CASE REPORT

A rare case of incidentally diagnosed primary papillary carcinoma of thyroglossal duct cyst

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Abstract Thyroglossal duct cysts are the most common congenital abnormality of thyroid development. Seventy percent of thyroglossal duct cysts are diagnosed during childhood and 7% are diagnosed in adulthood. Less than 1% of these cases are malignant with most being papillary in nature. It is often diagnosed incidentally after surgical excision. Incidentally discovered, well-differentiated thyroid carcinoma of the thyroglossal duct, in the presence of a clinically and radiologically normal thyroid gland, can be managed adequately by the Sistrunk operation. We present a rare case of primary papillary carcinoma of thyroglossal duct cyst, with normal thyroid gland, in a 28-year-old female that was diagnosed incidentally on histopathological examination. A Sistrunk procedure was performed on the patient to remove the thyroglossal duct cyst and patient is doing well at regular follow up.

Keywords Thyroglossal duct cysts · Papillary carcinoma · Neck masses · Sistrunk operation

Introduction

Thyroglossal duct cysts are the most common congenital abnormality of thyroid development. They represent the most common midline neck masses in childhood; however, can also be found in adults [1]. Less than 1% of these cases are malignant [2]. We present a rare case of primary papillary carcinoma of thyroglossal duct cyst, with normal thyroid gland, in a 28-year-old female, which was diagnosed on histopathological examination.

Case report

A 28-year-old female presented with a small swelling over midline of neck for the past one and a half years associated with occasional pain. On examination a 3×2 cm cystic mass was present in the midline of neck, which moved with deglutition and on protrusion of tongue, suggested thyroglossal cyst. The thyroid gland was clinically normal.

On ultrasonography, a thick walled, anechoic cystic mass over midline of anterior neck measuring 3.3×3.3 cm was seen, with the thyroid being of normal size and echogenicity, also no associated lymphadenopathy was observed. Fine needle aspiration cytology (FNAC) of mass yielded 4 ml of straw coloured fluid. Microscopy of aspirated fluid showed few macrophages and polymorphs, which were suggestive of an inflammatory lesion. Thyroid function tests were within normal limits.

A Sistrunk procedure was performed on the patient to remove the thyroglossal duct cyst. Thyroid gland was found to be normal. Histopathological examination of the specimen showed features suggestive of well-differentiated papillary carcinoma of thyroglossal cyst (Fig. 1). Retrospectively fine needle aspiration cytology (FNAC) of thyroid was done, which showed a normal thyroid gland.

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Patient was followed up in every 3 months. There were no complaints or evidence of recurrence. Thyroid gland was found to be normal clinically as well as on ultrasonography

Discussion

Among congenital cystic masses of the neck, thyroglossal duct cyst is the most common accounting for about 70% of cases [1]. Thyroglossal duct cysts are usually located in the midline or slightly off midline. Thyroglossal duct carcinoma is an uncommon entity, occurring in approximately 1% of all thyroglossal duct cysts [1, 3]. It is often diagnosed incidentally after surgical excision [3]. Ninety-four percent of carcinomas are of thyroid origin, with most being papillary in nature, and 6% are of squamous cell origin [3]. If thyroglossal duct cysts are hard, fixed, and irregular or have undergone size change with palpable neck lymph nodes, carcinoma should be suspected. Eighty percent of thyroglossal duct carcinomas are 2–5 cm in size [1]. Thyroglossal cyst can be diagnosed usually by clinical examination and on ultrasonography, and in case of any suspicion of malignancy ultrasonography of thyroid gland should be performed preoperatively [4].

In our case diagnosis of primary papillary carcinoma of thyroglossal cyst was made incidentally only on histopathological examination as the patient presented with a cystic swelling of 3×2 cm in midline of anterior part of neck without any features suggestive of malignancy. Ultrasonography and fine needle aspiration cytology (FNAC) of swelling did not show any features of malignancy. On retrospect ultrasonography and fine needle aspiration cytology (FNAC) of thyroid gland were normal.

Fig. 1 Features of well differentiated papillary carcinoma of thyroglossal Cyst (black arrow showing papillary projections, white arrow showing cyst wall).

Incidentally discovered, well-differentiated thyroid carcinoma of the thyroglossal duct, in the presence of a clinically and radiologically normal thyroid gland, can be managed adequately by the Sistrunk operation, as done in our patient. The addition of total thyroidectomy to Sistrunk operation did not have a significant impact on outcome in cases of incidentally diagnosed primary papillary carcinoma in thyroglossal cyst with normal thyroid gland [5].

Some studies have advocated thyroid gland removal for a papillary carcinoma and patients should receive suppressive doses of thyroid hormone. As the cure rate is 95% for the patients whose thyroid is preserved and further postoperative complications are avoided, it can be considered that the optimal surgical procedure for thyroglossal duct carcinoma is the same as that for the benign cyst [4].

Those patients with more advanced disease require more aggressive treatment. This may include a total thyroidectomy with or without neck dissection in addition to the Sistrunk operation, followed by radioactive iodine therapy and thyroid-stimulating hormone suppression. The prognosis is generally excellent with adequately treated disease [3].

Prognosis depends on the histological findings; the best prognosis is for well-differentiated carcinomas, decreases for squamous cell carcinoma, and is poorest for anaplastic carcinoma [2].

Hence, we conclude that in a case of thyroglossal duct cyst, with normal thyroid gland and without any clinical or radiological evidence of malignancy, a possibility of underlying malignancy should be kept in mind. These patients can be managed adequately with a sistrunk operation only with regular follow up.

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