TRA MEDICAL IMAGING

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Osteomyelitis Forefoot or Mid-Foot (Ulcer at Tip of Foot – Distal Ulcer)

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The purpose of this seemingly complicated approach to osteomyelitis is to streamline the protocol so we can perform the exams on a consistent basis to obtain adequate diagnostic information with a reasonable amount of scanning time.

For all osteomyelitis cases, post-contrast sequences are needed for evaluation of bone viability.

If intravenous contrast cannot be administered due to severe renal insufficiency or allergy, please refer to routine protocol to scan the patient.

Ulcers should be marked before scanning is initiated.

Please acquire sequences in the order listed in the protocol.

If there is difficulty completing the last post-contrast sequence (e.g. pt. motion, pt. pain, scanner shut down etc.), there is no need to repeat the specific sequence.

General parameters (1.5 T magnets):

For all T1 sequences, please keep TE below 20 (between 10 and 15 if possible); TR 500-600.

For all T2 FS sequences, use equivalent of FSE/TSE. TE of mid to upper 50's is the most ideal for Siemens, 60-65 for GE, and ~ 60 for Toshiba.

It is important to have TE long enough for T2 weighting but not so long that it is signal starved.

For STIR, TI = ~ 135

Imaging planes:

- short axis – cross section of the metatarsals
- cor – cor to the foot
- sag – sag to the foot

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Imaging Sequences:

- short axis T1
- short axis T2 FS
- sag T1
- sag STIR
- sag pre contrast T1 FS
- sag post contrast T1 FS

-cor (to foot) T1 post contrast, no FS – for anatomic correlation