

Midline or near-midline radioiodine uptake in the oropharyngeal region in patients of differentiated thyroid carcinoma: Differential diagnosis between lingual thyroid and retropharyngeal nodal metastasis, the subtle clues in the scan and their implications for patient management

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Dear Editor,

Either lingual thyroid (associated with normal thyroid) or iodine concentrating retropharyngeal lymphadenopathy in patients of differentiated thyroid cancer (DTC) is relatively rare but important clinical entities, that present with remarkably similar finding in postablation radioiodine study. An accurate diagnosis is of pivotal importance particularly in view of the diagnostic challenge they pose and different management strategies between the two. In a recently described report,^[1] Song *et al.* described incidental uptake in the oropharynx that turned out to be an associated lingual thyroid. We herein illustrate an alternate diagnosis through a clinical example that led to the diagnosis of a solitary metastatic retropharyngeal lymphadenopathy from DTC.

A 26-year-old male, initially presented with right sided neck swelling and was evaluated with contrast enhanced computed tomography which showed right thyroid lobe nodule (1.3 cm × 1.9 cm in size) with ipsilateral cervical level II–VI lymphadenopathy. Fine-needle aspiration cytology from the nodule and lymph nodes was suspicious of differentiated procalcitonin (PCT). Following total thyroidectomy and nodal dissection (histopathology was classical PCT with nodal

metastasis), the patient had undergone treatment with 2.0 GBq I-131 6 months previously. The follow-up radioiodine scan demonstrated focal tracer concentration [Figure 1a] just right to midline in the oral region, which persisted at the same location on repeat scan the next day. The lateral images [Figure 1b and c] confirmed tracer concentration posterior to the oral cavity, which raised the suspicion of either lingual thyroid or iodine concentrating the retropharyngeal lymphadenopathy.

A plain computed tomography (CT) [Figure 2] of neck undertaken to clarify the exact nature of the uptake showed a right sided large retropharyngeal lymph node (3.5 cm × 3.0 cm × 2.8 cm); in the setting of intense radioiodine uptake, this suggested metastatic retropharyngeal lymph node. Serum thyroglobulin level at this time was 3.2 ng/ml. A surgical opinion was sought, but he declined surgery and was treated with 5.5 GBq of I-131. The posttreatment study [Figure 3a] demonstrated solitary focus of uptake in oropharyngeal location intense in both anterior and posterior views. The single-photon emission computed tomography (SPECT) images [Figure 3b] further confirmed this.

One subtle clue on the planar radioiodine scan is that lingual thyroid is typically midline while retropharyngeal node focus appears slightly lateral to the midline. In the given setting, the lateral views and SPECT helped in confirming its location in posterior oral region. In our case, the follow-up scan [Figure 1] showed a focal tracer concentration just right to the midline and was finally proven to be iodine concentrating the retropharyngeal lymphadenopathy. A plain CT was undertaken to prevent iodide interference from the contrast so that radioiodine therapy could be undertaken if decided for.

The current consensus suggests that in case of lingual thyroid in operated DTC, the primary treatment modality being surgery, followed by radioiodine treatment.^[1] In the case of retropharyngeal lymphadenopathy, the primary approach should be surgical resection. If not feasible, other treatment modalities may be considered such as radioiodine therapy.^[2] Thus,

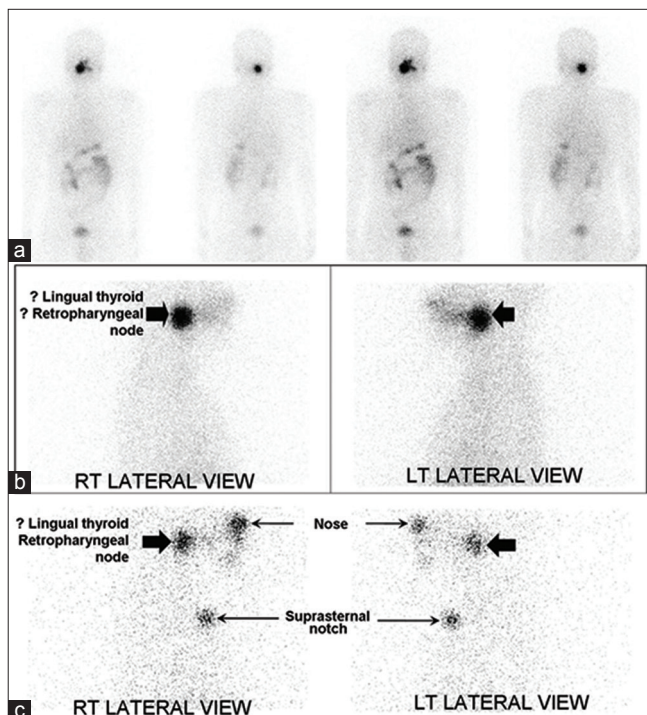


Figure 1: (a) Follow-up large dose scan with 148 MBq I-131 showing a focal tracer concentration just right to the midline in the oral region, which persists on repeat study on next day at the same location. (b and c) The lateral images confirmed that the tracer concentration was posterior to the oral cavity which raised the query of presence of either lingual thyroid or iodine concentrating retropharyngeal lymphadenopathy

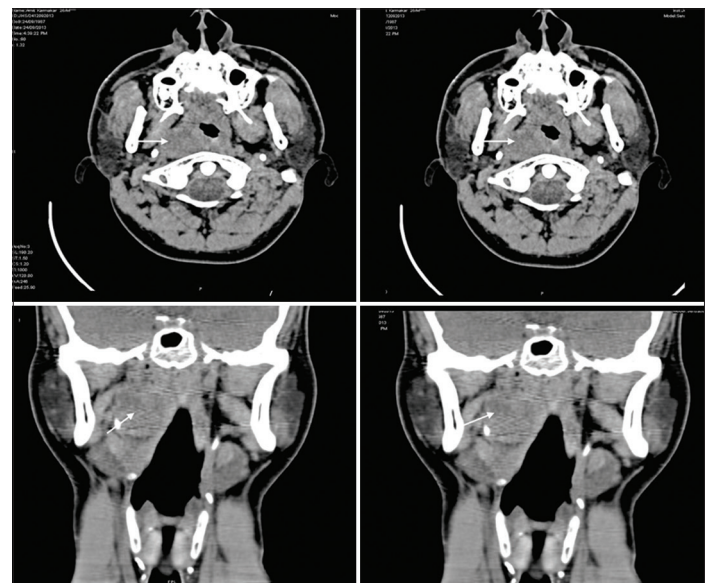


Figure 2: Correlative plain computed tomography scan of neck demonstrating a large retropharyngeal lymph node (3.5 cm × 3.0 cm × 2.8 cm) on the right side which in the setting of intense iodine uptake suggested the diagnosis of metastatic retropharyngeal lymph node

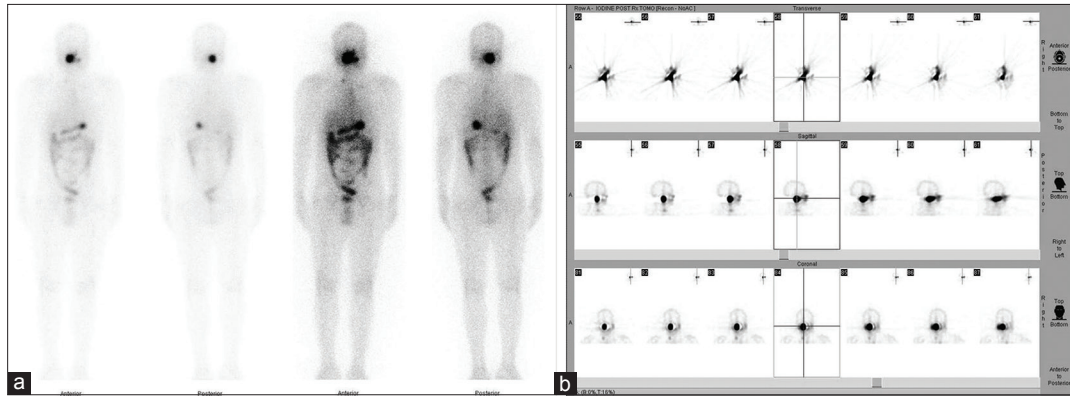


Figure 3: (a) The posttreatment scan demonstrating a solitary focus of intense radioiodine uptake in the same location that is intense in both anterior and posterior views. The single-photon emission computed tomography images (b) further confirms this impression

importance of correct diagnosis of midline or near midline uptake in radioiodine study in DTC is important from patient management viewpoint, and the presented subtle clues with correlative anatomical imaging can clinch the correct diagnosis.

Pradeep Thapa, S. Joshi¹, Sandip Basu

Radiation Medicine Centre (B.A.R.C), Tata Memorial Centre Annexe,
¹Department of Radiology, Tata Memorial Hospital, Parel,
 Mumbai, Maharashtra, India

Correspondence to: Dr. Sandip Basu,
 E-mail: drsanb@yahoo.com

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