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Ultrasonographic findings of thyroglossal duct papillary carcinoma: A case report

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ABSTRACT

INTRODUCTION: Reports on thyroglossal duct cyst carcinoma (TGDCCa) are rare, occurring in approximately 1% of thyroglossal duct cyst (TGDC) cases. The origin and treatment of carcinoma arising in TGDC are controversy.

PRESENTATION OF CASE: A 38-year-old woman presented with a midline neck mass at the thyrohyoid level for 3 years. Ultrasound revealed a 2.4 cm cystic mass with a solid mural component and microcalcification. A small right thyroid nodule was also detected. Sistrunk's operation was performed and the pathology was a primary carcinoma arising in the TGDC with a close surgical margin. Total thyroidectomy was done and revealed a 4 mm papillary carcinoma with partial invasion through the thyroid capsule of the right lobe with a 1 mm papillary carcinoma at the isthmus. The diagnosis was a primary TGDCCa with multifocal papillary thyroid carcinoma.

DISCUSSION: Sistrunk's operation is an accepted procedure for the treatment of both TGDC and TGDCCa. Additional total thyroidectomy has been proposed but still controversial. The aims of preoperative ultrasound and ultrasound-guided fine needle aspiration biopsy (FNAB) are differential diagnosis of the possible diseases and operative planning. The results which suggest a carcinoma arising in the TGDC, synchronous thyroid malignancy and metastatic cervical lymph nodes are helpful in determining the magnitude of the operation.

CONCLUSION: Ultrasound and FNAB of the TGDC, thyroid gland and cervical lymph nodes are the useful preoperative evaluations leading to the accurate diagnosis. The definitive treatment is Sistrunk's operation with the possible addition of total thyroidectomy and neck dissection when indicated.

1. Introduction

The most common congenital neck mass found in over 75% of cases of childhood midline neck mass is the thyroglossal duct cyst (TGDC) [1,2] and it also has been reported in approximately 7% of the adult population [3,4]. Thyroglossal duct cyst carcinoma (TGDCCa) is very rare, accounting for only 0.7–1.6% of the cysts [5–8]. The differential diagnosis between TGDC and TGDCCa is difficult because both diseases have a similar clinical manifestation, specifically an asymptomatic midline neck mass [7,9,10]. A sudden enlargement of the mass can occur during infection however if the mass is fast growing, of a hard consistency, is fixed to surrounding structures and there is evidence of cervical lymphadenopathy a malignancy should be suspected [1,3,5,6].

An accurate diagnosis of TGDCCa is usually achieved from histopathology after surgical excision [5,7]. Following diagnosis, Sistrunk's operation which involves en bloc mass excision and central hyoidectomy with tract excision up to the foramen caecum is recommended for TGDCCa [9]. In addition, total thyroidectomy, neck dissection and radioiodine ablation have been described in treatment planning [2,7]. A preoperative diagnosis of TGDCCa is helpful in planning the extent of the surgery, the selection of additional therapy and the information shared with the patients [5,6,9].

2. Presentation of case

A 38-year-old woman presented with a painless midline neck mass for 3 years. She had no associated symptoms and no history of previous neck irradiation. She was clinically euthyroid. Examination revealed a 2×2 cm cystic mass in the thyrohyoid area.

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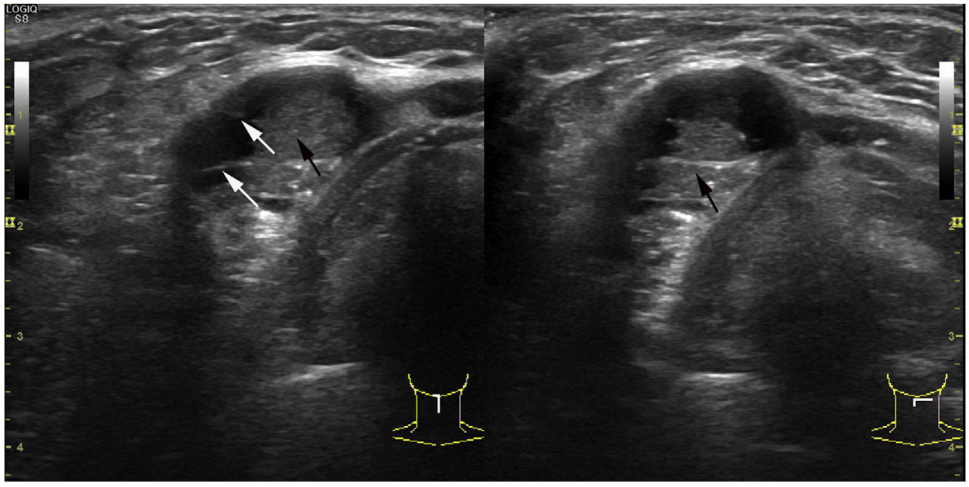

Fig. 1. A midline cystic mass with septation (white arrow) and a solid mural component (black arrow).

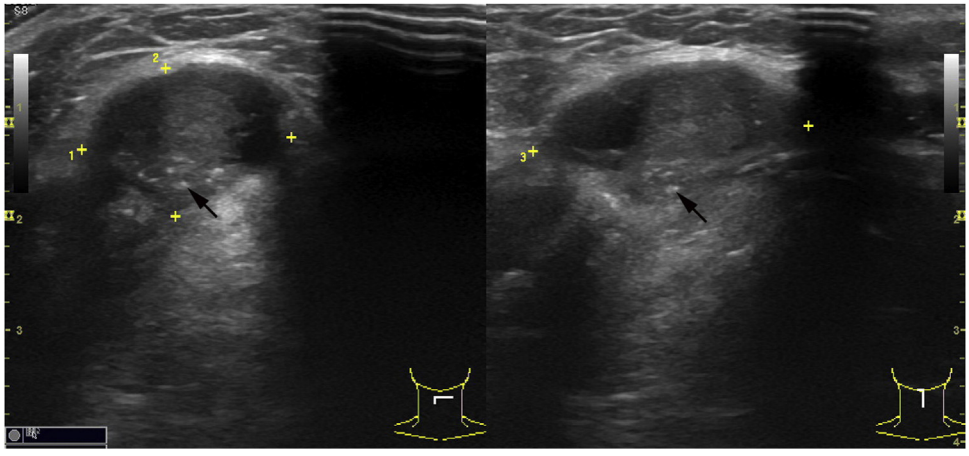

Fig. 2. Microcalcification (black arrow) in the mural mass.

The palpable thyroid gland was unremarkable. Preoperative ultrasound revealed a 1.8 × 2.4 cm cystic mass with septation and a solid mural component with microcalcification (Figs. 1 and 2). A 4 mm right thyroid nodule was also detected (Fig. 3) and there was no cervical lymphadenopathy. A fine needle aspiration biopsy without imaging guidance was carried out and yielded a nondiagnostic result. Sistrunk's operation was performed and the pathological report was a 1.4 cm papillary thyroid carcinoma in the benign cyst. A primary carcinoma arising in the TGDC is suggestive due to the presence of a thick fibrous wall with squamous epithelium and normal follicular cells. Lymphovascular invasion and a close surgical margin were reported. The patient was informed for a total thyroidectomy due to the pathological results and the right lobe lesion. Pathological report of the thyroid was a 4 mm papillary carcinoma with partial invasion through the thyroid capsule of the right lobe with a second 1 mm papillary carcinoma at the isthmus. The final diagnosis was a primary carcinoma arising in the TGDC with multifocal papillary thyroid carcinoma. Radioactive iodine ablation was then administered. At the 12 month follow up involving clinical examination, cervical ultrasound and radioactive iodine whole body scan there was no evidence of any recurrent disease. The thyroglobulin and antithyroglobulin antibody levels were <0.2 ng/mL and <20 IU/mL respectively. The patient has been taking synthetic thyroid hormone with a thyroid stimulating hormone level of 0.5 mU/L.

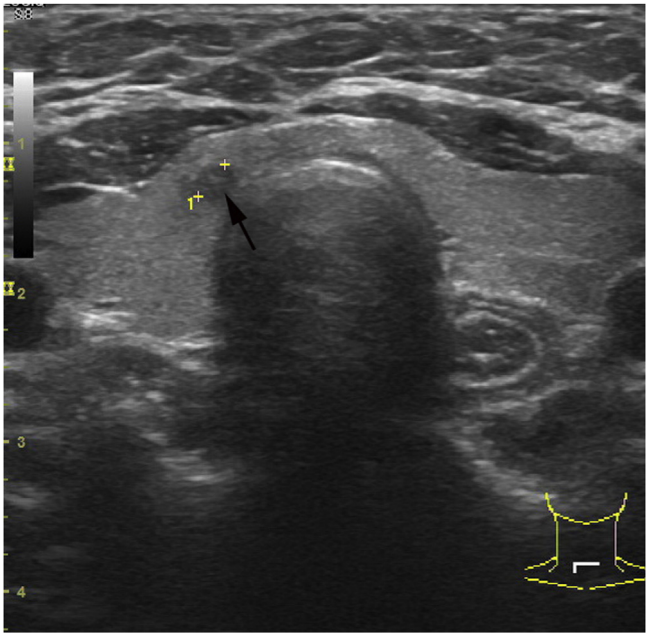

Fig. 3. A small hypoechoic right thyroid nodule (black arrow).