HIGH-RESOLUTION COMPUTED TOMOGRAPHY

June, 2018

Exam: CT Thorax for interstitial lung disease

Protocol:
- Oral Contrast: none
- IV Contrast: none

- Acquisitions:

1) Supine, Inspiration

Breathing instructions for inspiratory scout and CT acquisition:

"For the first part of this study I am going to give you specific breathing instructions. Try to follow as best you can."
"Take in a deep breath….and let it out."
"Take in another deep breath….and let it out."
"Take in another deep breath, and hold your breath in. Keep holding your breath!"

Scout views: PA and Lateral to include all of chest
Scan Range: Lung apices to base

Inspiratory CT acquisition parameters Image reconstruction parameters Image reconstruction parameters

Detector Collimation	kV	mAs	Pitch	Rotation	Tube current modulation
Helical 1.2mm	120 (may be lower as tolerated by interpreting physician	230 (may be lower as tolerated by interpreting physician	~1.0	0.5sec (or faster)	on

Image Processing Plane	Field of view	Reconstruction algorithm	Slice reconstruction thickness	Slice reconstruction interval	Window	Source
Axial	Variable	Soft tissue (e.g. Siemens B31f, GE standard, Philips B, Toshiba Body Std.)	3 mm	3 mm	Mediastinum	raw
Axial thin section	≤ 2 cm beyond lung margin	Moderate edge-enhancing algorithm (e.g. Siemens B45f, GE Bone, Philips D or YB, Toshiba lung std.)	1 mm	1 mm	Lung	raw

Optional Axial thick section	≤ 2 cm beyond lung margin	Moderate edge-enhancing algorithm (e.g. Siemens B45f, GE Bone, Philips D or YB, Toshiba lung std.)	3 mm	3 mm	Lung	raw
Axial MIP	≤ 2 cm beyond lung margin	Moderate edge-enhancing algorithm (e.g. Siemens B45f, GE Bone, Philips D or YB, Toshiba lung std.)	6 mm	3 mm	Lung	raw
Coronal	≤ 2 cm beyond lung margin	Moderate edge-enhancing algorithm (e.g. Siemens B45f, GE Bone, Philips D or YB, Toshiba Lung Std.)	2.5 mm	2.5 mm	Lung	raw
Sagittal	≤ 2 cm beyond lung margin	Moderate edge-enhancing algorithm (e.g. Siemens B45f, GE Bone, Philips D or YB, Toshiba Lung Std.)	2.5 mm	2.5 mm	Lung	raw

* Technologist must review scans immediately after acquisition and repeat as appropriate if there is motion artifact or inadequate inspiration (in clearly non-diagnostic cases) or must contact a radiologist immediately while the patient is on the scanner gantry to determine whether repeating or adding any additional scans is necessary. Also perform prone scans if there is dependent density on supine images.

2) Supine, Expiration
Breathing instructions for expiratory scout and CT acquisition:
"For the next part of this study we will ask you to breathe out and hold your breath."
"Take in a deep breath….and let it out." "Take in another deep breath….and let it out."
"Take in another deep breath, let it out and hold your breath out! Do not breathe!"
Scout views: PA and Lateral to include all of chest

Scan Range
2cm below lung apices to base

Expiratory CT acquisition parameters

Detector collimation	kV	mAs	Scan interval	rotation	Tube current modulation
Axial 2 x 1.0mm	120	150	20 mm	1.0 sec	on

* Technologist must review scans immediately after acquisition and repeat as appropriate if there is motion artifact or inadequate expiration.

Image reconstruction parameters

Image Processing Plane	Field of view	Reconstruction algorithm	Slice reconstruction thickness	Slice reconstruction interval	Window	Source
Axial thin section	≤ 2 cm beyond lung margin	Moderate edge-enhancing algorithm (e.g. Siemens B45f, GE Bone, Philips D or YB, Toshiba Lung Std.)	2 mm	20 mm	Lung	raw

3) Prone, Inspiration (do this series only if dependent density noted on HRCT)

Breathing instructions for prone inspiratory scout and CT acquisition:

"Take in a deep breath….and let it out." "Take in another deep breath….and let it out."
"Take in another deep breath, and hold your breath in. Keep holding your breath!"

Scout views: PA and Lateral to include all of chest
Scan Range: Carina to lung base
Prone Inspiratory CT acquisition parameters

Detector Collimation	kV	mAs	Scan interval	rotation	Tube current modulation
Axial 2 x 1.0mm	120	150	20 mm	1.0 sec	on

Image reconstruction parameters

Image Processing Plane	Field of View	Reconstruction algorithm	Slice reconstruction thickness	Slice reconstruction interval	Window	Source
Axial thin section	≤ 2 cm beyond lung margin	Moderate edge-enhancing algorithm (e.g. Siemens B45f, GE BonePhilips D or YB, Toshiba Lung Std.)	2 mm	20 mm	Lung	raw

* Technologist must review scans immediately after acquisition and repeat as appropriate if there is motion artifact or inadequate inspiration.