Thyroid

PSAT282

A Case of Papillary Thyroid Cancer in a Thyroglossal Duct Cyst

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Background: Thyroglossal duct cysts (TGDC) are common congenital neck anomalies. They persist through adulthood in 7% of the general population. Associated malignancy is rare, occurring in <1% of cases. Over 90% of such malignancies are papillary thyroid carcinoma (PTC). Twenty to 60% of patients with TGDC malignancies are found to have concomitant cancer in the thyroid. The rarity of TGDC malignancy makes its management particularly challenging, given limited long term outcome data. We describe a case of a 4cm TGDC PTC.

Case: A 49-year-old female with a history of autoimmune thyroid disease presented for evaluation of a goiter. She reported 6 months of painful midline neck swelling. No family history of thyroid cancer and she had no history of radiation to her head or neck. She denied swallowing, dyspnea, or hoarseness. Physical exam was notable for a mildly tender, firm 2.5 cm submental midline neck mass overlying the
hyoid. TSH was normal and thyroid peroxidase antibody was >1000 (n: <5 IU/mL). Neck ultrasound showed a 3.7x2.5x1.6 cm mixed solid/cystic midline neck mass and a mildly enlarged, heterogeneous, and vascular thyroid without discrete intrathyroidal nodules. A neck CT with contrast indicated that the midline mass was heterogeneous enhancing with tiny internal cystic spaces. The differential diagnosis included an infected thyroglossal duct cyst versus malignant transformation. Fine needle aspiration of the mass was suggestive of PTC. The patient underwent the Sistrunk procedure, with excision of the thyroglossal duct cyst, the middle of the hyoid bone, and the tissue surrounding the thyroglossal tract. Final pathology was consistent with a 4 cm PTC, classical type, without lymphatic, vascular or perineural invasion. Surgical margins were negative for malignancy. Two months postoperatively, TSH remained normal, and the thyroglobulin (TG) level was 78 with negative TG antibodies. She declined a thyroidectomy.

**Conclusion:** To date, there is no consensus guideline regarding optimal management for malignancy involving TGDC. Studies suggest that surgical decision making be based on patient risk stratification. High risk factors include age older than 45 years, tumor >4 cm in size, extension of tumor to adjacent soft tissue, and/or the presence of nodal or distant metastases. In high-risk patients, treatment with Sistrunk procedure combined with thyroidectomy, neck dissection and radioactive iodine therapy have shown excellent results. In younger than 45 years with tumor size <1.5 cm, without extension beyond cyst wall and normal thyroid ultrasound Sistrunk procedure alone might be sufficient. Despite low risk factors patients should still be advised to have thyroidectomy as there could be a 20% risk of coexisting thyroid cancer. Additional longitudinal studies are needed to confirm that this approach leads to optimal long-term outcomes for patients with TGDC-associated malignancy.

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