

This worksheet is solely for the purpose of recording preliminary data and does not constitute a final report of any kind.

ABDOMINAL HEPATIC DOPPLER ULTRASOUND WITH TIPS (TIPS)

PATIENT NAME: _____ MR#: _____ DATE: _____
TECH INITIAL: _____ EXT: _____ FACILITY: MWH / MIF / ICW / MILH / MINS / MIKG / SH

INDICATION: [] TIPS evaluation [] Elevated Liver Function Tests [] Cirrhosis [] Hepatitis B
[] Hepatitis C [] Portal Hypertension [] Hepatic Transplant [] OTHER: _____

COMPARISON: [] None [] _____

TECHNIQUE: Transabdominal grayscale, color, and pulsed duplex sonography of the liver were performed to evaluate the TIPS shunt in place.

FINDINGS:

LIVER:

[] The liver appears normal in size and echotexture. No focal mass.

[] ABNORMAL. [ADD DICTATION]

[] Fatty infiltration of the liver suggested by loss of periportal echoes/ increased echogenicity compared to the right kidney/ loss of through transmission. No focal mass.

[] Nodular hepatic contour.

[] Subjectively (**mildly / moderately / markedly**) coarsened hepatic echotexture.

[] Enlarged hepatic size.

[] Relatively enlarged caudate lobe/left hepatic lobe.

[] OTHER: _____

MAIN PORTAL VEIN: [] Adequately visualized [] Suboptimally visualized [] Non-visualized

[] Patent with hepatopetal flow. Monophasic waveform with respiratory variability.

MPV diameter is _____ mm. (Normal is 8-13mm, 14-17mm borderline, >17mm abnormal)

MPV velocity: _____ cm/s (normal velocity is 40-60 cm/s for post-TIPS procedure)

[] ABNORMAL [ADD DICTATION]

[] Narrowed secondary to thrombus.

[] Medium to low level internal echoes with lack of demonstrable flow consistent with occlusion.

[] Adjacent collateral vessels.

[] Hepatofugal flow.

[] Pulsatile waveform pattern.

[] OTHER: _____

LEFT PORTAL VEIN: [] Adequately visualized [] Suboptimally visualized [] Non-visualized

[] Patent with hepatopetal flow. Monophasic waveform with respiratory variability.

Left portal vein velocity: _____ cm/s

[] ABNORMAL [ADD DICTATION]

[] Narrowed secondary to thrombus.

[] Medium to low level internal echoes with lack of demonstrable flow consistent with occlusion.

[] Adjacent collateral vessels.

[] Hepatofugal flow.

[] Pulsatile waveform pattern.

[] OTHER: _____

RIGHT PORTAL VEIN: [] Adequately visualized [] Suboptimally visualized [] Non-visualized

[] Patent with hepatopetal flow. Monophasic waveform with respiratory variability.

Right portal vein velocity: _____ cm/s

[] ABNORMAL [ADD DICTATION]

[] Narrowed secondary to thrombus.

[] Medium to low level internal echoes with lack of demonstrable flow consistent with occlusion.

This worksheet is solely for the purpose of recording preliminary data and does not constitute a final report of any kind.

PATIENT NAME: _____ MRN: _____

[] Adjacent collateral vessels.
 [] Hepatofugal flow.
 [] Pulsatile waveform pattern.
 [] OTHER: _____

TIPS SHUNT: [] Adequately visualized [] Suboptimally visualized [] Non-visualized
[] Flow within the shunt is patent with flow towards the draining hepatic vein.

HEPATIC VEINS: [] Adequately visualized [] Suboptimally visualized [] Non-visualized
[] Patent with hepatofugal flow and tri-phasic waveform pattern.

[] ABNORMAL [ADD DICTATION]

- [] Narrowed in caliber.
- [] Narrowed secondary to visualized thrombus.
- [] Medium to low level internal echoes with lack of demonstrable flow consistent with occlusion.
- [] Adjacent collateral vessels.
- [] Hepatopetal flow.
- [] Monophasic waveform pattern.
- [] OTHER:

Velocity for Right Hepatic Vein: _____ cm/s

Velocity for Left Hepatic Vein: _____ cm/s

Velocity for Middle Hepatic Vein: _____ cm/s

HEPATIC ARTERY: [] Adequately visualized [] Suboptimally visualized [] Non-visualized

[] Patent with hepatopetal flow toward the liver.

Hepatic artery PSV: cm/s

[] ABNORMAL. [ADD DICTATION]

[] Abnormal focal hepatic artery velocity >200cm/sec associated with turbulence

OTHER:

INFERIOR VENA CAVA: [] Adequately visualized [] Suboptimally visualized [] Non-visualized

[] Patent with normal phasic flow towards the heart.

[] Patent with normal phasic flow toward IVC velocity: cm/s

ABNORMAL [ADD DICTATION]

[] Narrowed in caliber.
 [] Narrowed secondary to visualized thrombus.
 [] Medium to low level internal echoes with lack of demonstrable flow consistent with occlusion.
 [] Adjacent collateral vessels.
 [] Abnormal flow direction away from the heart
 [] Monophasic waveform
 [] OTHER:

SPLENIC VEIN: [] Adequately visualized [] Suboptimally visualized [] Non-visualized.

[] Patent with hepatopetal flow

Splenic vein velocity: cm/s

PATIENT NAME: _____ MRN: _____

ABNORMAL [ADD DICTATION]

- Narrowed in caliber.
- Narrowed secondary to visualized thrombus.
- Medium to low level internal echoes with lack of demonstrable flow consistent with occlusion.
- Adjacent collateral vessels.
- Hepatofugal flow.
- Turbulent waveform
- OTHER: _____

SPLEEN:

Normal in size measuring _____ cm in maximum dimension.

ABNORMAL [ADD DICTATION]

- Enlarged, measuring _____ cm in maximum dimension.
- Other: _____

INTRAPERITONEAL FLUID:

No evidence of ascites.

ABNORMAL [ADD DICTATION]

- A (**mild / moderate / large**) amount of ascites is present.

ADDITIONAL EXTRAHEPATIC FINDINGS:

No additional extrahepatic findings visualized

ABNORMAL [ADD DICTATION]

- Recanalization of the umbilical vein is identified.
- Abdominal collateral vessels are identified.

IMPRESSION: *Preliminary findings/impression subject to radiologist review.*

Patent shunt with no evidence for stenosis. Patent portal veins, hepatic veins, and hepatic artery with normal flow direction. **No discrete hepatic lesions.** Continued hepatic surveillance per your algorithm is advised. CT and MR are more sensitive for the detection of hepatocellular carcinoma, and can be incorporated as you feel clinically necessary.

Patent shunt with no evidence for stenosis. Patent portal veins, hepatic veins, and hepatic artery with normal flow direction. **Chronic hepatic disease.** Continued hepatic surveillance per your algorithm is advised. CT and MR are more sensitive for the detection of hepatocellular carcinoma, and can be incorporated as you feel clinically necessary.

Patent shunt with no evidence for stenosis. Patent portal veins, hepatic veins, and hepatic artery with normal flow direction. **Cirrhotic hepatic morphology.** Continued hepatic surveillance per your algorithm is advised. CT and MR are more sensitive for the detection of hepatocellular carcinoma, and can be incorporated as you feel clinically necessary.

ADD DICTATION

This worksheet is solely for the purpose of recording preliminary data and does not constitute a final report of any kind.

PATIENT NAME: _____

MRN: _____

Table: Mallinckrodt Data – Suggested Doppler Criteria for TIPS Malfunction

Doppler Parameter	Vel. (cm/sec)	Sensitivity	Specificity	PPV	NPV
Peak Shunt Velocity	Overall Impression	84%	70%	82%	72%
Change in Peak Shunt Velocity	Decrease > 40 or Increase > 60	71%	88%	89%	67%
Main Portal Vein Velocity	< 30	82%	77%	86%	71%
Overall Impression	Not Applicable	92%	72%	84%	86%