Oesophagus / Esophagus

L2

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الثلاثاء ١٨ / ١٠ / ٢٠٢٢

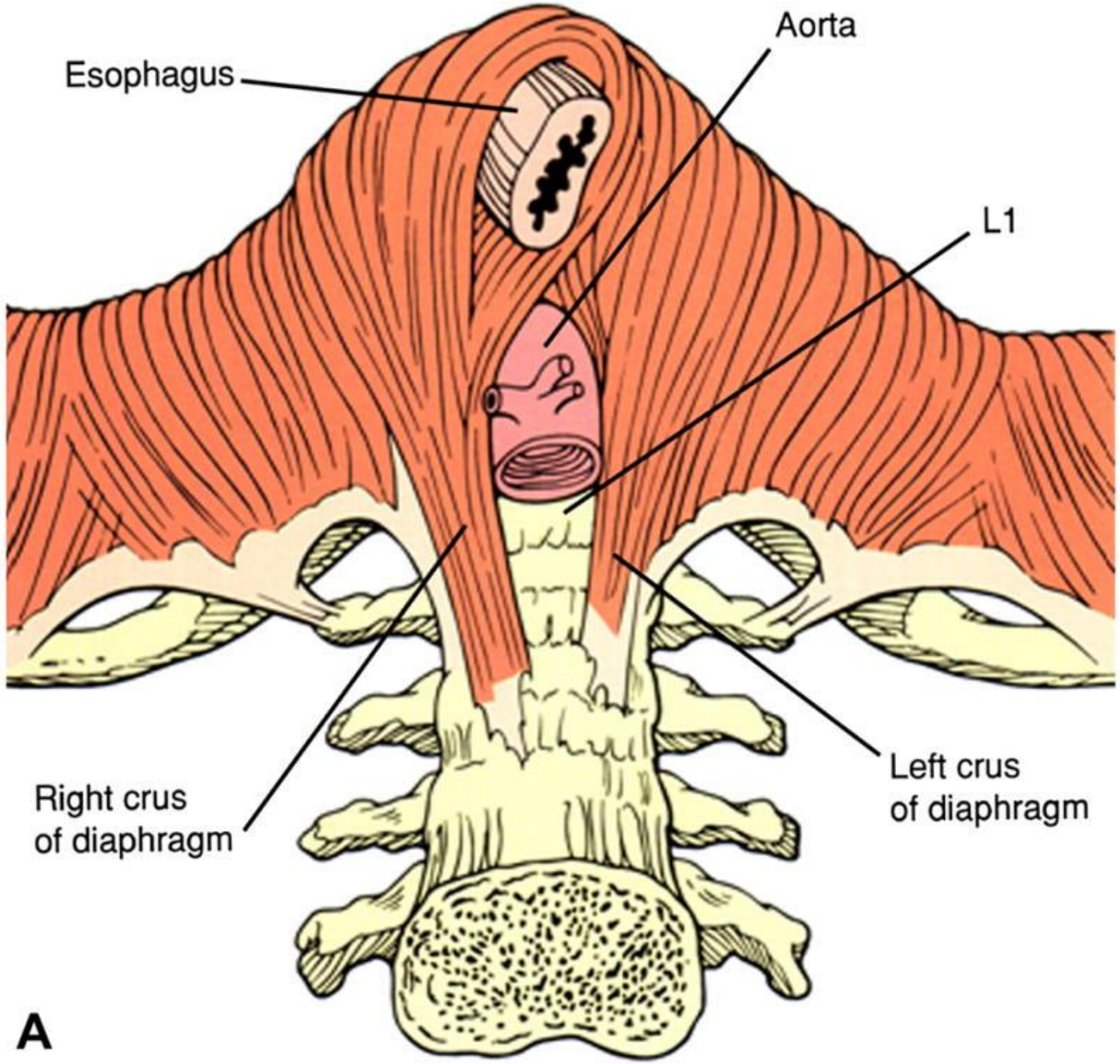
L2

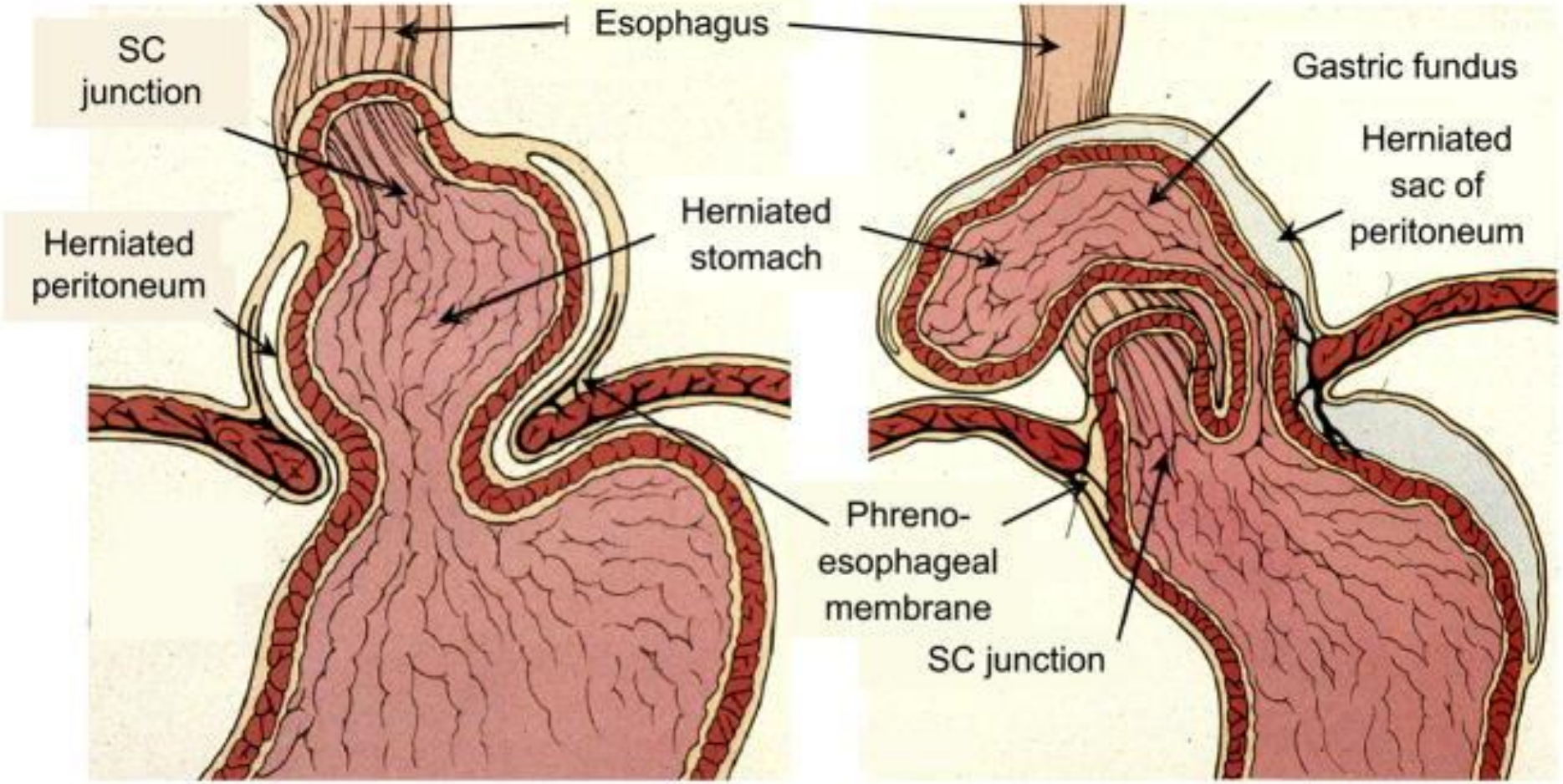
Bailey & Love's Short Practice of Surgery, 27th Edition . CH 60 .
Browse's Introduction to The Symptoms and Signs of Surgical Disease , 4th Edition.

- **Congenital abnormalities.**
- **Foreign bodies.**
- **Perforation(spontaneous Barotrauma),Pathological,Penetrating injury, Foreign body,Instrumental) (Chemical, Physical , mechanical and Ca.,.**
- **Mallory Weiss Syndrome.**
- **Corrosive Injury.**
- **Drug induced Injury.**
- **G.O.R.D.**
- **Barrett's Oesophagus.**
- **Hiatus Hernia.**
- **Neoplasm (Benign and Malignant).& post cricoid tumor.**
- **Motility disorders and diverticulae. (Achalasia, Webs,**
- **Infections (candida, Chagas disease)**
- **Crohn's diseae.**
- **Plummer vinson disease (Sideropenic Dysphagea).**
- **Varicose vein.**
- **Mediastinal fibrosis.**

Hiatal hernia

- Esophageal hiatus hernia (Sliding) G1 (the cardia is displaced into the chest) .
- Paraesophageal hiatus hernia (Rolling) G2: the cardia is displaced into the chest and the greater curve of the stomach rolls into the mediastinum .
- Mixed G3.


Esophagus
Aorta
L1
Right crus
of diaphragm
Left crus
of diaphragm
A


SC junction
Esophagus
Herniated peritoneum
Herniated stomach
Phreno-esophageal membrane
Gastric fundus
Herniated sac of peritoneum
SC junction

Para-esophageal Hernia (Rolling)

- Fixed cardia , greater curve in the chest (Lt).
- Potentially dangerous, because of volvulus .
- Colon / small bowel.
- Ps : Dysphagia, chest pain (relieved by a loud belch).
  Strangulation, gastric perforation and gangrene can occur.
- Ix : CXR (plain and contrast). CT scan and Endoscopy.
- Emergency / Elective surgery .
- Laparotomy / Laparoscopic .
- Reduction of the hernia, excision of the sac, reduction of the crural defect and some form of retention of the stomach in the abdomen +/- Mesh reinforcement.

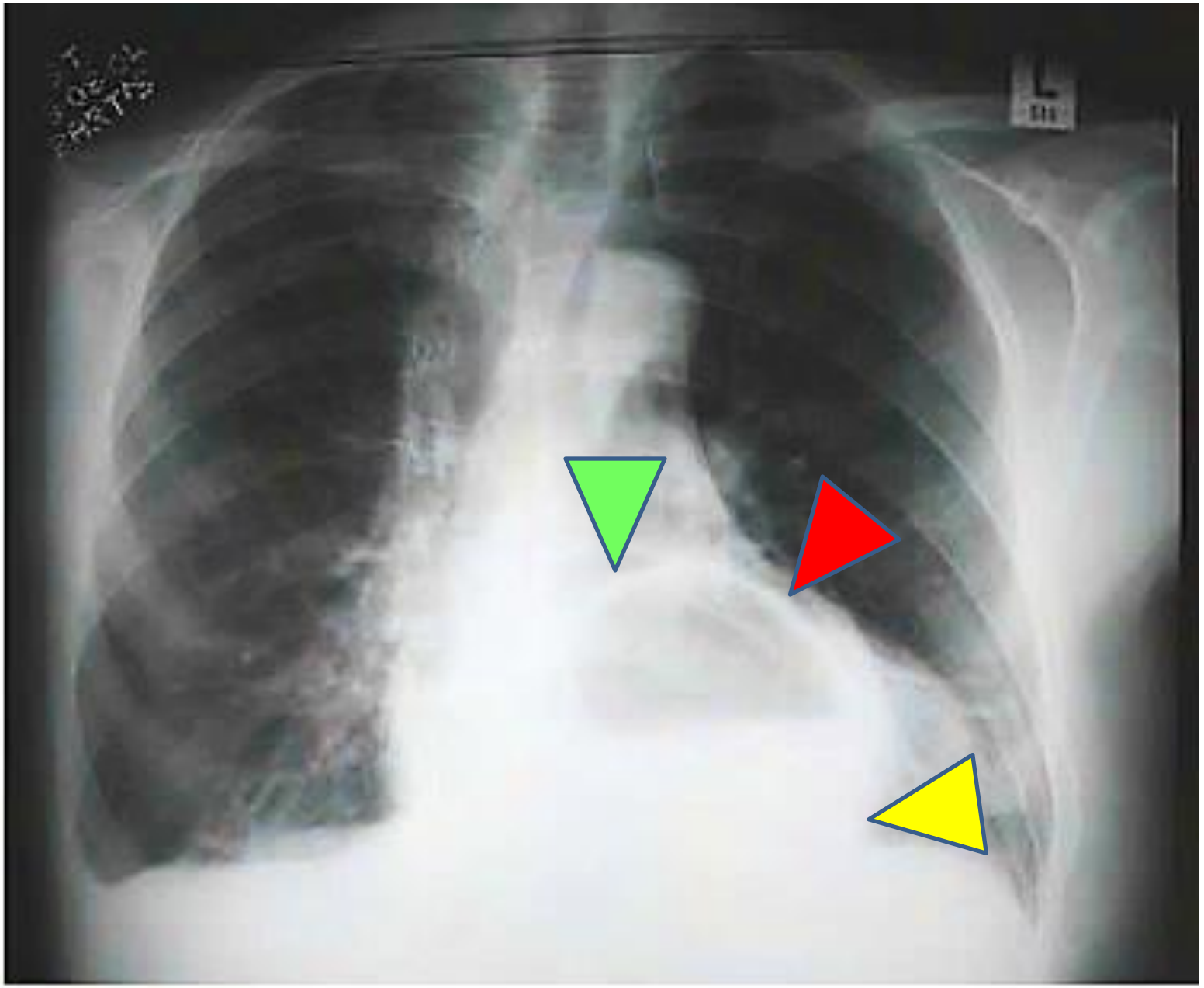
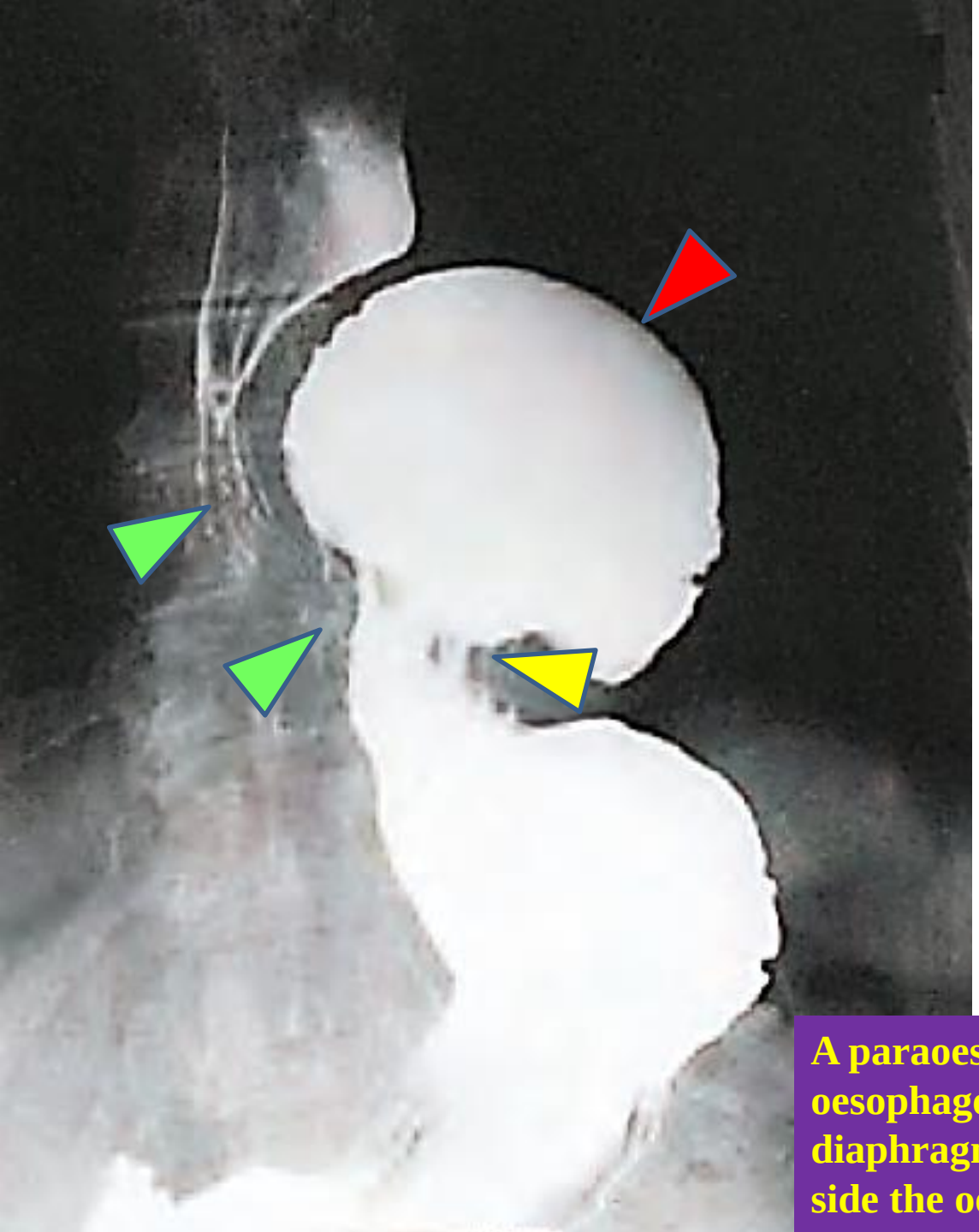


Figure 62.33 A gas bubble seen on a plain chest radiograph, showing the fundus of the stomach in the chest (courtesy of Dr Stephen



A paraoesophageal hernia showing the gastro-oesophageal junction just above the diaphragm and the fundus alongside the oesophagus, compressing the lumen.

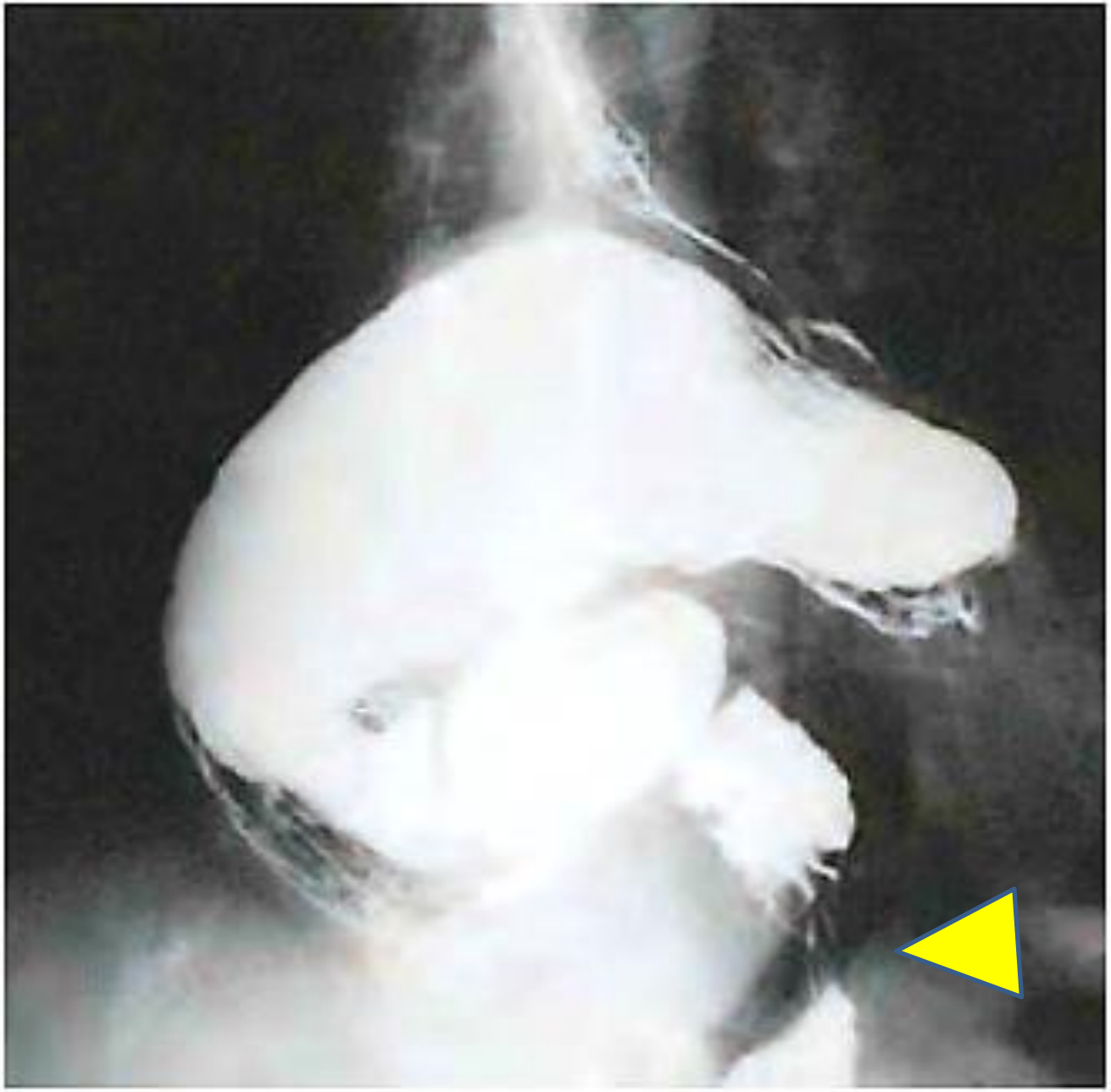
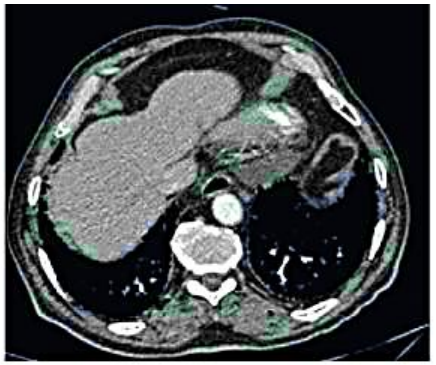
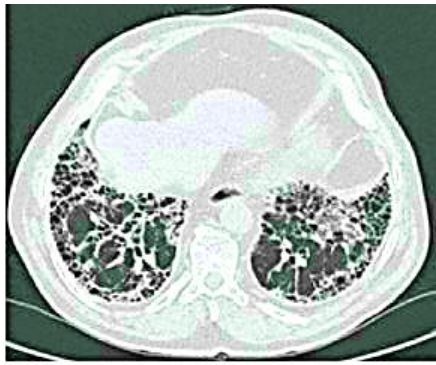


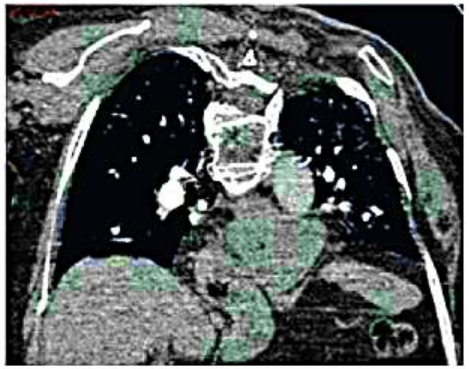
Figure 62.32 A huge paraoesophageal hernia with an upside-down stomach and the pylorus just below the hiatus.

Type I

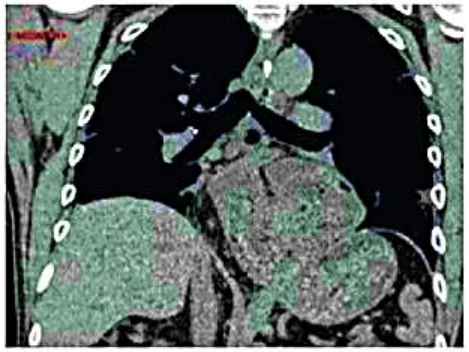




Type II



Type III



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Benign Tumours

- Rare.
- Mostly :GISTomas,lipoma & granular cell tumor.

Malignant Tumours

- it is a disease of mid to late adulthood, with a poor survival rate. Only 5–10% of those diagnosed will survive for 5 years
- 1ry: Mostly epithelial in origin (Seq > Adeno).
- Post cricoid tumor (Plummer–Vinson syndrome)
- 2nd: rare.

Carcinoma of the oesophagus

- Squamous cell usually affects the upper two-thirds; adenocarcinoma usually affects the lower third
- Common aetiological factors are tobacco and alcohol (squamous cell), GORD and obesity (adenocarcinoma)
- The incidence of adenocarcinoma is increasing
- Lymph node involvement is a bad prognostic factor
- Dysphagia is the most common presenting symptom, but is a late feature
- Accurate pretreatment staging is essential in patients thought to be fit to undergo 'curative' treatment

- Both M1 early.
- It is insidious.
- Early presentation (non specific unwell during swallowing).
- Barrett’s oesophagus
- Dysphagia, regurgitation & Wt. loss & odenophagea).
- Spread : Direct (Longitudinal / Lateral).and transperitoneal (Transcoelomic).

  Blood stream. (3 Ls, brain).

  Lymphatic (L.N.).(caudal/cranial)

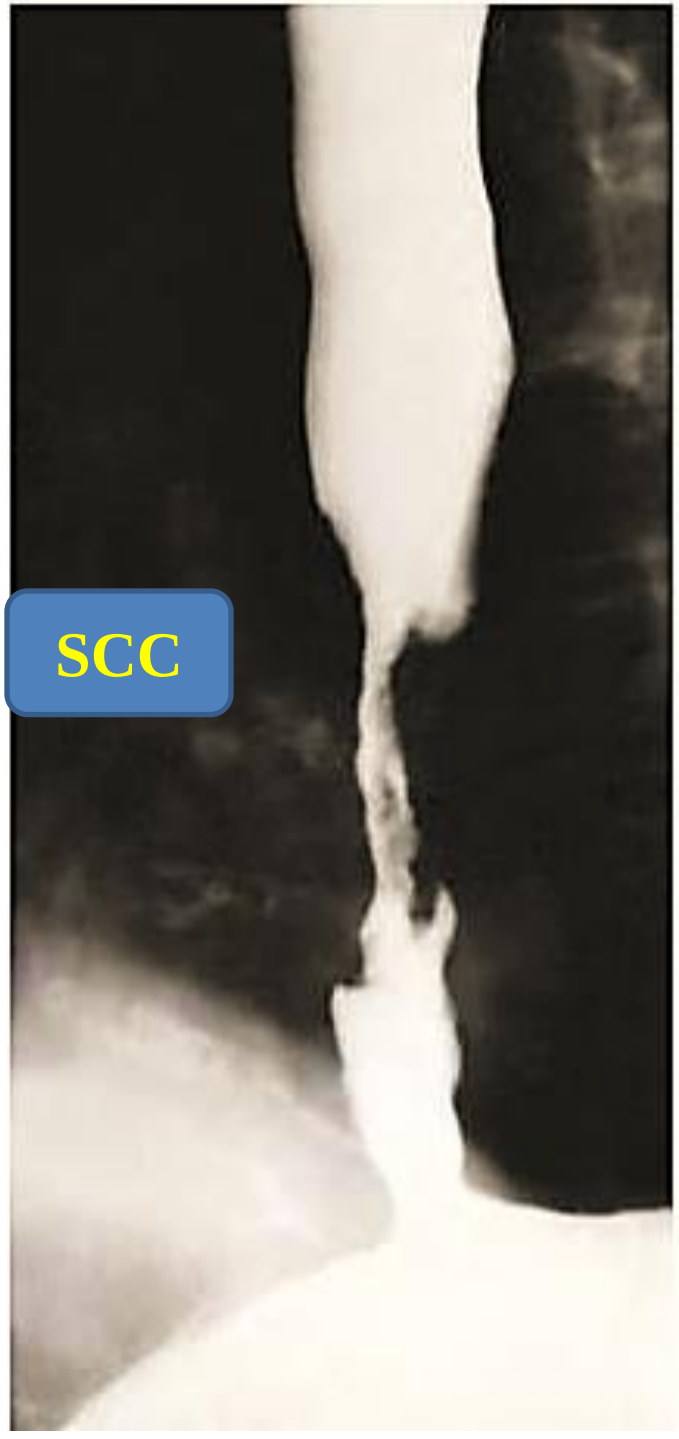
Advanced Malignancy
Surgical cure is unlikely

- R.L.N. palsy.(Hoarseness).
- Horner’s Syndrome.
- Chronic spinal pain.
- Diaphragmatic paralysis.
- Others.:Wt.Loss > 20%, Loss of Appetite.
- Cx L.N. & Supraclavicular LN.

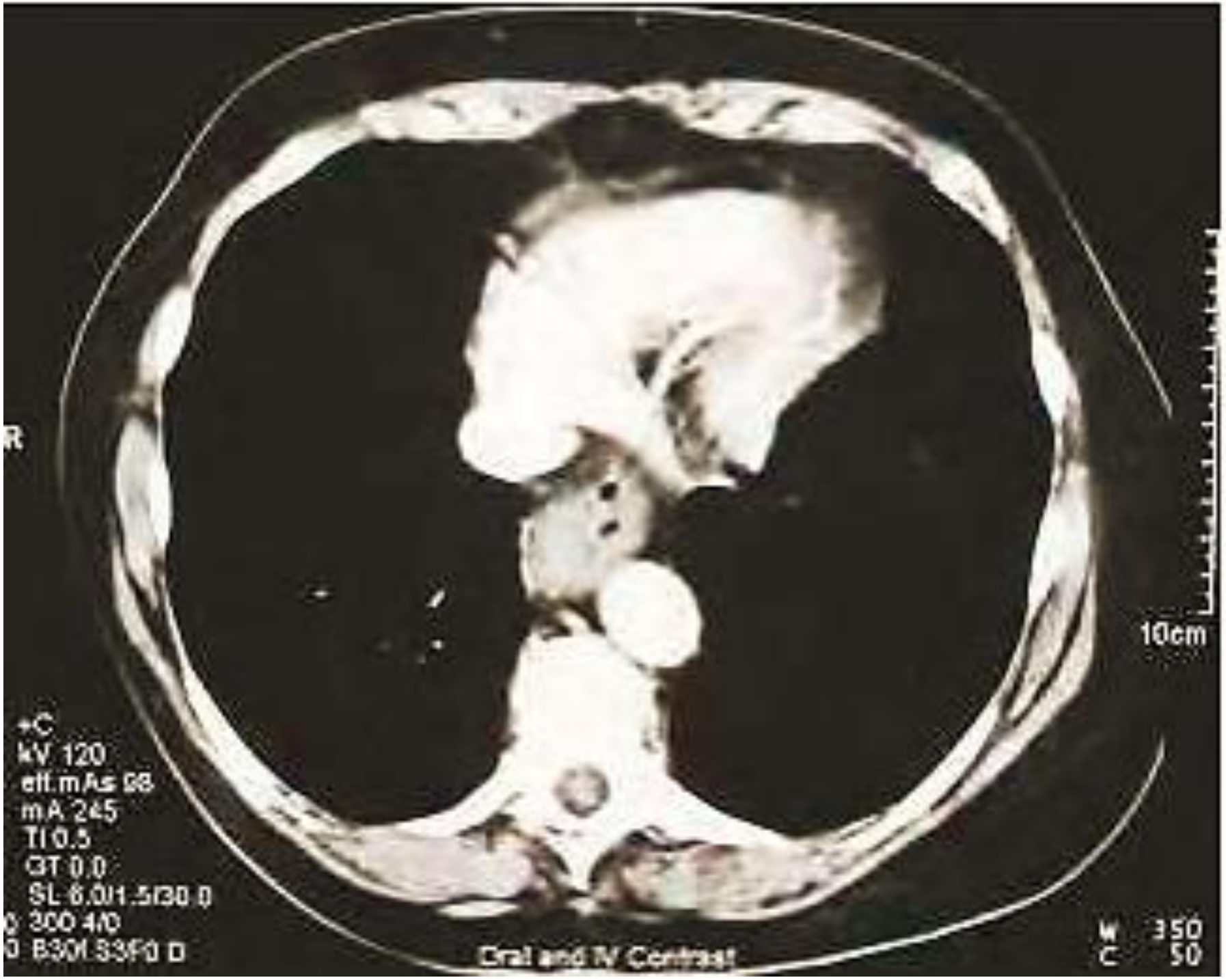
Investigations

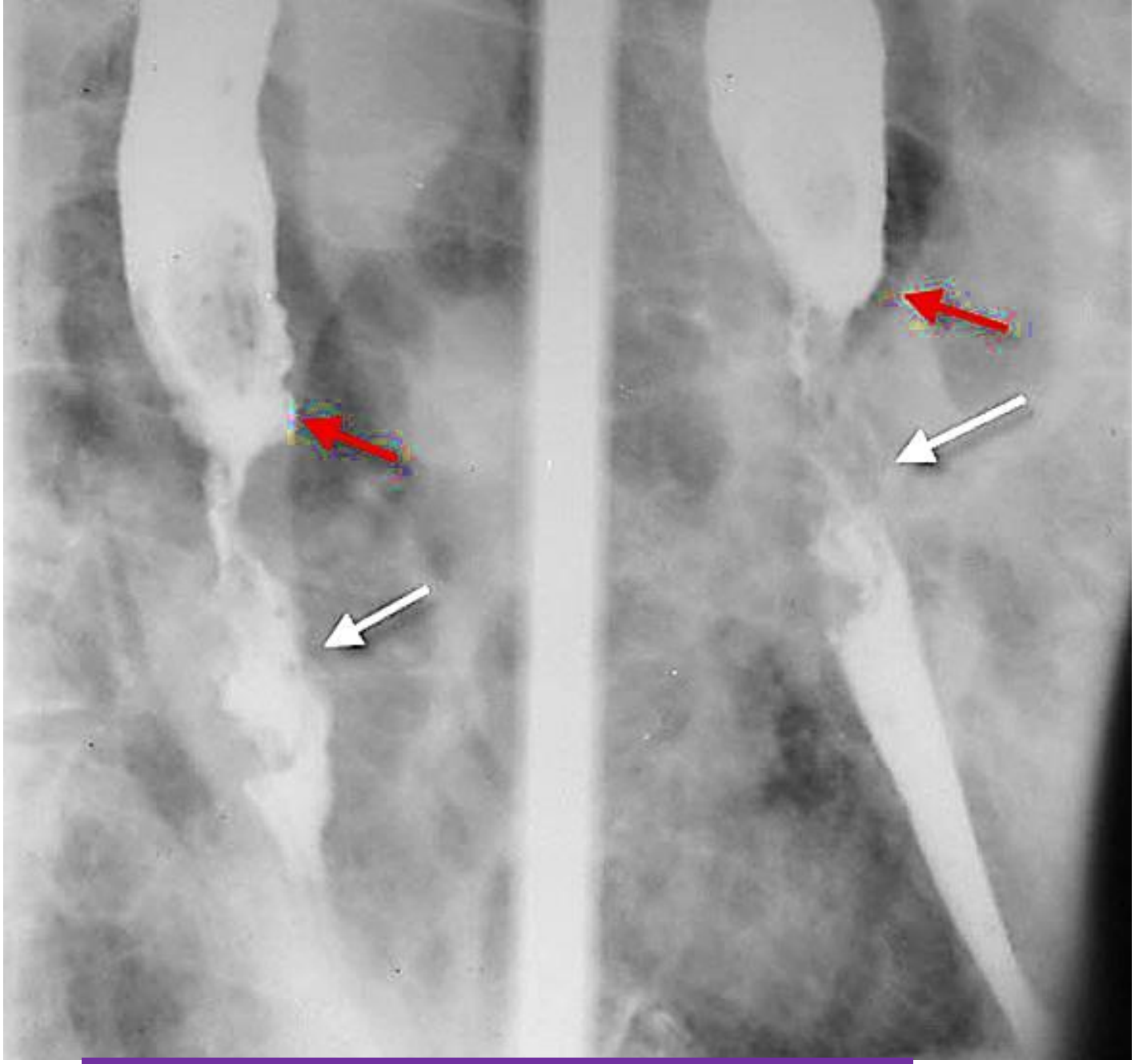
- Hematology & Biochemistry.
- C.X.R.
- Ba swallow.
- Endoscopy + Biopsy.
- Bronchoscopy.
- Endoluminal Ultrasonography.
- Abdominal Ultrasonography.
- PET + CT scan.
- MRI.
- Explorative Laparoscopy.(Trans peritoneal seeding). Ca cardia.


T.B.

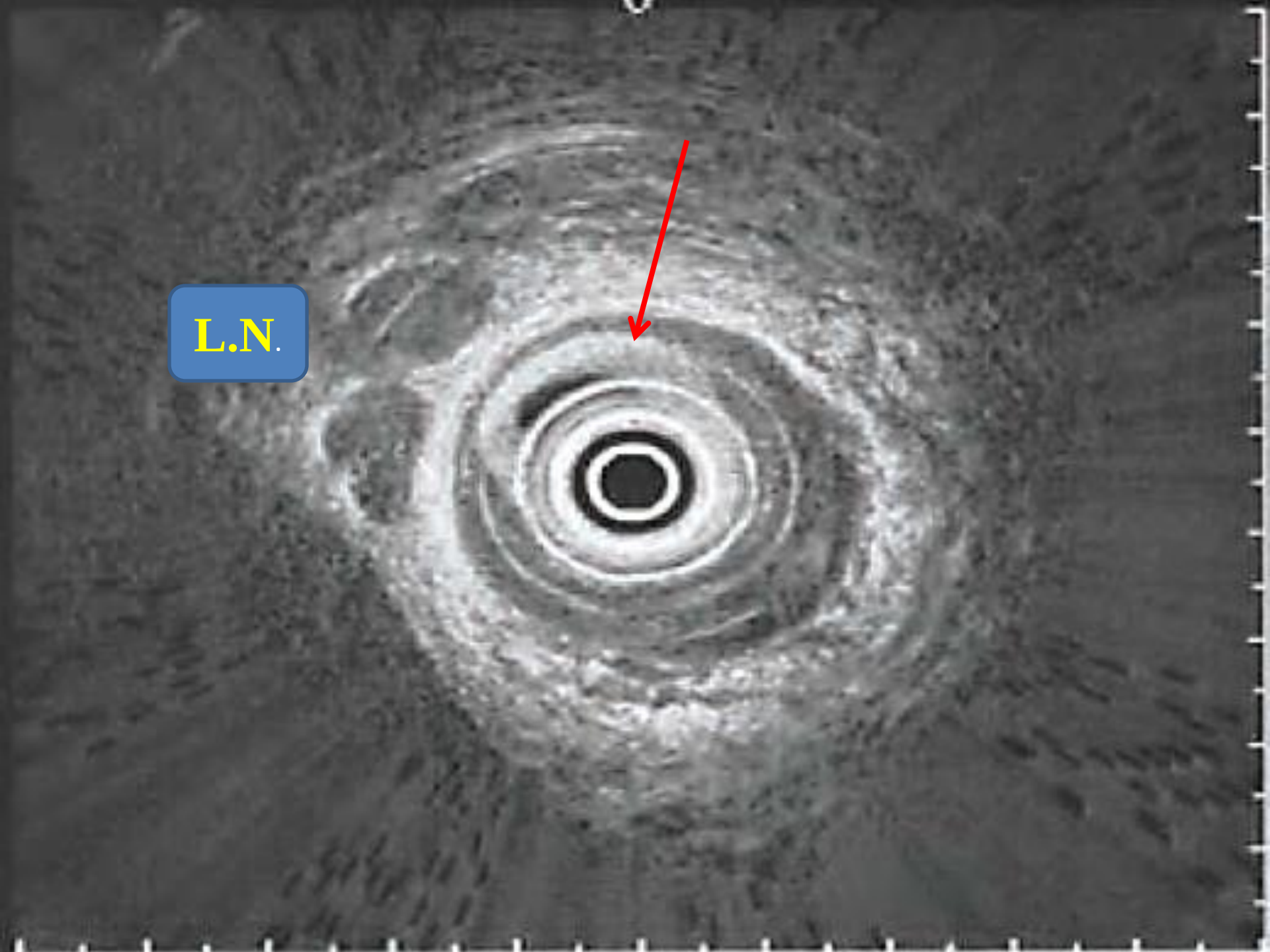

SCC

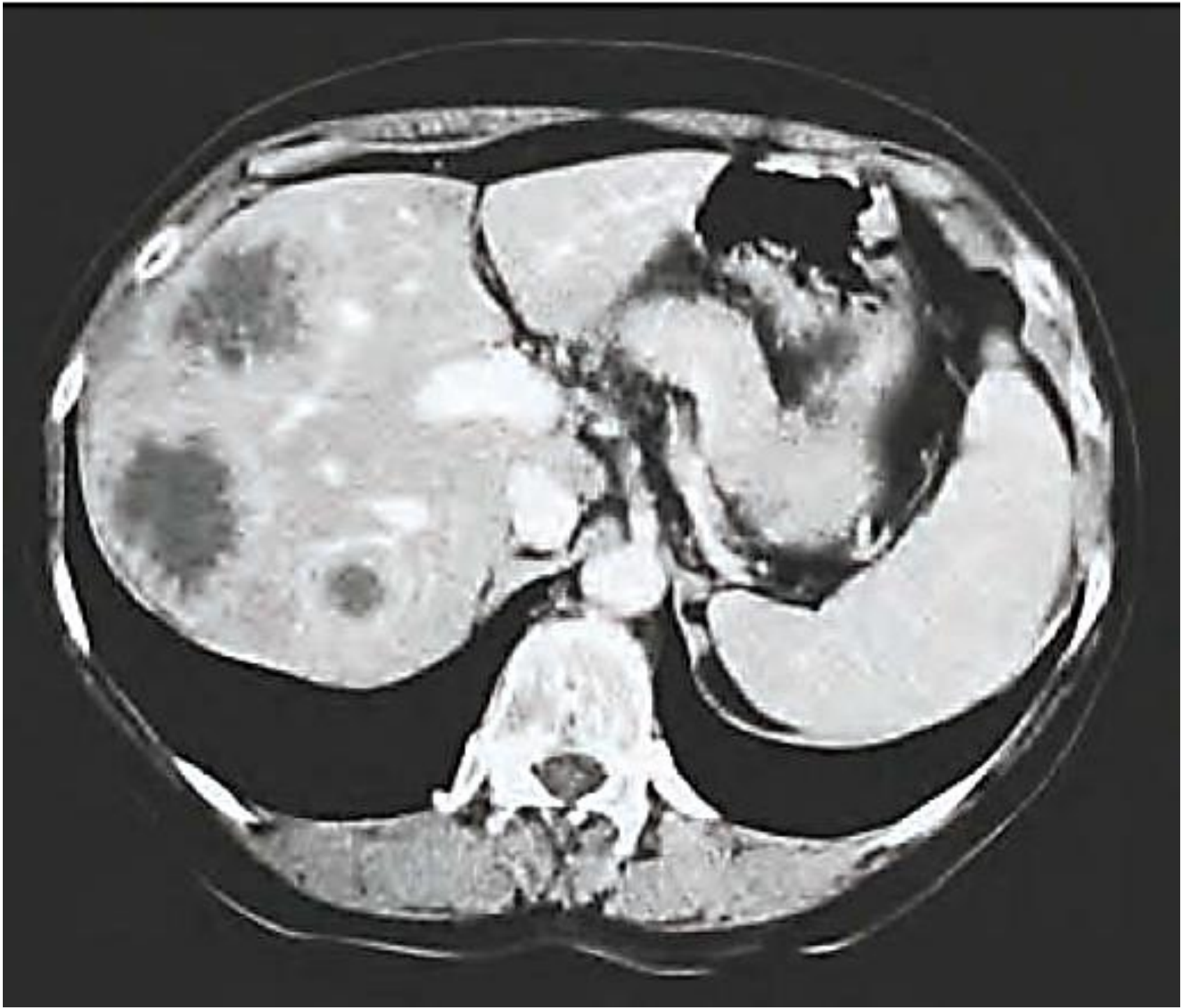

AdenoCa

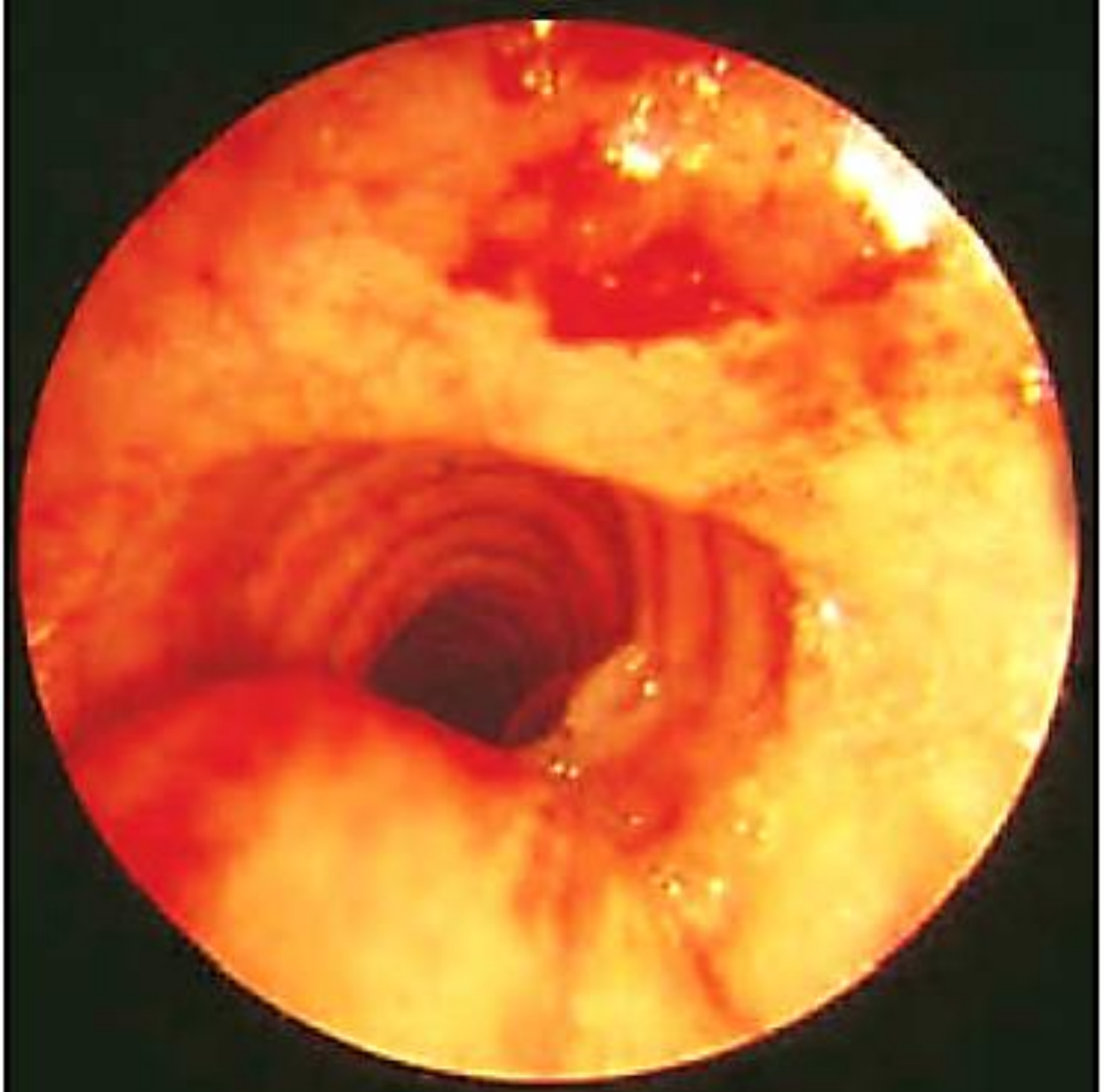

R
10cm
+C
kV 120
eff.mAs 98
mA 245
TI 0.5
GT 0.0
SL 6.0I1.5I30.0
300 4/0
B30f 33F0.0
Oral and IV Contrast
W 350
C 50

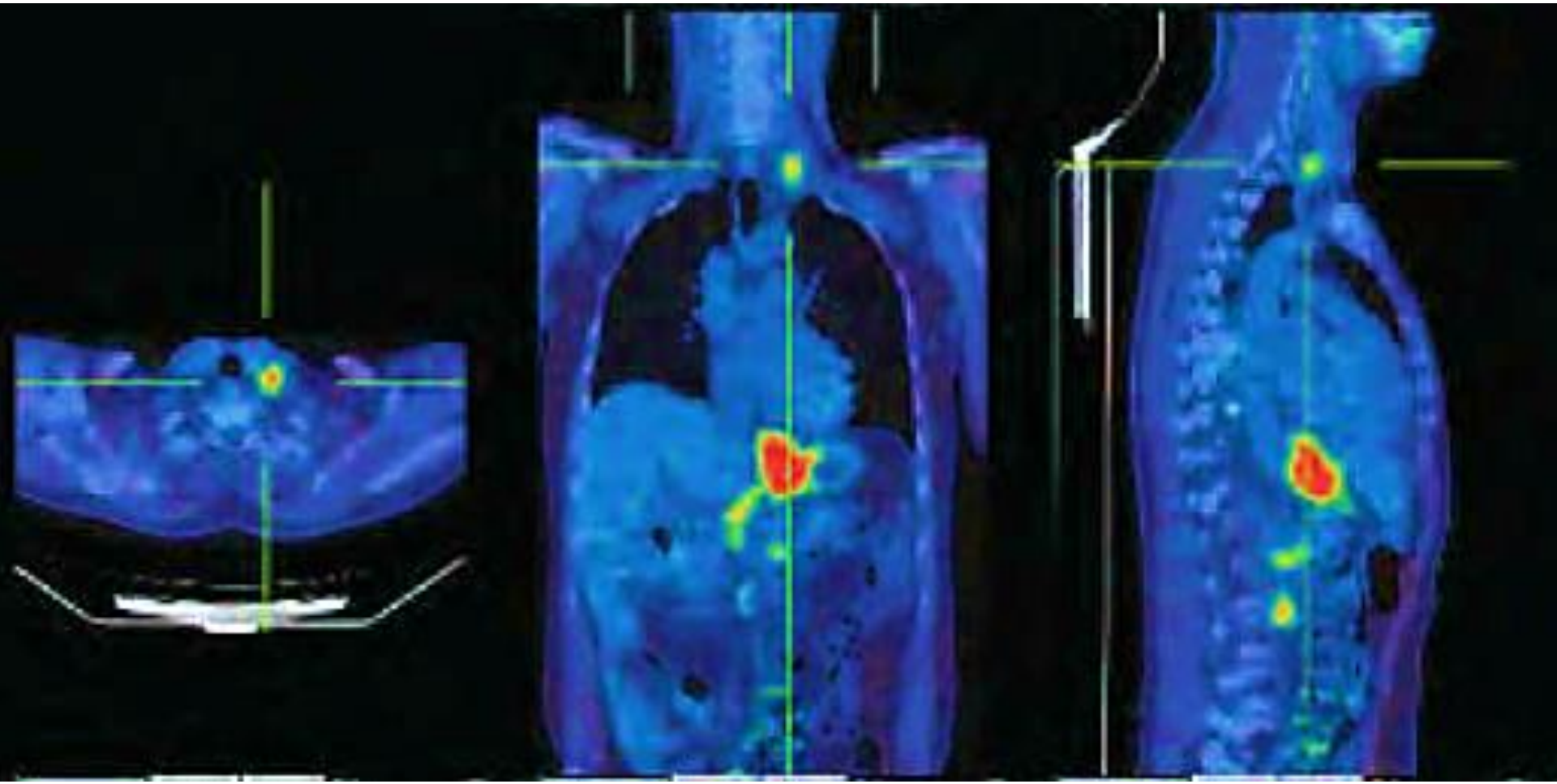


An irregular stricture with shouldered margins.


L.N.







Positron emission tomography/computed tomography demonstrating a primary tumour and a distant metastatic node.

Assessment and Evaluation

- Staging. (advancement of the disease) (T.N.M.)
- Grading.(Hitopathology)
- Operability.(Fitness)
- Resectability. (Resection of the tumour)
- Curability. (Complete free of malignancy)
- palliative management. (Symptomatic Relief)

Treatment of carcinoma of the oesophagus

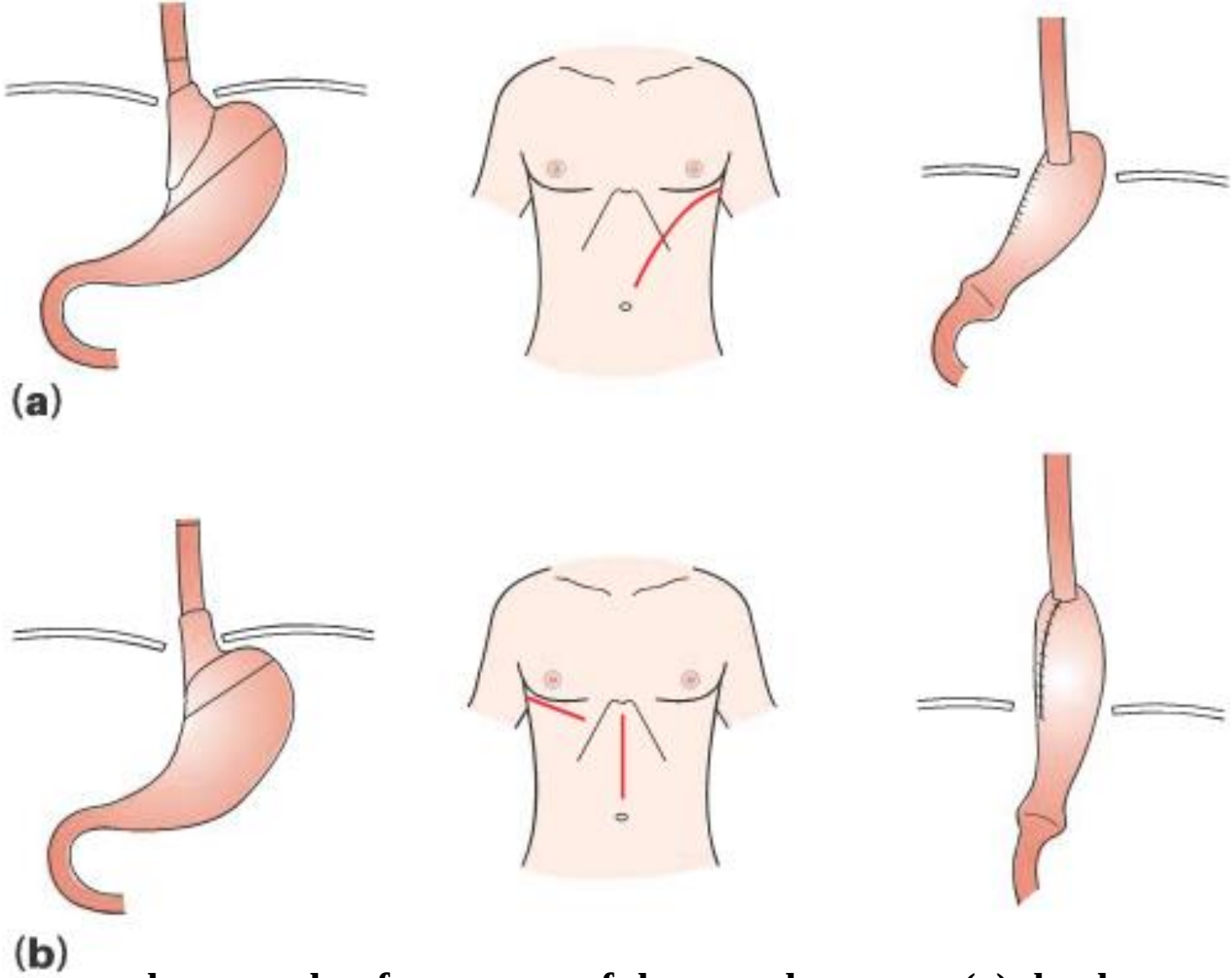
- Radical oesophagectomy is the most important aspect of curative treatment
- Neoadjuvant treatments before surgery may improve survival in a proportion of patients
- Chemoradiotherapy alone may cure selected patients, particularly those with squamous cell cancers
- Useful palliation may be achieved by chemo-/radiotherapy or endoscopic treatments

Modalities of Treatment

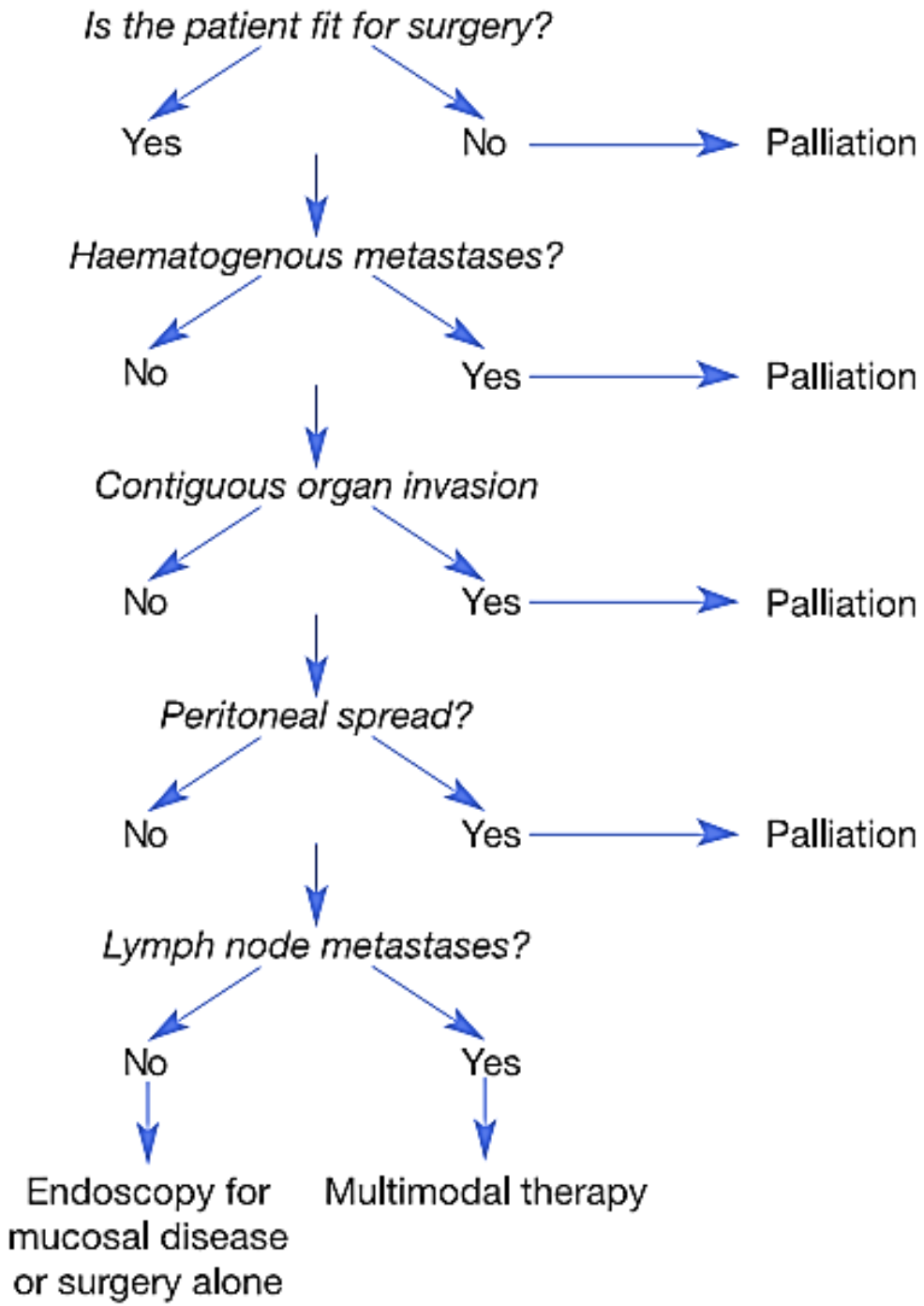
- Surgery (EMR T1a, Radical surgery Esophagectomy +L.N. clearance.).
- Chemotherapy.(Neoadjuvant & adjuvant).
- D.X. Therapy (Radiotherapy).
- Radiofrequency Ablation.
- Palliative (Thermal recanalization, Stent).

Esophagectomy

- 10 cm above , 5 cm below .If not achieved then Radiotherapy.
- Transhiatal (Thoracoabdominal).
- Iver Lewis (Abdominal then Thoracic).
- Mckoen operation (Cx).



The two usual approaches for surgery of the oesophagus are (a) the thoracoabdominal, which opens the abdominal and thoracic cavities together, and (b) the two-stage Ivor Lewis approach, in which the abdomen is opened first, closed and then the thoracotomy is performed. In the McKeown operation, a third incision in the neck is made to complete the cervical anastomosis.


Is the patient fit for surgery?
Yes
No
Palliation
Haematogenous metastases?
No
Yes
Palliation
Contiguous organ invasion
No
Yes
Palliation
Peritoneal spread?
No
Yes
Palliation
Lymph node metastases?
No
Yes
Endoscopy for mucosal disease or surgery alone
Multimodal therapy

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Esophageal Motility disorders

- Pain.(severe spasm).
- Dysphagia.
- Barium swallow.
- Manometry.

Classification of Motility disorders

- Pharyngo-Esopgageal
- Body of the esophagus.
- L.O.S.

TABLE 62.3 General classification of oesophageal motility disorders.

Disorders of the pharyngo-oesophageal junction
Neurological – stroke, motor neuron disease, multiple sclerosis, Parkinson's disease
Myogenic – myasthenia, muscular dystrophy
Pharyngo-oesophageal (Zenker's) diverticulum
Disorders of the body of the oesophagus
Diffuse oesophageal spasm
Nutcracker oesophagus
Autoimmune disorders – especially systemic sclerosis (CREST)
Reflux associated
Idiopathic
Allergic
Eosinophilic oesophagitis
Non-specific oesophageal dysmotility
Disorders of the lower oesophageal sphincter
Achalasia
Incompetent lower sphincter (i.e. GORD)

TABLE 62.4 The Chicago Classification of oesophageal motility v3.0.

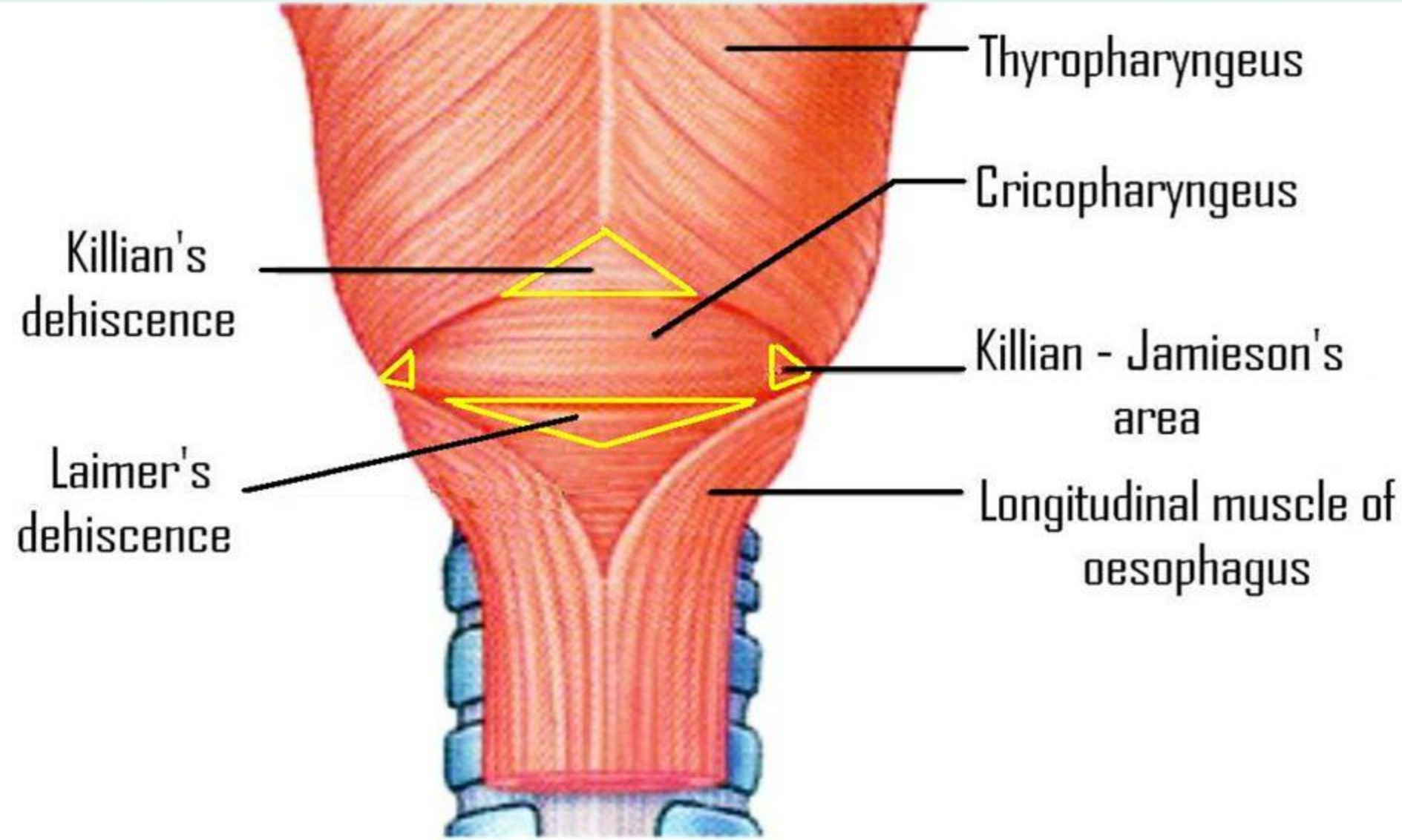
Achalasia and EGJ outflow obstruction	Criteria
Type I achalasia (classic achalasia)	Elevated median IRP (>15 mmHg), 100% failed peristalsis (DCI <100 mmHg·s·cm) *Premature contractions with DCI values* <450 mmHg·s·cm *satisfy criteria for failed peristalsis*
Type II achalasia (with oesophageal compression)	Elevated median IRP (>15 mmHg), 100% failed peristalsis, panoesophageal pressurisation with ≥20% of swallows *Contractions may be masked by oesophageal pressurisation and DCI should not be calculated*
Type III achalasia (spastic achalasia)	Elevated median IRP (>15 mmHg), no normal peristalsis, premature (spastic) contractions with DCI >450 mmHg·s·cm with ≥20% of swallows *May be mixed with panoesophageal pressurisation*
EGJ outflow obstruction	Elevated median IRP (>15 mmHg), sufficient evidence of peristalsis such that criteria for types I–III achalasia are not met
Major disorders of peristalsis	(Not encountered in normal individuals)
Absent contractility	Normal median IRP, 100% failed peristalsis *Achalasia should be considered when IRP values are borderline and when there is evidence of oesophageal pressurisation* *Premature contractions with DCI values* <450 mmHg·s·cm *meet criteria for failed peristalsis*
Distal oesophageal spasm	Normal median IRP, ≥20% premature contractions with DCI >450 mmHg·s·cm. Some normal peristalsis may be present
Hypercontractile oesophagus (jackhammer)	At least two swallows with DCI >8000 mmHg·s·cm *Hypercontractility may involve, or even be localised to, the LES*
Minor disorders of peristalsis	(Characterised by contractile vigour and contraction pattern)
Ineffective oesophageal motility (IEM)	≥50% ineffective swallows *Ineffective swallows can be failed or weak (DCI <450 mmHg·s·cm)* *Multiple repetitive swallow assessment may be helpful in determining peristaltic reserve*
Fragmented peristalsis	≥50% fragmented contractions with DCI >450 mmHg·s·cm
Normal oesophageal motility	Not fulfilling any of the above classifications

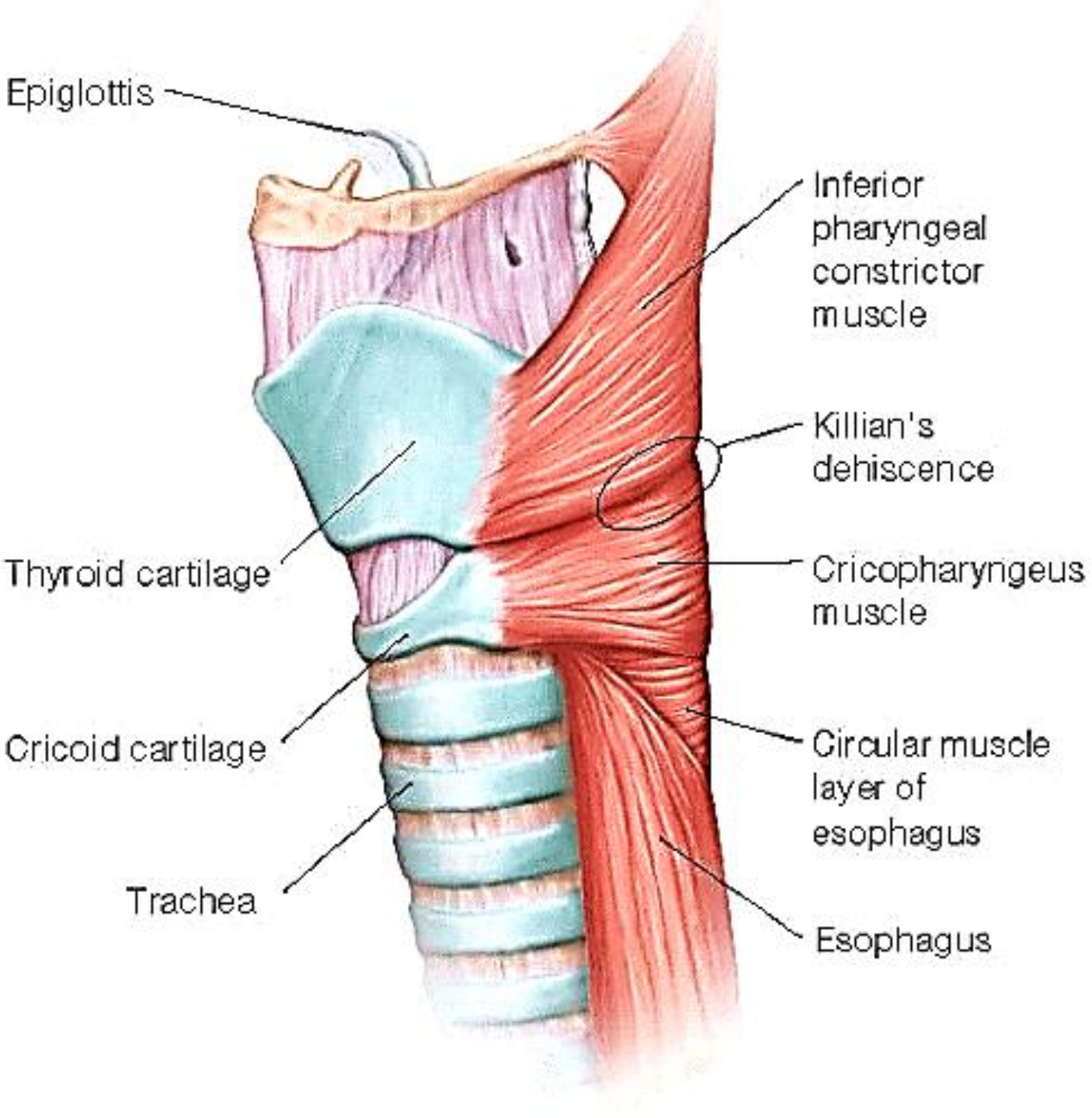
Pharyngeal Pouch(Zenker's diverticulum)

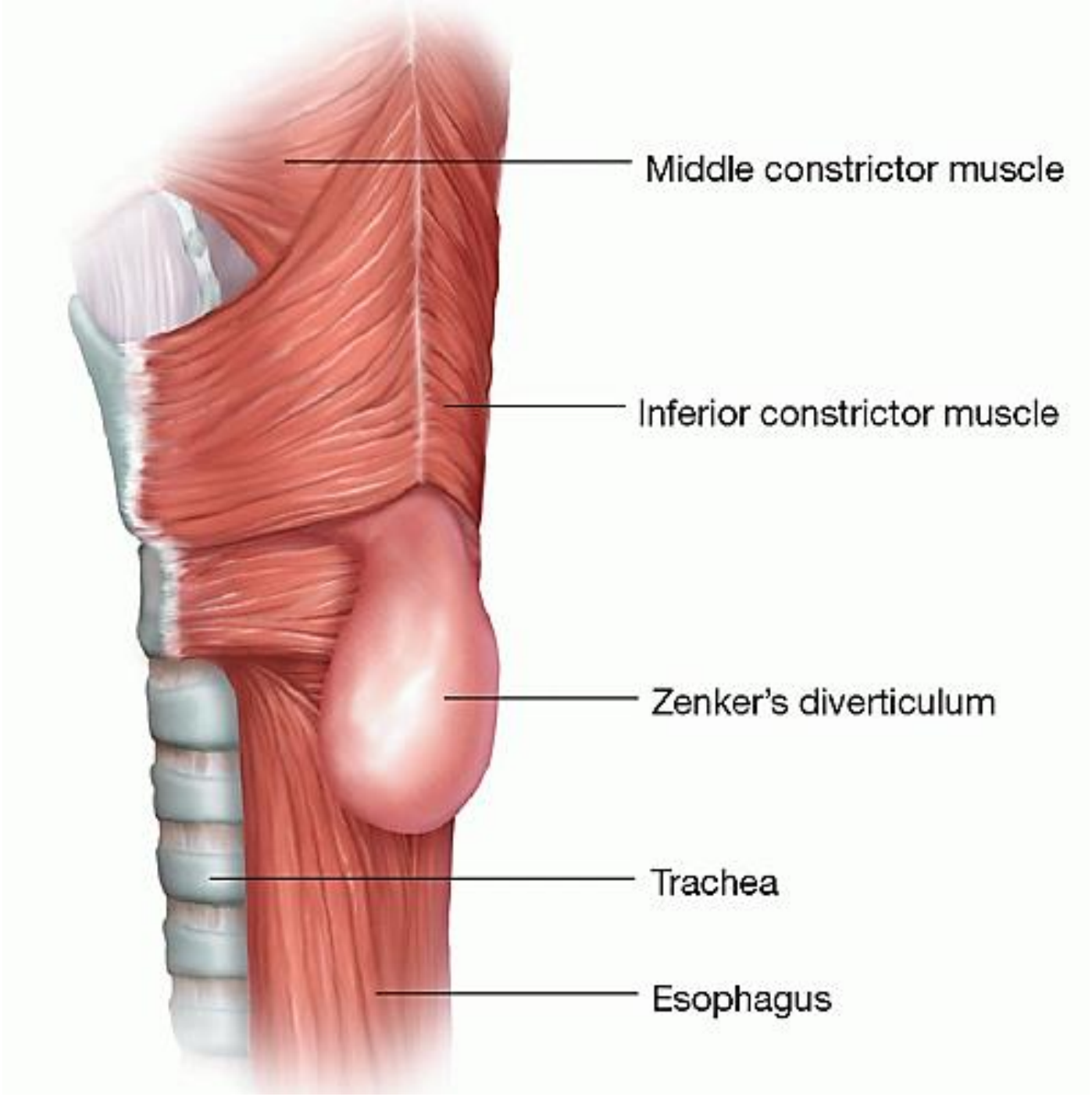
- Pulsion diverticulum (mucosal diverticulum of the pharynx) and It is a false divericulum.
- Dehiscence of Killian Inferior Pharyngeal m. (oblique and horizontal fibers.
- Incoordination.
- Pharyngeal dysphagia and halitosis.
- Then Esophageal dysphagea (pressure effect { extraluminal }).
- Ix: Endoscopy, Ba study.
- Rx: Endoscopy with linear cutting stapler (diverticulo-esophagectomy).

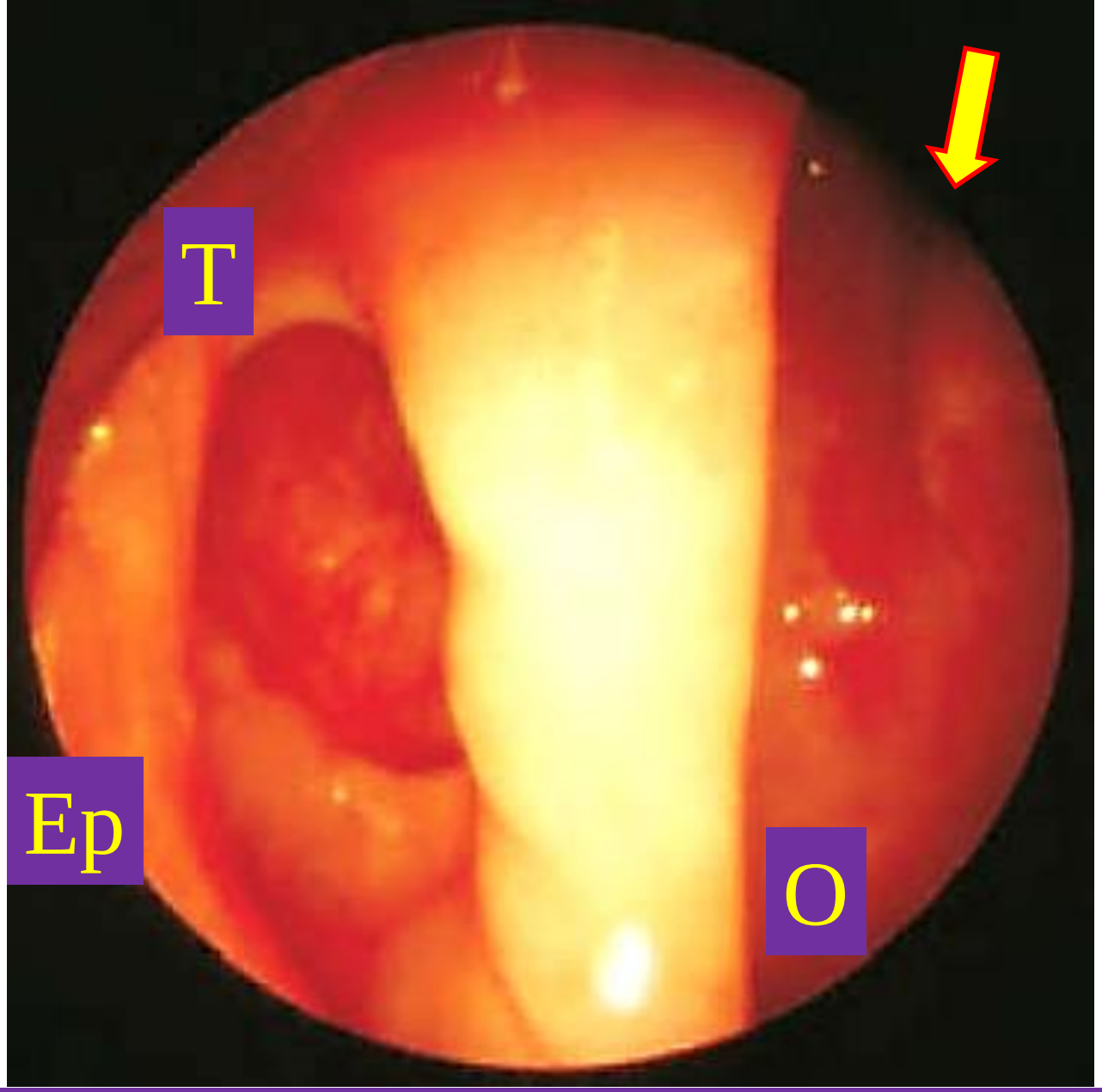
Open surgery (Pouch excision/ suspension (diverticulopexy) +/- crycopharyngeus myotomy.

Weak spots b/w muscles




Epiglottis
Inferior pharyngeal constrictor muscle
Killian's dehiscence
Thyroid cartilage
Cricopharyngeus muscle
Cricoid cartilage
Circular muscle layer of esophagus
Trachea
Esophagus


Middle constrictor muscle
Inferior constrictor muscle
Zenker's diverticulum
Trachea
Esophagus



The endoscopic appearance of the mouth of a pharyngeal pouch posterior to the normal opening (left) of the oesophagus.

Disorder Body of the Esophagus

Chicago classification

- Distal Esophageal Spasms (Corkscrew Esophagus).
- Jack hammer (Hypercontractile Esophagus).

- Chest pain.(DDx GERD)
- Dysphagia.
- Regurgitation.

Distal Esophageal Spasms

- Distal 2/3rd .
- Ba study (corkscrew" or "rosary bead esophagus“) .
- Manometry: (where normal peristalsis is interrupted by (more than 20% of contractions occurring prematurely non-propulsive) contractions occurring in the distal oesophagus

- Rx: Medication : PPI, Ca.C.B.,Vasodilators, Endoscopic dilitation , Botulinum Toxin .
- POEM (Peroral Endoscopic Myotomy)
- Surgery : Extended esophageal myotomy.

Corkscrew *or* **Shis Kabab**
appearance

Osamah

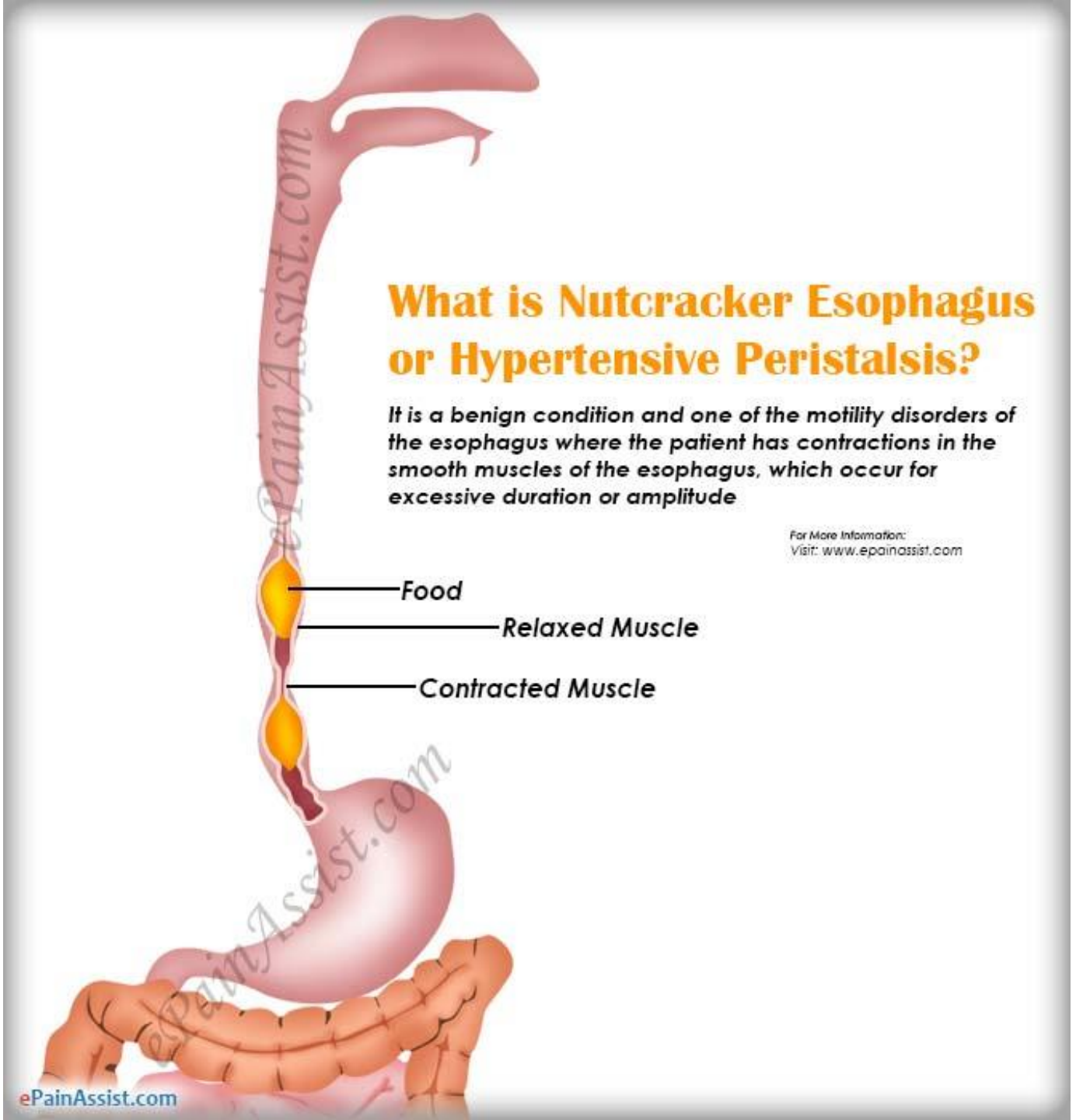
Incoordinated peristalsis with simultaneous contration of the oesophagus at multiple points

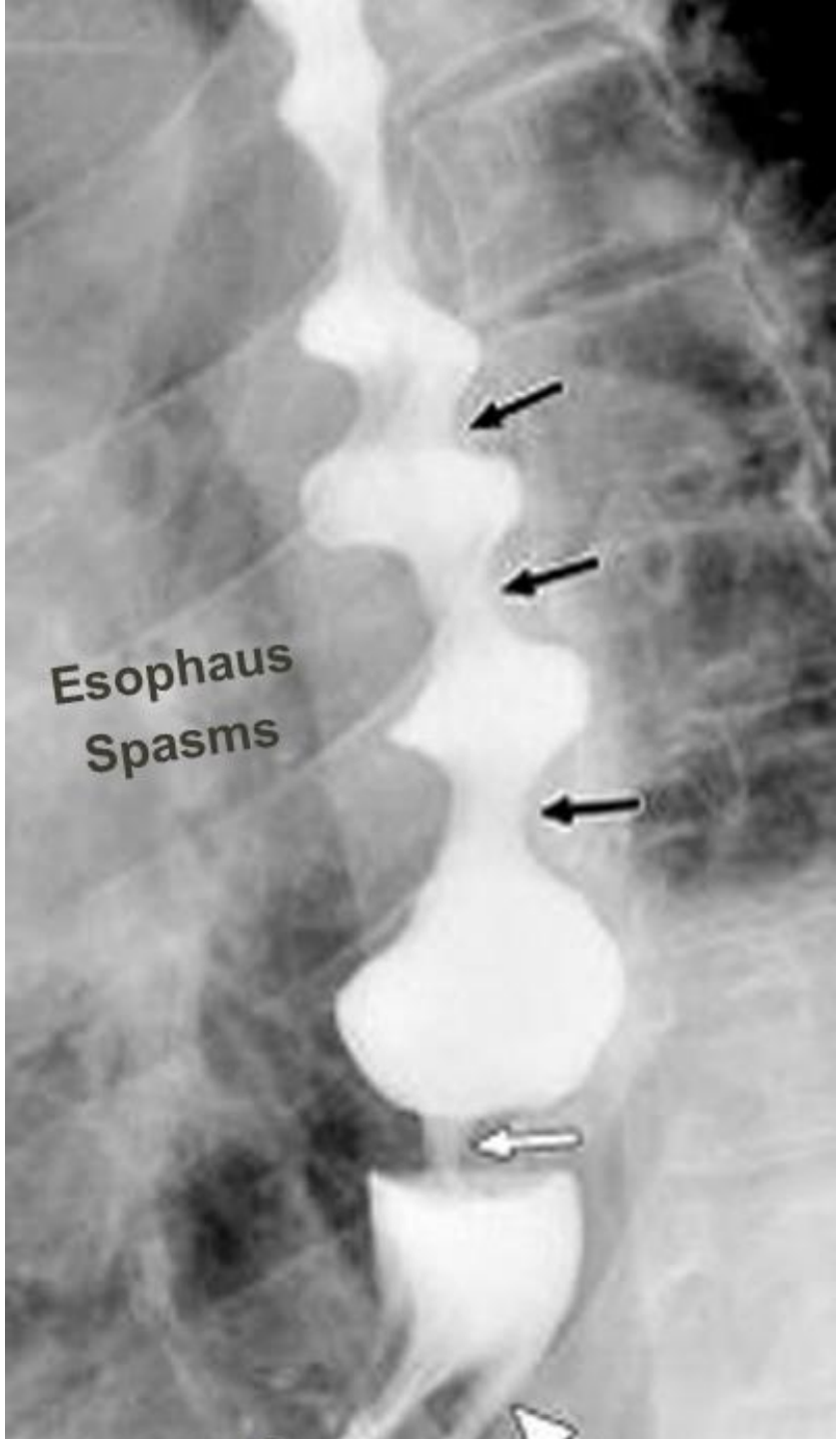
Rosary bead esophagus

(Jack hammer)/ (Nutcracker)/ Hypercontractile Esophagus

- Is a hypercontractile esophageal motor disorder.
- Which is defined by high-resolution manometry (HRM) when high amplitude, high speed waves of contractions occur that have a distal contractile integral (DCI) greater than 8000 mm Hg.s.cm.
- Ix: Ba study : Nutcracker sign.

  High-pressure manometric features
- Rx: as for corkscrew esophagus.


What is Nutcracker Esophagus or Hypertensive Peristalsis?
It is a benign condition and one of the motility disorders of the esophagus where the patient has contractions in the smooth muscles of the esophagus, which occur for excessive duration or amplitude
For More Information:
Visit: www.epainassist.com
Food
Relaxed Muscle
Contracted Muscle
ePainAssist.com

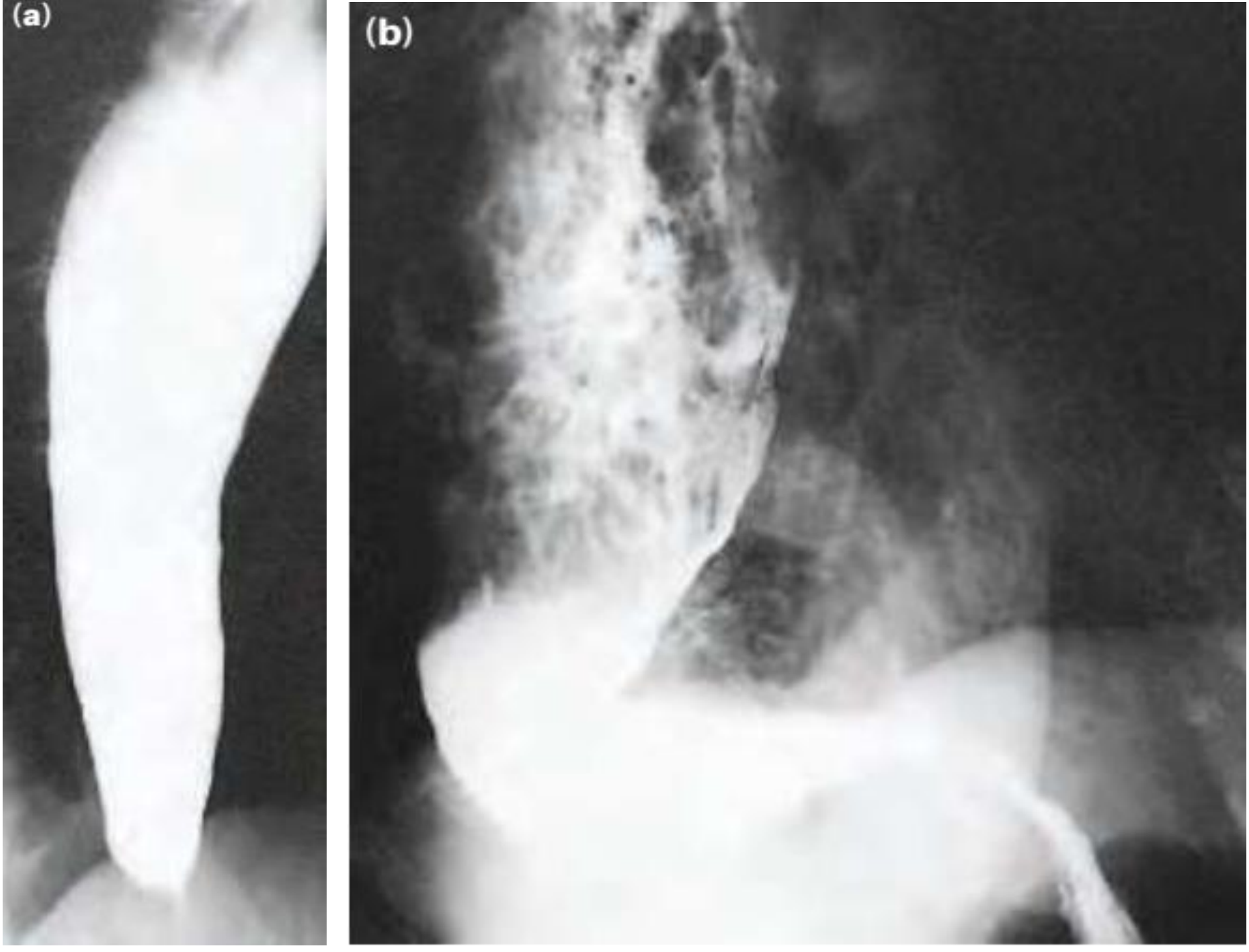

Esophaus
Spasms

Achalasia

- Middle life, but can occur at any age.
- Selective loss of inhibitory ganglionic cells in the myenteric plexus.
- Non relax LOS and absent peristalsis (body).
- Not reflux.
- Regurgitation, Dysphagia. pain as much as a sense of food sticking.
- High-resolution manometry recognises (uncoordinated non-peristaltic contractions).
- Barium study.
- DDx : Adenocarcinoma of the cardia.

Diagnosis

- History (regurgitation, hoarseness of voice , halitosis) .
- Plain CXR .(megaesophagus).
- Ba Study. (bird’s beak/ rat tail)
- Endoscopy.


(a)
(b)


(c)

ACHALSIA CARDIA

- Barium swallow showing dilatation of the esophageal body

*With short segment stricture.

* A “bird-peak " like tapering of the esophagus at the GE junction. OR
*A Sigmoid “ Mega esophagus

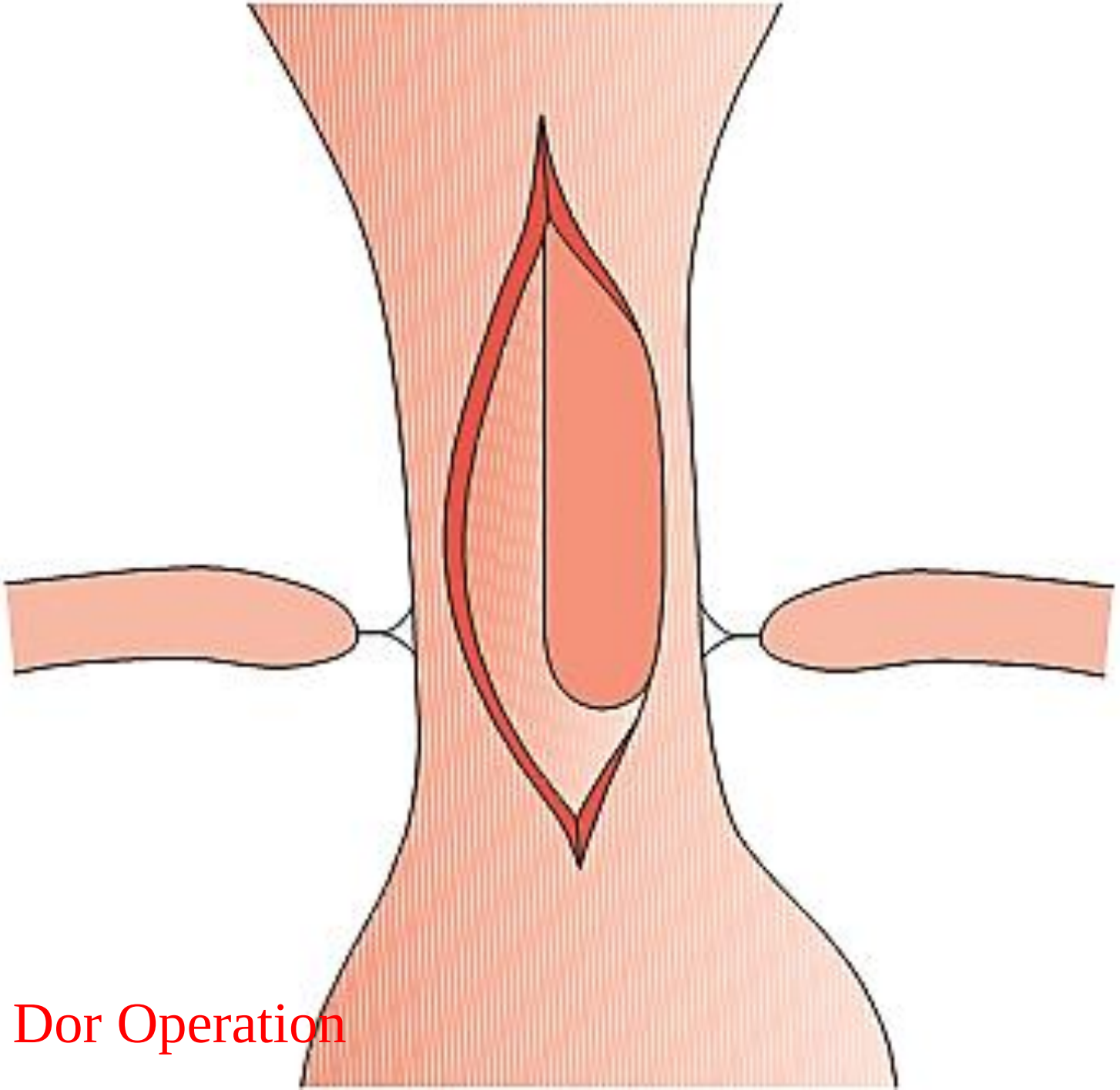
Almost achalasia, but note the irregularity of the taper, which indicates carcinoma of the cardia .

- Pseudoachalasia

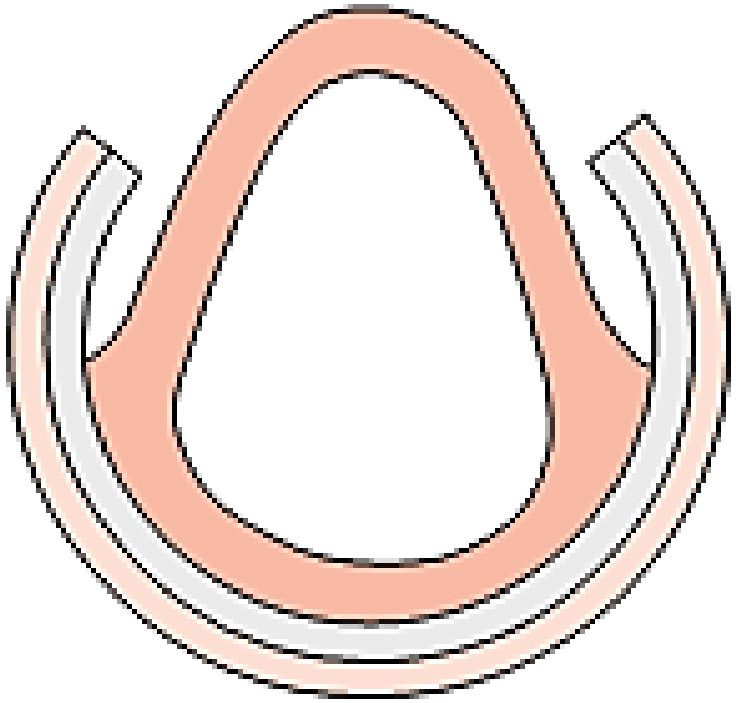
It has been presumed that the inability of the sphincter to relax is linked to the loss of body peristalsis

Treatment

- Medical: (Ca+C.B., Botulinum toxin).
- Endoscopic Pneumotic dilitation.
- Surgical: Heller’s myotomy (open, laparoscopic or Endoscopic (POEM)



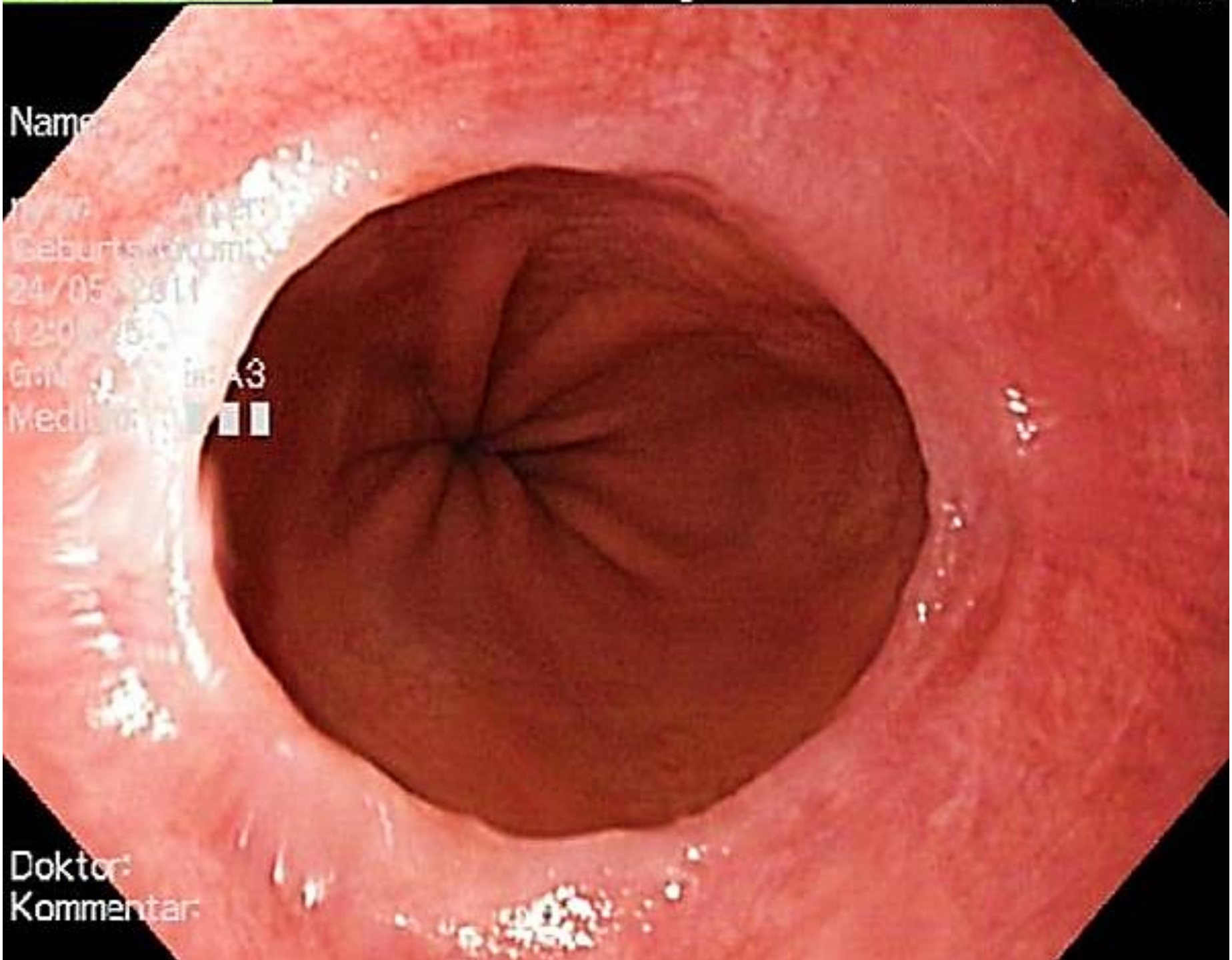
Heller – Dor Operation



Heller – Dor Operation

Schatzki's Ring

- Circular ring in the distal esophagus (S.C.J.).
- Fibrous tissue
- Incidental.
- In association with reflux disease.
- Dysphagea.
- Ix: Ba study (constriction), Endoscopy.
- Rx : dilitation with anti-reflux medication.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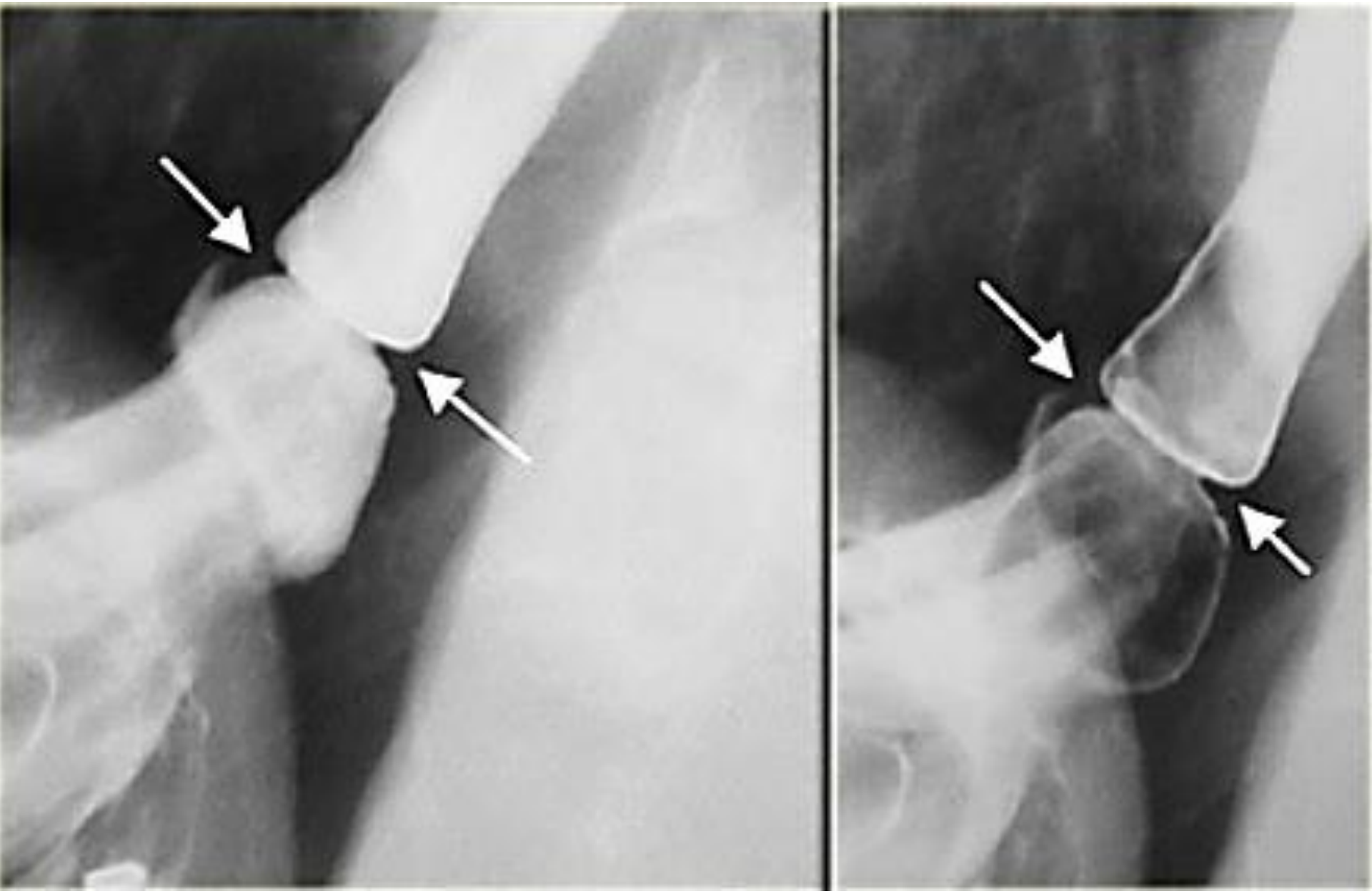
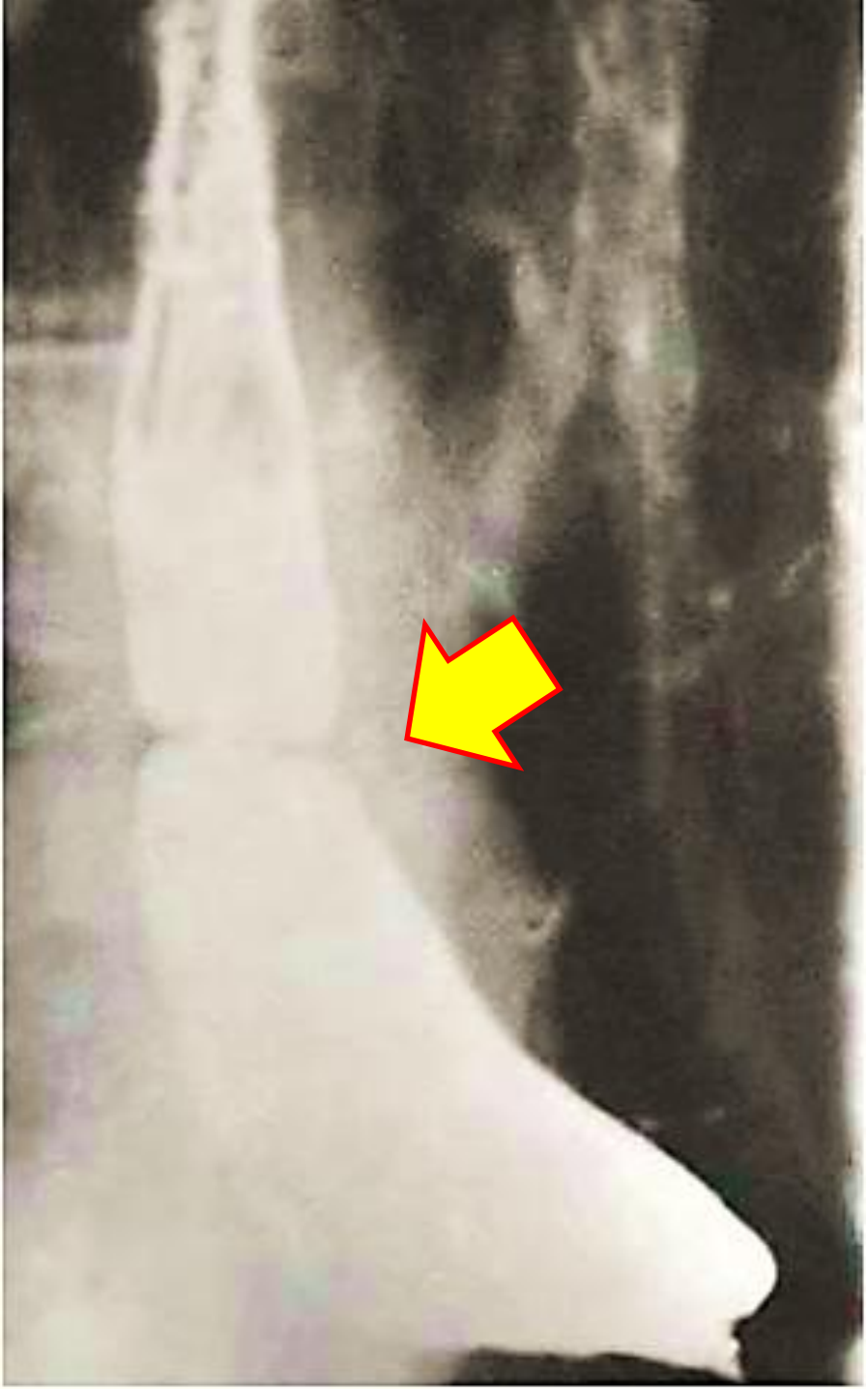
A3
Doktor:
Kommentar:





Schatzki's ring, a thin submucosal web completely encircling the whole of the lumen, usually situated at the squamocolumnar junction

- **Congenital abnormalities.**
- **Foreign bodies.**
- **Perforation(spontaneous Barotrauma),Pathological,Penetrating injury, Foreign body,Instrumental) (Chemical, Physical , mechanical and Ca.,.**
- **Mallory Weiss Syndrome.**
- **Corrosive Injury.**
- **Drug induced Injury.**
- **G.O.R.D.**
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- **Hiatus Hernia.**
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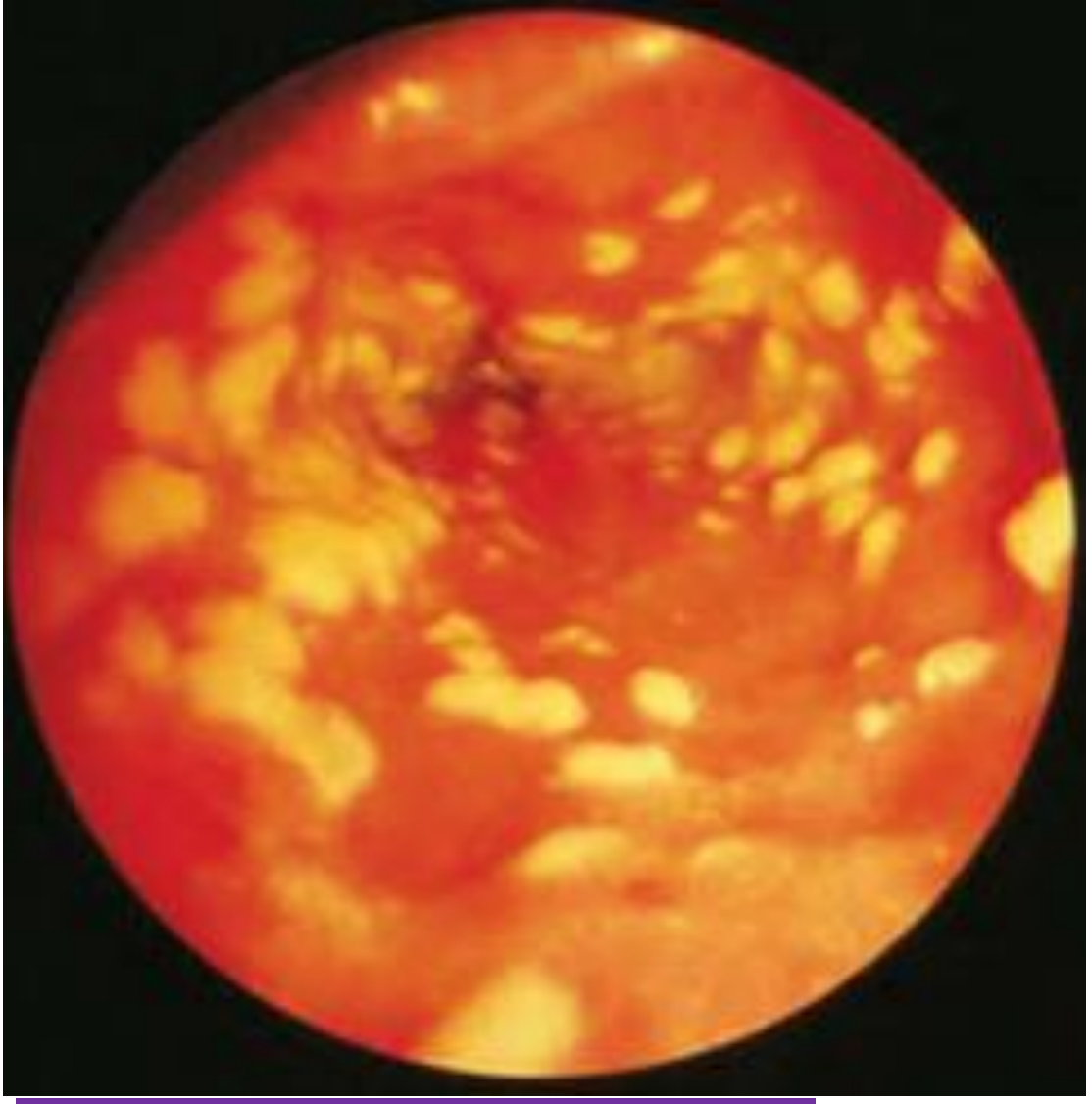
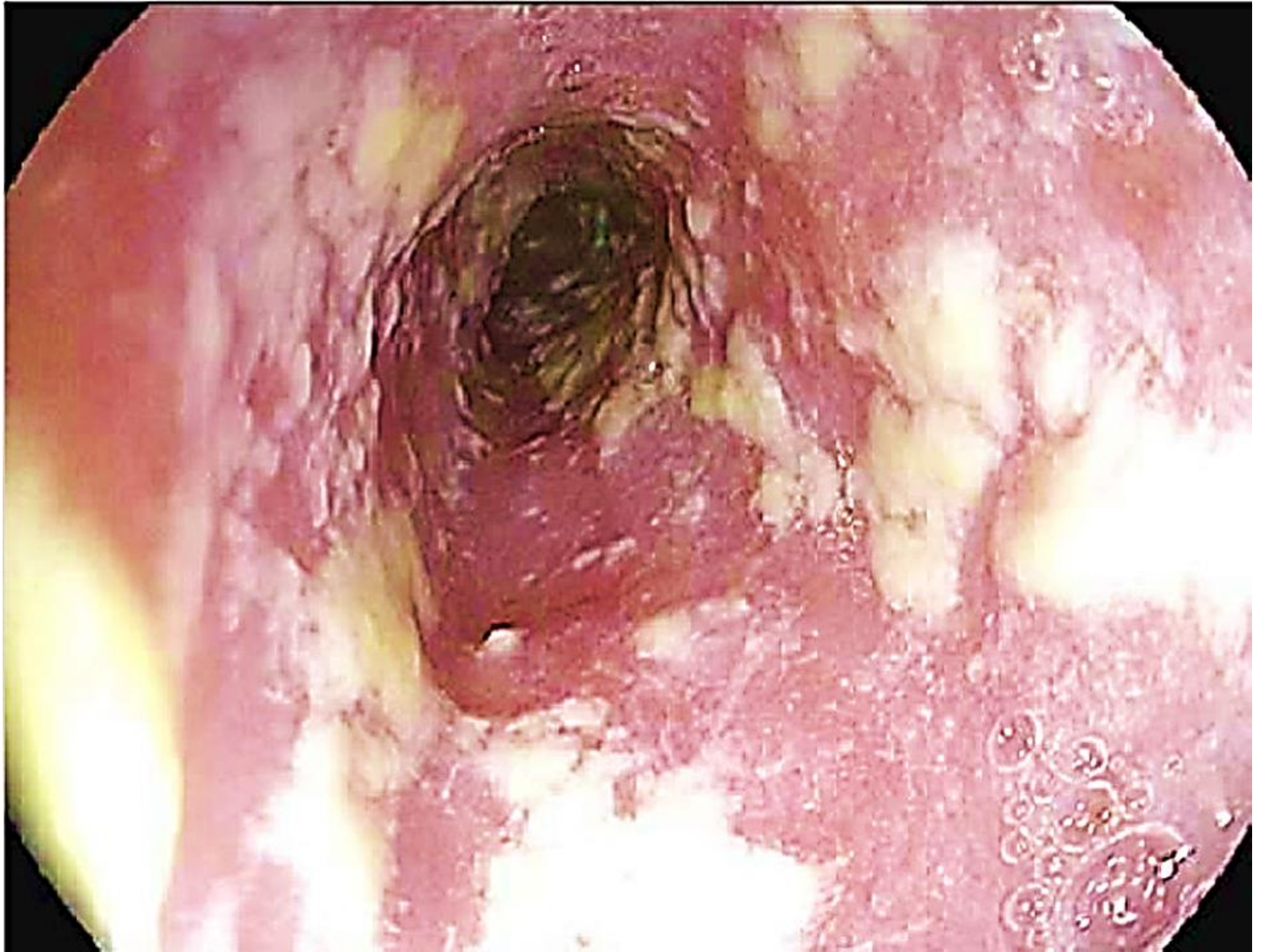
- **Varicose vein.**
- **Mediastinal fibrosis.**

Oesophageal Candidaisis

- Candida albicans .
- Dysphagia or odynophagia with oral thrush.
- Immune compromised patients.
- .Endoscopy .
- Biopsies are diagnostic.
- In severe cases, a barium swallow may show dramatic mucosal ulceration and irregularity that is surprisingly similar to the appearance of oesophageal varices.
- Treatment is with an antifungal agent.



Numerous white plaques that cannot be moved, unlike food residues



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Crohn's disease.

- Is not common, asymptomatic 20%.
- Retrosternal pain and dysphagia.
- Endoscopy shows extensive oesophagitis .
- Biopsies may be diagnostic.
- In severe cases, deep sinuses occur, and fistulation .
- Respond poorly to medical treatment .
- Balloon dilatation of strictures .
- Surgical resection for multiple internal .

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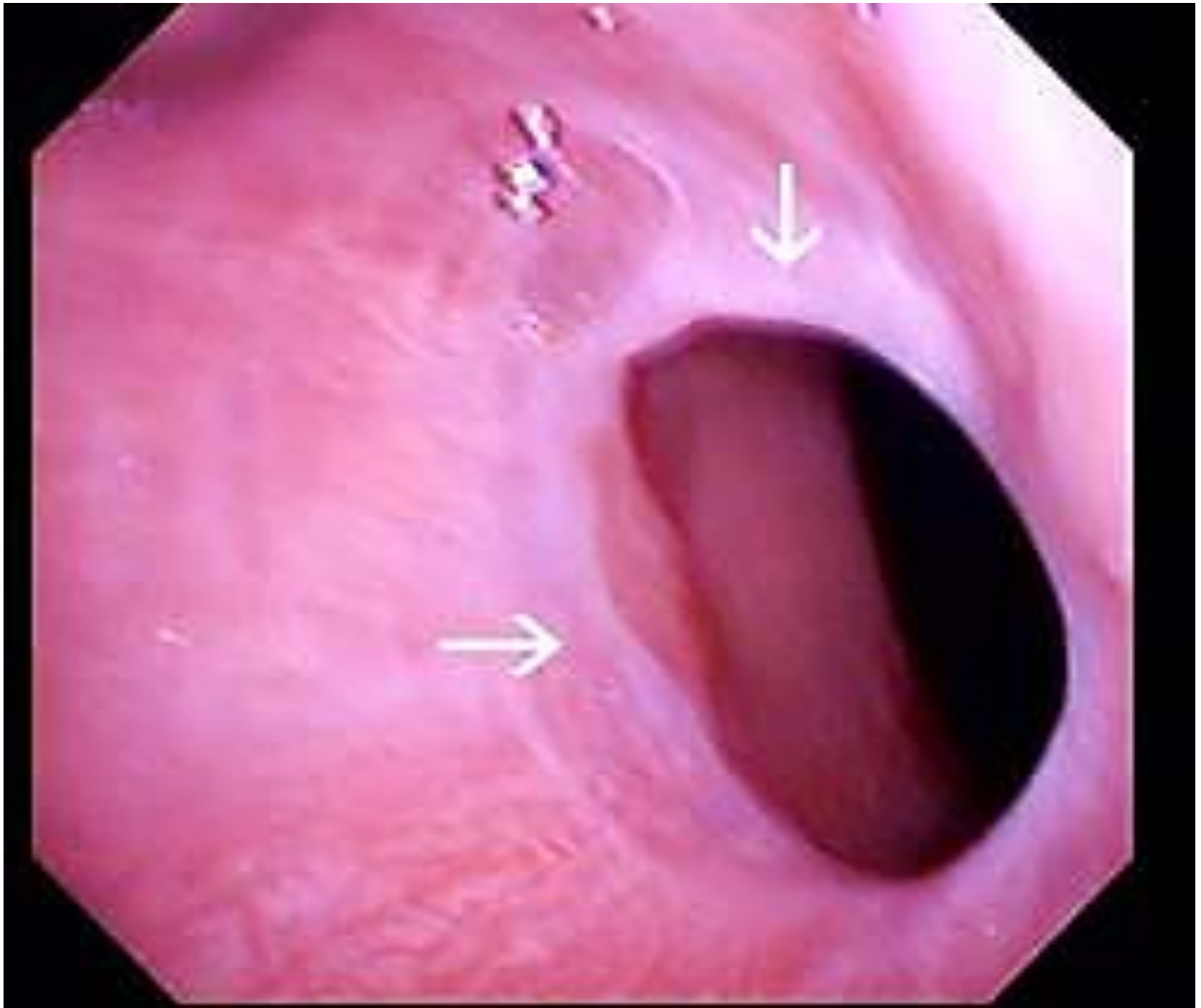
Plumer Vinson Syndrome

- Sideropenic dysphagia.
- Postcricoid web.
- Iron def.An.
- Upper and middle esophagus.
- Precancerous.(postcricoid tumor).
- F > M.
- Ix: Endoscopy, Ba Study.
- Rx: Endoscopic dilitation.



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Causes

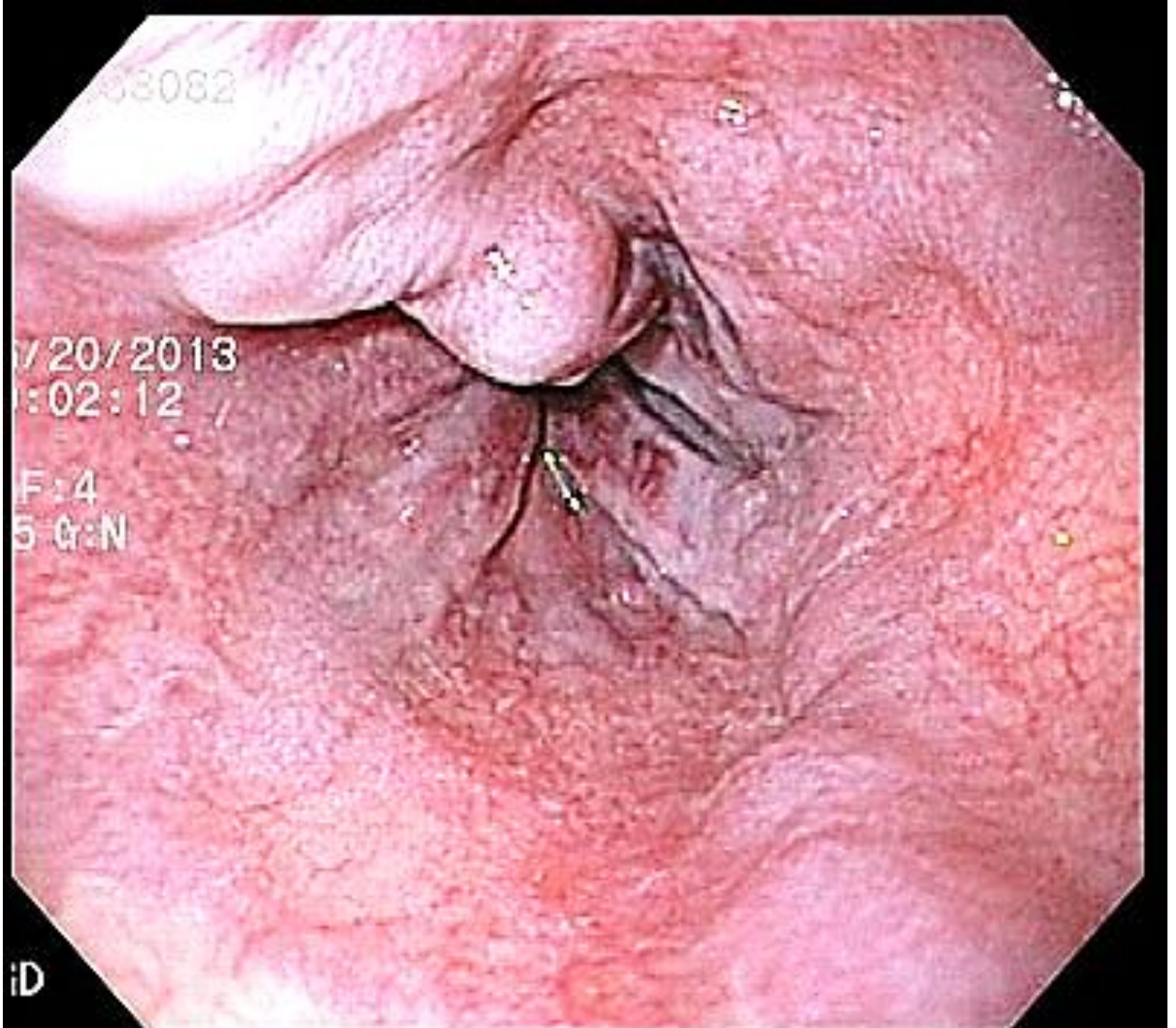
- **Pre-hepatic** : Portal vein thrombosis
- **Hepatic** : Cirrhosis
- **Post-hepatic** : Budd–Chiari syndrome (Hepatic vein thrombosis).

Clinical Presentation

- Upper GIT bleeding.
  - Hematemesis.
  - Melena.
  - Hypovolemic shock
- Underlying cause.

Management of bleeding oesophageal varices

- Blood transfusion (transfusion protocol).
- Correct coagulopathy (fresh frozen plasma (FFP).
- Haemodynamic stability, then do an O.G.D. to establish the diagnosis .
- Splanchnic vasoconstrictor (terlipressin).
- Endoscopic sclerotherapy or rubber banding.
- Oesophageal balloon tamponade (Sengstaken–Blakemore tube). (temporarily deflated after 12 hours) .
- Assess portal vein patency (Doppler ultrasound or CT).
- **Emergency :**
  Transjugular intrahepatic portosystemic stent shunts (TIPSS).
- **Elective Surgery** :
  - Portosystemic shunts.
  - Splenectomy and gastric devascularisation.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:02:12
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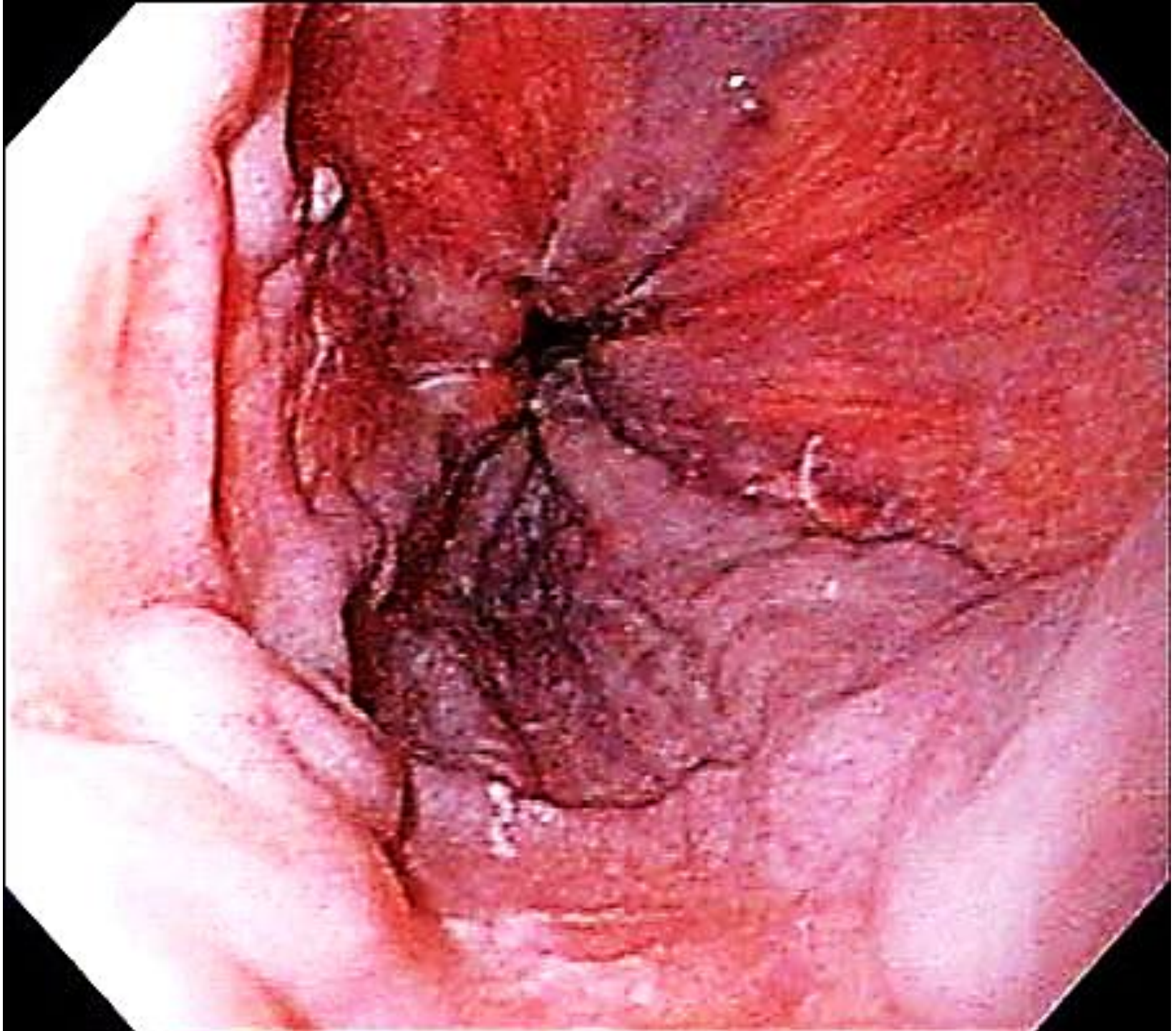
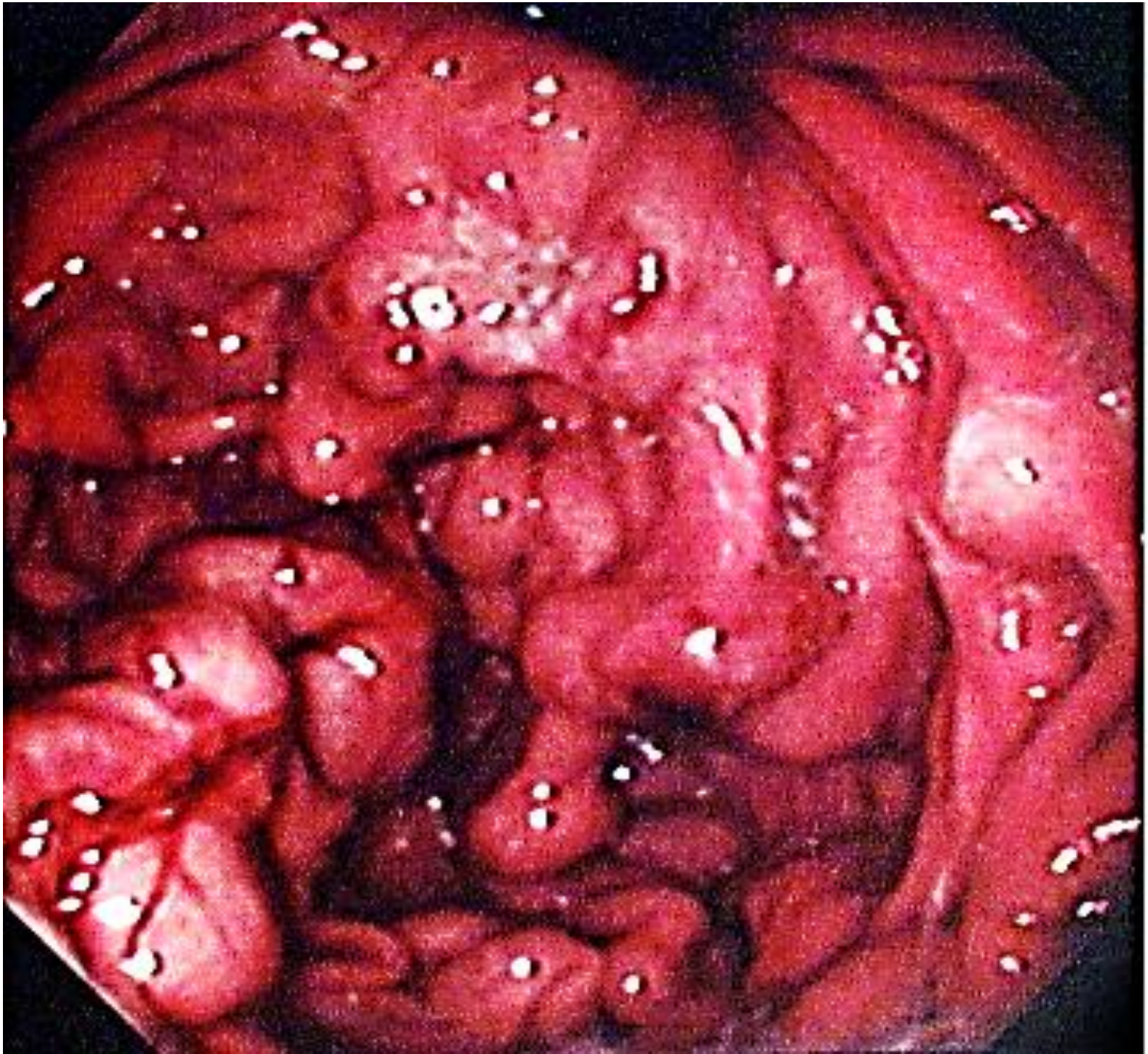
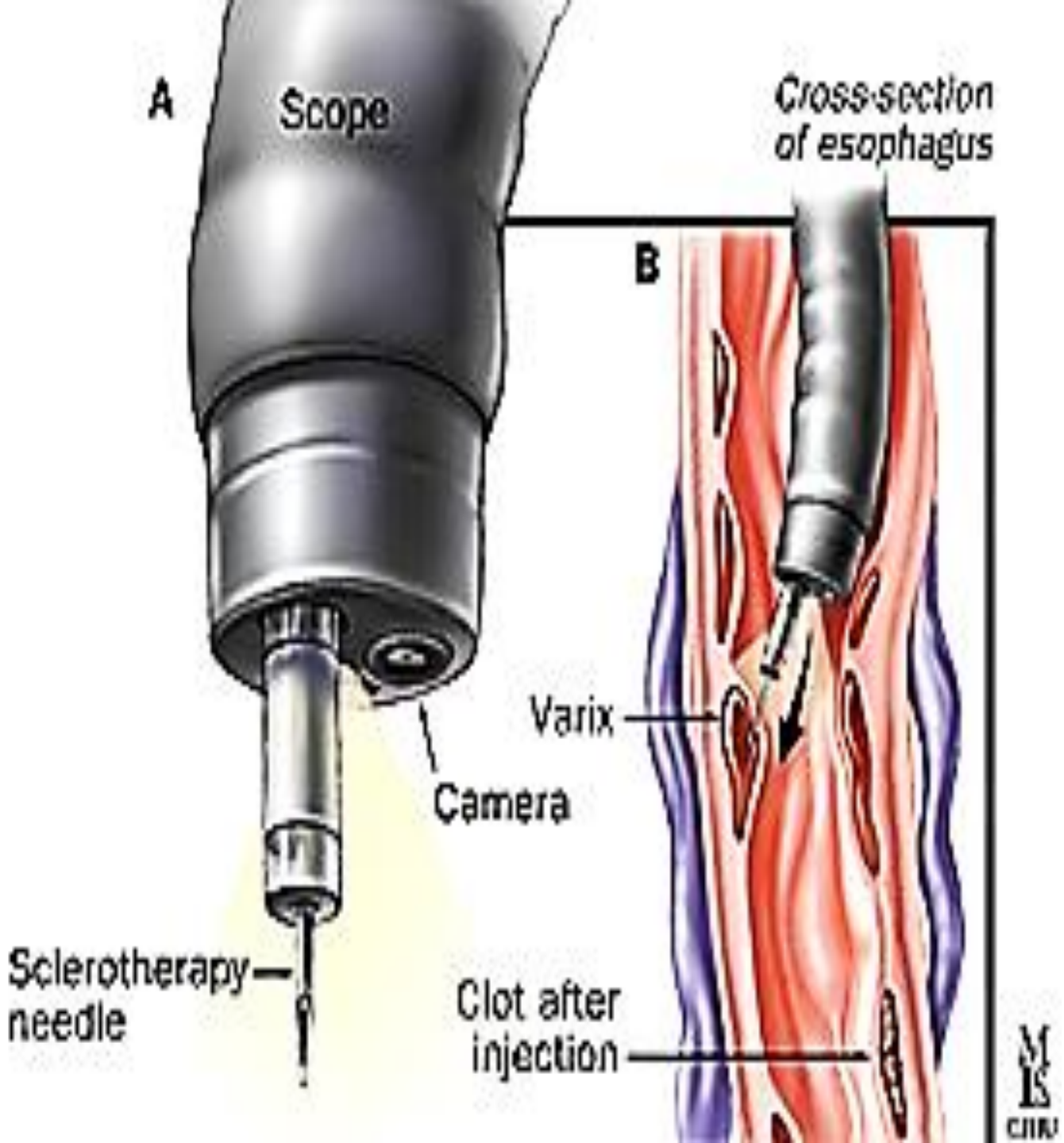
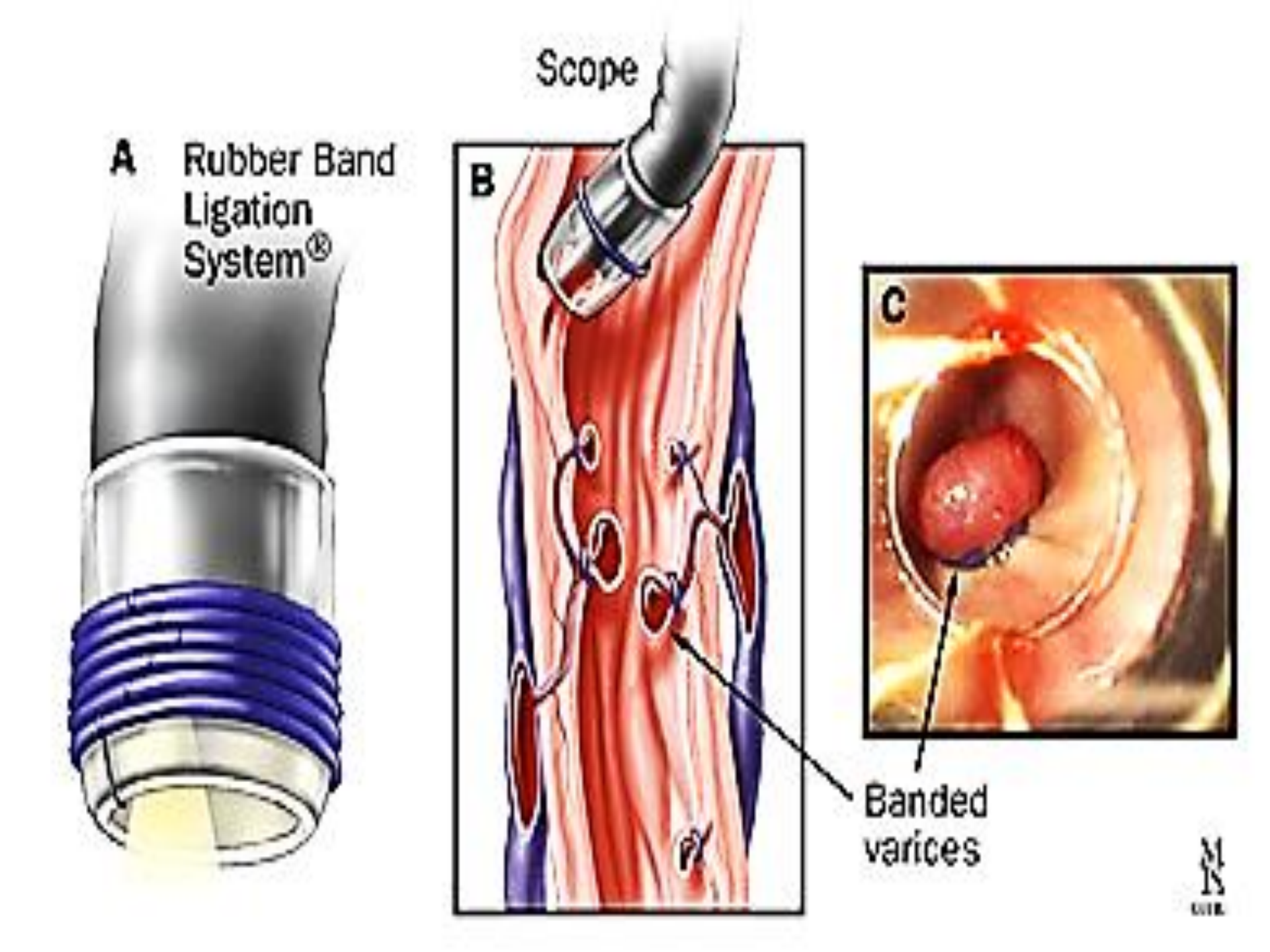


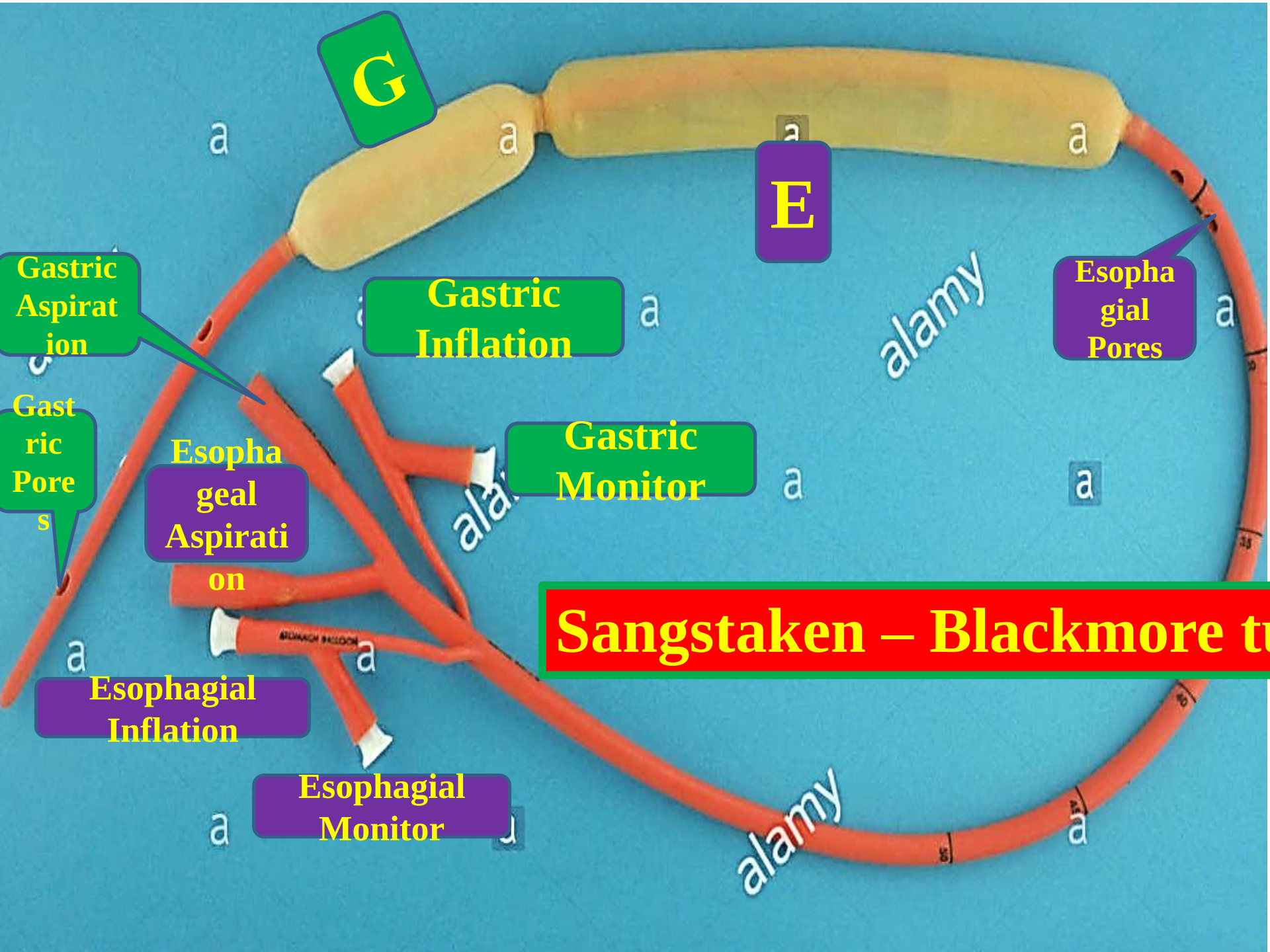


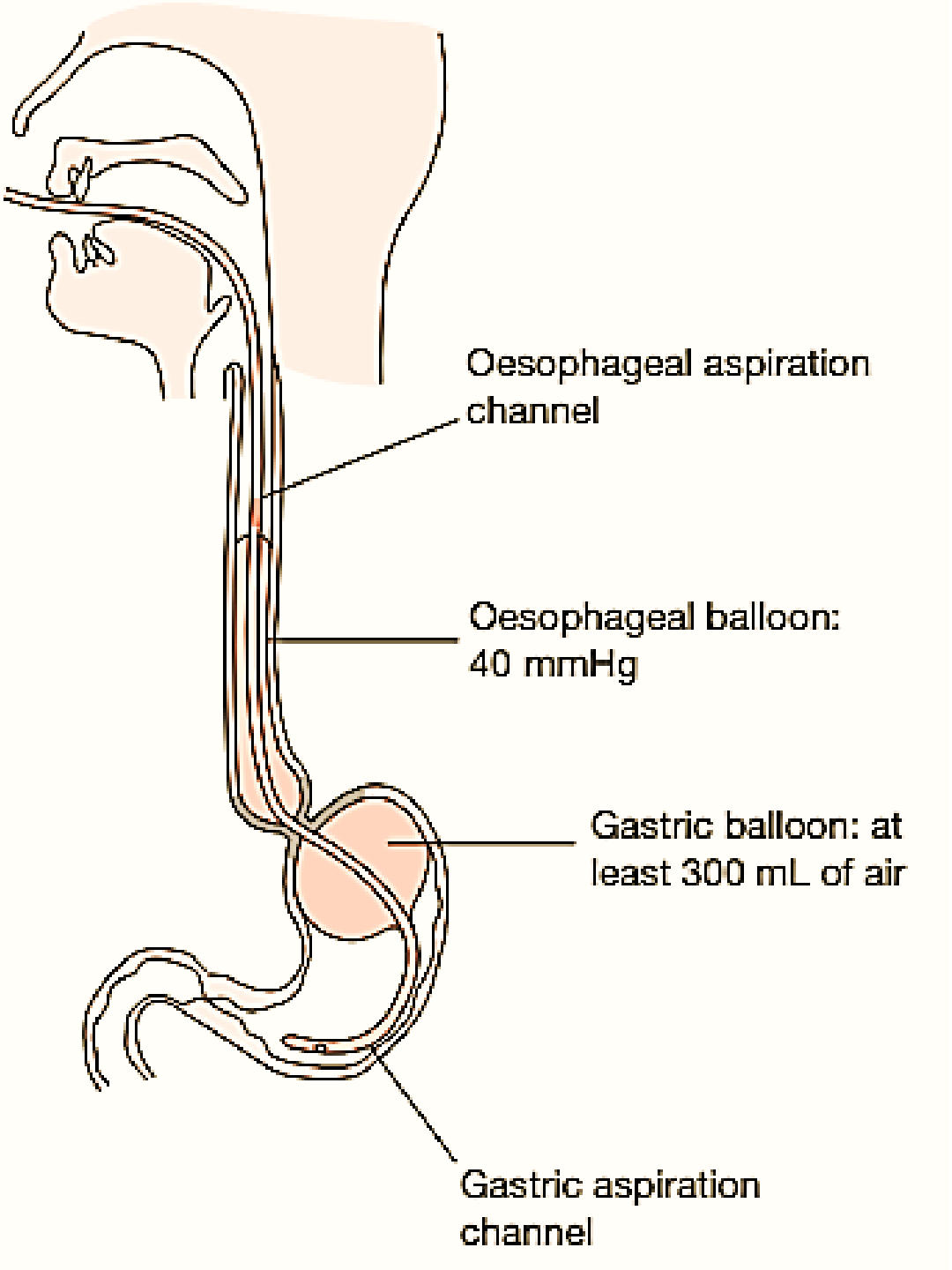
Oesophageal varices with smooth outline of the filling defects.

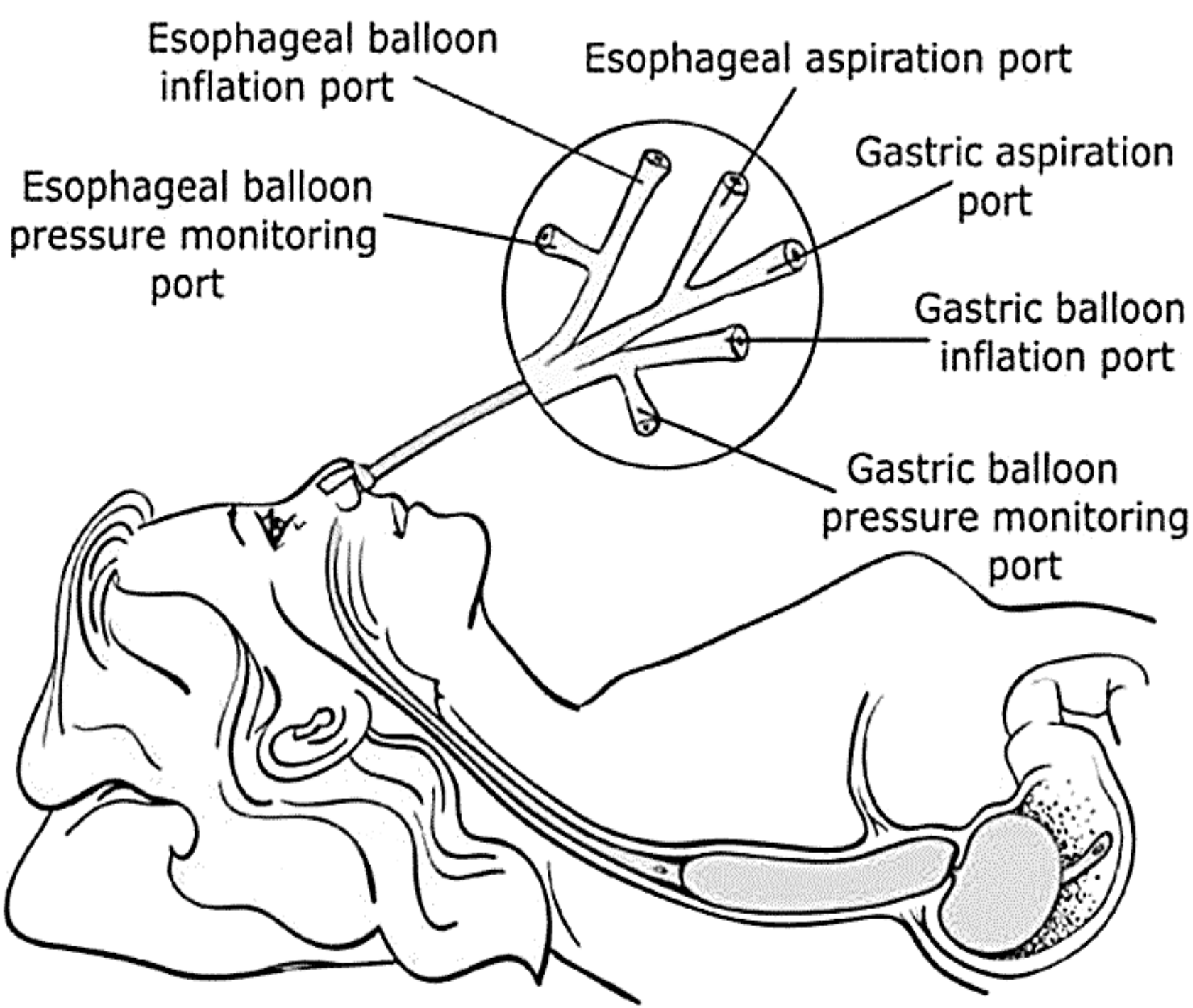

A
Scope
Cross-section
of esophagus
B
Varix
Camera
Sclerotherapy
needle
Clot after
injection


A
Rubber Band
Ligation
System®
Scope
B
C
Banded
varices


VE 55820031
M 40
07/12/1963
09/27/2003
14:36:31
CVP:
D.F:
E:8 G:H
DR. MURRA SACA.


G
E
Gastric Aspiration
Gastric Inflation
Esophagial Pores
Gastric Pores
Esophageal Aspiration
Gastric Monitor
Sangstaken – Blackmore t
Esophagial Inflation
Esophagial Monitor


Oesophageal aspiration channel
Oesophageal balloon: 40 mmHg
Gastric balloon: at least 300 mL of air
Gastric aspiration channel


Esophageal balloon inflation port
Esophageal aspiration port
Gastric aspiration port
Esophageal balloon pressure monitoring port
Gastric balloon inflation port
Gastric balloon pressure monitoring port

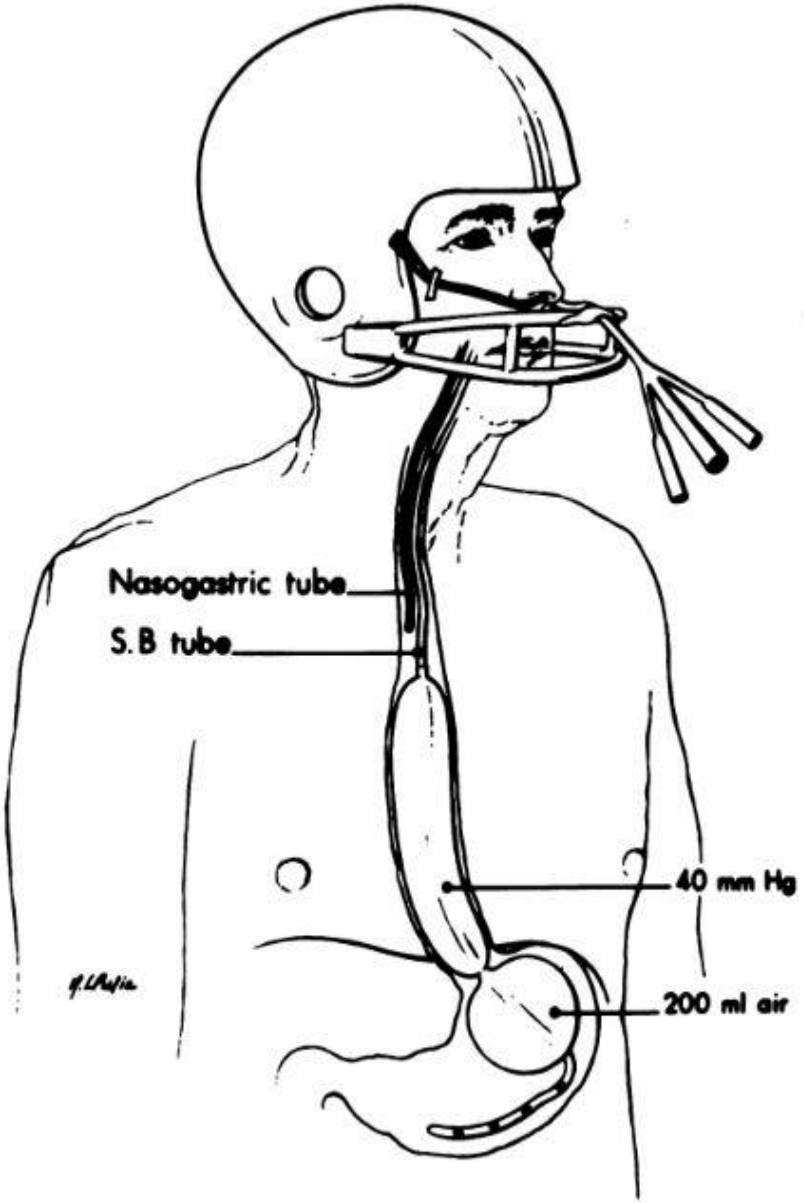
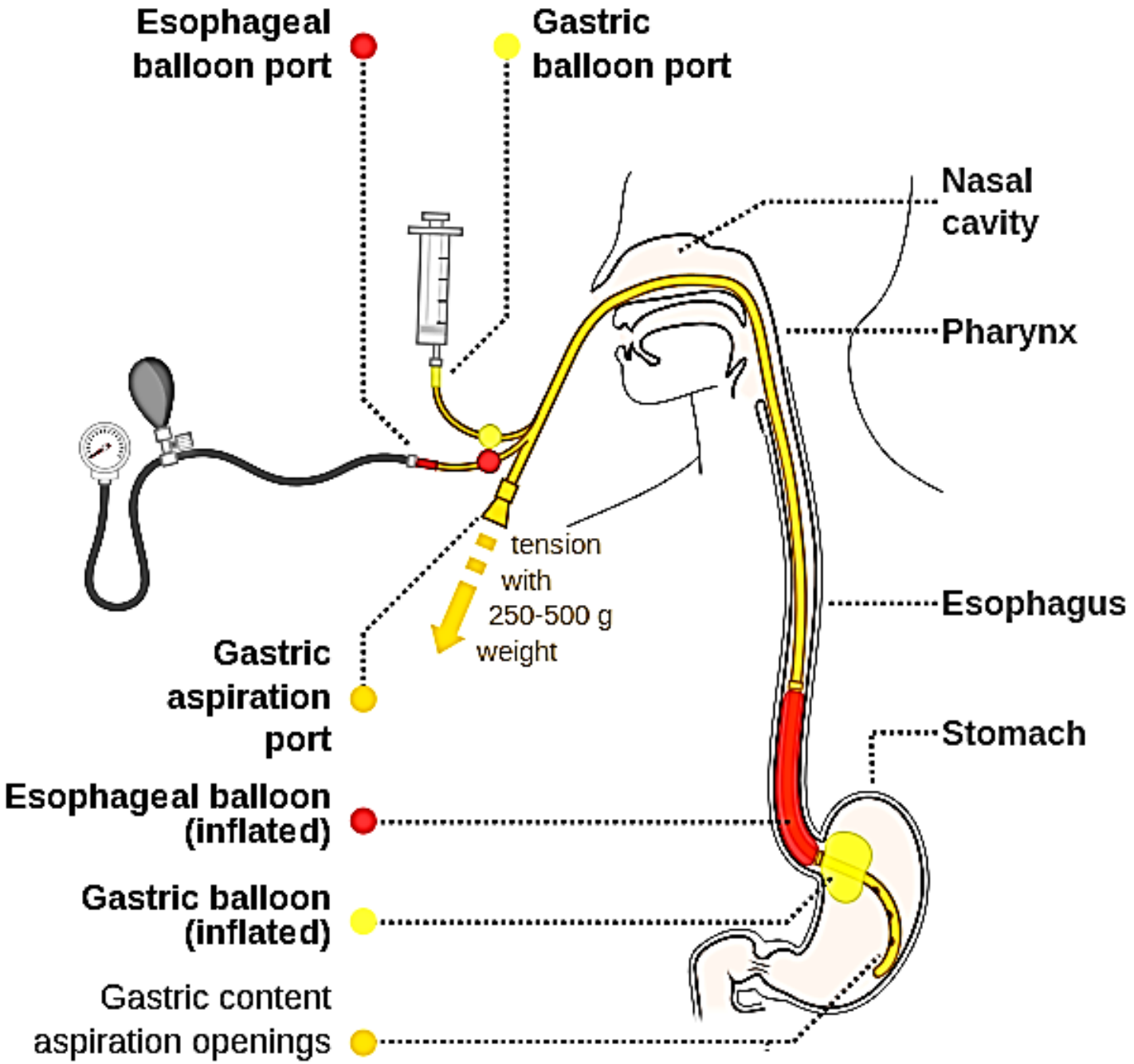
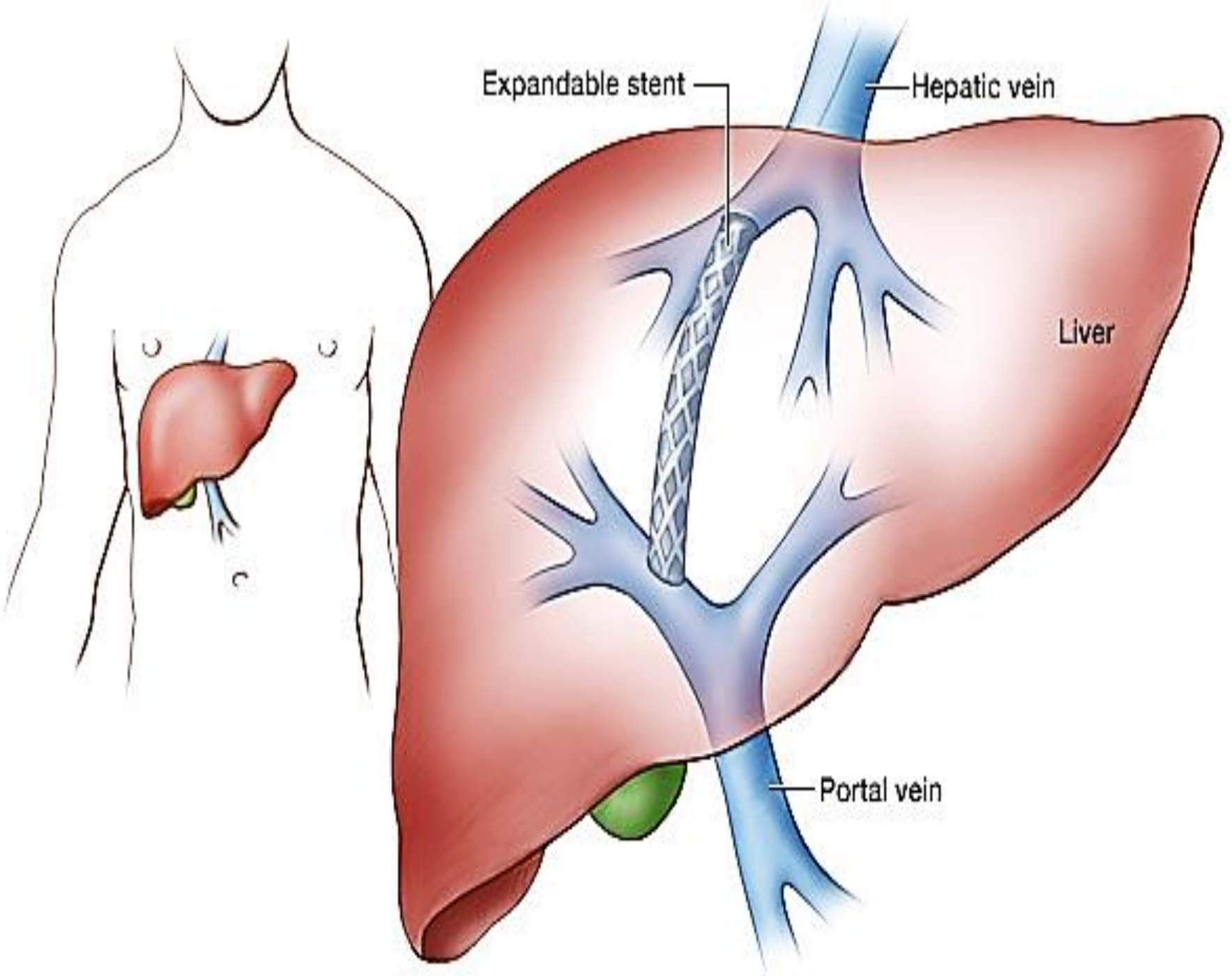
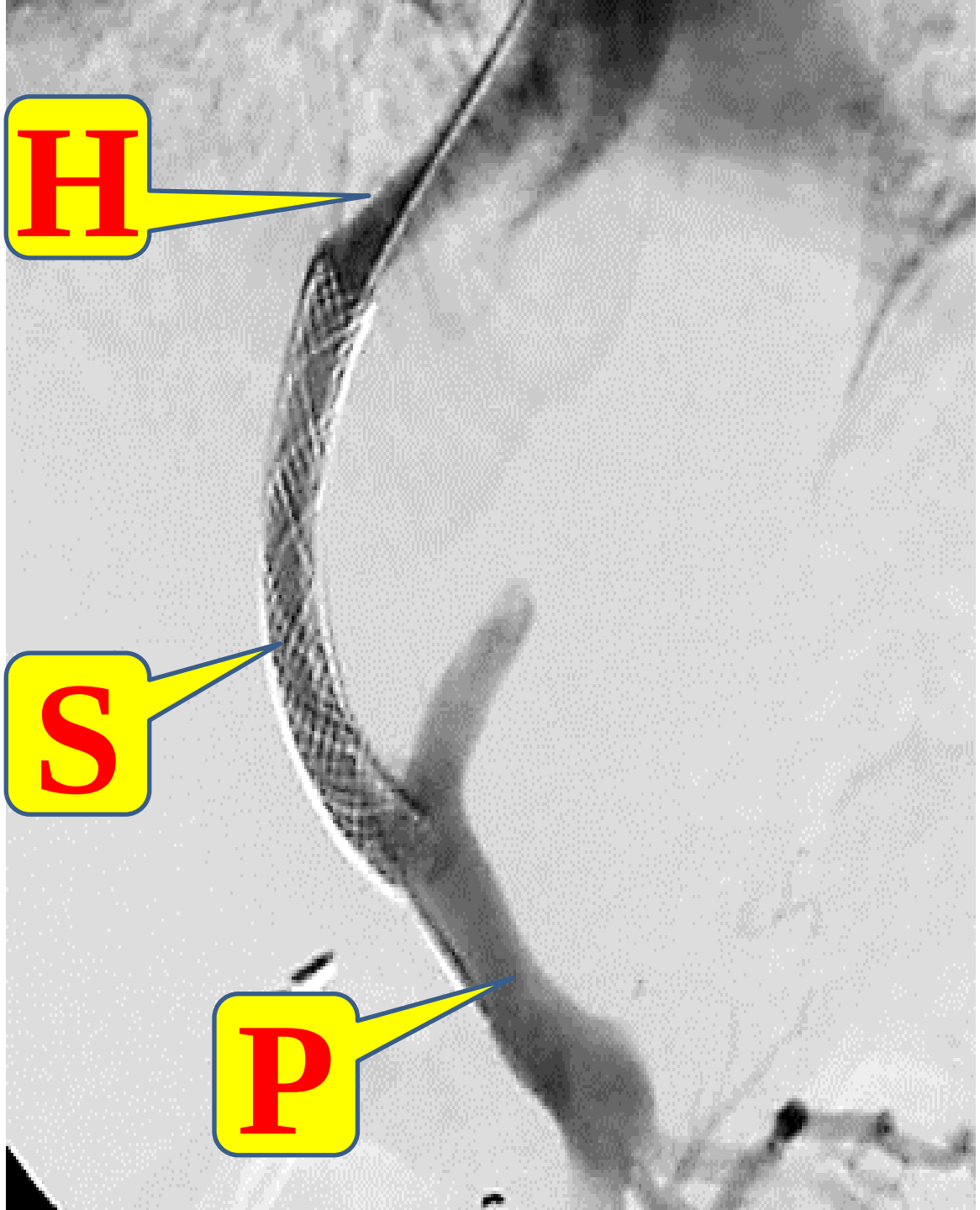


FIG. 1. The Sengstaken-Blakemore tube is in place with both balloons inflated. A nasogastric tube is placed through the contralateral external nares into a position just above the esophageal balloon.


Esophageal balloon port
Gastric balloon port
Nasal cavity
Pharynx
tension with 250-500 g weight
Esophagus
Gastric aspiration port
Stomach
Esophageal balloon (inflated)
Gastric balloon (inflated)
Gastric content aspiration openings


Expandable stent
Hepatic vein
Liver
Portal vein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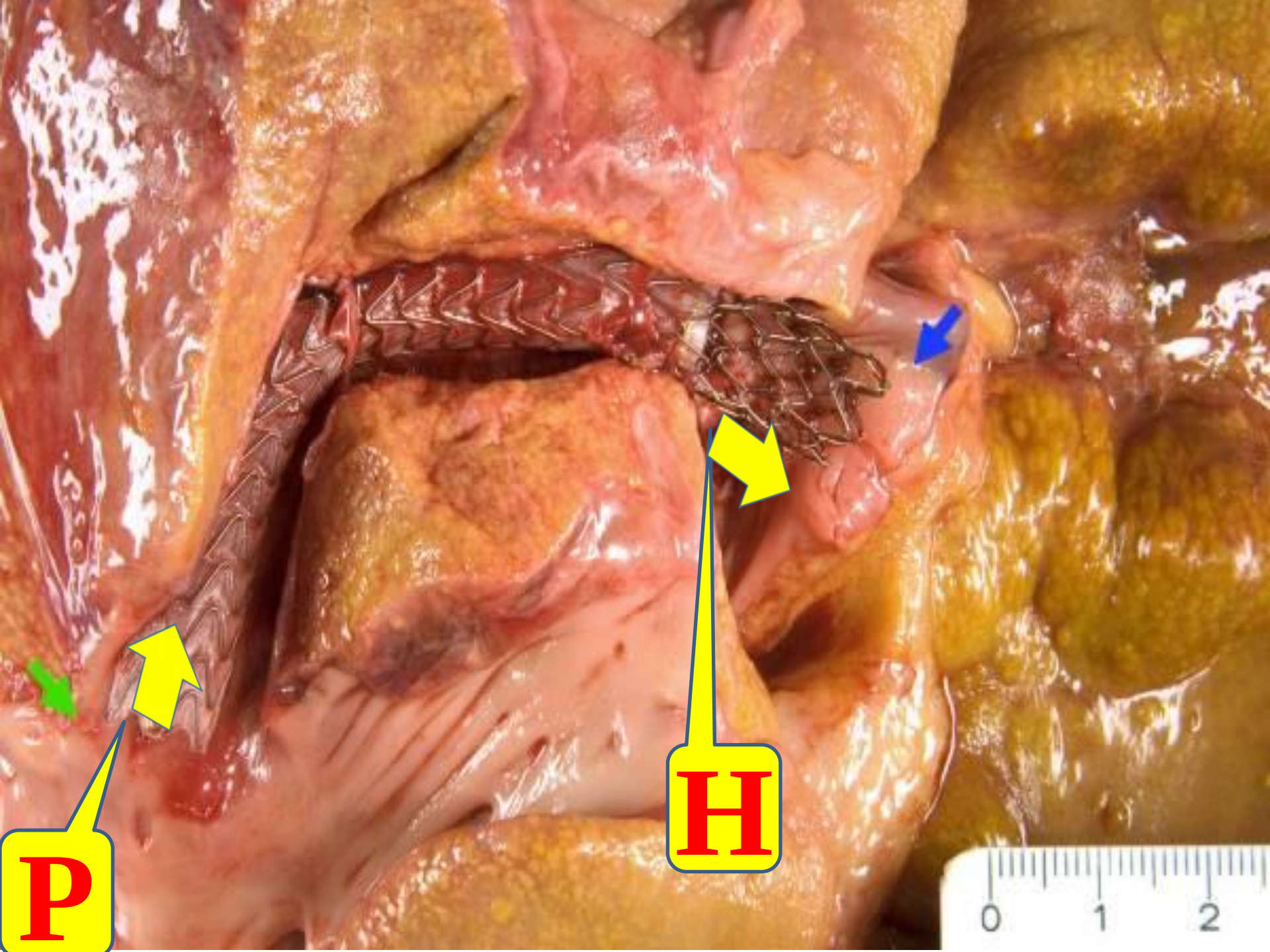
P
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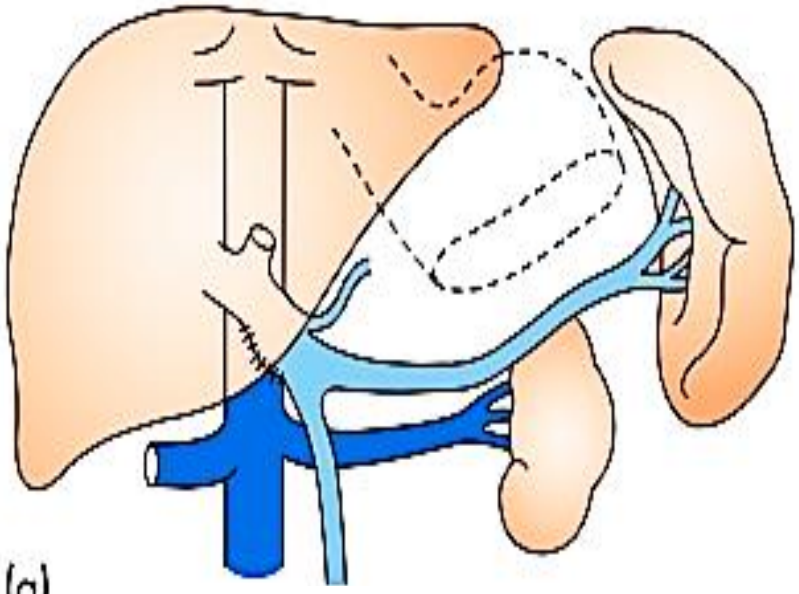
1
2

Elective Surgery

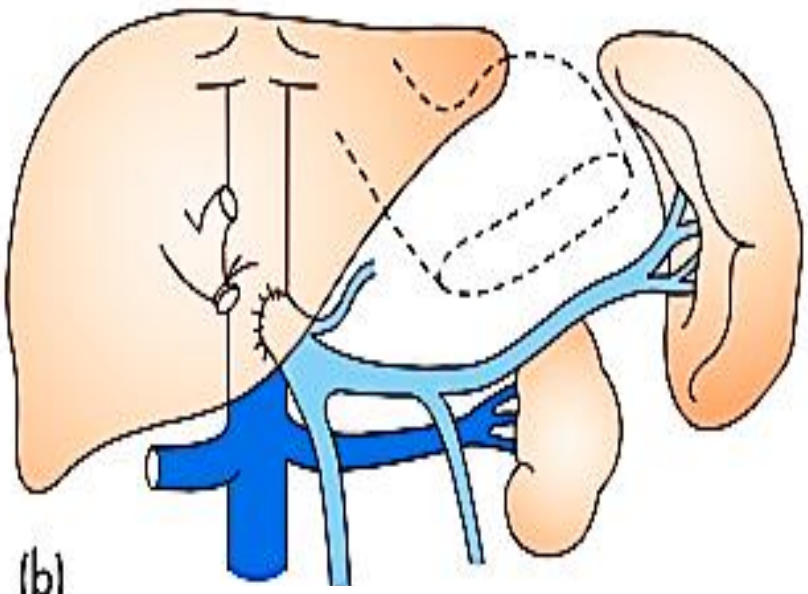
- Porto-Systemic Shunt.
- Splenectomy and gastro-oesophageal devascularisation.

Porto-Systemic Shunt.

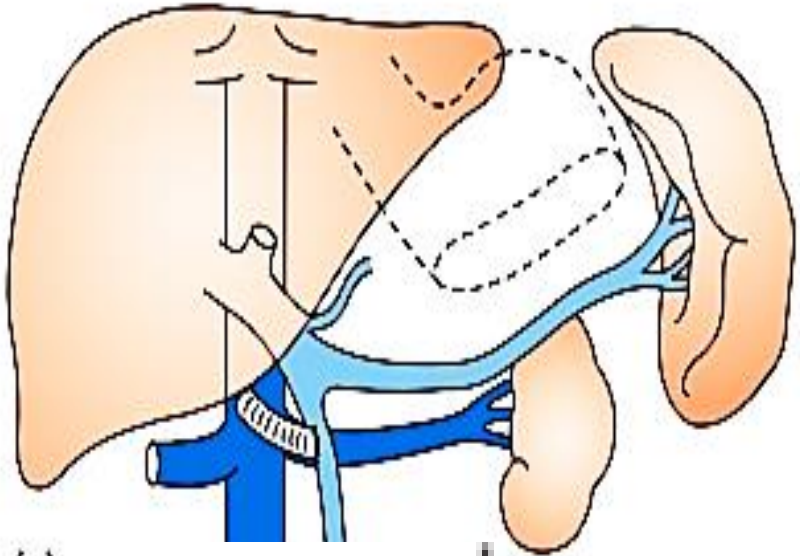
- Surgical shunts are an effective method of preventing rebleeding from oesophageal or gastric varices, as they reduce the pressure in the portal circulation by diverting the blood into the low-pressure systemic circulation.
- Non-selective (e.g. portocaval).a,b,c
- Selective (splenorenal) .d



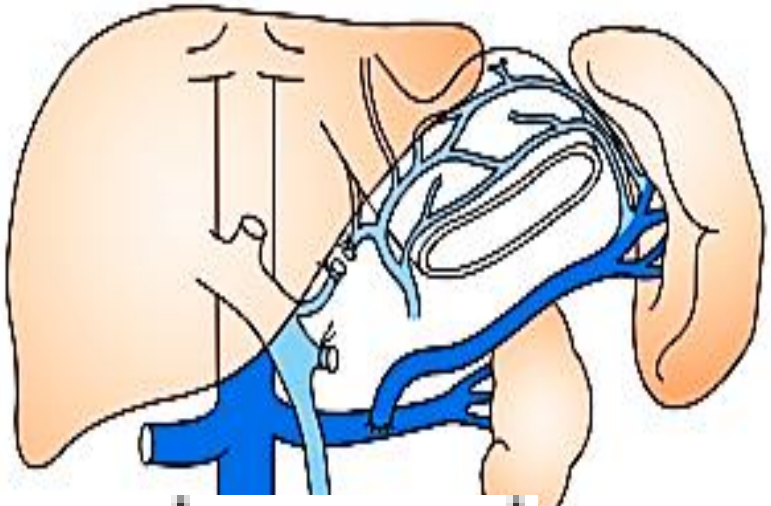
(a) side-to-side



(b) end-to-side

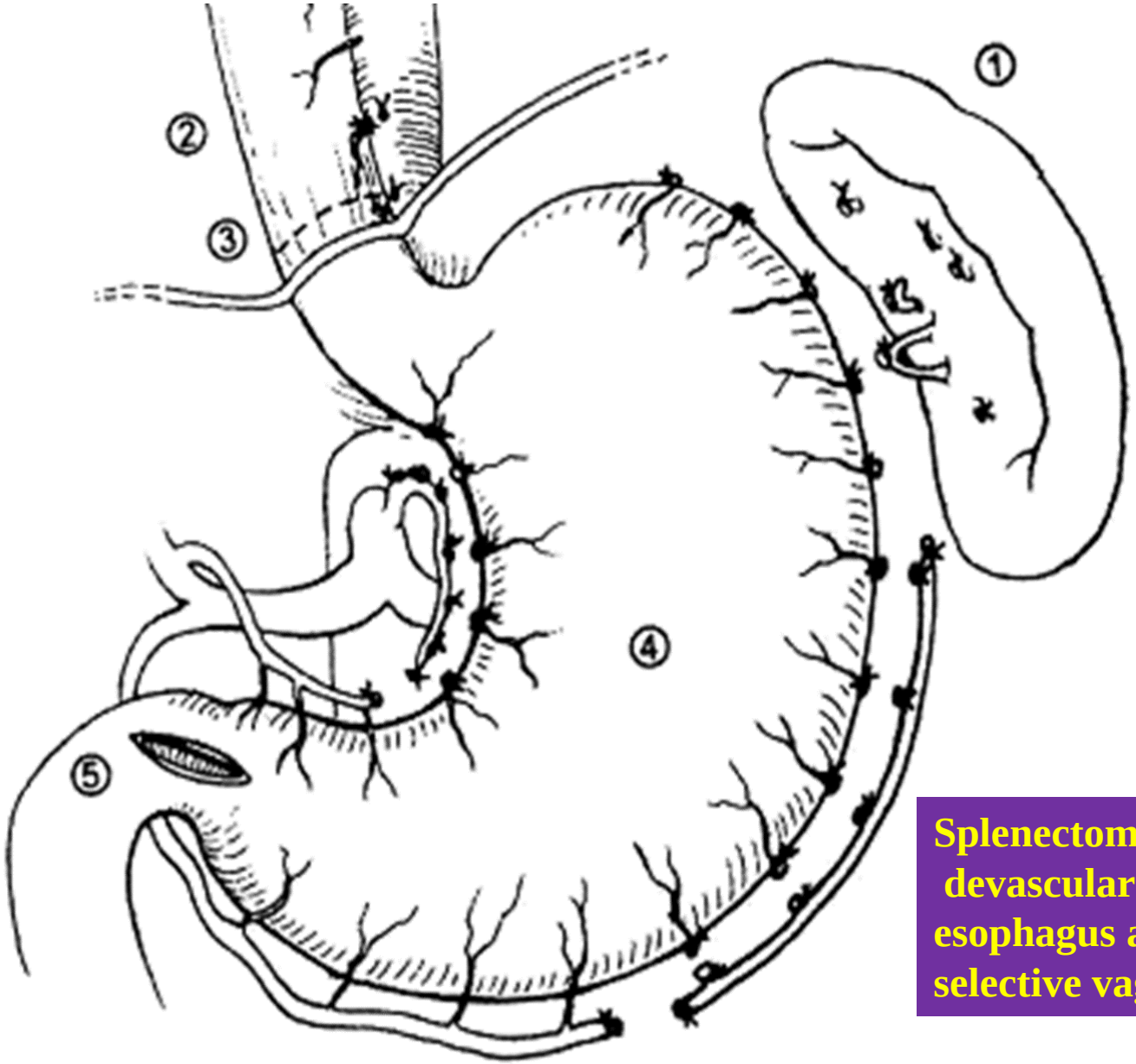


(c) mesocaval



(d) splenorenal

Splenectomy and gastro-oesophageal devascularisation.
Sugiura's Operation



Splenectomy,
devascularization of the abdominal esophagus and cardia.
selective vagotomy with pyloroplasty

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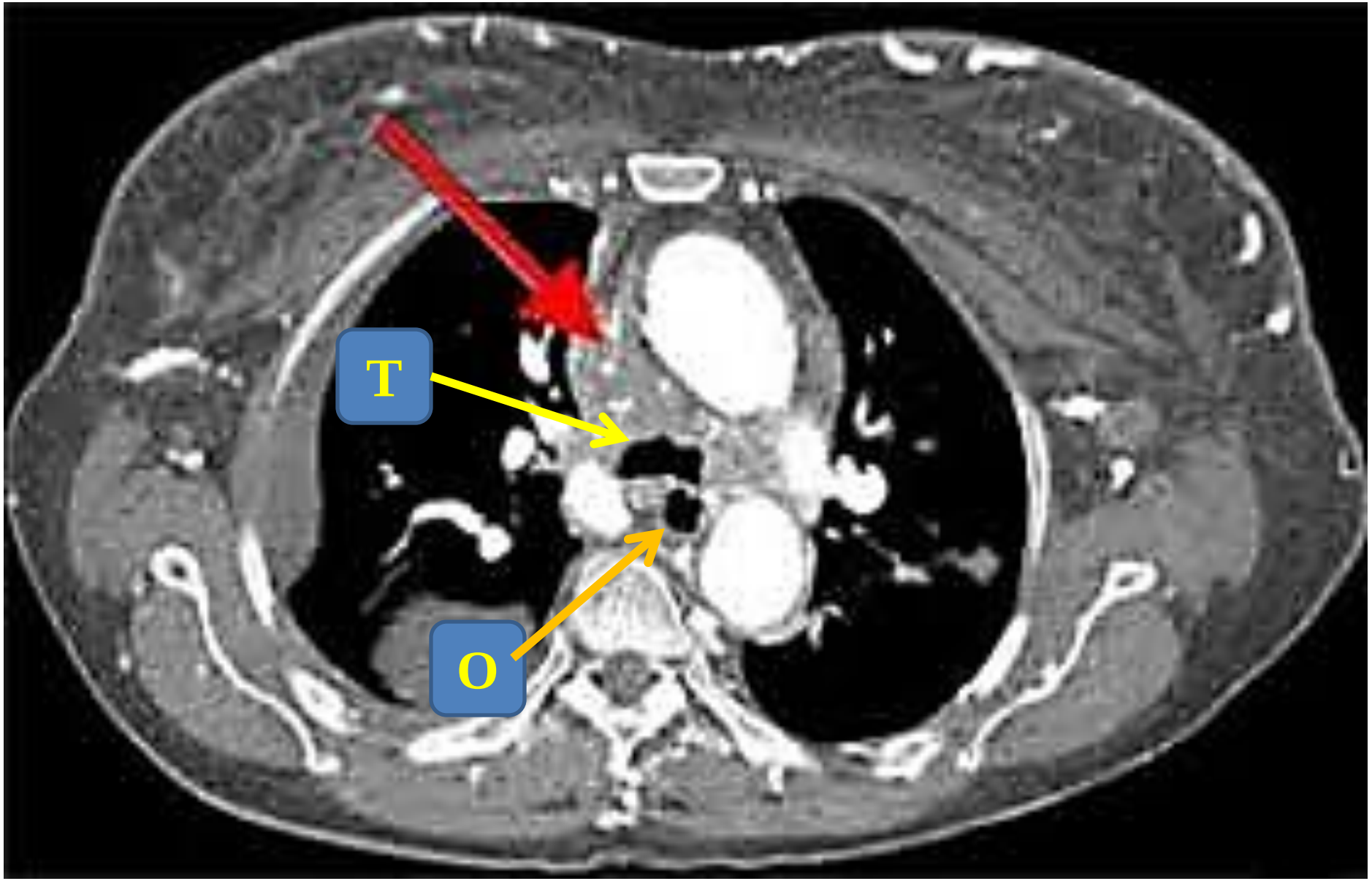
Mediastinal fibrosis

- This rare condition can occur alone or together with retroperitoneal fibrosis.
- The cause is unknown .
- It causes slow progressive and dense fibrosis of the mediastinum.
- Result of caval compression, dysphagia can occur.
-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تم بمعونة الله