

Lateral neck malignant cyst

Raya Al Shaaibi*, Smitha, Amani Al Saidi and Salma Al Shamsi

General surgery, Armed Forces Hospital, Muscat, Oman

***Corresponding Author:** Raya Al Shaaibi, General surgery, Armed Forces Hospital, Muscat, Oman

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Abstract

Branchial cysts are the most common lesions in lateral neck cysts. Rare branchial cysts are associated with malignant tumors metastatic from the thyroid gland. Occult thyroid papillary carcinomas often present as a solid mass in the lateral neck, with only a few cases revealing a branchial cyst as the initial manifestation.

Keywords: branchial cyst; papillary thyroid carcinoma

Introduction

Branchial cleft cysts are the most common congenital neck masses arising laterally. The majority of branchial cleft cysts are benign. Branchial cleft cysts can contain malignant tissue, including papillary thyroid carcinoma. We present a case of branchial cyst with papillary cancer and the discovery of micro-papillary thyroid carcinoma one year after the initial diagnosis of branchial cyst.

Case report

R.M is a 20-year-old female, presenting to the surgical outpatient department with a 7-month history of right-sided neck swelling with no other complaints. On examination, she had a 4 x 3 cm cystic, nontender

swelling in the lateral side of her sternocleidomastoid, fixed with a smooth surface, not attached to the skin, and no palpable cervical lymphadenopathy.

Ultrasound of the neck showed a 4.8 x 2.6 cm cystic lesion with internal moving echoes seen on the right side of the neck, which may represent a 2nd branchial cleft cyst. An 8 x 6 mm small soft tissue echogenicity adherent along its posteromedial wall may represent a mural soft tissue nodule or adherent debris.

No cervical lymphadenopathy was seen. A CT scan revealed the same finding. Intra-operatively, a solitary cystic mass containing dark fluid was found (figure 1).



Figure1: Intra-operative finding

The specimen was sent for histopathological examination and found to be cystic papillary carcinoma. The patient was followed up with a serial ultrasound of the neck to detect the primary site. All were reported as normal studies. One year after the first presentation, ultrasound showed a small ill-defined hypoechoic nodule measuring 3.7 x 3.1 mm noted in the lateral aspect of the right lobe with no evidence of internal vascularity or micro-calcification within the nodule. No cervical lymphadenopathy was detected. Ultrasound guided fine needle aspiration was done and reported as papillary carcinoma of the thyroid (papillary micro-carcinoma). Consequently, total thyroidectomy was done for the patient.

Discussion:

Papillary thyroid microcarcinoma is a subgroup of papillary thyroid carcinoma defined by the World Health Organization as having a dimension of 1.0 cm or less. PTMs are usually incidentally found in radiological investigations or in histopathological examinations for benign thyroid diseases [1]. Papillary thyroid cancer is common thyroid tumors with metastatic potential. These tumors may be occult and may present with asymptomatic congenital neck masses. Management is controversial as PTMs do not frequently become clinically apparent. Patients can be under observation while their tumors are not progressing. However, they are pathologically multifocal and involve lymph nodes in high incidence [2].

Branchial cyst is a lateral neck mass resulting from the proliferation of epithelial remnants of the second branchial arch or the cervical sinus. It is a common congenital anomaly in the pediatric age group, representing 20% of cervical lesions in children [3]. Lateral cyst mass usually is a benign lesion. However, when it presents in patients above 40 years it raises the suspicion of malignancy, which most likely is metastatic from primary cancer in the upper aerodigestive tract [4]. In case of histopathology came as squamous cell carcinoma, primary tumors were discovered by pan-endoscopy before neck surgery with tonsillectomy and mapping biopsies [5].

The metastatic cystic lesion was discovered incidentally in 4% to 22% of cases with a primary diagnosis of branchial cyst [2,6,7,8,9]. Radiographic evaluation by ultrasound and CT scan can address the diagnosis, but histopathology investigation is essential to confirm it [10]. A malignant lateral cervical cystic lesion without the presence of a primary origin can be defined as branchiogenic carcinoma, as a malignancy arising from a branchial cyst [11]. Branchiogenic carcinoma is first described by Von Volkmann in 1882 as malignant transformation of branchial cyst epithelium, which has a lot of controversies in the literatures [12]. More attention is drawn to the association between solitary cystic neck mass and occult primary source in the tonsils or the base of the tongue and can be detected after performing an ipsilateral tonsillectomy or biopsy for the base of the tongue [13]. However to conclude the diagnosis of branchiogenic carcinoma, no primary source should be detected after 5 years from the diagnosis and the histological appearance of the tumor must be similar to the histology of branchial vestige.¹ PTC metastasis to a branchial cleft cyst has been reported in the literature, where the patient underwent excision of a branchial cleft cyst with unexpected histological that consistent with PTC [15].

Histopathological examination of lateral neck cyst may demonstrate the presence of lymph tissue, which makes it difficult to discriminate between cystic lymph nodes and branchial cysts [16]. Moreover, the lateral anlage of the thyroid develops from the fourth-fifth branchial pouch with the possibility of entrapping normal thyroid tissue presenting as a branchial cyst with ectopic thyroid tissue. As described in the literature, thyroid cancers can present in the ectopic sites, such as a branchial cyst, the diagnostic dilemma is whether it of occult primary carcinoma or the

presence of metastatic disease [17]. These cystic changes and unknown primary carcinoma could explain the pathophysiology in our case.

Conclusion:

Unusual neck cysts in adult patients should raise the suspicion of malignancy. Assessment needs to be completed by imaging and FNAC or excisional biopsy is essential to confirm the diagnosis and proper management of the patient. All benign congenital lesions should be thoroughly examined for the possibility of containing occult carcinomas.

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