MR Foot (Hindfoot Infection/Osteomyelitis)
Last Updated: 2/2020

Name	Plane	Sequence	Slice	Gap	FOV	Matrix	TE	TR	ETL
AX T1	Axial/long axis	T1	3-4 mm	0.5-1 mm	16-20 cm	224 x 256	15	500-700	4
AX STIR	Axial/long axis	STIR	3-4 mm	0.5-1 mm	16-20 cm	192 x 224	42	>3000	6-8
COR T1	Coronal/short axis**	T1	3-4 mm	0.5-1 mm	16-20 cm	224 x 256	15	500-700	4
COR STIR	Coronal/short axis**	STIR	3-4 mm	0.5-1 mm	16-20 cm	192 x 224	42	>3000	6-8
SAG T1	Sagittal	T1	3-4 mm	0.5-1 mm	16-20 cm	224 x 256	15	500-700	4
SAG STIR	Sagittal	STIR	3-4 mm	0.5-1 mm	16-20 cm	192 x 224	42	>3000	6-8
SAG T1 FATSAT	** Optional Sagittal Pre-contrast	T1 Fat Sat	3-4 mm	0.5-1 mm	16-20 cm	224 x 256	15	500-700	4
POST COR T1 FATSAT	** Optional Coronal Post-gad	T1 Fat Sat	3-4 mm	0.5-1 mm	16-20 cm	224 x 256	15	500-700	4
POST SAG T1 FATSAT	** Optional Sagittal Post-contrast	T1 Fat Sat	3-4 mm	0.5-1 mm	16-20 cm	224 x 256	15	500-700	4

Notes:
General notes for the foot:

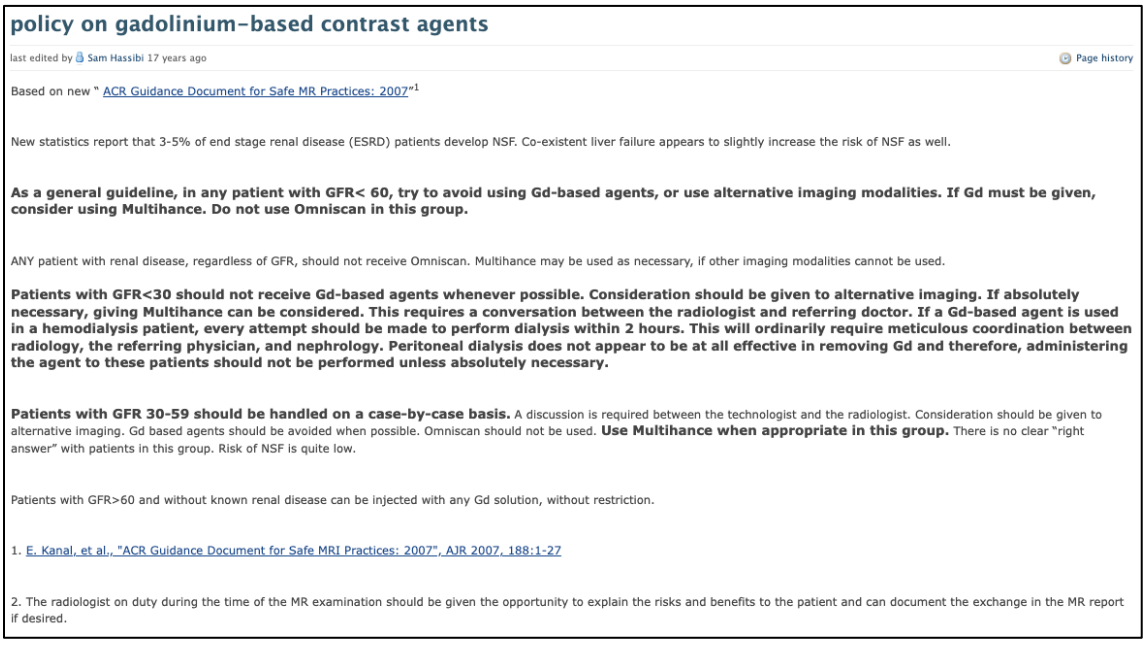
- In the foot, the image planes are ALWAYS THE SAME as ankle planes. So short-axis through the foot is CORONAL.

- NEVER combine ankle and foot protocols when evaluating joints, tendons, and ligaments. For infection and tumor, consult with the radiologist.
- **There is no "hind-foot" protocol. If asked to evaluate the hindfoot, heel, plantar fascia for heel pain, ligament/tendon pathology, or calcaneus stress fracture, use the ANKLE PROTOCOL. For infection, see the forefoot / hindfoot infection protocols below.**

Hindfoot Infection / Osteomyelitis:

- In the foot, the image planes are ALWAYS THE SAME as ankle planes. So short-axis through the foot is CORONAL**.
- Field of View should include from the heel to the mid metatarsal shafts.
- DO NOT IMAGE THE WHOLE FOOT! If forefoot is a concern, then a Forefoot Infection protocol needs to be done as a separate exam.
- When possible, mark the area of concern (discoloration, pain, wound.) Note if there is an open ulcer or draining tract. Indicate the area on your tech notes.
- Consult the radiologist if there is any questions regarding the area of concern, use of contrast, scan prescription, etc.
- By default, contrast is NOT given if the concern is osteomyelitis. Contrast may occasionally be requested to identify abscess, sinus tract, or extent of devascularization prior to surgery. If unsure, consult the radiologist. Please refer to the updated policy on gadolinium-based contrast agents. (Below)
- If contrast is given, please do the pre-contrast T1 FS first.

Policy On Gadolinium-Based Contrast Agents:



policy on gadolinium-based contrast agents

last edited by Sam Hassibi 17 years ago — Page history

Based on new " ACR Guidance Document for Safe MR Practices: 2007"[1]

New statistics report that 3-5% of end stage renal disease (ESRD) patients develop NSF. Co-existent liver failure appears to slightly increase the risk of NSF as well.

As a general guideline, in any patient with GFR< 60, try to avoid using Gd-based agents, or use alternative imaging modalities. If Gd must be given, consider using Multihance. Do not use Omniscan in this group.

ANY patient with renal disease, regardless of GFR, should not receive Omniscan. Multihance may be used as necessary, if other imaging modalities cannot be used.

Patients with GFR<30 should not receive Gd-based agents whenever possible. Consideration should be given to alternative imaging. If absolutely necessary, giving Multihance can be considered. This requires a conversation between the radiologist and referring doctor. If a Gd-based agent is used in a hemodialysis patient, every attempt should be made to perform dialysis within 2 hours. This will ordinarily require meticulous coordination between radiology, the referring physician, and nephrology. Peritoneal dialysis does not appear to be at all effective in removing Gd and therefore, administering the agent to these patients should not be performed unless absolutely necessary.

Patients with GFR 30-59 should be handled on a case-by-case basis. A discussion is required between the technologist and the radiologist. Consideration should be given to alternative imaging. Gd based agents should be avoided when possible. Omniscan should not be used. **Use Multihance when appropriate in this group.** There is no clear "right answer" with patients in this group. Risk of NSF is quite low.

Patients with GFR>60 and without known renal disease can be injected with any Gd solution, without restriction.

1. E. Kanal, et al., "ACR Guidance Document for Safe MRI Practices: 2007", AJR 2007, 188:1-27

2. The radiologist on duty during the time of the MR examination should be given the opportunity to explain the risks and benefits to the patient and can document the exchange in the MR report if desired.