# An intrahepatic portosystemic shunt masquerading as as tumor

Dayana Nasr, MD[1]; Pujitha Kudaravalli , MD[1], Alyssa Ionno, MD[1,], Janane Nasr, MD[2], Ganesh Aswath, MD[1], Savio John, MD[1]
[1]SUNY Upstate University Hospital , [2] University of Balamand

## Introduction

Portosystemic shunts can be congenital or acquired and are divided into extrahepatic and intrahepatic shunts. Intrahepatic portosystemic venous shunts (IPSVSs) are abnormal intrahepatic connections that occur between branches of the portal vein (PV) and hepatic veins (HV) or IVC. Patients with IPSVSs can be symptomatic or asymptomatic as most of the cases are detected incidentally on imaging. However, they can potentially lead to long term complications by allowing bypass of mesenteric venous return into systemic circulation without going through the liver. We herein describe the case of a 58-year-old woman who was incidentally found to have an IPSVS on imaging for which she was recommended periodic surveillance imaging.

## Case

- A 58-year-old presented to her PCP's office with complaint of unintentional weight loss.
- As part of the workup, a CT abdomen pelvis was ordered.
- She was noted to have a 2.3 x 2.0 cm hyperdense nodular lesion in the posterior segment of the right hepatic lobe suspicious for hemangioma or a hypervascular neoplasm on CT abdomen pelvis.
- She was referred to the hepatobiliary clinic and a CTA abdomen pelvis was then performed and showed a lobulated 2.2 x 2.1 x 2.9 cm lesion in segment 6 consistent with an intrahepatic portosystemic shunt (figure 1 and figure 2).
- The patient was otherwise asymptomatic and therefore was advised to continue with periodic imaging surveillance.

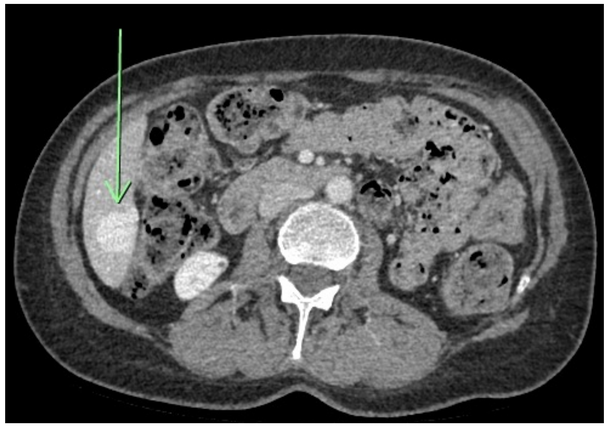

Figure 1: Axial CTA abdomen venous phase showing aneurysmal communication between right portal vein and middle hepatic vein in segment 6 of the liver (green arrow)

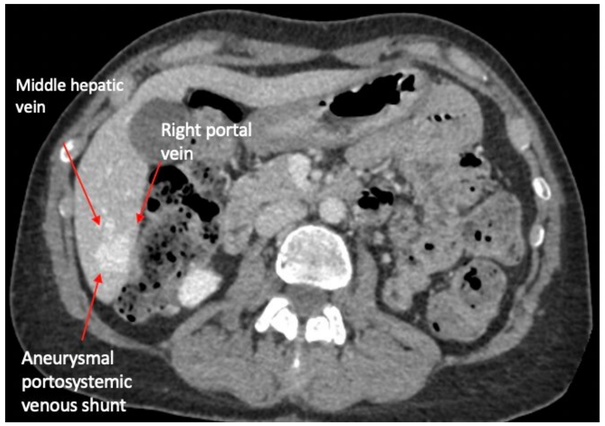


Figure 2: Axial CTA abdomen venous phase showing aneurysmal communication between right portal vein and middle hepatic vein in segment 6 of the liver

## Discussion

- IPSVSs are divided into 4 types depending on their morphology.
- In type 1, a single large vessel connects the PV or its right branch to the IVC.
- Type 2 involves a localized peripheral shunt within one hepatic segment that has one or more communications between peripheral branches of the PV and HV.
- In type 3, an aneurysmal connection exists between PV and HV. And finally, multiple communications between PV and HV in multiple lobes are present in type 4.
- In patients without a history of liver disease or trauma, the origin of the IPSVS is presumed to be congenital.
- CT scan, MRI and even color Doppler sonograms should provide visualizations of the feeding portal vein and draining hepatic vein.
- For symptomatic IPSVSs, endovascular closure is the standard of care.
- No consensus, however, exists for asymptomatic cases and surveillance is an appropriate option in asymptomatic patients.

## Take Home Message

- Portosystemic shunts can be congenital or acquired and are divided into extrahepatic and intrahepatic shunts
- CT scan, MRI and even color Doppler sonograms should provide visualizations of the feeding portal vein and draining hepatic vein
- IPSVSs can appear as a hyperdense nodular lesion in the posterior segment of the right hepatic lobe suspicious for hemangioma or a hypervascular neoplasm on CT abdomen pelvis
- No consensus exists for treatment of asymptomatic cases and surveillance is an appropriate option in asymptomatic patients.

## References

- Remer EM, Motta-Ramirez GA, Henderson JM. Imaging findings in incidental intrahepatic portal venous shunts. American journal of roentgenology (1976). 2007;188(2):W162-W167.
- Stringer MD. The clinical anatomy of congenital portosystemic venous shunts. Clinical anatomy (New York, N.Y.). 2008;21(2):147-157.

## Contact

Dayana Nasr
SUNY Upstate University Hospital
Email: nasrd@upstate.edu