

Unusual Midline Neck Swellings – A Case Series

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Abstract

Background: Midline swelling of neck are common case scenarios of which thyroid swellings are most common. Ultrasound imaging of neck and FNAC are routinely used for diagnostic purposes. **Cases:** Here we report three unusual case scenarios. First is a case of papillary carcinoma of thyroid identified in a thyroglossal cyst excision specimen where thyroidectomy was done as an adjuvant procedure. Second is a case of extramedullary hematopoiesis of thyroid which served as a diagnostic indicator for a patient with chronic idiopathic myelofibrosis with no other symptoms. The third is a case of thyroid nodule which was pathologically a well differentiated tumour of uncertain malignant potential, which is an indolent lesion of borderline characteristics whose management varies according to radiological risk stratification. **Conclusion:** In cases of unusual scenarios of midline neck swellings, management scenarios differ from routine practice. It is important to have an understanding of these rare differentials to facilitate early diagnosis and avoid aggressive surgical management. **Categories:** General Surgery, Thyroid, Thyroglossal Cyst, Neck swellings.

Keywords: Thyroid, Thyroglossal cyst, Papillary thyroid carcinoma, WDT-UMP, Extramedullary hematopoiesis.

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INTRODUCTION

Midline neck swellings are a common presentation in surgical practice. It is important to identify the structure of origin, nature, extent, and presence of any other swellings to plan proper management. Midline swellings are mostly seen to arise from the thyroid gland.^[1] Of the thyroid swellings, most are found to be of benign nature. Thyroid swellings are safely assessed with an Ultrasound imaging to determine their nature and extent. Fine needle Aspiration Cytology is the standard for preoperative pathological diagnosis.^[2] It is important to identify the structure of origin, nature, extent, and presence of any other swellings to plan proper management.

Here we report three unusual cases of anterior neck swellings. The first is a case of Papillary carcinoma of thyroid inside a thyroglossal duct cyst. It is a very rare presentation and no appropriate management consensus has been defined yet. Preoperative diagnosis is ideal but in cases where the malignancy has been identified postoperatively, opinions vary regarding the management of the thyroid gland. Identification of any associated thyroid malignancy is of vital importance in these cases.

The second case is that of a patient who underwent hemithyroidectomy for a clinically benign large solitary nodule. Extramedullary hematopoiesis was identified on histopathological examination. It is a rare entity most often associated with Myelofibrosis with myeloid metaplasia.^[3] The most common site described for extramedullary hematopoiesis are organs of reticuloendothelial system.^[4] Of the other sites reported, thoracic vertebrae are the most common.^[3] Extramedullary hematopoiesis in thyroid gland is

a very rare presentation and should be preferably identified on FNAC to avoid surgery.

The third case is that of a borderline thyroid tumour – Well differentiated tumour of uncertain malignant potential. It was first described in 2000 by Williams,^[5] for tumours of borderline nature and equivocal pathological characteristics. These are mostly classified as indeterminate nodules cytologically and imaging by Ultrasound is necessary for identification of high risk features. This classification was proposed to reduce aggressive surgical management in nodules with benign characteristics.^[6]

CASE REPORT 1

This 24 year old female presented to the OPD with a history of swelling in front of the neck of 1 year duration. It was insidious in onset and gradually increased in size. She had no history of symptoms of hyper or hypothyroidism or any compressive symptoms. She does not have any history of radiation exposure to neck, previous surgeries, fever or cachexia. There is no history of similar complaints or malignancies in her family.

A solitary, well-defined, oval, soft swelling measuring 3x2 cm with smooth surface was located in the midline of the neck, just

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below the level of the hyoid bone. It moved with swallowing and protrusion of tongue.

Laboratory tests were within normal limits. Ultrasonography showed a midline cystic lesion measuring 25x19x14 mm with intraluminal isoechoic solid area containing multiple echogenic foci and no significant vascularity with a normal thyroid gland. Guided FNAC was done but the results were inconclusive.

She underwent Sistrunk operation. Intraoperatively an infrahyoid thyroglossal cyst with no adhesions to surrounding structures was noted. There were no enlarged lymph nodes. Cut surface drained brownish fluid and showed a cyst filled with friable papillary growth measuring 1x1x0.7 cm. Postoperative period was uneventful.



Figure 1: Gross specimen of thyroglossal cyst showing solid areas within

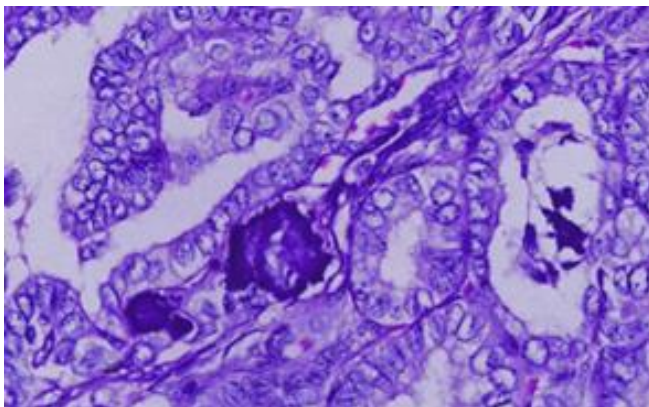


Figure 2: Histopathological examination showing presence of papillary carcinoma

Histopathology showed cyst wall with areas of papillary projection and psammoma bodies. The individual cells showed overlapping and overcrowding at places with nuclear enlargement, occasional intranuclear grooving and nuclear clearing. Final histopathological impression was that of a papillary thyroid carcinoma arising from thyroglossal duct cyst.

Following an oncosurgery opinion, she underwent total thyroidectomy – histopathology showed colloid filled

nodules only.

CASE REPORT 2

56 year old male presented with complaints of neck swelling on the right side of one year duration. Ultrasound evaluation showed a solid appearing nodule in right lobe of thyroid (TIRADS 4) and thyromegaly on the side. Left lobe and isthmus appeared normal. FNAC was non diagnostic (TBSRTC 1). On preoperative evaluation, he was found to have anaemia – correction done, bone marrow studies sent as a part of evaluation. He underwent Right hemithyroidectomy – Left lobe was found to be normal intraoperatively. No cervical lymphadenopathy seen. Post operative period was uneventful.

HPR showed a circumscribed lesion with a hyalinised wall with extensive areas of central hyalinisation and hemorrhage. Periphery showed variably sized thin walled vascular channels which appears anastomosing focally and lined by flattened endothelial cells. In many vessels and focally within the stroma or hemorrhagic areas in between, large cells with multilobated nuclei and abundant eosinophilic cytoplasm (Megakaryocytes) are seen with adjacent erythroblasts, focally admixed with myeloid precursors. Adjacent thyroid shows lobules of thyroid follicles with areas of hemorrhage.

Immunohistochemistry:

ERG – Highlights blood vessels and is positive in the large cells in most areas

CK, CD68, D2-40 – Negative in the large cells

CD41 – Positive in the large cells

Diagnosis – Extramedullary hematopoiesis thyroid

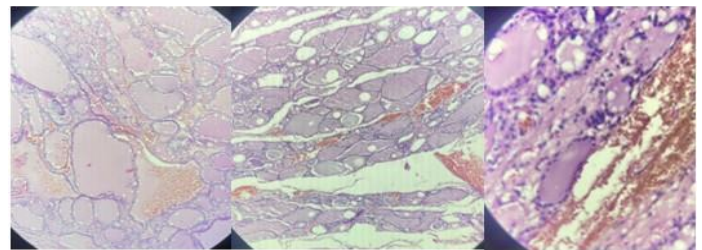


Figure 3: Extramedullary hematopoiesis of thyroid

Patient was evaluated systemically in view of these findings. He was found to have Chronic idiopathic myelofibrosis and is under hematology follow up.

CASE REPORT 3

A 67 year old female, known case of Diabetes and hypertension presented with complaints of neck swelling of 6 months duration which was gradually increasing in size. She had no other complaints. Examination showed a nodular thyroid swelling of approximately 5x3 cm. Ultrasound showed a solid hyperechoic nodule in the right lobe – 4.2x2.4 cm (TIRADS 3) and a colloid nodule 1.7x1.3 cm in left lobe (TIRADS 2). FNAC from nodule in right lobe was suggestive of a follicular neoplasm (TBSRTC 4).

Histopathological examination showed an encapsulated solid neoplasm in the right lobe with follicular cells exhibiting mild to moderate atypia with nuclear enlargement, overlapping and occasional grooving. Doubtful equivocal capsular invasion with focal area showing mushrooming of tumour cells. Definite

capsular penetration not conclusively identified. Final pathological diagnosis made of a Well differentiated Tumour of Uncertain Malignant Potential (WDT-UMP) of size 4x2.5 cm.

Postoperative period was uneventful. Patient is kept on regular follow up.

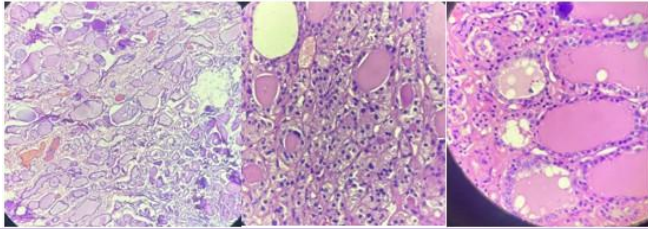


Figure 4: WDT-UMP – Mild to moderate atypia in follicular cells with nuclear enlargement, overlapping and occasional grooving

DISCUSSION

A thyroglossal duct cyst is the remnant of the epithelial tract from the descent of the thyroid gland.^[7] Malignancy is noted in only 1% of such swellings and is not usually identifiable by clinical examination.^[8] Papillary Carcinoma is the most prevalent pathological subtype.^[9] Sistrunk procedure is usually an adequate treatment for malignant thyroglossal cysts.^[7] However the management of thyroid gland in such swellings is controversial. Suppressive doses of thyroxine is advised for all patients whereas thyroidectomy may be done in cases of a cold thyroid nodule, cervical lymphadenopathy or in patients with a history of neck irradiation.^[8,9]

Reticuloendothelial system is the main site for extramedullary hematopoiesis.^[4] A retrospective review identified that myeloid metaplasia most commonly associated with non hepatosplenic extramedullary hematopoiesis.^[3] Thyroid gland is an extremely unusual site for this condition.^[4] The mesenchymal cells and capillaries inside the thyroid gland offers a suitable site for differentiation of hematopoietic cells.^[10] No significant association has been identified with any form of thyroid malignancy and hence surgery is not indicated for this condition. Identification of disease is essential on FNAC.^[11] Well differentiated thyroid tumour of uncertain malignant potential (WDT-UMP) is pathologically characterised by absence of definite invasion and nuclear changes of papillary carcinoma type which are diffusely equivocal or focally unequivocal.^[12] These have been identified to have a borderline nature. Thyroid ultrasound is recommended for risk stratification for such lesions to decide on the management. Higher risk lesions are treated surgically whereas lesions with lower risk features can be safely followed up.^[6]

CONCLUSION

In cases of unusual scenarios of midline neck swellings, management scenarios differ from routine practice. It is important to have an understanding of these rare differentials to facilitate early diagnosis and avoid aggressive surgical management.

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Conflicts of interest

There are no conflicts of interest.

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