Hemoptysis as an Initial Presentation of Poorly Differentiated Thyroid Carcinoma: An Ominous Presentation

Atif, Z, Morante, J, Kaushik, D, Curiel, L, Babury, M
Jamaica Hospital Medical Center, Jamaica, NY , 11418 - USA

ATS 2018 Where today's science meets tomorrow's care™
San Diego, CA
May 18 - May 23

Introduction:

Hemoptysis is a common sign associated with lung cancer, bronchiectasis or infectious etiology. Rarely, thyroid cancer can present with tracheal invasion with hemoptysis as the primary complaint. Tumors originating from thyroid gland present as neck masses with lymphadenopathy.

Poor prognostic factors include old age, suboptimal response to Iodine-131 therapy, metastasis to bone other than lung and follicular histology. We present a rare case of poorly differentiated thyroid carcinoma presenting as hemoptysis.

Case Description:

A 56-year-old female presented with copious amount of hemoptysis with clots since the night prior to admission. Physical examination revealed thyroid enlargement without palpable nodules. Direct laryngoscopy showed no visible lesions, masses, clots or source of bleeding in hypopharynx or larynx. Extrinsic compression of trachea was visible on the left side.

Two separate bronchoscopies were performed showing no endobronchial lesions or foci of bleeding. MRI of the neck with gadolinium showed an ill-defined and heterogeneously enlarged thyroid mass narrowing the trachea to a minimum of 7 mm, and lymphadenopathy (Fig.1). CT of the chest revealed multiple pulmonary nodules suspicious for metastatic disease. A biopsy of the right lower lung nodule was consistent with metastatic thyroid carcinoma with positive TTF, PAX8, and focal thyroglobulin staining.

Fine needle aspiration of the right thyroid lobe showed findings suspicious of follicular variant of papillary carcinoma. The patient underwent total thyroidectomy, left superior parathyroid re-implantation, central neck dissection and tracheostomy. The final biopsy revealed KRAS mutated poorly differentiated thyroid carcinoma with positive nodal and vascular invasion.

A suppressive dose of levothyroxine was started postoperatively with the TSH goal of <0.01 uIU/ml. Thyroglobulin level trended up to 276 (N <60 ng/dl) 3 months after surgery. In addition, the PET scan showed extensive uptake along the tracheostomy tube and surgical bed, extensive pulmonary nodules and increased uptake in axial and proximal appendicular skeleton. The patient is currently receiving radioactive iodine therapy along with a high dose of levothyroxine.

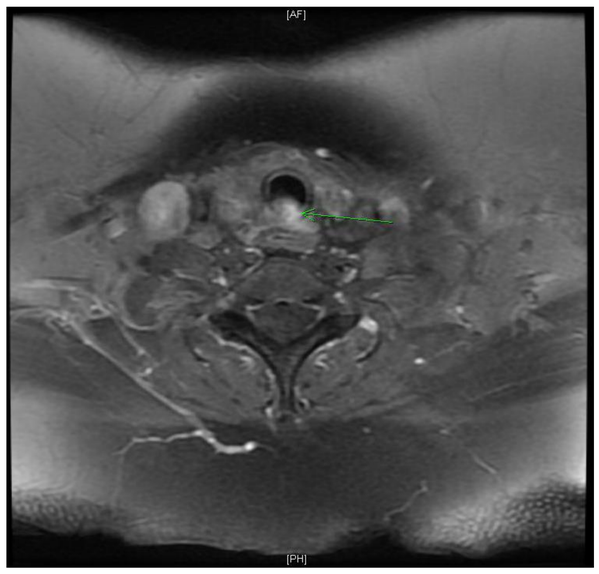

Fig.1: MRI of the neck; enlarged heterogeneous thyroid encircling proximal trachea contiguous with mass projecting into the posterior aspect of the trachea.

Fig.2: CT guided core needle biopsy of right lower lobe pulmonary nodule.

Discussion:

Hemoptysis is commonly associated with local tracheal invasion rather than lung metastasis. Although hemoptysis is rarely a presentation of thyroid tumors, this case illustrates it as the initial complaint of thyroid carcinoma.

Poorly differentiated thyroid carcinoma is an exceedingly rare and aggressive malignancy comprising 0.3-6.7% of all thyroid tumors. In hemoptysis, bronchoscopy is a useful diagnostic procedure and the treatment is geared towards surgical resection and radioactive iodine therapy along with TSH suppression. Multi-kinase inhibitors are an alternative therapy in cases not responsive to Iodine-131.

References:

1. Cabanillas, M. E., Terris, D. J., & Sabra, M. M. (2017). Information for Clinicians: Approach to the Patient with Progressive Radioiodine-Refractory Thyroid Cancer—When to Use Systemic Therapy. Thyroid, 27(8), 987-993.
2. Sanders Jr, E. M., LiVolsi, V. A., Brierley, J., Shin, J., & Randolph, G. W. (2007). An evidence-based review of poorly differentiated thyroid cancer. World journal of surgery, 31(5), 934-945.
3. Sobrinho-Simoes, M., Sambade, C., Fonseca, E., & Soares, P. (2002). Poorly differentiated carcinomas of the thyroid gland: a review of the clinicopathologic features of a series of 28 cases of a heterogeneous, clinically aggressive group of thyroid tumors. International journal of surgical pathology, 10(2), 123-131.
4. Volante M, Landolfi S, Chiusa L, et al. Poorly differentiated carcinomas of the thyroid with trabecular, insular, and solid patterns: a clinicopathologic study of 183 patients. Cancer. 2004;100(5):950–7.
5. Weiland, J. E., Santos, M. D., Mazzaferri, E. L., Schuller, M. D., & Oertel, J. E. (1989). Hemoptysis as the Presenting. Arch Intern Med, 149, 1693-1694.