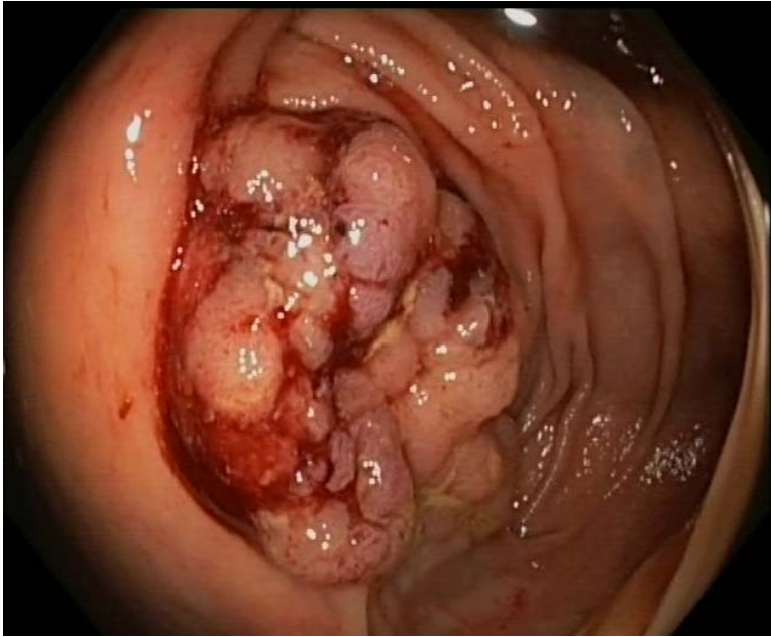


Pathologie digestive et imagerie

Master 1

Radiologie digestive , Master 1

- Quels organes ?
 - Tube digestif: de la bouche à l'anus
 - Foie, voies biliaires, pancréas
- Quelle technique ?
 - RX
 - Echographie
 - CT
 - IRM
 - Angiographie





Marie-José Del Volgo

La douleur du malade



actualité de la psychanalyse

érès

Tube digestif

- Pharynx – Oesophage - Estomac
 - Pathologie fonctionnelle
 - Pathologie organique
- Intestin Grêle-Colon-Rectum
 - Affections aiguës
 - Appendicite
 - Diverticulite
 - Occlusion
 - Grêle
 - Colique
 - Ischémie
 - infarctus mésentérique
 - colite ischémique
 - Maladies Inflammatoires
 - Tumeurs

Cours à option RX

Pharynx – œsophage - Estomac

- Pathologie fonctionnelle & organique
- Symptôme : Dysphagie
 - Haute
 - Basse

Difficulté de déglutition

ou

sensation de blocage pendant la déglutition

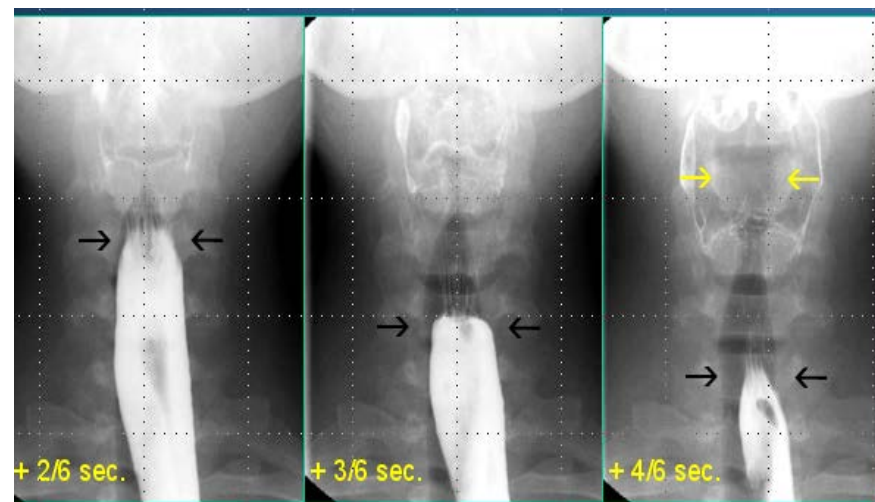
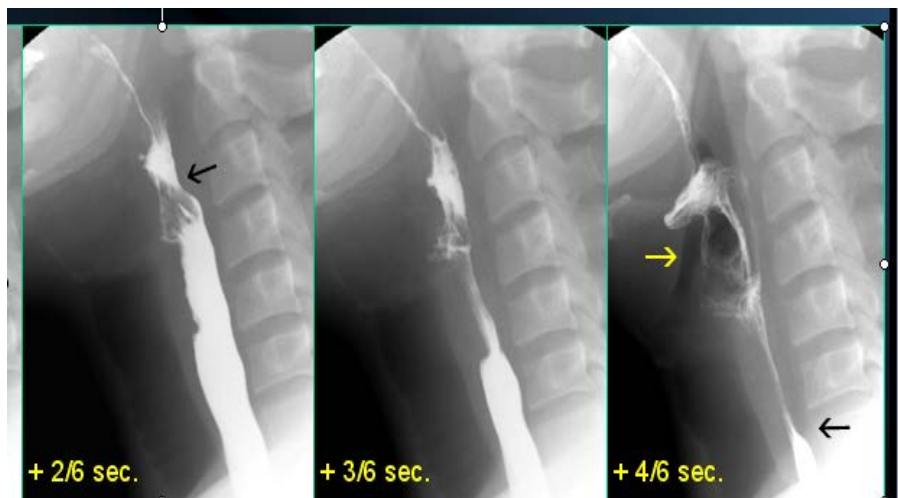
Dysphagie Haute





MALADIES NEUROMUSCULAIRES AFFECTANT LA PHASE PHARYNGEE DE LA DEGLUTITION

- Du système nerveux central
 - accidents vasculaires (20-40 %)
 - tumeurs , traumatisme
 - poliomyélite , SEP , SLA
 - ...
- Musculaires
 - polymyosite , dermatomyosite
 - myopathie oculo-pharyngée
 - maladie de Steinert
 - ...
- De la jonction myoneurale
 - myasthénie grave (thymome)
 - syndrome de Lambert-Eaton
- Des nerfs périphériques
 - traumatisme , compression
 - névrite : diabète , éthyliste
médicaments (corticoïdes,
immunosuppresseurs, antidépresseurs...)
- Idiopathique
 - achalasie du crico-pharyngien

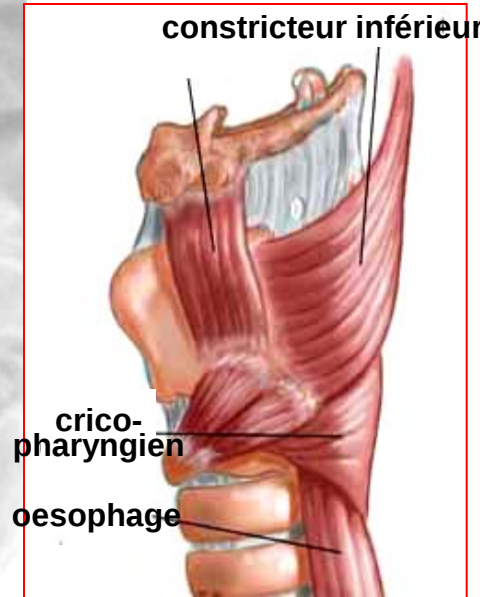


Penetration/Aspiration Scale



No Penetration or Aspiration	1	Contrast Does Not Enter the Airway
P E N E T R A T I O N	2	Contrast Enters the Airway, Remains Above Vocal Folds, No Residue
	3	Contrast Remains Above Vocal Folds, Visible Residue Remains
	4	Contrast Contacts vocal Folds, No Residue
	5	Contrast Contacts Vocal Folds, Visible Residue Remains
A S P I R A T I O N	6	Contrast Passes Glottis, No Sub-Glottic Residue Visible
	7	Contrast Passes Glottis, Visible Sub-Glottic Residue Despite Patient's Response
	8	Contrast Passes Glottis, Visible Sub-Glottic Residue Absent Patient Response

(Rosenbek et al, *Dysphagia*, 1996; Robbins et al, *Dysphagia*, 1999)



ACHALASIE DU MUSCLE CRICO-PHARYNGIEN

OU DEFAUT DE RELAXATION DU SPHINCTER
OESOPHAGIEN SUPERIEUR (SOS)

OU " BARRE " DU SOS

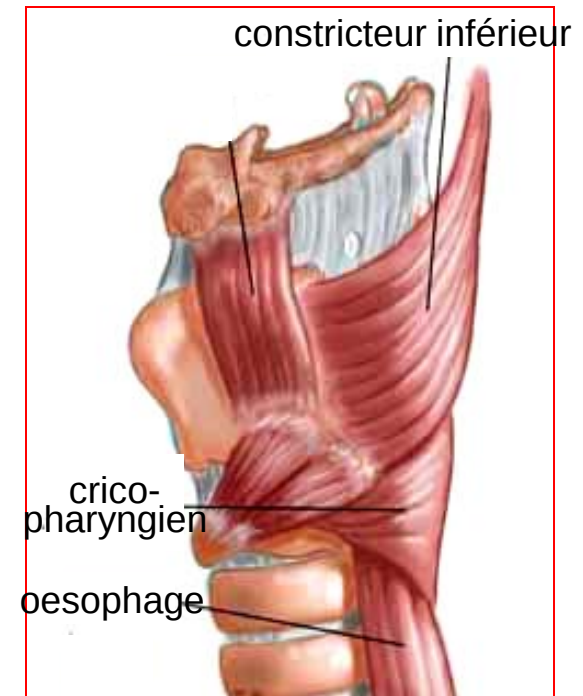
encoche postérieure persistante (C5-C6)
phénomène du jet

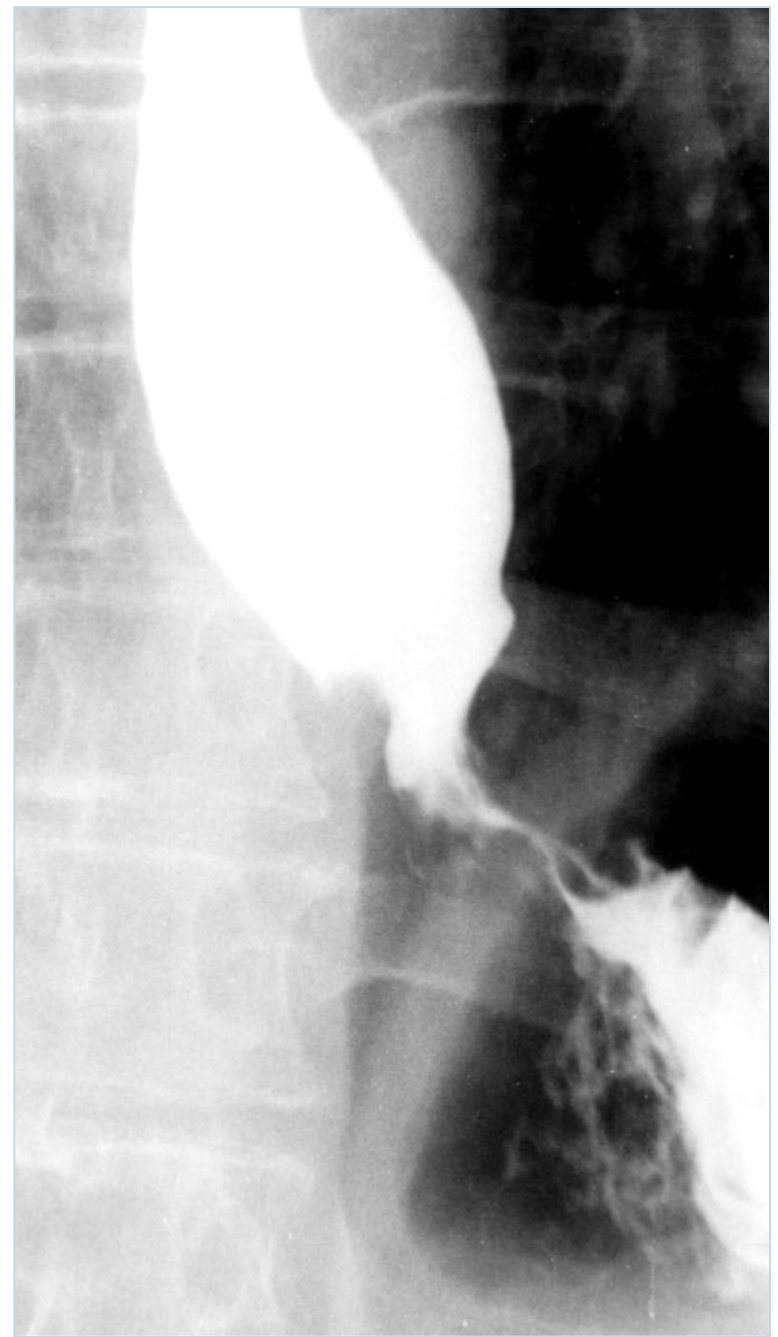
ACHALASIE DU SPHINCTER OESOPHAGIEN SUPERIEUR (SOS)

(défaut de relaxation du muscle
crico-pharyngien)

causes

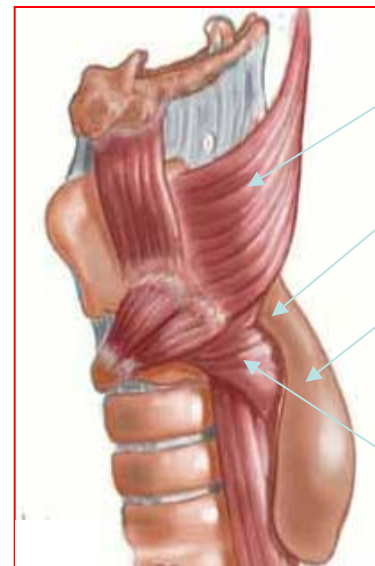
- hypocontractibilité des constricteurs
 - AVC
 - idiopathique
 - " réactionnelle "
 - reflux gastro-oesophagien (RGO)
 - obstructions oesophagiennes organiques ou fonctionnelles
- ➔ " proéminence " du SOS





PROEMINENCE DU CRICOPHARYGIEN
 DYSPHAGIE REFERENCE AU COU
 (30 % = LESIONS OBSTRUCTIVES
 OESOPHAGIENNES INFERIEURES OU RGO)

exploration de la totalité de l'oesophage

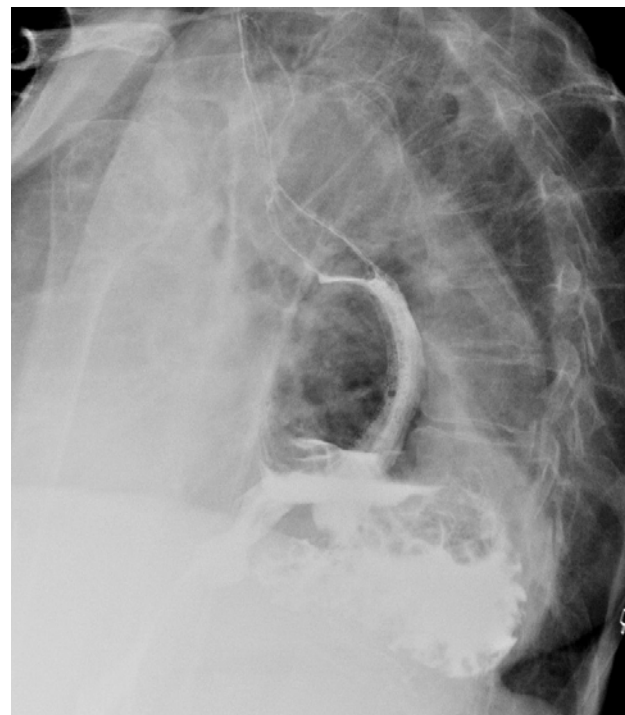


constricteur inférieur

déhiscence de Killian

**DIVERTICULE
DE ZENKER**

crico-pharyngien



Dysphagie basse

CAUSES DE DYSPHAGIE BASSE

- TROUBLES FONCTIONNELS 11%
- LESIONS ORGANIQUES 89%
 - hernie hiatale, oesophagite et sténose peptiques 53%
 - anneau de Schatzki 15%
 - sténose néoplasique 12%
 - autres (compression, tumeurs bénignes, sténose caustique ...) 9%

Ott DJ , et al ; Gastointest Radiol 6 :109 , 1981

TROUBLES FONCTIONNELS DE L' OESOPHAGE

- PRIMAIRES

- achalasie
- spasmes diffus
- presbyoesophage

- SECONDAIRES

- Sclérodermie
- Oesophagite
 - peptique ,caustique, infectieuse
- Pseudo-achalasies :
 - Sténoses bénignes,malignes,iatrogènes
- Maladie de Chagas
- Diabète , éthylisme ...
- Médicaments
 - Parasympathicolytiques
- Myopathies

= tout ce qui modifie la motilité oesophagienne

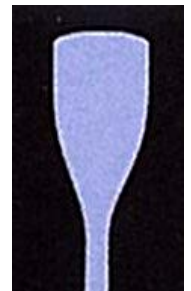
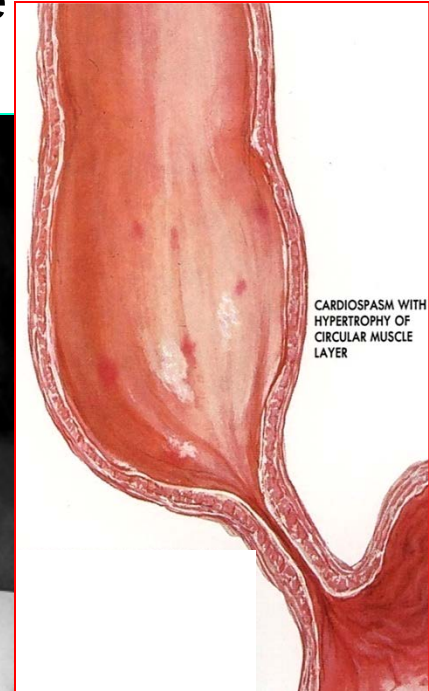
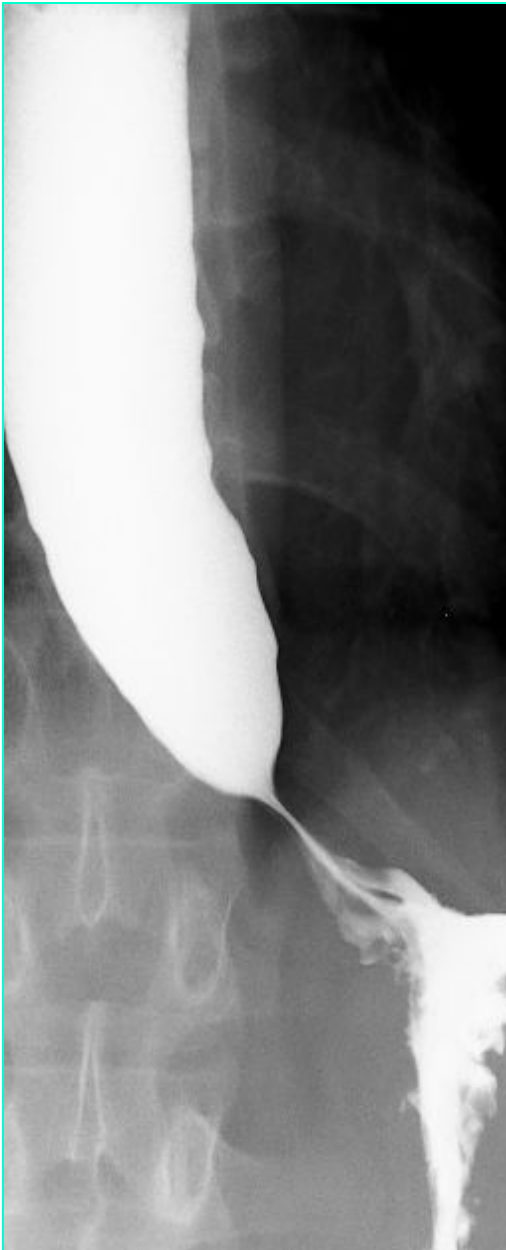


PERISTALTIQUE
PRIMAIRE

(1- 4 cm / sec.)

ACHALASIE

absence → de péristaltique
→ de relaxation du SOI
→ d'air gastrique





ACHALASIE
VIGOUREUSE

(+ contractions
tertiaires
répétitives)



SPASMES DIFFUS

contractions
tertiaires
profondes

" curling " esophagus



PRESBYOESOPHAGE

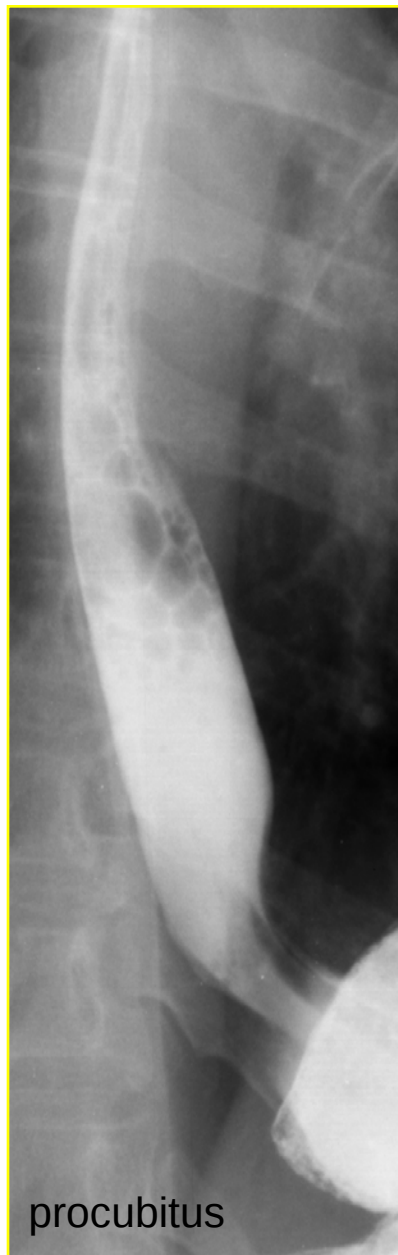
contractions
tertiaires
prolongées

" corkscrew " esophagus

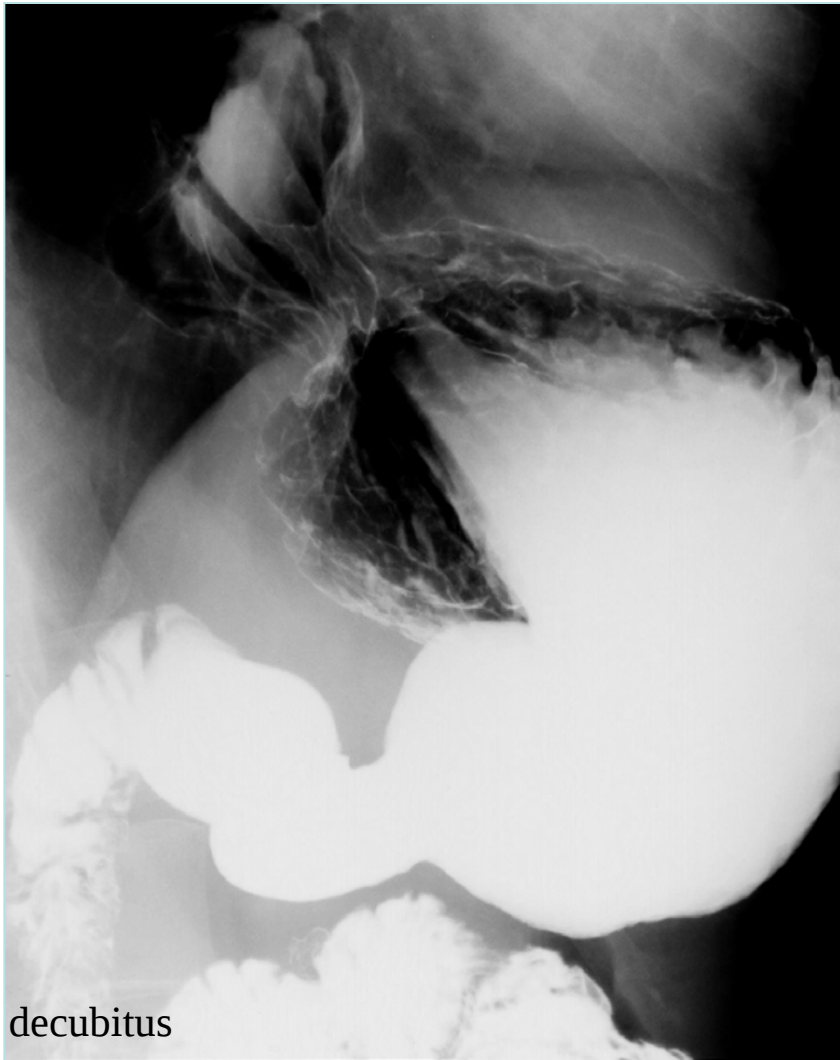
CAUSES DE DYSPHAGIE BASSE

- TROUBLES FONCTIONNELS 11%
- LESIONS ORGANIQUES 89%
 - hernie hiatale, oesophagite et sténose peptiques 53%
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Ott DJ , et al ; Gastointest Radiol 6 :109 , 1981

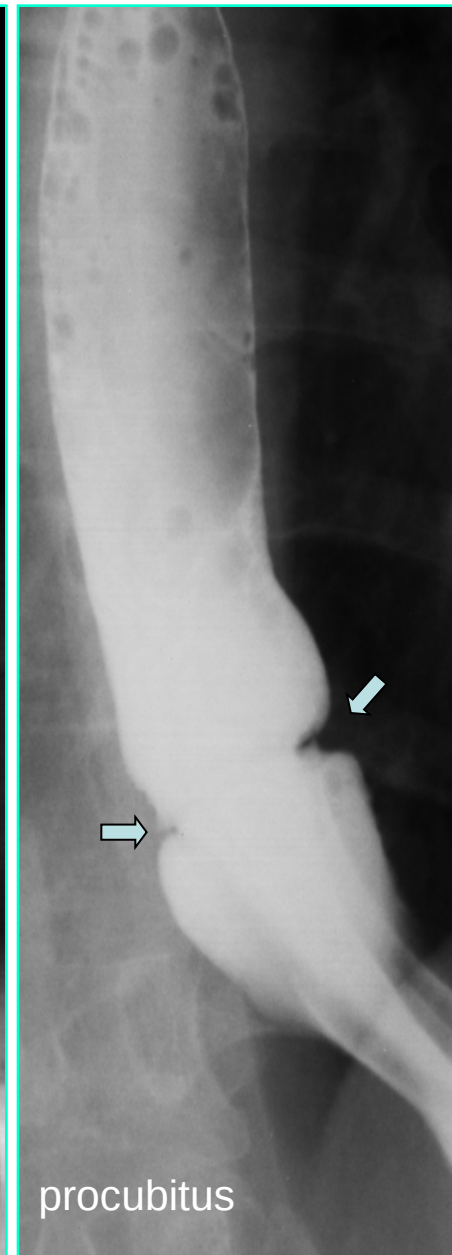


NORMAL



hernie hiatale axiale + RGO

réductibilité



NORMAL

HERNIE AXIALE ET Shatzki

STEAK
HOUSE
SYNDROME



endoscopie
négative



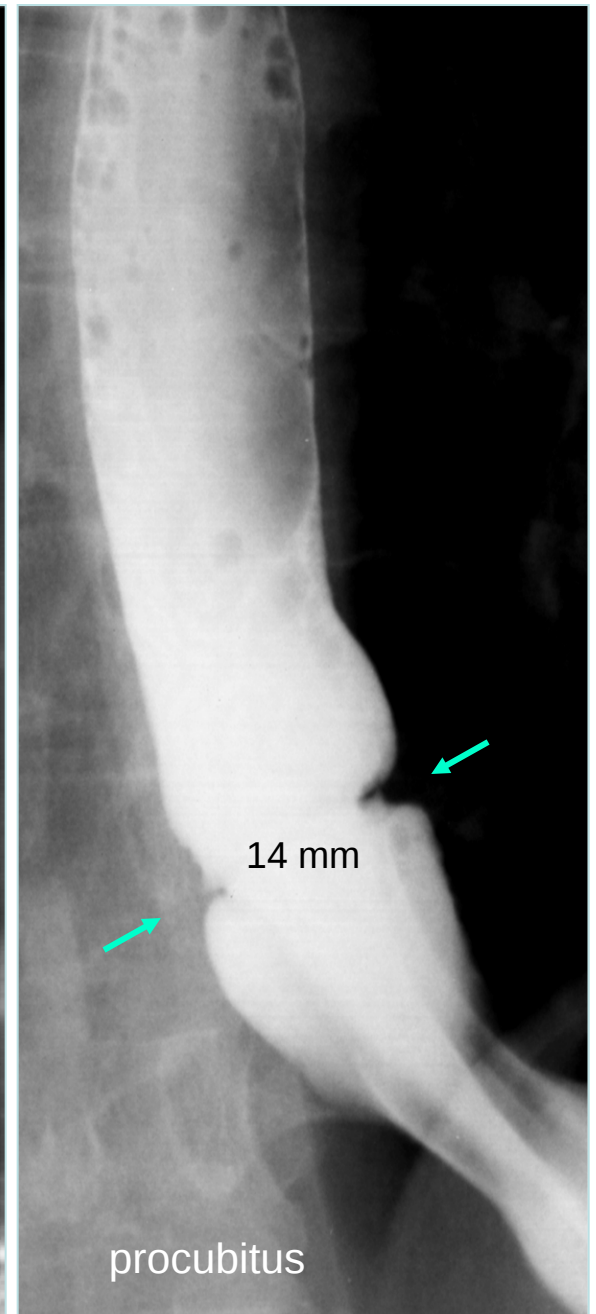
OESOPHAGOGRAPHIE



ANNEAU DE
SCHATZKI



debout



14 mm

procubitus

PETITE HERNIE HIATALE + ANNEAU DE SCHATZKI

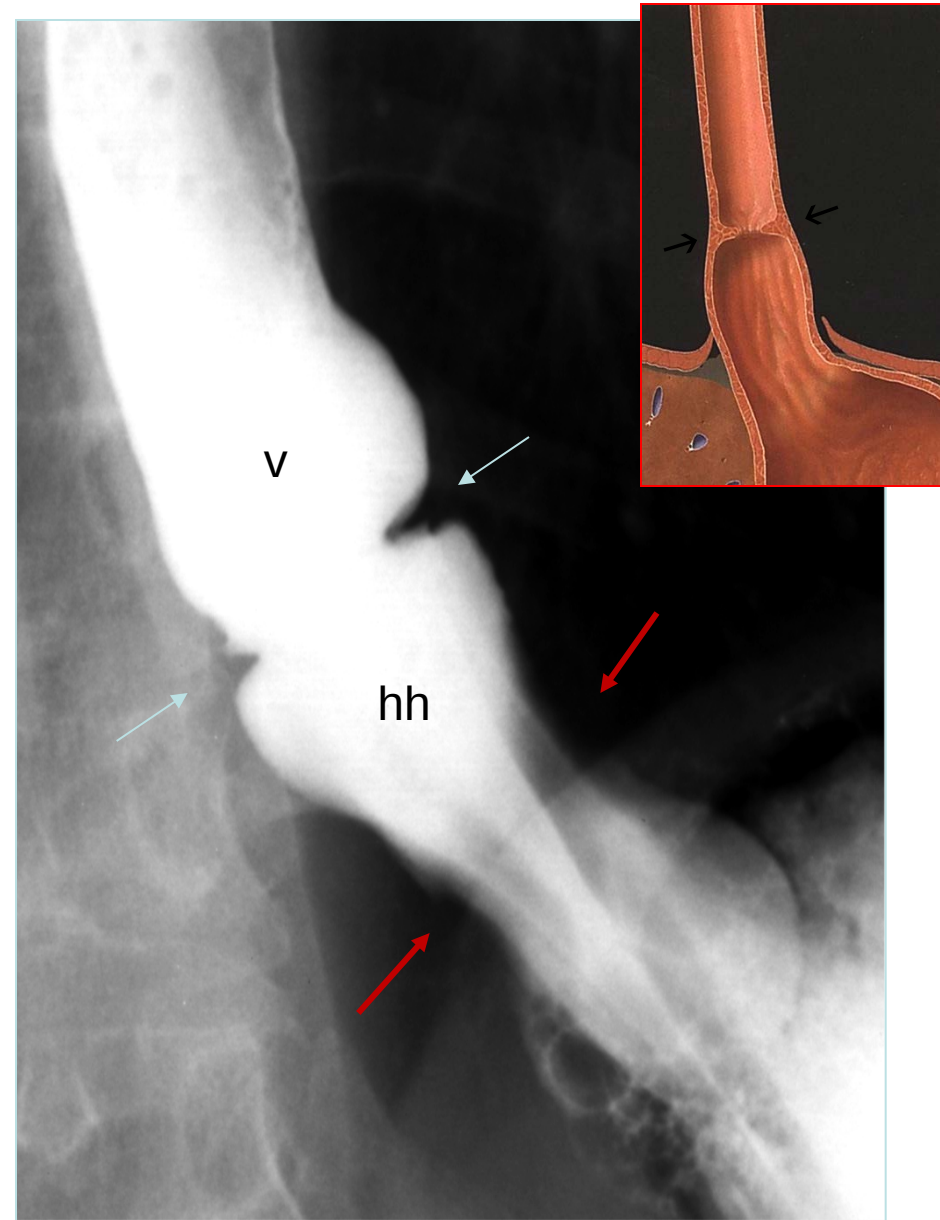
v : vestibule (oesophagien)

→ ← anneau de Schatzki

- hh : hernie hiatale (gastrique)

- → ← hiatus
diaphragmatique

Schatzki R , et al ; AJR 70 : 911 , 1953

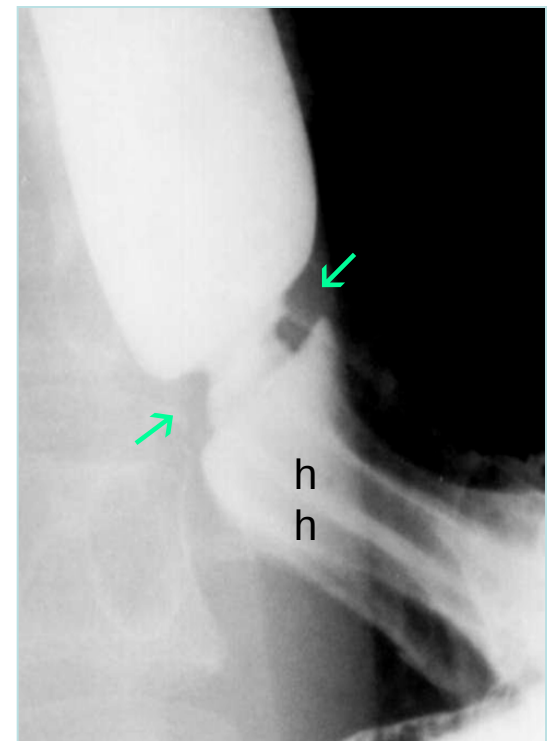


In Netter, Atlas d'anatomie humaine, Masson, 2007

RING DE SCHATZKY

symptomatique

< 13 mm



Œsophage et lésions organiques

- Cancer
- Ruptures

TNM Staging System for Colorectal Cancer

Table 2. TNM Staging System for Colorectal Cancer. *

Stage	TNM Classification	Five-Year Survival %
I	T1–2, N0, M0	>90
IIA	T3, N0, M0	60–85
IIB	T4, N0, M0	
IIIA	T1–2, N1, M0	25–65
IIIB	T3–4, N1, M0	
IIIC	T (any), N2, M0	
IV	T (any), N (any), M1	5–7

Primary tumor (T)

TX: Primary tumor cannot be assessed

Tis: Carcinoma in situ

T1: Tumor invades submucosa

T2: Tumor invades muscularis propria

T3: Tumor penetrates muscularis propria and invades subserosa

T4: Tumor directly invades other organs or structures or perforates visceral peritoneum

Nodal status (N)

NX: Regional lymph nodes cannot be assessed

N0: No metastases in regional lymph nodes

N1: Metastases in one to three regional lymph nodes

N2: Metastases in four or more regional lymph nodes

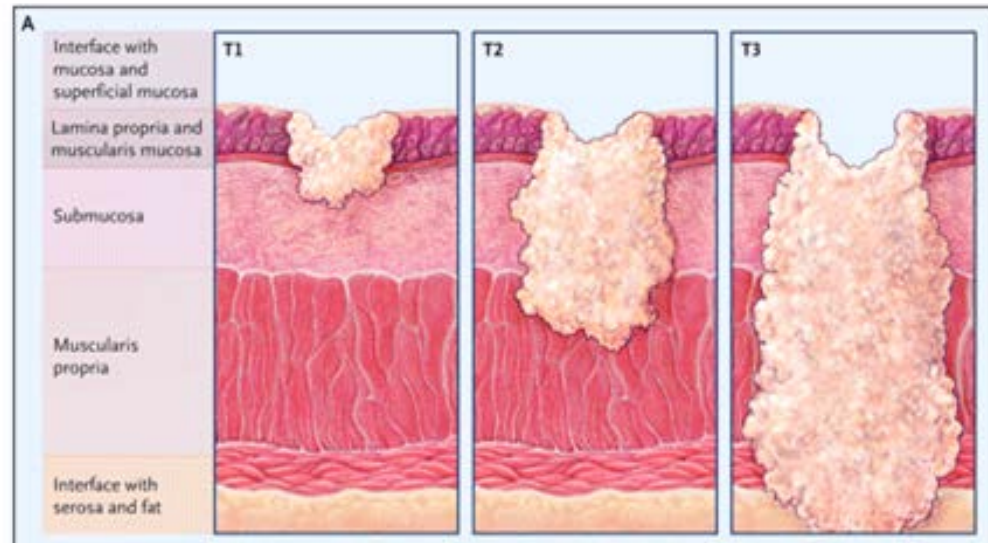
Distant metastases (M)

MX: Presence or absence of distant metastases cannot be determined

M0: No distant metastases detected

M1: Distant metastases detected

* The information is from Greene et al.⁷



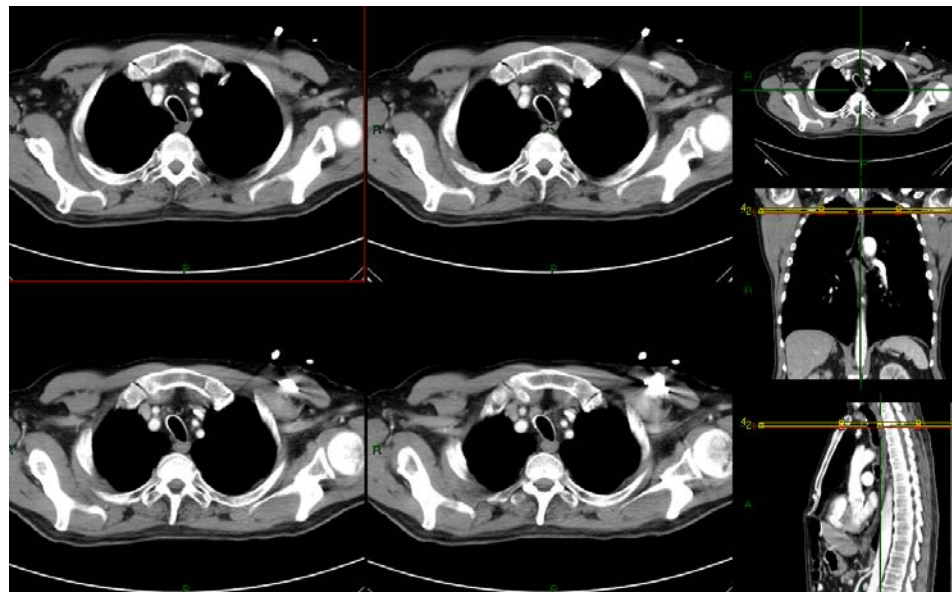
Meyerhardt, J. A. et al. N Engl J Med 2005;352:476-487

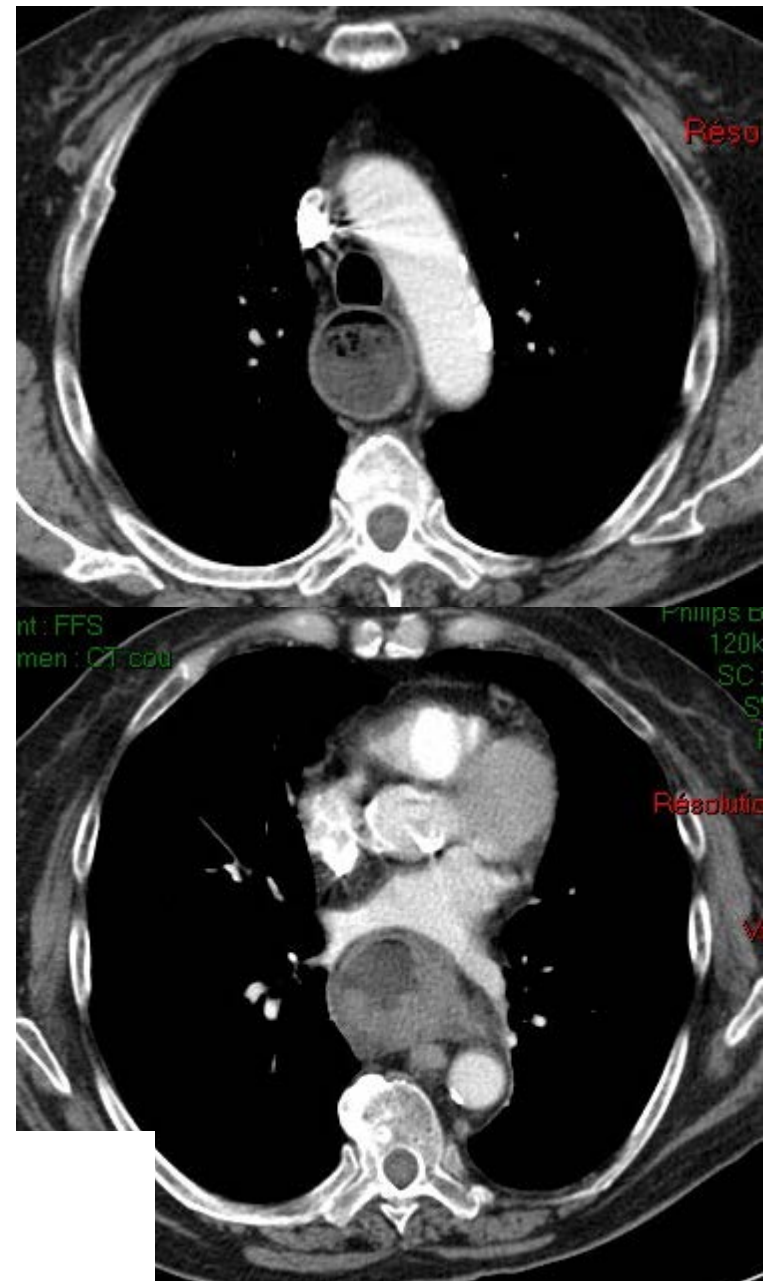


The NEW ENGLAND
JOURNAL of MEDICINE

Esophage

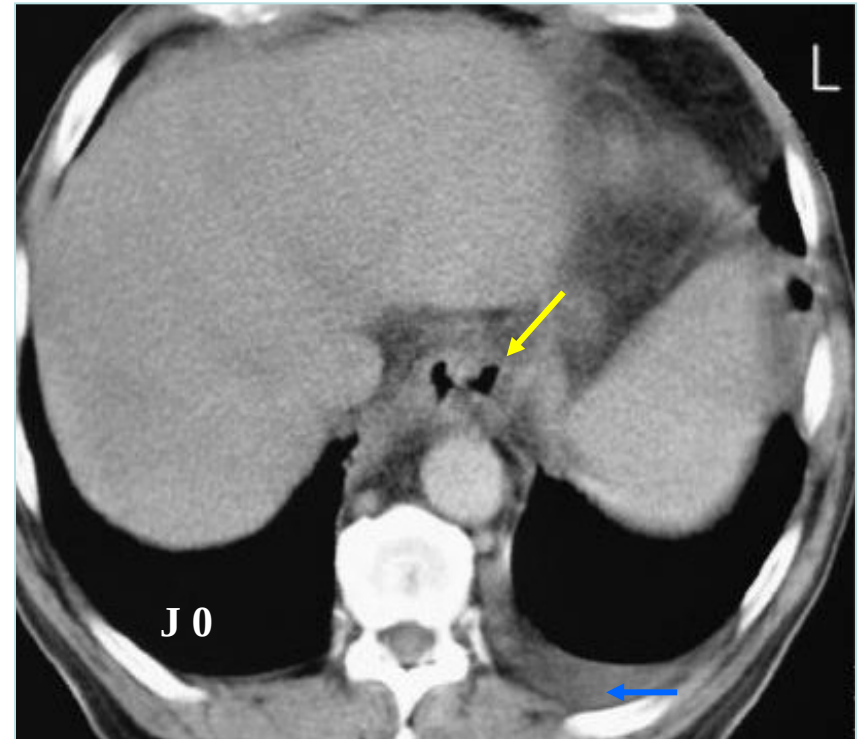
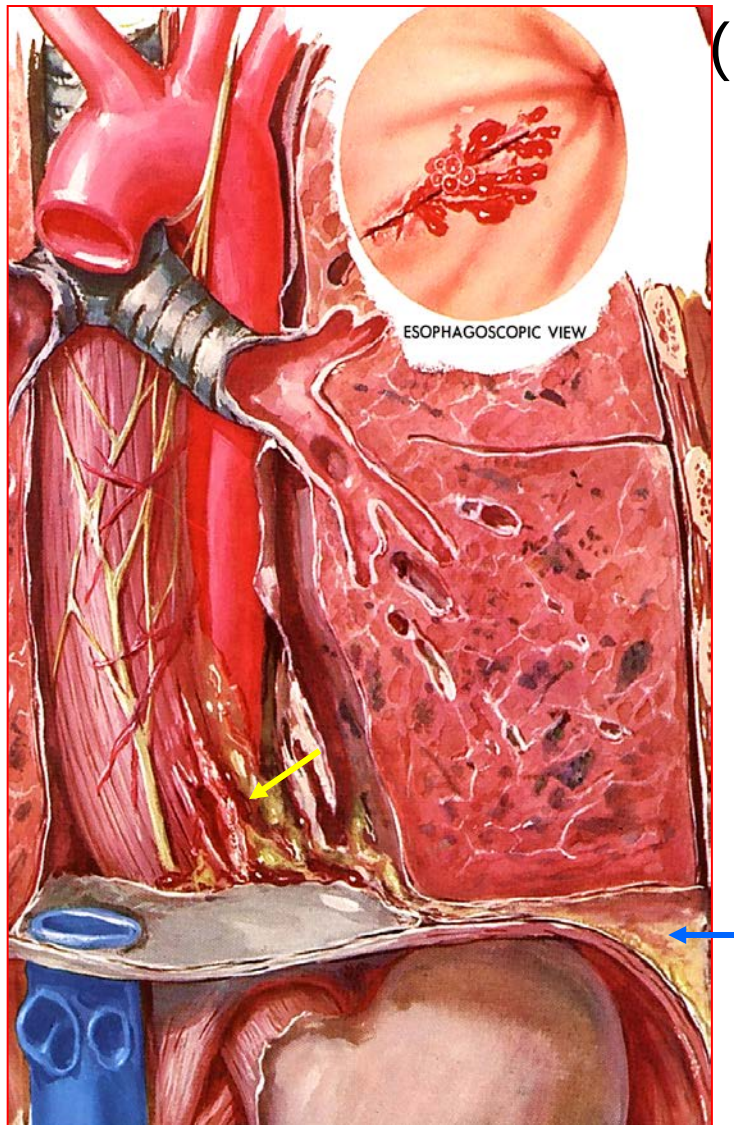
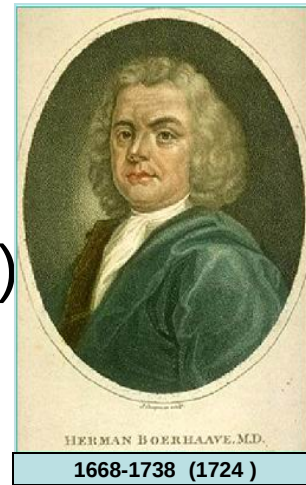
	US endo	RX	CT	Pet CT
Détection	+			+
Stadification	+		T4, N, M	+
Suivi	+	+/- post op	+	+



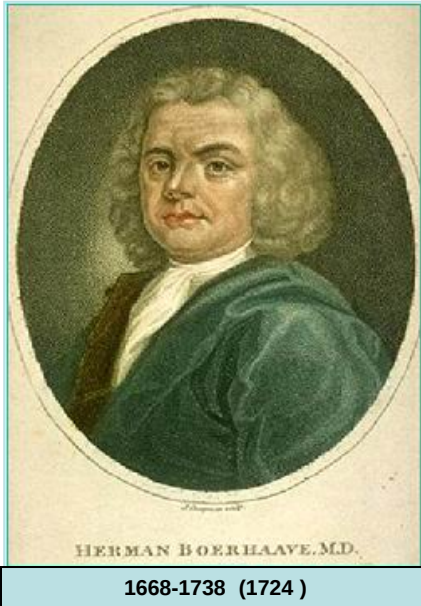


Épaisseur de la paroi de l'œsophage:
 = 5 mm en contraction, 3 mm si distendu
 = jamais > 5,5 mm
 = 1 mm de plus chez l'homme

rupture spontanée de l'œsophage (syndrome de Boerhaave)

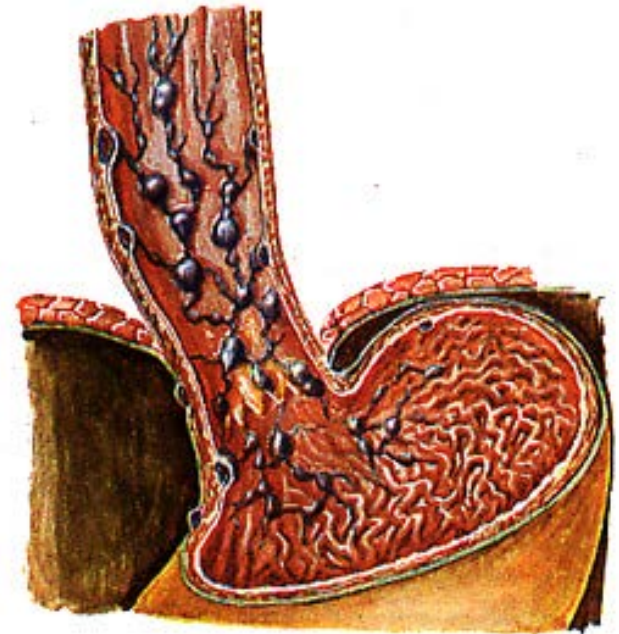


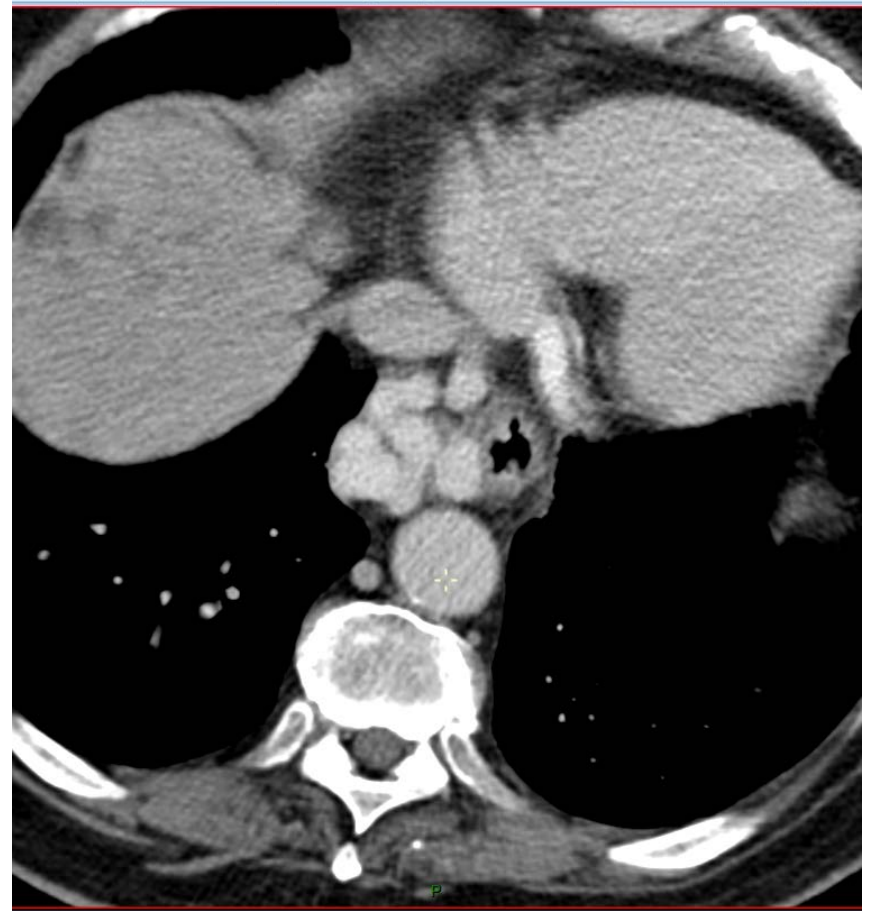
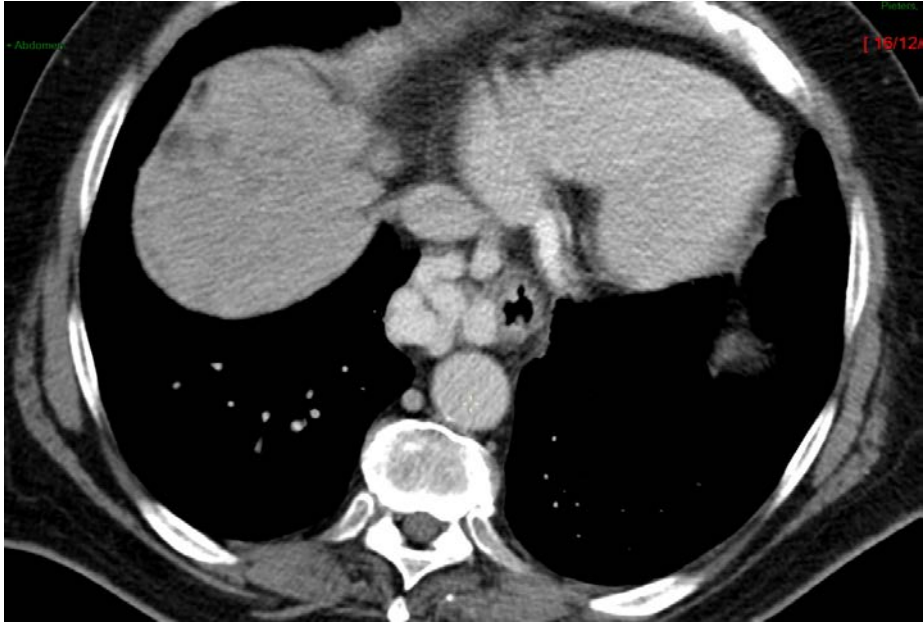
collection aérique para-oesophagienne
épanchement pleural gauche



Varias

- Varices oesophagiennes
 - Les voir
 - Les complications possibles
- Oesophagite
 - Mycotique
 - Caustique
 - Radique









Radiologie et estomac

- Inflammation
 - Ulcère
 - Perforation
- Hémorragies
- Occlusions
 - Volvulus
 - Bouveret
- Post-op
 - Chirurgie de l'obésité
 - Chirurgie oncologique
- Tumeur

Estomac, Inflammation et Imagerie

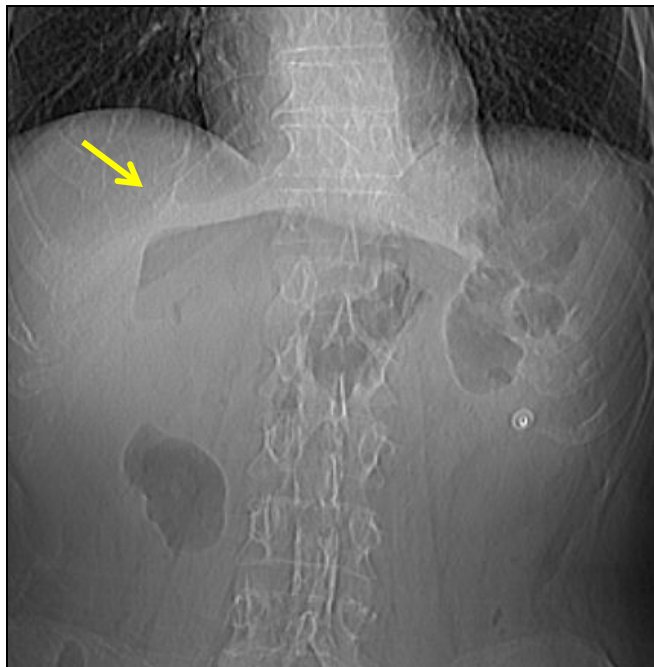
- Gastrites, Ulcères : endoscopie

Estomac, Inflammation et Imagerie

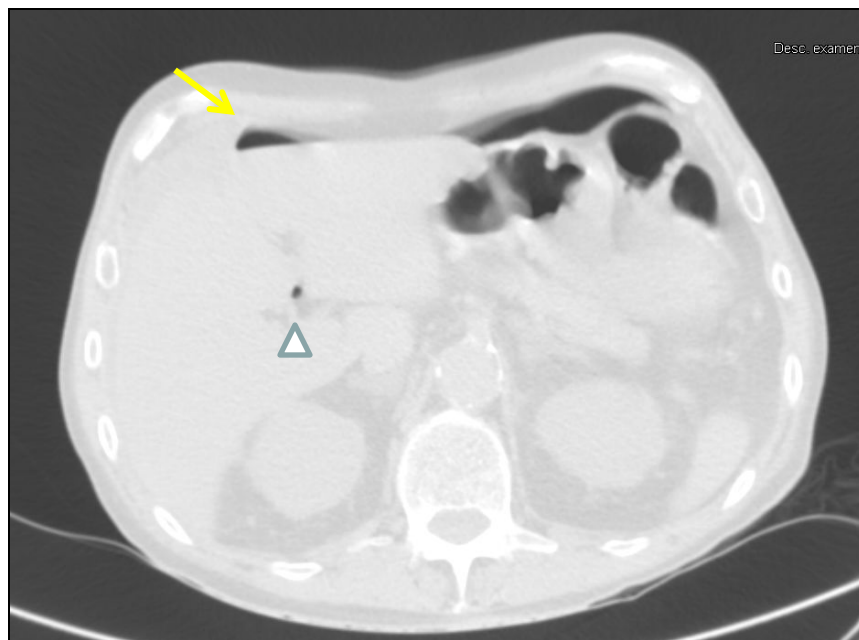
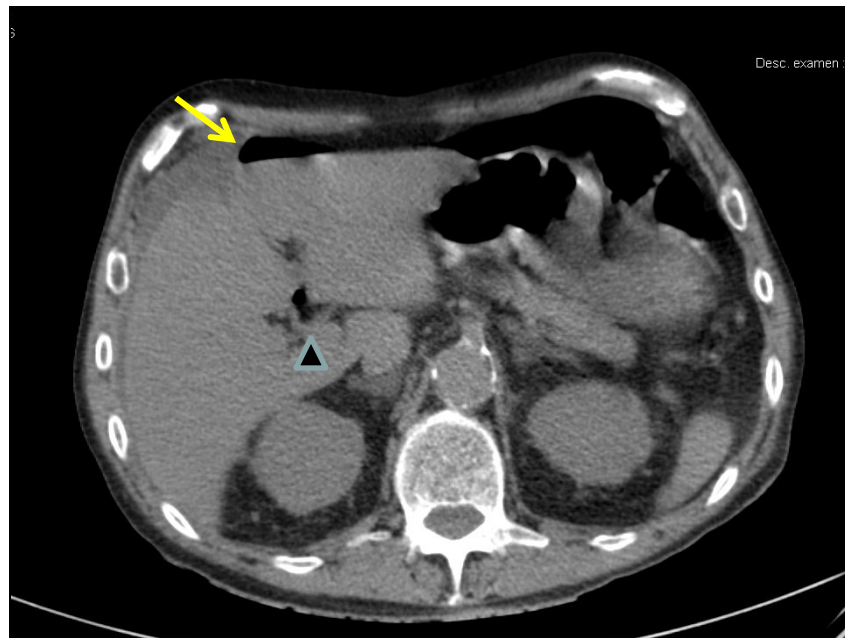
- Gastrites, Ulcères : endoscopie
- Perforation: Imagerie

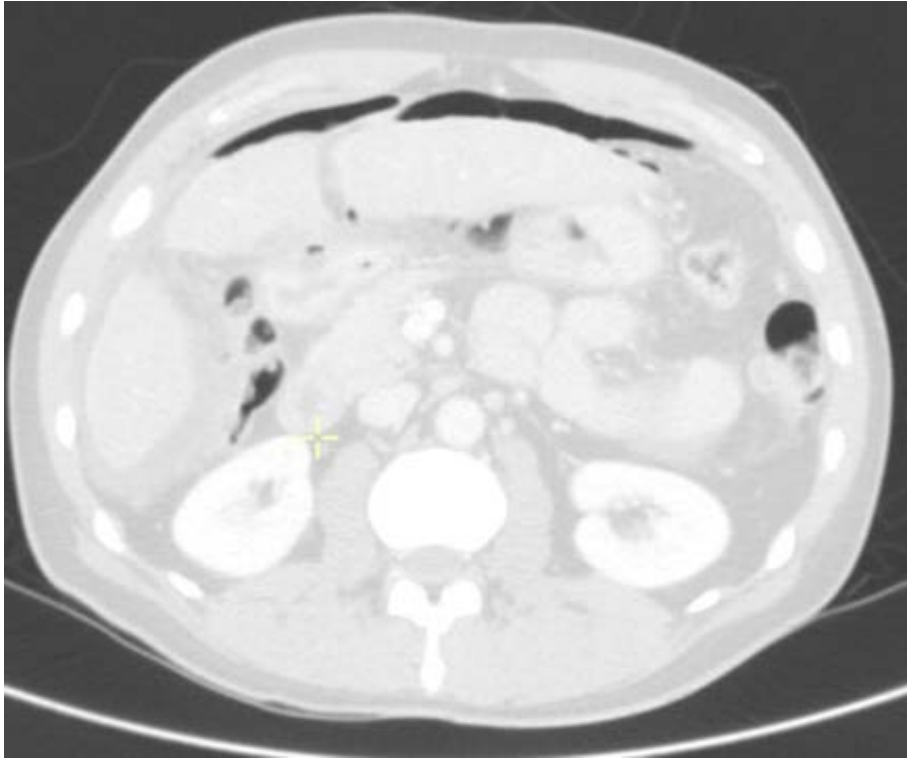
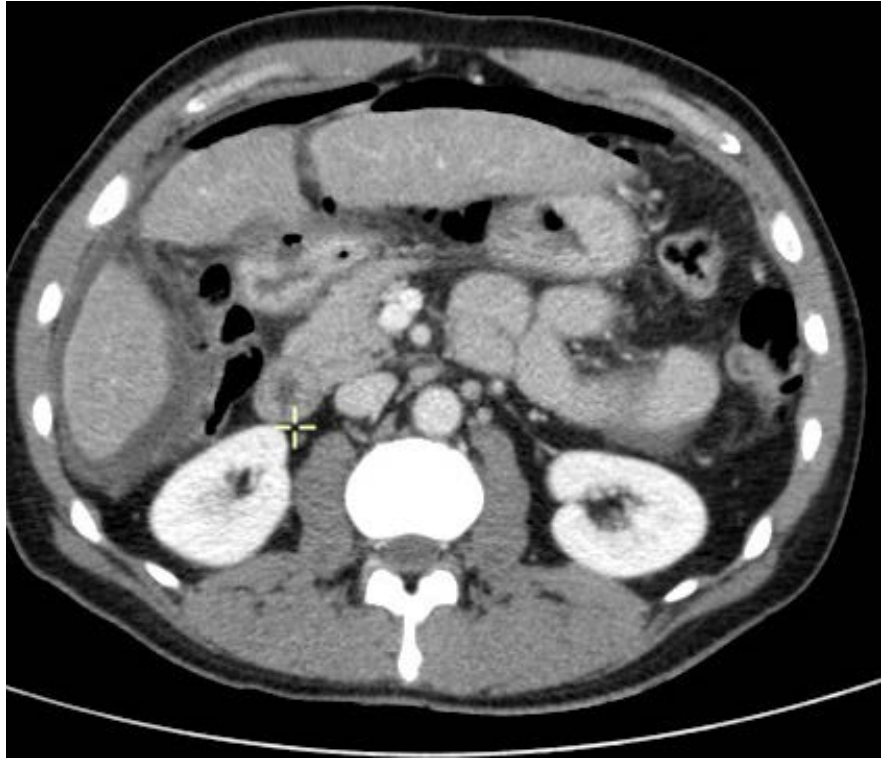
Site & Cause de la perforation: CT

- CT et perforation gastro-duodénale:
 - Liquide localisé entre le duodénum et la tête du Pancréas
 - Paroi épaissie à > 12 mm
 - Interruption focale de la paroi (si IV)
 - Infiltration de la graisse de voisinage
 - Air libre
 - dans la scissure hépatique
 - Dans l'ACE
 - Si post-endoscopie haute
 - Rétropneumopéritoine périoduodéal



→ Ligament
falciforme

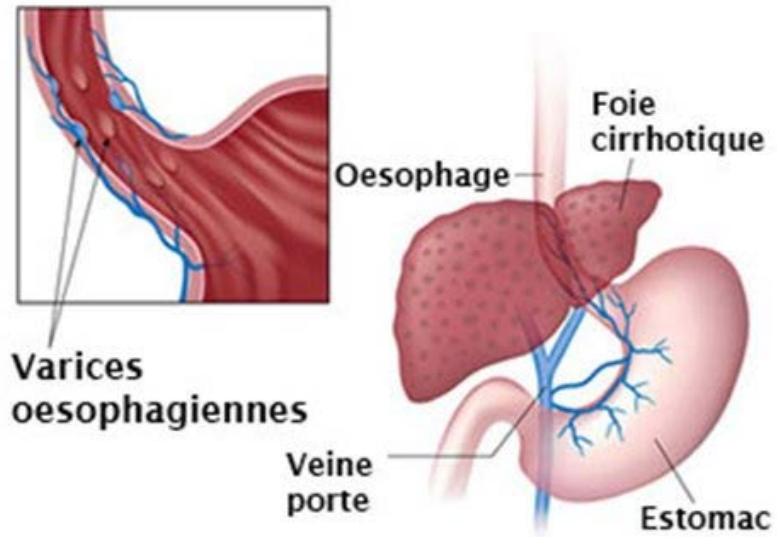




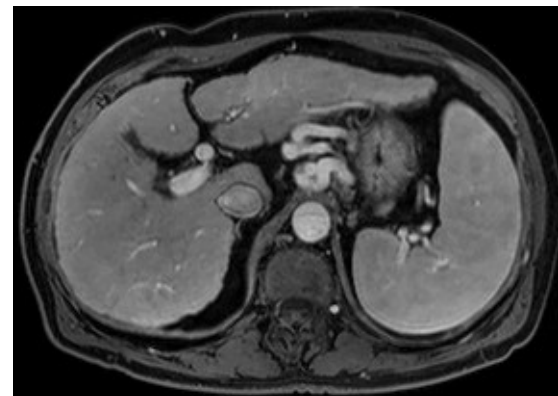
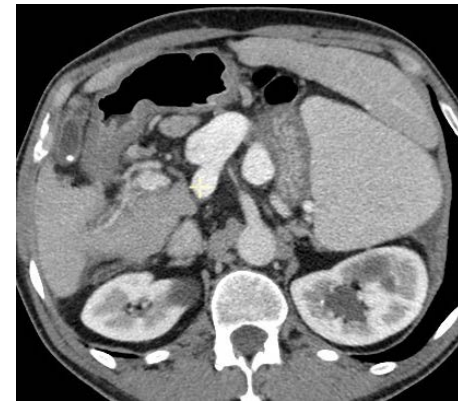
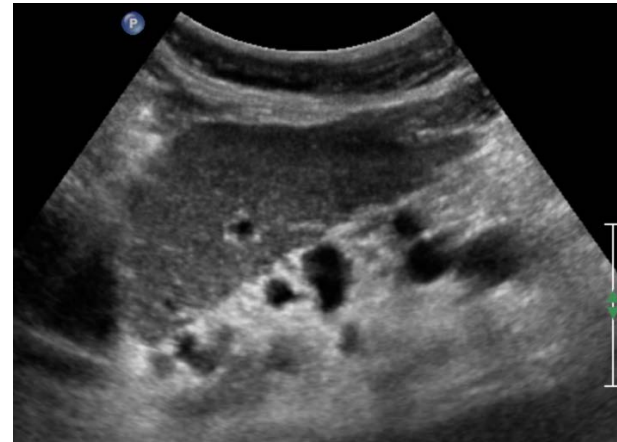
Estomac, Inflammation et Imagerie

- Gastrites, Ulcères : endoscopie
- Perforation: Imagerie
- Hémorragies :
 - Endoscopie
 - RX interventionnelle
 - CT post procédure

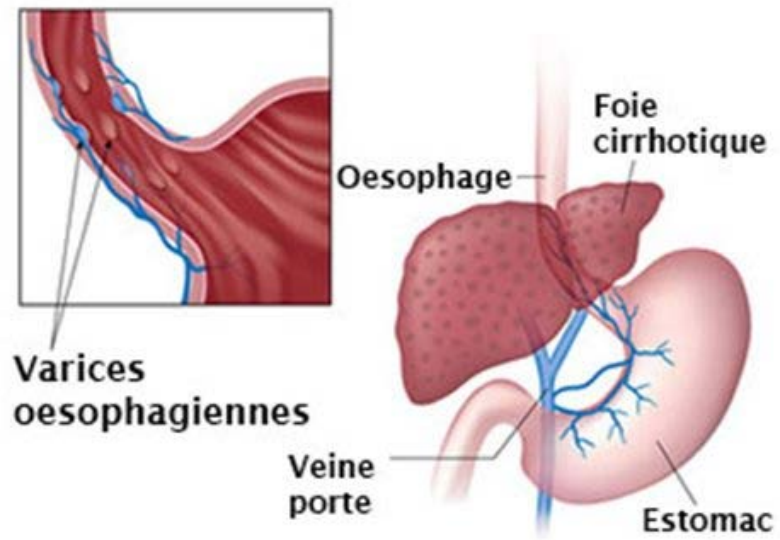
Varices oeso-gastriques



http://www.docteurcliv.com/galerie-photos/image_5260_400.jpg



Varices oeso-gastriques

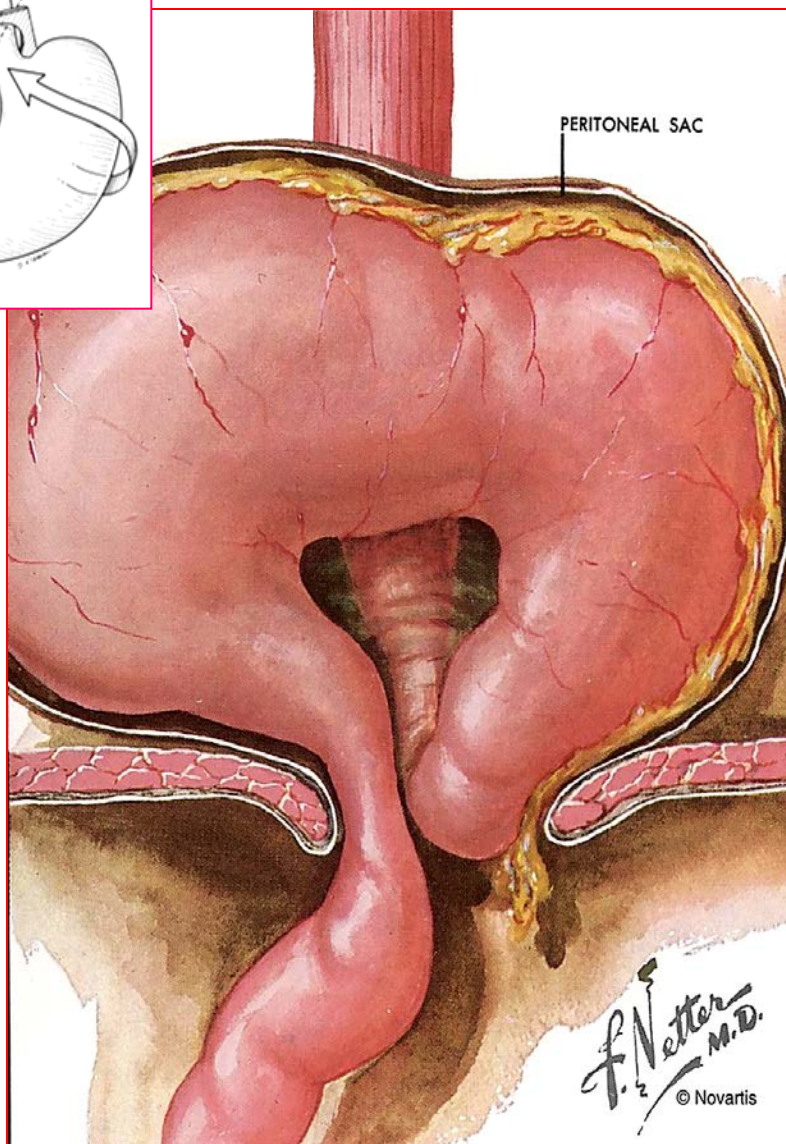
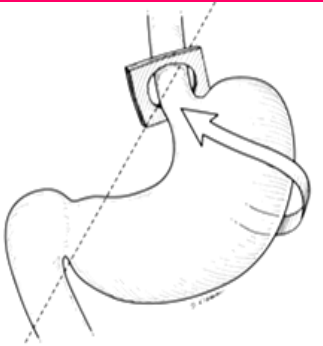


http://www.docteurclic.com/galerie-photos/image_5260_400.jpg

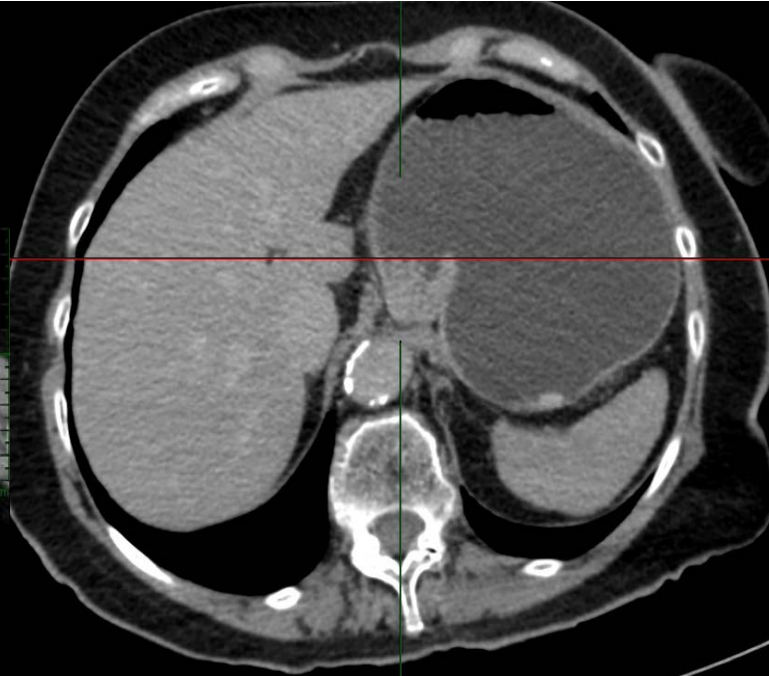
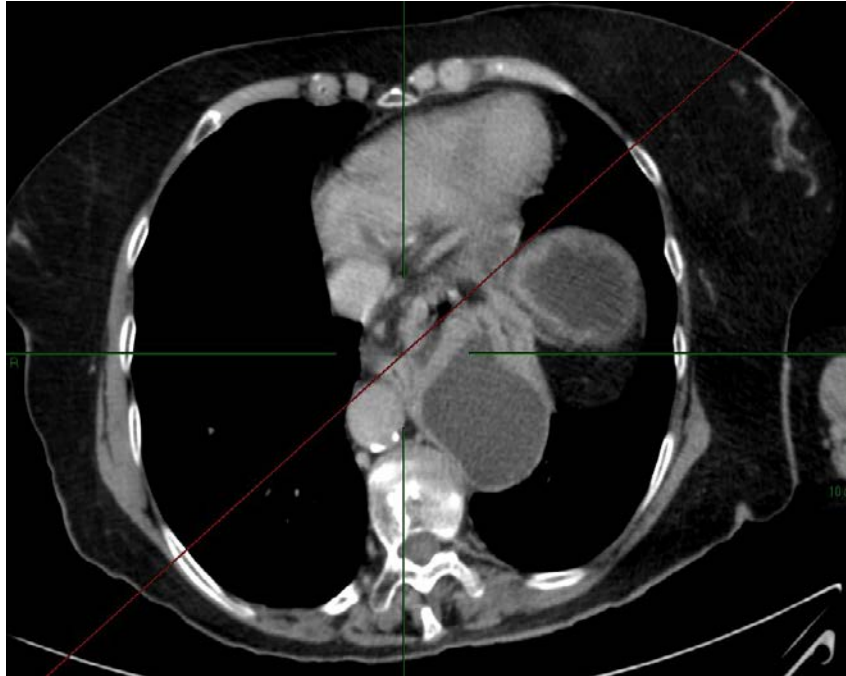


Estomac, Inflammation et Imagerie

- Gastrites, Ulcères : endoscopie
- Perforation: Imagerie
- Hémorragies : endoscopie et RX Interv
- Occlusion: Imagerie



hernie hiatale et volvulus gastrique (organo-axial)
estomac intrathoracique "en miroir"

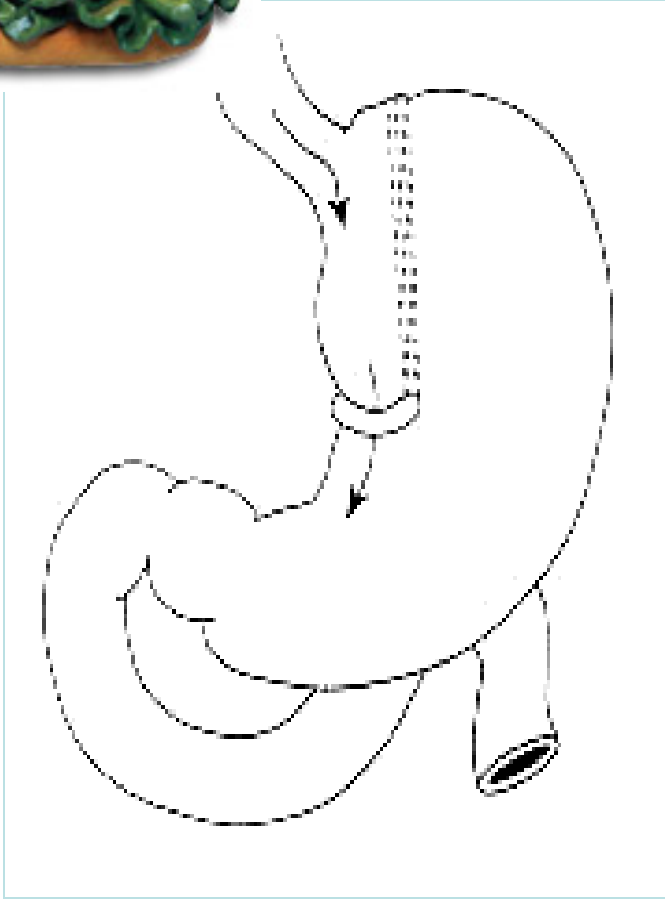


Radiologie et Estomac

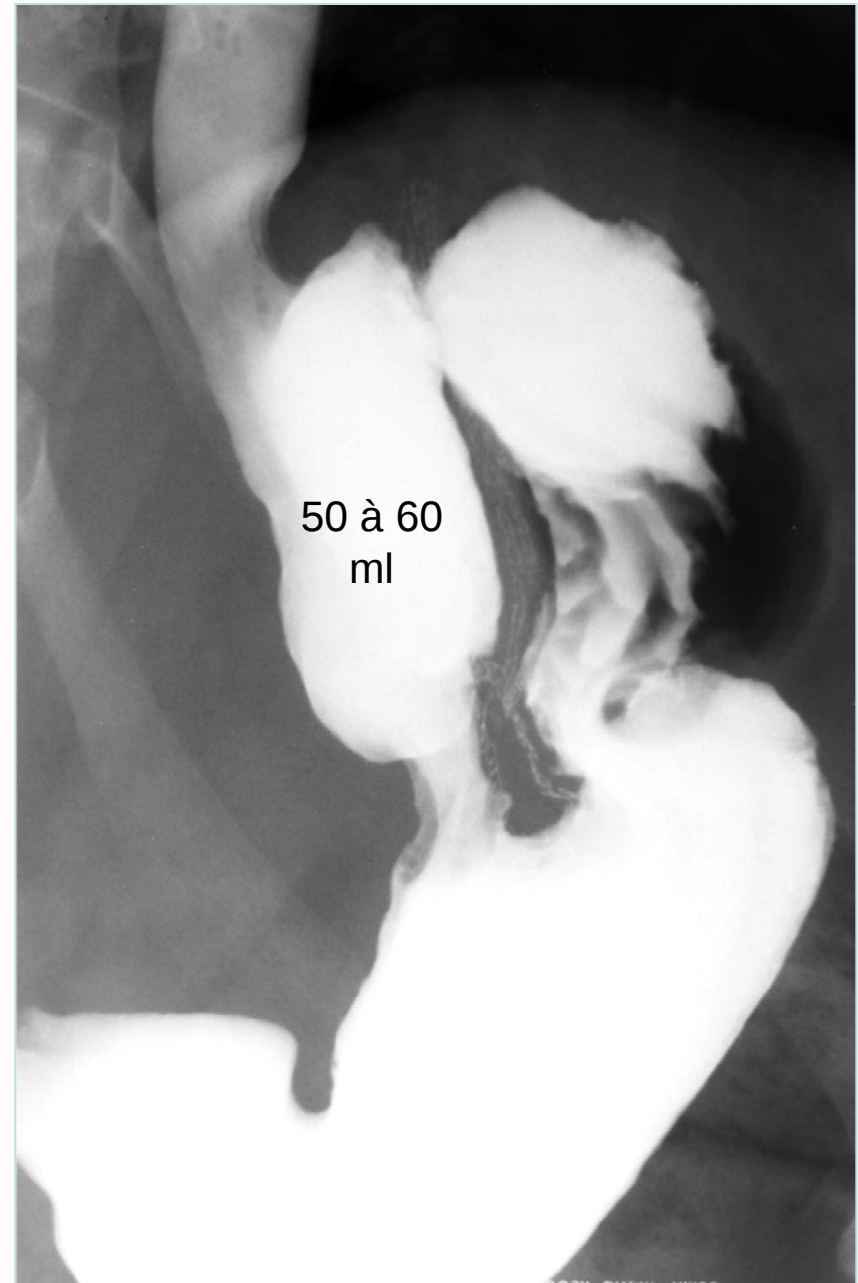
- Chirurgie de l'obésité = Chirurgie Bariatrique



chirurgie
bariatrique

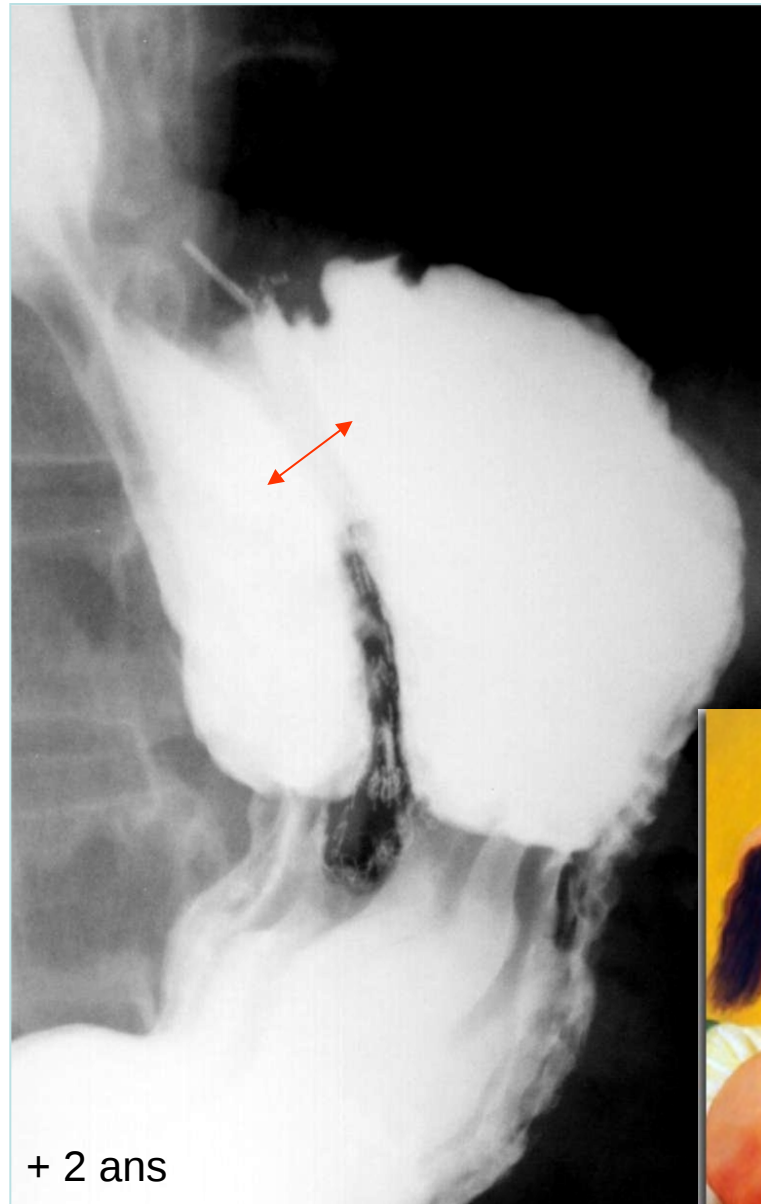


gastroplastie verticale de Mason





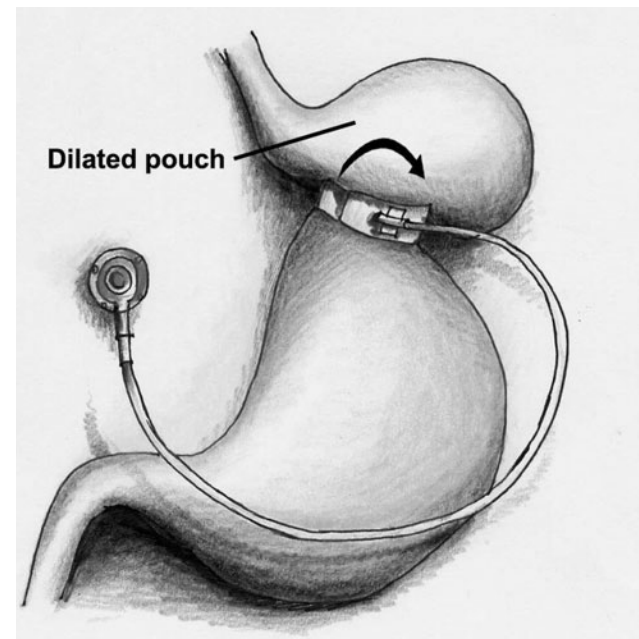
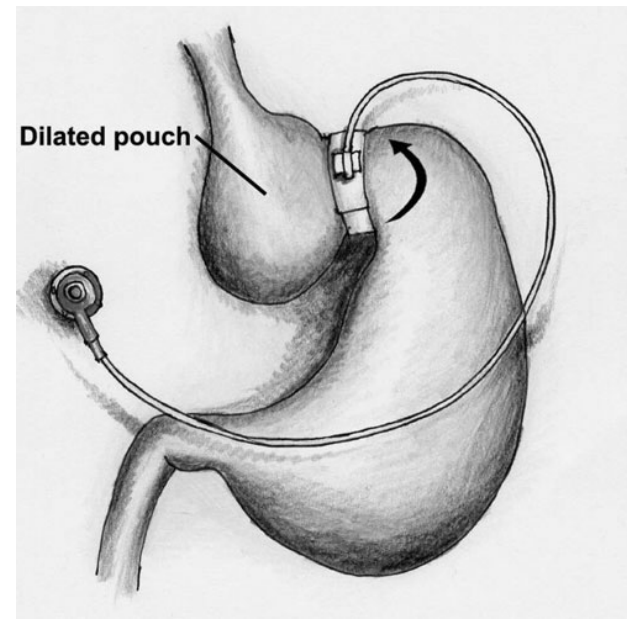
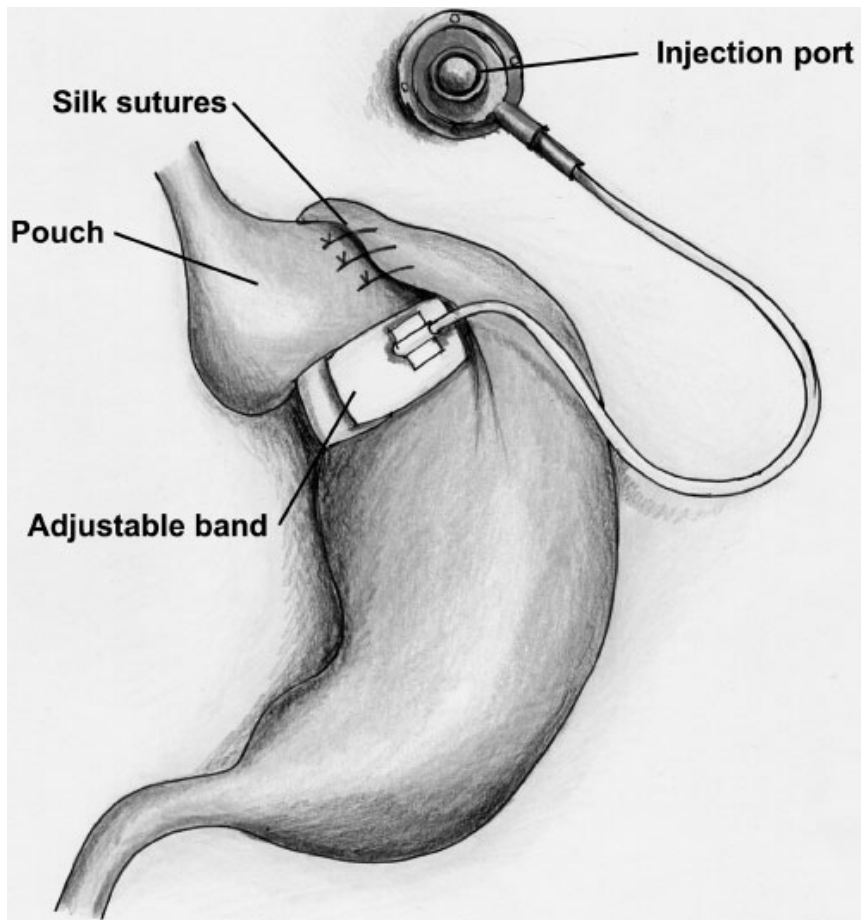
gastroplastie verticale de
Mason



+ 2 ans

complication : déhiscence
partielle de la suture





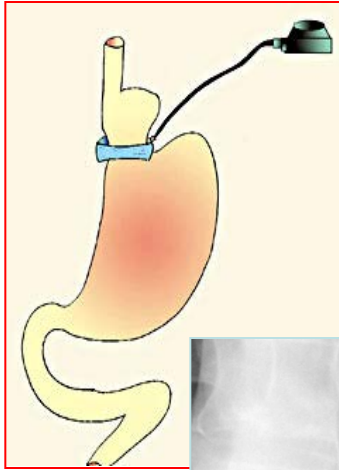
The British Journal of Radiology, 81 (2008), 753–757

PICTORIAL REVIEW

Radiographical imaging of the normal anatomy and complications after gastric banding

¹H PROSCH, MD, ¹R TSCHERNEY, MD, ²S KRIWANEK, MD and ¹D TSCHOLAKOFF, MD

chirurgie bariatrique



complication :
sténose

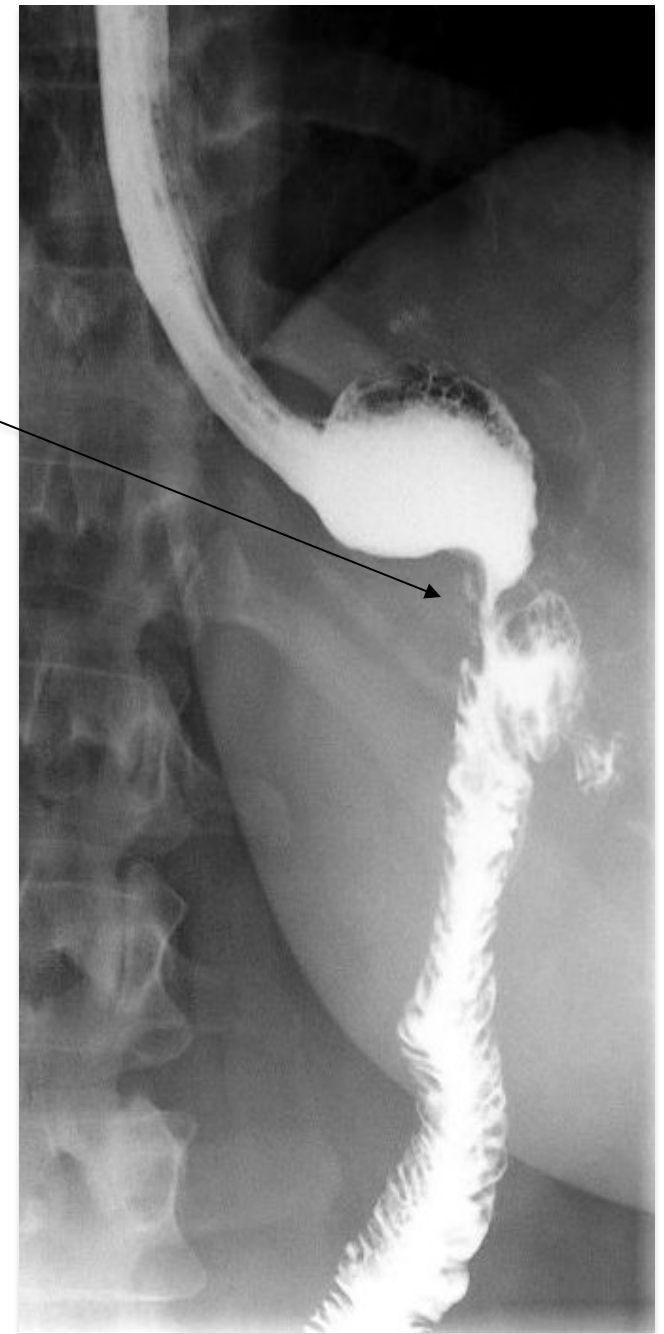
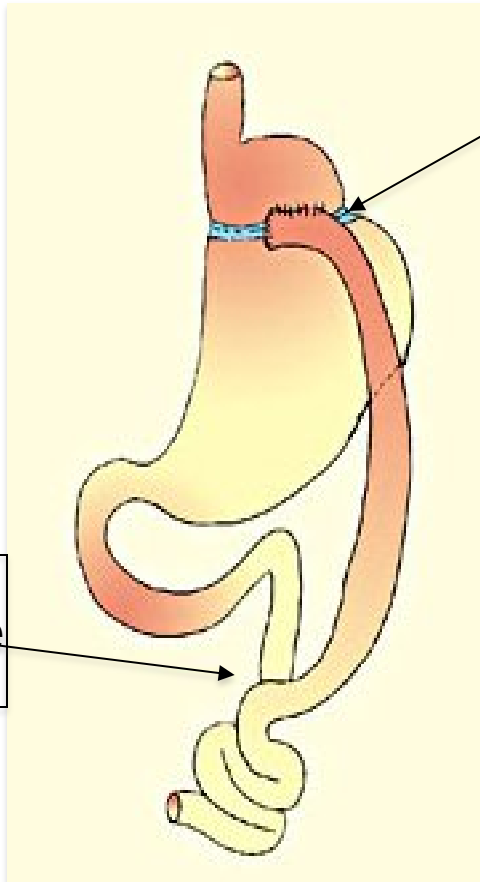
gastroplastie par anneau ajustable
"gastric banding"

chirurgie bariatrique

anastomose
gastro-jéjunale

anastomose
jéuno-jéjunale

bypass gastrique



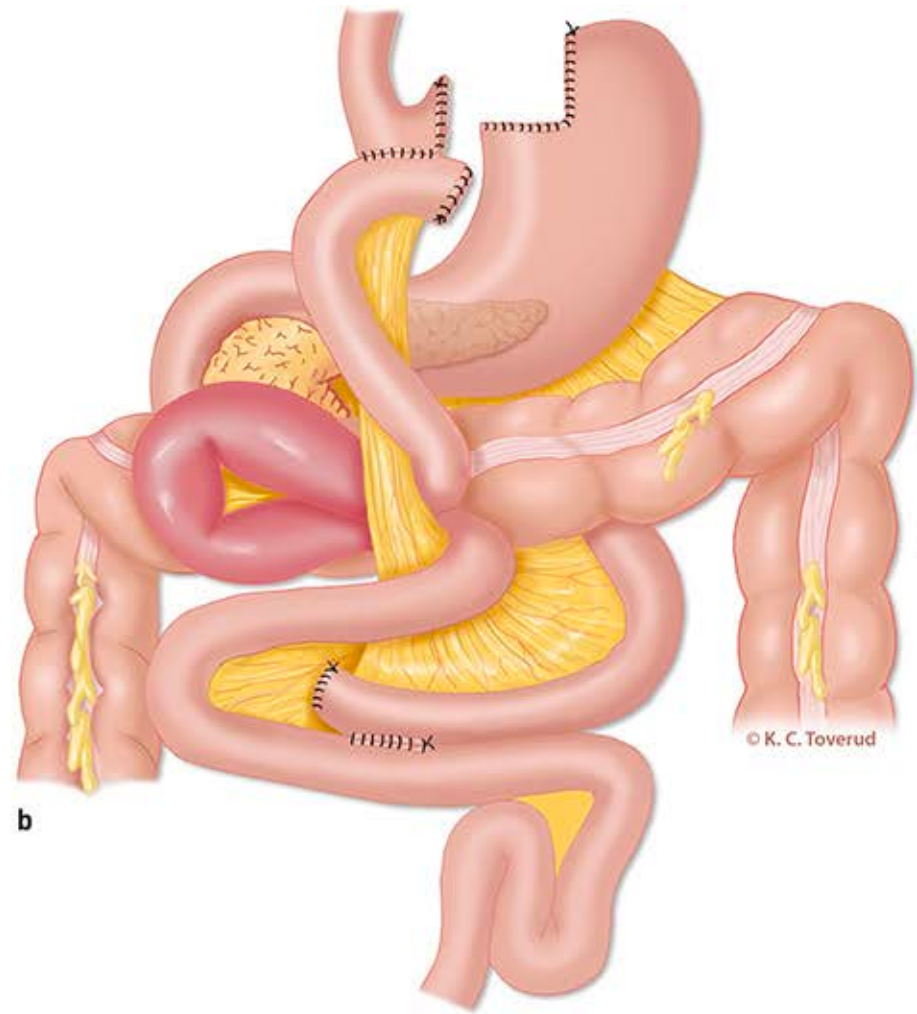
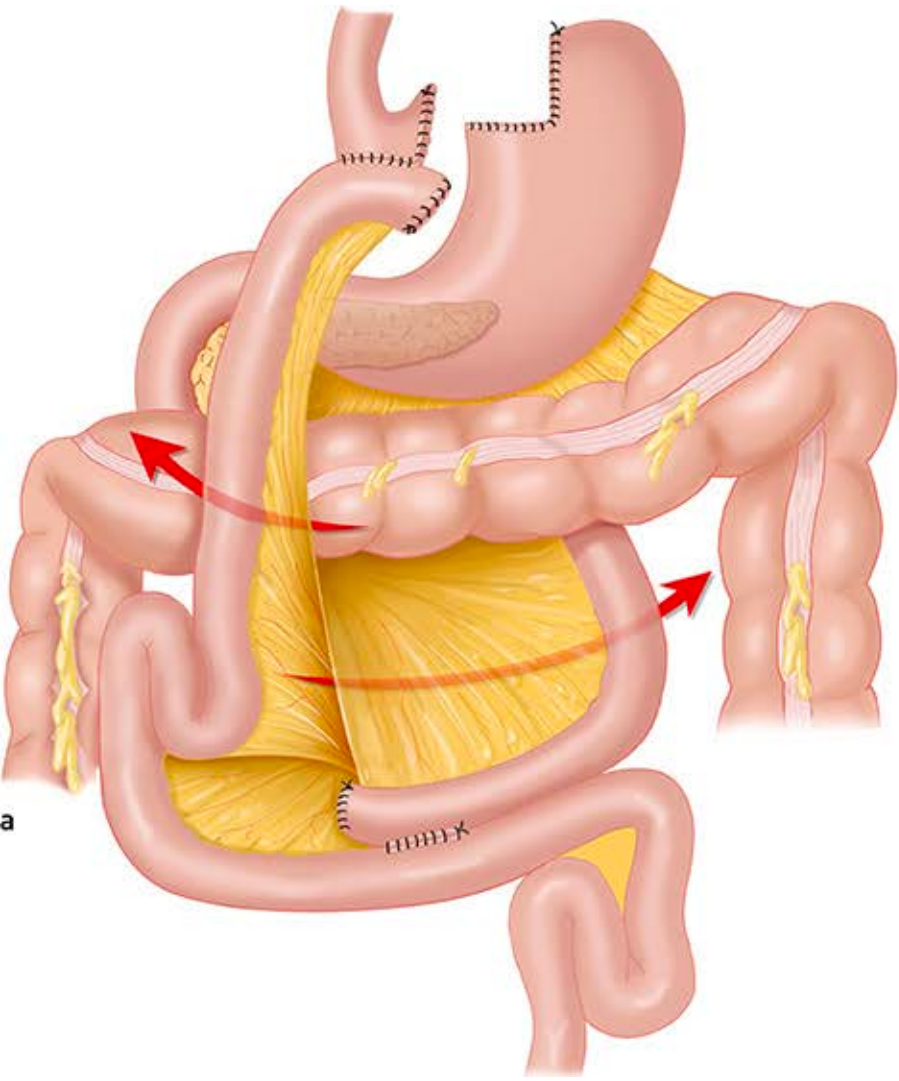
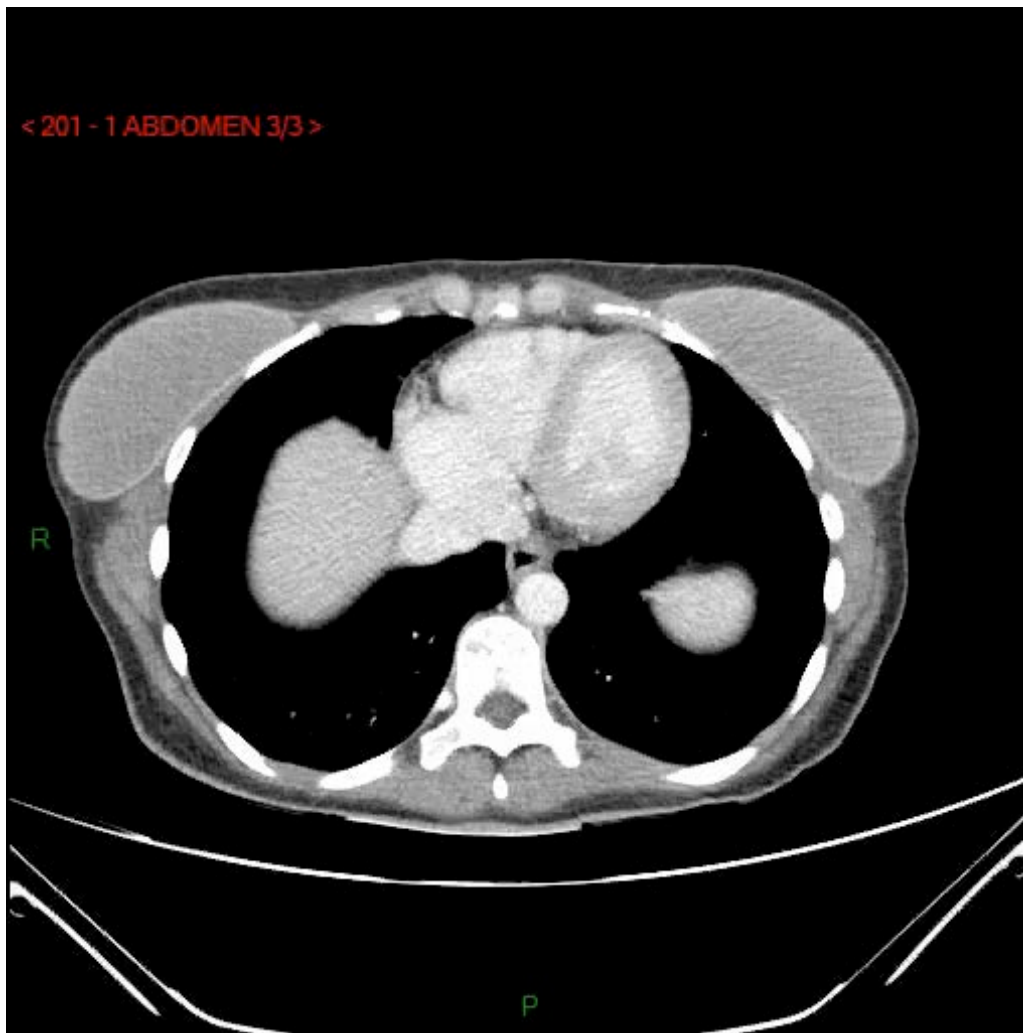




Figure 7 Hernie par le trou de Petersen

https://www.google.be/search?q=hernie+de+petersen&espv=2&biw=1280&bih=699&source=lnms&tbn=isch&sa=X&ved=0ahUKEwiO6trQ2qbSAhWDOsAKHcFICVwQ_AUIBigB#imgrc=Sjt1caZdDvWW4M:



Estomac et tumeurs

- Adénocarcinome
- Linite
- GIST
- Autres

Estomac

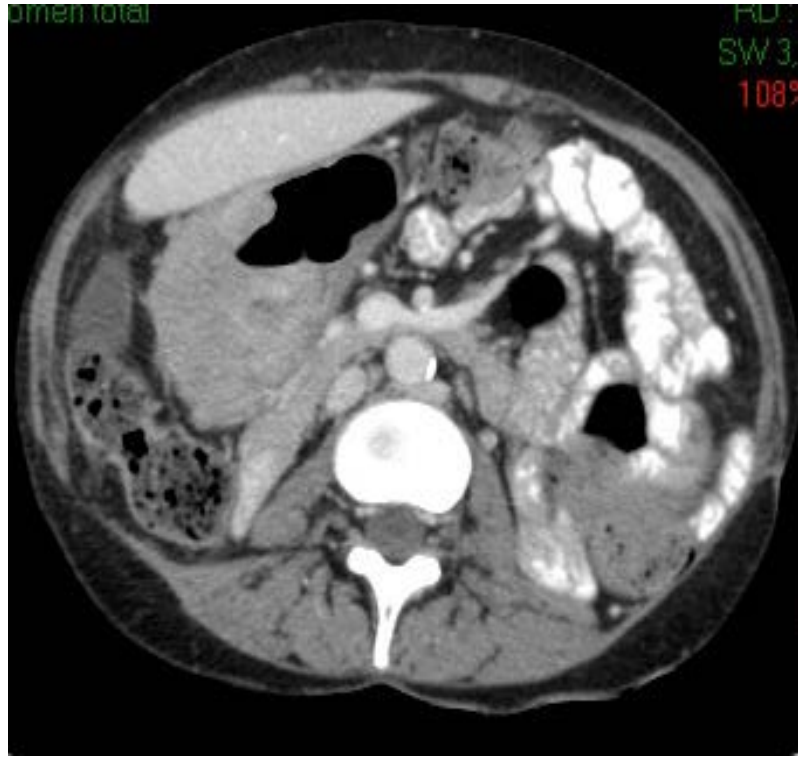
	US endo	RX	CT	Pet CT
Détection	endoscopie			
Stadification	+		+	+
Suivi	+		+	+

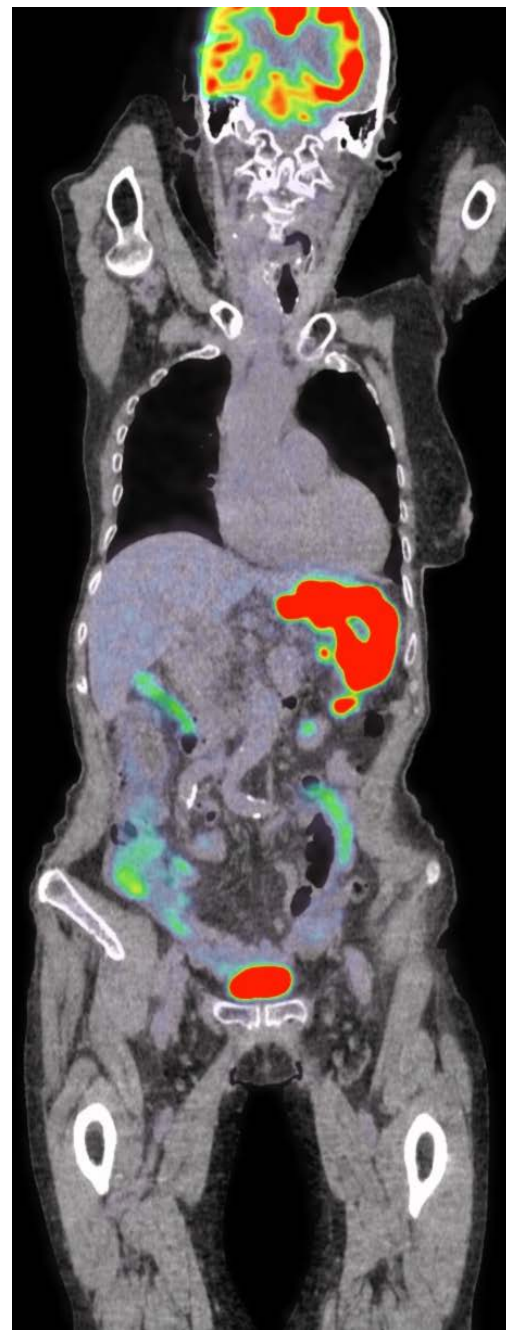
Tumeurs primitives :

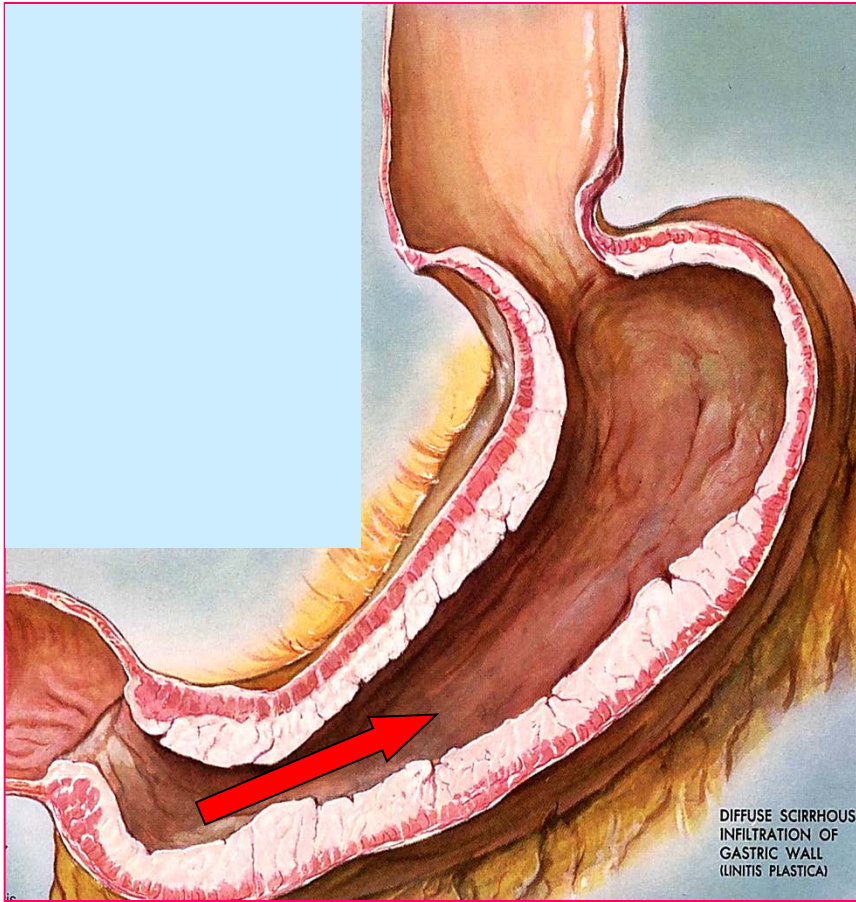
- Carcinomes :75 %
 - Linite : K peu différencié, ou métastase K sein ou Lymphome (7 à15 %)
- Lymphomes : 20 %
- GIST: localisation gastrique préférentielle: 1 à 2 %

Métastases:

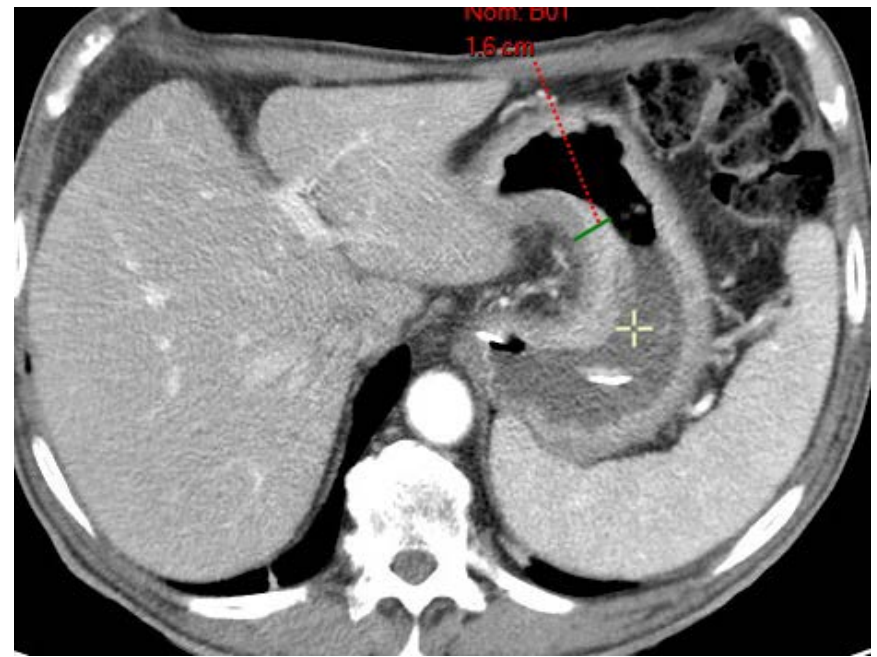
- Sein
- Poumon
- Ovaire
- mélanome







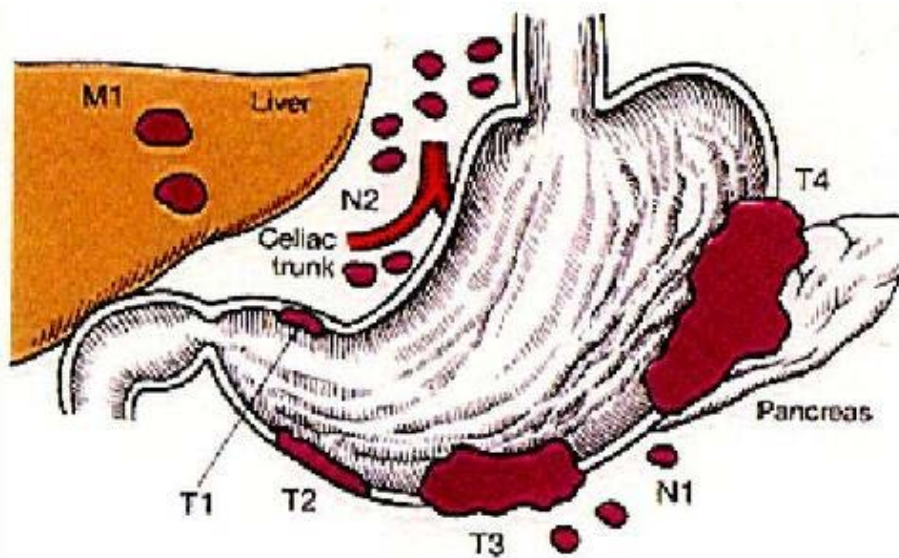
In Netter, Atlas d'anatomie humaine, Masson, 2007



cancer infiltrant (linite plastique)

Néoplasie gastrique et extension

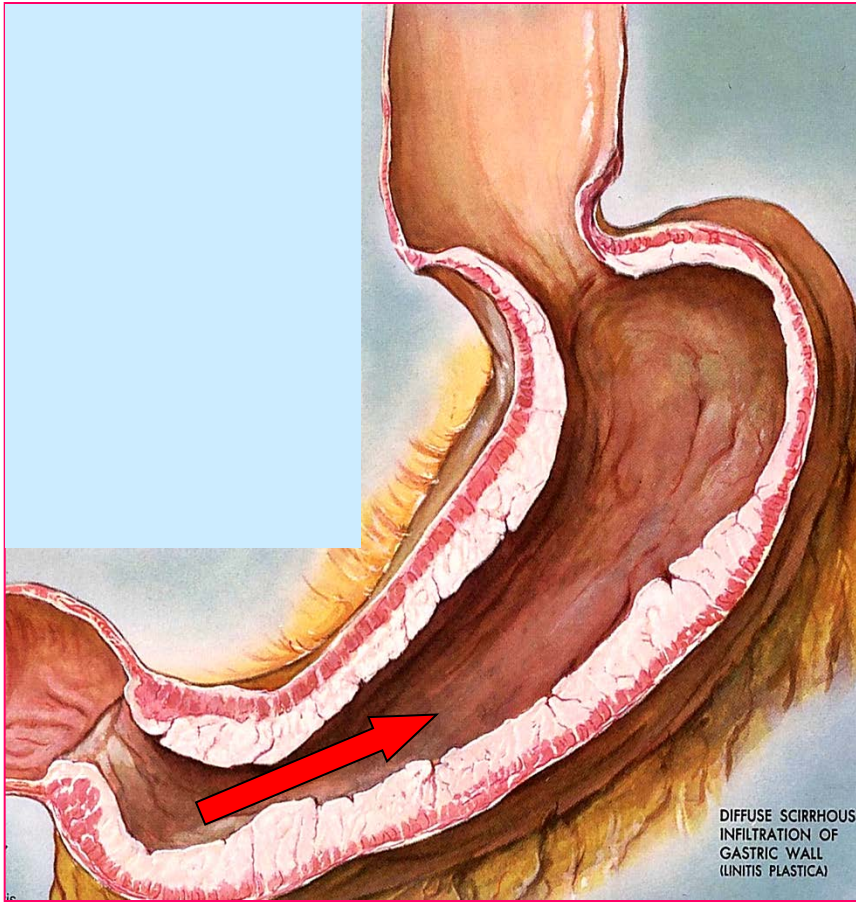
- N: ganglions régionaux



Medscape ©

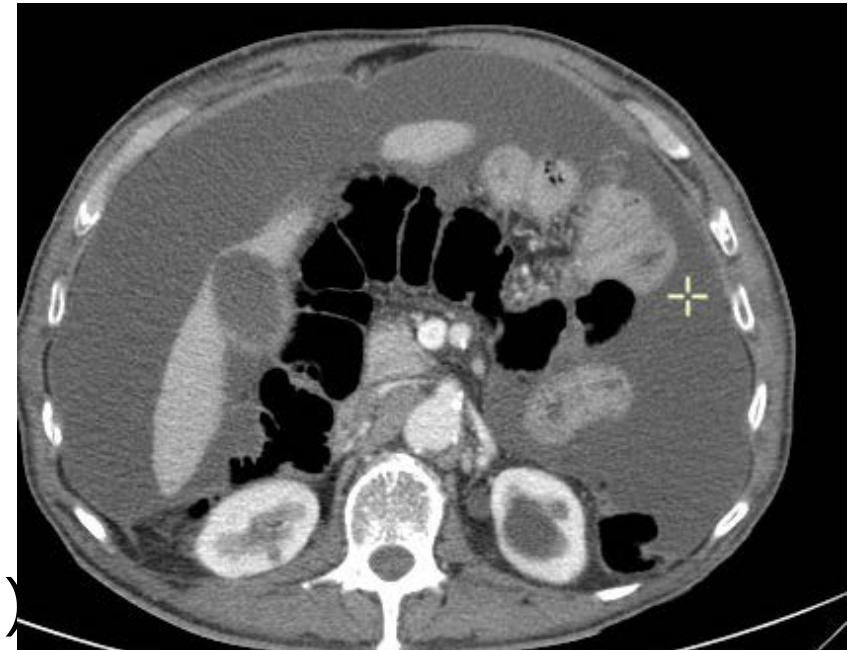
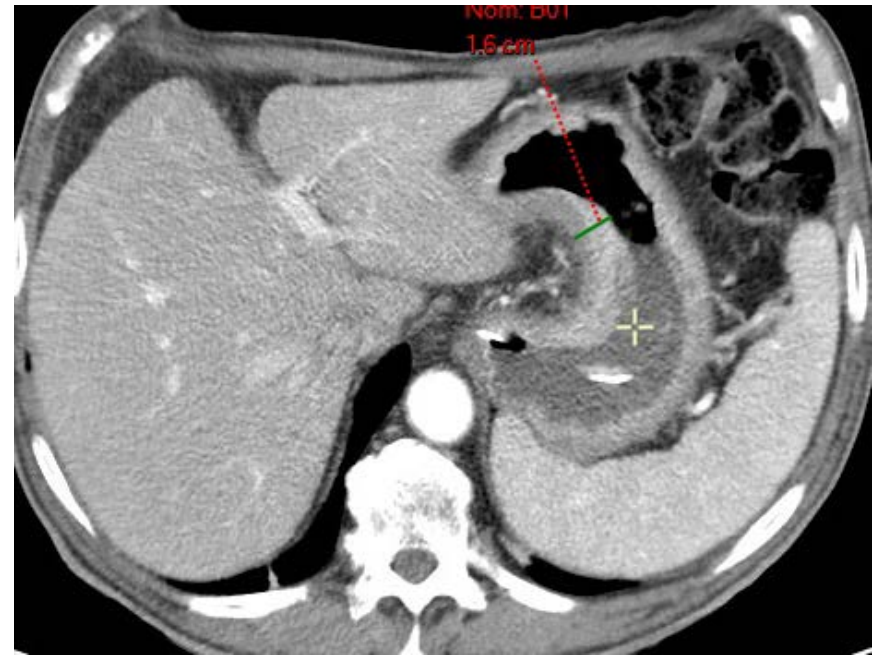
<http://www.medscape.com>





In Netter, Atlas d'anatomie humaine, Masson, 2007

cancer infiltrant (linite plastique)

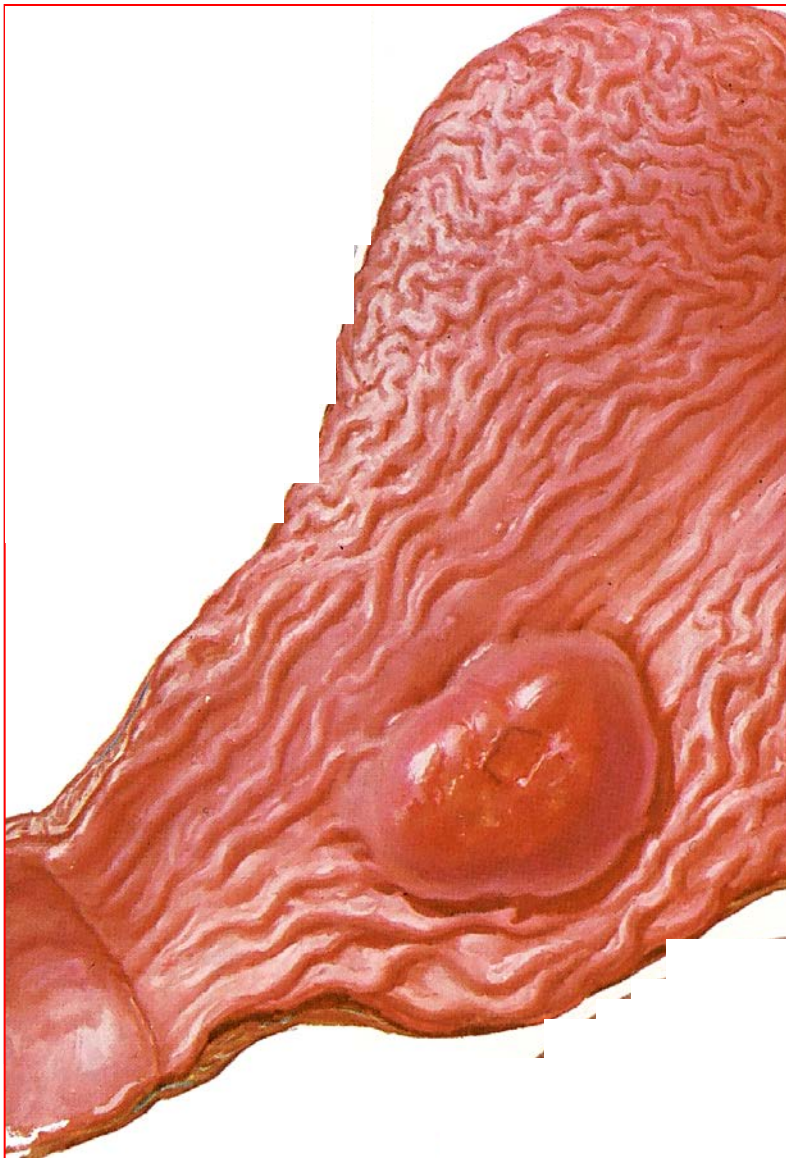


Néoplasie gastrique et extension

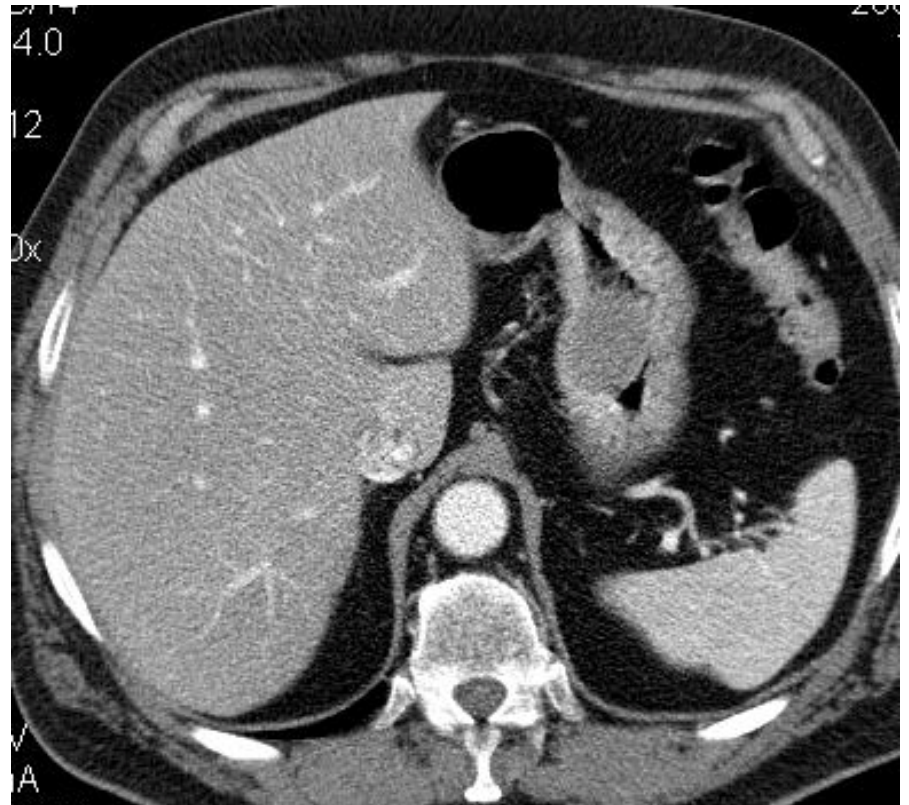
- N: ganglions régionaux
- Extension Péritonéale :
 - Péritoine
 - Ovaires: tumeur de Krukenberg

GIST

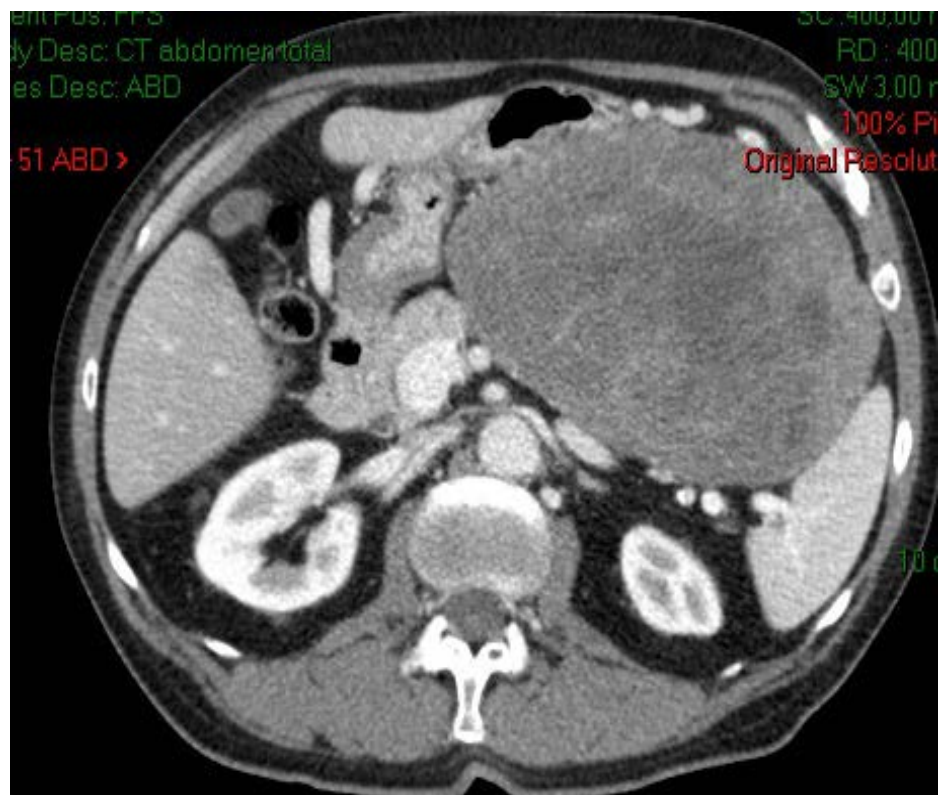
- = « gastrointestinal stromal tumors »
- = ensemble des tumeurs conjonctives du tube digestif, à cellules fusiformes et exprimant le CD 117 (« protein C kit »)
 - GIST à différenciation cellulaire musculaire lisse (léiomyome)
 - GIST à différenciation cellulaire nerveuse (plexosarcome)
 - GIST à différenciation nerveuse
 - GIST mixtes
 - GIST indifférenciés
- > cellules de Cajal
- Peuvent se développer dans un contexte particulier
 - Neurofibromatose de type 1 (NF1)
 - GIST avec prédilection grêle, lésions de petite taille (< 2 cm), inactivité mitotique, pas de signes cliniques
 - Triade de Carney:
 - GIST gastrique, paragangliome, chondrome pulmonaire



In Netter, Atlas d'anatomie humaine, Masson, 2007



tumeur sous-muqueuse
 contour lisse
 angles de raccord droits ou (obtus)
 léiomyome



GIST

	US endo	RX	CT	Pet CT
Détection	Endoscopie		+	
Stadification	+		+	+
Suivi	+	+	+	+

Estomac site le plus fréquent

- les lésions peuvent s'ulcérer et saigner, ou se nécroser et présenter une cavité centrale dans le suivi de la nécrose.

Critère de malignité : > 5 cm

Diagnostic initial

- de la lésion
- des localisations secondaires

Suivi

- De la lésion
- des localisations secondaires
 - critères de Choi

Table 2 Response criteria and modified CT criteria according to RECIST and Choi

Response	RECIST 1.1	Choi
PD	Increase of at least 20% and 5 mm in SLD New lesion(s) Unequivocal progression of non-target lesion(s)	Increase of at least 10% in SLD and decrease of less than 15% in MLD ^a New lesion(s) New or increasing nodule(s) within a mass
SD	Decrease of less than 30% and increase of less than 20% in SLD	Decrease of less than 10% and increase of less than 10% in SLD and decrease of less than 15% in MLD ^a
PR	Decrease of at least 30% in SLD	Decrease of at least 10% in SLD and decrease of at least 15% in MLD ^a
CR	Complete remission	Complete remission

PD, progressive disease; SD, stable disease; PR, partial complete response; CR, complete response; SLD, sum of the longest diameter according to RECIST^[9]; MLD, mean lesion density according to modified CT criteria^[11].

^aComplementary recommendation of the German GIST Working Group: density changes should account for at least 10 HU.