

Case 2: April 2011 Whole-body Iodine-131 case

History:

53 year-old female with papillary thyroid cancer (1.7 x 1.3 x. 1.3 cm, well-differentiated, multifocal, no capsular/lymphovascular/extrathyroidal invasion, negative surgical margins, +0/3 lymph nodes; pT1b N0 Mx) status-post thyroidectomy. She presented to the department for Iodine-131 diagnostic whole-body imaging in anticipation of radio-ablative iodine therapy. The patient was on hormone withdrawal for 4 weeks, then had 72-hour whole body images acquired after I-131 administration.

Pictures - First Set = Pre-therapy Scan (designated as follows):

Case 2_1_WB 1 = 72-hour anterior and posterior whole-body images



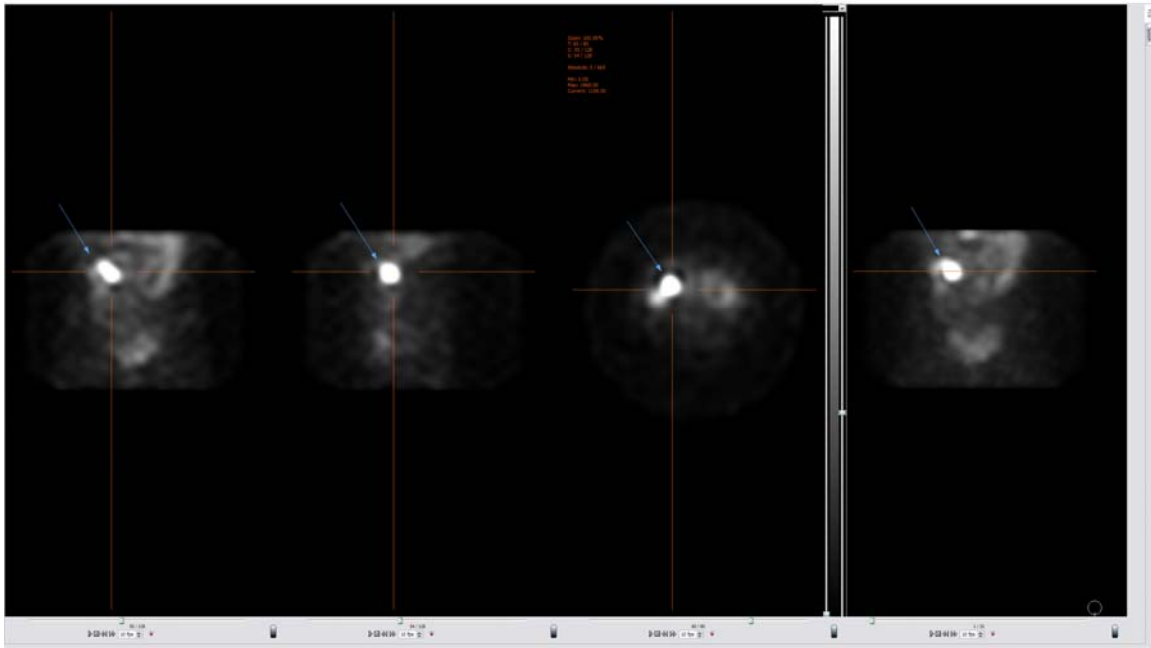
Case 2_2_LAT = approximate 72-hour right and lateral images of the abdomen and pelvis



Case 2_3_AP = the patient was asked to drink water and ambulate. She then returned to the department for additional imaging approximately 8 hours after the initial whole-body images were acquired. This is anterior/posterior spot images of the abdomen and pelvis



Case 2_4_SPECT = SPECT images of the abdomen/pelvis



Findings (Pre-therapy Scan):

Whole-body anterior/posterior images, as well as lateral spot views of the abdomen were acquired 72-hours after administration of Iodine-131.

There is the expected residual uptake in the post-surgical thyroid bed. However, suspicious focal uptake is seen in the right lower quadrant of the abdomen slightly above and to the right of the bladder. Lateral images demonstrate that the activity is in line with the anterior aspect of the bladder.

The patient was asked to drink water and ambulate. She was then brought back approximately 8 hours later for additional static anterior/posterior views and SPECT imaging of the abdomen/pelvis.

Images demonstrate that the previously seen focal uptake has moved higher up in the abdomen, possibly to the level of the hepatic flexure, and there is evidence for uptake adjacent to the focal uptake in a pattern consistent with colonic morphology (see SPECT). Interval movement of the uptake and conformation to GI (gastrointestinal) morphology confirms that this was physiologic GI uptake rather than a metastatic focus.

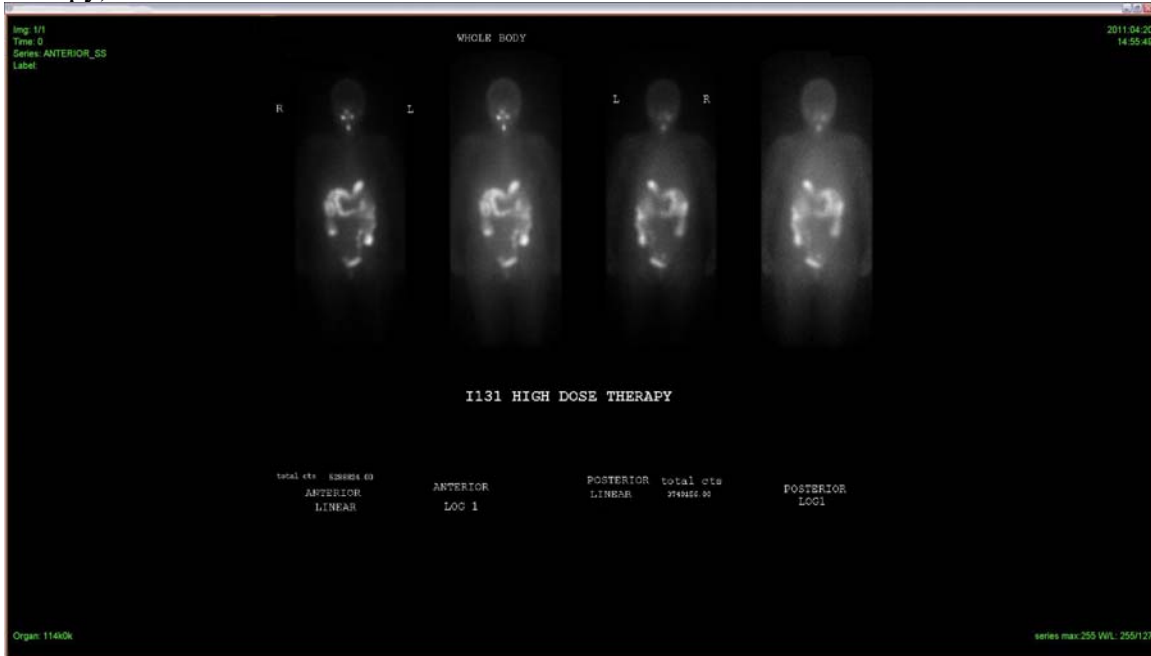
Impression:

Whole-body I-131 scan demonstrating evidence for expected residual uptake in the neck only. There is no evidence for distant metastatic disease. 72-hour uptake was calculated at 0.7%.

Follow-up 1: The patient was treated with 100 mCi I-131.

Pictures - Second Set = Post-therapy Scan (designated as follows):

Case 2_5_WB 2 = 48-hour anterior and posterior whole-body images (after therapy)



Findings:

There is the expected residual uptake in the post-surgical thyroid bed. Physiologic diffuse GI uptake, including in the stomach, duodenum, and the entire colon is noted. Physiologic activity is also noted in the bladder. There is, once again, no evidence for distant metastatic disease.

Impression:

The post-therapy I-131 scan demonstrates evidence for expected residual uptake in the neck only. There is no evidence for distant metastatic disease.

Soraya Jaoroenkul, M.D.
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