An Unusual Presentation of Papillary Thyroid Carcinoma in a Pediatric Patient

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Abstract

Objectives: 1) Discuss an unusual presentation of metastatic papillary thyroid cancer 2) Discuss differential diagnosis of cystic masses in the neck in the pediatric population

Study Design: Case report and review of the literature.

Methods: A rare case of papillary thyroid cancer presenting as a lymphangioma of the left neck is described and the recent English literature is reviewed.

Results: Four years ago, a 15-year-old female with history of Beckwith-Wiedemann syndrome presented with acute left neck swelling. A CT scan was performed revealing a large solid and cystic mass, which was thought to be a lymphangioma radiographically. FNA was not recommended due to the benign characteristics of the mass, and patient chose observation. The patient was seen three more times in the clinic setting for the next three years for intermittent neck swelling, resolving on its own each time. In July 2016, the patient decided to proceed with surgery prior to starting college. The patient was taken to the operating room for excision of the left neck mass. Intraoperative frozen section revealed metastatic papillary thyroid cancer. The patient recovered from surgery well. Ultrasound mapping suggested left thyroid mass and bilateral normal cervical lymph nodes. Two weeks later, the patient underwent total thyroidectomy and bilateral neck dissections.

Conclusions: Cystic neck masses in the pediatric population are rarely concerning for malignant processes. As such, they are frequently conservatively managed. Here, we present an unusual case of a cystic neck mass that pathologically was shown to be metastatic papillary thyroid cancer. We suggest that this diagnosis be considered in any cystic neck mass workup.

Introduction

Cystic lesions of the neck in the pediatric population are often benign. Papillary thyroid carcinoma is the most common type of thyroid cancer; however, it only accounts for 1.4% of all pediatric malignancies with a peak incidence between 15-19 years of age, usually presenting as a palpable thyroid nodule. Presentation in cervical nodes alone without clinical suspicion of thyroid cancer occurs infrequently. Lymph node metastases may undergo cystic transformation. This is rarely encountered, and in cases of an occult primary tumor, the diagnosis may be difficult, resulting in a delay of the correct diagnosis and therapy. Although this has been reported in the adult literature, it has not been in the pediatric population. This paper describes our experience with a case of occult thyroid papillary carcinoma presenting as a lymphangioma in a pediatric patient.

The Case

A 15 year old female with extensive family history of thyroid cancer and past medical history of Beckwith-Wiedemann syndrome presented to our ENT clinic in 2012 for evaluation of left sided neck swelling following knee surgery. This was treated with antibiotics and slowly resolved. A CT scan was performed at that time revealing a large solid/cystic mass deep to the left sternocleidomastoid muscle abutting the left thyroid gland causing narrowing of the great vessels (Figure 1). Radiographically, this was thought to be a lymphangioma. At that clinic visit, surgical resection was discussed with the patient and patient’s mother. They opted to forego surgical resection, and continue to observe. She was seen one other time in 2014 for similar symptoms, however, decided to continue to observe. In July 2016, the patient returned to clinic stating that the mass had grown in size (Figure 3) and opted for surgical resection. Prior to surgery, a MRI angiogram of the neck was performed (Figure 2). A large multi-locular mass was excised (Figure 4 and 5). Gross features were concerning for malignancy, therefore intraoperative frozen sections were taken, revealing metastatic papillary thyroid carcinoma. The patient recovered from surgery well. After discussion with the patient and family, it was decided that the patient needed to undergo a total thyroidectomy with bilateral neck dissections. A lymph node mapping ultrasound was performed (Figure 6), showing concern for bilateral lymph node involvement. Pathology revealed right sided papillary thyroid carcinoma with right sided lymph node involvement. The patient developed hypoparathyroidism post-operatively, and continues to take calcium and calcitriol daily. Two months following surgery, patient underwent radioactive iodine therapy, and tolerated well. Due to the extensive family history of thyroid cancers, genetic counseling/testing was offered.

Discussion

The various common cysts in the neck include lymphangiomas, branchial and dermoid cysts, teratomas, and cystic hygromas. Cystic masses of the neck can also be metastases from head and neck tumors. Papillary thyroid carcinoma is the most common type of thyroid malignancies presenting with solitary thyroid nodule or as a lymph node mass. It is a slow growing tumor, therefore can be easily misdiagnosed as a benign cyst, especially in young patients. Although, FNA was not performed on our patient, if it is negative, excisional biopsy of a benign appearing cystic mass should be performed with frozen section analysis.

In patients with neck swelling presenting as a huge cystic lesion mass, the differential diagnosis of metastatic papillary thyroid carcinoma must always be considered prior to planning surgery. Once diagnosed, to reduce recurrence, it is recommended to give post-operative radioactive iodine with a suppressive thyroxine dose.

Prognosis is excellent (>90%) with a poor prognosis in the presence of extra-thyroid extension (30-60%).

Conclusion

Cystic neck masses in the pediatric population are rarely concerning for malignant processes. As such, they are frequently conservatively managed. Here, we present an unusual case of a waxing and waning cystic neck mass that pathologically was shown to be metastatic papillary thyroid cancer. This presentation for this age group has not been described in the literature, therefore we suggest that this diagnosis be considered in any cystic neck mass workup, regardless of age.

References