Papillary Carcinoma of Thyroglossal Cyst

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A rare case of papillary carcinoma of the thyroglossal cyst in a 27-year-old female is presented. The diagnosis was established only after histopathological examination of a completely excised thyroglossal cyst. Clinically, no differentiation between a benign cyst and malignancy could be made. A characteristic CT scan finding of nodular soft tissue excrescences in a midline cystic mass suggests the possibility of carcinoma in a thyroglossal cyst and may help in the preoperative diagnosis. Complete excision of the cyst with the thyroglossal tract and a wedge of the hyoid bone is usually sufficient. Long-term follow-up of the patient is recommended.

Thyroglossal cyst is a common neck swelling which develops as a result of gradual accumulation of secretions within an incompletely obliterated thyroglossal duct. The swelling usually presents as an asymptomatic midline mass. The development of carcinoma in a cyst of this type is rare and is usually not suspected preoperatively.

We report a rare case of papillary carcinoma in a thyroglossal cyst. A brief review of literature is also presented.

Case Report

A 27-year-old Saudi female presented with a painless swelling of the neck of 2 years duration. She had noticed an increase in the size of swelling which brought her to the hospital. She was in good general health. Examination of the neck demonstrated a firm midline swelling of about 2 cm x 3 cm which moved with deglutition and tongue protrusion. There was no thyroid enlargement or lymphadenopathy. Tests showed a normal white cell count, haemoglobin, urea, electrolytes and serum calcium. A Tc-99-thyroid scan showed a normal thyroid gland. Preoperative laryngoscopy was normal. A clinical diagnosis of thyroglossal cyst was made.

At surgery, the cyst with its tract was fully excised. A wedge of hyoid bone was also removed.

Her postoperative course was eventful. Histopathology confirmed the diagnosis of a papillary adenocarcinoma of thyroglossal cyst (Fig. 1). An isotope thyroid scan was repeated after 1 month which was normal. Multiple fine needle aspiration (FNA) biopsy was performed on both lobes of thyroid gland which showed no malignancy. The patient has been under regular follow-up for over 2 years since surgery.

Discussion

During fetal development, the central portion of thyroid gland descends from the foramen caecum to the base of the neck. The thyroglossal duct which connects the migrating thyroid gland to foramen caecum, disappears by 8–10 weeks. When parts of this tract fail to obliterate completely, a gradual accumulation of secretion results in the development of a thyroglossal cyst.3

Classically, a thyroglossal cyst occurs in the midline, but 10–24% may be lateral to this expected
location. The cyst may be classified according to its location into infrayoid (65%), suprayoid (20%) and hyoid (15%). The cyst wall is lined with various epithelial elements with ectopic thyroid tissue present in 5–45%. Uncomplicated thyroglossal cysts most often present in the first decade of life with equal frequency in boys and girls. Carcinoma of thyroglossal cyst is usually diagnosed in the third and sixth decades of life with a slight female predominance. Our patient was a female in her third decade. Clinically, no differentiation between a benign cyst and a malignancy can be made. The diagnosis is usually established after excision of the cyst. It has been suggested that CT scan is helpful in identification of malignant change. The CT findings of nodular soft tissue excrescences in a midline cystic mass should suggest the possibility of carcinoma arising in a thyroglossal duct cyst. Histologically papillary adenocarcinoma accounts for 75–85% of malignancies occurring in the thyroglossal duct cyst with follicular, squamous anaplastic and mixed tumours accounting for the remainder.

There is controversy over how malignant tumours arise in these cysts. Some believe that thyroglossal cyst carcinoma represents a spread of an occult thyroid carcinoma. Consequently, subtotal thyroidecetomy is recommended, if necessary supplemented by neck dissection and radio-iodine treatment. Others consider it as a primary carcinoma arising in ectopic thyroid tissue in thyroglossal cysts. They recommend only the use of Sistrunks procedure by which the cyst, the central portion of hyoid bone and the foramen caecum are removed. We have adopted this conservative policy which is well supported in the literature. The cyst was completely excised with thyroglossal tract and a portion of hyoid bone. Fine needle aspiration (FNA) and isotope scan did not show any involvement of the thyroid gland.

The long-term results of various treatments have not been described in the literature. A long-term follow up of the patient is recommended. Thyroid suppression with thyroid hormone replacement has also been suggested.

References