

Pedicle Measurements Post Processing

Start by loading the thin data set (Axial 1.0 B20) into the 3D card. Turn on the Free Mode, Orientation Control and Pan/Zoom. Adjust the coronal plane on the sagittal viewport so you can count all levels that you will be reformatting on the coronal viewport. It generally is easiest to start at the bottom and work your way up. Zoom and center each plane for easier viewing. Starting in the coronal plane adjust reference lines to orthogonal planes. Note: if making measurements for **Dr. Wintersteen's patients DO NOT ADJUST REFERENCE LINES ON THE AXIAL VIEWPORT (BOTTOM LEFT WINDOW)** Start parallel to the superior endplate at each level. Next, center your reference lines on whichever pedicle is easier to see clearly. Adjust axial plane on the sagittal viewport to be parallel with the pedicle. Set coronal plane 90 degrees to the axial plane on sagittal viewport. Now grab the coronal plane on the sagittal viewport and drag anterior and posterior until the opposite pedicle can be seen clearly on the coronal viewport. When both pedicles are visible clearly on the coronal viewport, adjust the axial plane on the coronal viewport to intersect the middle of both pedicles. (axial plane should already be centered on the first pedicle you picked, so just swing the other end of the line until it intersects the middle of the second pedicle.) (see fig. A) Next scroll the axial plane up and down, looking at the axial viewport. Both pedicles should come into and out of view at the same time. If not, readjust reference lines on coronal viewport as needed to make both pedicles as symmetrical as possible. Once you have both pedicles appearing symmetrically on the axial viewport, adjust your axial plane to be in the center of the pedicles. If it is not possible to get both pedicles symmetrical, you may have to capture two images, one for each pedicle. With the pedicles symmetrical and the axial plane centered in the pedicle, click on the button to hide reference lines. Now, with the axial viewport selected, click on save as. With "group all images by type" selected save this axial image labeled as the level at which it was created (L3 for instance). (See Fig. B) Continue on like this for each level requested. Note: for any Dr. who isn't Wintersteen, these axial images can all be put in the same series and sent to PACS. For Dr. Wintersteen's patients continue on to the next step. Note: for patients with scoliosis, when you get to a level with a radically different orientation than the level previous (going through a curve in the spine) you should reset your reference lines and recount your levels to make sure you are still on track. Resetting the reference lines helps to assure proper orientation at each level.

When each requested level has an axial image in the center of the pedicles, load each individual axial image into the viewing card. Select the 'image' tab in the middle right part of the screen. Click on Rotate 90 twice so that the image is positioned as if the patient were lying prone, and you are looking up from the feet. Now click on the 'Tools' tab and select "Annotate". Click in the middle of the vertebral body and label according to which level you have. Next, click on

“Distance”. You will draw a line through the narrowest part of each pedicle from the interior cortex to interior cortex. You can grab the line you drew and slide it up and down through the pedicle to verify that you have placed it in the narrowest portion of each pedicle. Grab and drag the distance measurement so it is near the line it references, but not covering necessary anatomy. When you have all the labels in place and the image orientated correctly save the image in a new series labeled “Pedicule Measurements”. (See Figs. C and D) Continue on like this for each level requested and put each level in the “Pedicule Measurements” folder you have created so that all images are saved as one series. Send this series to PACS and then check on Synapse to verify that your series is orientated and labeled properly.

Fig. A

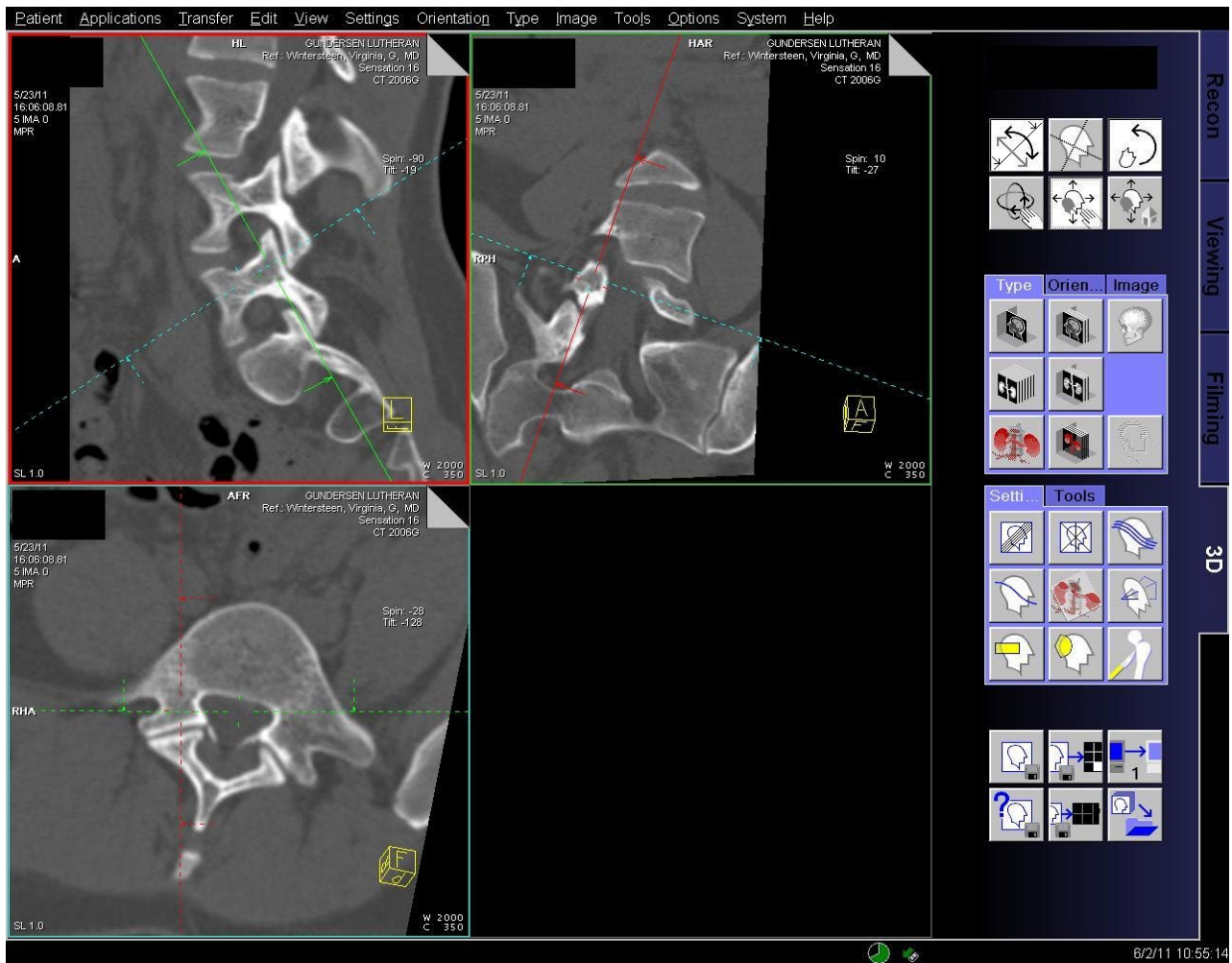


Fig. B

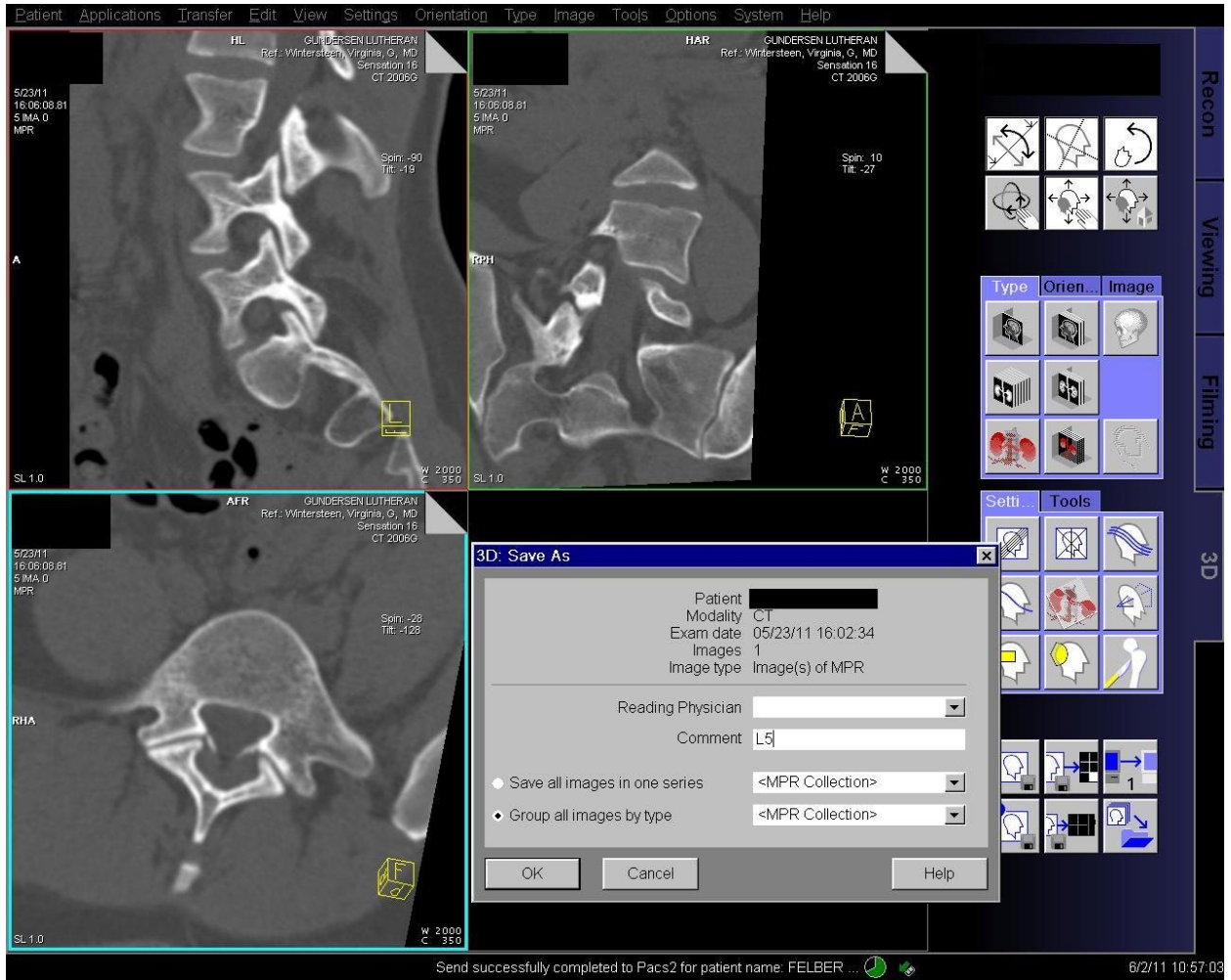


Fig. C

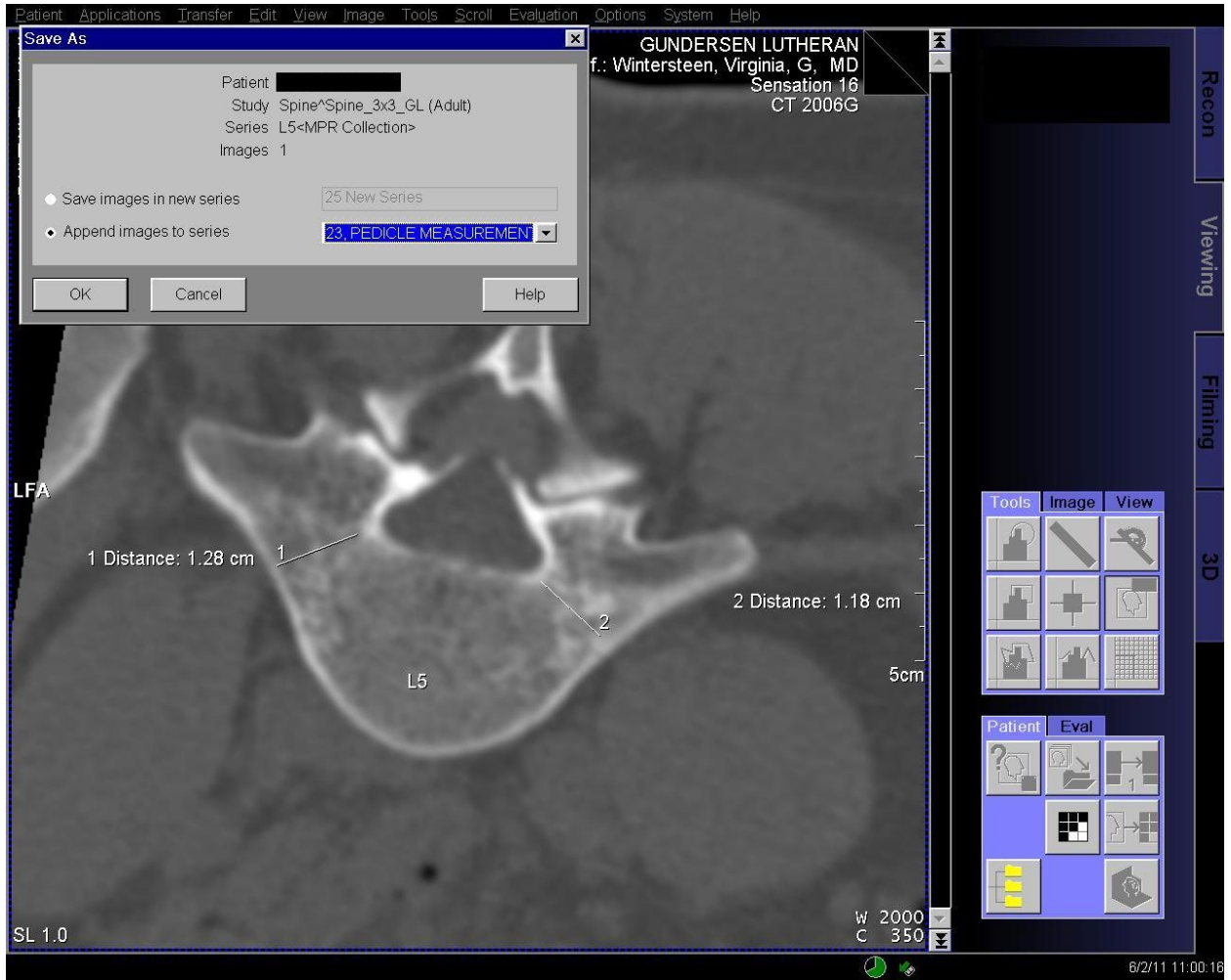


Fig. D (Final image for Dr. Wintersteen)

