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Papillary carcinoma of thyroglossal cyst– A case report

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Abstract
Aims & Objectives: To describe the role of imaging in midline swelling of neck in addition to pathological correlation, To aid the clinician in diagnosis of midline swelling of neck and to assess the benignity of the lesion.
Materials and methods: 52-year-old female patient with complaints of midline swelling in neck since 2 months which has gradually progressed in size and was referred to the Department of Radiology for further evaluation. Ultrasonography and contrast enhanced computed tomography of neck were performed and the imaging features were recorded. The imaging features and final diagnosis were documented in a structured case record form.
Results: Ultrasonography showed well defined heteroechoic lesion with few peripheral cystic changes in the midline of the neck. Following which, contrast enhanced computed tomography of neck was performed, which showed solitary well defined heterogeneously enhancing soft tissue density lesion in the midline of infrahyoid location with few non enhancing necrotic areas within. Sistrunk surgery was performed for the same and HPE revealed papillary carcinoma of thyroglossal cyst.

Keywords: Thyroglossal cyst, neck swelling, papillary carcinoma

Introduction

Thyroglossal cysts are the most common congenital cystic lesions in the midline of neck [1]. It is more commonly seen in paediatric age group and are associated with ectopic thyroid. They generally present as swelling in the midline of neck which moves with swallowing and tongue protrusion. They are generally benign, and about ~1% of them undergo malignant transformation, however, common complication being infection of the cyst [2].

Case Report

52-year-old female patient with complaints of midline swelling in neck since 2 months which has gradually progressed in size and was referred to the Department of Radiology for ultrasonography (USG) of neck.

USG showed well defined heteroechoic lesion with few peripheral cystic changes in the midline of the neck, just above the thyroid cartilage. The lesion shows mild internal and peripheral vascularity. No evidence of calcification noted within the lesion. Orthotopic thyroid gland noted and was normal. In addition, cervical lymphadenopathy was also noted. The differentials for the lesion were given as necrotic lymph node and epidermoid cyst.

Following which USG guided fine needle aspiration cytology (FNAC) of the lesion was performed which showed colloid goitre with cystic degeneration.

For further evaluation, contrast enhanced computed tomography (CECT) neck was performed, which showed solitary well defined heterogeneously enhancing soft tissue density lesion in the midline of infrahyoid location. Few non enhancing necrotic areas within were noted in the inferior aspect. No calcification or obvious fatty areas within. The lesion is seen extending from C4-6 level superiorly, abutting the thyroid cartilage and strap muscles of neck posteriorly and inferiorly it is just above the level of thyroid isthmus. In addition, few sub centimetric lymph nodes were noted in bilateral II, III, IV and V stations. Normal orthotopic thyroid gland was noted.

With the above constellation of findings, following differentials were given;

- Ectopic thyroid with colloid nodule in view of FNAC report.
- Thyroglossal duct cyst with secondary changes.
- Epidermoid/ dermoid cyst

Following which, patient underwent Sistrunk surgery, and intraoperative findings were as follows: globular mass which is firm to hard in consistency, thyroglossal duct was seen to arise from the cyst. The cyst and the tract were removed in total along with the part of body of hyoid bone. The surgical specimen was sent for histopathological examination (HPE). HPE revealed papillary carcinoma of thyroglossal cyst.

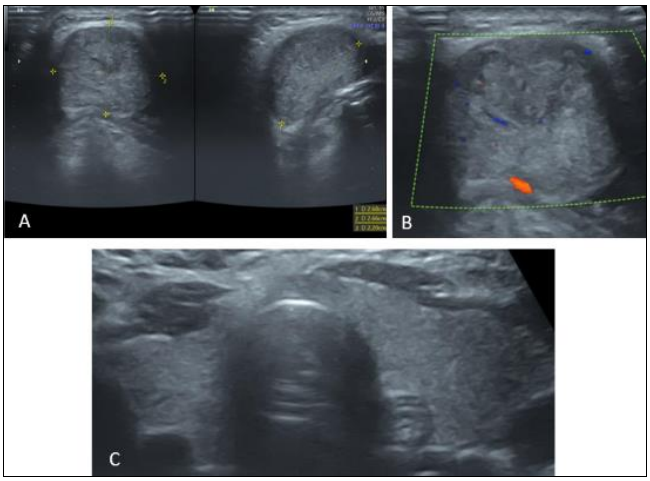

Fig 1: USG findings; 1A - heteroechoic lesion in midline of neck; 1B – mild internal vascularity of lesion; 1C - normal orthotopic thyroid gland.

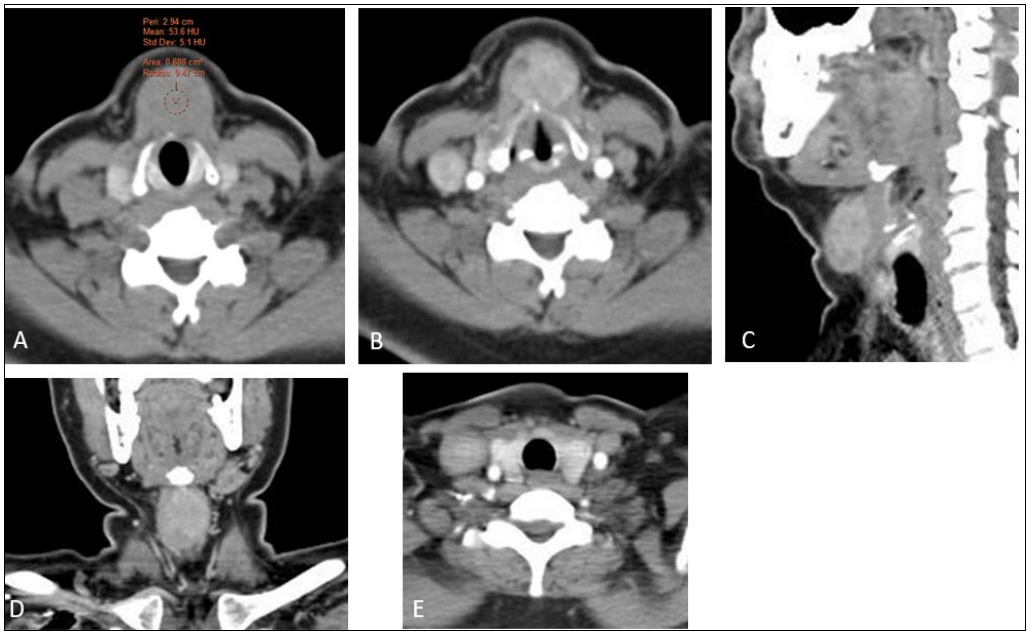

Fig 2: CECT findings; 2A & B – axial section showing solitary well defined soft tissue density lesion in the midline of infrahyoid location; 2C & D - sagittal image showing heterogeneous enhancement with few necrotic areas and abutment of strap muscles posteriorly; 2E - normal orthotopic thyroid gland.

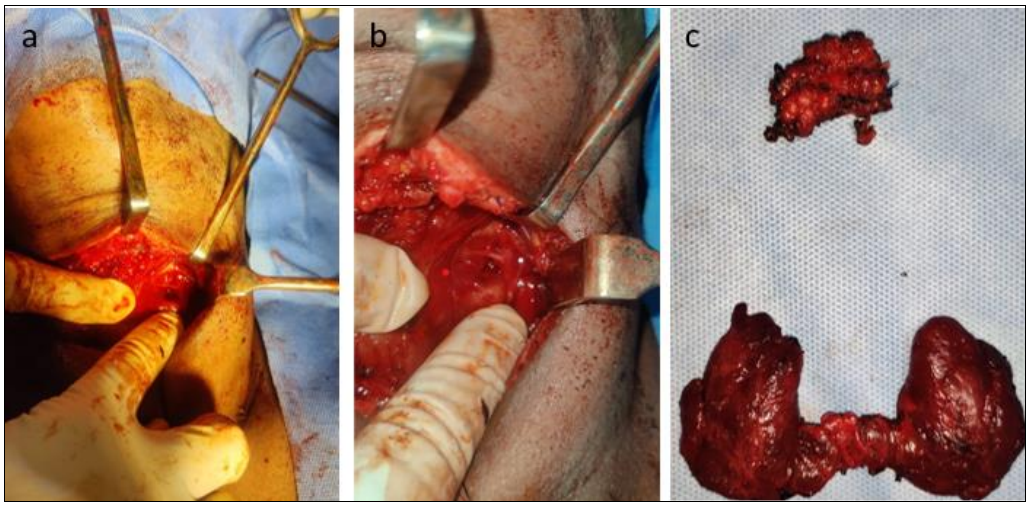

Fig 3: Intraoperative findings; 3a & b – thyroglossal duct; 3c – gross specimen.

Discussion

Thyroglossal duct cyst is an epithelial lined cyst due to non-obliteration of the thyroglossal duct during the antenatal period and can occur from foramen caecum and thyroid cartilage [3]. Most common location is infrahyoid region. The cyst can contain few areas of thyroid tissue and is commonly associated with ectopic thyroid tissue. Malignant transformation of the thyroglossal duct cyst is rare and is seen commonly in females > 40 years and the most common malignancy is papillary carcinoma, followed by follicular and anaplastic carcinoma [4].

Diagnosis

Primary imaging modality of choice is USG which demonstrates the lesion as cystic lesion causing displacement of sternocleidomastoid muscle with no internal vascularity [5]. In case of malignant transformation, soft tissue component is noted within the cyst.

CT and magnetic resonance imaging (MRI) aid in differentiating the lesion from other midline cystic lesions of neck, demonstrating the extent of the lesion and secondary changes within the lesion. Thus, mainly aids in planning the further management.

Abbreviations

USG – Ultrasonography
FNAC – Fine needle aspiration cytology
CECT – Contrast enhanced computed tomography
HPE – Histopathological examination.
MRI – Magnetic resonance imaging

Conclusion

Assessment of midline cystic lesions of neck is essential in diagnosis and further planning of management.

Conflict of interest: Nil.

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