ACUTE SPINE TRAUMA

The approach to imaging the spine in the setting of acute trauma is inherently different than spine imaging for other indications.

- This side of the protocol sheet is specific for the UW Emergency Department.
- For all other spine CT, refer to the non-acute traumatic protocol sheet.

CT of the spine is the imaging modality of choice for fracture detection and alignment assessment when there is a high or moderate suspicion of acute trauma to the spine.

- Radiographs are NOT required prior to obtaining a spine CT for acute trauma.
- Negative radiographs should NOT preclude obtaining a spine CT if the clinical suspicion is high enough.

When requested via the Emergency Department, the standard protocol below should be followed and no approval by a radiologist is required.

- However, anyone (clinician, technologist, patient) should feel free to contact a radiologist at any time with any questions.

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1) Since acutely traumatized patients often require CT scans of other body parts (head, chest, abdomen, pelvis) the technologist should make the following inquiries before performing a dedicated spine CT.

a. Has this patient had a CT scan within the past 24 hours such that the raw data is still available, and does this scan cover the requested portion of the spine?

b. Will CT scans of other body parts soon be needed such that the coverage of those scans can be adjusted to include the spine, eliminating double irradiation?

2) If the answer to either of the above is YES, then every effort should be made to reconstruct the raw data to create reformatted images of the spine before we proceed with a new dedicated CT of the spine.

a. It is up to the radiologist who is responsible for interpreting these reconstructed spine images to decide if they are adequate.

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COVERAGE

C-spine: Base of skull → Top of T3
T-spine: Bottom of C6 → Top of L2
L-spine: Bottom of T10 → Top of Sacrum

RECONSTRUCTION

1.25mm Slices at 0.625mm Intervals
Edge-Enhanced (“Bone+”) & Soft tissue (“Standard”) algorithms
Use Bone Window (WL=1500 WW=300) for Bone+ images
Use Soft Window (WL=___ WW=___) for Standard images

REFORMATION

In the Sagittal and Coronal planes, 2mm Slices at 2mm Intervals
Reformat the Sagittals off of Coronals, and Coronals off of Sagittals.
DO NOT REFORMAT OFF OF THE AXIALS!
For spines that are very curved additional reformats may be needed.

PACS

If there is more than one requisition, make sure the proper images get sent to the proper imaging folders on the PACS.
For each portion of the spine requested, all axial and all reformatted images get sent to the same folder. (There are no separate “source images” for spines.)
Spine CT NOT Related to Acute Trauma

- The approach to imaging the spine in the setting of acute trauma is inherently different than spine imaging for other indications.
- For spine CT in the setting of acute trauma, refer to the acute trauma sheet.
- Outside the setting of acute trauma, CT is the tertiary modality for spine imaging.
- Radiographs are the primary imaging modality for the assessment of vertebral alignment, body height, and disk space narrowing.
- MR is the secondary imaging modality. Uses include: Visualization of the disks, assessment of narrowing of the central vertebral canal and neural foramen, detection of occult fractures and metastases, determination of acuity of fractures, visualization of the spinal cord and assessment for spinal cord compression.
- A Nuclear Medicine Bone Scan and PET/CT are sensitive secondary imaging modalities to screen for metastases.

Radiographs of that portion of the spine (Cervical, Thoracic, or Lumbar) MUST be obtained and examined before ordering any spine CT.

Outside studies can be scanned into our PACS at any UW imaging center.

All scheduled spine CTs must be approved and protocoled by a radiologist.

- The radiologist should review prior studies to assure proper coverage.

Protocoled by: ___________________ Levels to be covered:____________________

Bill as (specify 1 or more): ☐ C-spine, ☐ T-spine, ☐ L-spine

Appropriate Indications:
☐ Assess fusion/hardware ☐ Assess pars defect ☐ Assess fracture
☐ CT to follow Myelogram, performed by Neuroradiology ☐ Stealth protocol
☐ “Spinal Stenosis” Radiologist should confirm MR is not more appropriate.
☐ Other

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COVERAGE Cover entire length specified above as one continuous scan.

RECONSTRUCTION 1.25mm Slices at 0.625mm Intervals
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