RADIOLOGY CLINICAL MEET FEBRUARY 2024

TUMOUR THROMBUS MASQUERADING AS A RIGHT ATRIAL MYXOMA

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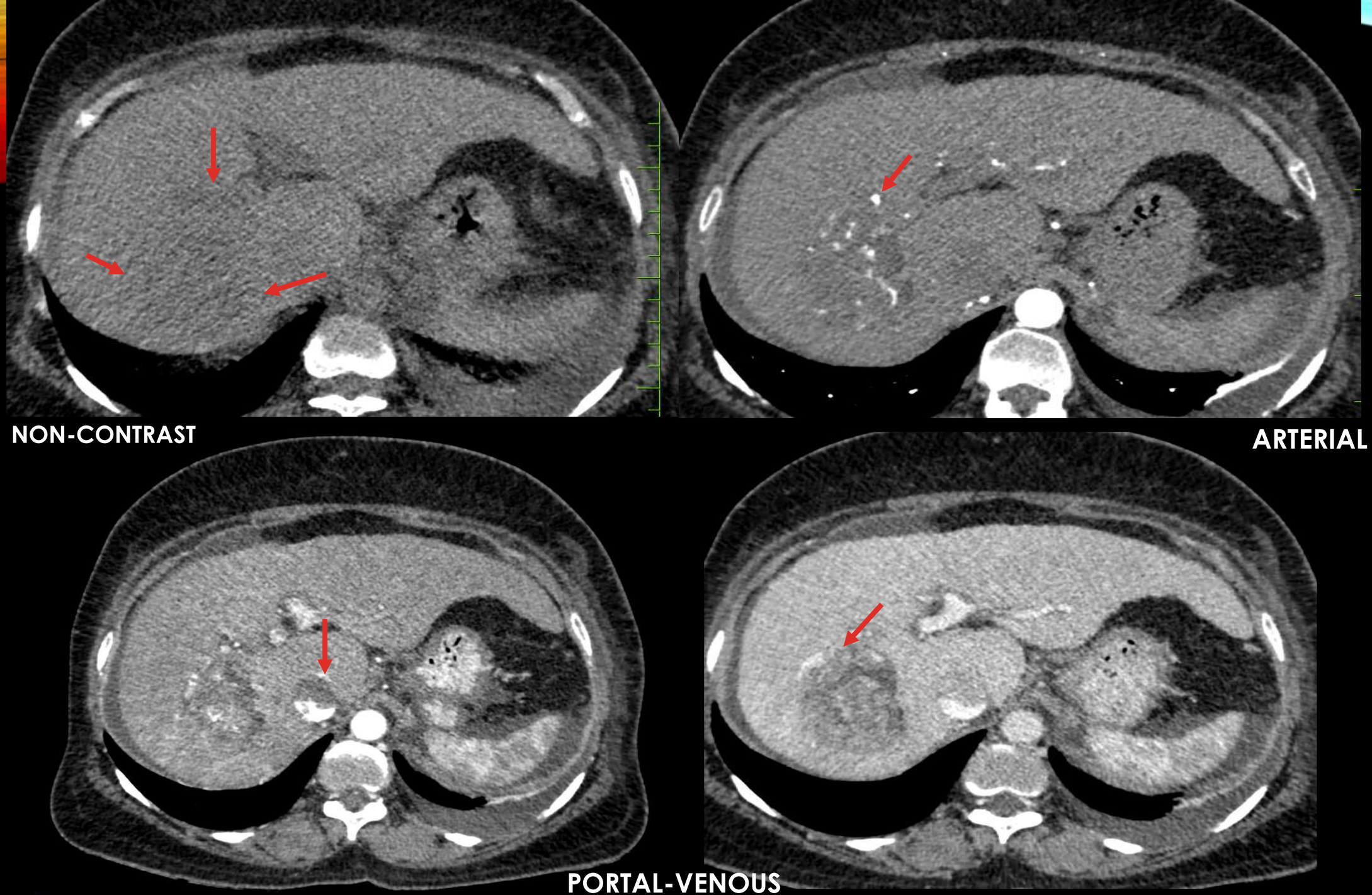
CLINICAL HISTORY

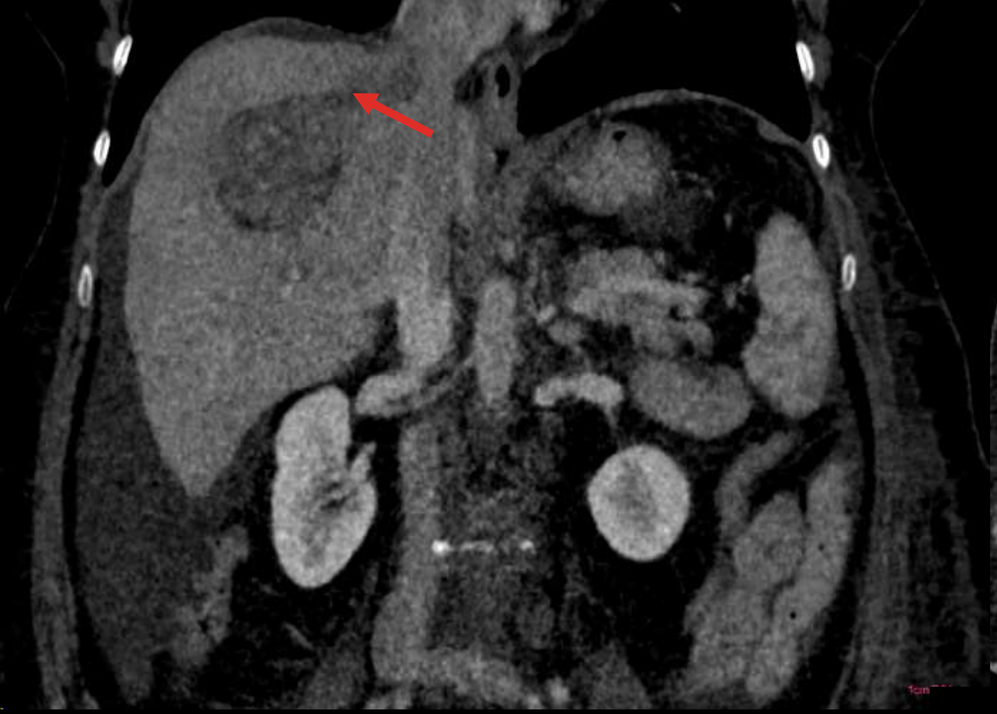
A 63 year old female came with the complaints of-

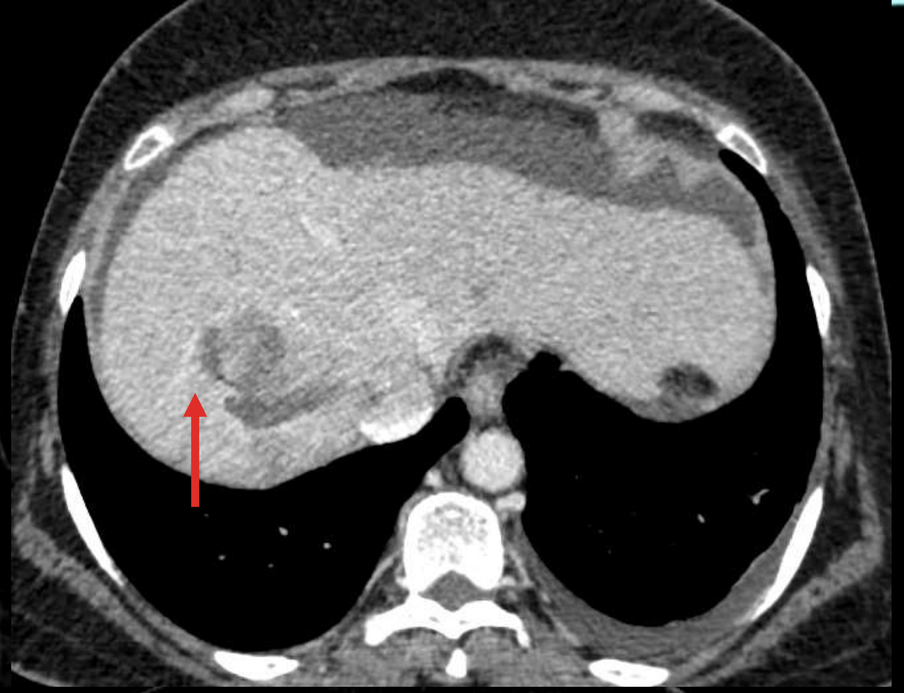
- % difficulty in breathing which aggravates on lying supine and on exertion since 20 days
- % recurrent episodes of palpitations since 20 days
- k/c/o Hepatitis B (HBsAg- reactive)
- k/c/o DM since 6 years and is on medication for the same.
- No h/o TB/ BA/ HTN
- No previous surgical history

2D ECHO-

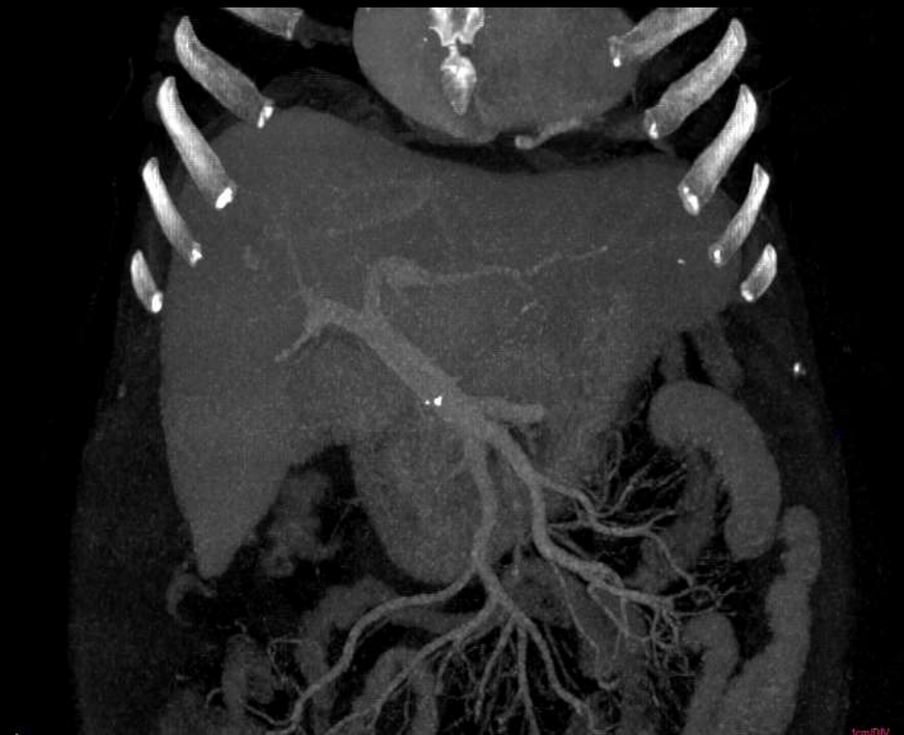
- Homogenous mass present in the RA extending into the IVC obstructing TV/ IVC- ?Right atrial myxoma.
- Aortic Valve Sclerosed
- Normal LV size and systolic function, LVEF- 60%
- No regional wall motion abnormality
- Severe TS
- Mild pericardial effusion (Non-tappable)
- Grade I diastolic dysfunction

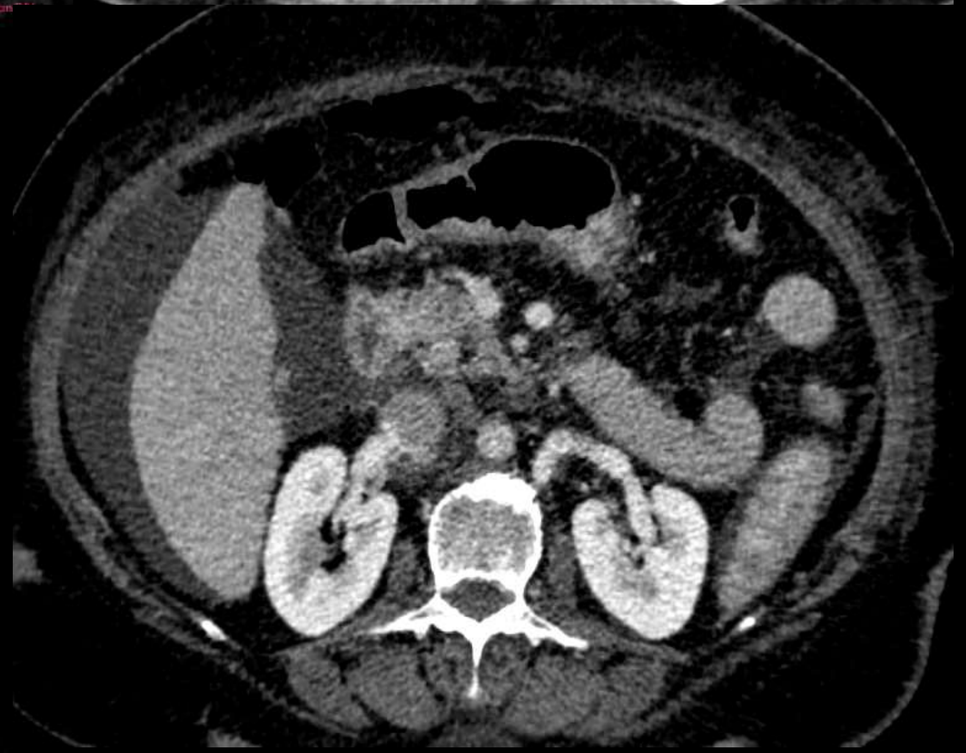

NON-CONTRAST
ARTERIAL
PORTAL-VENOUS



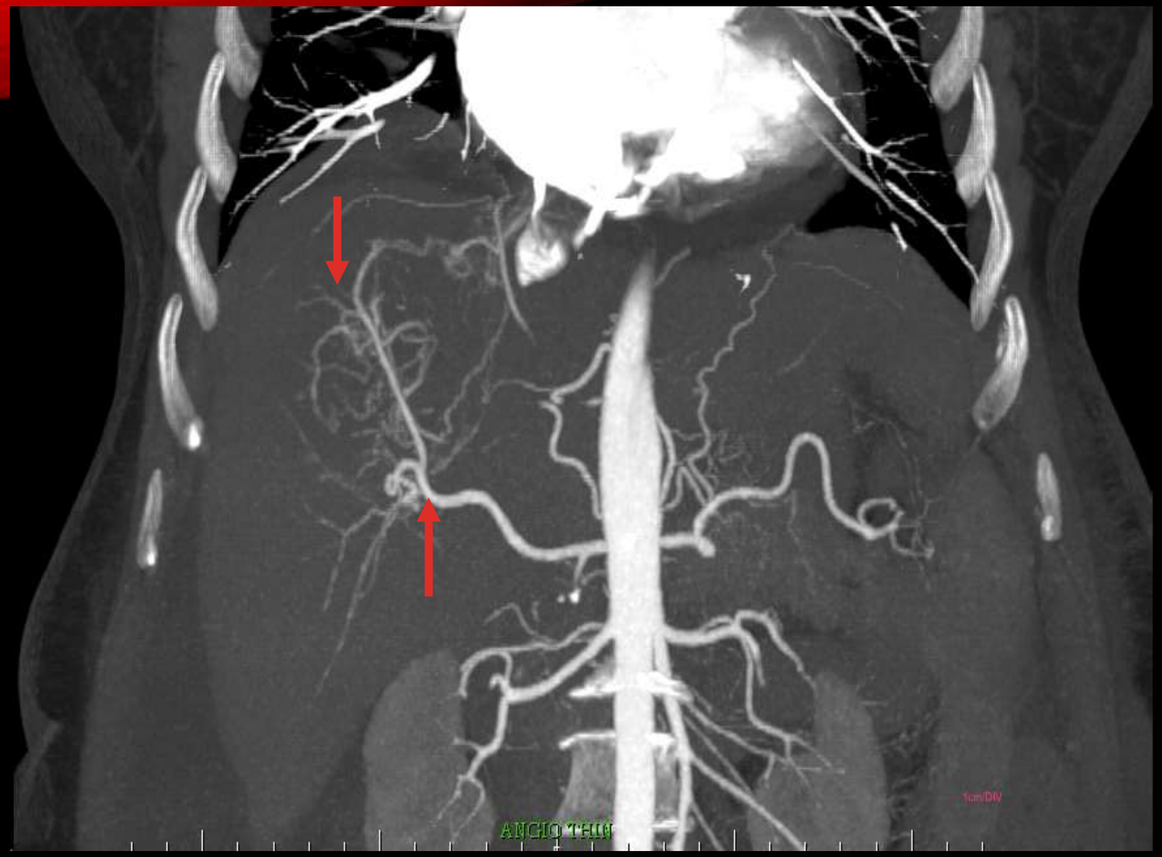


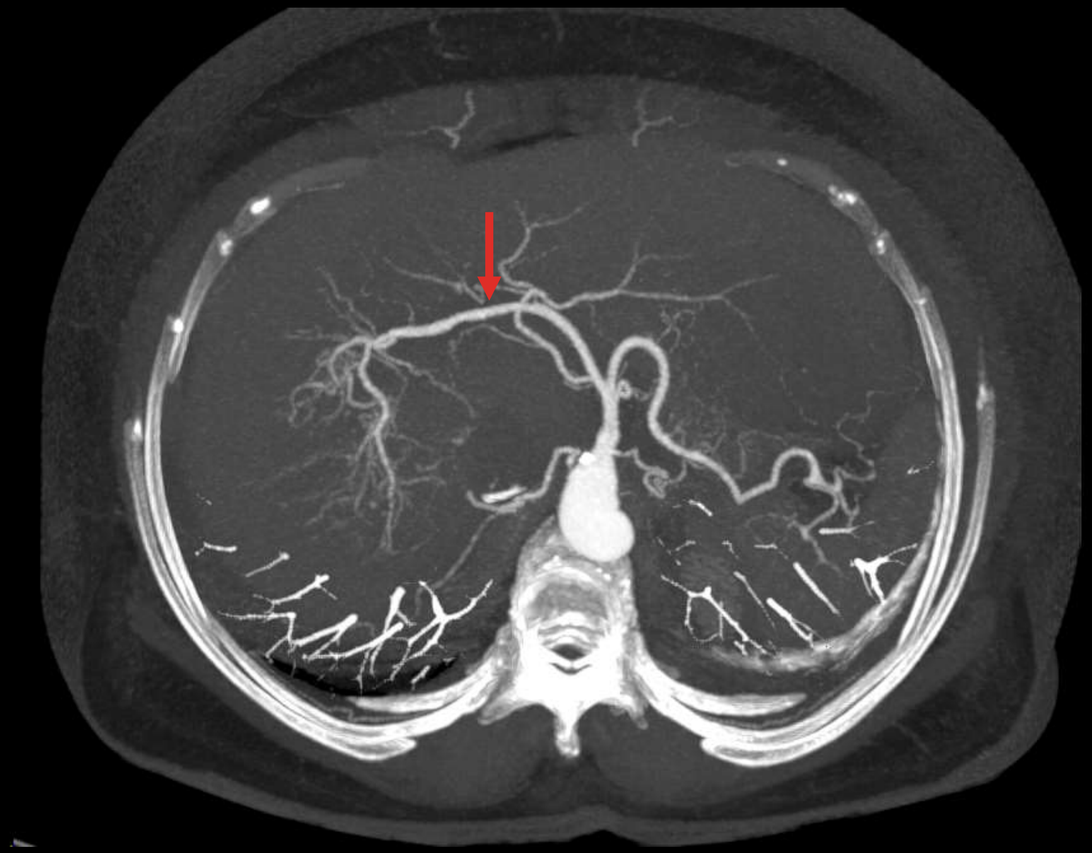
Hypodense filling defect in the right hepatic vein.



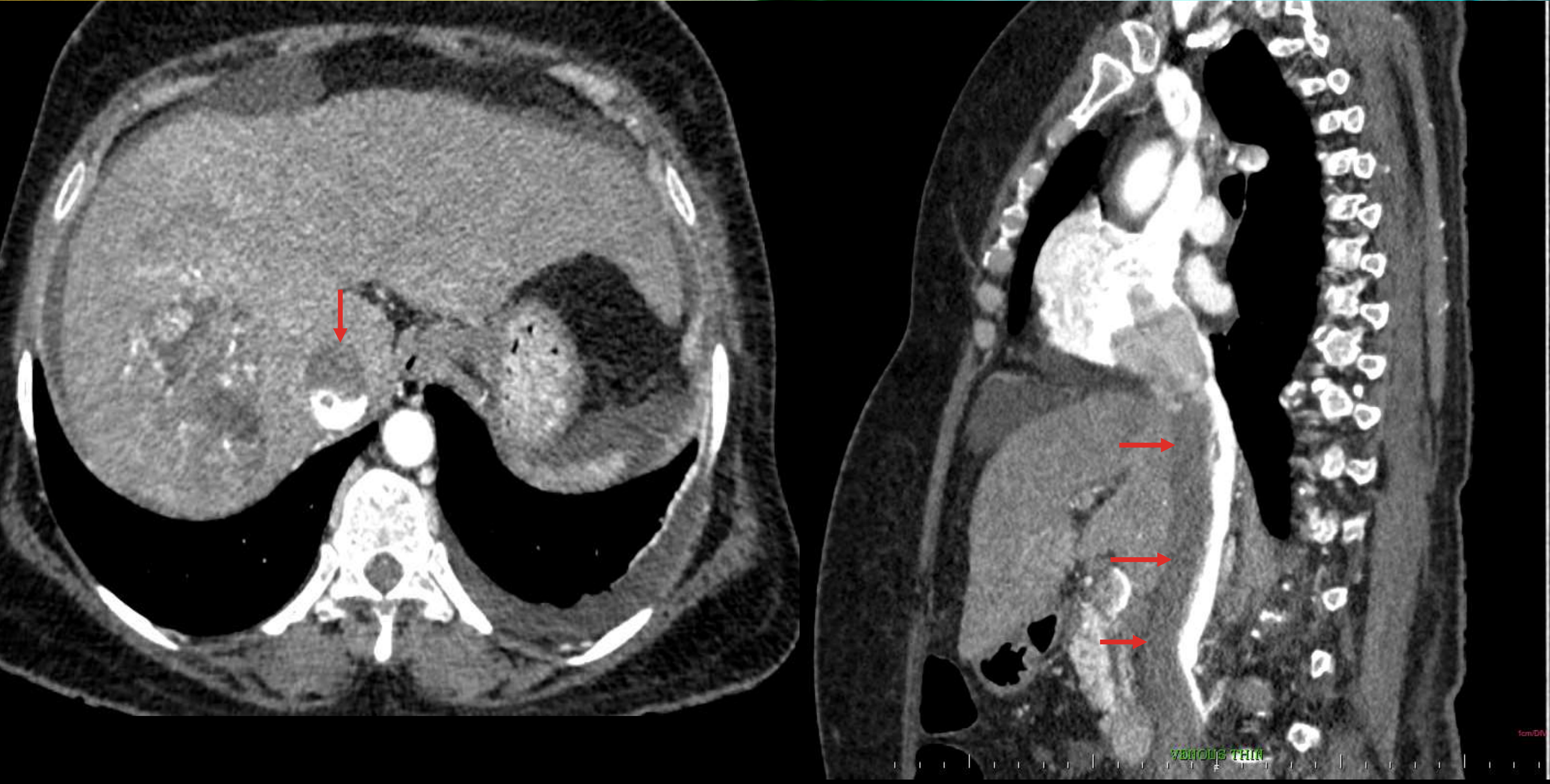


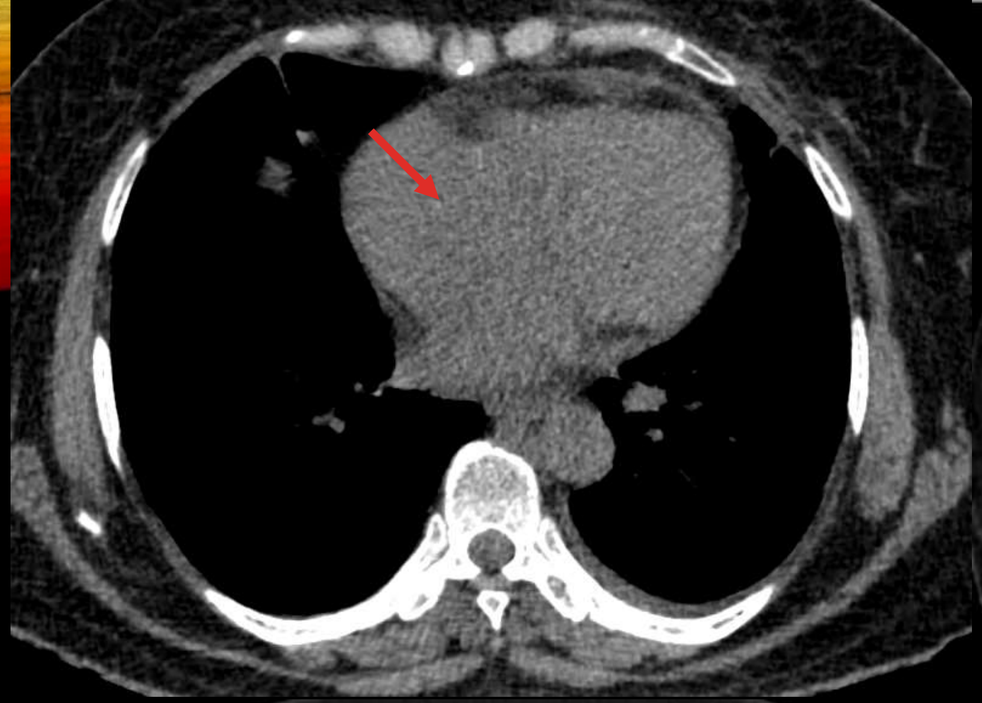
Portal vein and its branches show normal opacification. Bilateral renal veins show normal opacification

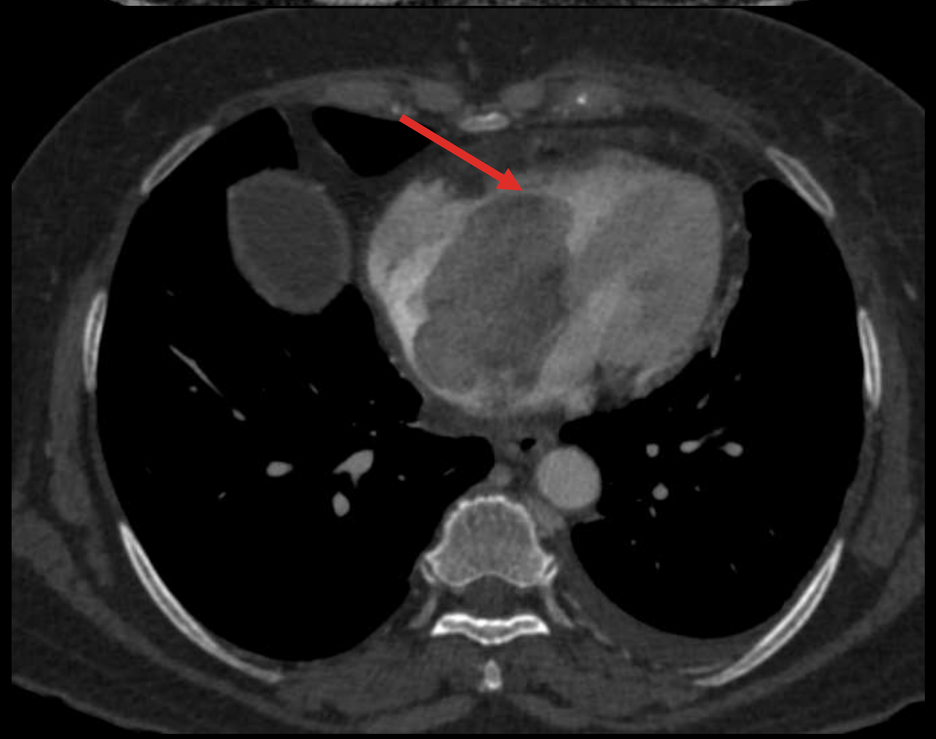


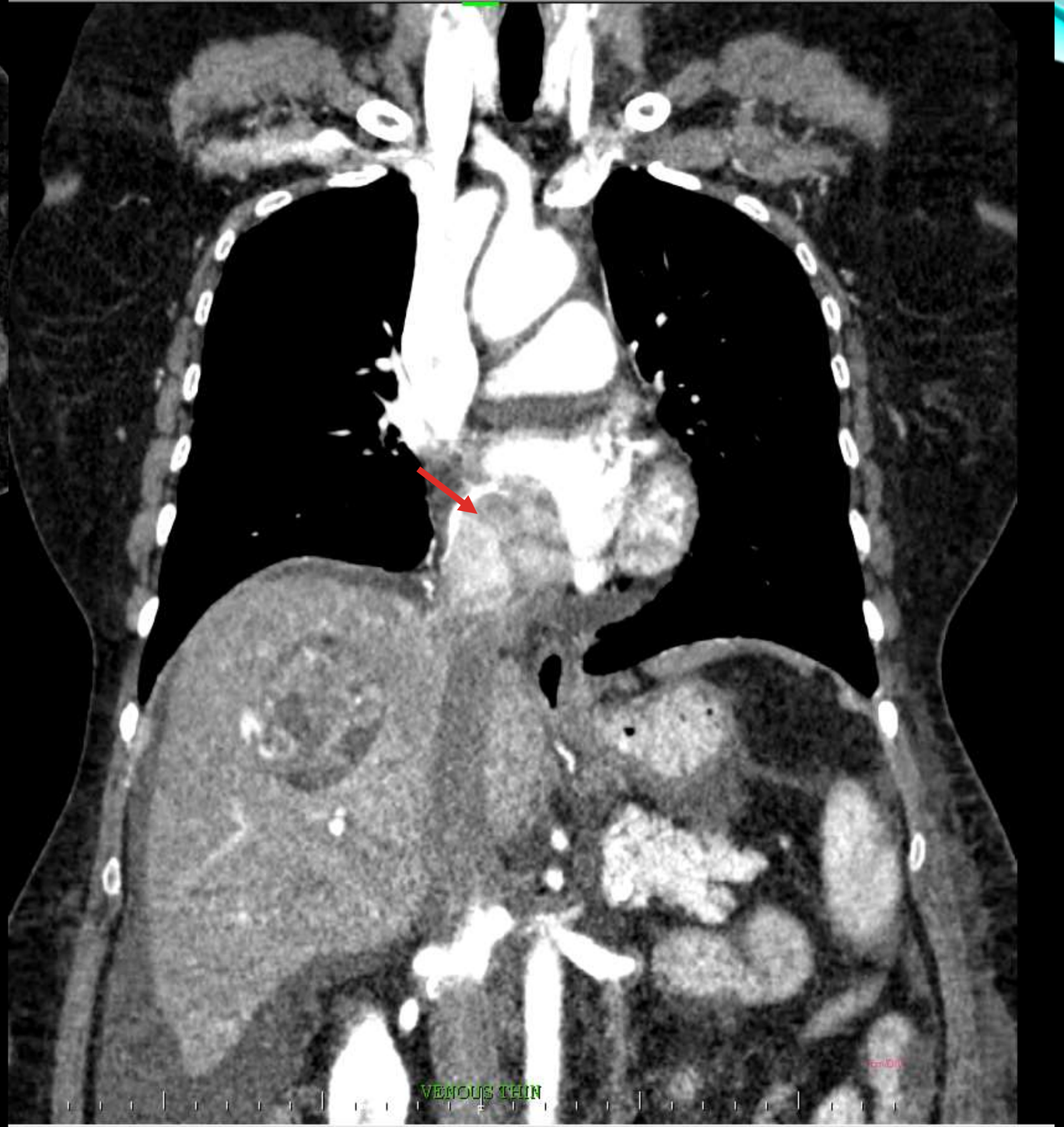


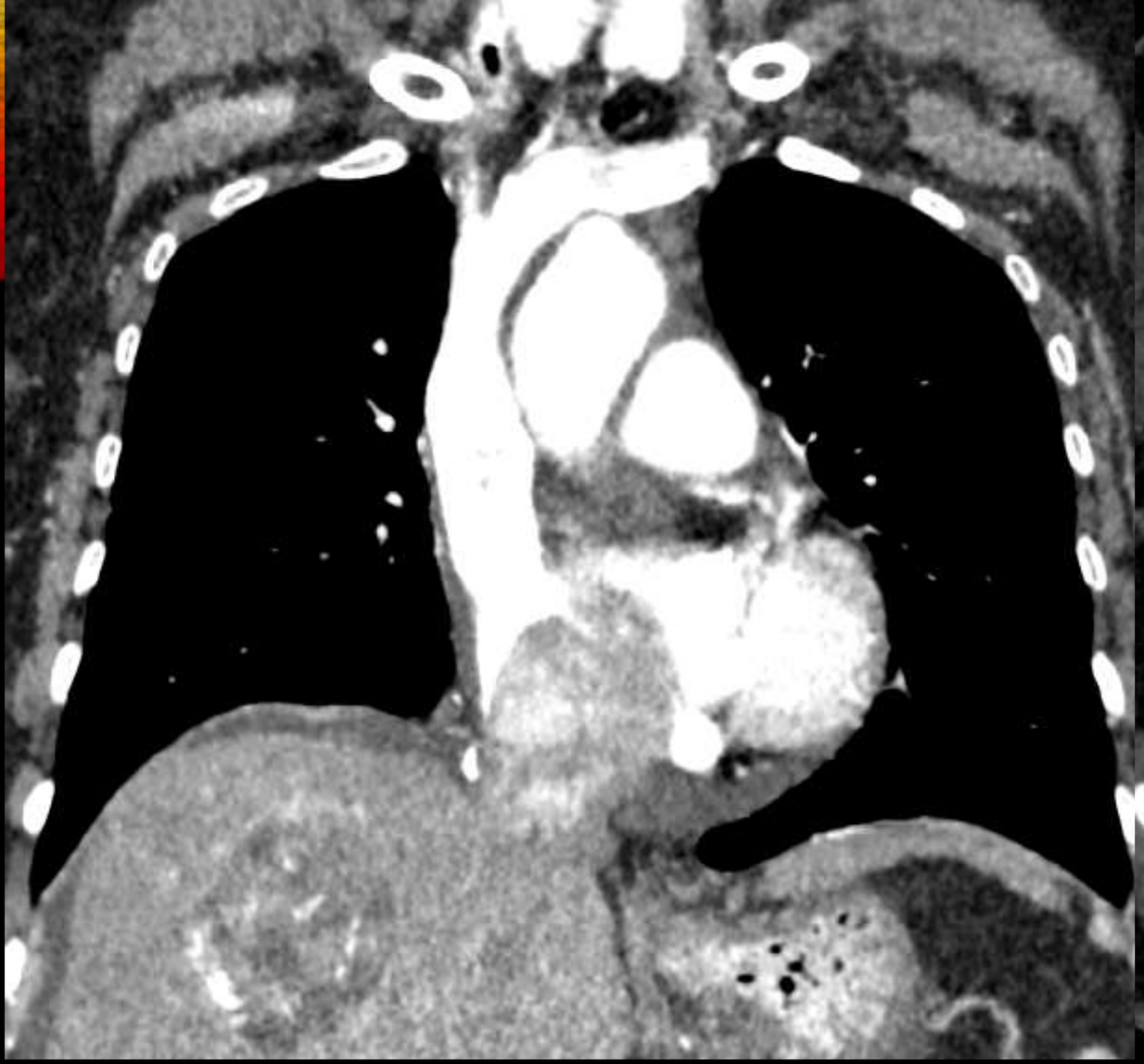
Presence of neovascularization- with arterial feeders from the hepatic artery



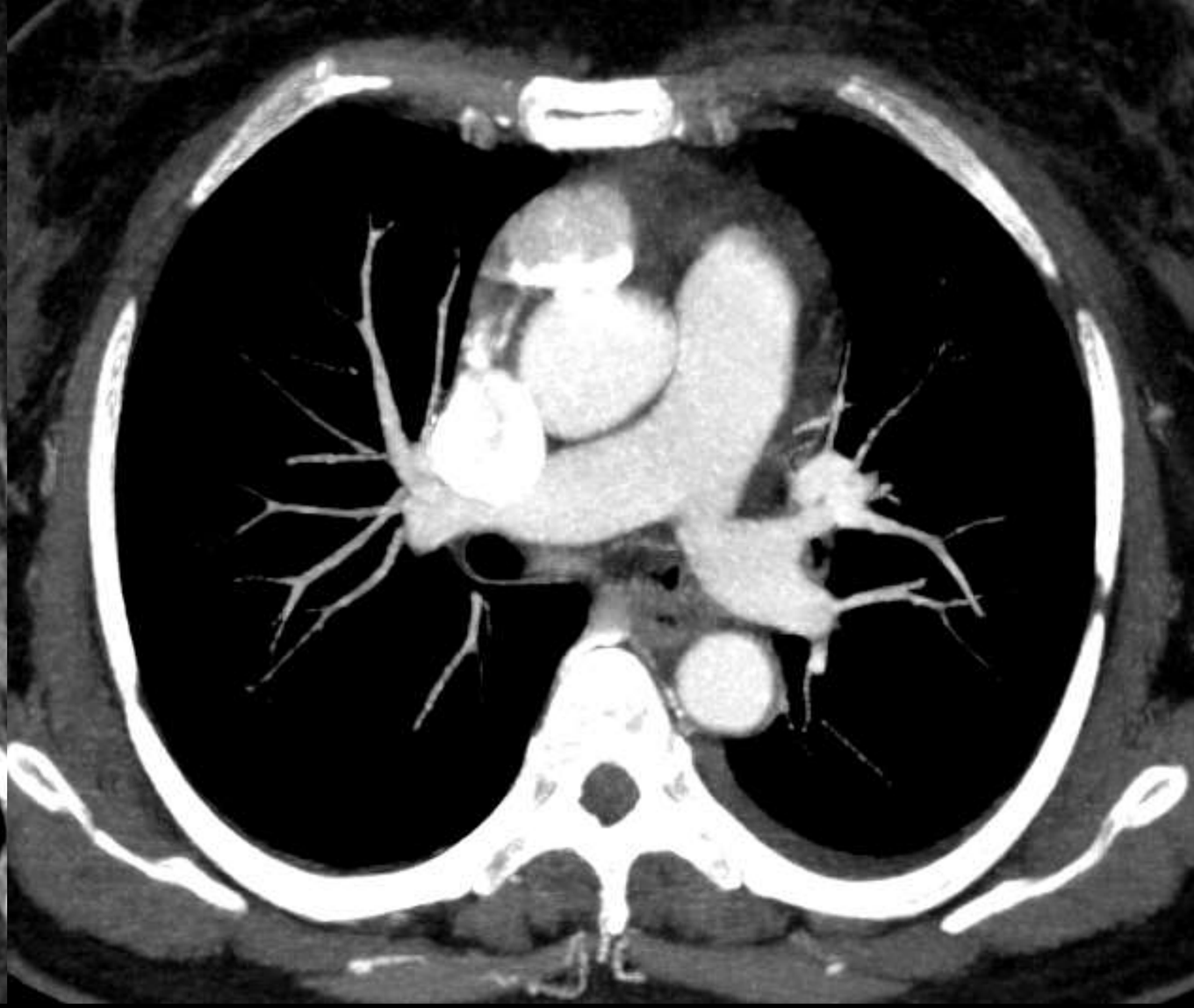




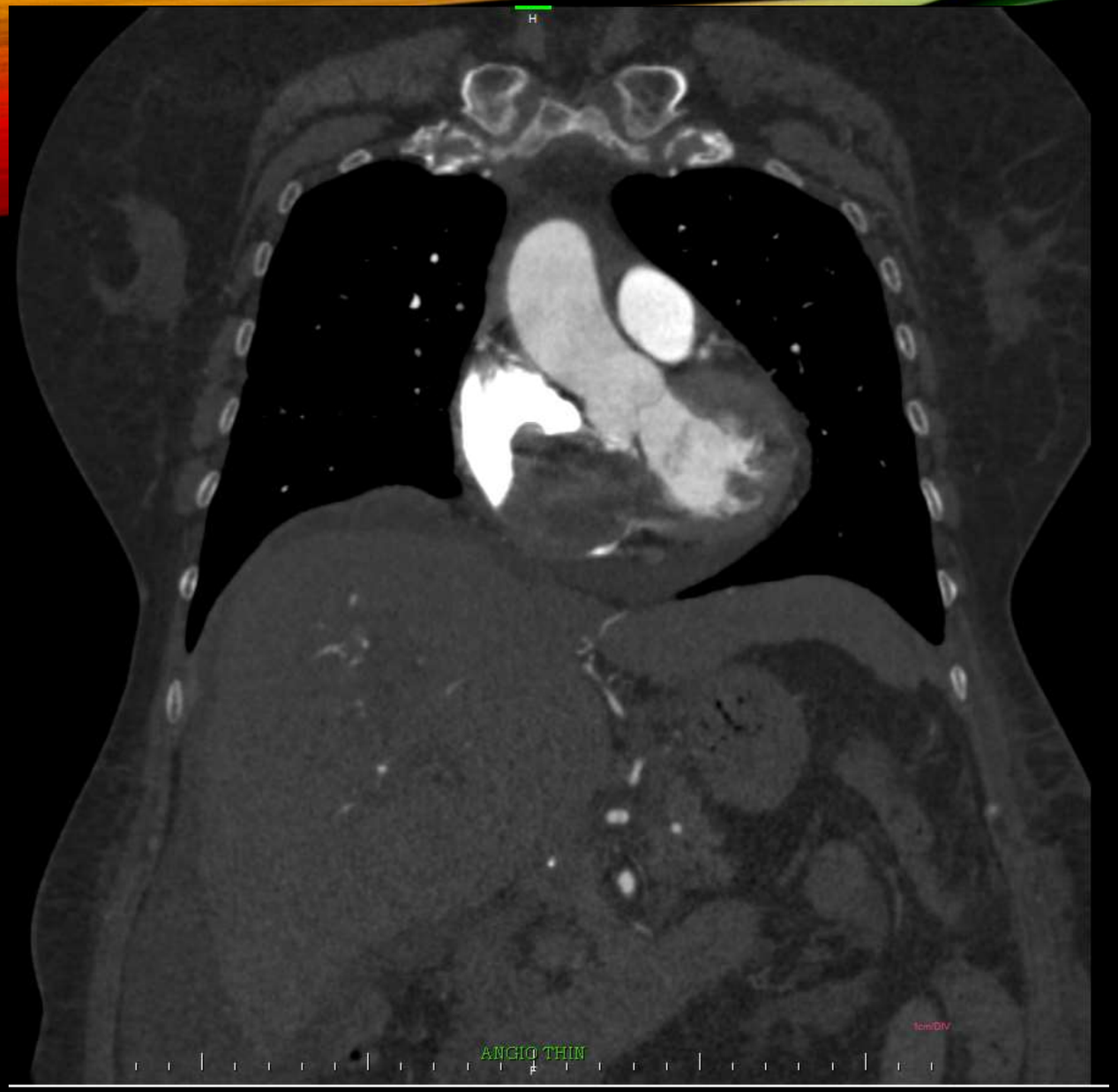

VENOUS THIN

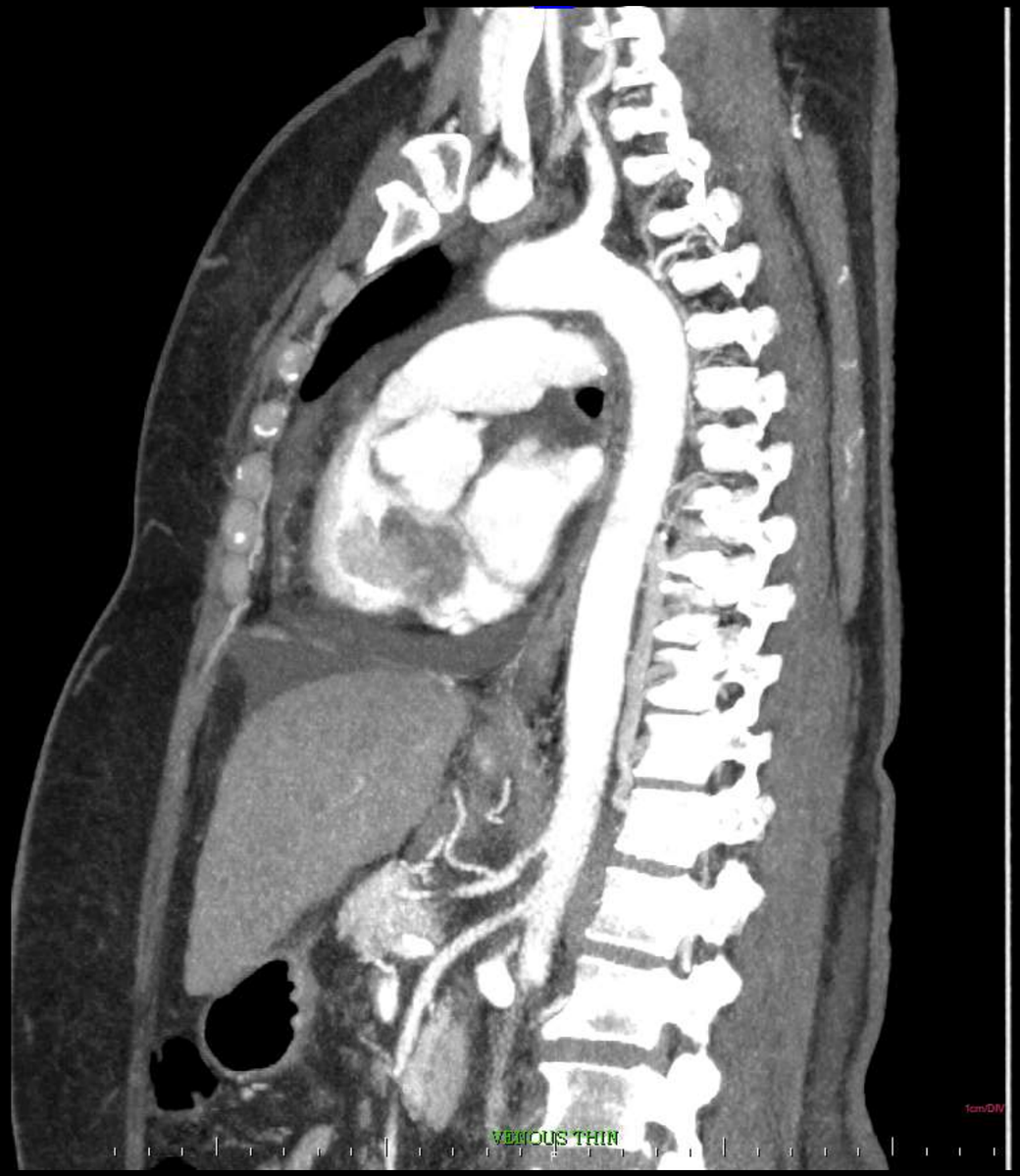


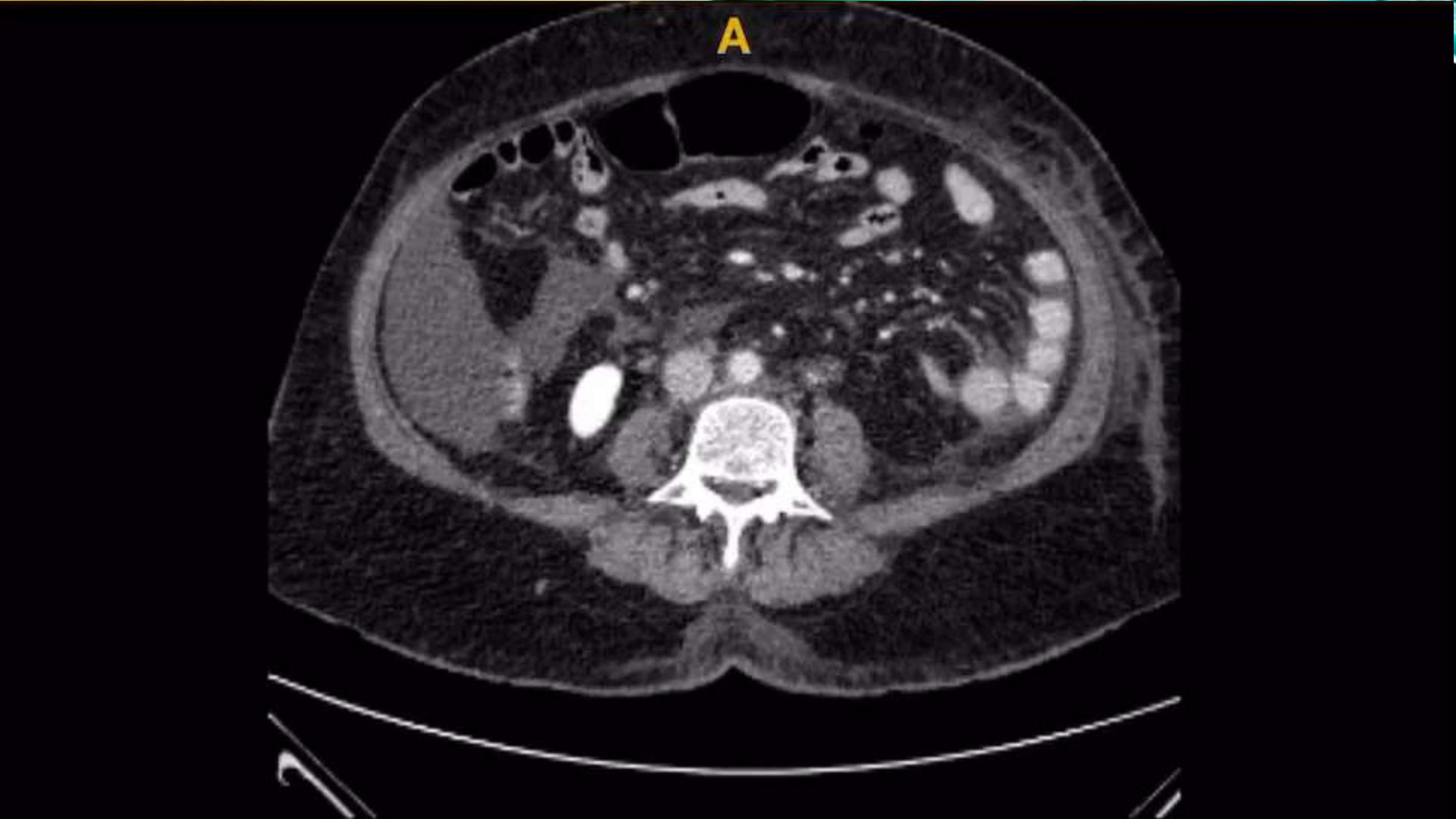
Tumor extending into the inferior atrio-caval junction;
SVC shows normal contrast opacification



Pulmonary arteries show normal opacification


H
ANGIO THIN
1cm/DIV


VENOUS THIN
1cm/DIV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IMAGING FINDINGS

- Mild hepatomegaly.
- Large lobulated heterogeneously enhancing mass in segments VIII and VII of liver with arterial feeders arising from right hepatic artery. Right branch of portal vein is compressed by the lesion. Right hepatic vein is not opacified in venous phase and are probably involved / thrombosed.
- A fairly large well defined solid hypodense mass showing heterogenous enhancement in the right atrium extending upto inferior cavo-atrial junction and across the tricuspid valve into the right ventricle.
- Long segment bland thrombus in IVC upto the level of the renal veins.

Findings suggestive of primary neoplastic mass in the liver (most likely- hepatocellular carcinoma) with tumor thrombus in the right atrium and bland thrombus in the IVC.

Followed up with-

AFP- 7.3 (Normal)

PIVKA II- 16,338 (grossly elevated)

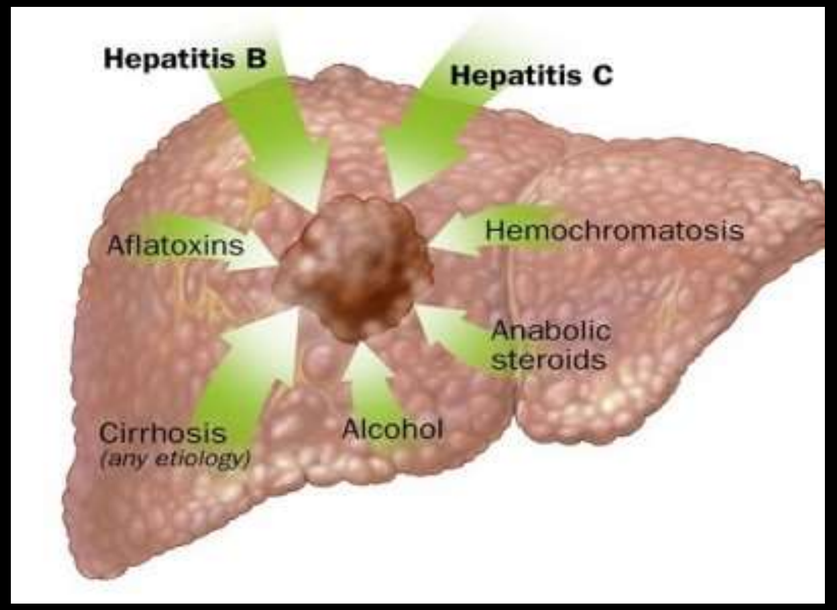
HEPATO-CELLULAR CARCINOMA

- Hepatocellular carcinoma-

✓5th most common cancer in the world.

✓3rd most common cause of cancer-related death.

- Risk factor- Hepatitis B infection
  Hepatitis C infection
  Alcoholic liver disease
  Metabolic disorders



- Hepatocellular carcinoma is typically diagnosed in late middle-aged or elderly adults (male>female). In regions where chronic hepatitis B infection is endemic, young adults aged 20 to 40 (who had contracted the virus via maternal-fetal transmission) have the highest risk of developing hepatocellular carcinoma.

- Local invasion beyond the lesion is frequent and is manifested by-

➢ presence of satellite nodules surrounding the tumor.

➢A large proportion of patients with advanced HCC have macrovascular invasion.

✓portal vein and its branches

✓more rarely, the hepatic veins and right atrium

➢The presence of macrovascular invasion of the portal vein branches and/or hepatic veins needs to be assessed and they usually present as either bland or tumor thrombosis.

- Patients with cirrhosis and portal hypertension are at risk of bland venous thrombosis, which should be differentiated from a tumor thrombus. Thrombus location relative to the tumor and internal enhancement are key features to diagnose a tumor thrombus.

- However, an antemortem diagnosis of right atrial invasion by tumor thrombus is very rare and confers a poor prognosis.

- HCC patients with tumor thrombus extending through the major hepatic veins and IVC into the RA are rare, which was reported in 0.67% to 4.1% of autopsies.

- This is an infrequent occurrence and had a poor prognosis because it carries an increased risk of systemic metastasis and a threat of impending death because of pulmonary embolism or acute heart failure.

TREATMENT

- Treatment techniques for cases of HCC with tumour thrombosus extending into right atrium-
- ✓Simultaneous resection of liver tumour and tumour thrombus- most effective
- ✓Resection of tumour thrombus alone
- ✓Transcatheter arterial chemoembolization (TACE)
- ✓Transcatheter arterial embolization (TAE)
- ✓Sorafenib
- ✓Radiation therapy in multiple combinations.

- **In this rare case of hepatocellular carcinoma with an unusual presentation, what began as a suspicious right atrial myxoma on preliminary investigation was in fact a tumor thrombus from a neoplastic mass in the liver.**
- **This case has made us aware of the rare complications of macro-vascular invasion and the dismal prognosis that they carry. Echocardiography followed CT scanning of the abdomen and chest with contrast in advanced HCC patients with any suspicion for intracardiac involvement by tumor thrombus is of extreme importance.**
- **The role of imaging is critical in the effective and personalized management and treatment of patients.**

THANK YOU