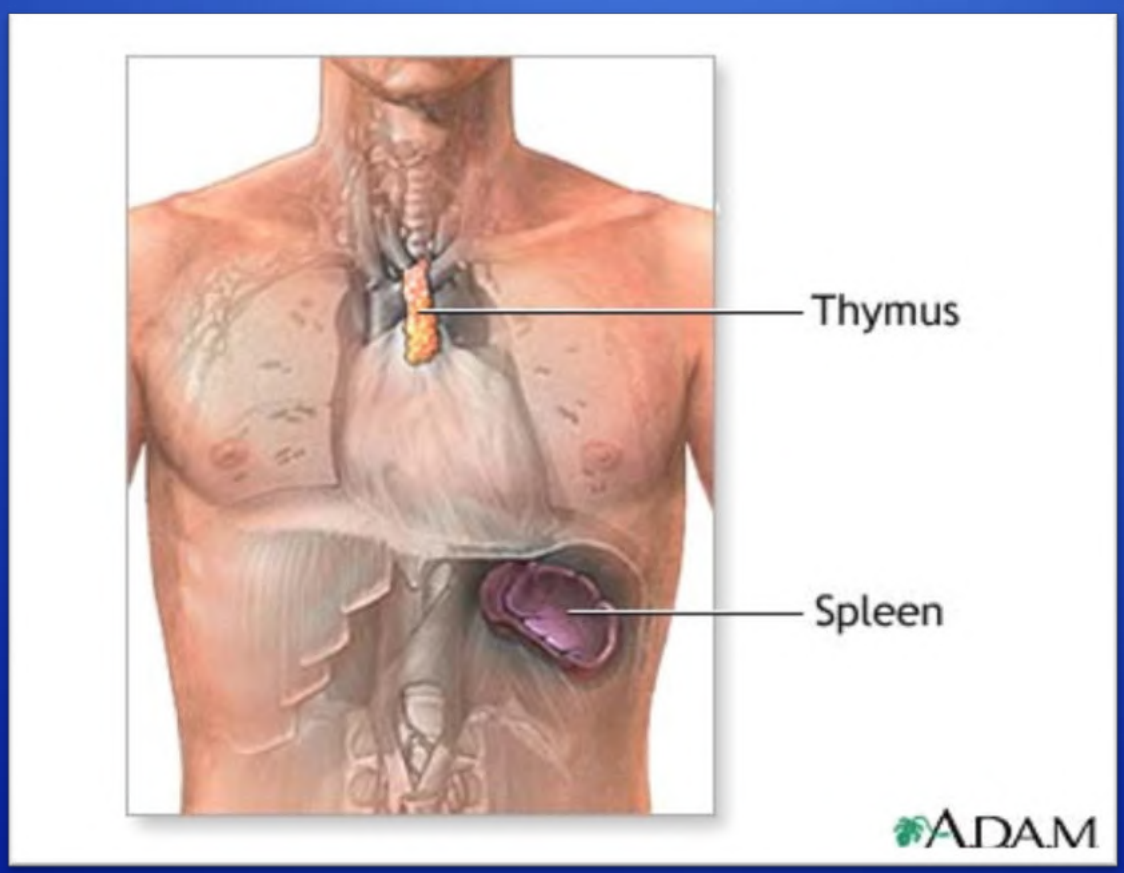
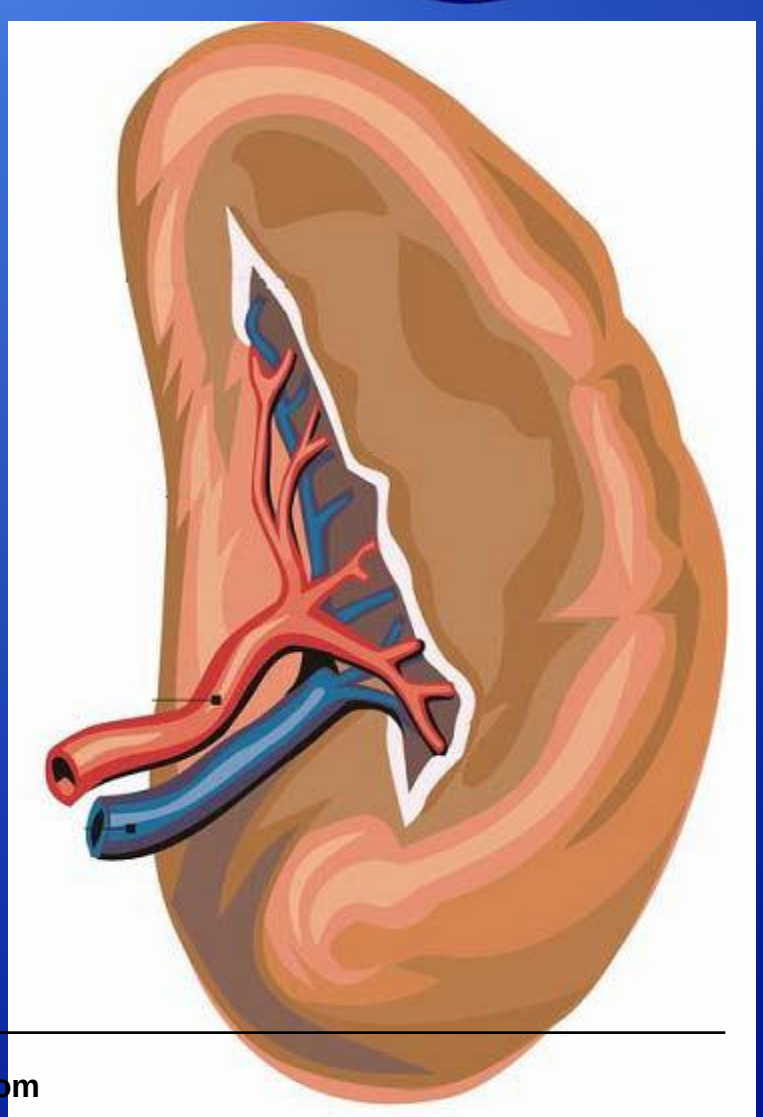
Spleen

Lien(l)
Splen (g)



Definition

- A large, highly vascular lymphoid organ .
- It is the largest of the ductless glands,
- Its soft, and dark purplish color.



Anatomy

Shape – Wedge (Tetrahedral)

Location- Lt. Hypochondrium partly epigastrium

Wedged between the gastric Fundus and the diaphragm,

lies beneath the 9^{th} to 12^{th} ribs,

The hilum sits in the angle between stomach and the kidney and is in contact with the tail of the pancreas

- **Size & weight – markedly variable**
- **Normally – not palpable**
- **Harri's Dictum**
- **Its related to the odd numbers 1,3,5,7,9,11,**
- **Thick , Broad, length, weight & relation.**

- **Position- Axis of spleen**

lies obliquely along the long axis of the 10th rib.

Directed- downwards, forwards & laterally. (45*)

External features-

Two ends, Three borders & Two surfaces.

- **Peritoneal Relations-**
- **Surrounded by peritoneum & suspended by following ligamnets-**
- **Gastrosplenic ligament- short gastric vessels, lymphatics & symp. N.**
- **Lienorenal ligamnet- tail of pancreas, splenic vessels,**
- **pancreaticospleni lymoh nodes**
- **phrenicocolic ligamen – supports only.**
- **Visceral relations-**

visceral & diaphragmatic surface- costodiaphragmatic recess of pleura, lung, & 9,10,11th ribs of left side.

Blood Supply

- **Arteries :**

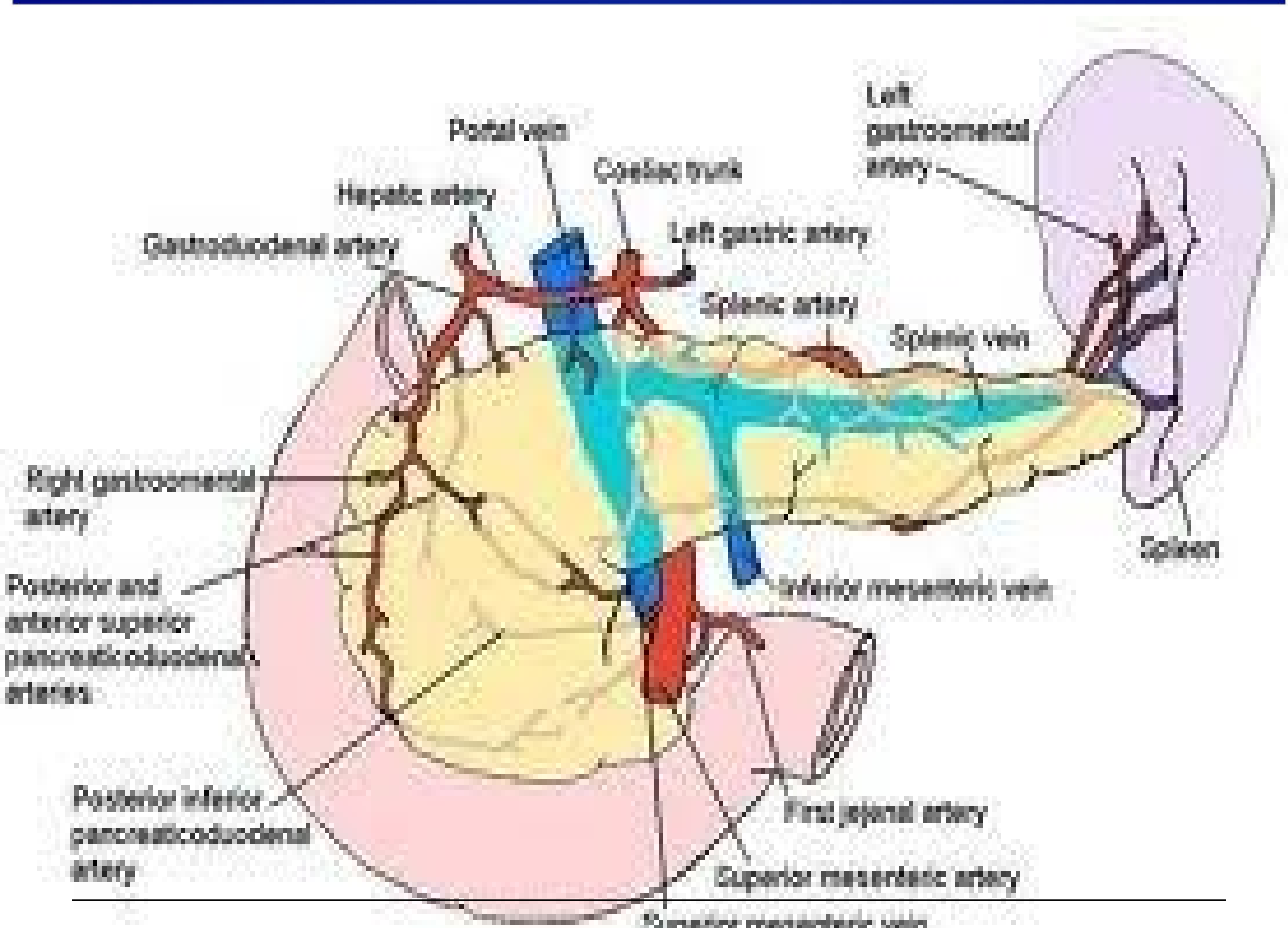
  The splenic artery which is the largest branch of the celiac artery

- **Veins :**

  The splenic vein which joins the superior mesenteric vein to form the portal vein

- **Lymph drainage :**

  The lymph vessels emerge from the hilum and drain into the celiac nodes .



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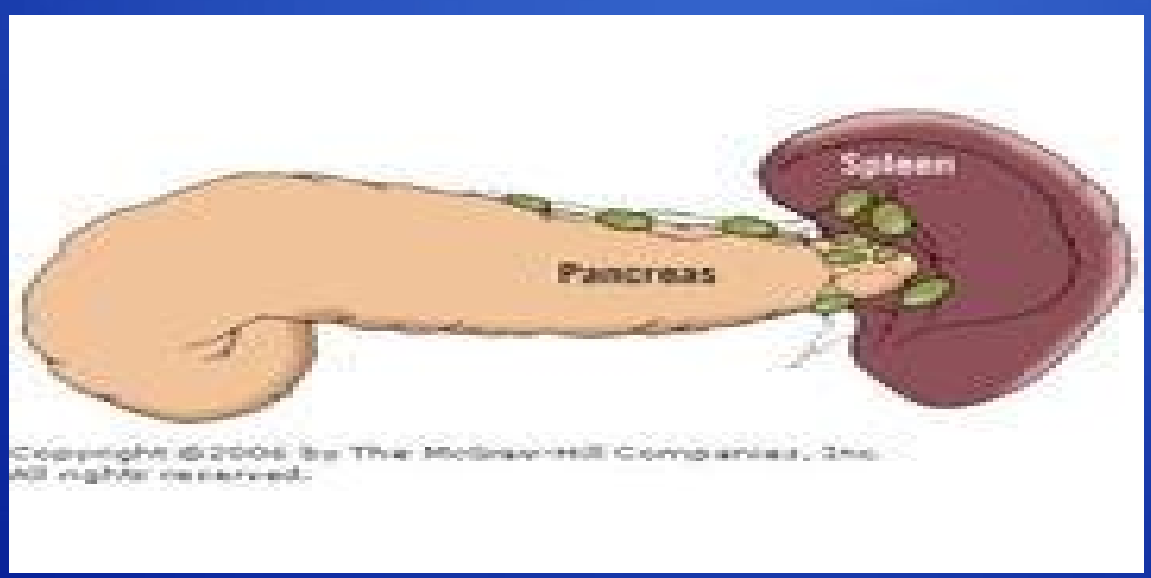


Nerve Supply- sympathetic fibres are derived from the coeliac plexus, vasomotor in nature.

Functions of the spleen

Immune function	• the spleen processes foreign antigen • Make bacteria and fungi more susceptible to phagocytosis. • Macrophages capture cellular and noncellular material from the blood and plasma includes bacteria, especially pneumococci
Filter function	
culling	• Removal of effete, platelets and red cells • removing the inclu-sions from red cells and returning the repaired red cell to the circulation
Pitting	
Pooling	• up to 30—40 per cent of blood platelets are sequestered within the spleen. • removal of iron from ingested degraded haemoglobin during red cell culling and return the iron to the plasma.
iron reutilisation	

- PALPATION OF THE SPLEEN
- SPLENOMEGALY
- SPLENECTOMY
- SPLENIC PUNCTURE
- SPLENIC INFARCTION- Kehr's sign.

SPLENOMEGALY

What is splenomegaly ?

- Splenomegaly is an enlargement of the spleen beyond its normal size

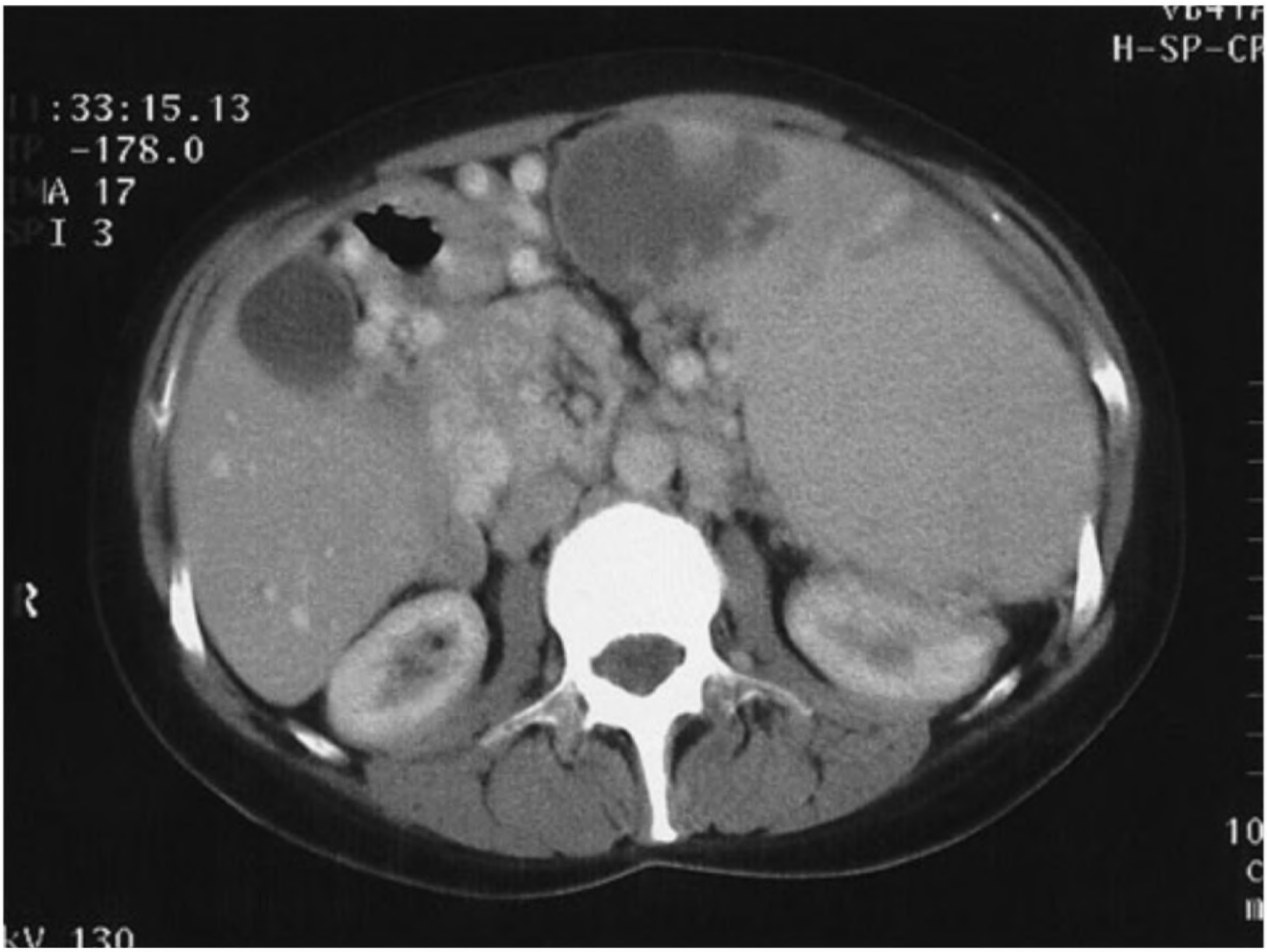
Symptoms and signs

Symptoms:

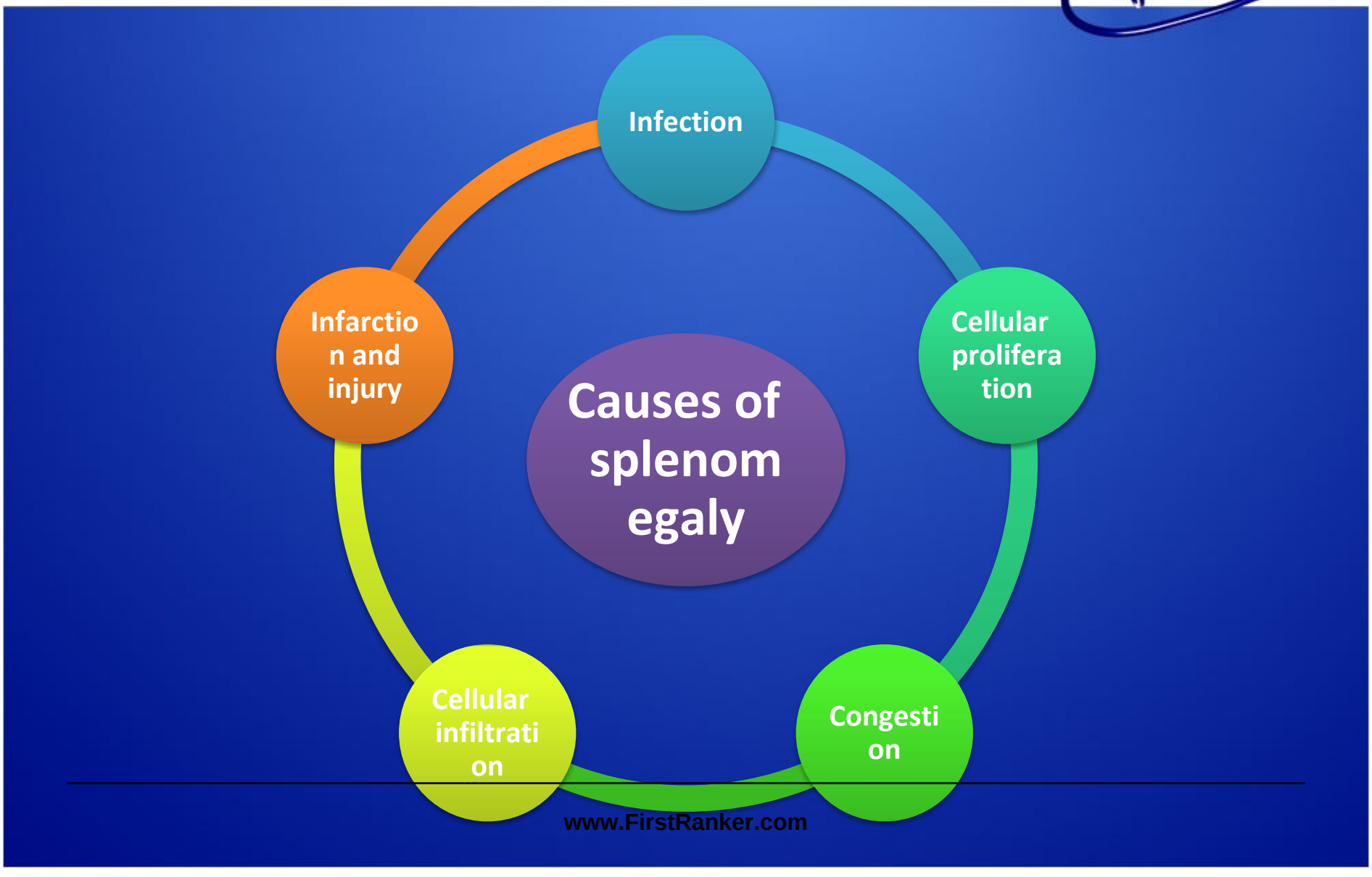
- Abdominal pain
- chest pain
- back pain

Signs:

- palpable left upper quadrant
- Abdominal mass



Causes of splenomegaly



1- Infection

- Bacterial
- Viral
- Protozoal

2- Cellular Proliferation

Malignancies

- leukemia
- lymphoma

Anemia

- Spherocytosis
- Hemolytic
- Sarcoidosis
- Myelofibrosis
- pernicious

3- Congestion

- Portal hypertension
- Hepatic vein obstruction
- Congestive heart failure

4- collagen disease :

- Felty's syndrome
- Still's syndrome

Felty's syndrome

- **Felty syndrome** is characterized by the combination of:

1. rheumatoid arthritis
2. splenomegaly
3. Neutropenia

5-Infarction and Injury

1. • Embolism from ; bacterial endocarditis , AF, MI
2. • Splenic artery or vein thrombosis
3. • Hematoma

Hypersplenism

- **Definition:**

Hypersplenism is a type of disorder which causes the spleen to rapidly and prematurely destroy blood

Types & causes

1ry hypersplenism	• The problem within the spleen itself.
2ry hypersplenism	• chr. malaria • TB • Polycythemia vera • Tumors. • Portal hypertension Almost always

Symptoms & signs

↓ RBC
- Symptoms of anemia

↓WBC
- Symptoms of leukopenia & recurrent infections

↓platelets
- Symptoms of thrombocytopenia

+ splenomegaly

Diagnosis & ttt

History taking

Clinical examination

Imaging studies

Laboratory investigation

Treat underlying dis.
splenectomy

SPLENECTOMY

Splenectomy

- **Definition:**

A splenectomy is the total or partial surgical removal of the spleen

Indication of Splenectomy

- **Trauma:**

A- accidental B- during surgical procedure of surrounding structures

- **As a part of other procedures:**

eg. Radical gastrectomy in gastric carcinoma. Total or distal pancreatectomy.

- **Hematological conditions:**
- **A- RBC:**
- - Hereditary spherocytosis
- - Thalassaemia
- - SCA
- - Autoimmune hemolytic anemia (AIHA)
- **B- WBC:**
- - CML)
- - Lymphomamanagement
- C- **Platelets**:
- - Idiopathic thrombocytopaenic purpura (ITP)

- **Vascular conditions:**
- a- Splenic Artery Aneurysm
- b- Portal hypertension (only if there are symptomatic esophageal varices) which we called it segmental portal hypertension.

- **Tumors or Abscess:**
- primary tumors of the spleen
- Splenic Abscess(Both are rare conditions)
- Others: like cysts in spleen which could be congenital, degenerative or parasitic like in hydatid dis.

- **Remember that :**

There are two diseases for which a splenectomy is the only treatment—primary cancers of the spleen and hereditary spherocytosis (HS)

Pre Operative Preparation

1.VACCINATIONS

2.PLT Transfusion

3. Steroids

Special Pre-Op Preparations

In SCD:

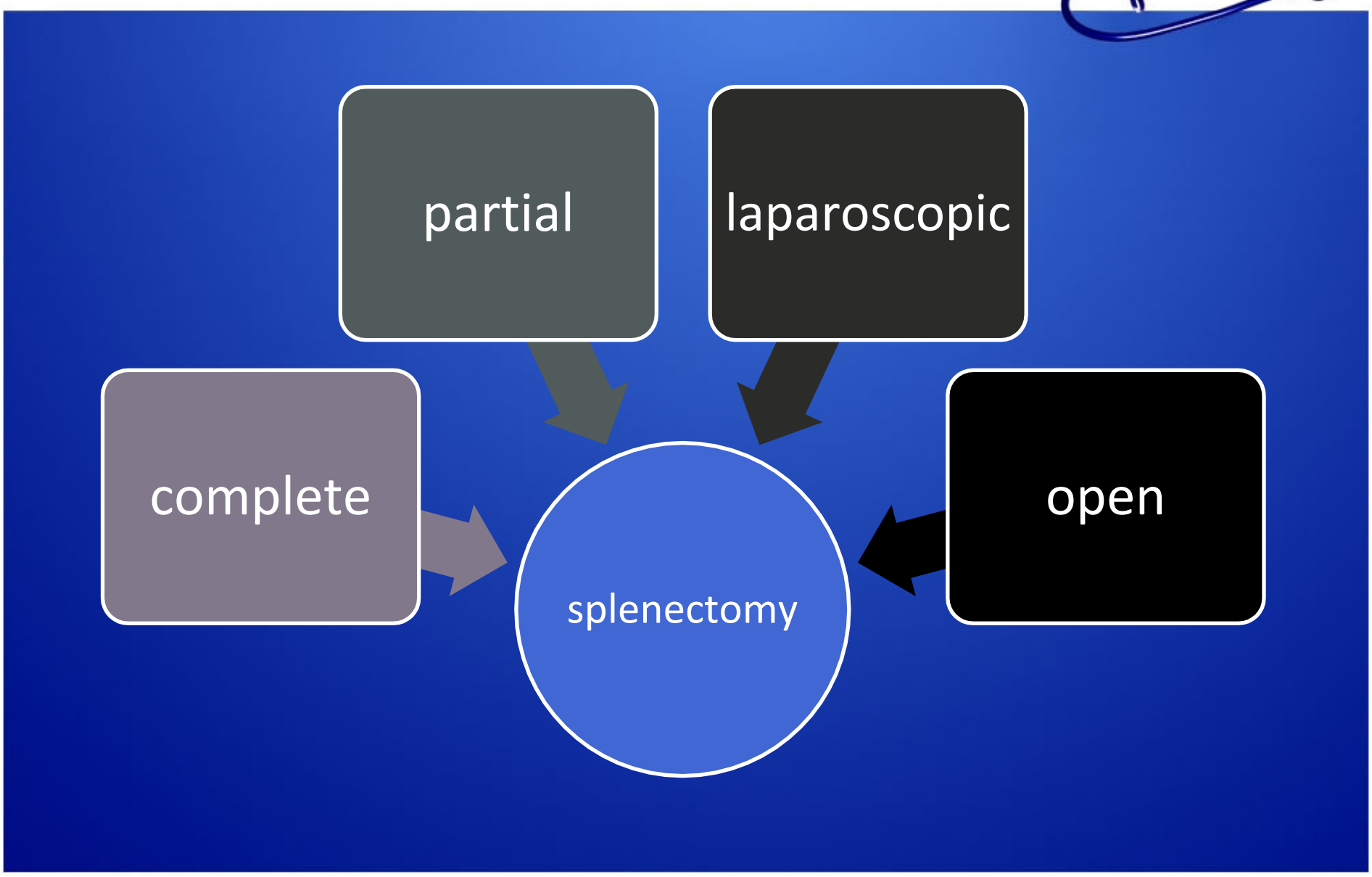
1 Prevention of hypoxia [O2]

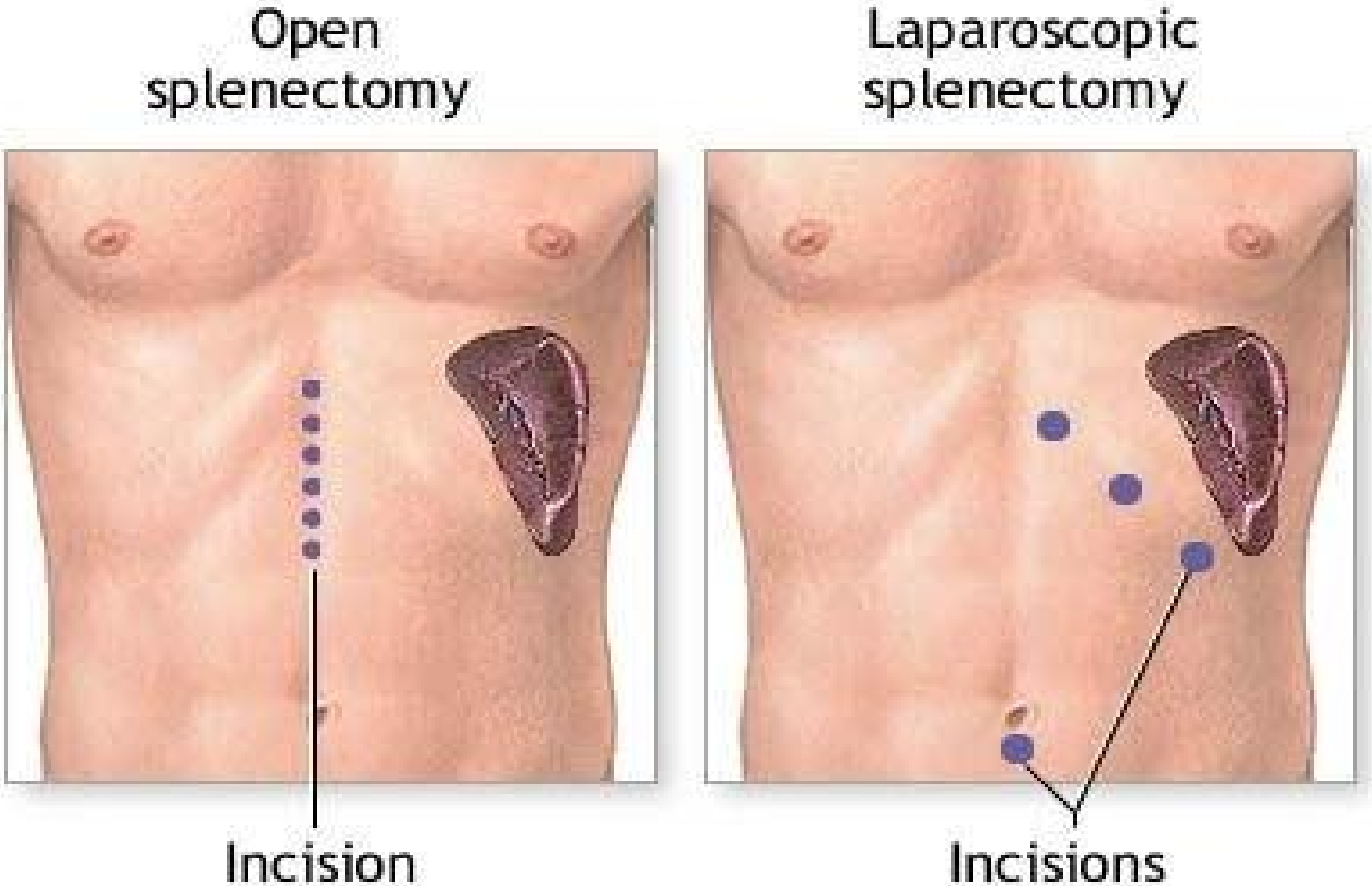
2 hydration

3 Antibiotics

4 Blood!!!!

Types





Laparoscopic splenectomy

- Removal through several small incisions.
- ↓ hospital stay.
- ↓ postoperative pain.
- ↓ risk of get infection
- Leave smaller scars.
- Remove only middle size enlarged spleen.

Complete splenectomy

Removal of enlarged spleen

- Performed under general anesthesia.
- One of the open surgery.
- Most common technique used if we have …..

Removal of ruptured spleen

- Common cause of rupture is accidental trauma.
- To avoid bleeding, we ties the splenic artery before removing the ruptured organ.

Partial splenectomy

- Removes only part.
- Useful to reduces pain caused by splenomegaly.
- The pt. is less vulnerable to infection.

Complications

Early complications

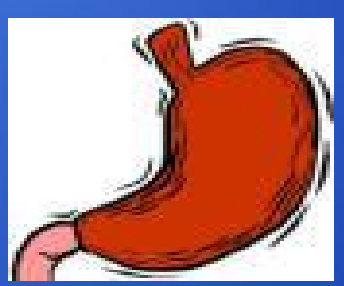
Late complications

Postoperative complications

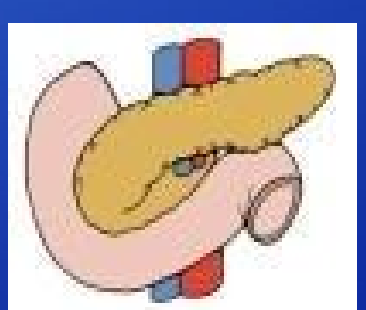
- ***Lung:***
  - Atelactasis
  - Pleural effusion
  - Subphrenic abscess

Postoperative complications

- ***Stomach***
  - Dilatation
  - Perforation
  - Fistula
  - Haematemesis



- ***Pancreas***
  - Abscess
  - Pancreatitis
  - Fistula



Postoperative complications

- ***Haematological***

increase in Plts &WBC.

- ***Postsplenectomy Septicaemia***

D/T *H.inf
*St.pneum
*N.mening