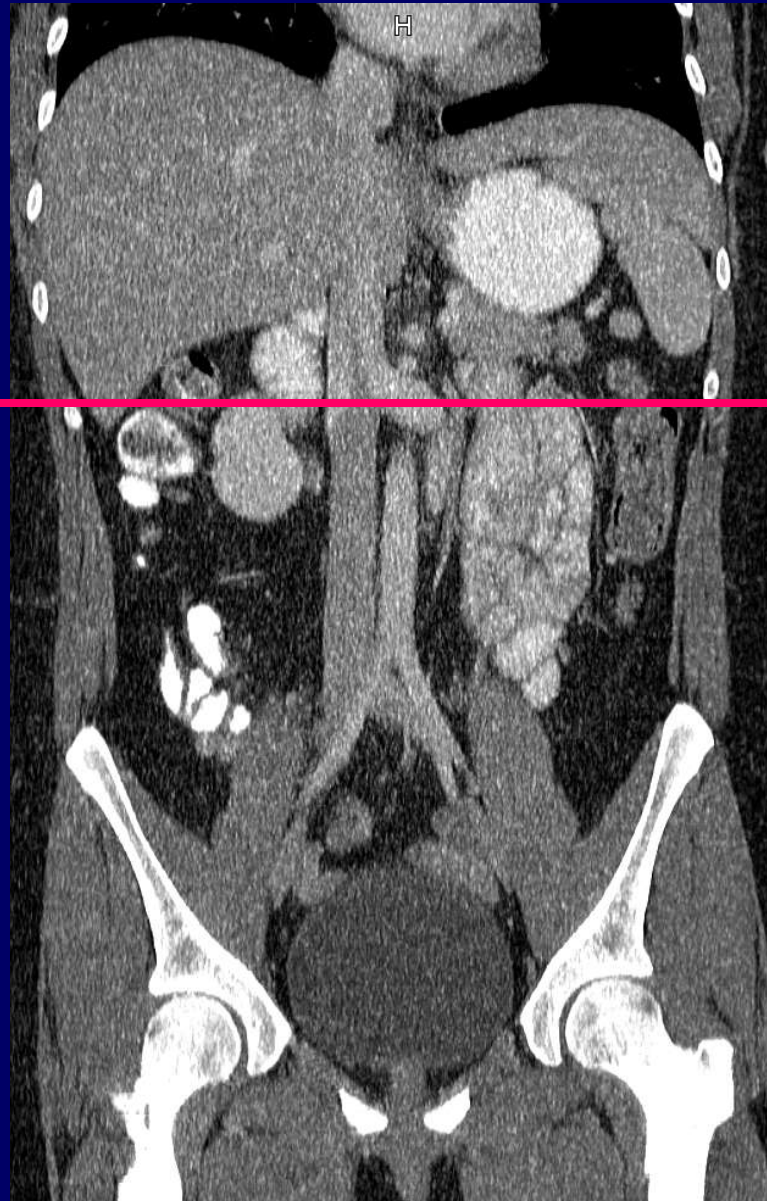
5

IVC **AORTA** **PORTAL V** **SMA** **PANCREAS**
SPLenic V

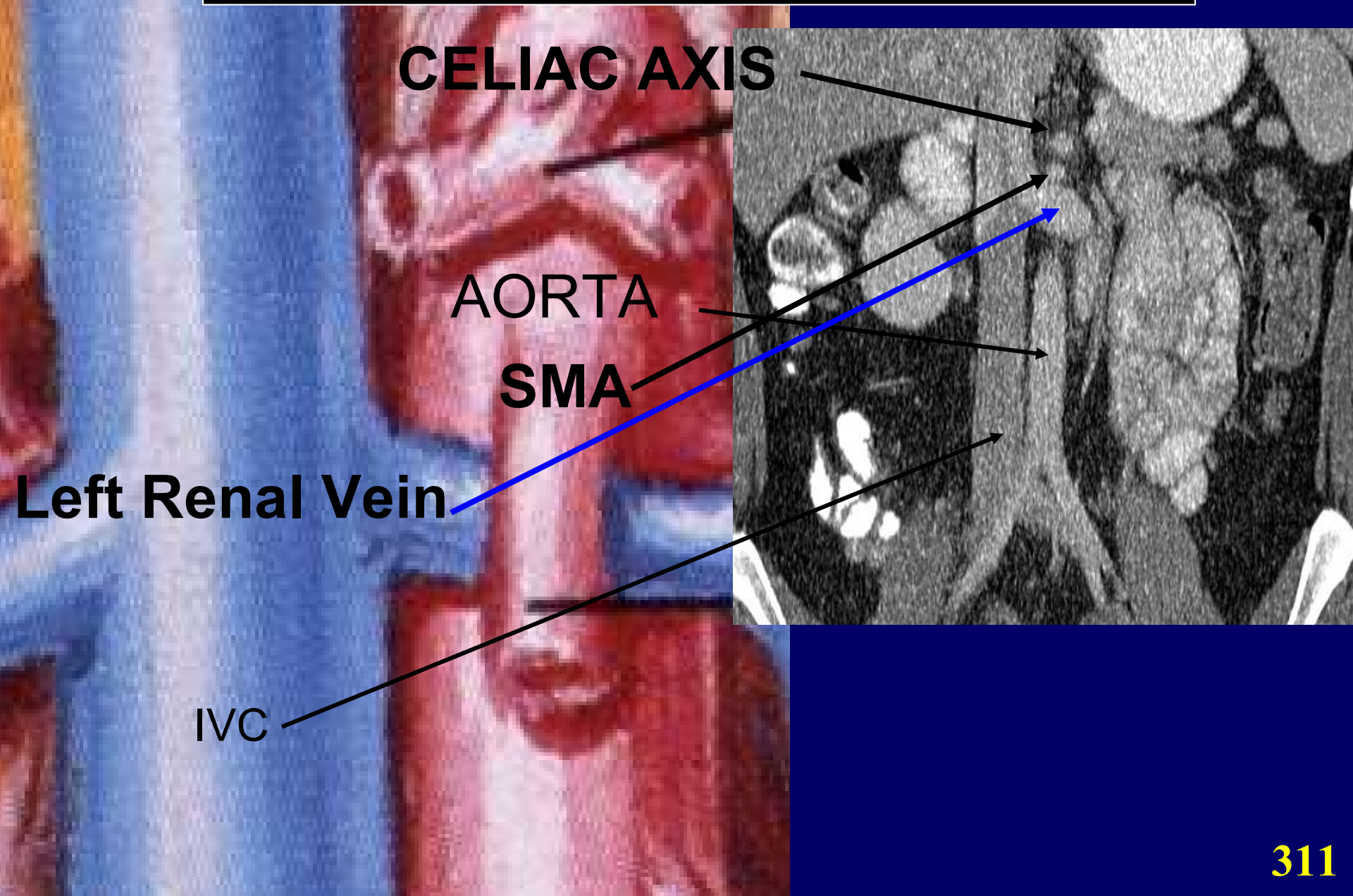


**SUPERIOR
MESENTERIC
ARTERY IS
THE SECOND
MAJOR
BRANCH OF
THE
ABDOMINAL
AORTA**

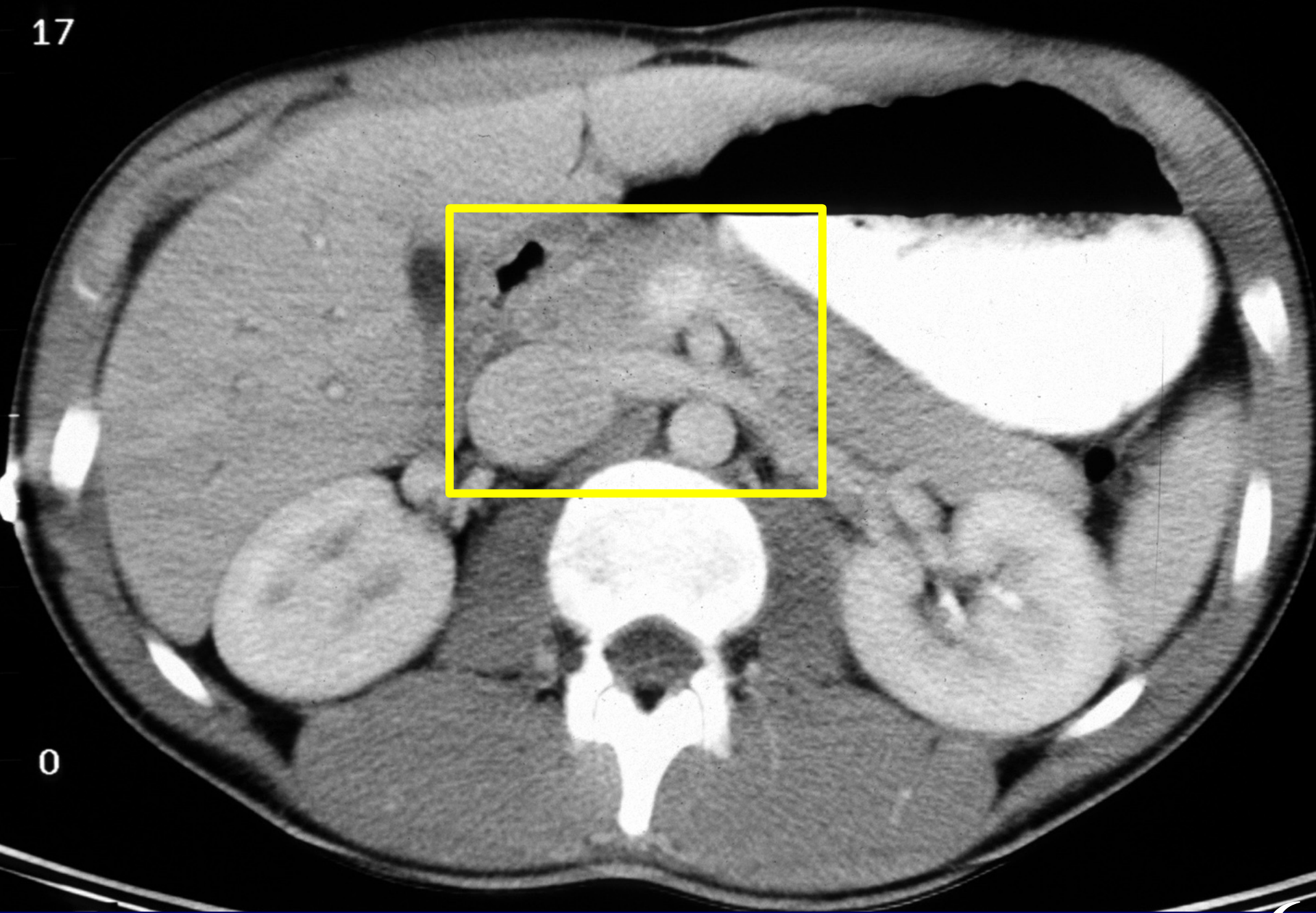
CUT 6. ALONG LEFT RENAL VEIN



LEFT RENAL VEIN RUNS BETWEEN AORTA AND SUPERIOR MESENTERIC ARTERY



17



0

6

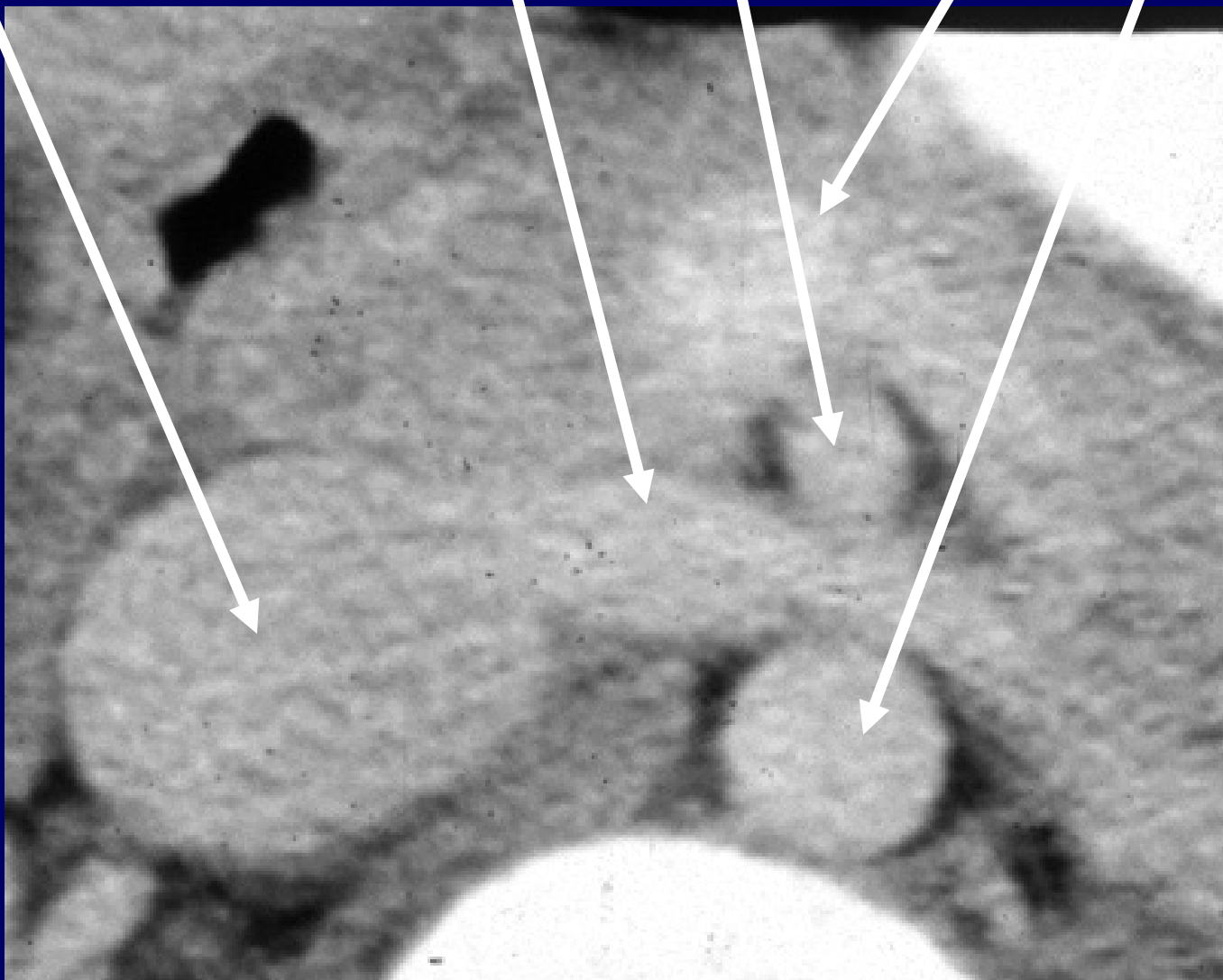
IVC

LEFT RENAL VEIN

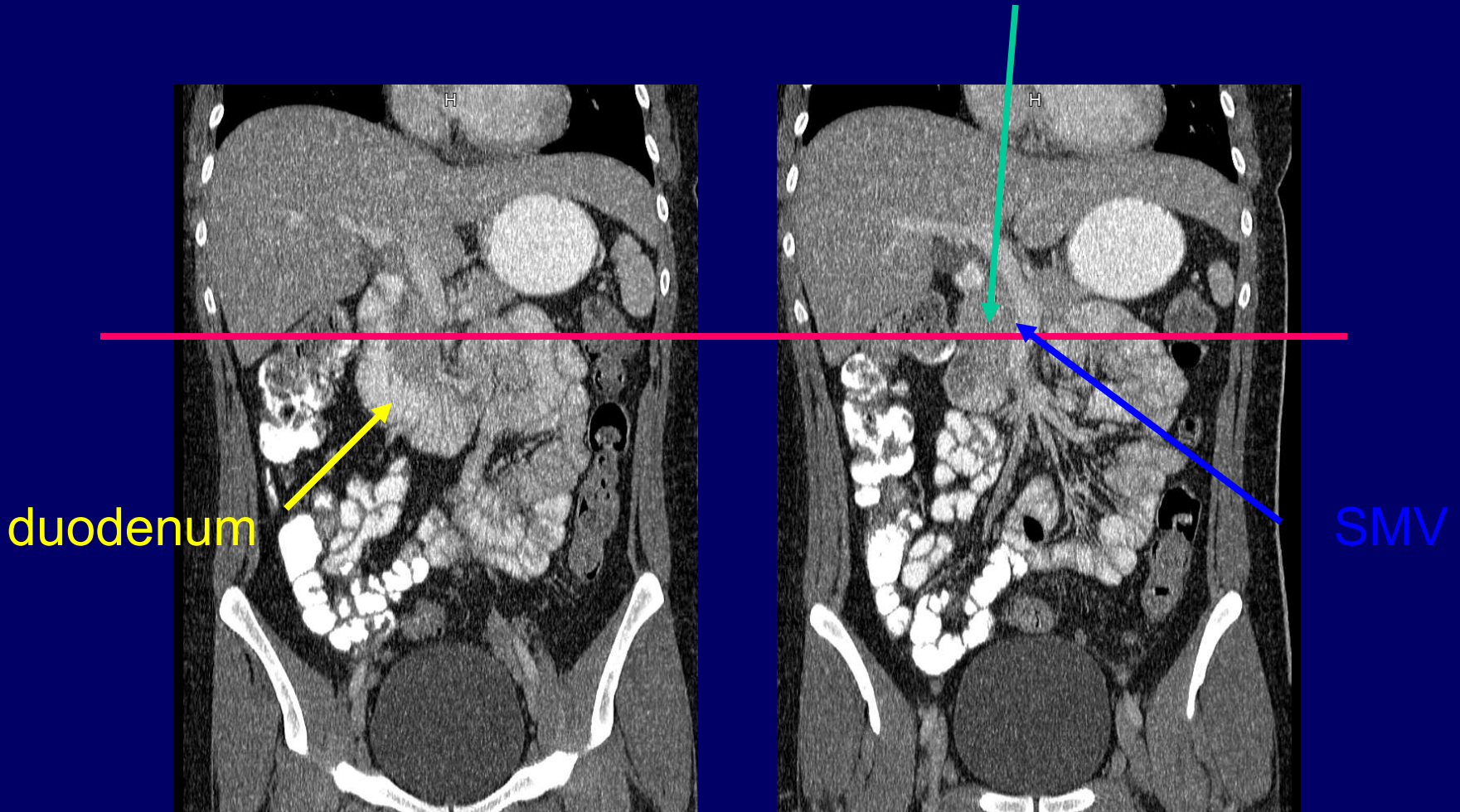
SMV

SMA

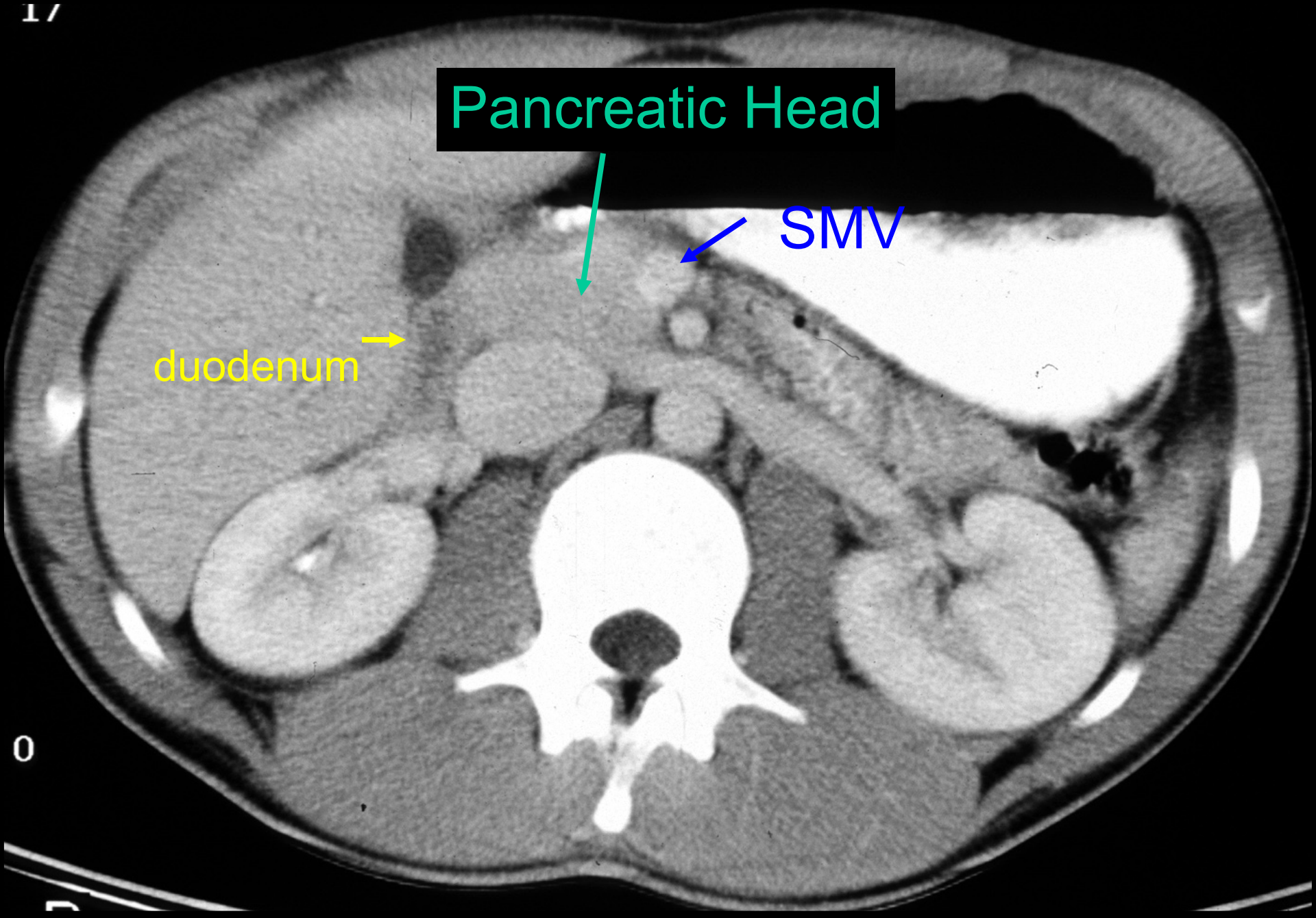
AORTA



CUT 7. THROUGH PANCREATIC HEAD



PANCREATIC HEAD LIES MEDIAL TO THE DUODENUM AND TO THE RIGHT OF THE SMV

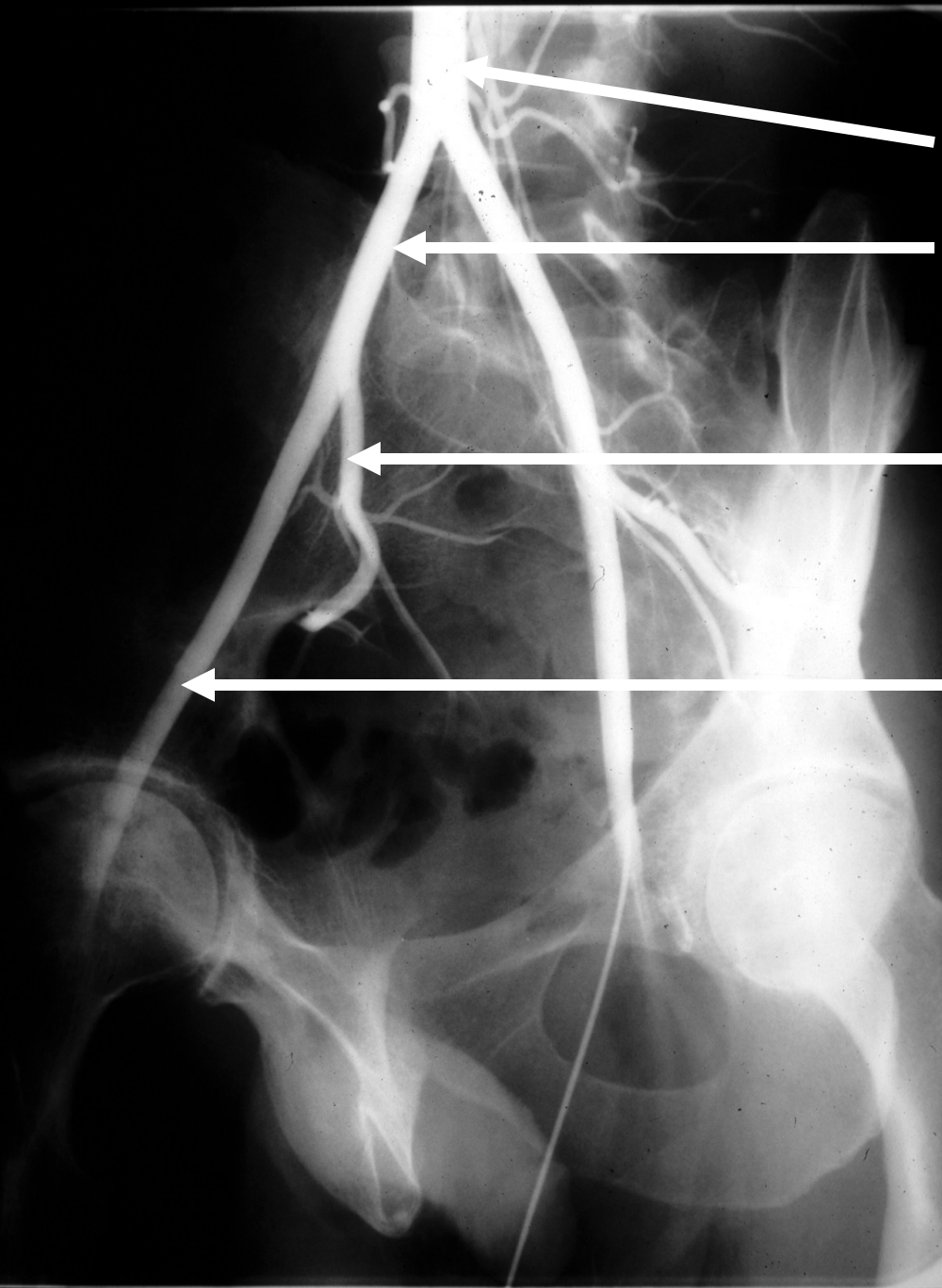


Pancreatic Head

SMV

duodenum

**ANGIOGRAPHIC
ANATOMY
OF THE
PELVIS**



AORTA

COMMON ILIAC
ARTERY

INTERNAL ILIAC
ARTERY

EXTERNAL ILIAC
ARTERY



CT ANATOMY OF THE PELVIS

SAGITAL MALE PELVIS



**RECTUS
ABDOMINIS**

BLADDER

PROSTATE

RECTUM

SAGITAL MALE PELVIS



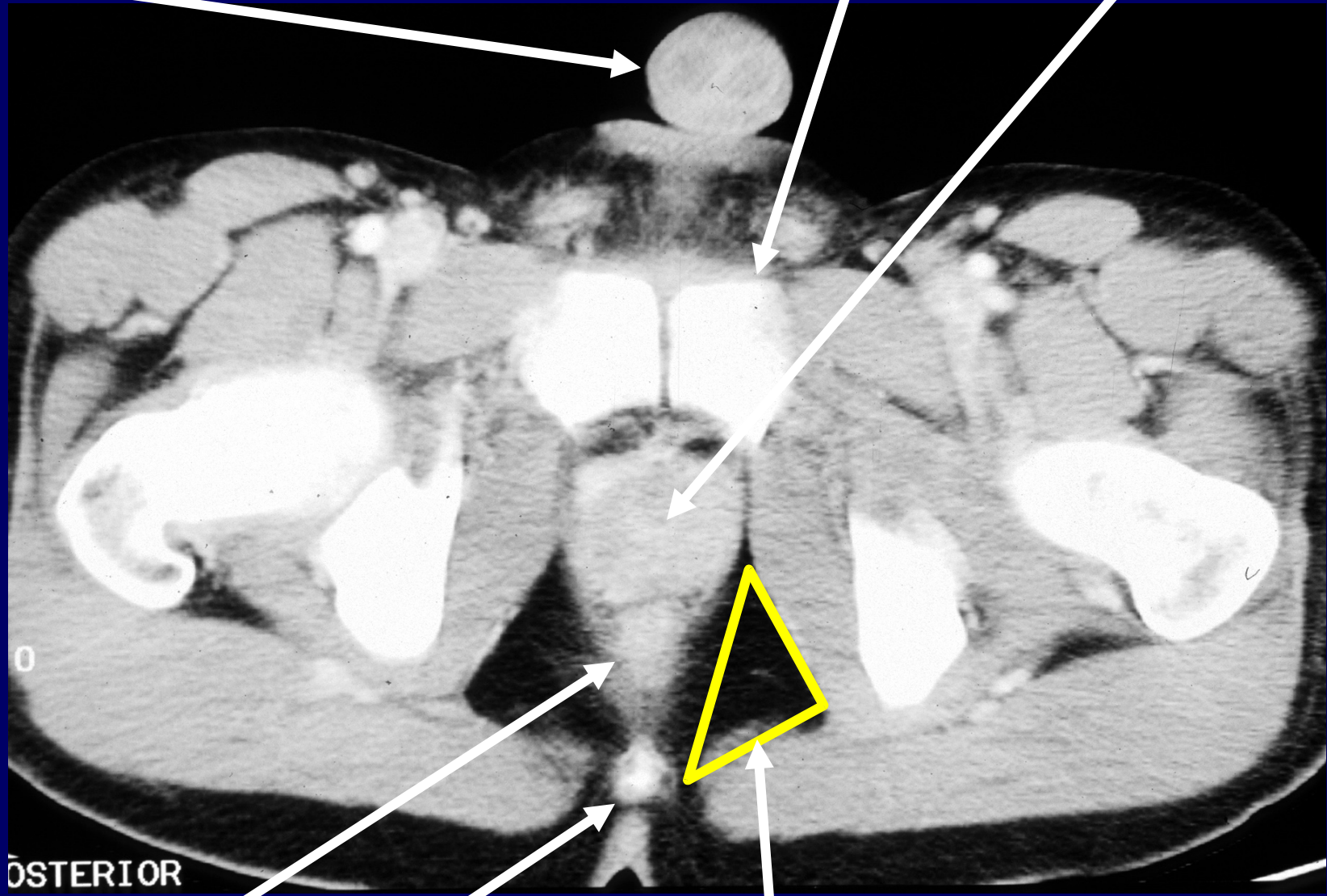
SAGITAL MALE PELVIS



PENIS

PUBIS

PROSTATE



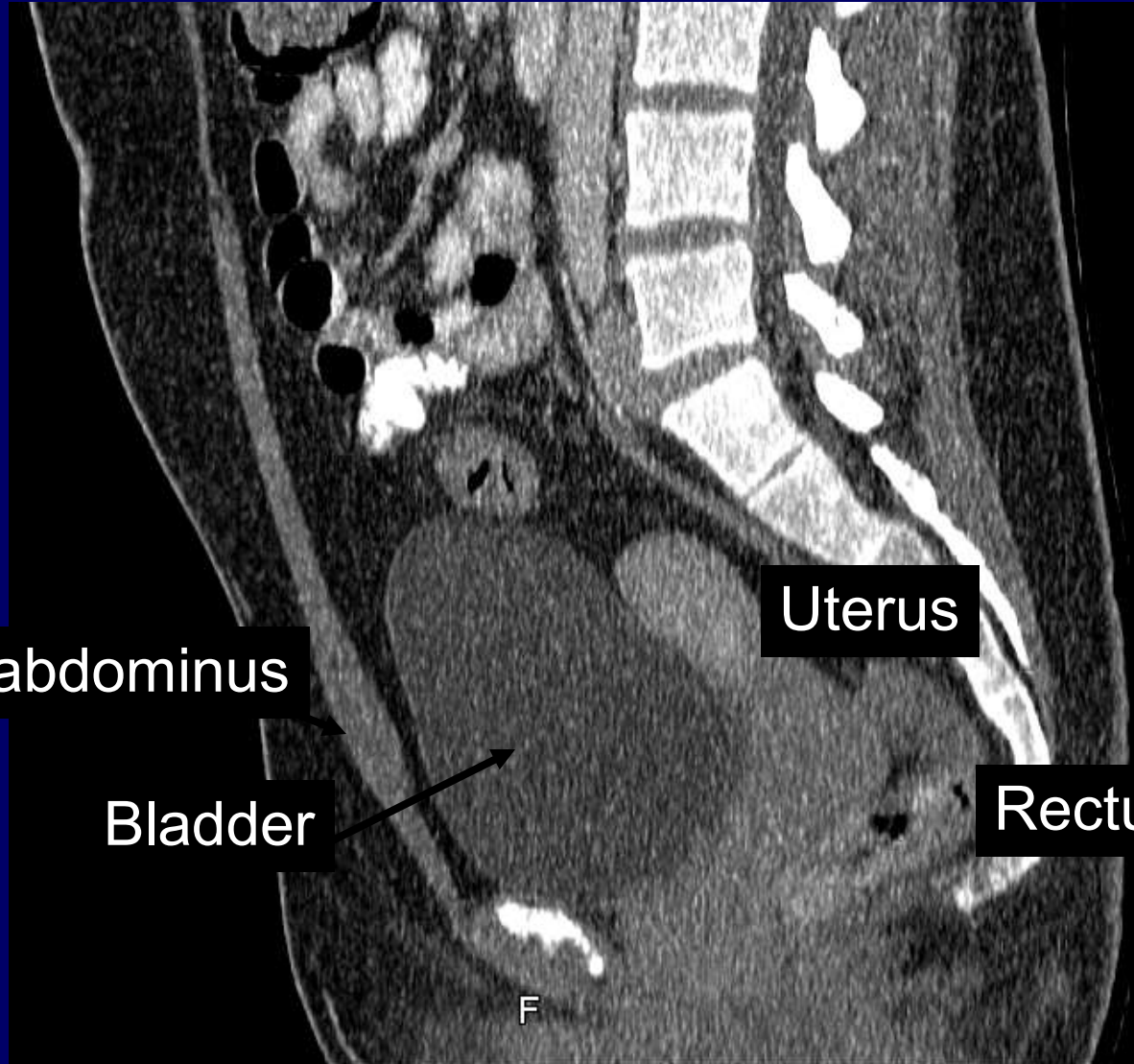
POSTERIOR

RECTUM

COCCYX

ISCHIORECTAL FOSSA

Sagittal Female Pelvis



Rectus abdominus

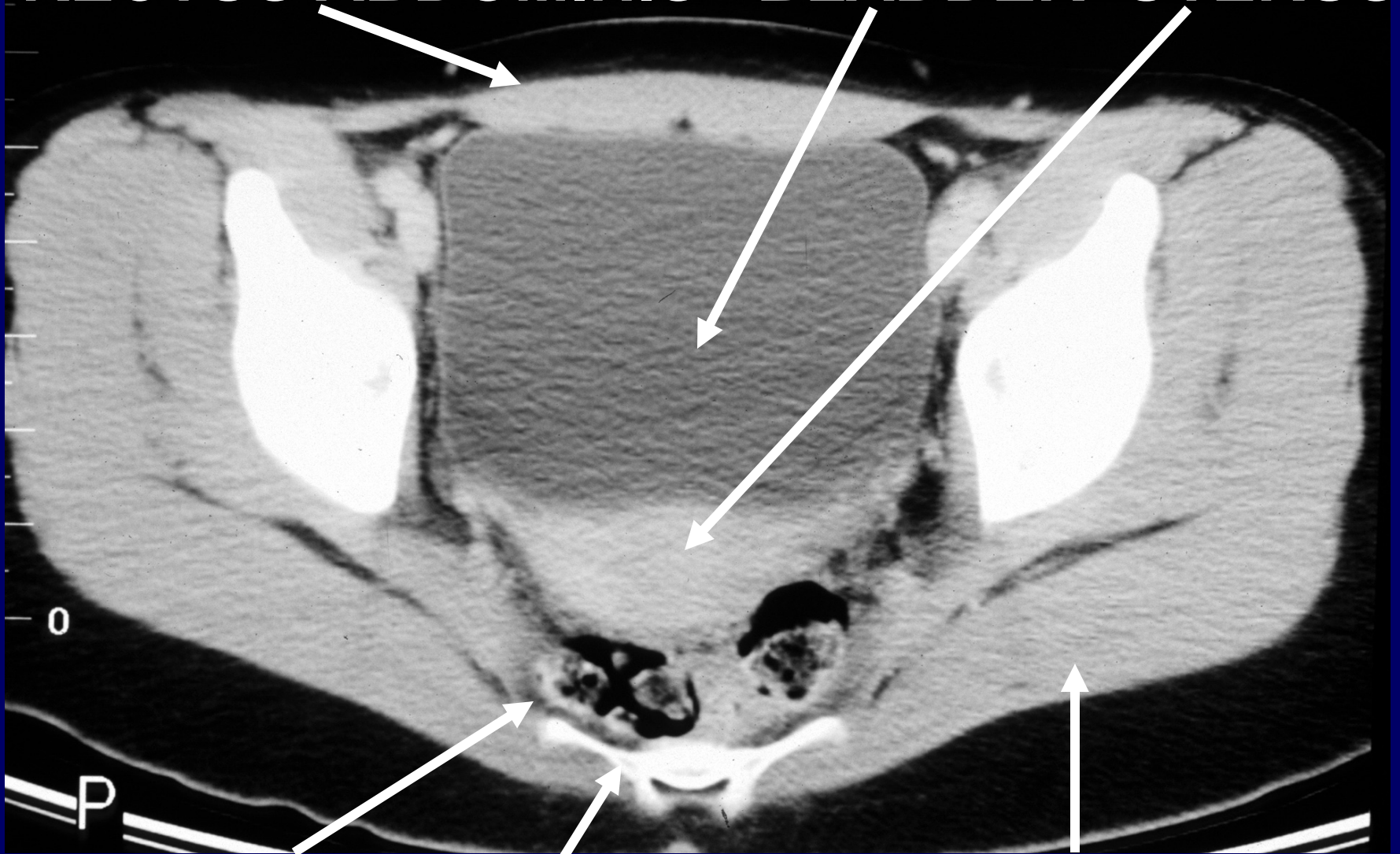
Bladder

Uterus

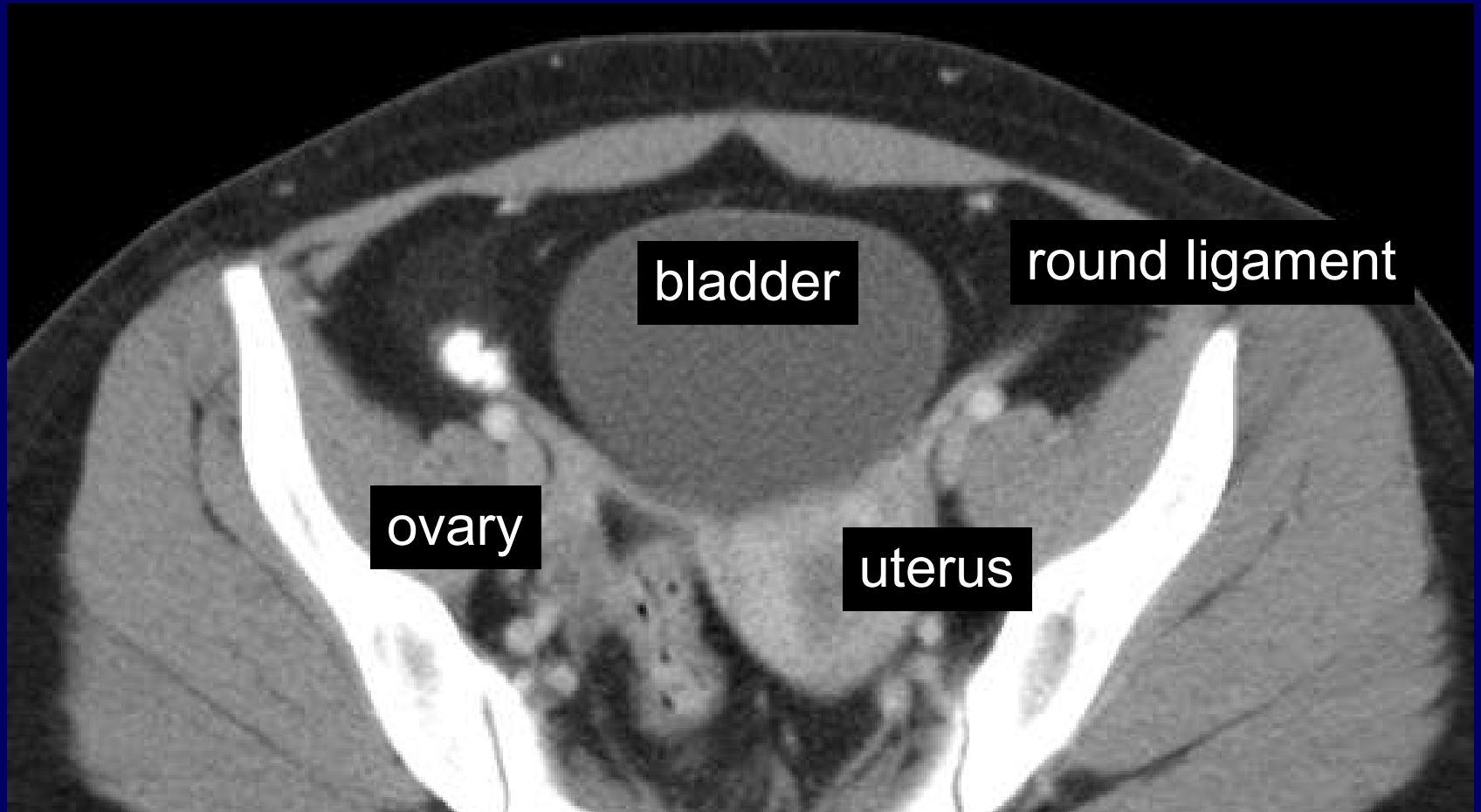
Rectum

F

RECTUS ABDOMINIS BLADDER UTERUS



RECTUM SACRUM GLUTEUS



Round ligaments

anterior suspensory ligaments of the uterus
course lateral to the deep inferior epigastric vessels to
enter the inguinal canal

AORTA
SPLENIC ARTERY
SPLENIC VEIN
PORTAL VEIN



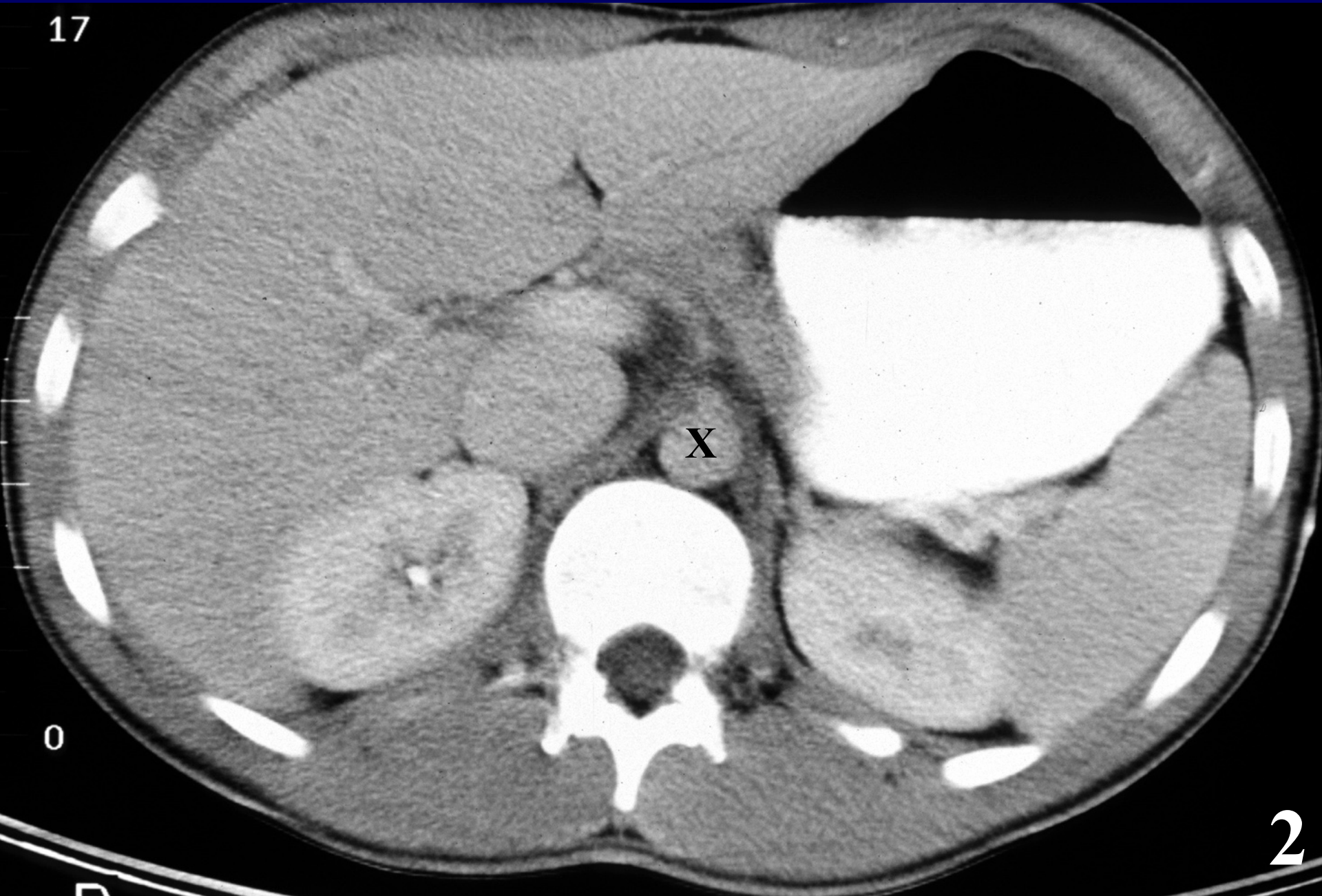
17

X

0

1

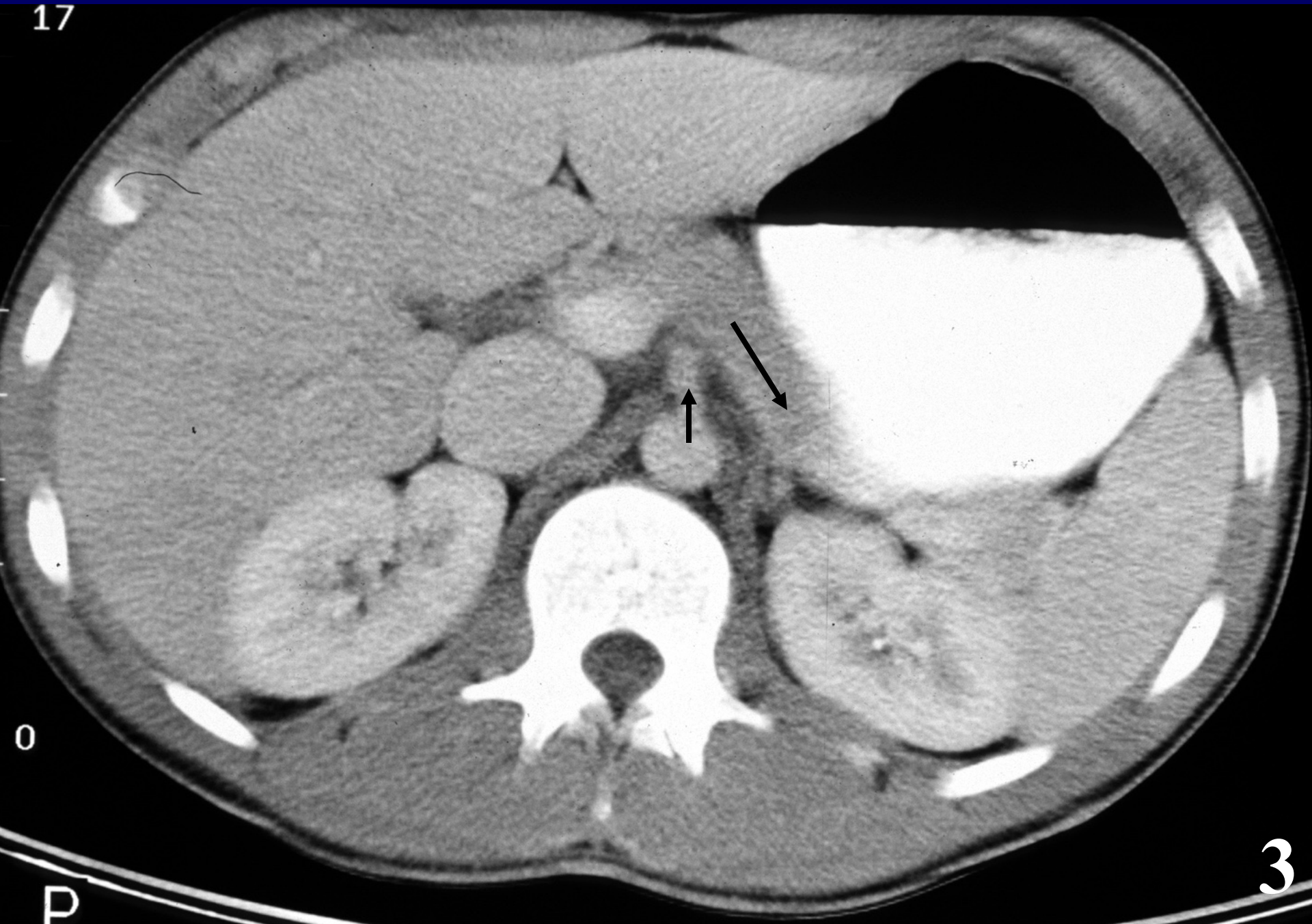
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2

17

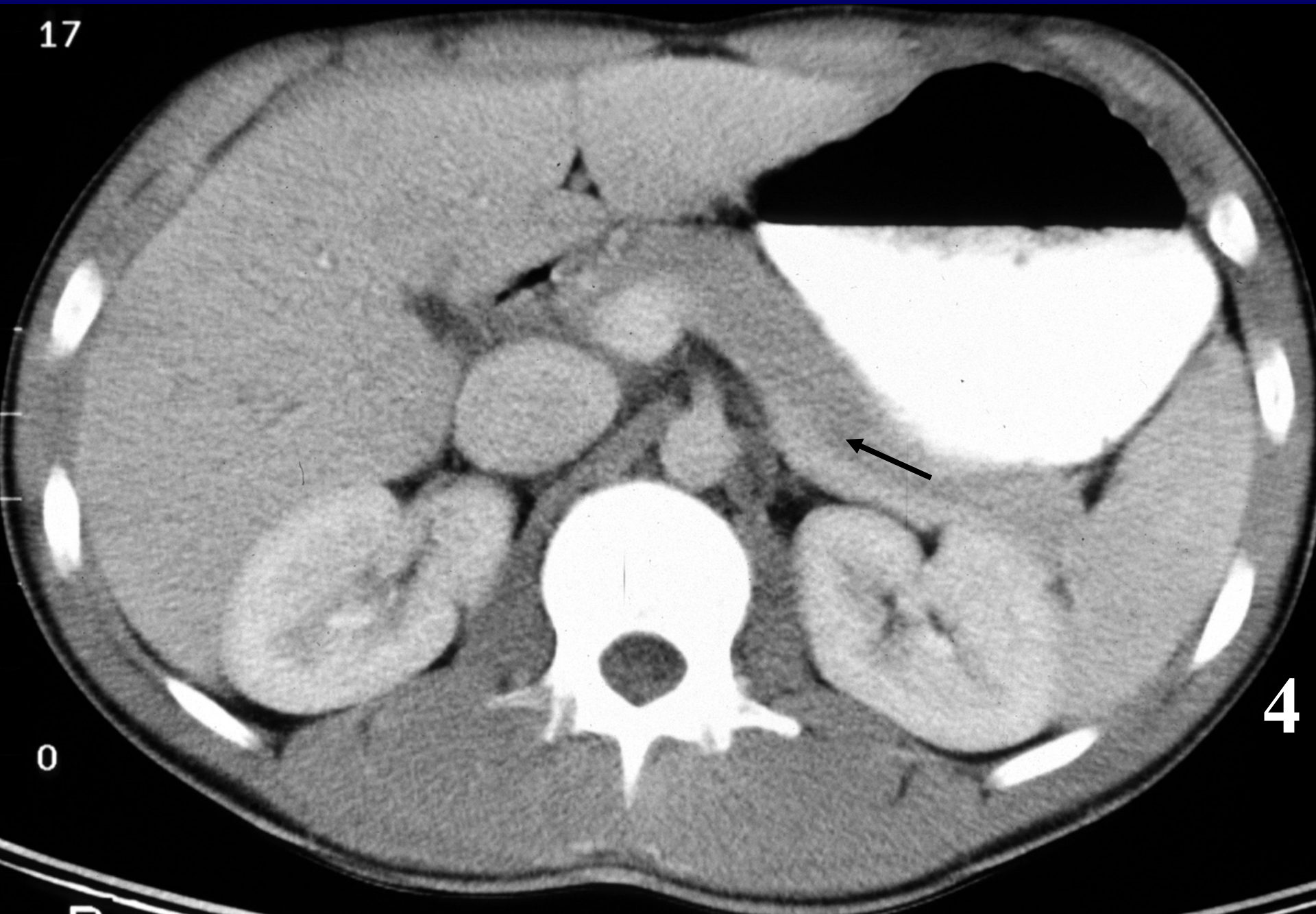


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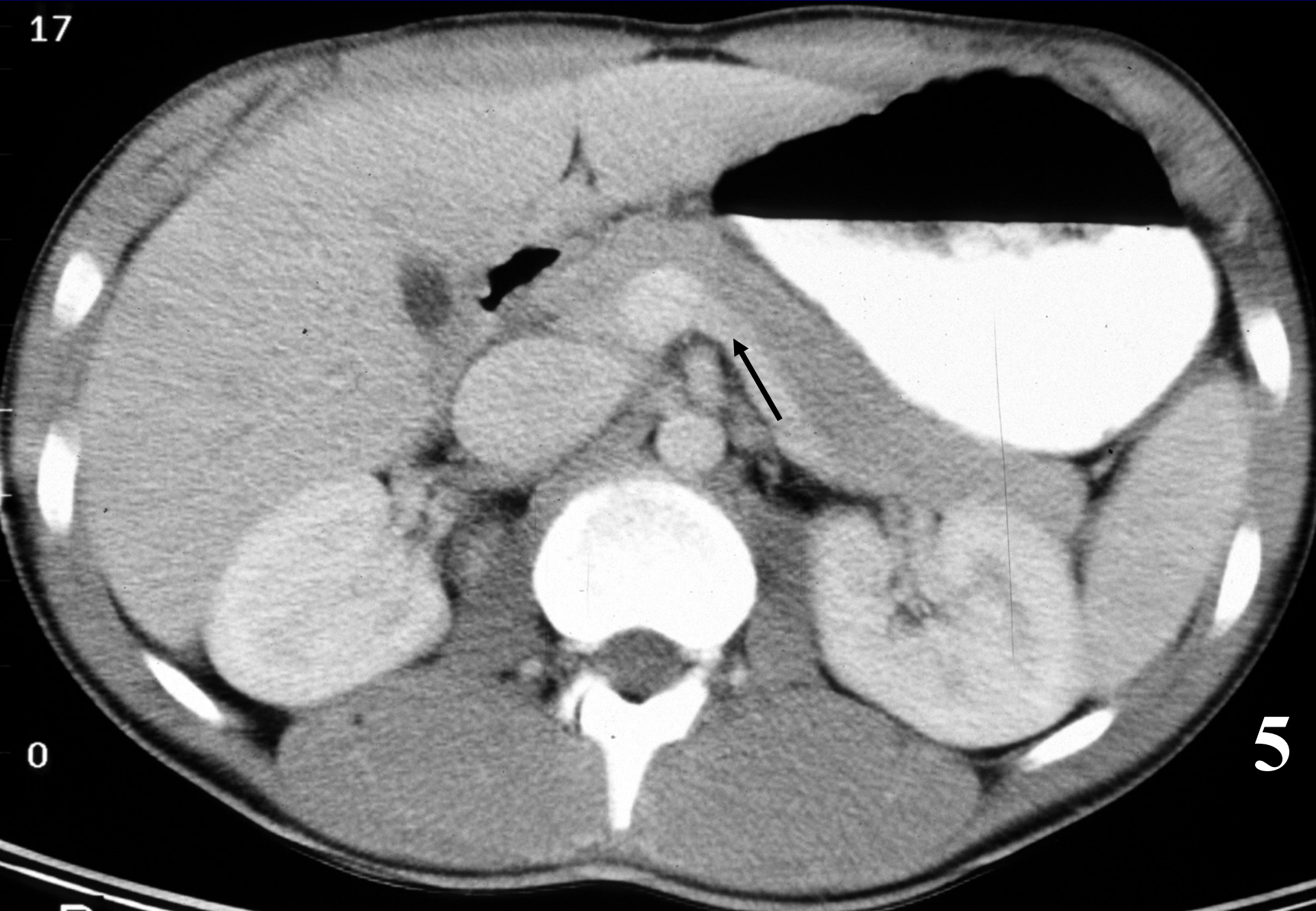
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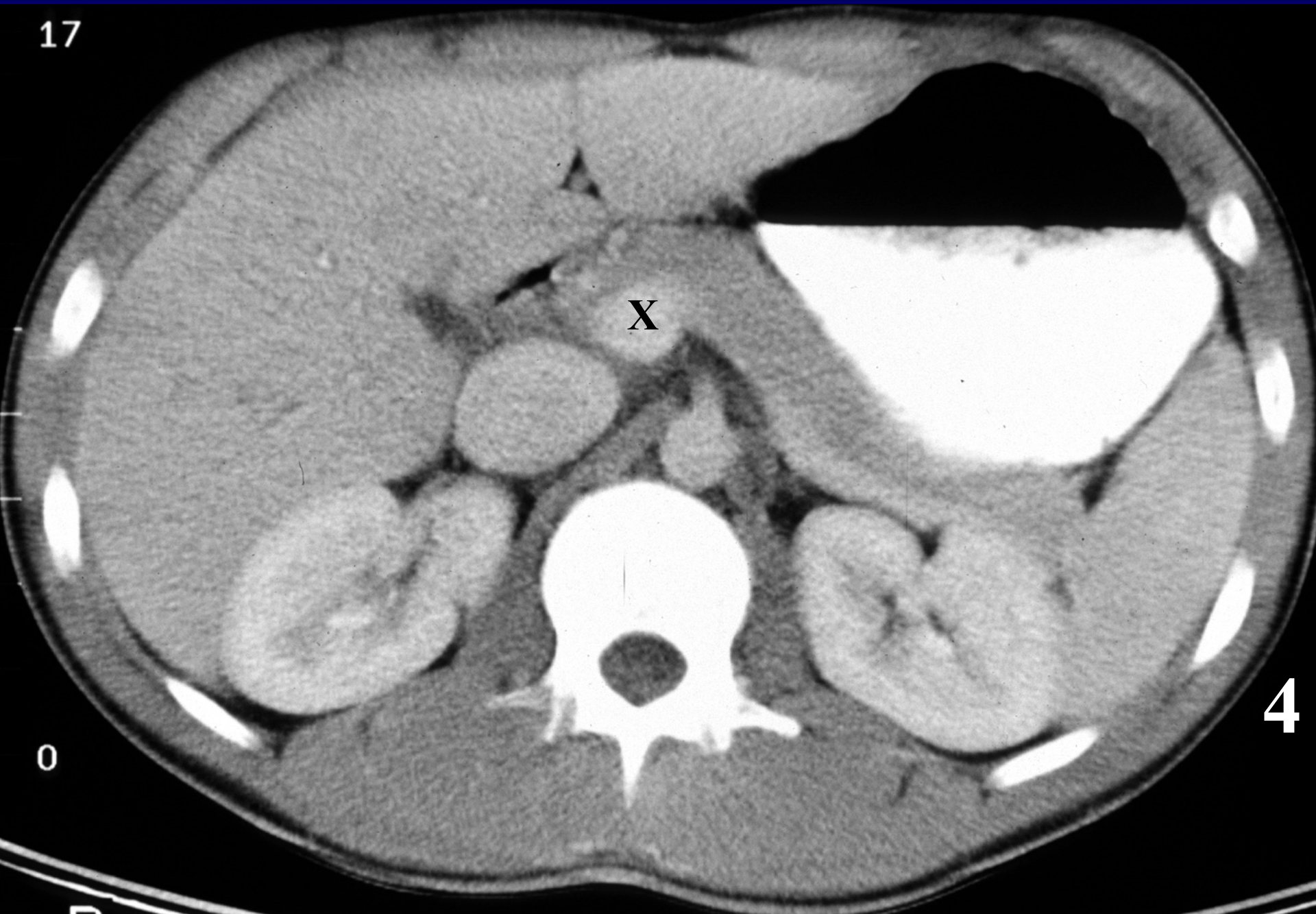
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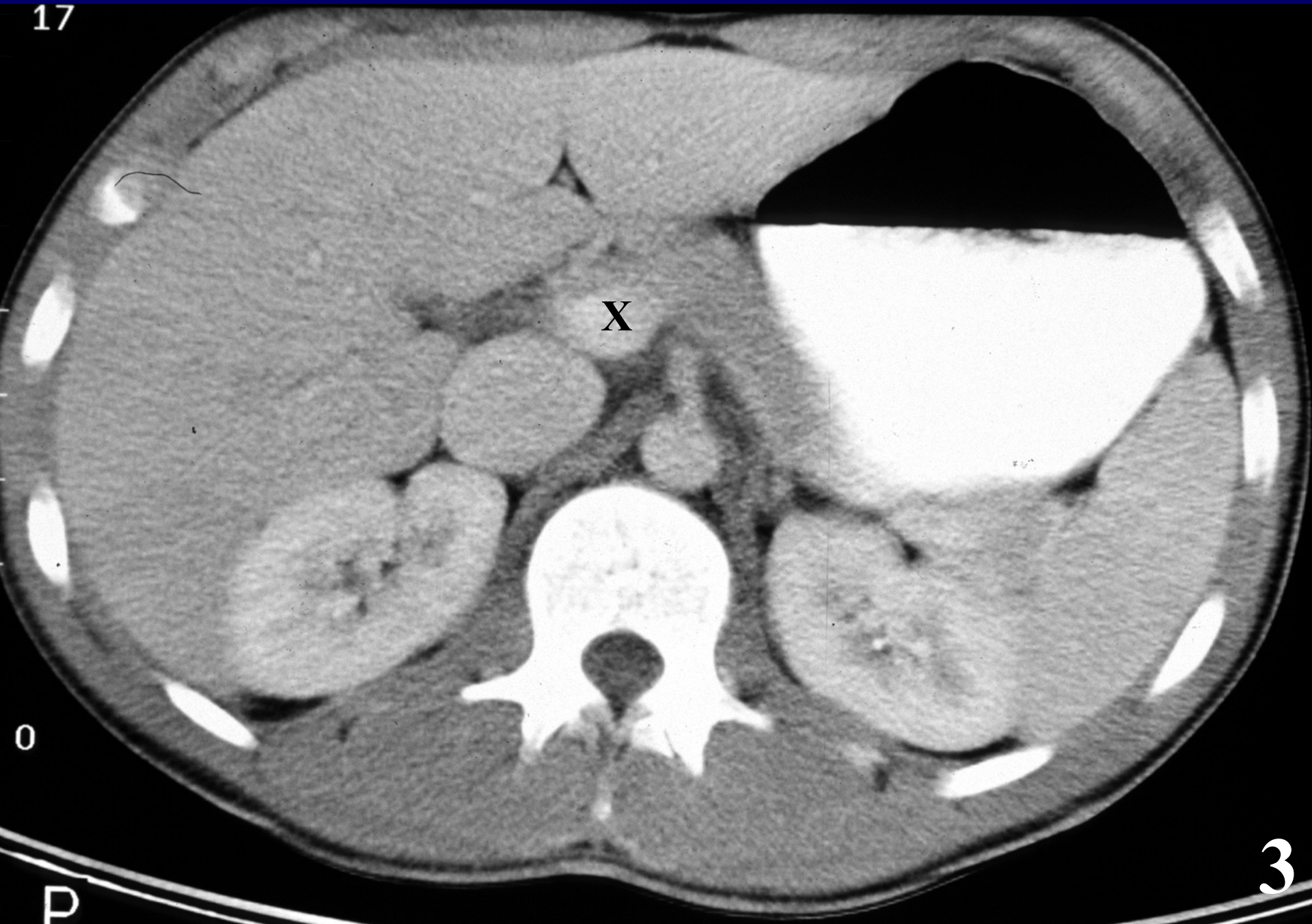


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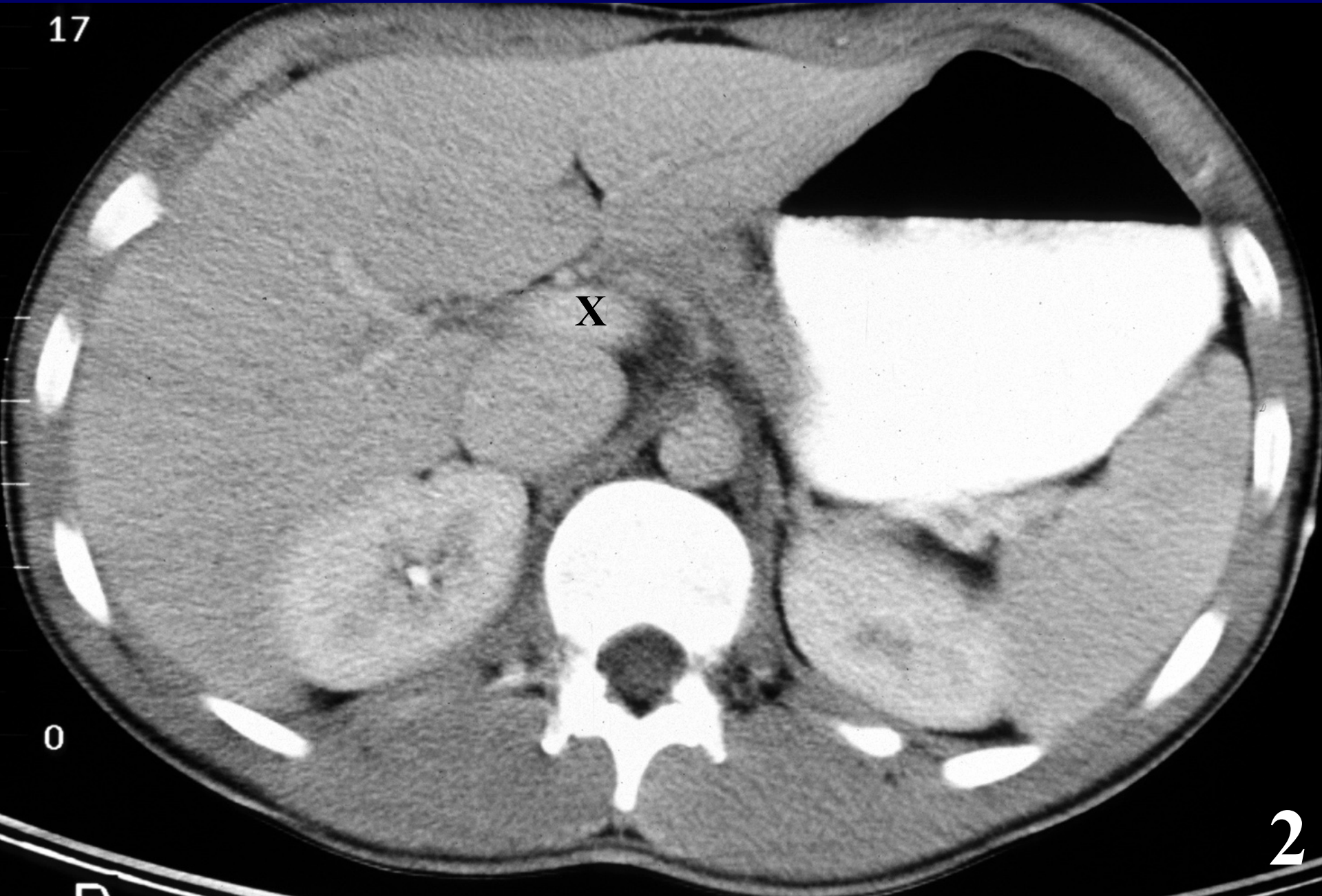


0

P

3

17



X

0

2

17

X

0

1



AORTA

SMA

SMV

PORTAL VEIN



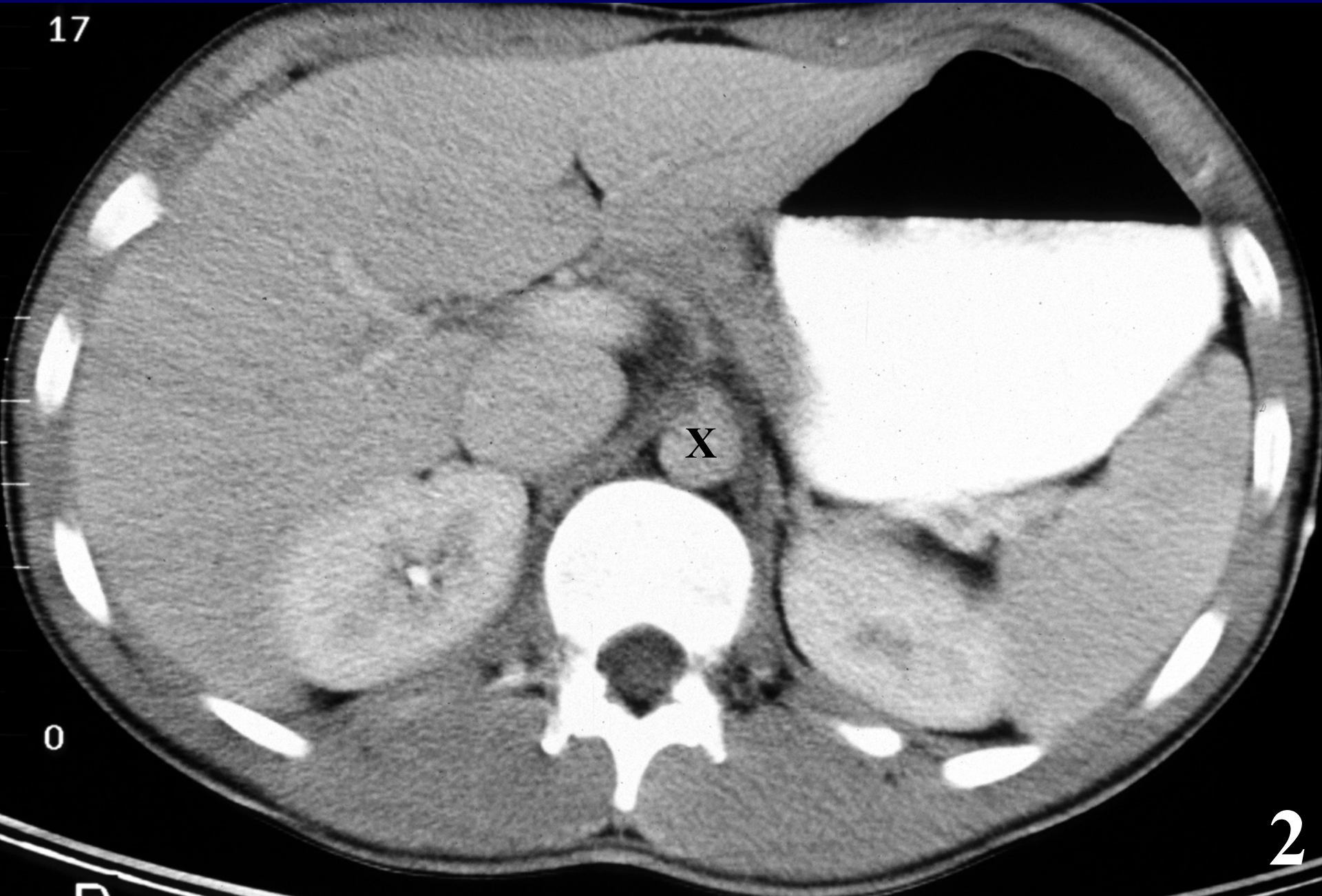
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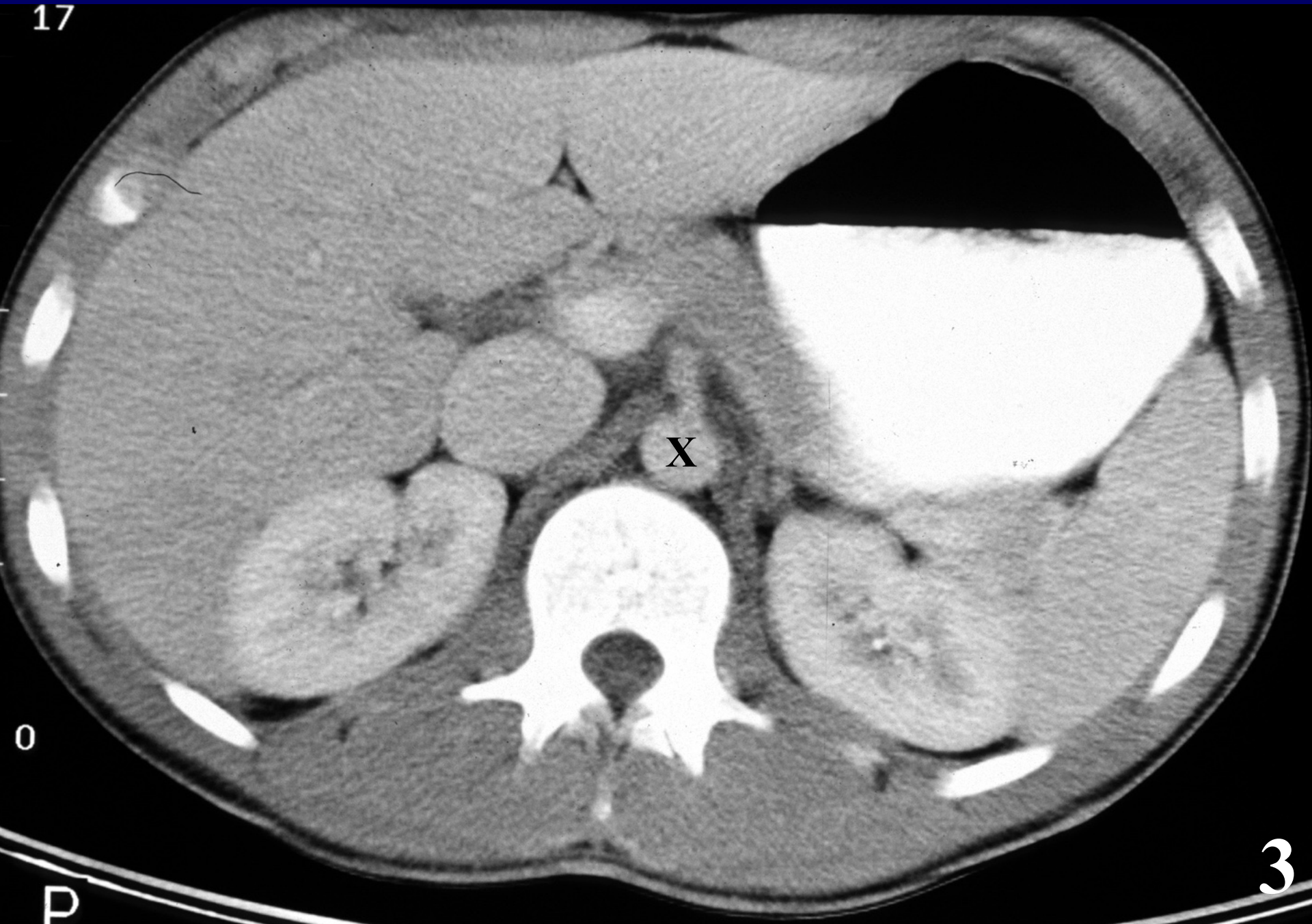
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2

17



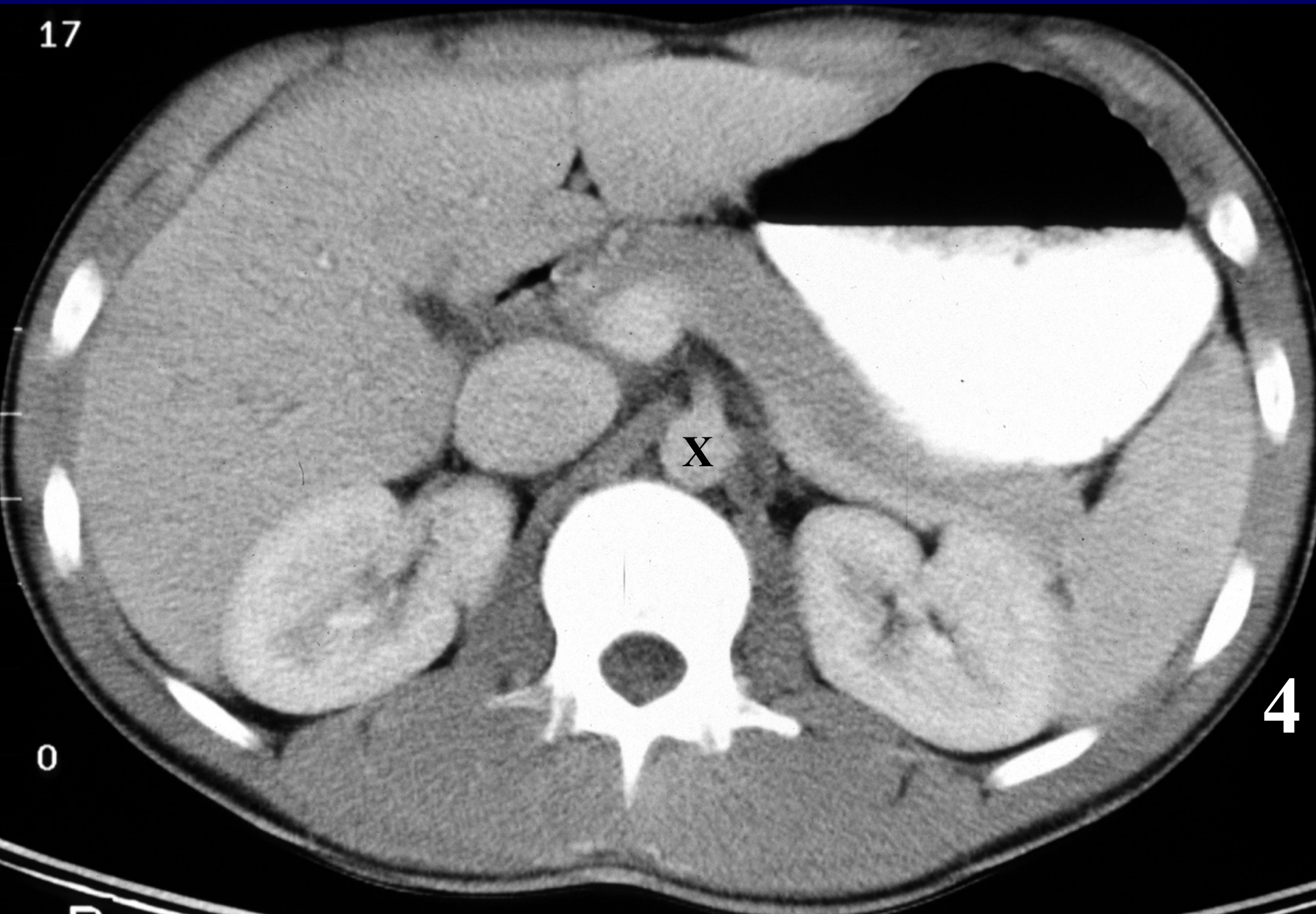
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P

3

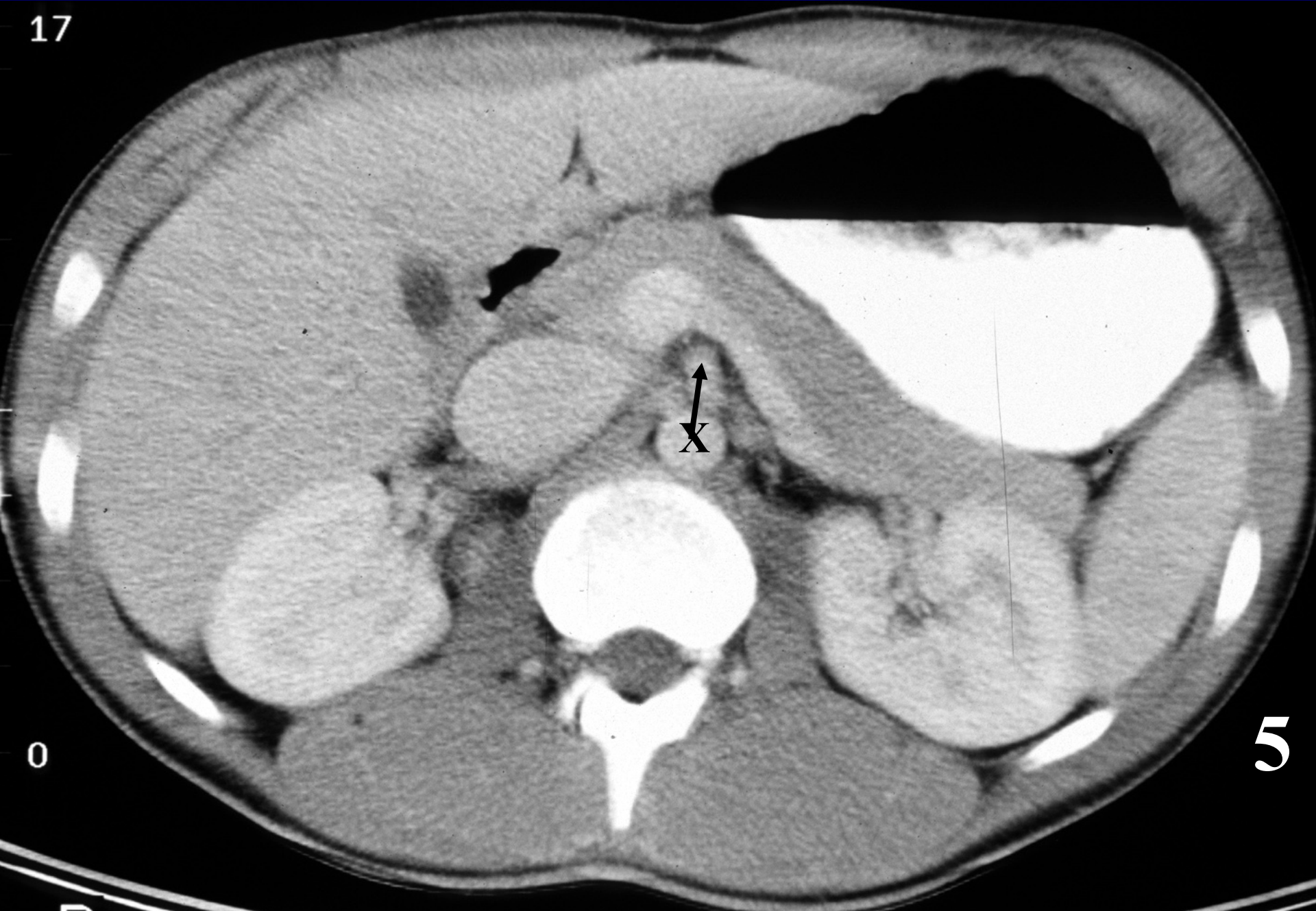
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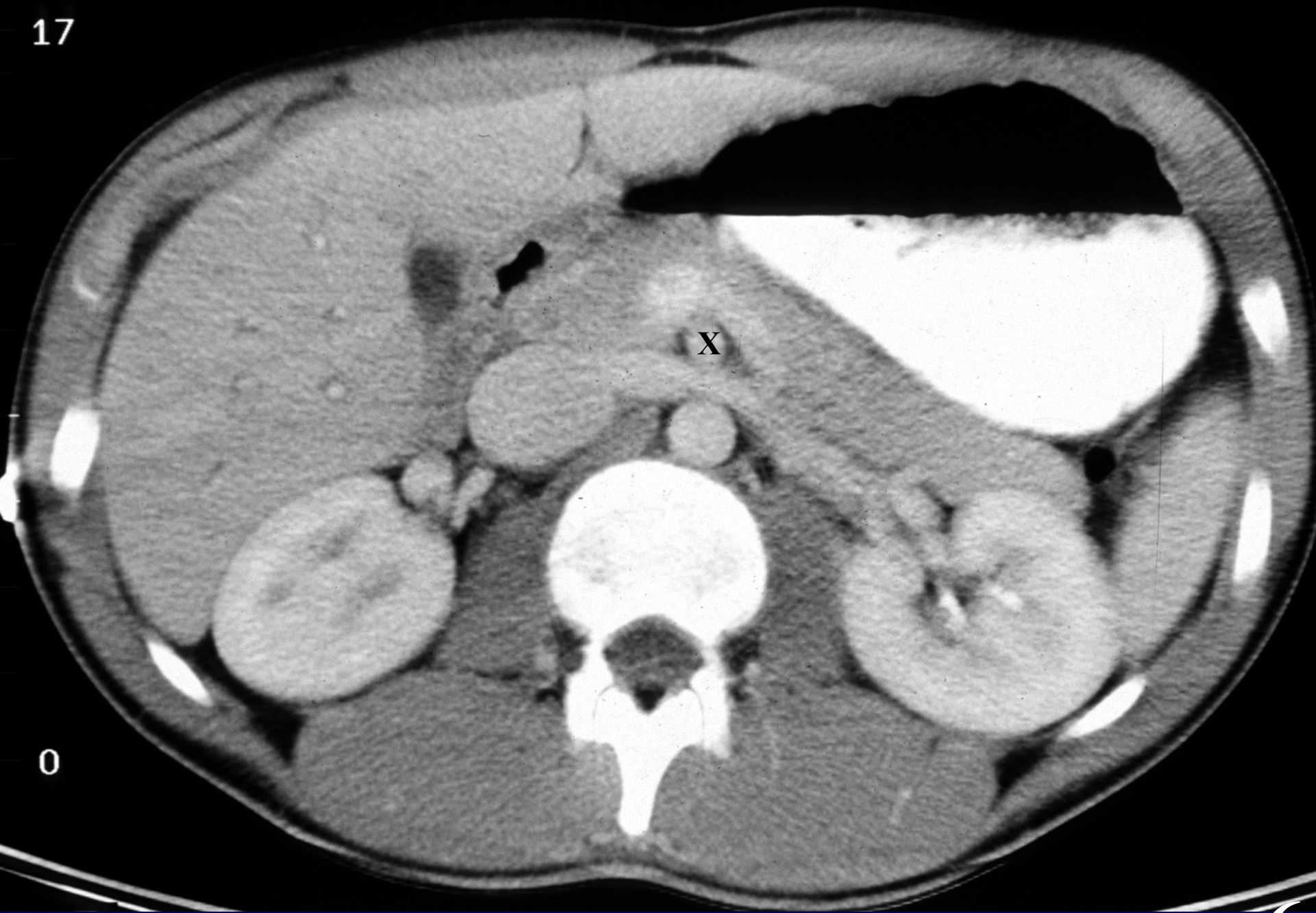
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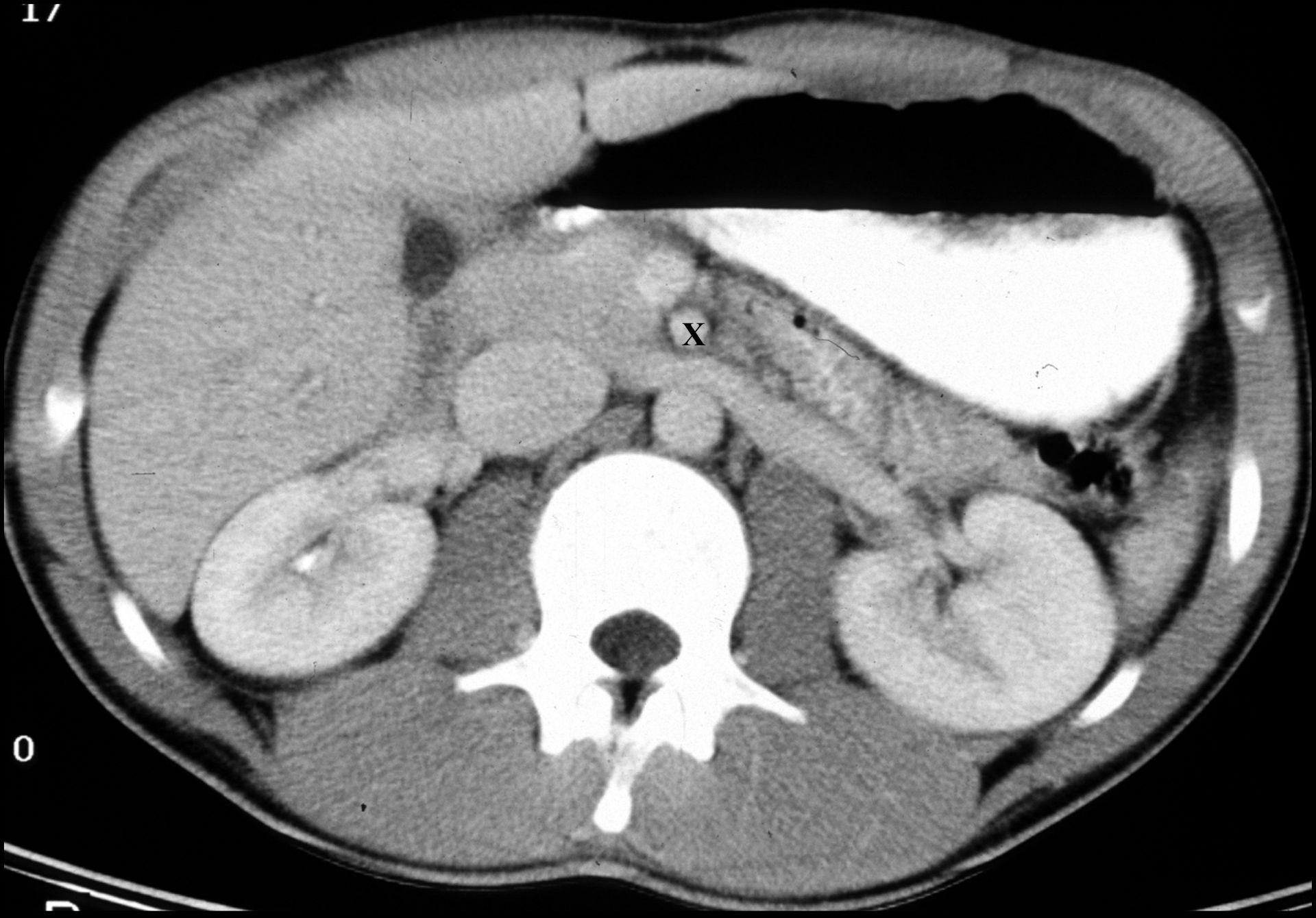
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17



0

6

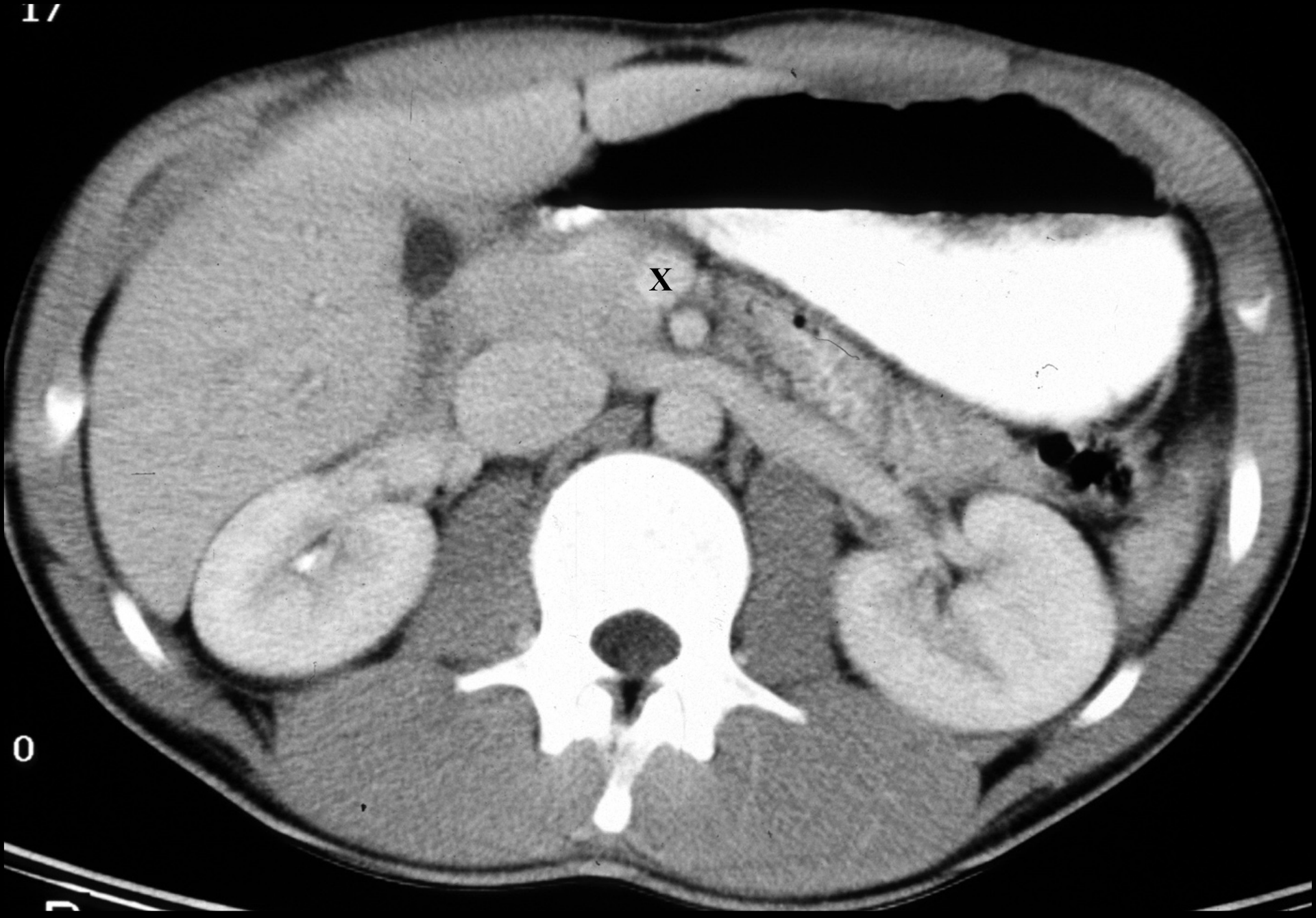


17

X

0

7



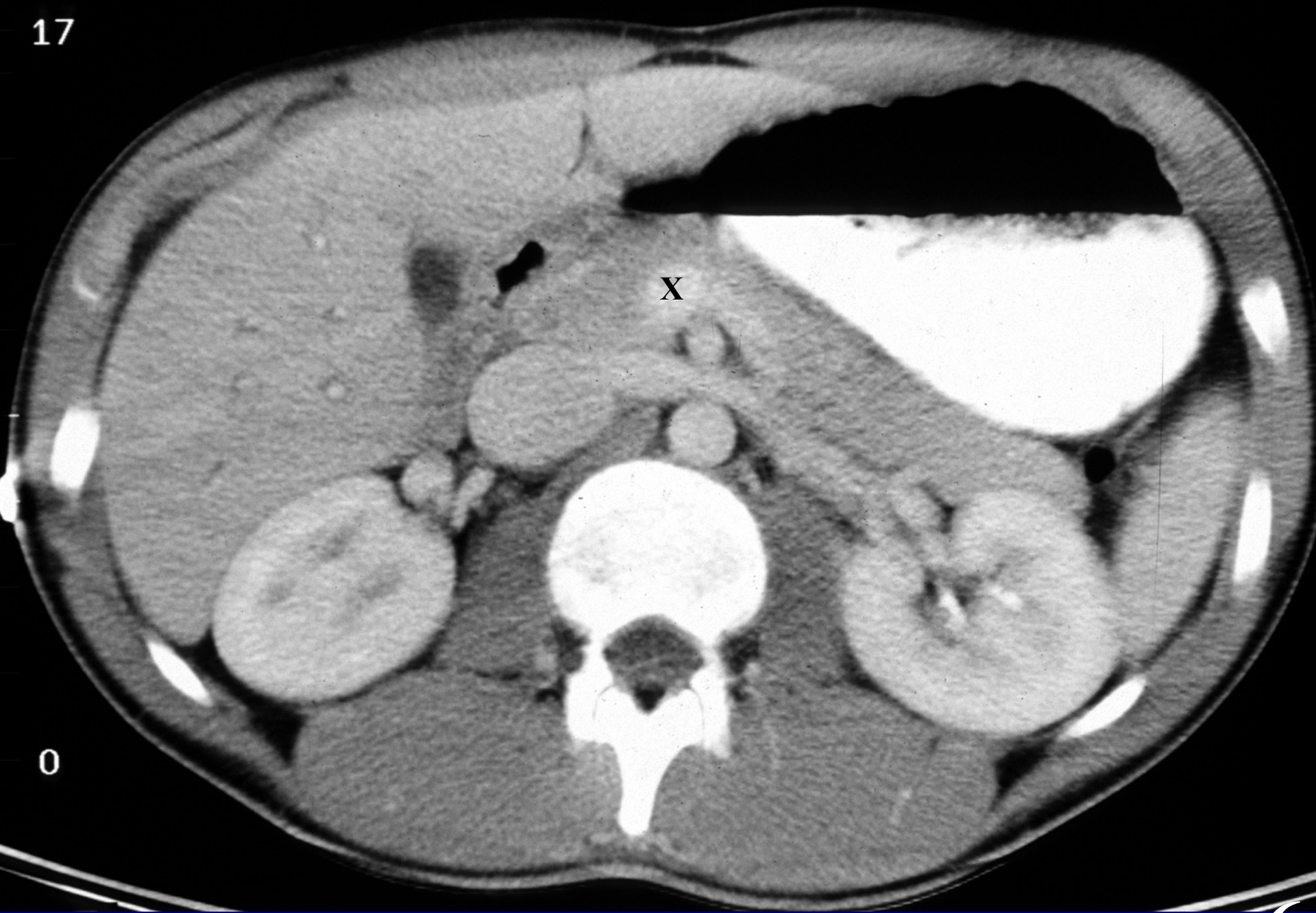
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X

0

7

17

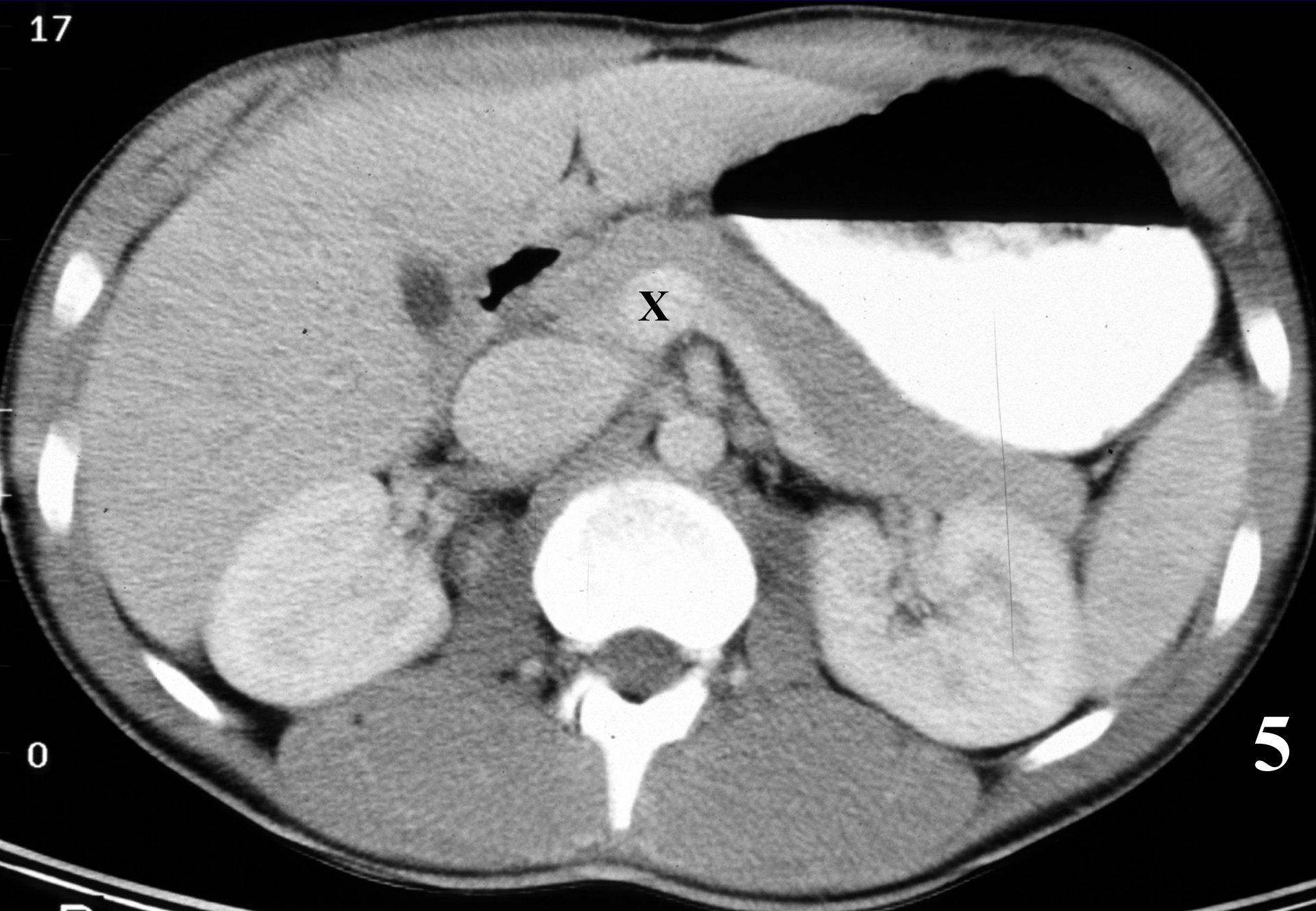


X

0

6

17

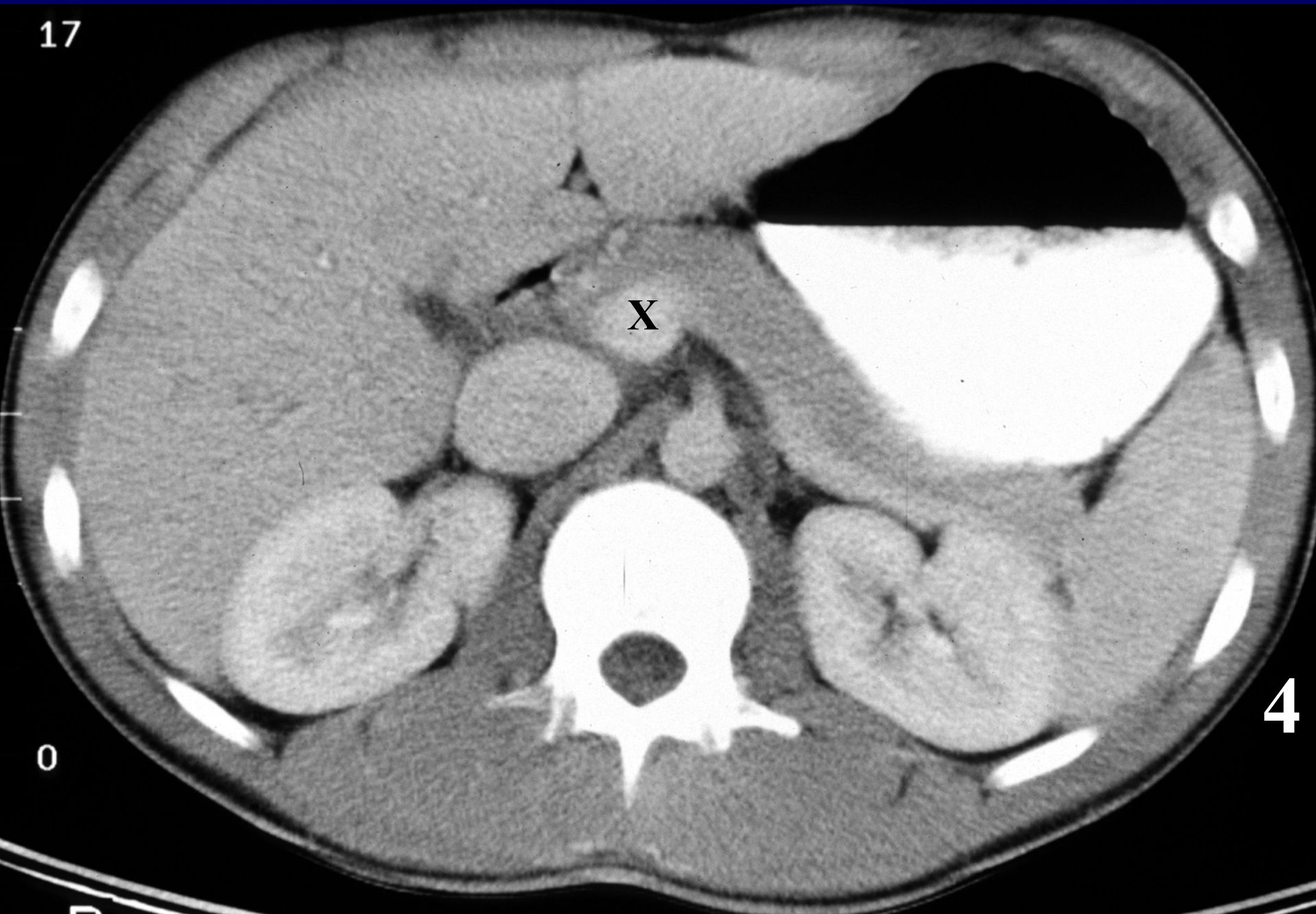


X

0

5

17

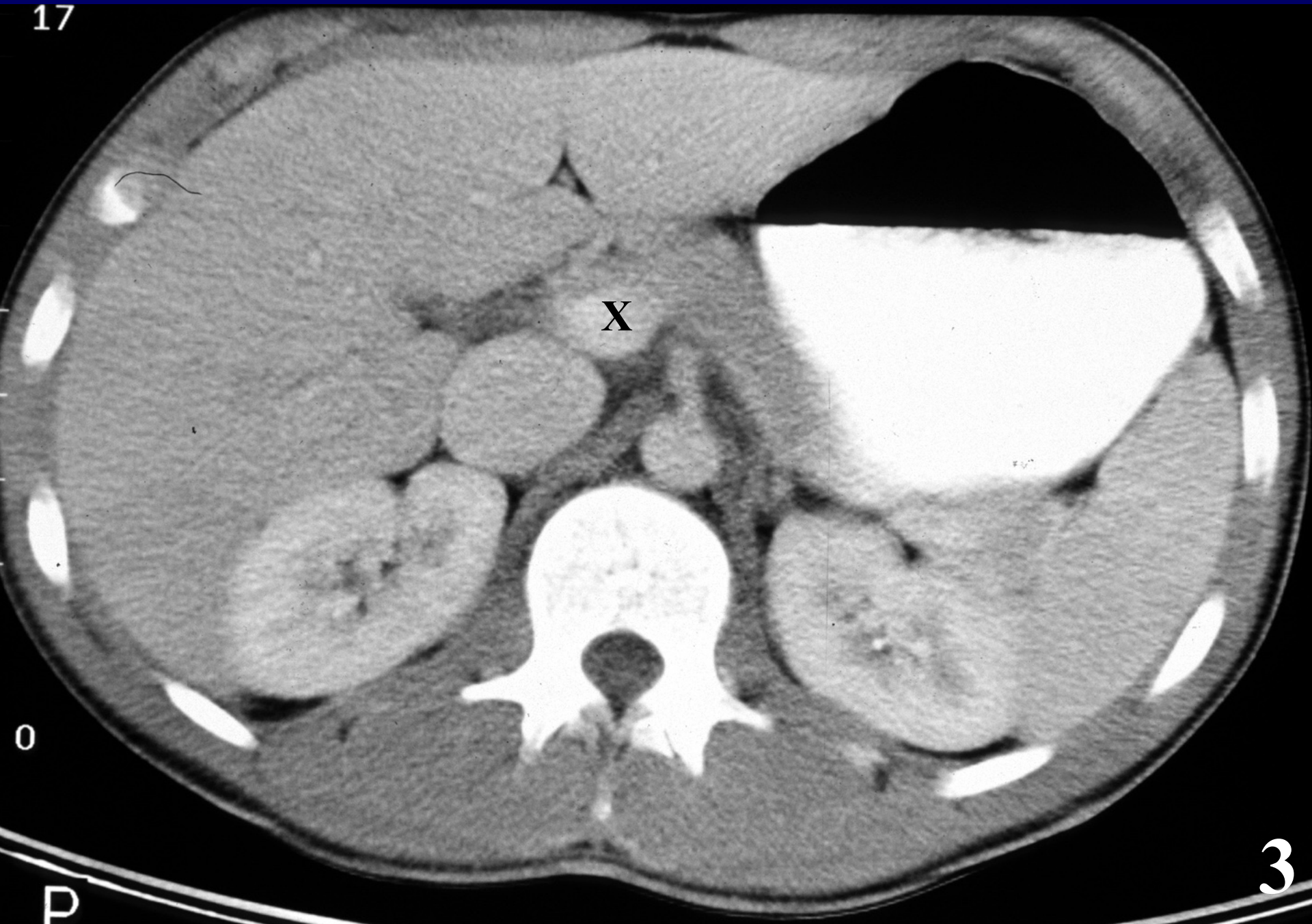


X

4

0

17

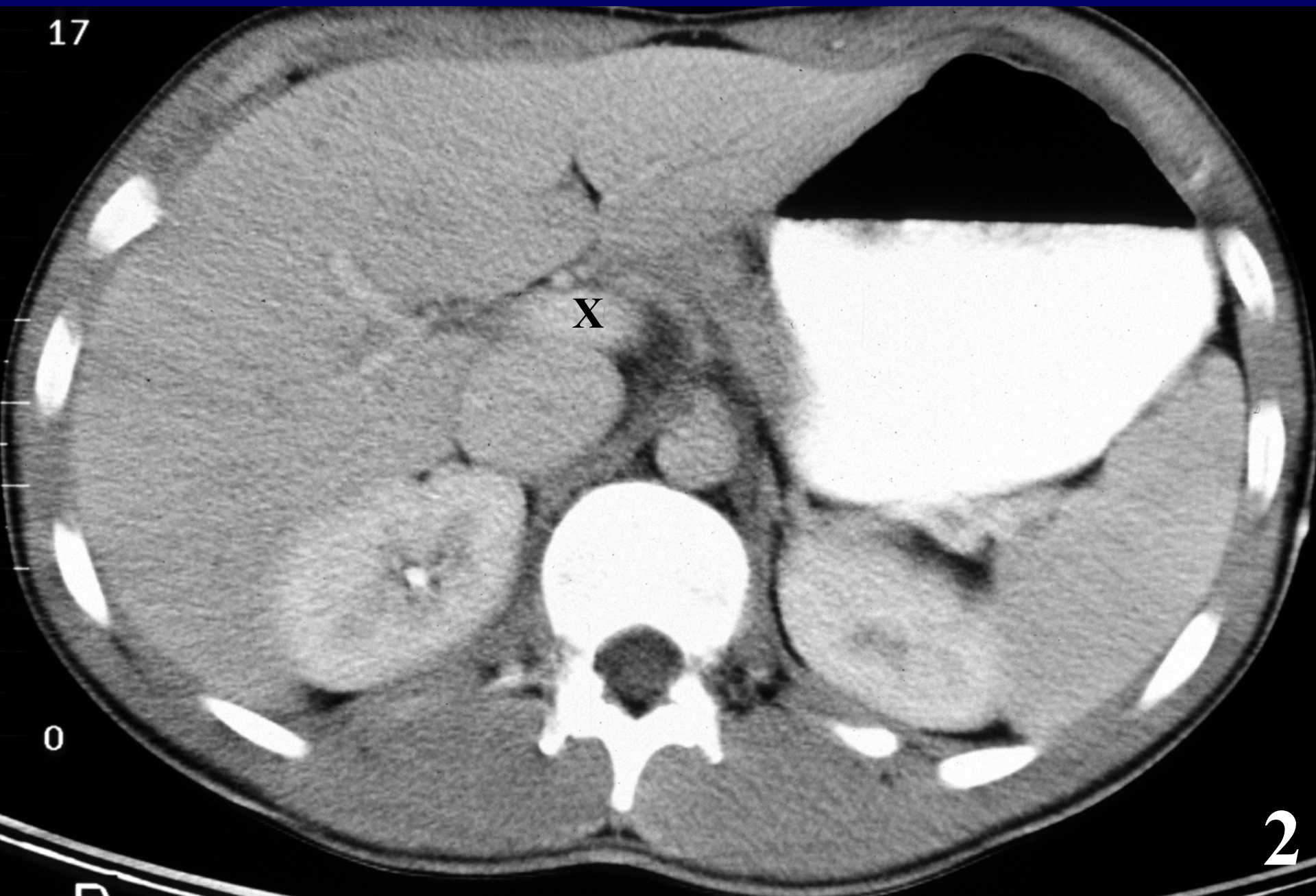


0

P

3

17



X

0

2



17

X

0

1

AORTA
LEFT RENAL ART
LEFT RENAL VEIN
IVC

