



### Introduction

Metastasis from the thyroid gland to the oral cavity is rare. In this case report, we present a case of mandibular metastasis from papillary thyroid carcinoma (PTC).

### Case

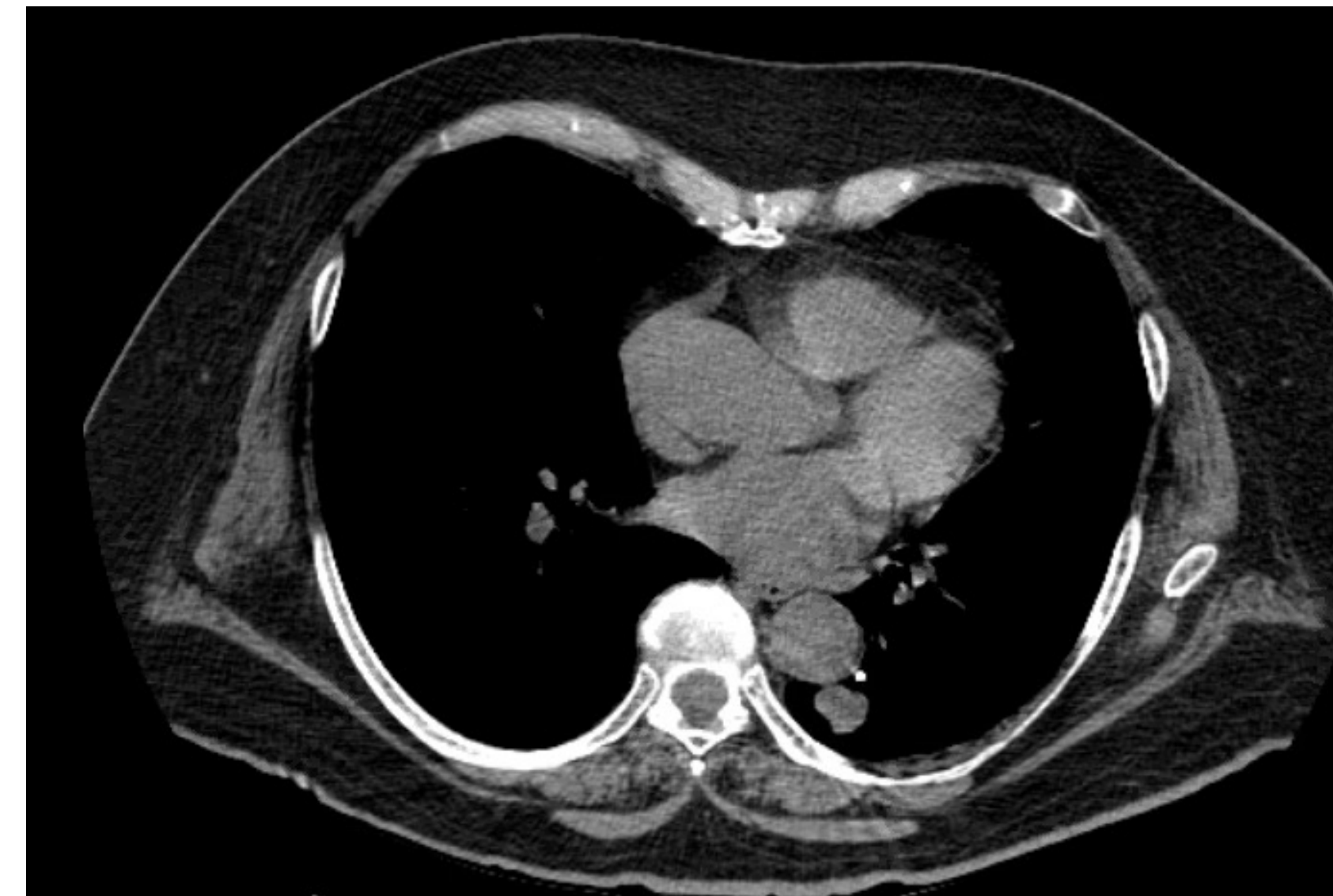
68-year-old woman status post total thyroidectomy presented with recurrent neck swelling and intermittent dysphagia, without voice changes, respiratory symptoms or history of radiation exposure. There was a firm 3cm nodular left neck mass on exam. A thyroid ultrasound demonstrated benign-appearing lymph nodes, but no discrete nodules.

She initially had a left hemithyroidectomy in Bolivia 9 years ago with pathology demonstrating high-grade PTC with focal follicular and insular patterns; immunohistochemistry was positive for thyroglobulin. She subsequently underwent completion thyroidectomy and 101.5mCi RAI therapy. Pathology of the remaining right thyroid lobe was benign. Posttreatment I-131 whole-body scan showed 0.2% uptake in the lower neck, suggestive of residual thyroid tissue or malignancy, without evidence of distant metastasis.

Over the past 2 years, patient's thyroglobulin levels increased: 10.7ng/mL → 14.1ng/mL → 23.8ng/mL → 57.5ng/mL → 69.6ng/mL (ref. range 1.5-38.5ng/mL). An excisional biopsy of the neck mass was performed and pathology showed metastatic thyroid carcinoma in dermis and subcutis of skin with tumor cells positive for thyroglobulin and CK7; histomorphologic pattern was solid and follicular in a nodular arrangement. CT chest demonstrated multiple lung nodules and lesions in the liver, concerning for metastasis. PET/CT showed an intensely FDG-avid bone lesion in the left mandibular angle with destructive changes, concerning for locoregional tumor recurrence and an intensely FDG-avid lung nodule consistent with metastatic disease.

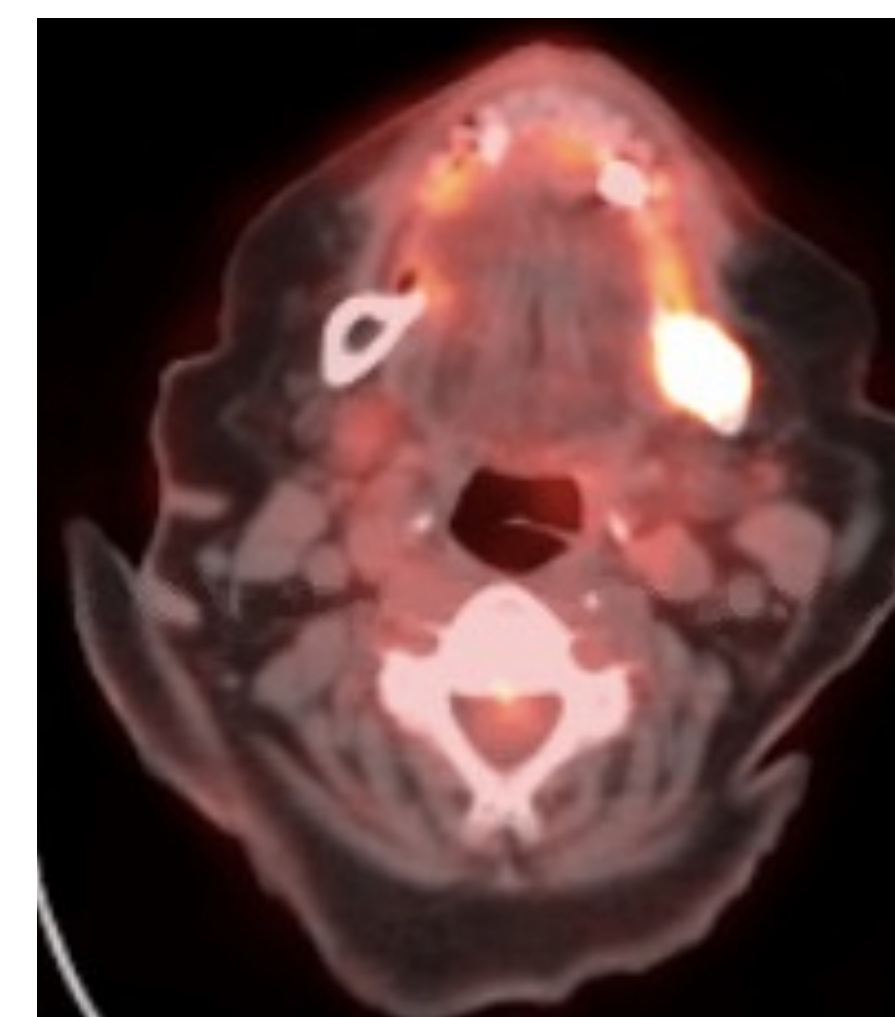
### Imaging

#### CT Chest W/O Contrast 8/2020

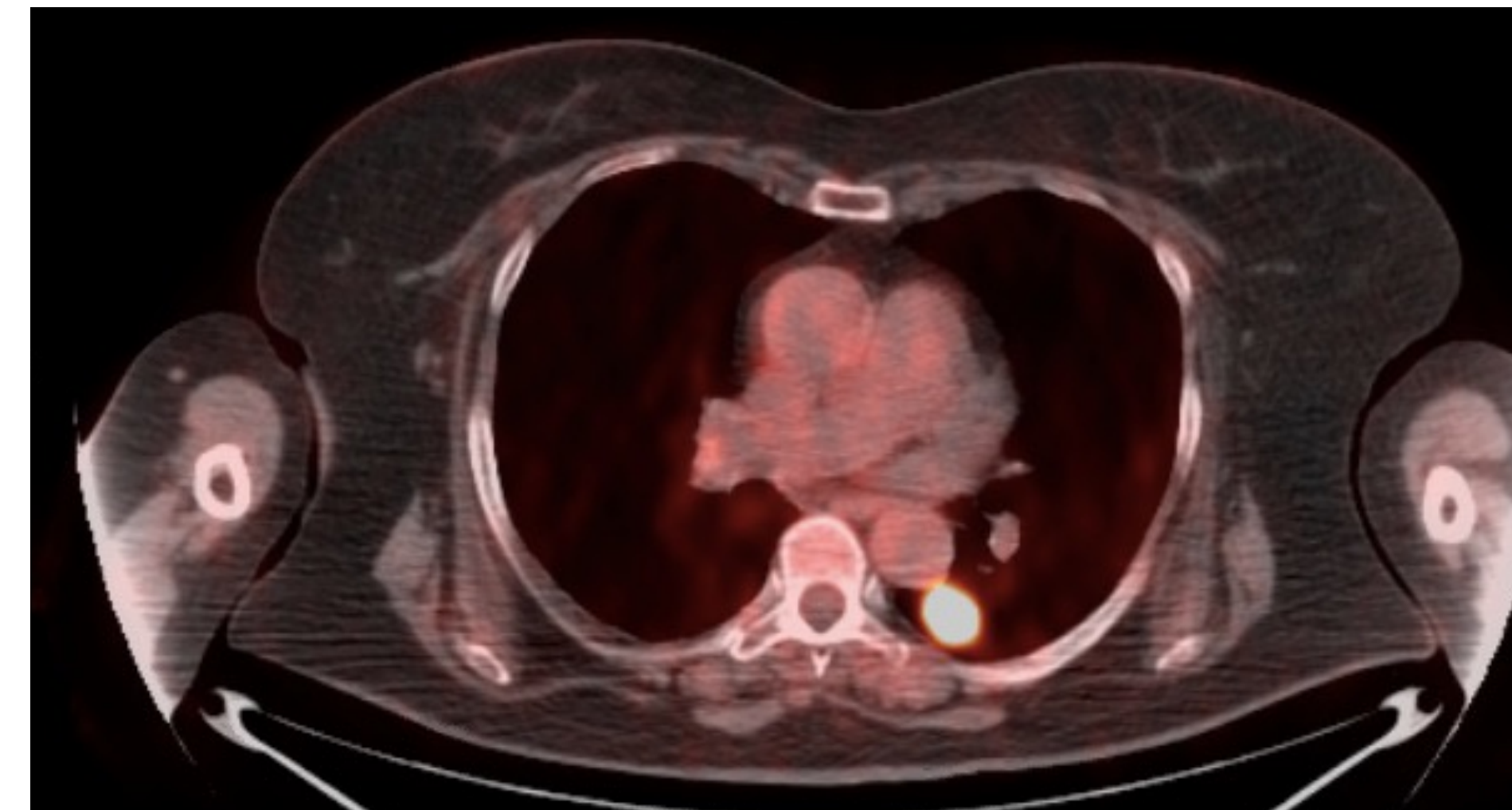


There are multiple pulmonary nodules; metastatic disease is not excluded. Largest nodule is in the left lower lobe and measures 1.8 x 2.8 cm.

#### PET/CT 9/2020



Intensely FDG avid bone lesion (SUV max 20.8) in the left mandibular angle with destructive changes of the bone, concerning for locoregional tumor recurrence.



Intensely FDG avid lung nodule (SUV max 14.0) measuring 1.8 x 1.6 cm in left lower lobe is consistent with metastatic disease. Multiple sub-centimeter bilateral lung nodules, FDG avid or non-FDG avid, are suspicious for metastatic lesions.

#### CT Maxillofacial W/O Contrast 2/2021



A well-defined expansile osteolytic mass in the left mandibular body, which has expanded and eroded the cortical bone. This mass measures 2.1 x 1.7 x 2.6 cm. In view of clinical history, metastasis is considered.

### Discussion

Papillary Thyroid Carcinomas are common and usually nonaggressive tumors that are commonly detected by slow growing swelling of the anterior neck, as seen in our patient's case. PTC typically follow an indolent clinical course and do not recur or metastasize beyond local lymph nodes; generally, thyroidectomy is curative.

However, our patient experienced metastasis of her PTC at the mandibular angle, a common site of oral metastasis from thyroid cancer due to the rich blood circulation in the medullary cavity of the region. Metastasis to the oral cavity is a rare occurrence – they account for about 1% of all oral malignancies.

Prognosis of patients with distant thyroid metastases is generally poor, with an average of 40% of patients alive four years after the diagnosis of metastasis. In conclusion, oral metastasis from PTC is a rare event that usually accompanies a poor prognosis.

### References

1. Benedict M et al. Metastatic Papillary Thyroid Carcinoma with Multifocal Synchronous Transformation to Anaplastic Thyroid Carcinoma. *Case Rep Pathol.* 2016;2016:4863405. doi:10.1155/2016/4863405.
2. Das R et al. Papillary thyroid carcinoma presenting with mandibular metastasis: An unusual presentation. *Clin Cancer Investig J* 2014;3:426-8.
3. Khoozestani NK et al. Metastatic papillary thyroid carcinoma of the mandible: Case report and literature review. *J Oral Maxillofac Pathol.* 2019;23(Suppl 1):97-105. doi:10.4103/jomfp.JOMFP\_106\_18.
4. Nikitakis NG et al. Metastatic papillary thyroid carcinoma to the maxilla: case report and literature review. *Head Neck Pathol.* 2012;6(2):216-223. doi:10.1007/s12105-011-0323-6.