

# LES HERNIES

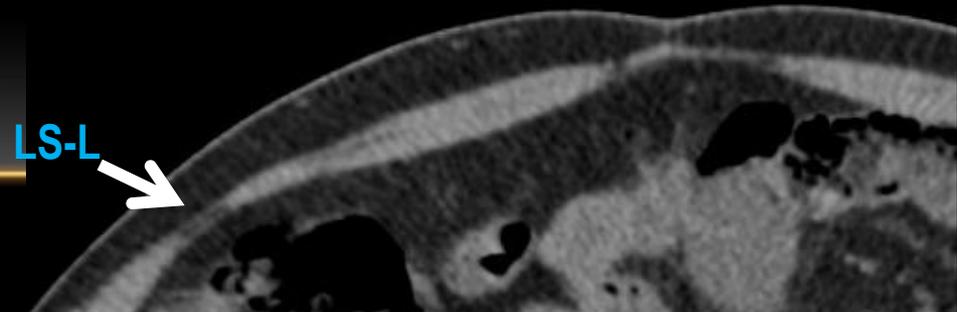
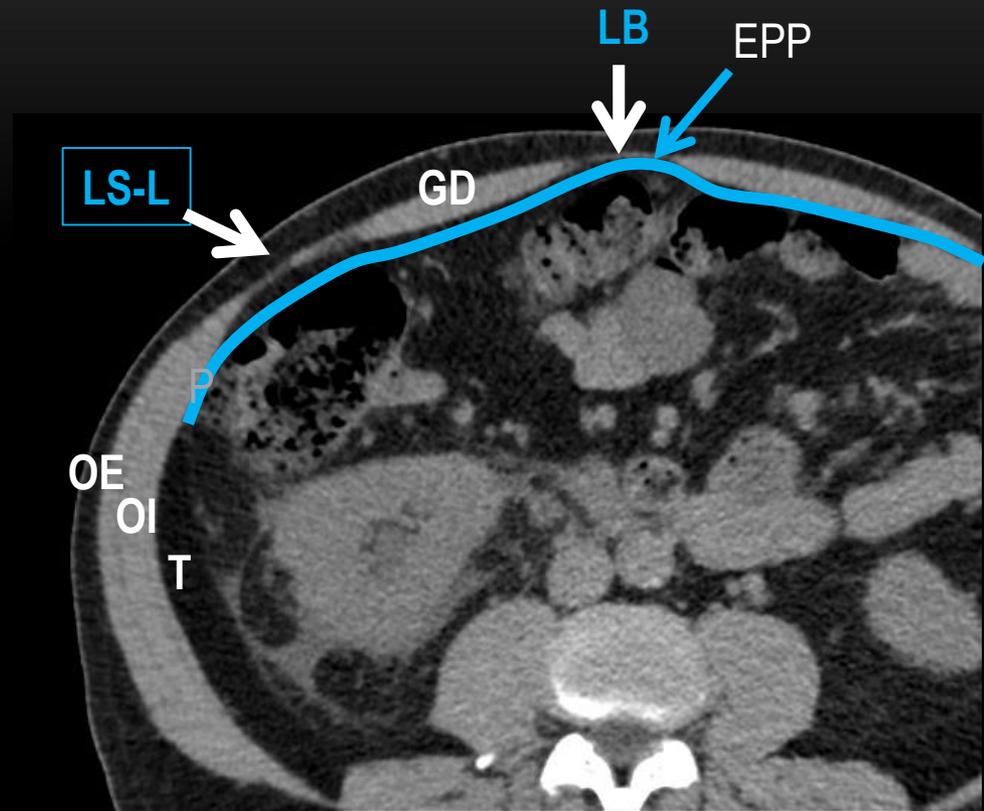
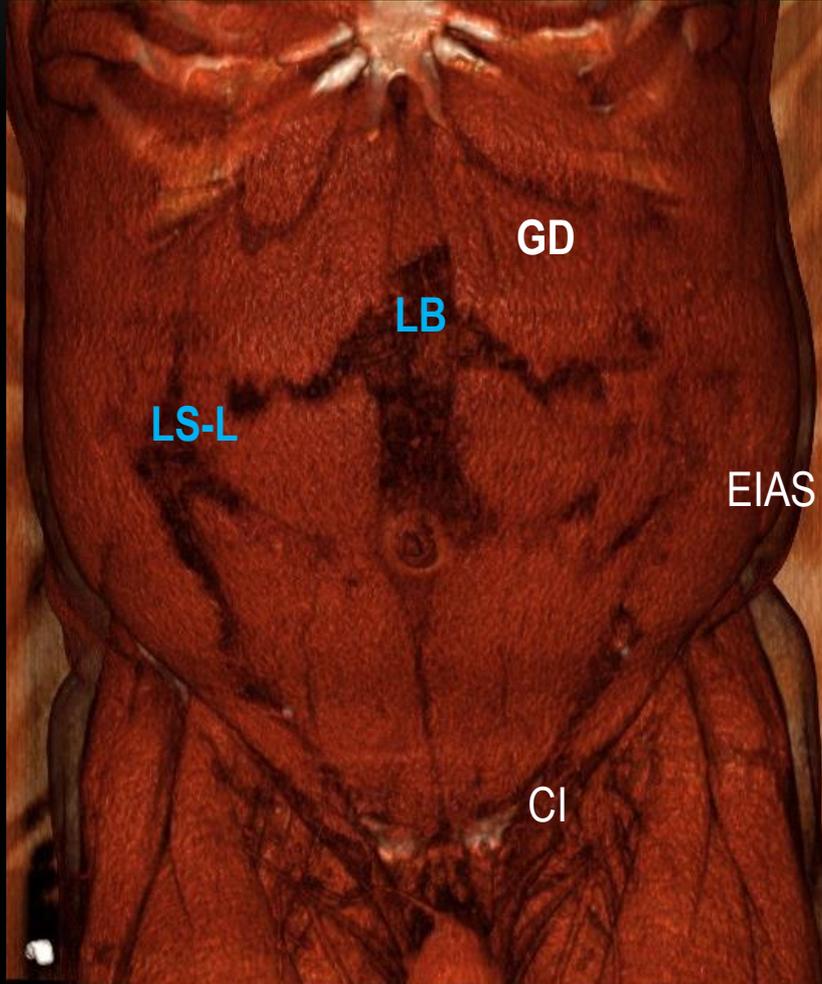
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Pariétales

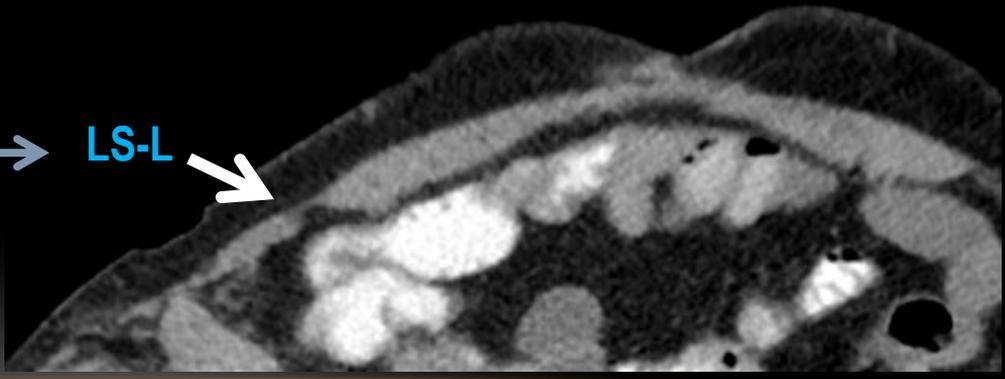
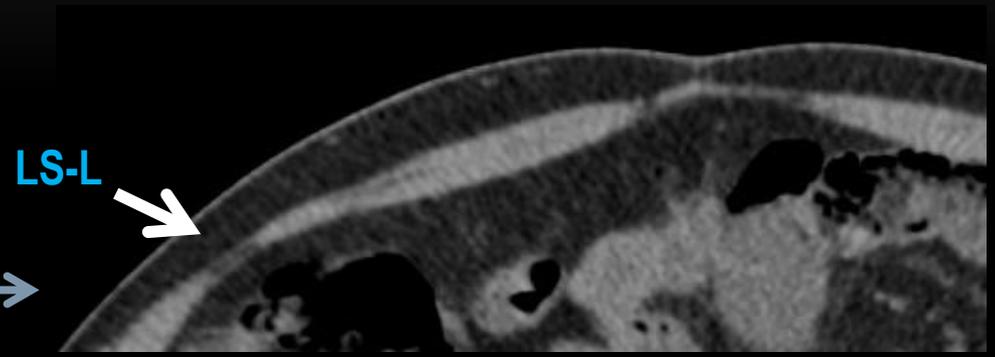
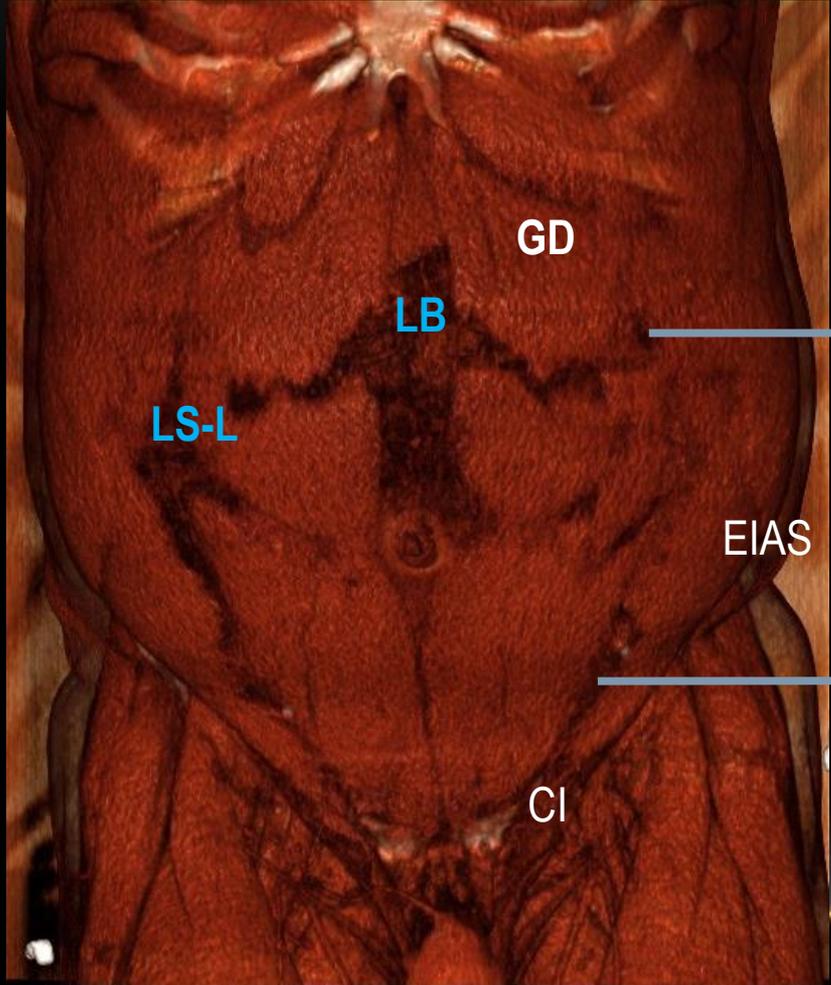
Internes

# HERNIES PARIETALES

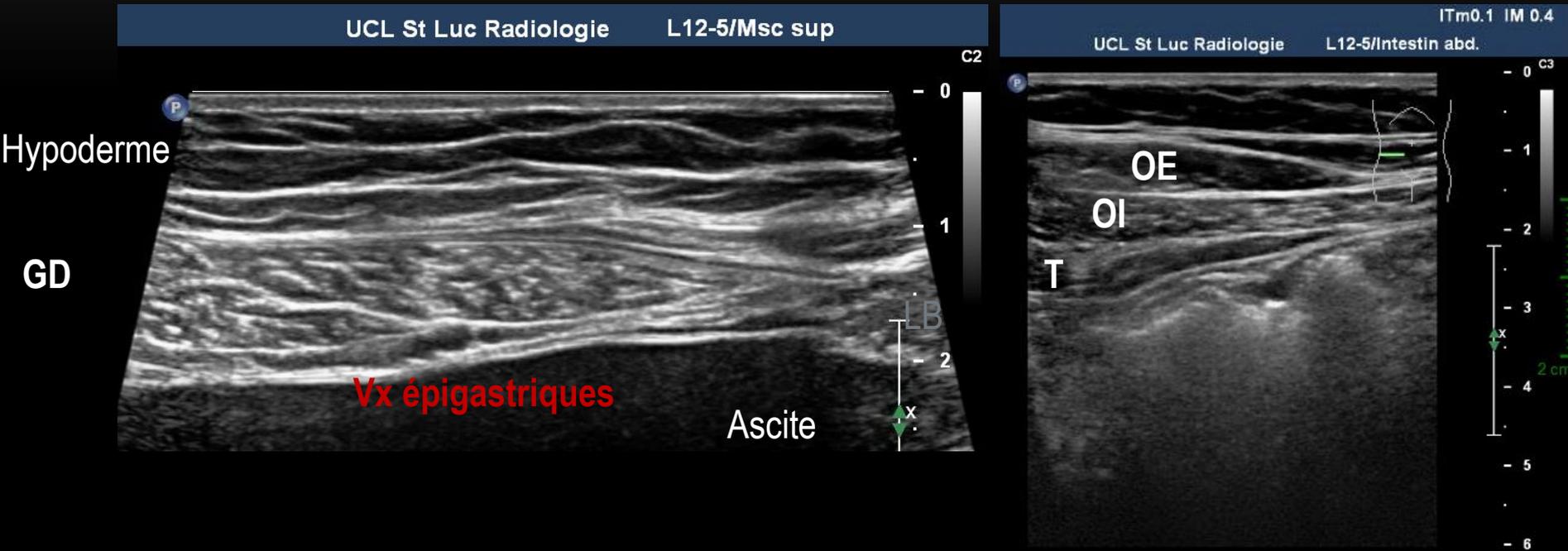
# ANATOMIE PARIÉTALE



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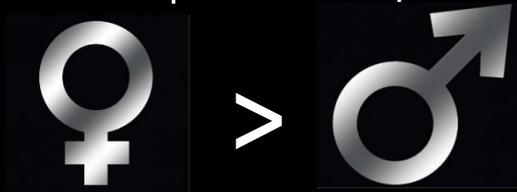
# ANATOMIE PARIÉTALE



# DIASTASIS DES GRANDS DROITS

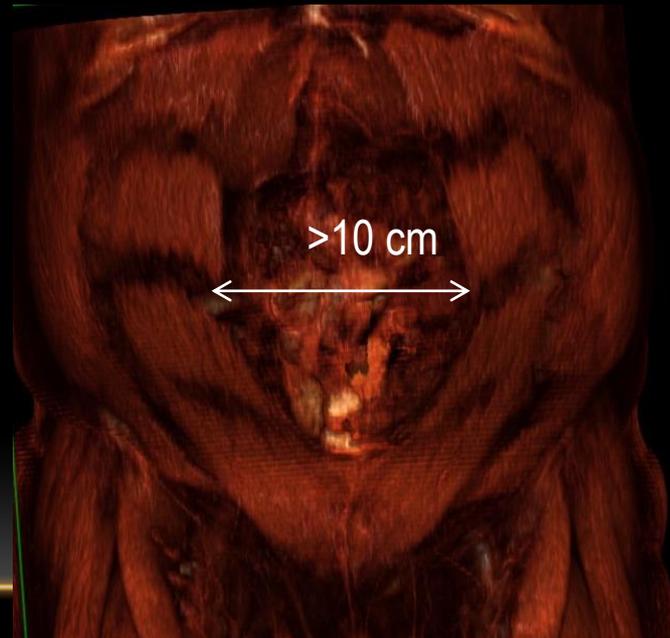
= Majoration distance entre les grands droits - Selon Beer et al  $> 3$  cm

- Multiparité  $>$  nulliparité

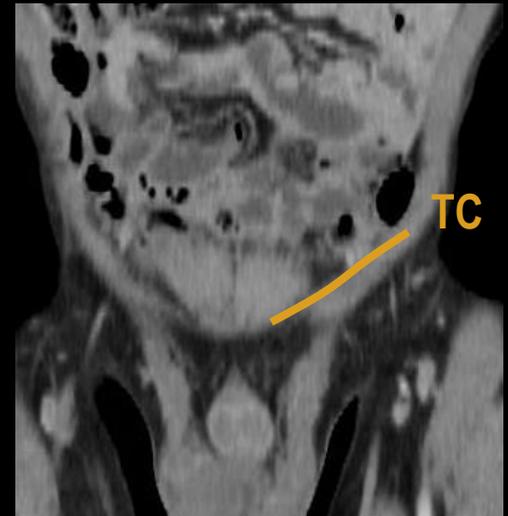
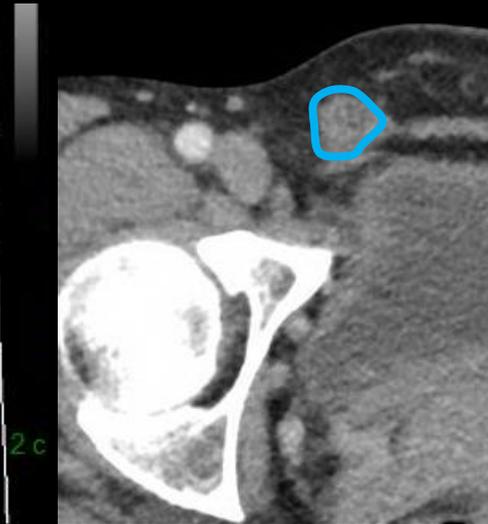
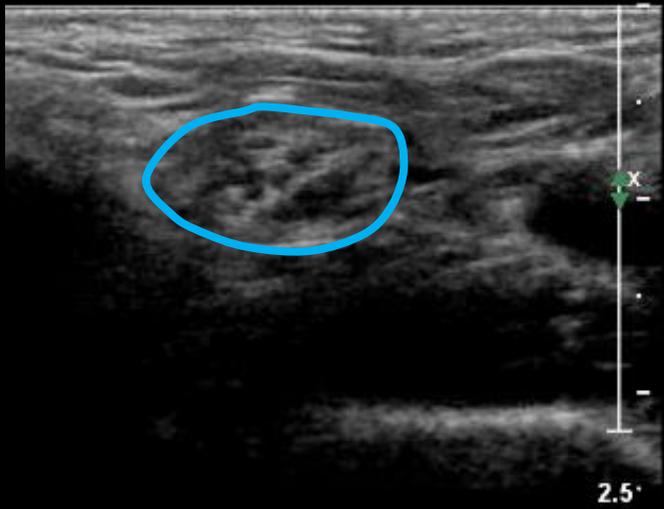


**IMPORTANTANCE**

**Cure  
d'éventration**

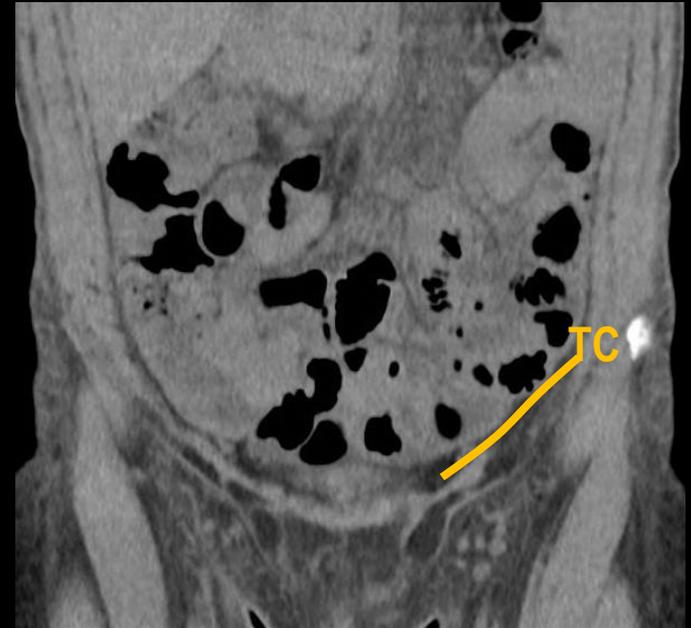
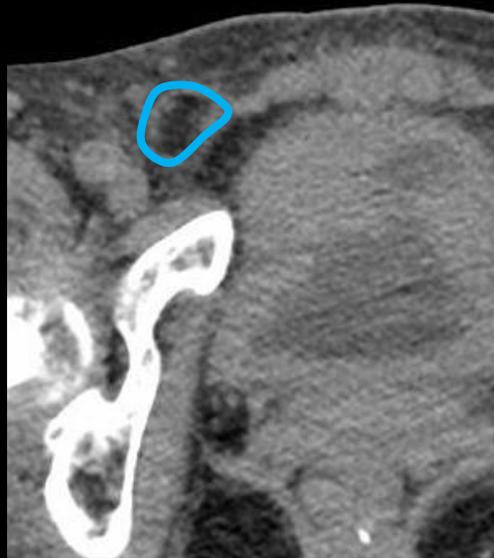
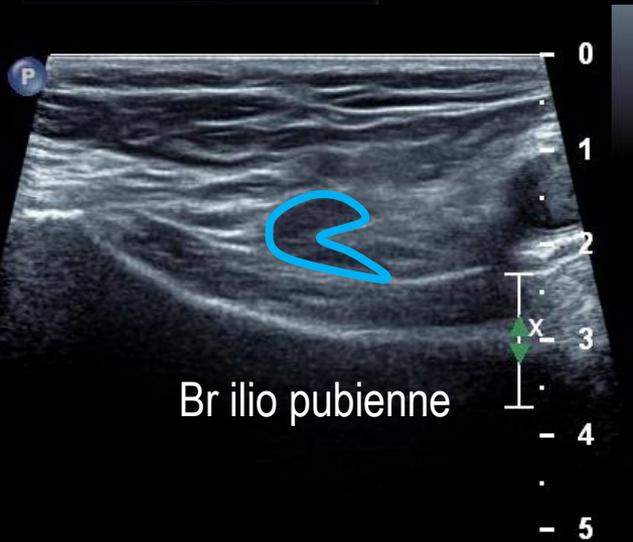


# CANAL INGUINAL





# CANAL INGUINAL



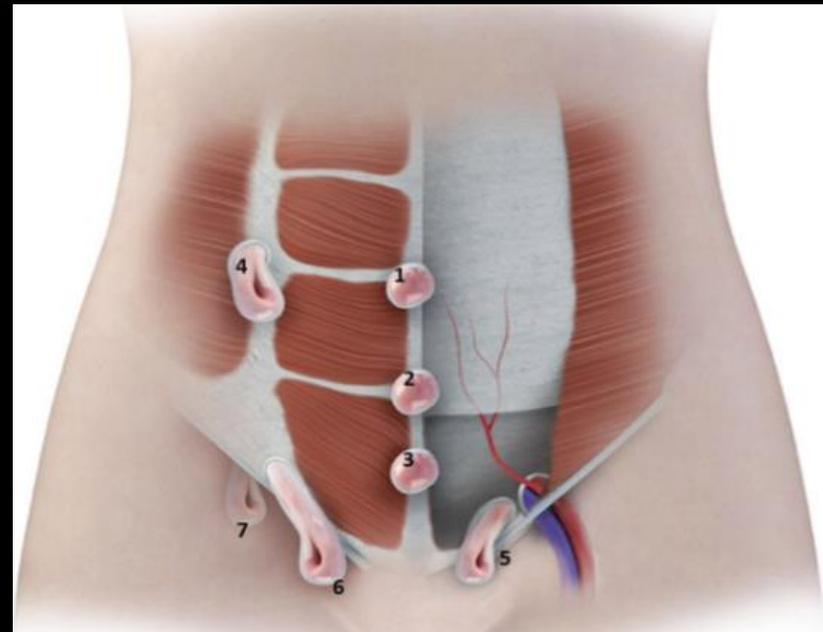
# DÉFINITION HERNIE PARIÉTALE



Protrusion sac péritonéal au travers d'une faiblesse ou d'un défaut congénital ou acquis de la paroi musculaire abdominale

# HERNIE DE LA PAROI ABDOMINALE

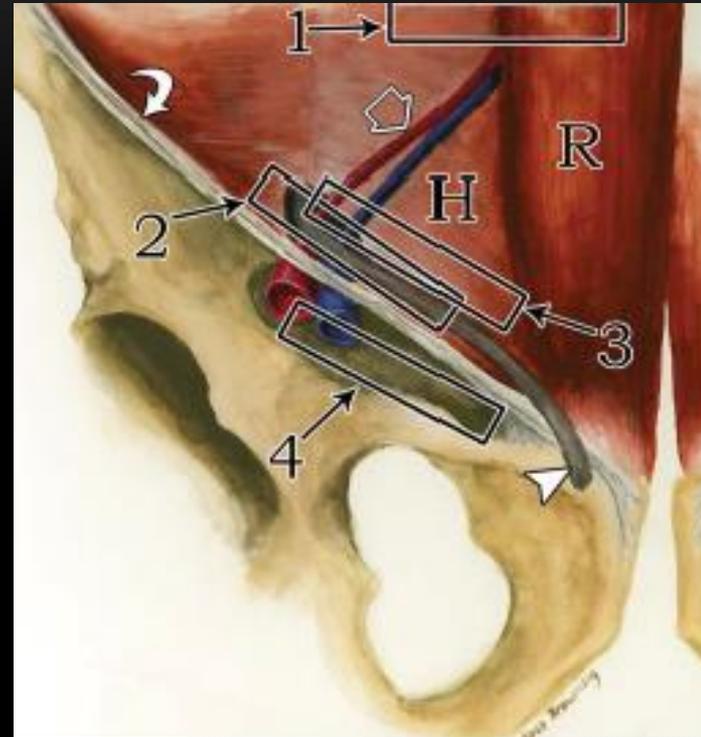
- **Inguinale et pelvienne** - indirecte
  - directe
  - fémorale et obturatrice
- **Ventrale - antérieure** - épigastrique
  - ombilicale et para-ombilicale
  - hypogastrique
- **latérale**
- **Lombaire**
- **Incisionnelle** (éventration – hernies parastomiales)



# US ?

- Courbe d'apprentissage
- Avantage dynamique de l'US
- Valsalva / debout / irréductibilité
- Pas d'irradiation

≠ hernies inguinales – fémorales  
ombilicales – Spiegel



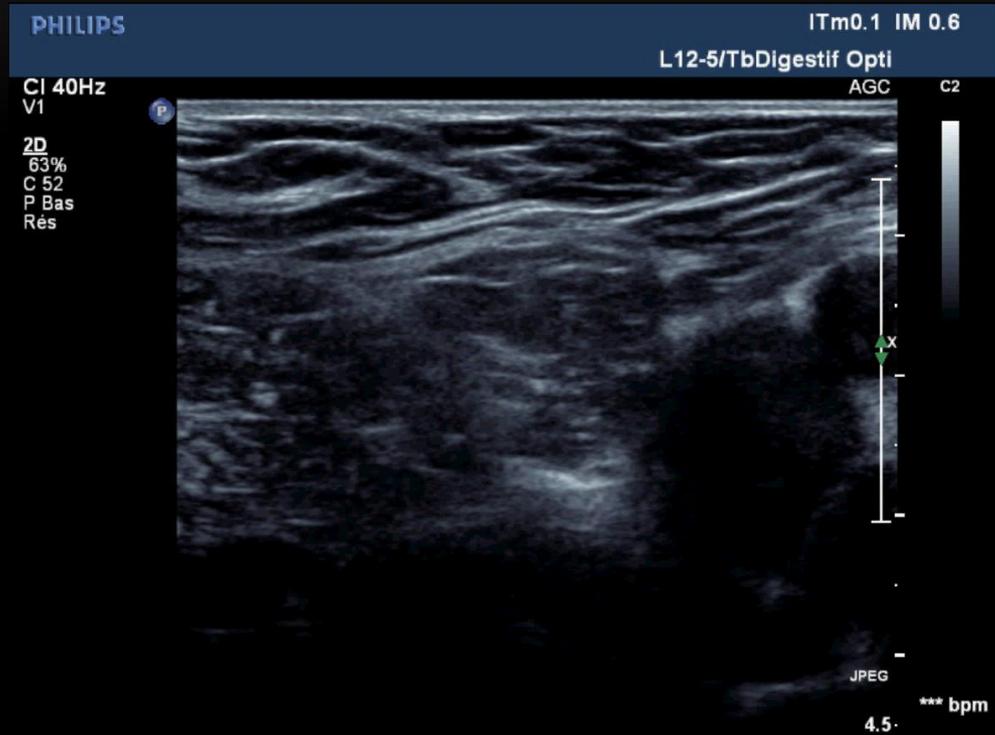
Sonography of Inguinal Region Hernias  
AJR:187, July 2006

- Signes d'incarcération

# REPÈRES ANATOMIQUES

- Art épigastrique -> hernie directe vs indirecte
- Ligament inguinal – Tubercule pubis  
-> hernie inguinale vs fémorale
- Veine fémorale -> hernie fémorale ?

# US



## Sonography of Inguinal Region Hernias

AJR:187, July 2006

David A. Jamadar<sup>1</sup>  
Jon A. Jacobson<sup>1</sup>  
Yoav Morag<sup>1</sup>  
Gandikota Girish<sup>1</sup>  
Farhad Ebrahim<sup>1</sup>  
Thomas Gest<sup>2</sup>  
Michael Franz<sup>3</sup>

**OBJECTIVE.** The purpose of this article is to describe the anatomy of the inguinal region in a way that is useful for sonographic diagnosis of inguinal region hernias, and to illustrate the sonographic appearance of this anatomy. We show sonographic techniques for evaluating inguinal, femoral, and spigelian hernias and include surgically proven examples.

**CONCLUSION.** Understanding healthy inguinal anatomy is essential for diagnosing inguinal region hernias. Sonography can diagnose and differentiate between various inguinal region hernias.

# HERNIE DE L'AINE

Directe

Indirecte

Différenciation peu utile  
Complications

Importance de la  $\neq$

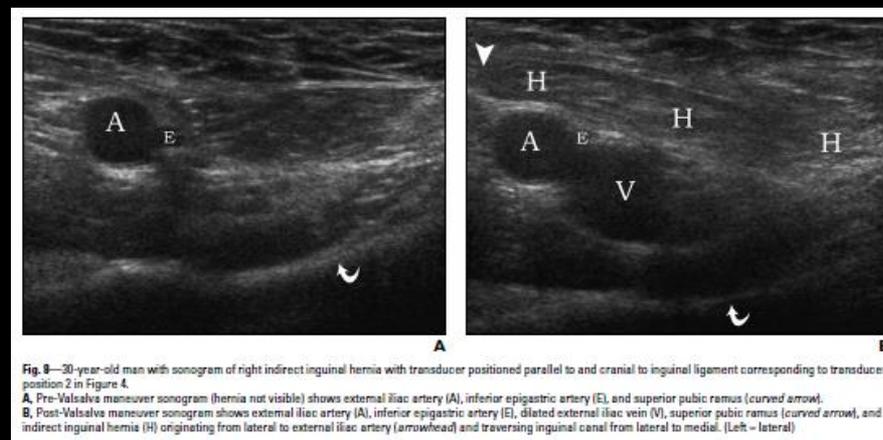
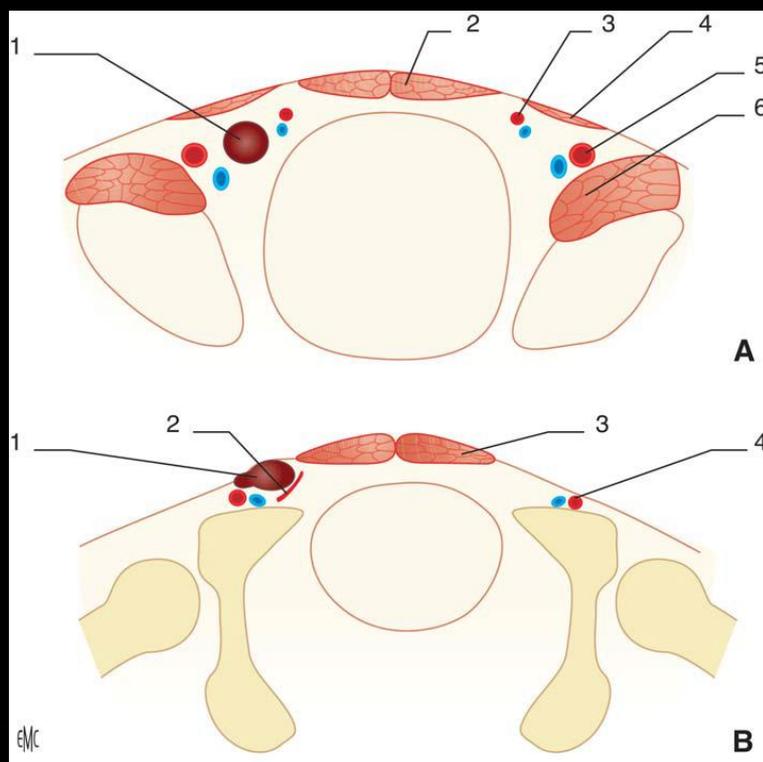
Fémorale / obturatrice





# HERNIES INDIRECTES

- La + f



- A.** Représentation schématique en coupe axiale au niveau de l'orifice profond du canal inguinal : hernie (1) dans le canal inguinal, en dehors des vaisseaux épigastriques (3), en dedans des vaisseaux fémoraux (5). Muscles grands droits (2), oblique interne (4) et psoas iliaque (6).
- B.** Coupe axiale plus basse que A : sac herniaire (1) en dehors des vaisseaux épigastriques (2), en dedans des vaisseaux fémoraux (4), pouvant atteindre le scrotum. Muscles grands droits (3).

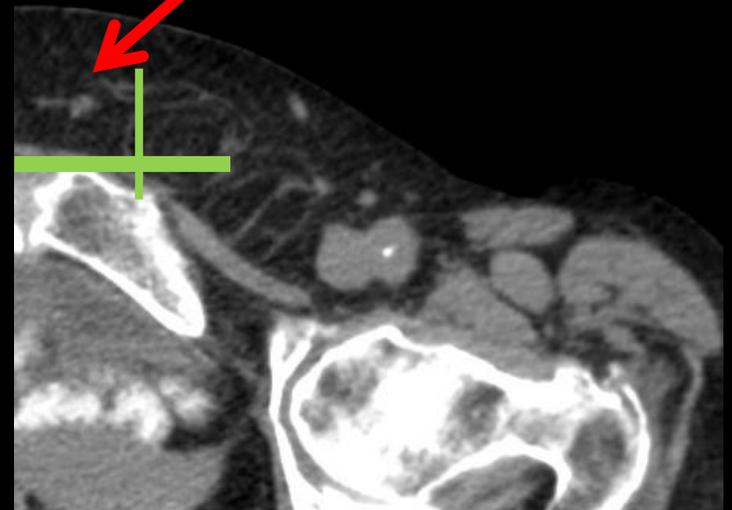
# HERNIES INGUINALES INDIRECTES

Canal inguinal

**souffrance**



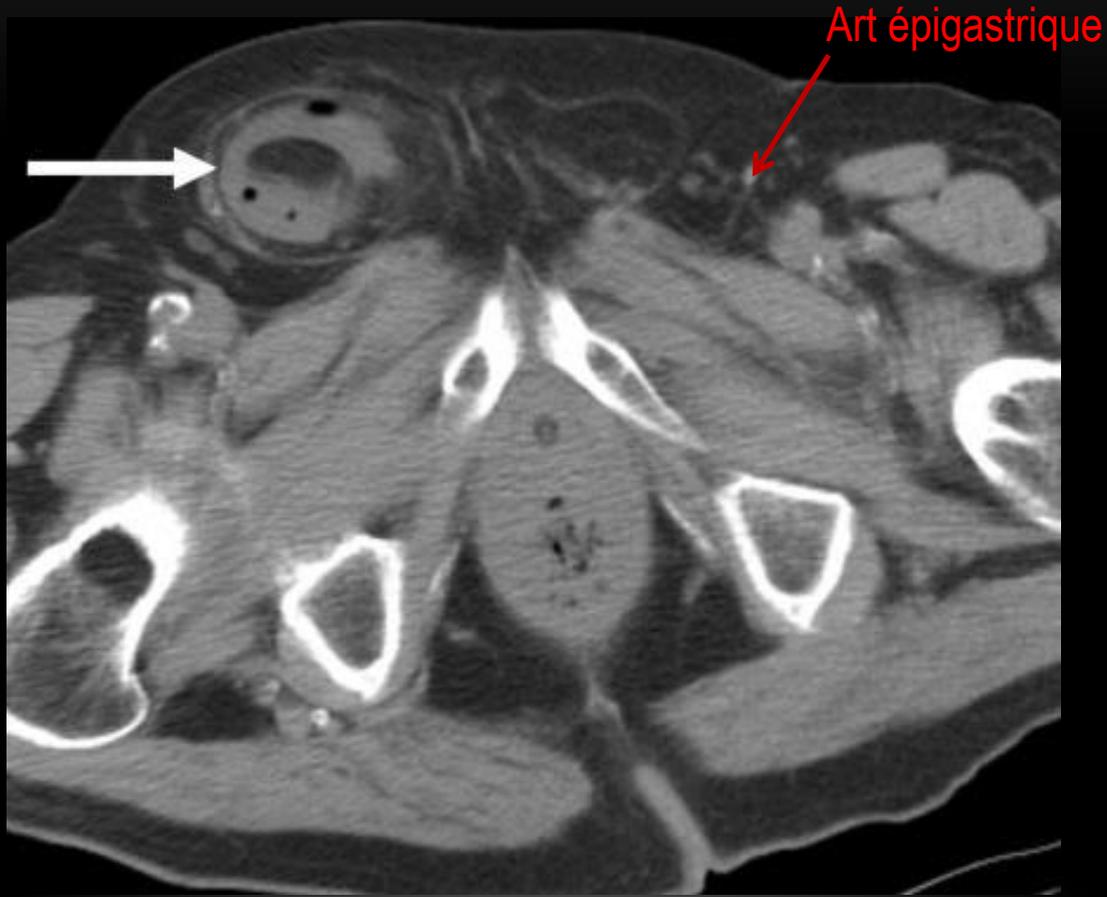
Art épigastrique



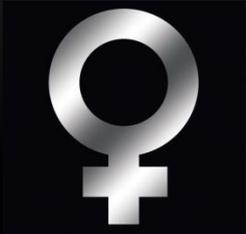
# HERNIES INGUINALES INDIRECTES



# HERNIE DIRECTE

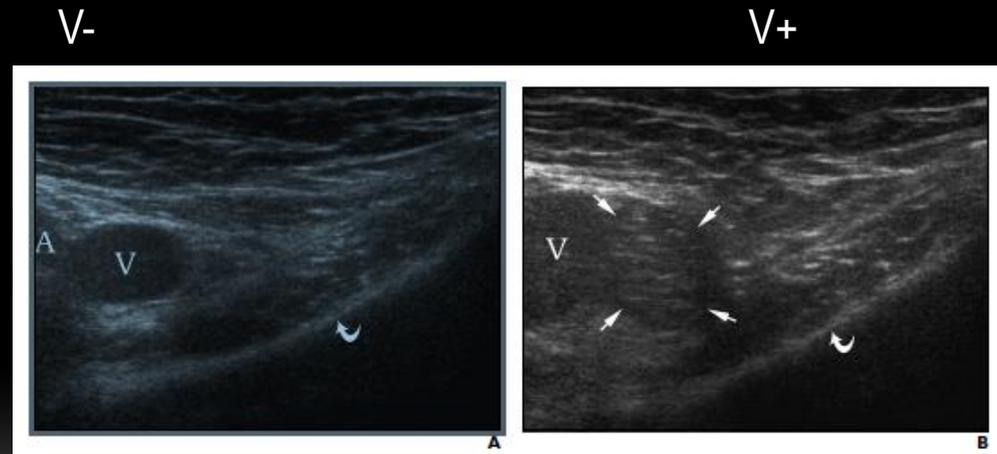
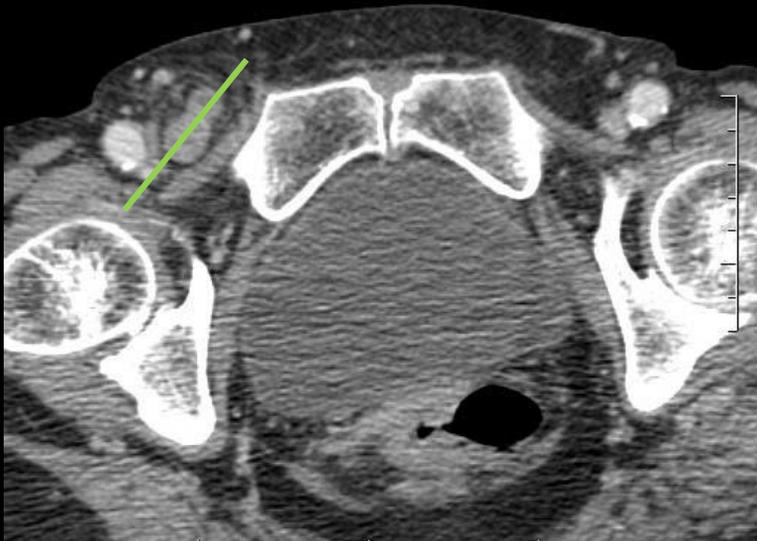


# HERNIE FÉMORALE



D+++

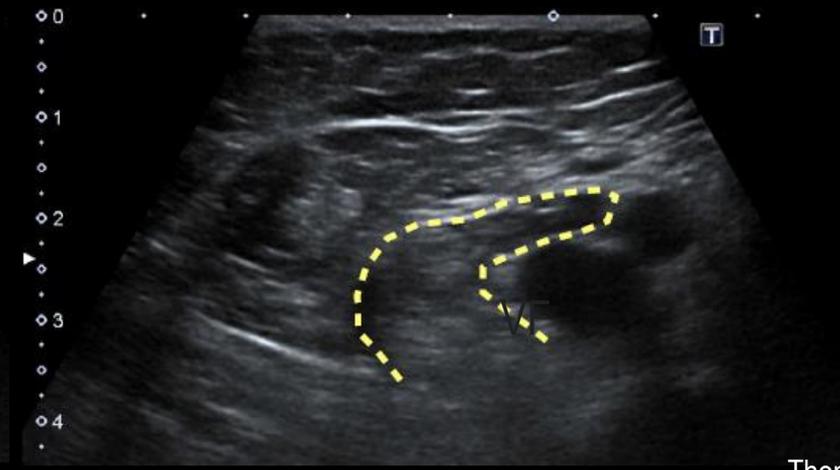
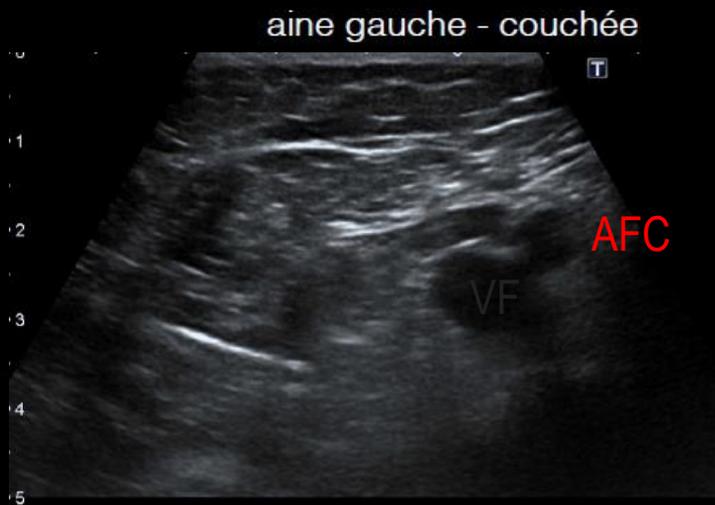
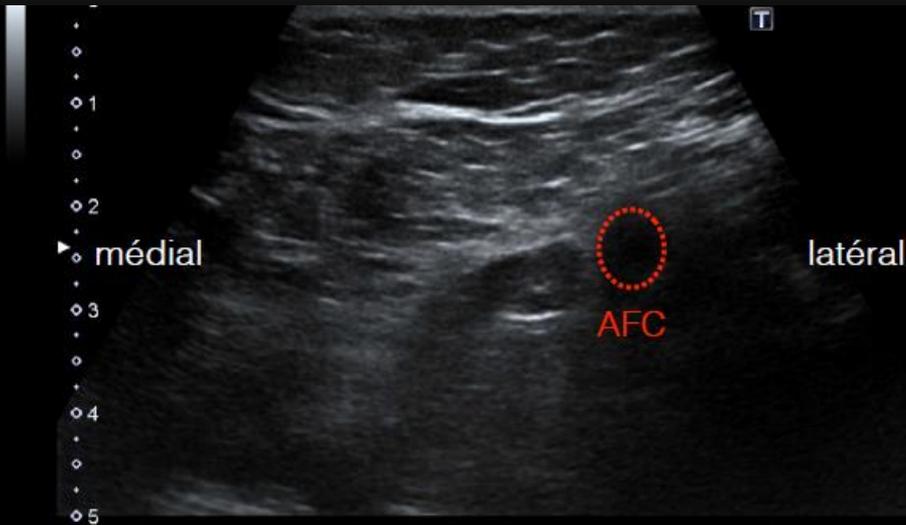
Sous le plan du ligament inguinal – externe - compression de la veine fémorale – Valsalva +++



Sfeir et al, Complications des hernies de la paroi abdominale : apport de la TDM, SFR

Sonography of Inguinal Region Hernias  
AJR:187, July 2006

# HERNIE FÉMORALE

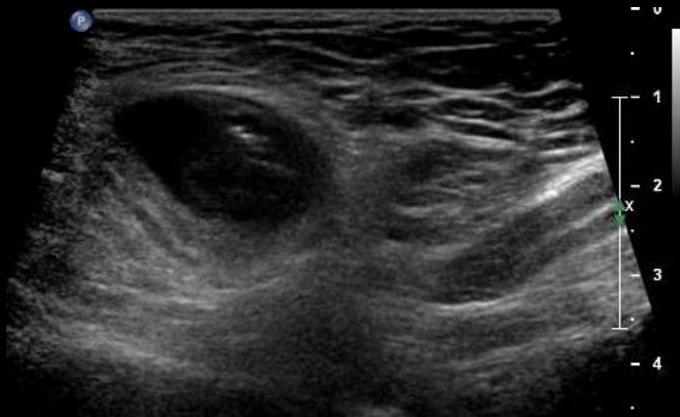


Valsalva +++

# HERNIE FÉMORALE



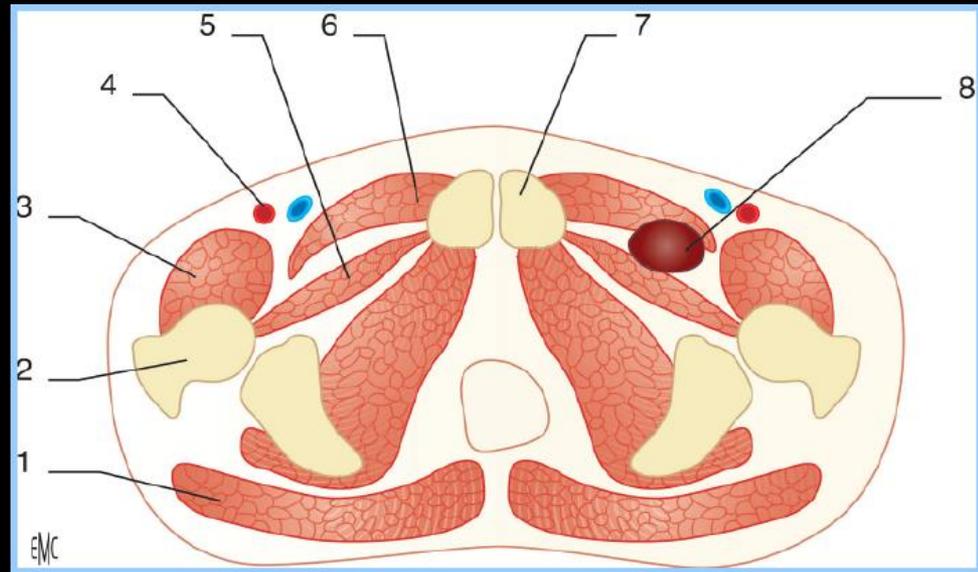
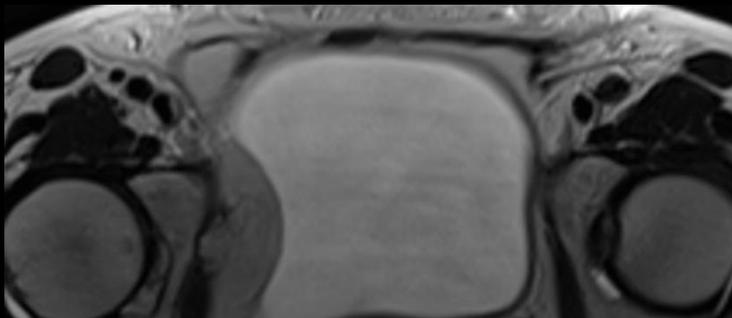
Risque +++ Incarcération



Souffrance avec aspect en cible

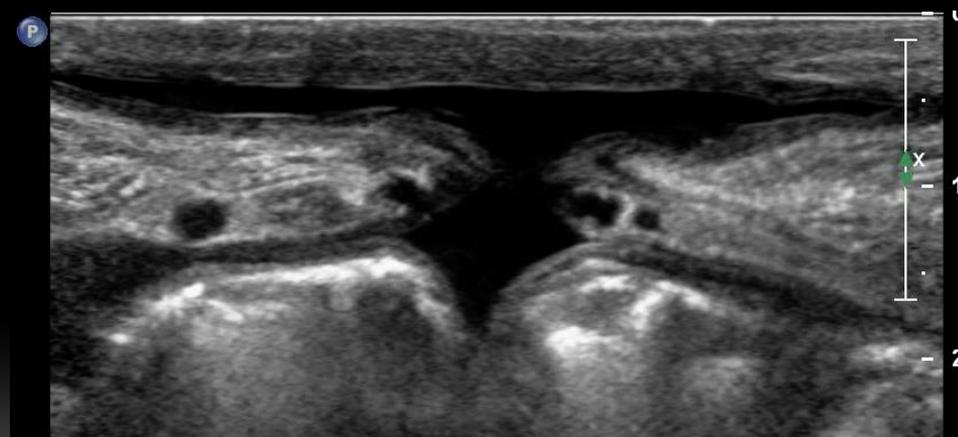
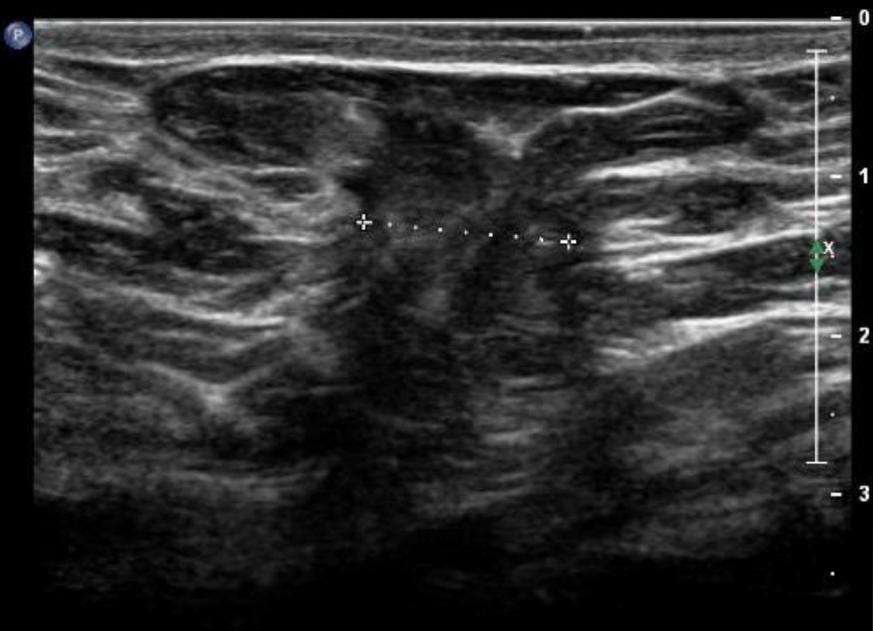
# HERNIE OBTURATRICE

Agées + amaigrissement + Névralgies

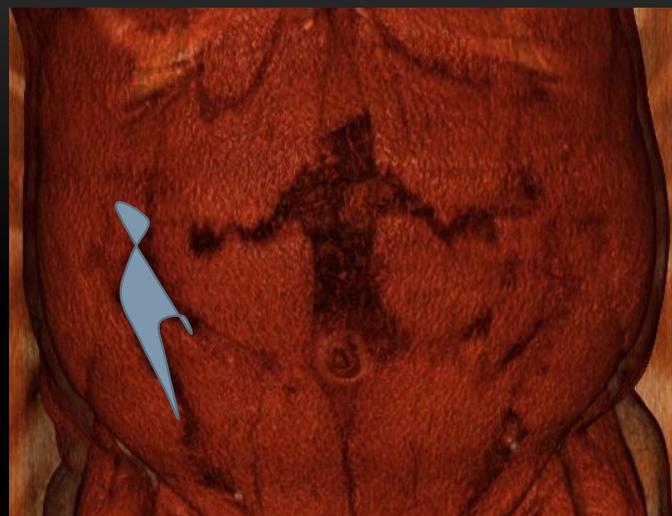
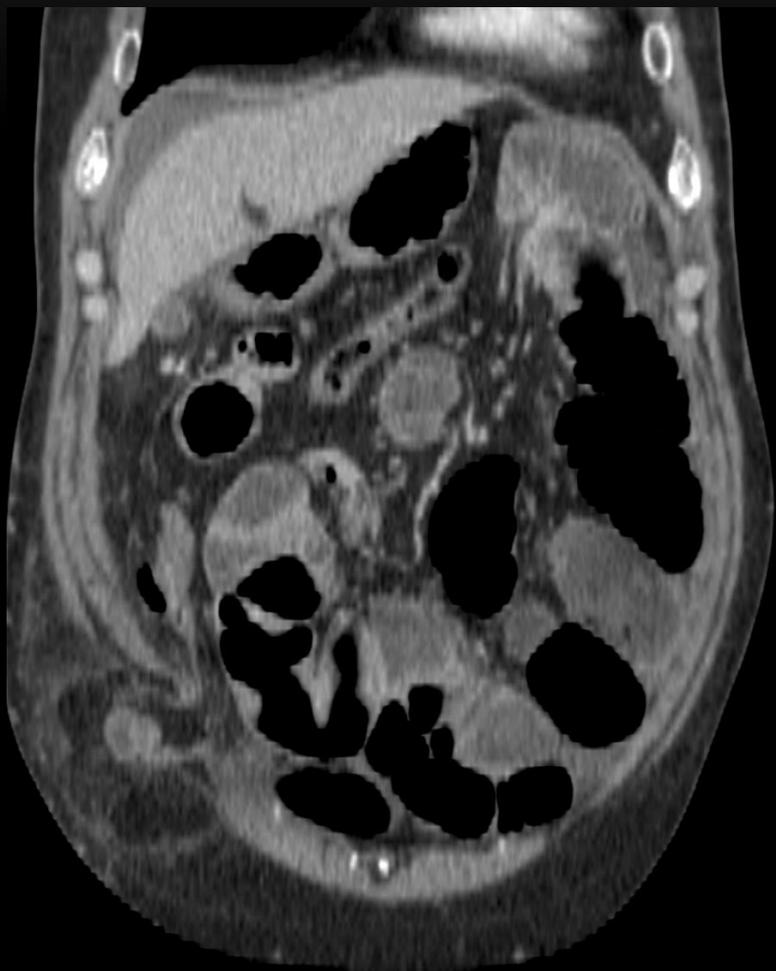


**Hernie obturatrice** (8), à travers le foramen obturateur, glissant entre le muscle pectiné (6) en avant et le muscle obturateur externe (5) en arrière. Muscles grand fessier (1), psoas iliaque (3) et vaisseaux fémoraux (4), pubis (7), tête fémorale (2).

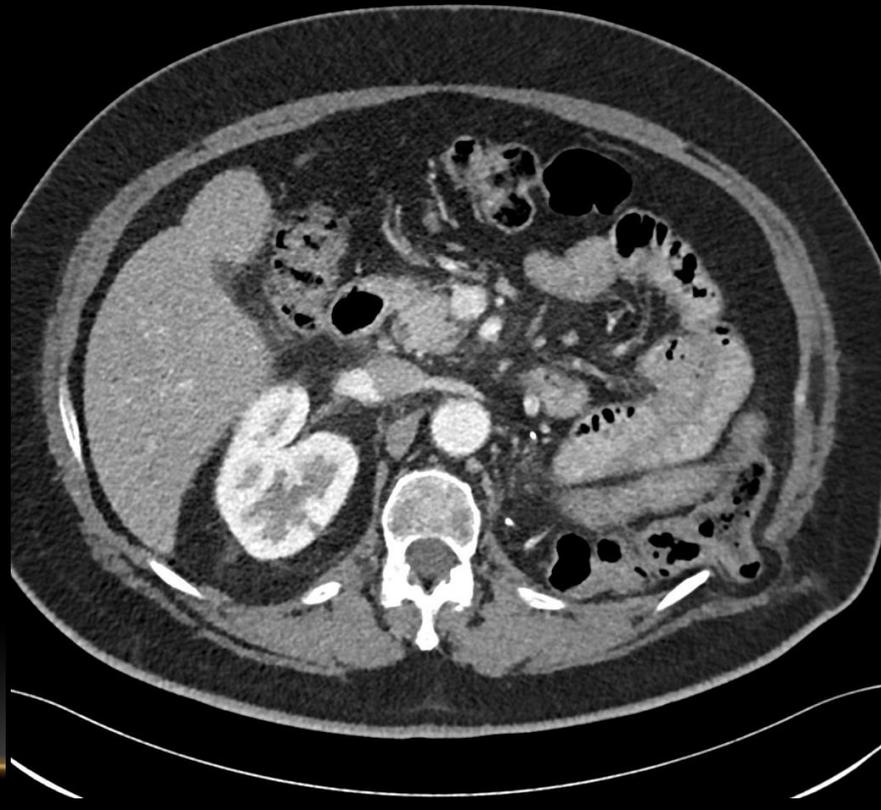
# HERNIE (PARA)-OMBILICALE



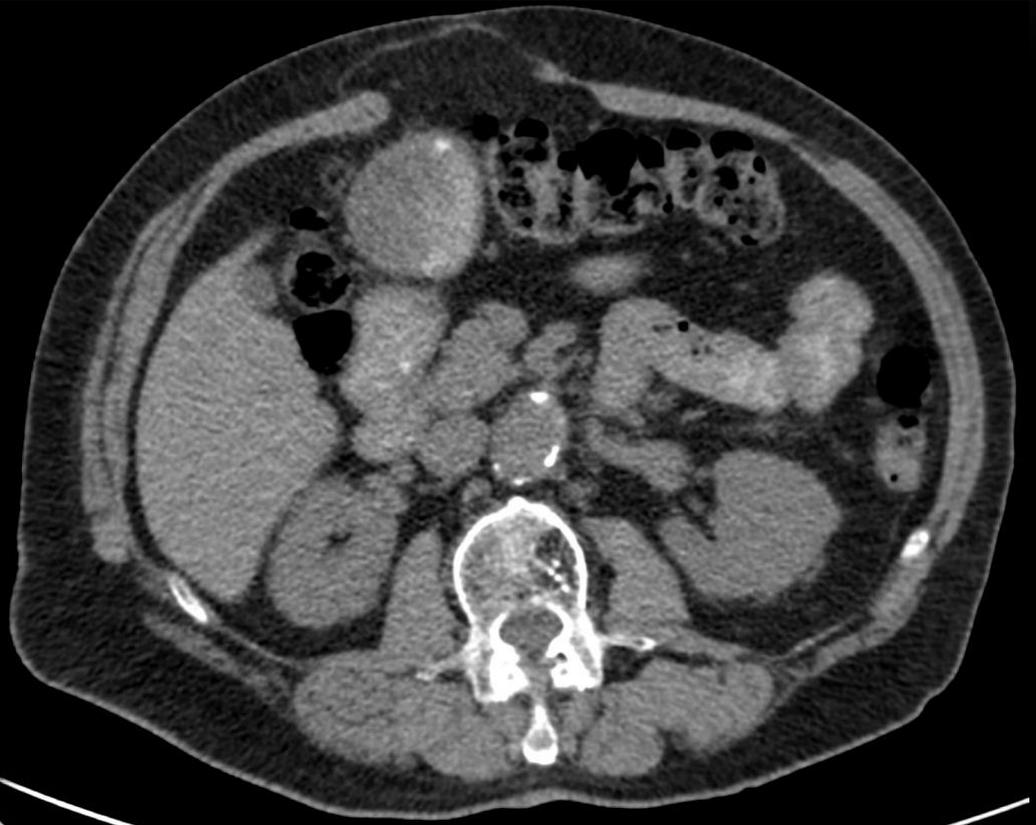
# HERNIE DE SPIEGEL



# HERNIES INCISIONNELLES



# HERNIES INCISIONNELLES



# HERNIES INCISIONNELLES



PARASTOMIALE

# HERNIES – EVENTRATIONS PARIÉTALES

L'attente du chirurgien ...

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# ATTENTE CHIRURGIEN

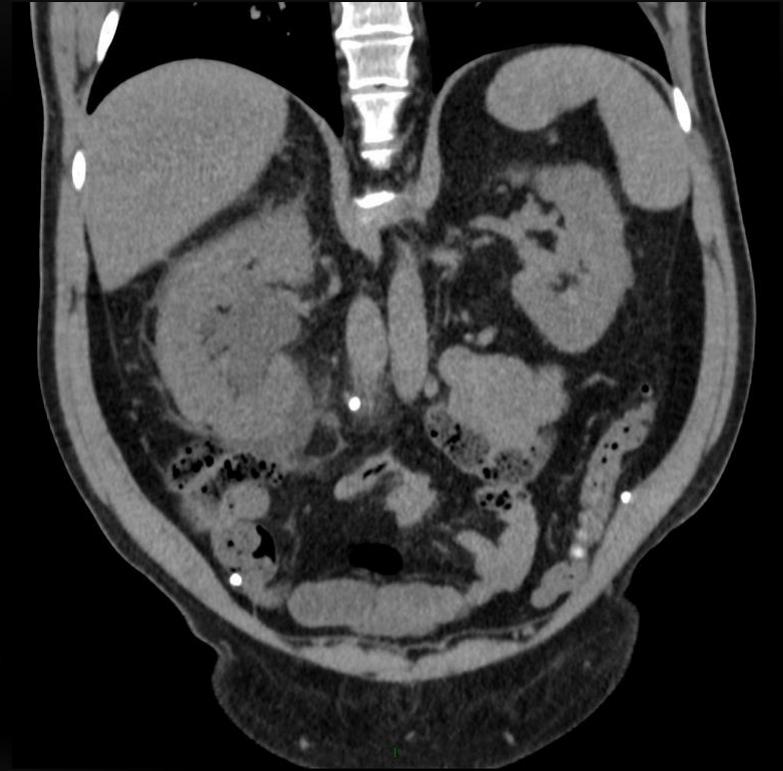
- 1 seule défect?
- Conformation pariétale globale : diastasis? (mise en place prothèse >10 cm)
- Type et contenu herniaire
- Complications éventuelles
  
- Cas particulier : - hernie para stomiale : si > 4 cm – Ø reconstruction coelio
  - Spiegel : faisabilité de la chirurgie coelio -taille du collet
  
- Post op : collection, matériel en place

## COMPLICATIONS

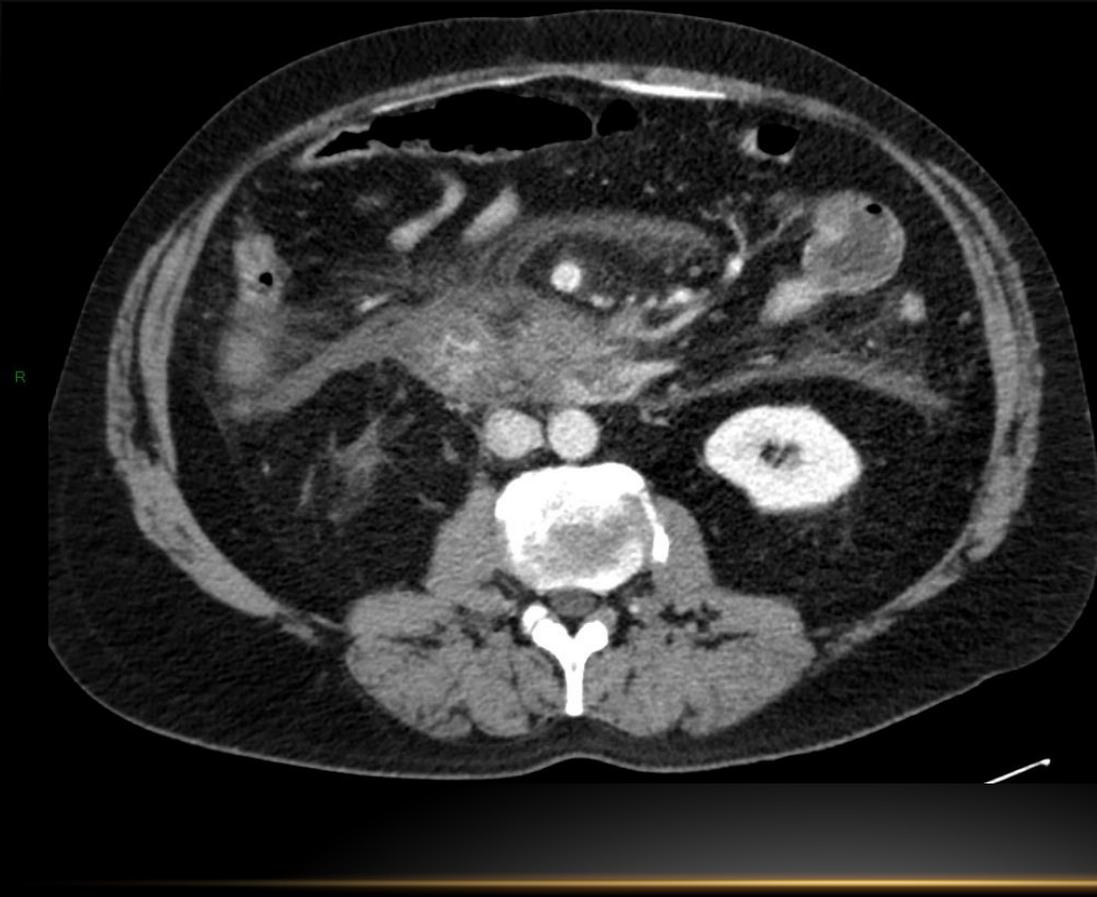
- Occlusion
- Strangulation
- Irréductibilité



# MATÉRIEL CHIRURGICAL

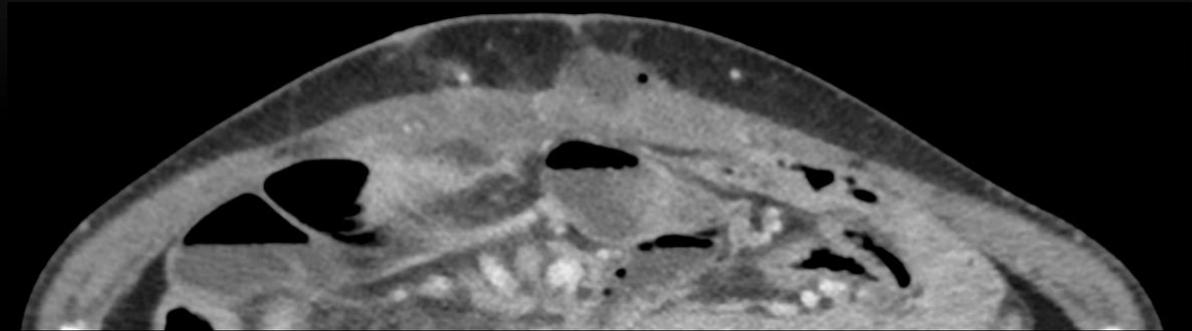


# MATÉRIEL CHIRURGICAL

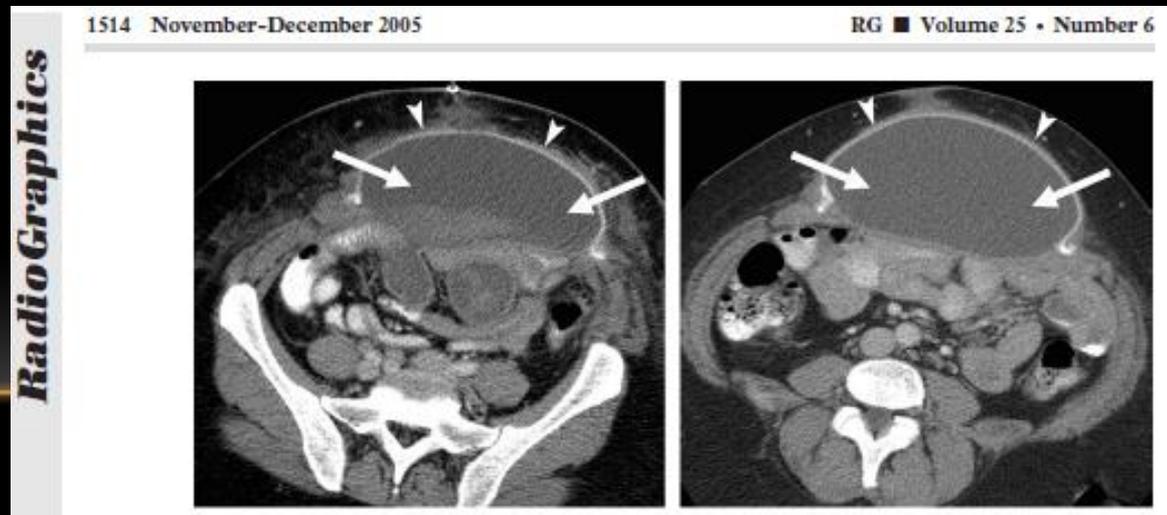


# COMPLICATIONS CHIRURGICALES

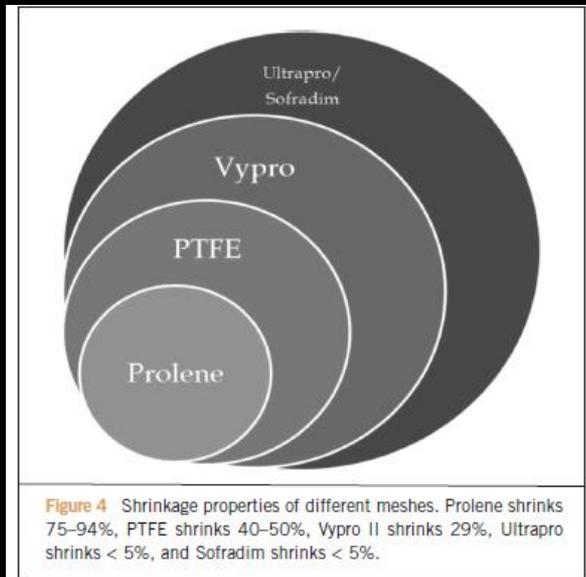
- Surinfection



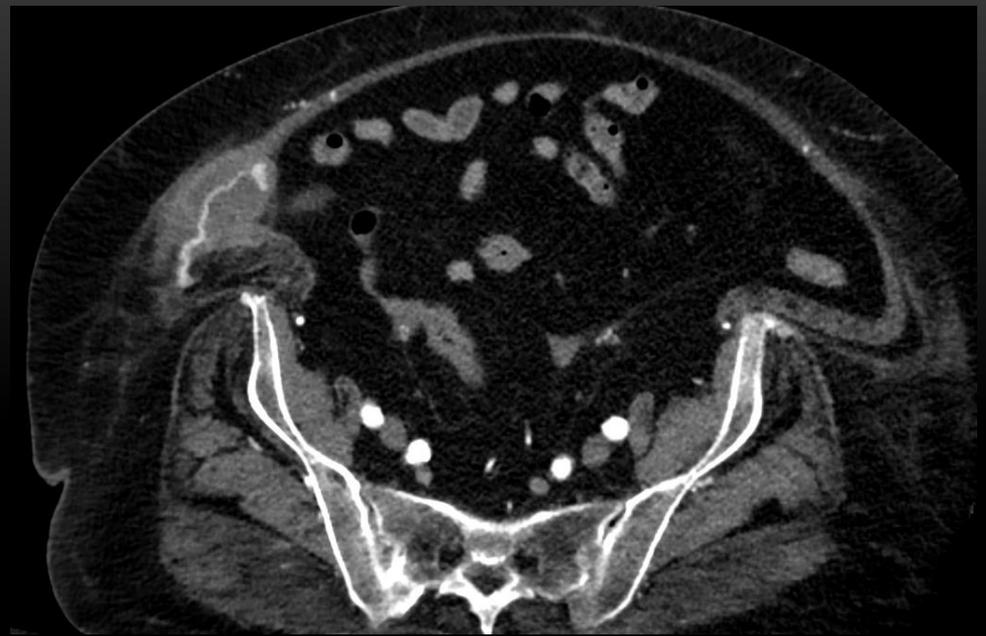
- Sérome



- **Rétrécissement matériel**



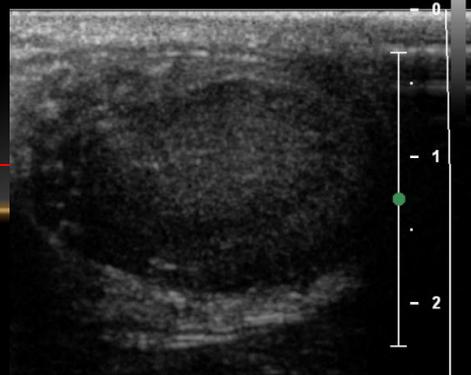
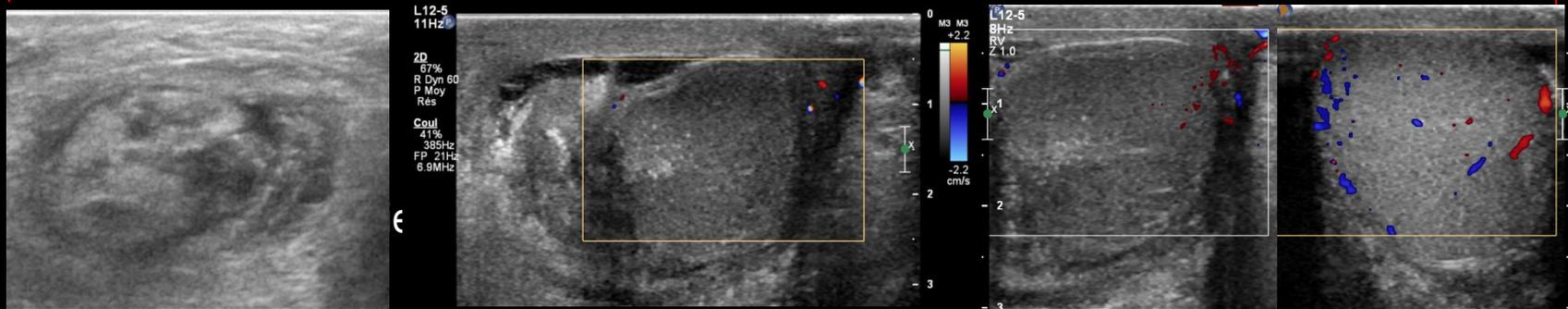
**→ Récidive herniaire**





# D+ POST CURE HERNIE INGUINALE

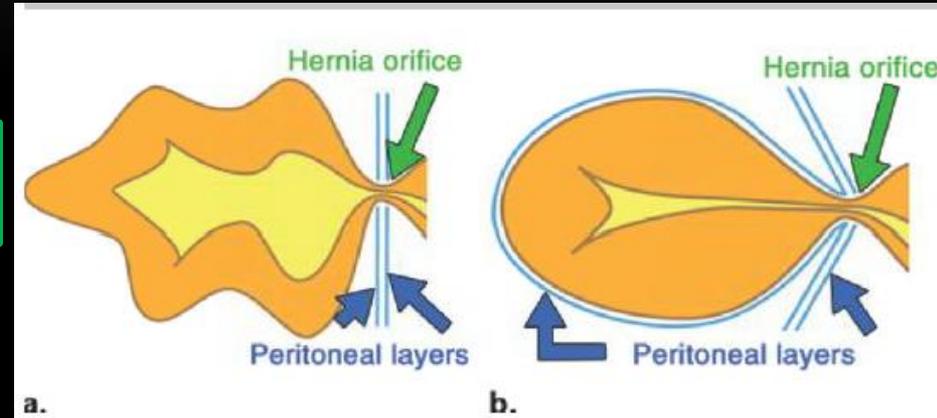
- Ischémie testiculaire



# LES HERNIES INTERNES

# CLEFS DIAGNOSTIQUES

- Contexte occlusif ou douleurs
- Recherche de « closed loop » U - C
- Identification orifice herniaire int



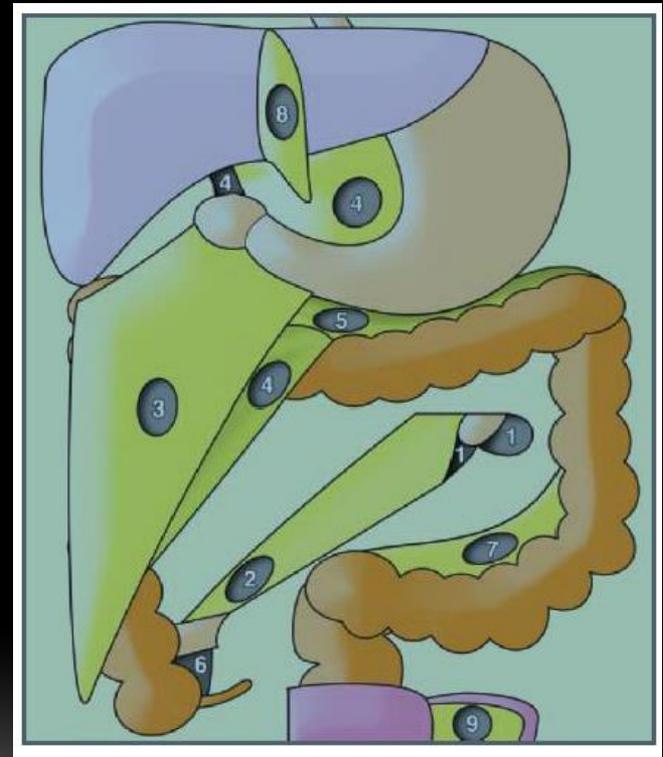
Doishita et al, *RadioGraphics* 2016; 36:88–106

-> déplacement structures vasculaires – digestives

- Aspect en « sac » ou non

# LES PLUS FRÉQUENTES APRÈS LE BYPASS

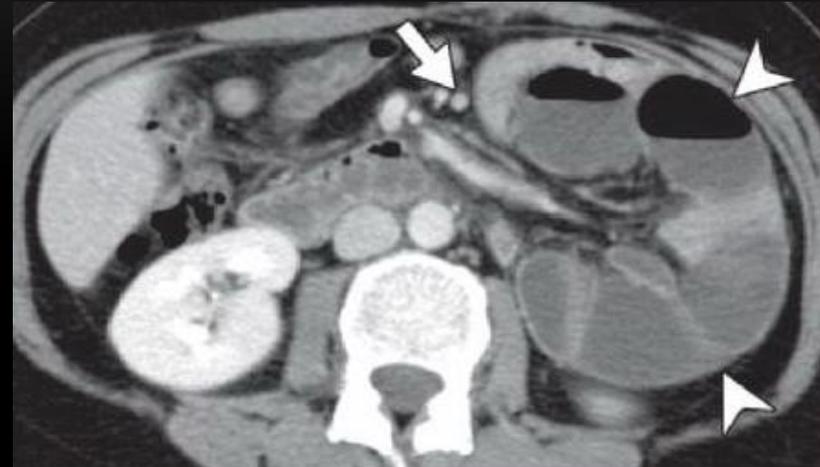
| Type de hernie        | Fréquence relative (%) |
|-----------------------|------------------------|
| Para-duodénales       | 50-55                  |
| Péri-caecales         | 10-15                  |
| Trans-mésentériques   | 8-10                   |
| Foramen de Winslow    | 6-10                   |
| Inter sigmoïdiennes   | 4-8                    |
| Pelviennes            | 6                      |
| - dont ligament large | 4-5                    |



Doishita et al, **RadioGraphics** 2016; 36:88-106

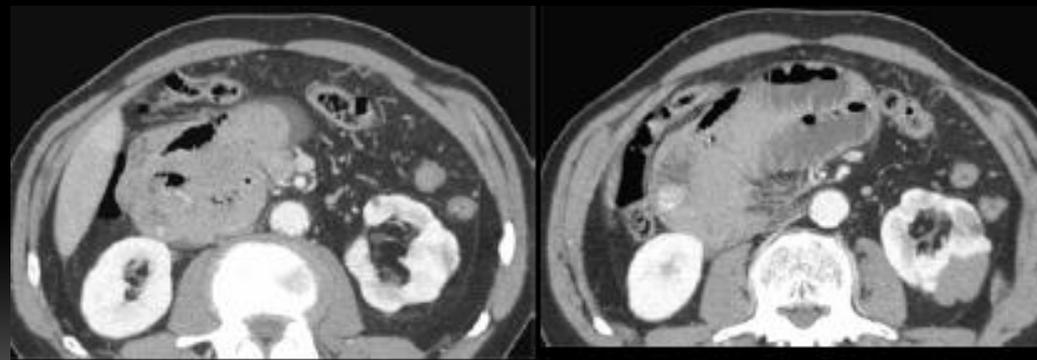
# HERNIES PARA-DUODÉNALES

- À G : - VMI
  - anses grêles devant fascia para rénal antérieur G



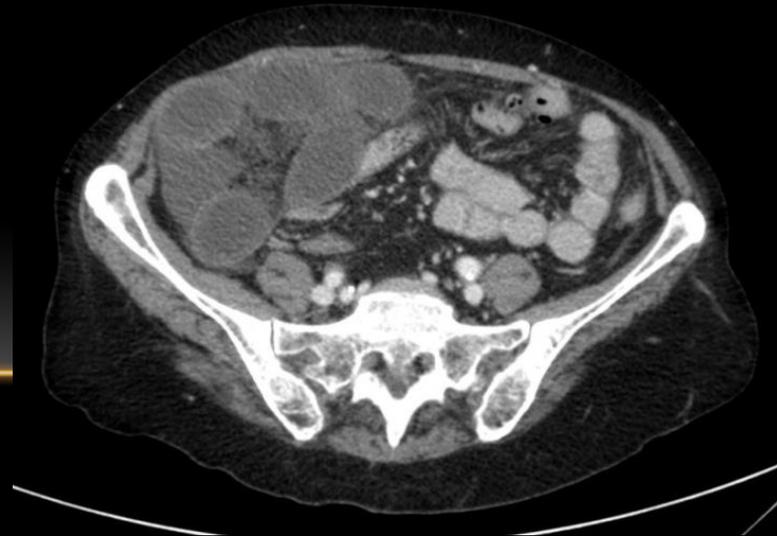
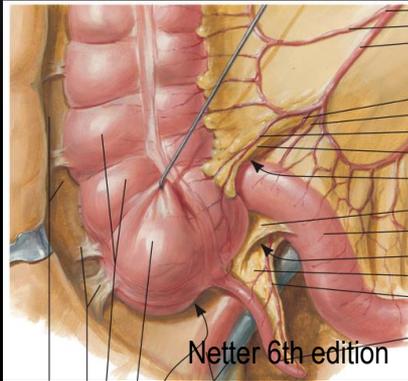
Doishita et al, *RadioGraphics* 2016; 36:88–106

- A D : - VMS et AMS
  - D3

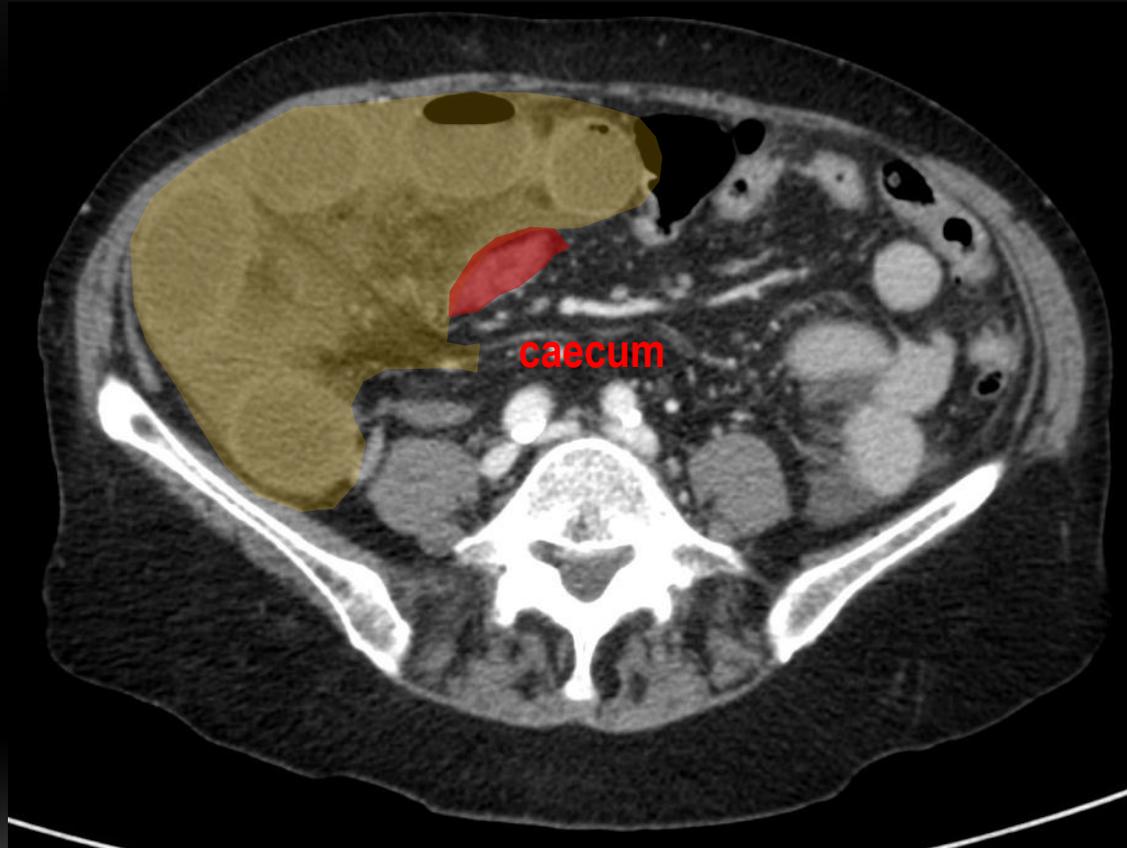


Régent et al. Hernies internes, les clés du diagnostic

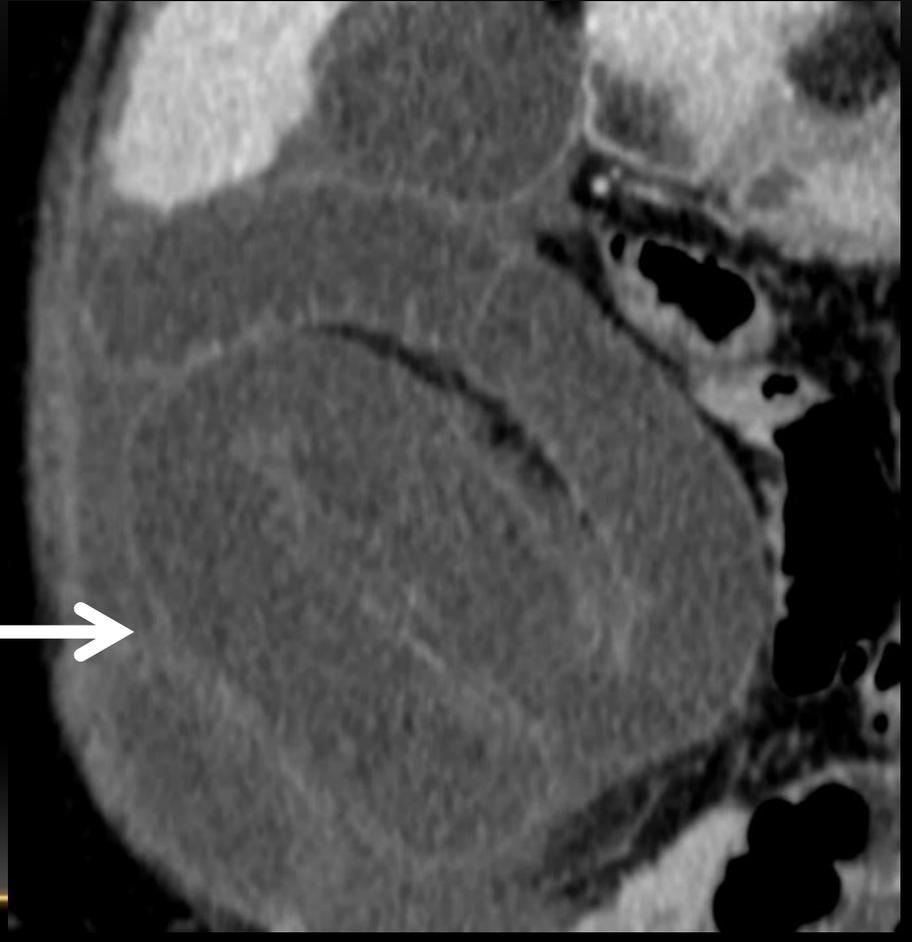
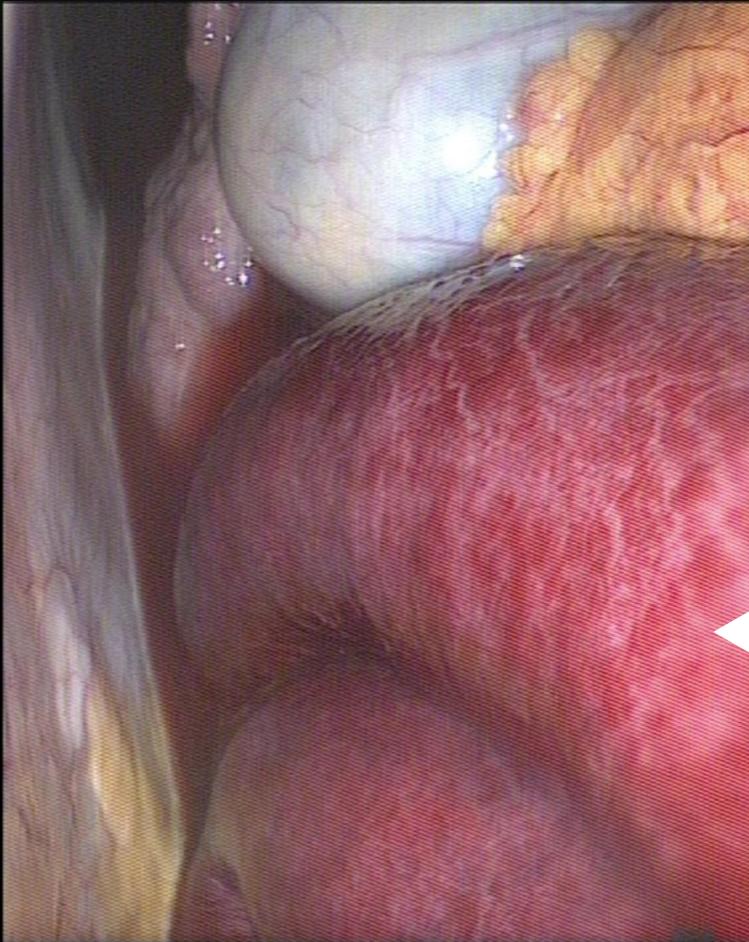
# HERNIE PÉRI CAECALE



# HERNIE PÉRI CAECALE



# HERNIE PÉRI CAECALE



souffrance



# CAS CLINIQUE



46 ans

Cher Confrère, voici le résultat de l'examen réalisé le 18/06/09.

**UroScanner**

**Appareil:** CT BRILLIANCE 64

***Indication***

CND



# CAS CLINIQUE



46 ans

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46 ans

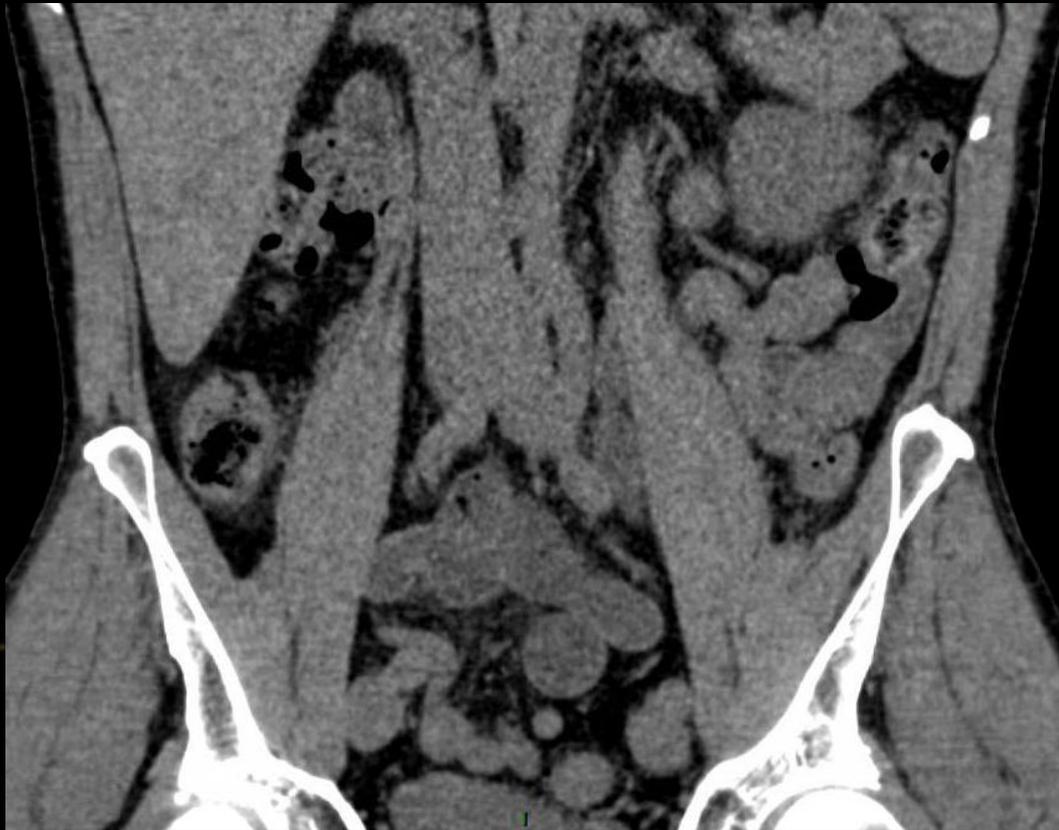
Cher Confrère, voici le résultat de l'examen réalisé le 18/06/09.

**UroScanner**

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46 ans

Cher Confrère, voici le résultat de l'examen réalisé le 18/06/09.

## UroScanner

**Appareil:** CT BRILLIANCE 64

### Indication

CND



# HERNIE FORAMEN WINSLOW

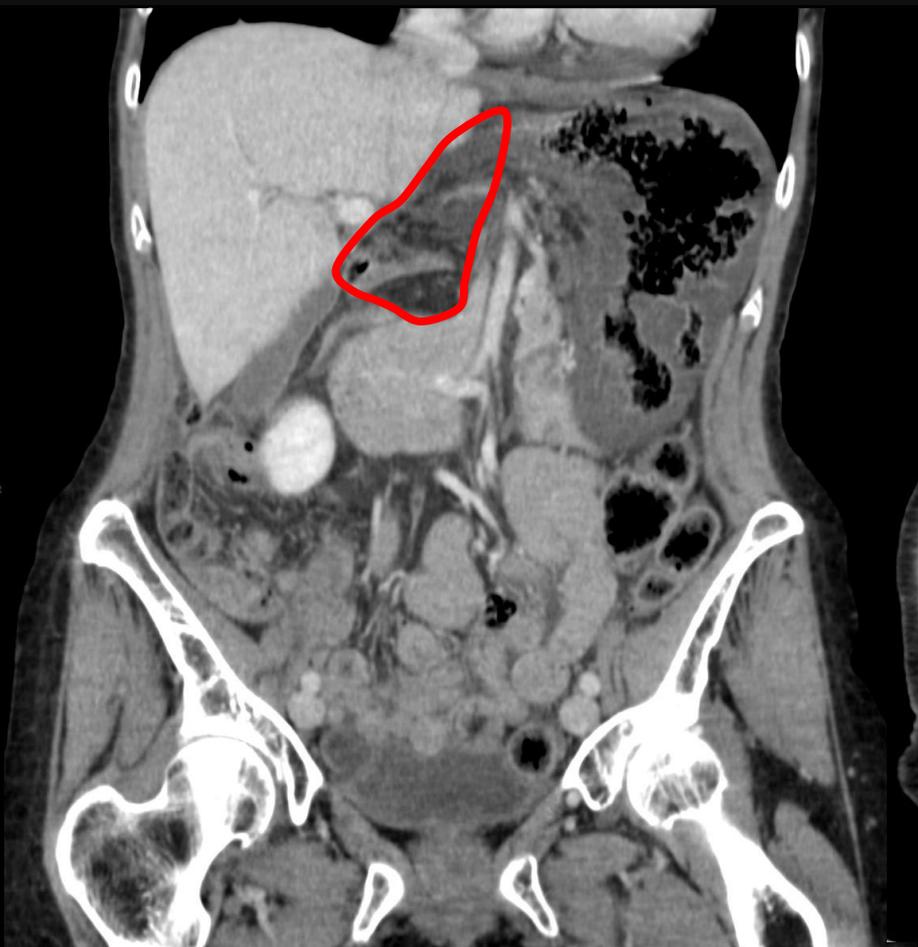
Espace virtuel entre VCI et VP



# HERNIE FORAMEN WINSLOW

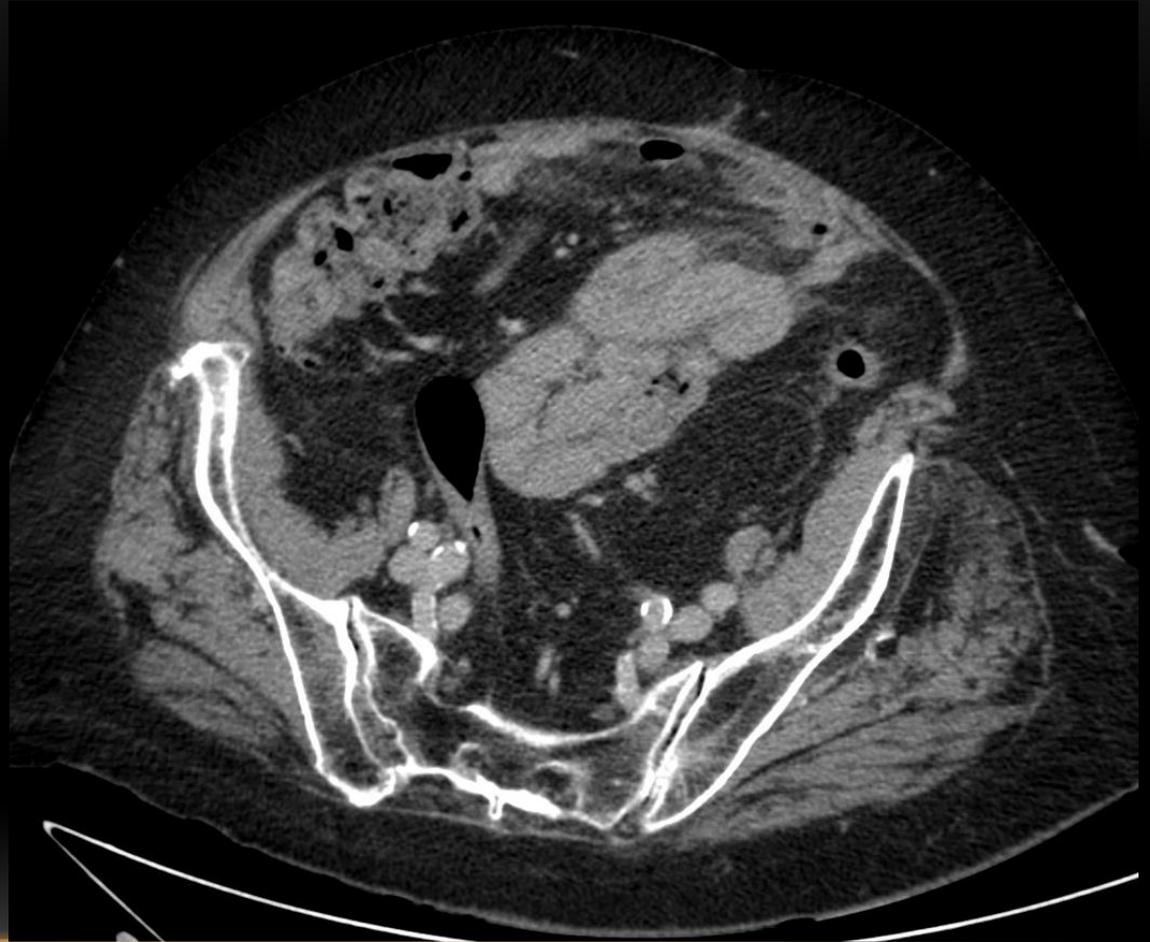


# HERNIE FORAMEN WINSLOW

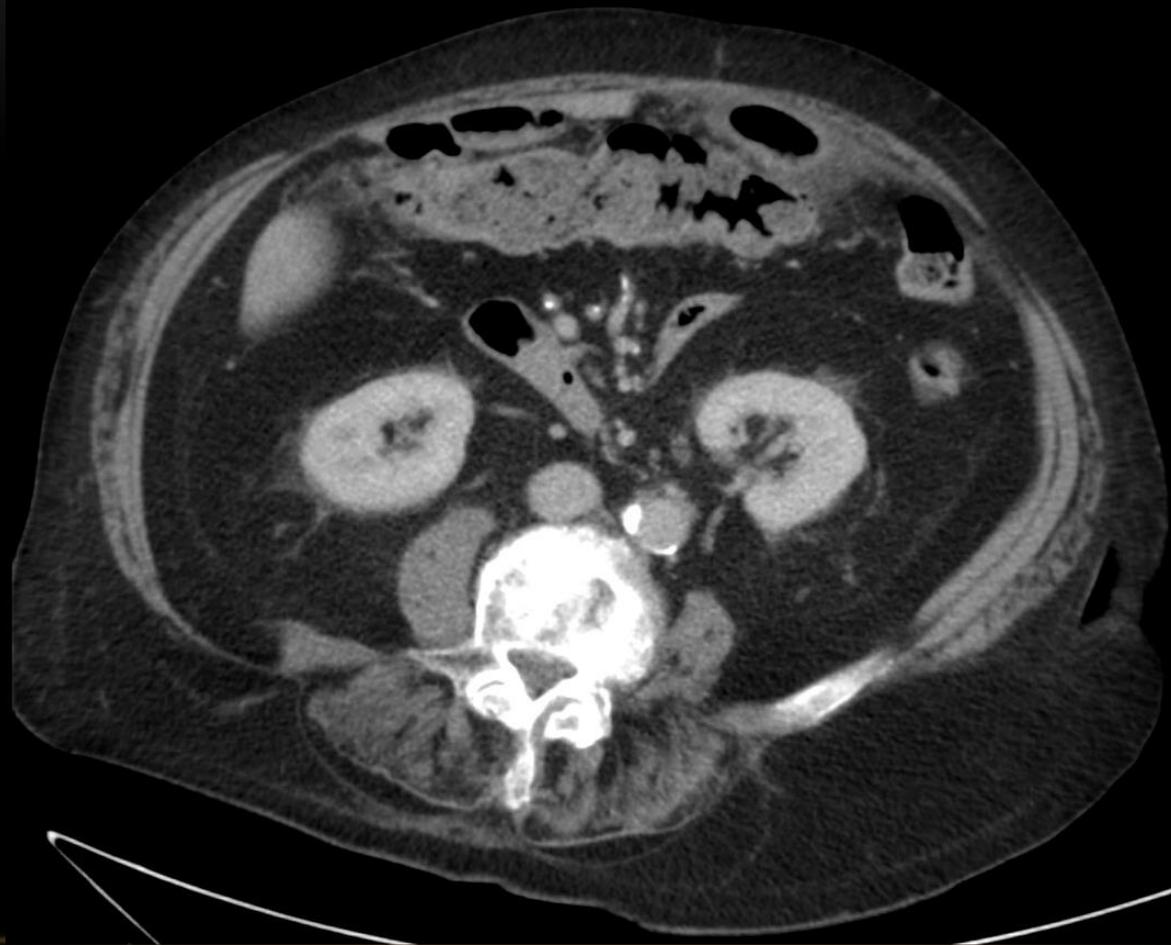


# HERNIE TRANS-MÉSENTÉRIQUE

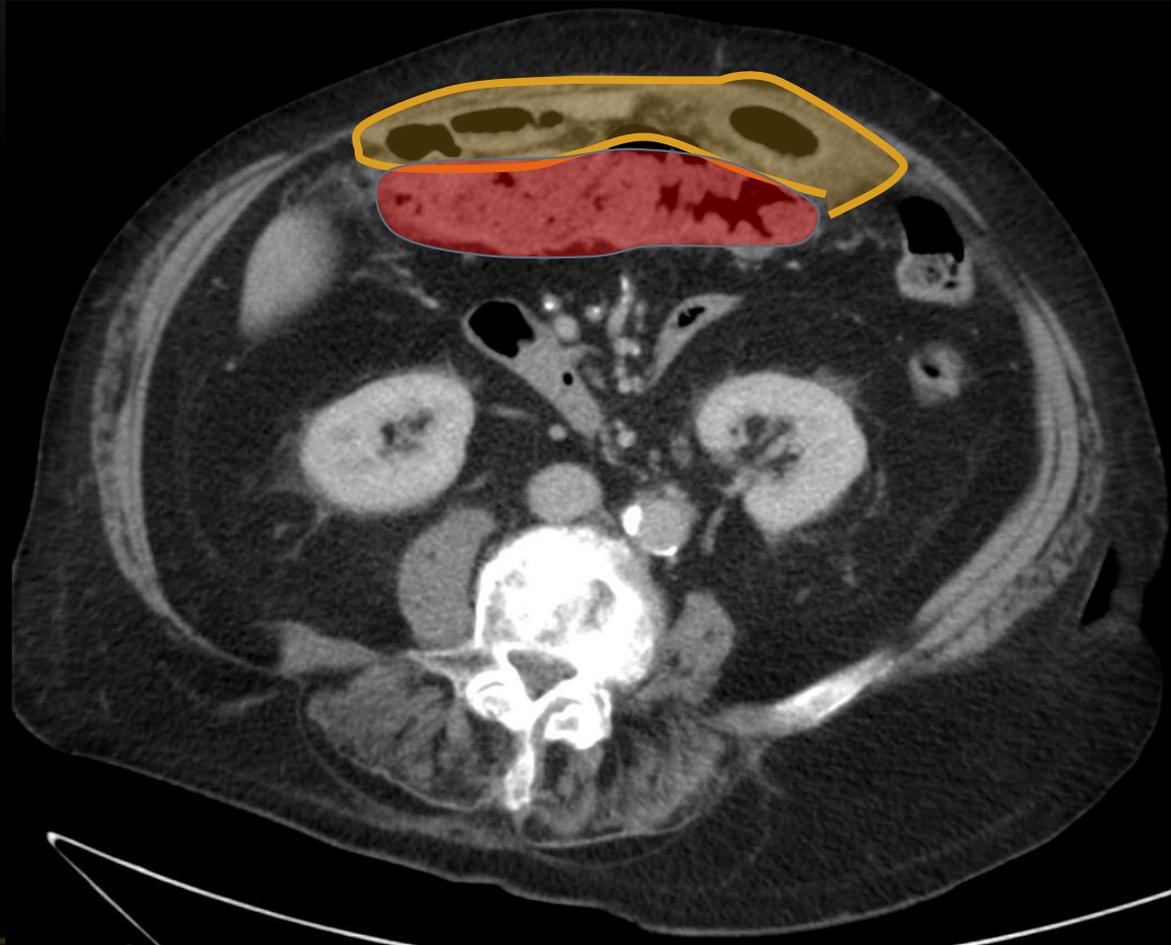
- Difficile
- Pas de sac
- Ant % colon



# HERNIE TRANS-MÉSENTÉRIQUE



# HERNIE TRANS-MÉSENTÉRIQUE



# HERNIE TRANS-MÉSENTÉRIQUE



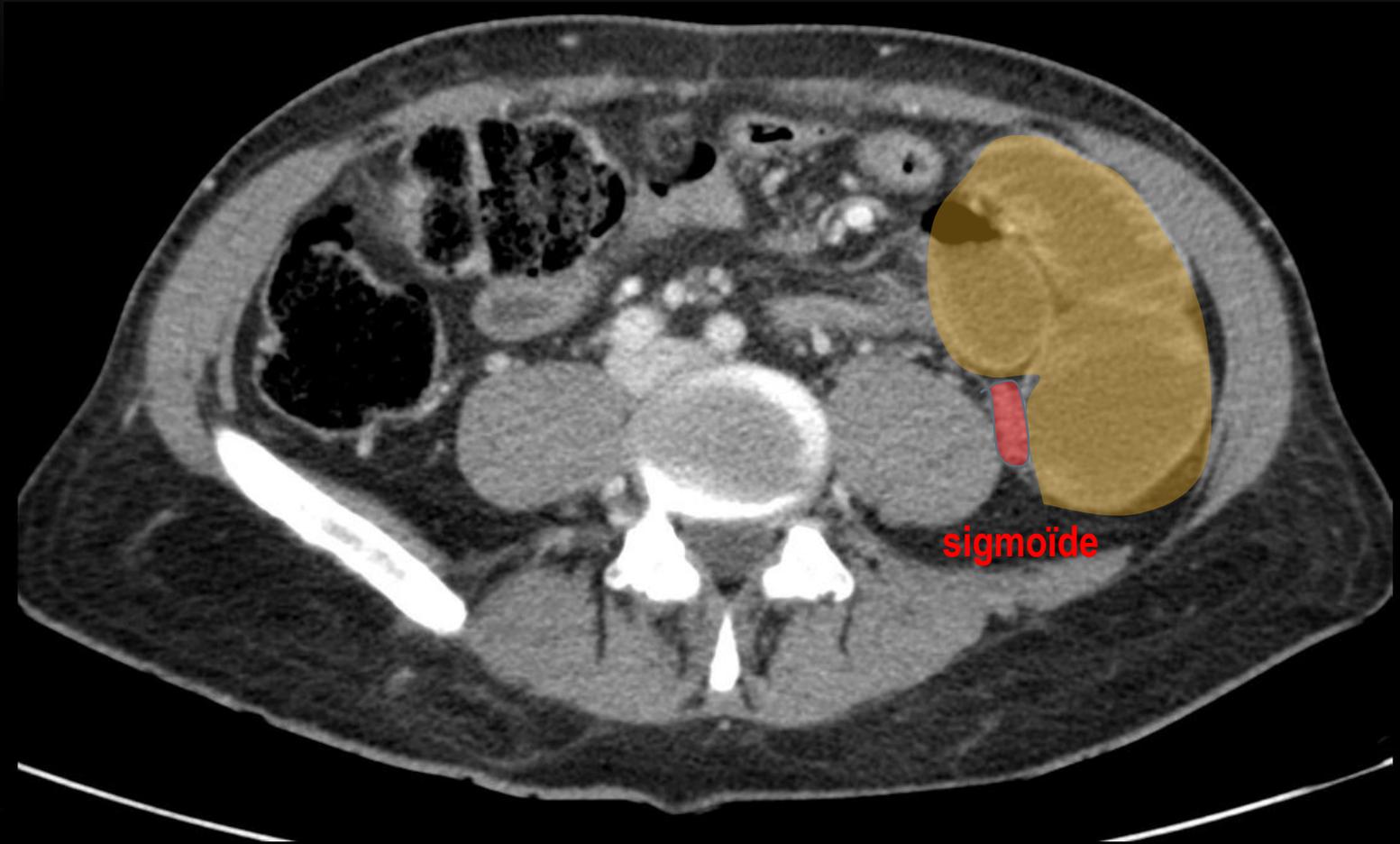
# HERNIE INTER-SIGMOÏDIENNE



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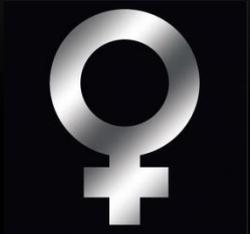
# HERNIE PELVIENNE – LIGT LARGE



44 ans

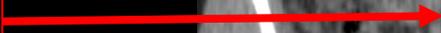


# HERNIE PELVIENNE – LIGT LARGE



44 ans

Closed loop



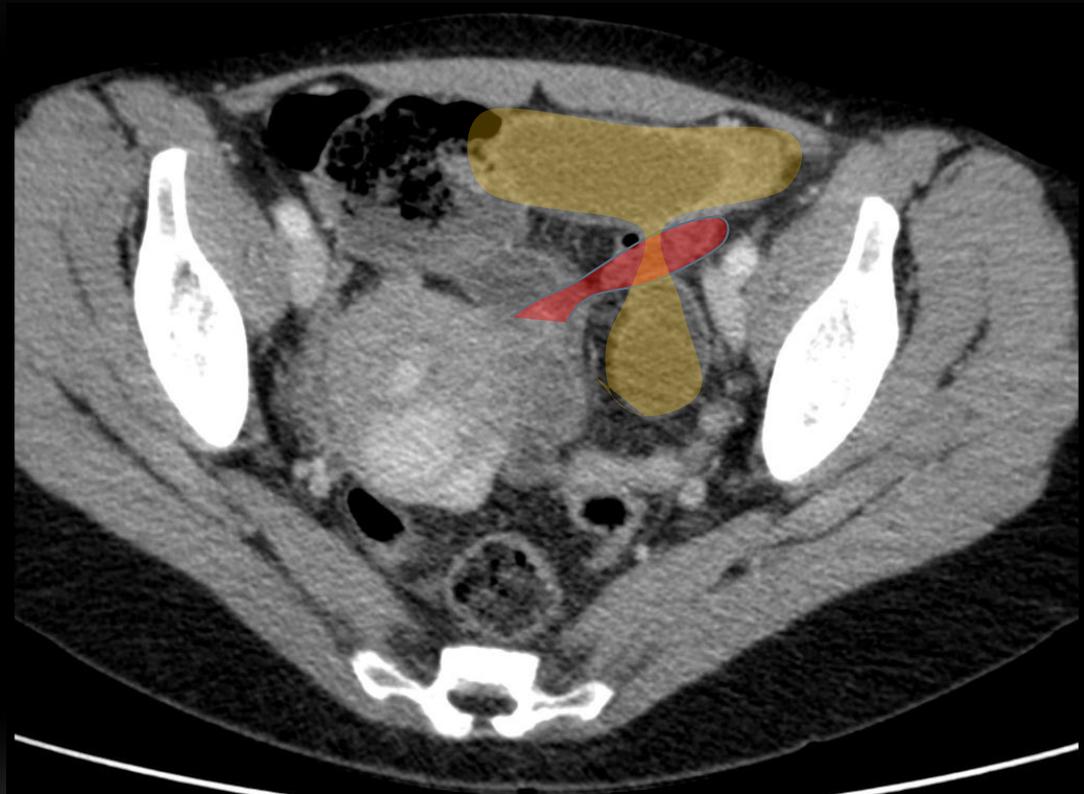
# HERNIE PELVIENNE – LIGT LARGE



# HERNIE PELVIENNE – LIGT LARGE

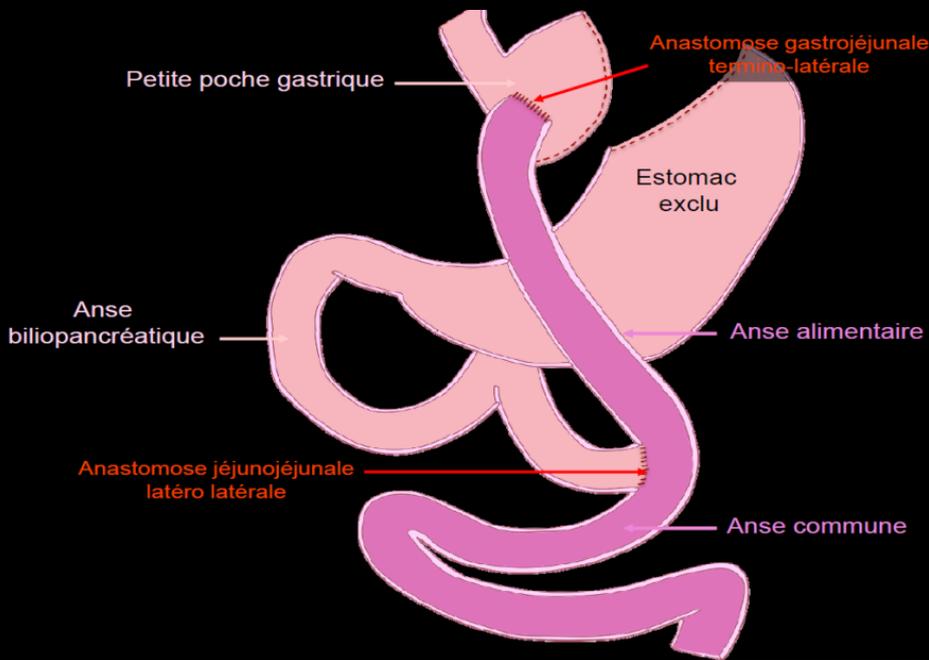


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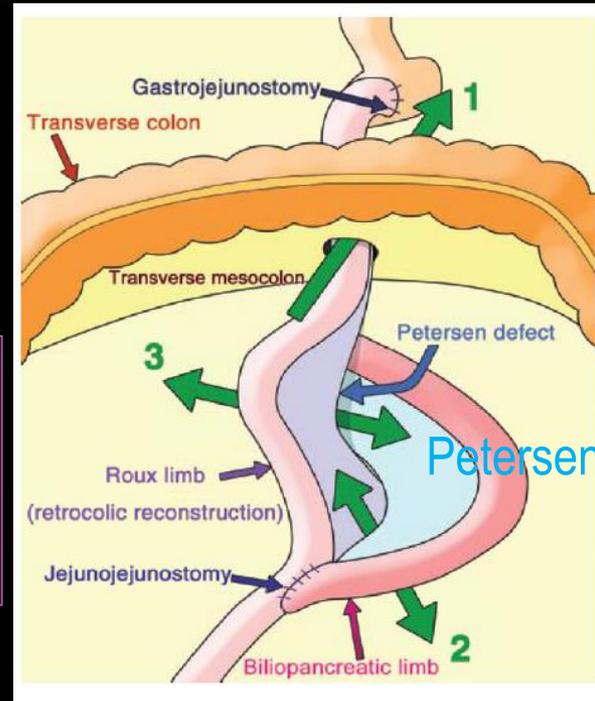


# HERNIES INTERNES POST OP BYPASS

- 0,2-9%



ANSE MONTÉE



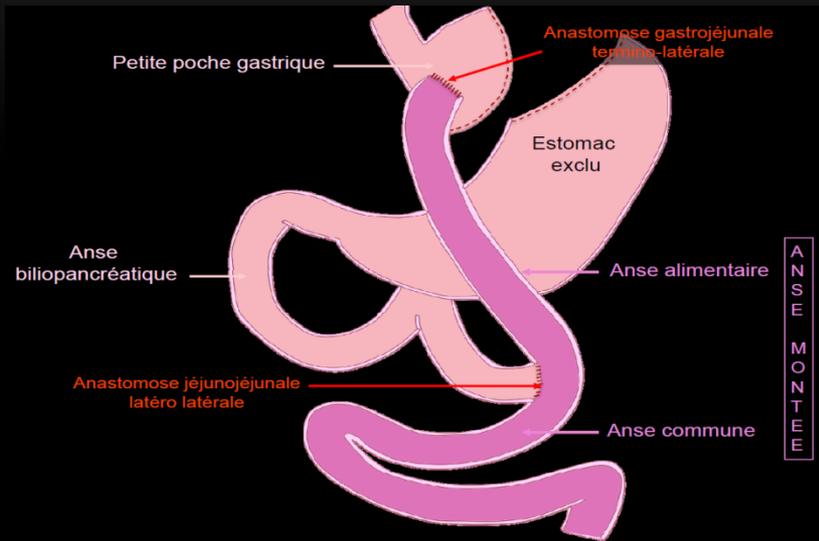
Trans mésocolique 80%

Montage rétro colique

Petersen 6%

Transmésentérique 14%

# HERNIES INTERNES POST OP BYPASS



**Internal Hernia After Gastric Bypass: Sensitivity and Specificity of Seven CT Signs with Surgical Correlation and Controls**

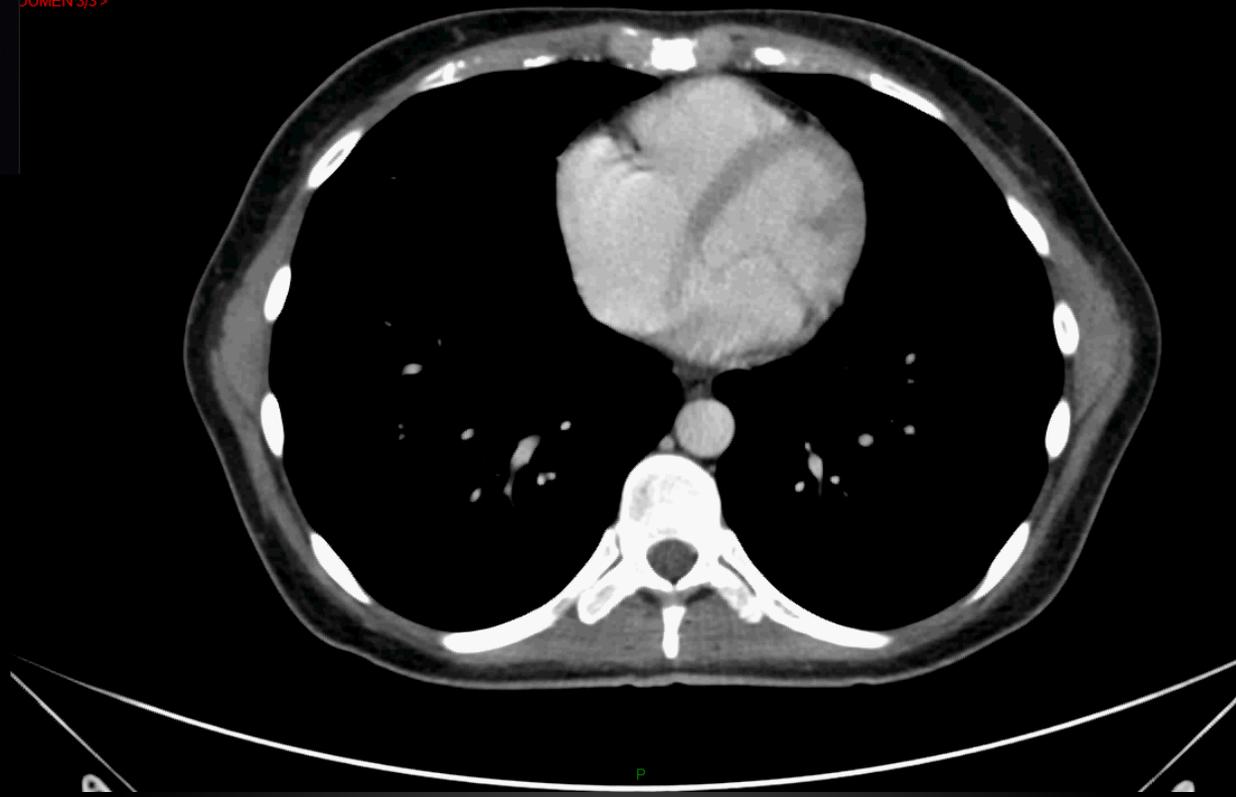
**TABLE 2: Sensitivity and Specificity of Seven CT Signs of Internal Hernia**

| Sign  | Sensitivity (%) |            |                       | Specificity (%) |            |                       |
|---|-----------------|------------|-----------------------|-----------------|------------|-----------------------|
|   | Reviewer 1      | Reviewer 2 | Reviewer 3 (Resident) | Reviewer 1      | Reviewer 2 | Reviewer 3 (Resident) |
| Swirled mesentery                             | 61              | 78         | 83                    | 94              | 89         | 67                    |
| Mushroom                                      | 33              | 72         | 33                    | 89              | 89         | 100                   |
| Hurricane eye                                 | 17              | 11         | 6                     | 100             | 100        | 100                   |
| Small-bowel obstruction                       | 11              | 28         | 39                    | 94              | 89         | 83                    |
| Clustered loops                               | 17              | 6          | 6                     | 72              | 78         | 83                    |
| Small-bowel behind superior mesenteric artery | 0               | 22         | 44                    | 100             | 89         | 94                    |
| Right-sided anastomosis                       | 11              | 6          | 6                     | 100             | 100        | 100                   |
| Overall impression                            | 56              | 78         | 72                    | 89              | 78         | 78                    |

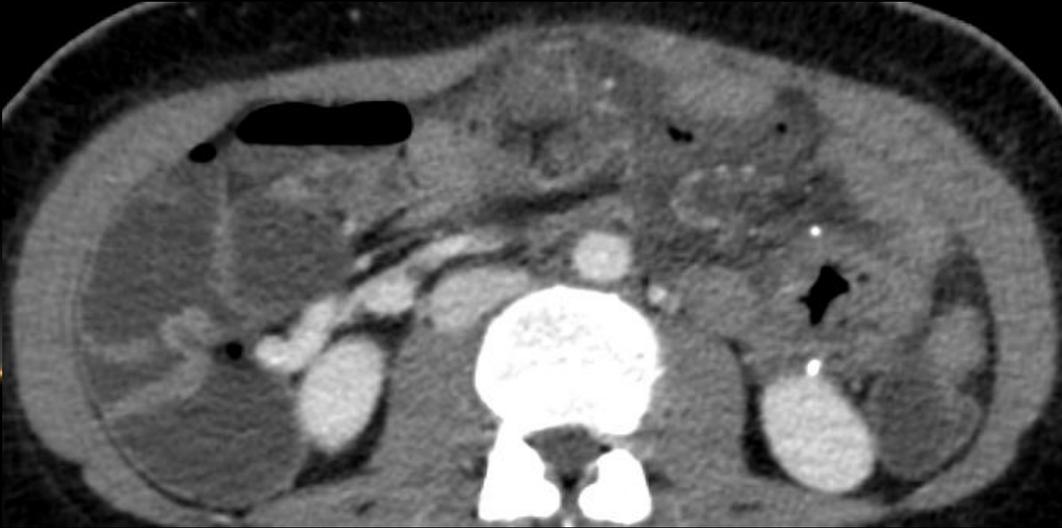
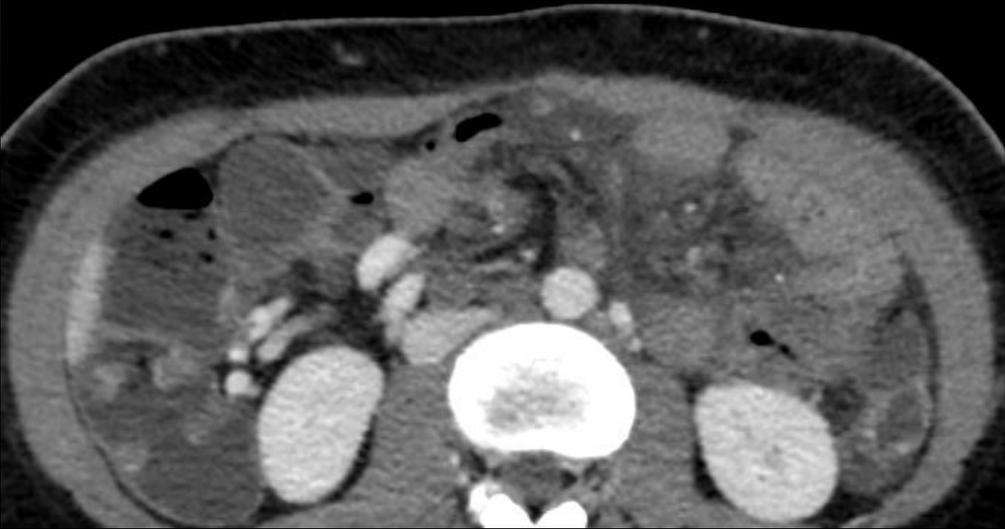
# HERNIE DE PETERSEN



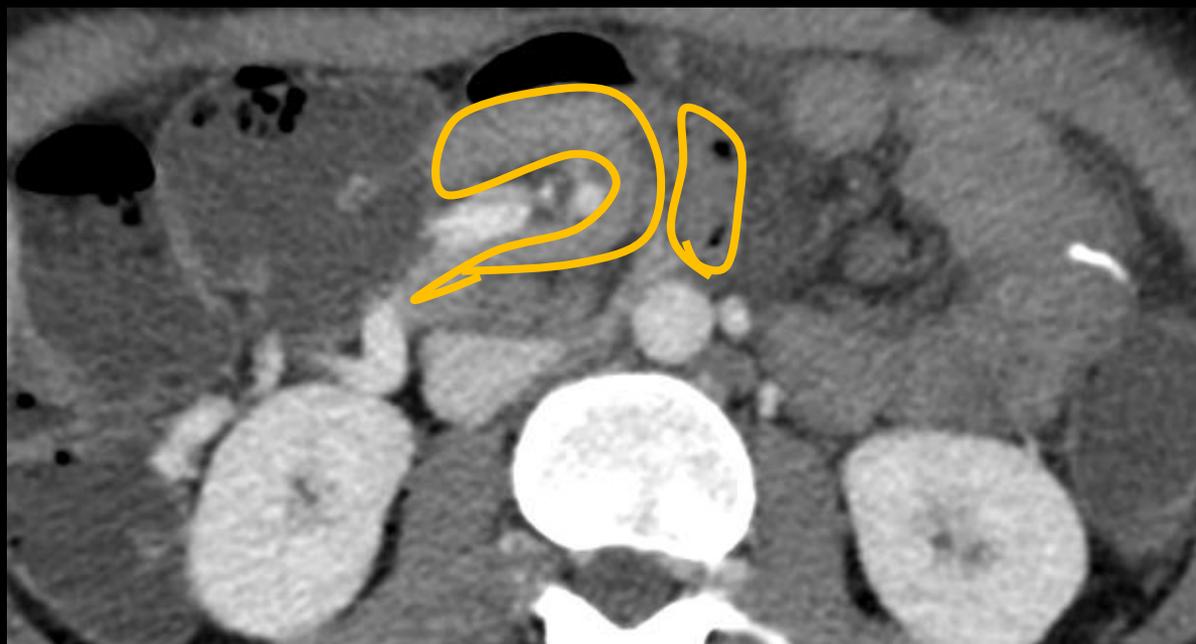
DOMEN 3/3 >



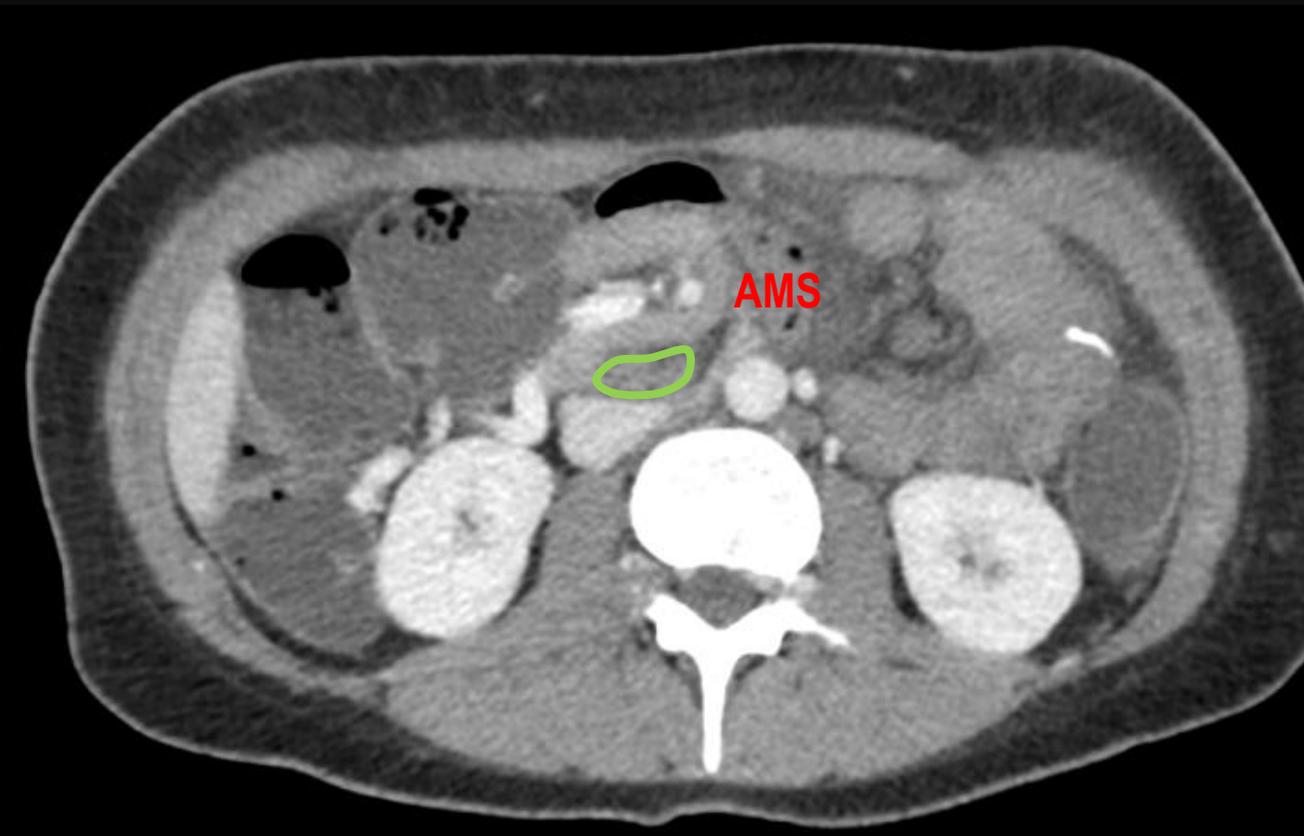
# WHIRL SIGN



# MUSHROOM SIGN



# ABSENCE DE GRELE EN ARRIERE DE L'AMS



# INFILTRATION DU MÉSENTÈRE



# ANSES ANTÉRIEURES



# CONCLUSION



## Sonography of Inguinal Region Hernias

David A. Jamadar<sup>1</sup>  
Jon A. Jacobson<sup>1</sup>  
Yoav Morag<sup>1</sup>  
Gandikota Girish<sup>1</sup>  
Farhad Ebrahim<sup>1</sup>  
Thomas Gest<sup>2</sup>  
Michael Franz<sup>2</sup>

**OBJECTIVE.** The purpose of this article is to describe the anatomy of the inguinal region in a way that is useful for sonographic diagnosis of inguinal region hernias, and to illustrate the sonographic appearance of this anatomy. We show sonographic techniques for evaluating inguinal, femoral, and spigelian hernias and include surgically proven examples.

**CONCLUSION.** Understanding healthy inguinal anatomy is essential for diagnosing inguinal region hernias. Sonography can diagnose and differentiate between various inguinal region hernias.

## Abdominal Wall Hernias: Imaging Features, Complications, and Diagnostic Pitfalls at Multi-Detector Row CT<sup>1</sup>

Abbreviations: MPR = multiplanar reformatted, PTFE = polytetrafluoroethylene

RadioGraphics 2005; 25:1501-1520 • Published online 10.1148/rg.256055018 • Content Codes:  

A. Madoz, E. Frampas, A. d'Alincourt, C. Perret, F. Leaute, B. Liebault, B. Dupas. Imagerie des hernies pariétales abdominales. EMC 33-015-A-39

# LES HERNIES

Attente chirurgien:

Dr Laurent Coubeau

## Pariétales Internes

**Internal Hernia After Gastric Bypass: Sensitivity and Specificity of Seven CT Signs with Surgical Correlation and Controls**

Lockhart et al, AJR 2007; 188:745-750

**Internal Hernias in the Era of Multidetector CT: Correlation of Imaging and Surgical Findings<sup>1</sup>**

RadioGraphics 2016; 36:88-106