



## Surgical anatomy of the liver

San Raffaele Hospital Milano | Dr. Luca Aldrighetti

**OLYMPUS**

---

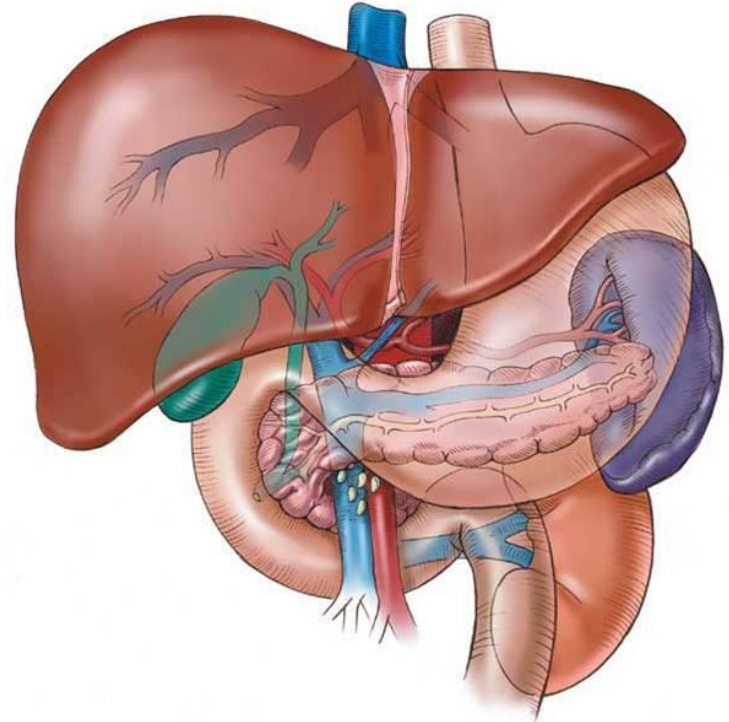
**Medical Expert Training**

Olympus does not assume any liability for the completeness, accuracy and up-to-dateness of the information provided by the speaker. Liability claims against Olympus related to damages of a material or non-material nature which have been caused due to the use or non-use of the information provided by the speaker or due to the use of incorrect an/or incomplete information are strictly excluded.

This presentation including its content are protected by copyright. You are not authorized to duplicate, distribute, reproduce or process, to make it publicly accessible or to perform this presentation or its contents without prior written consent of the owner of contents.

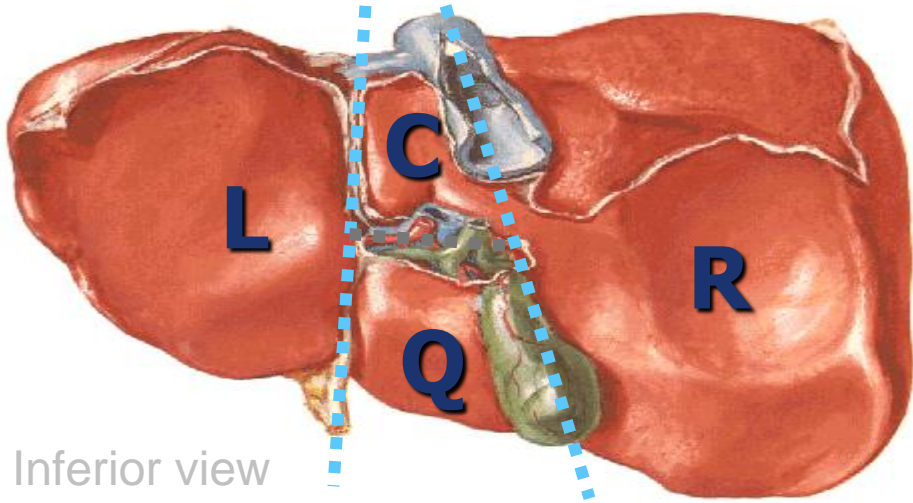
---

## Anatomy in hepatobiliary system



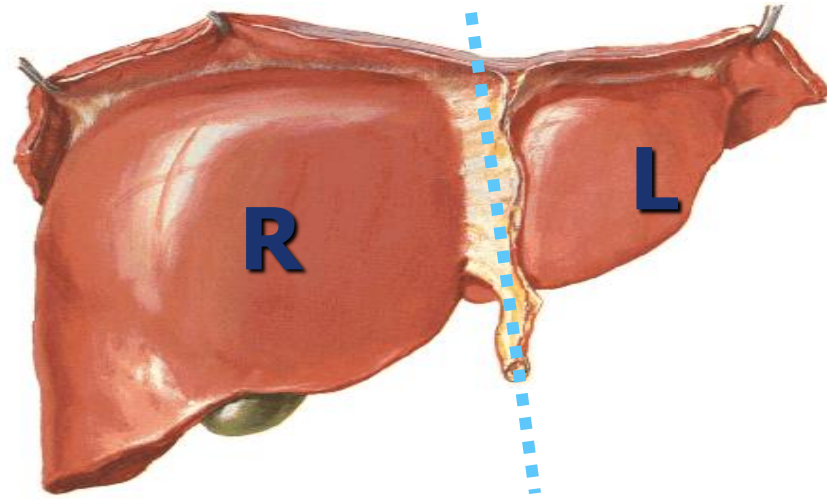
## Surface anatomy – Liver morphology

- ✓ Right Lobe (R)
- ✓ Left Lobe (L)



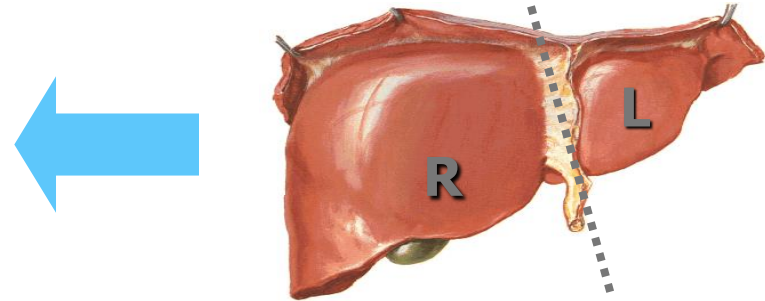
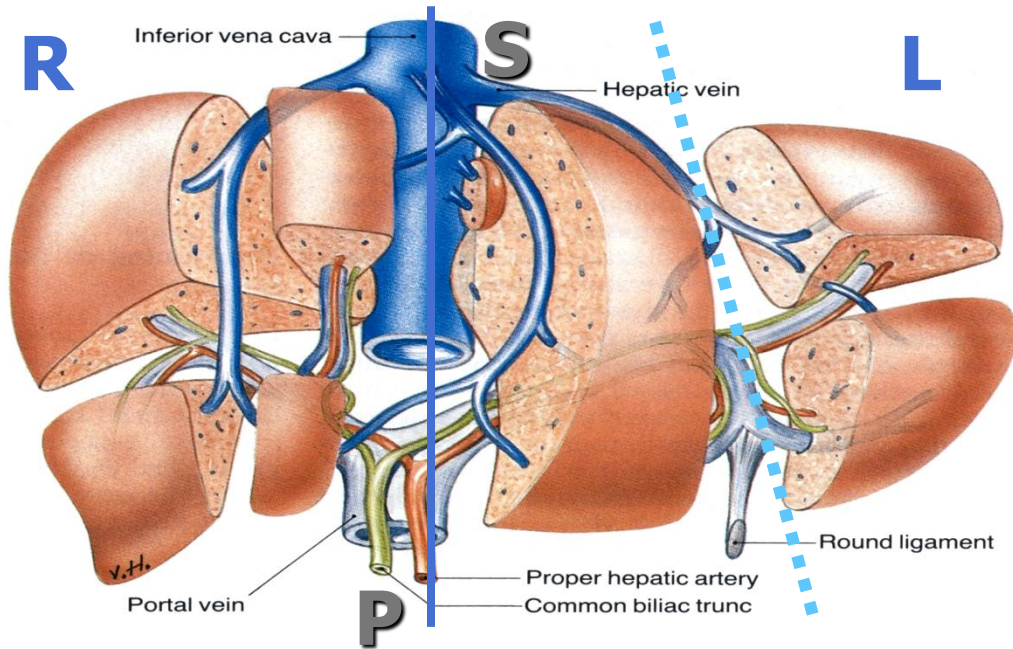
Inferior view

Anterior view



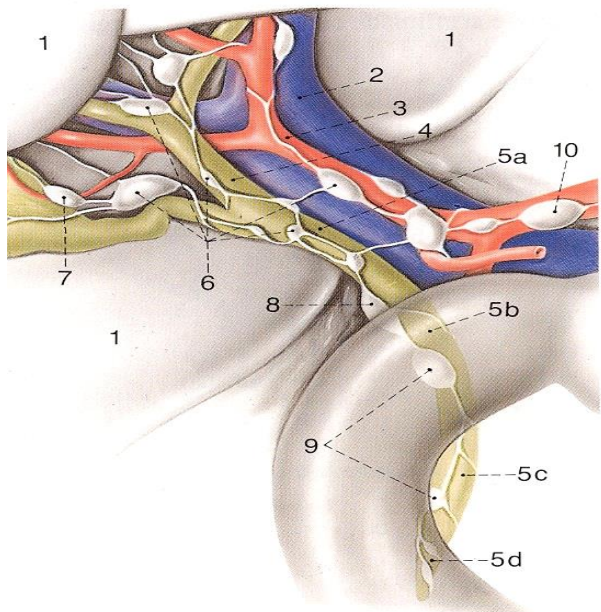
- ✓ Caudate Lobe (C)
- ✓ Quadrate Lobe (Q)

## Surgical anatomy – Liver vascularization

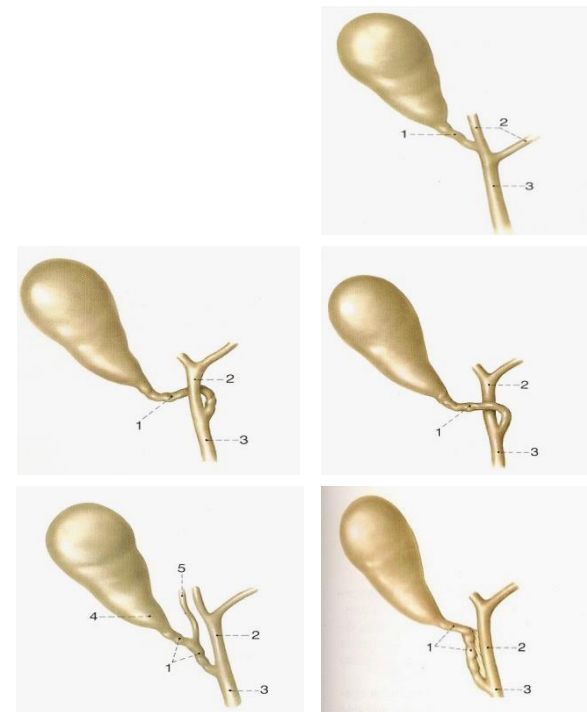
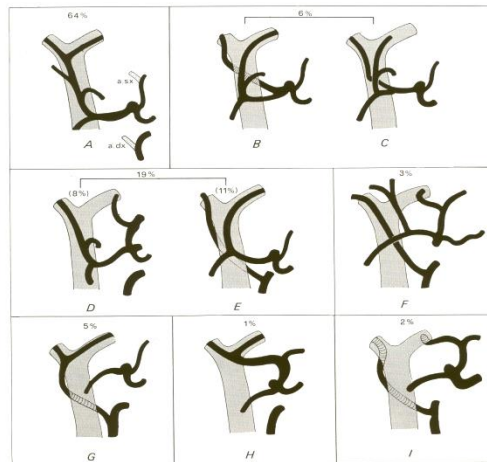


- ✓ Portobiliary hilum (P)
- ✓ Suprahepatic hilum (S)

# Surgical anatomy – Liver vascularization

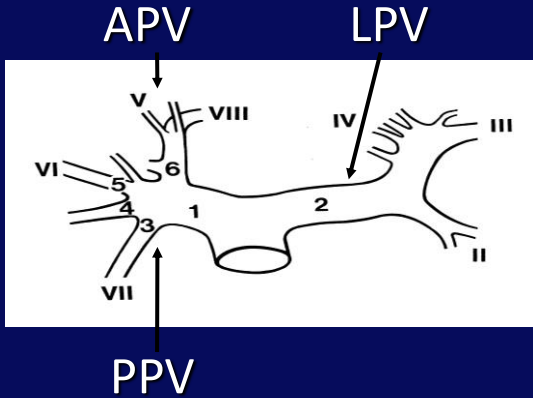


## Portobiliary hilum

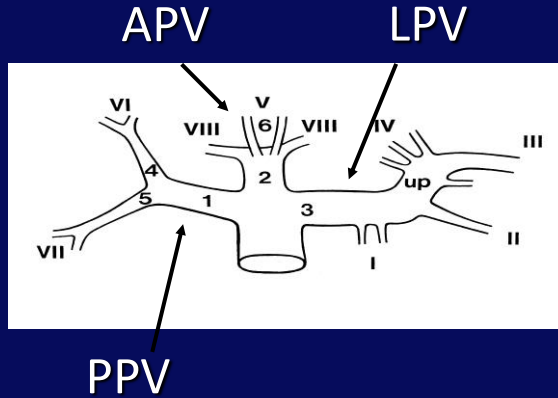


# Surgical anatomy – Portal vein

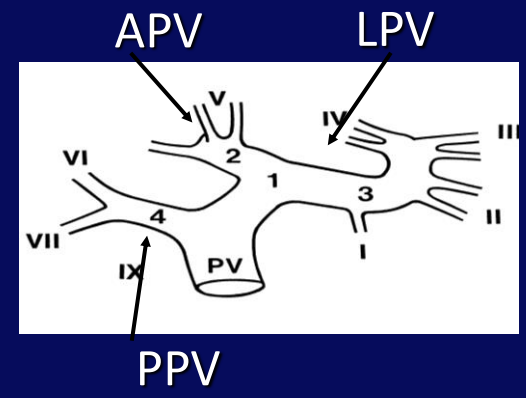
77%



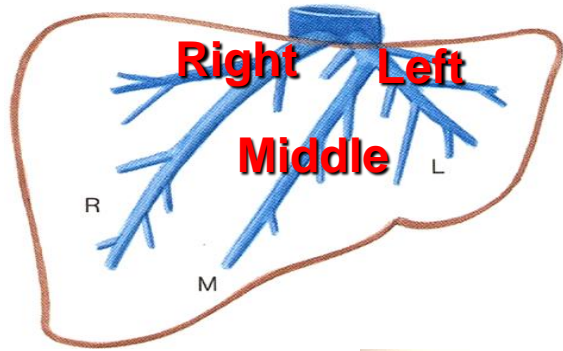
9%



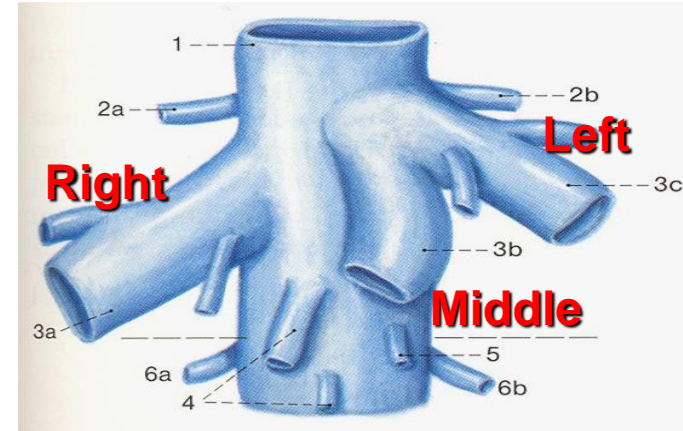
14%



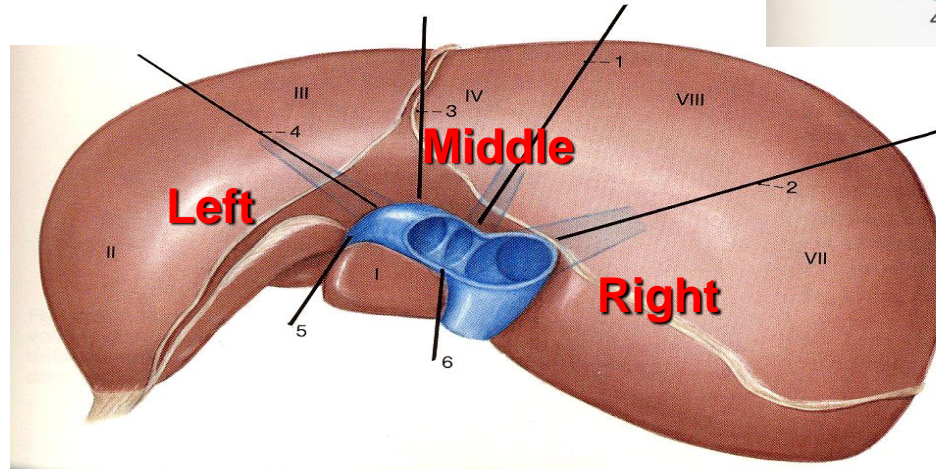
# Surgical anatomy – Liver vascularization



Suprahepatic hilum



Three main hepatic veins





## Surgical anatomy – Hepatic veins



Type I

**70%**

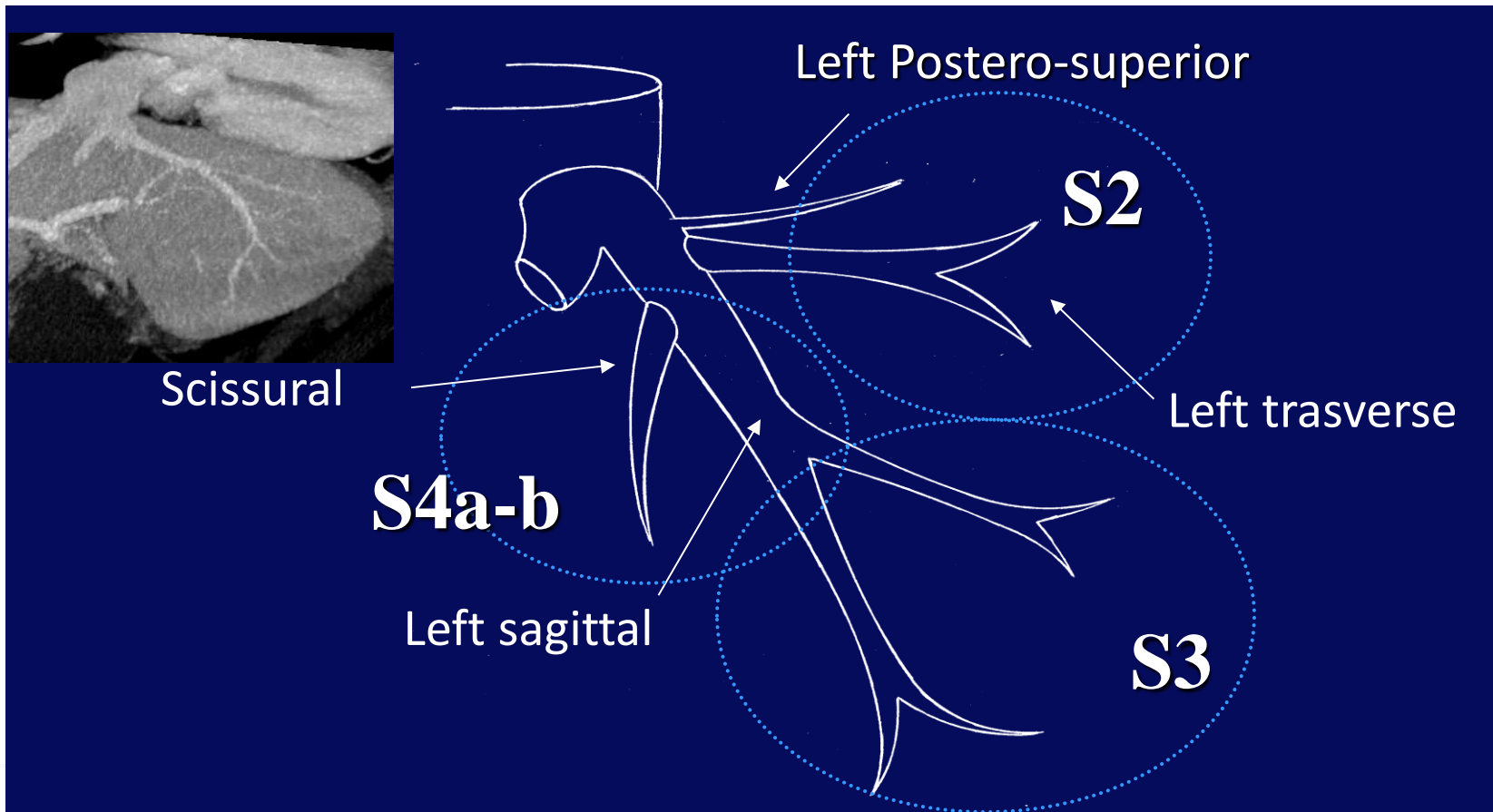
Type II

**25%**

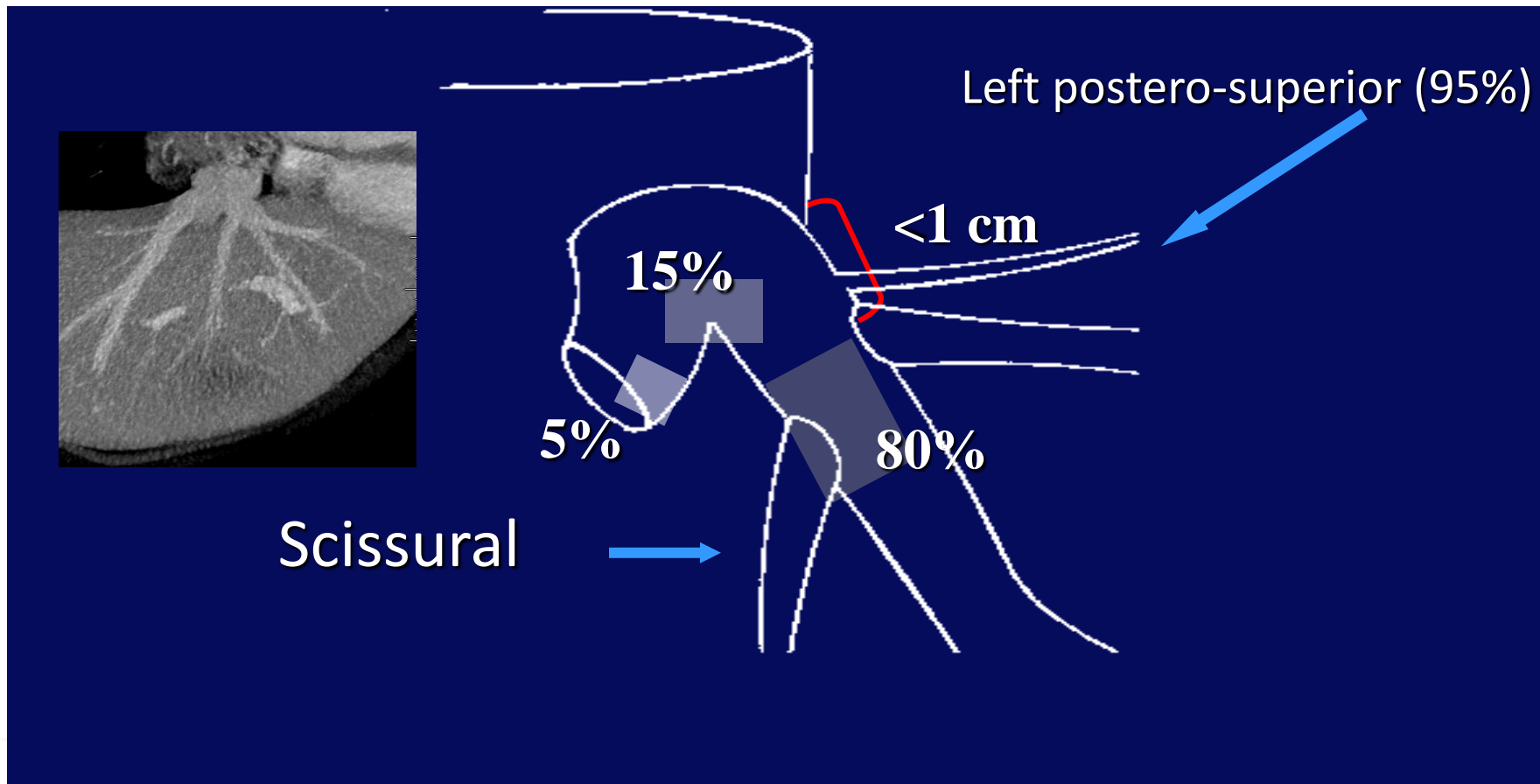
Type III

**5%**

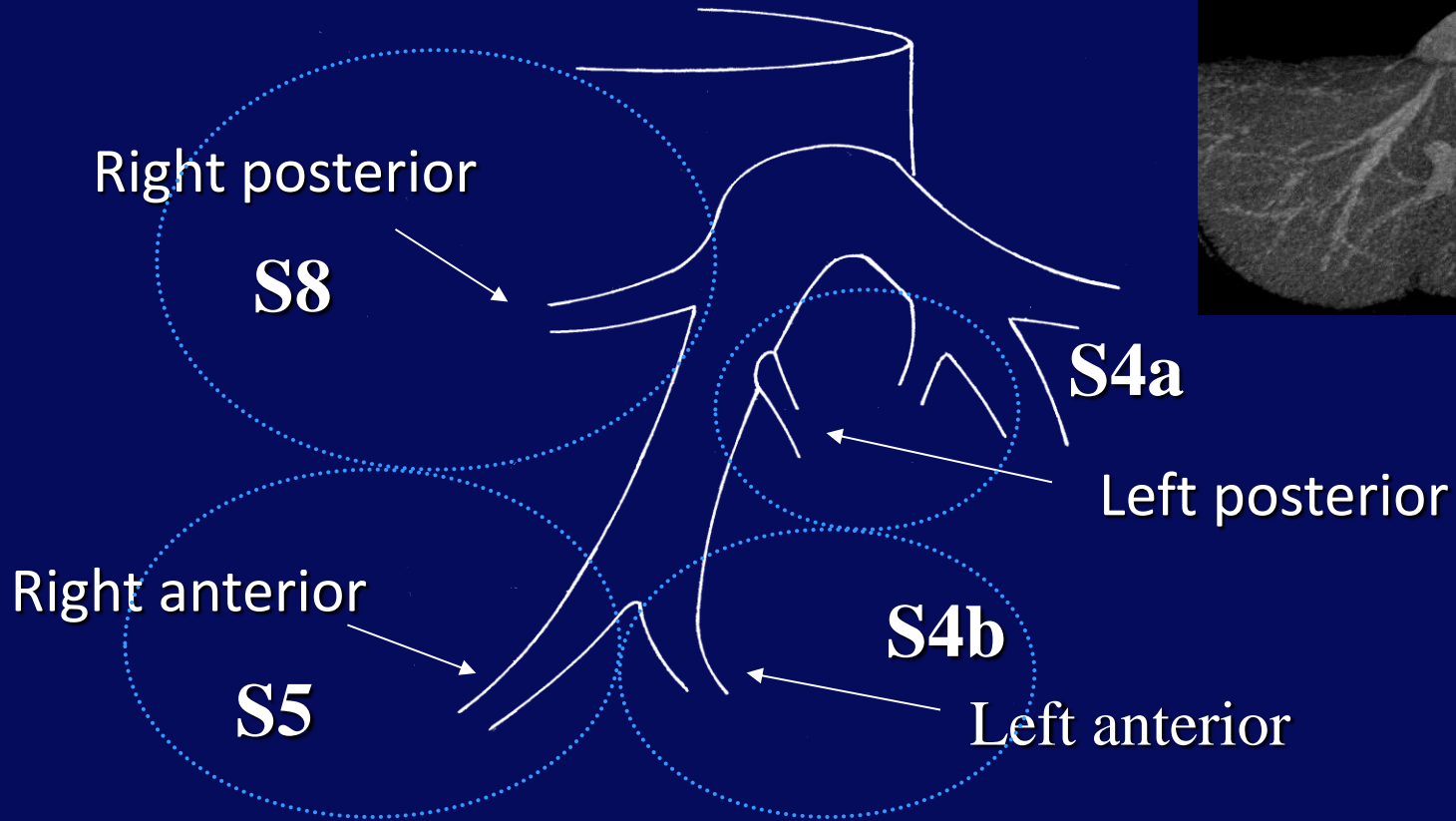
## Surgical anatomy – Left Hepatic vein



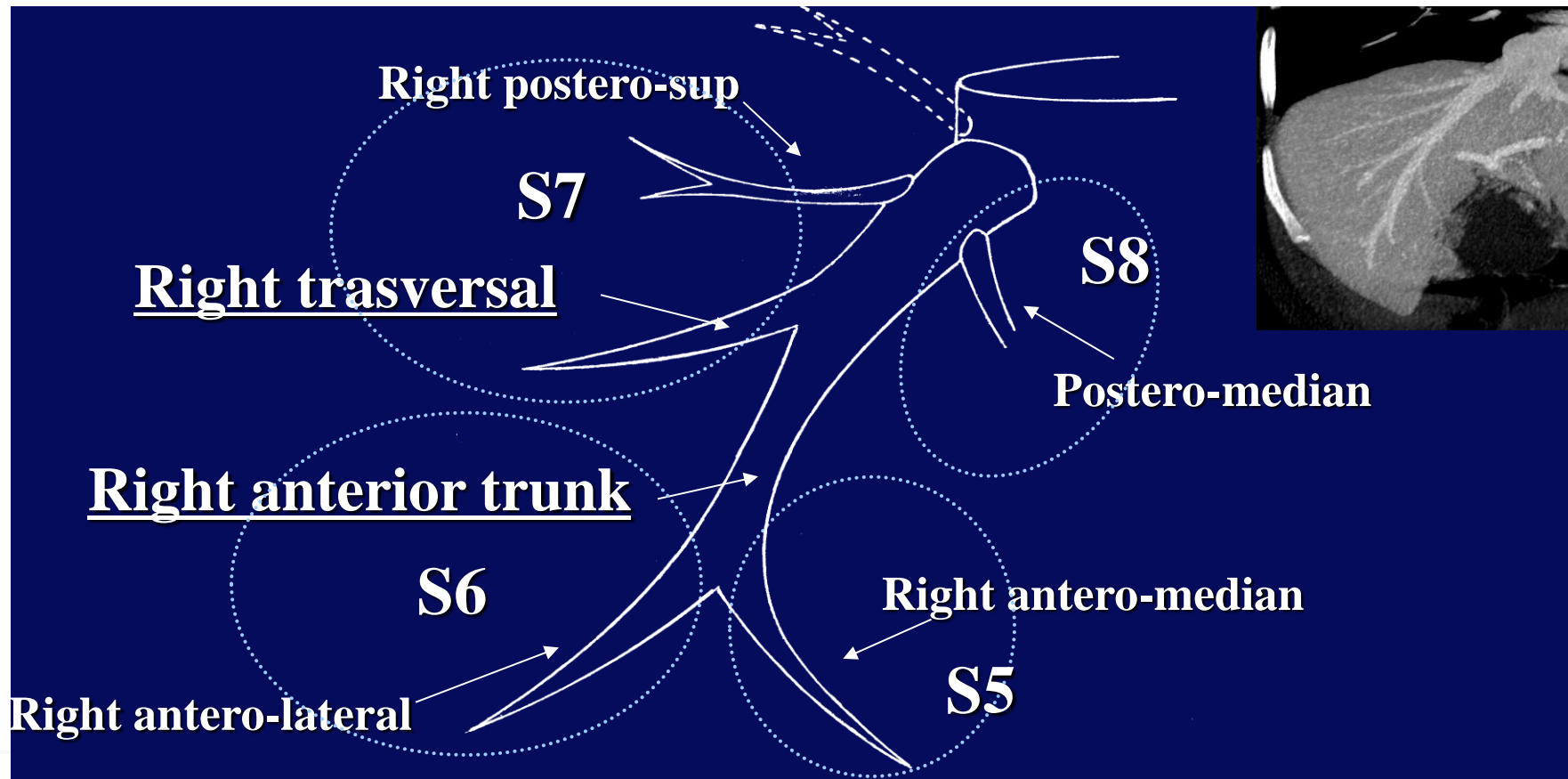
## Surgical anatomy – Left Hepatic vein



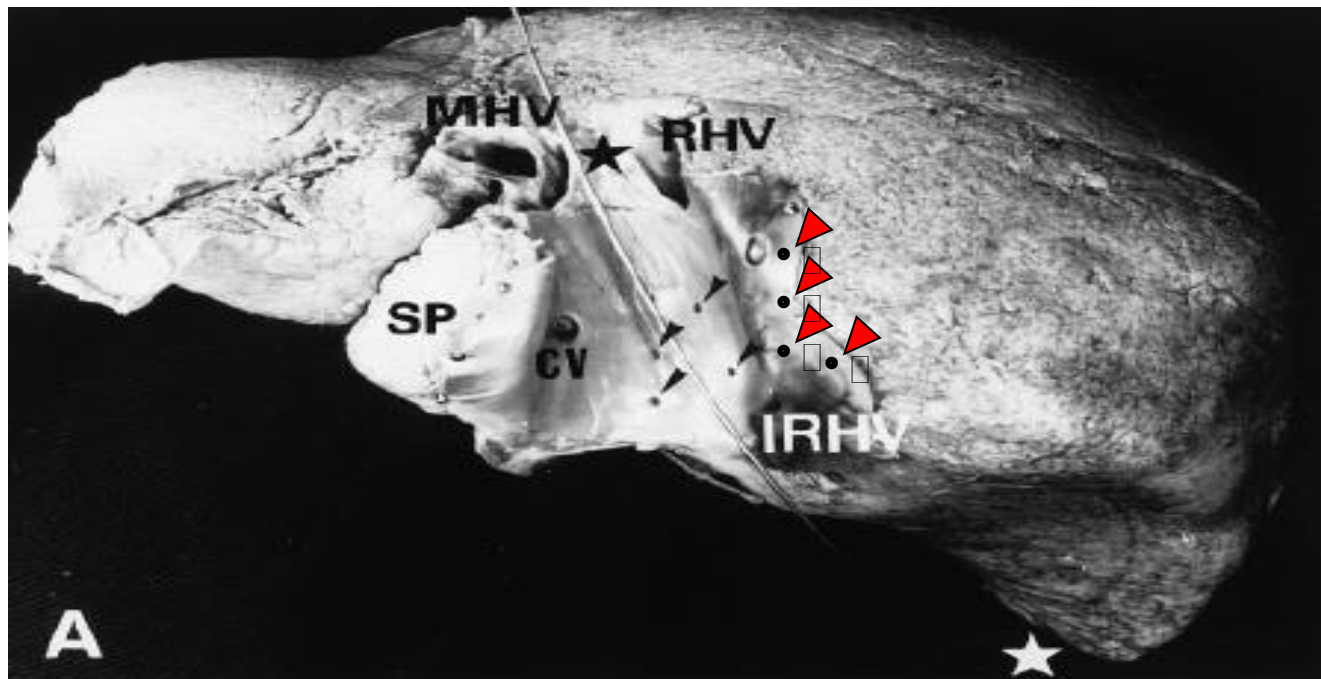
## Surgical anatomy – Middle Hepatic vein



## Surgical anatomy – Right Hepatic vein

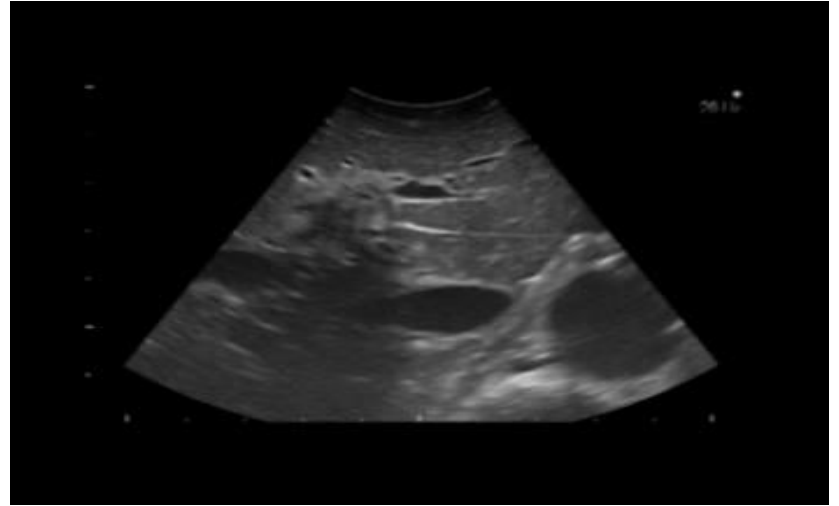


## Surgical anatomy – Hepatic veins

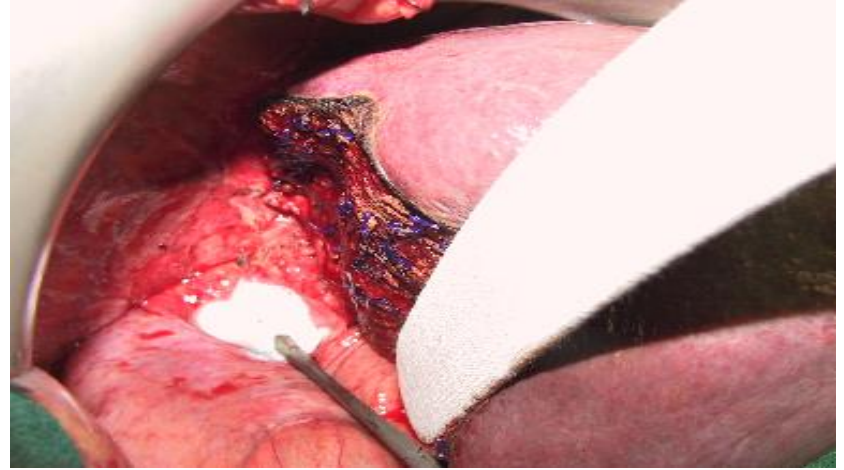


- ▶ Sg1 hepatic veins
- ▶ Short hepatic veins

## Surgical anatomy – Inferior Hepatic vein



## Surgical anatomy – Inferior Hepatic vein

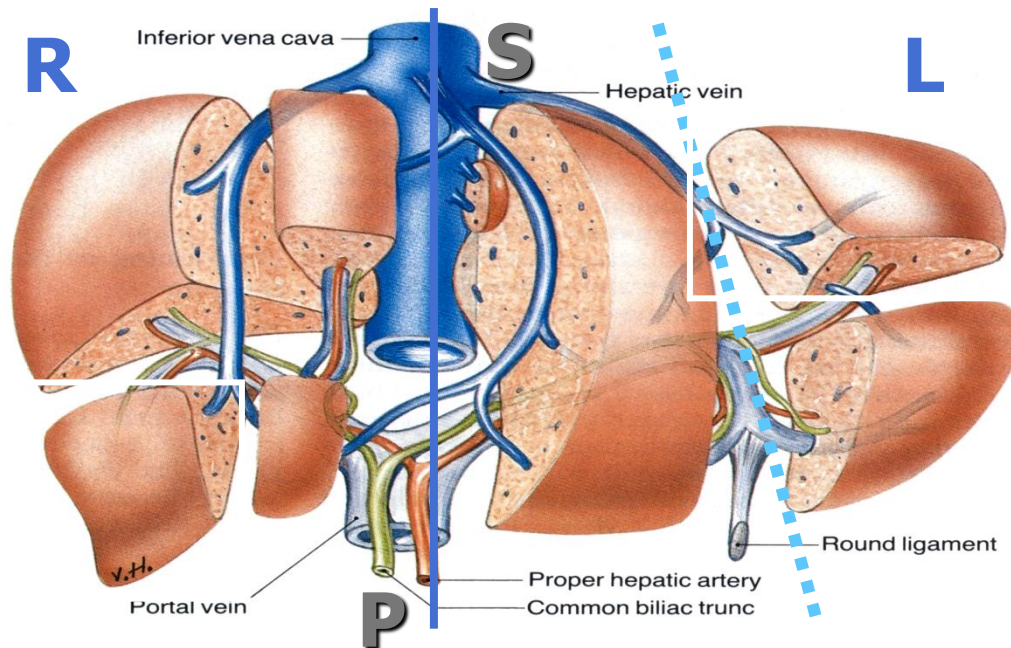


*Allows section of the right hepatic vein with preservation of Sg6*



## Surgical anatomy – Liver segments

- ❖ The liver can be divided in **SEGMENTS**: each of them has an ***autonomous vascularization*** (portal supply and suprahepatic efflux) and ***biliary drainage***.



## Conclusions

- Study of liver anatomy is fundamental during preoperative planning of every liver resection
- In particular, the surgeon should focus on
  - Portal vein
  - Hepatic artery
  - Hepatic veins
- This allows to reduce the incidence of intraoperative accidents and to control better unfavourable events



## Surgical anatomy of the liver

San Raffaele Hospital Milano | Dr. Luca Aldrighetti