

Liver MRI with contrast

Indications:	liver lesion characterization; metastatic disease workup; screening for HCC in chronic liver diseases			
Contrast	<i>type</i>	<i>rate</i>	<i>volume</i>	<i>saline flush</i>
	Multihance			
Acquisition	<i>sequence</i>	<i>fat sat</i>	<i>comments</i>	
Cor/Ax	T2 HASTE/SSFSE	N		
Ax	T2 TSE/FSE	Y	Resp. triggered, BLADE/PROPELLER. If cannot acquire good result run FS AX HASTE/SSFSE.	
Ax	T1 GRE IN/OPP	n/a		
Ax	DWI	n/a		
Ax	T1 VIBE/LAVA pre-Gd	Y	pre-contrast	
Ax	T1 VIBE/LAVA post-Gd	Y	care bolus arterial phase: breath hold and start scan immediately after Gd reaches heart	
Ax	T1 VIBE/LAVA post-Gd	Y	portal phase: begin 10 sec after arterial phase complete (70 sec)	
Ax	T1 VIBE/LAVA post-Gd	Y	equilibrium phase: start 3-5 min after contrast injection.	
Cor	T1 VIBE/LAVA post-Gd	Y	wait 15-20 sec to recover breath, then run	
Ax	T1 VIBE/LAVA post-Gd	Y	wait additional 5 min: ONLY RUN if indication includes cholangiocarcinoma (otherwise equilibrium is last sequence)	
Comments:	care bolus: coronal fast gradient refocused sequence to trigger arterial phase at the moment contrast reaches the heart. Patient must hold breath at this moment and arterial phase run immediately.			

Liver MRI without contrast

Indications:	liver lesion characterization; metastatic disease workup; screening for HCC in chronic liver diseases			
Comments:	contrast strongly preferred - if non-contrast study ordered, indication should be reviewed by radiologist			
Acquisition	<i>sequence</i>	<i>fat sat</i>	<i>comments</i>	
Cor/Ax	T2 HASTE/SSFSE	N		
Ax	T2 TSE/FSE	Y	Resp. triggered, BLADE/PROPELLER. If cannot acquire good result run FS AX HASTE.	
Ax	T1 GRE IN/OPP	n/a		
Ax	DWI	n/a		
Ax	T1 VIBE/LAVA	Y		
Cor	T1 VIBE/LAVA	Y		

Comments:

Liver MRI with Eovist

Indications: suspect FNH (focal nodular hyperplasia); metastatic workup; cirrhosis screening; biliary reconstruction, bile leak

Comments: Eovist will be specifically requested. If unsure call radiologist.

Contrast	<i>type</i>	<i>rate</i>	<i>volume</i>	<i>saline flush</i>
	Eovist			

Acquisition	<i>sequence</i>	<i>fat sat</i>	<i>comments</i>
Cor/Ax	T2 HASTE/SSFSE	N	
Ax	T1 GRE IN/OPP	n/a	
Ax	T1 VIBE/LAVA pre-Gd	Y	pre-contrast
Ax	T1 VIBE/LAVA post-Gd	Y	care bolus arterial phase: breath hold and start scan immediately after Gd reaches heart
Ax	T1 VIBE/LAVA post-Gd	Y	portal phase: begin 10 sec after arterial phase complete
Ax	DWI	n/a	
Ax	T1 VIBE/LAVA post-Gd	Y	equilibrium phase: start 5 min after portal phase complete.
Ax	T2 TSE/FSE	Y	resp. triggered, BLADE/PROPELLER. If cannot acquire good result run FS AX HASTE/SSFSE.
Ax	T1 VIBE/LAVA post-Gd	Y	total 20 min. delay after contrast injection
Cor	T1 VIBE/LAVA post-Gd	Y	

Comments: care bolus