stryker®

Orthopaedics

OtisMed® Imaging Technique: **Knee MRI**

BODY COIL INSTRUCTIONS: GE, PHILIPS, & SIEMENS 1.5T MRI SCANNERS

OtisMed
Innovation in Motion®

1.0 Scope:

This Imaging Technique describes how to perform the Body Coil Series following:

- Hi-Resolution 3-Plane Locator using Knee Coil
- Hi-Resolution Sagittal FSE FR PD Scan using Knee Coil
- Follow the imaging techniques for your scanner as published. Reference the OtisMed Imaging Technique 1.5T Quick Reference Guide and Graphix Instruction Guide

1.1 **Technologist MUST QC (Quality Check) Sagittal FSE PD Scan for alignment tolerance and verify there is no movement of the bony anatomy. Flow artifact is NOT movement and will not cause a scan to be rejected due to motion.**

1.2 **This scan must be able to pass QC (Quality Check) in order to move to the next steps of scanning.**

1.3 Remove the Knee Coil.

2.0 Scanning using Body Coil:

2.1 The following scans will all be performed using the Body Coil (Body and/or Spine Coil for Siemens users only). Please build separate scan parameters for the Left and Right side of the body.

- 3-Plane Locator Ankle
- Coronal FSE/TSE Ankle
- 3-Plane Locator Knee with appropriate Superior Offset and R/L Offset
- Coronal T1 FSE/TSE Knee
- Sagittal FSE/TSE Knee
- 3-Plane Locator Hip with the appropriate Superior Offset
- Coronal T1 FSE/TSE Hip
- All Body Coil scans must be motion free with appropriate bony anatomy centered accurately within the FOV.

2.2 **Make sure the patient understands that he/she must NOT move or adjust his/her body position once he/she is positioned for the Body Coil Images.**

2.3 **Only use ONE landmark for Body Coil Scans. Use offsets to move from one joint to another.**

2.4 **Place opposite leg as far from affected side as possible.** You may use sponges to achieve this.

2.5 Short bore scanners must use the Image Distortion Filter/Correction to reduce the distortion of the bony anatomy.

2.6 Place Ankle/Foot in upright neutral position. No rotation.

3.0 Positioning for 3-Plane Locators:

3.1 Place a level sponge under the patient's knees and ankles to help place the hip-knee-ankle in the same imaging plane.

3.2 Place MRI compatible skin markers above the ankle joint (approx 4-6 inches above joint) to verify affected side being scanned.

3.3 Gently secure the Ankle if necessary to keep the foot/toes in a neutral "Toes Up" position. Do not allow foot to rotate internally or externally. Remember to keep the unaffected limb out of the FOV.

4.0 Coronal T1 Ankle Series:

4.1 Use routine 3-Plane locator Ankle parameters.

4.2 Use scan parameters stated below for the T1 FSE Coronal Ankle Series. See sample Ankle Joint line image shown in Figure 1.

4.3 Coronal ankle slices should cover only the tibial joint line as shown in Figure 1.

T1 SERIES BODY COIL SCAN
Imaging Options: NPW/Anti Aliasing, VBW, TRF, ZIP 512/ Interpolate/Recon 512
TE – Min Full
TR – 500 – may adjust for single acquisition
4mm Slice Thickness by 1mm skip/25% distance factor
ETL 4
Scan Matrix 256 × 256
NEX/Averages/NSA 2
Bdw 31.25
FOV 28cm/280mm

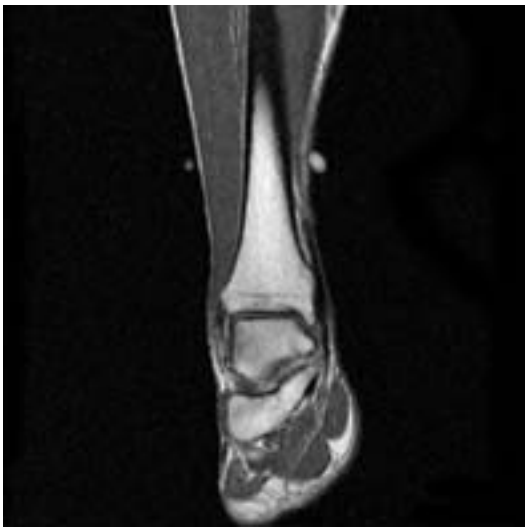

Figure 1

5.0 Coronal and Sagittal Knee FSE T1

5.1 Using a Superior and R/L Offset, perform a routine Knee Locator series.

5.2 Use the same parameters for both Coronal and Sagittal Knee series:

T1 SERIES BODY COIL SCAN
Imaging Options: NPW/Anti Aliasing, VBW, TRF, ZIP 512/ Interpolate/Recon 512
TE – Min Full
TR – 500 – may adjust for single acquisition
4mm Slice Thickness by 1mm skip/25% distance factor
ETL 4
Scan Matrix 256 × 256
NEX/Averages/NSA 2
Bdw 31.25
FOV 28cm/280mm

5.3 See Figures 2 and 3 for slice positioning.

5.4 These two series need to be motion free and centered within the FOV. Opposite leg or unaffected leg must be out the FOV.

Figure 2
Sample Sagittal T1FSE Body Coil Series. Slices must be perpendicular to the inferior edges of the Femoral Condyle. Slice coverage to include all of the condyle.

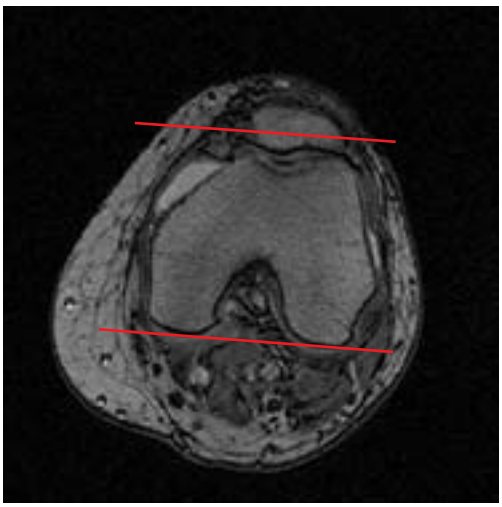

Figure 3
Sample Coronal T1 FSE Body Coil series. Slices must be parallel to the Posterior edges of the Femoral Condyle.
Images must include all of the Femoral Condyle.

6.0 Coronal T1 Hip Series:

6.1 Use a routine Hip Locator with Superior and R/L Offset.

6.2 Use parameters below for the T1 Coronal Hip:

T1 SERIES BODY COIL SCAN
Imaging Options: NPW/Anti Aliasing, VBW, TRF, ZIP 512/ Interpolate/Recon 512
TE – Min Full
TR – 500 – may adjust for single acquisition
4mm Slice Thickness by 1mm skip/25% distance factor
ETL 4
Scan Matrix 256 × 256
NEX/Averages/NSA 3 or 4
Bdw 31.25
FOV 28cm/280mm

6.3 See Sample Hip image Figure 4.

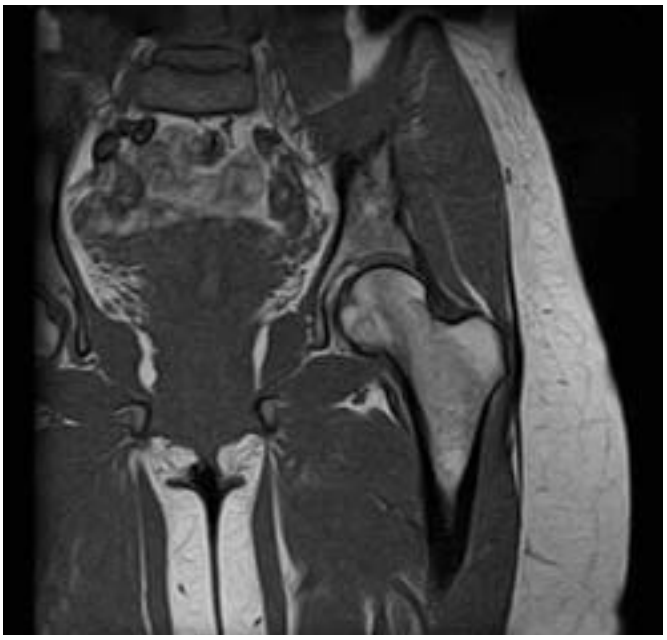

Figure 4
Sample image of necessary hip anatomy.

6.4 You must be able to see the following on the images (See Figure 4):

1. Head of the Femur
2. Neck of the Femur
3. Greater Trochanter of the Femur

7.0 Scanning Specifications

7.1 **If the patient moved or changed body position anytime while the Body Coil images were being acquired, they will ALL need to be repeated.**

7.2 Make sure the correct bony anatomy is centered correctly within the FOV and is motion free.

7.3 Verify there is no distortion of the bony anatomy.

8.0 Upload Images to www.OtisMed.net site

8.1 Upload images into the patient's folder on the **www.OtisMed.net** site the same day the study is performed. Do Not Batch Upload studies. This may result in delaying of a patient's surgery.

8.2 Upload only the following series to the .net site:

- 3-Plane Locator Knee Coil Series
- Sagittal PD Knee Coil Series
- T1 Coronal Knee Body Coil Series
- T1 Sagittal Knee Body Coil Series
- T1 Coronal Hip Body Coil Series
- T1 Coronal Ankle Body Coil Series

8.3 Refer to the Uploading Instructions.

8.4 If you have any questions regarding uploading of the image, please call Customer Service at 1-888-684-7633, option 2.

stryker®

Joint Replacements

Trauma, Extremities & Deformities

Craniomaxillofacial

Spine

Biologics

Surgical Products

Neuro & ENT

Interventional Spine

Navigation

Endoscopy

Communications

Imaging

Patient Care & Handling Equipment

EMS Equipment

325 Corporate Drive
Mahwah, NJ 07430
t: 201 831 5000

www.stryker.com

Registration with, and use of, the OtisMed ShapeMatch services by institutions/persons located in the EEA requires that the institutions/persons be registered as being authorized to transfer patient personal and sensitive personal information to the US. By registering with, and using, this service, you represent and warrant that you are in compliance with the data protection laws of your country of residence or registration.

An imaging technologist must always rely on his or her own professional clinical judgment when deciding whether to use a particular CT or MRI scanner on a particular patient. Stryker does not dispense medical advice and expects that imaging technologists are trained in the use of any particular CT or MRI scanner before using it on a particular patient. An imaging technologist must be certified and/or licensed by the appropriate jurisdiction, and/or otherwise qualified to use a CT or MRI scanner, in order to obtain images used to manufacture an OtisMed cutting guide for on a particular patient.

The information presented is intended to demonstrate the breadth of Stryker product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any Stryker product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Stryker representative if you have questions about the availability of Stryker products in your area.

Literature Number: NL11-BR-CR-2233
MS/GS 11/11

Printed in USA