Radiology Case of the Month

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IDIOPATHIC PORTAL VEIN THROMBOSIS

A 45 year old gentleman with no prior medical history presented to the emergency department with acute abdominal pain lasting 10 days and associated abdominal distention, his blood's are listed below. A chest radiograph showed no free gas under the diaphragm and was normal. Below is a representative slice of the patient's CT abdomen and pelvis with contrast and an ultrasound of the portal vein.

WCC	**15.3 (↑)**	ALT	113
Neutrophils	**10.9 (↑)**	ALP	36
CRP	**322.8 (↑)**	**Gamma-GT**	**118 (↑)**
Amylase	21 (N)	**INR**	**1.3 (↑)**

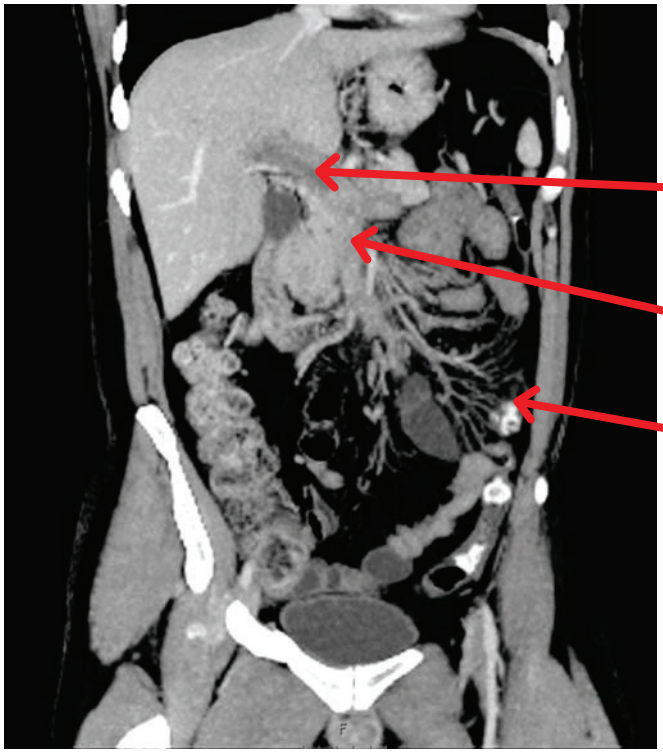


Figure 1: shows a portal vein thrombosis. In this slice the mesenteric veins are clearly one shade of grey and as they fuse to become the portal vein near the hilum of the liver a darker grey is seen centrally. This indicates there is an abnormality within the lumen of the portal vein-given the acute presentation and age-thrombosis. There was no evidence of malignancy or cirrhosis on the remainder of the CT scan

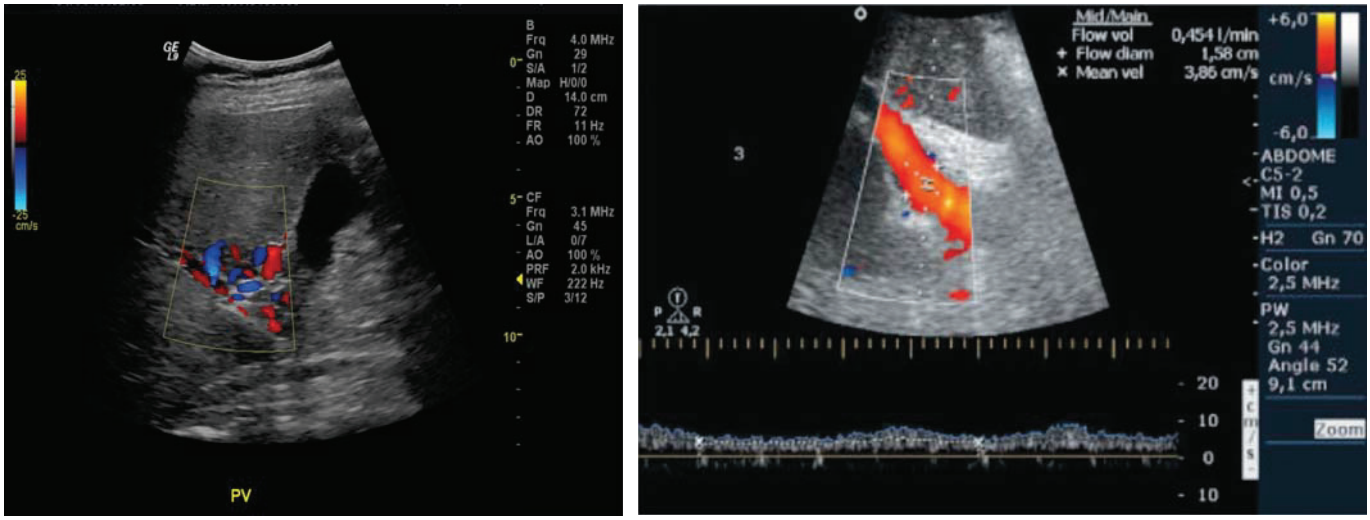
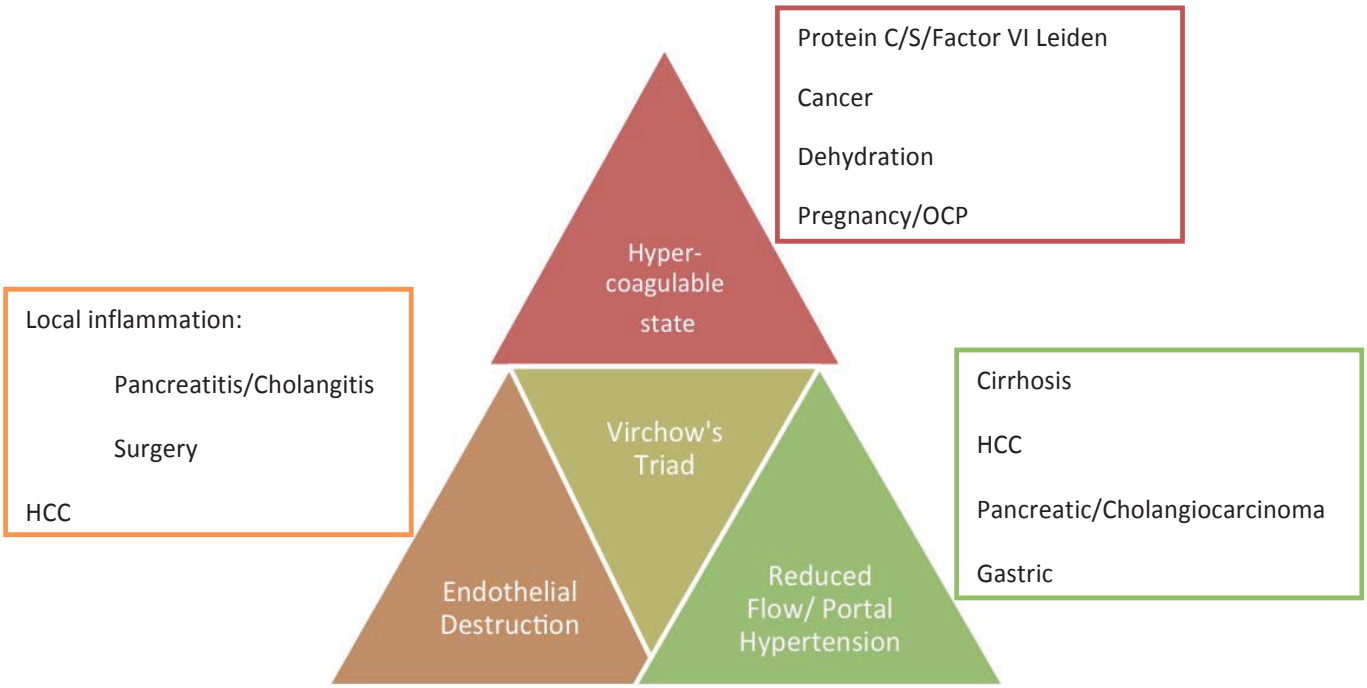


Figure 2: shows multi-directional flow within the portal vein. The portal vein normally has good anterograde flow as demonstrated on the image on the right

Portal vein thrombosis (PVT) is uncommon but has been shown to be present in up to 1% in hospital patients deaths in Sweden (Ogren 2006). In this study, 28% of cases had cirrhosis and primary and secondary hepatobiliary disease was present in 23% and 44% respectively. Thus investigating for underlying causes is important. PVT is usually discovered incidentally but can present with a history of abdominal/lumbar pain with diarrhea over a few days (Kinjo 2014) much like this case. Intestinal infarction is the most severe complication but tends to occur when clots propagate to the mesenteric veins (Jonel 2014). The mortality is associated with mesenteric vein thrombosis is 20% and risk factors for this high mortality include: treatment on a non-surgical ward and a failure to perform CT scan (Acosta 2008). Therefore, performing CT scans in patients with risk factors for portal vein thrombosis with vague abdominal pain is important.

Our patient was found to be diabetic but there was no clear cause for the portal vein thrombosis. He was treated with Lantus and Gliclazide for his type 2 diabetes. He received anticoagulation in the form of clexane and subsequently, warfarin, to treat the PVT and prevent propagation.

Causes of portal vein thrombosis are all related to **Virchow's triad:**



Below is the patient's workup:

Anti-thrombin 3	Normal
Protein C and S	Normal
Fibrinogen	5.0 (↑)
BcR ABL	No mutation
JAK-2 mutation	No mutation
Vitamin B12	112 (↓)
Random Glucose	13.4 (↑)

Learning Points

- Portal vein thrombosis are often precipitated and require a cause to be identified.
- It highlights the importance of contrasted studies in abdominal pain with PVT risk factors.

REFERENCES

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