



## Cystic nodal mass in the neck – A case report

Monica S, Aparna Irodi, Kirthi Sathyakumar, Manisha

Department of Radiology,  
Christian Medical College, Vellore.

### Abstract:

Cystic lesions in the neck can be either congenital or acquired. Congenital causes include thyroglossal duct cyst, branchial cleft cysts, cystic hygroma, epidermoid cyst, dermoid cyst, laryngocele and thymic cysts(1). Acquired causes can be inflammatory or neoplastic. Metastatic nodal mass is one of the most common cause for cystic mass in the neck in an adult of age > 40 years. The age of presentation and clinical examination essential to narrow down the differential diagnosis. Imaging plays a major role in assessing extent of the disease, reaching accurate diagnosis and pre-treatment planning. The most common first investigation of choice is Ultrasound. Computed tomography (CT) provides additional information about extent and internal composition of the mass(2). The gold standard investigation is histopathological assessment.

**Keywords:** cystic neck lesions, metastasis, thyroid metastasis

### Introduction:

Cystic lesions in the neck has varied aetiology. It requires a multidisciplinary approach (physical examination, clinical examination, laboratory investigations and radiological imaging) to conclude the diagnosis and plan treatment. The gold standard investigation is histopathological assessment.

### Case Report: (Hospital Number: 126477G)

A 39-year-old gentleman presented with complaints of a swelling in the front of the neck for 2 years. It was gradually progressive in size and painless. There was no history of voice change, difficulty in breathing or swallowing, chronic cough, jaundice, altered sensorium or seizures. He was a known case of beta thalassemia requiring frequent transfusions. All his siblings have beta thalassemia.

On examination, his pulse rate and BP were normal. Local examination of the neck showed a bosselated swelling with soft tissue consistency involving the entire left side of the neck extending from 2 cm below the left mastoid tip to the level of left clavicle. The swelling moved up with deglutition.

Skin over the swelling was normal in temperature. No tenderness. No bruit on auscultation.

Examination of the abdomen showed splenomegaly (related to frequent transfusions). Routine laboratory investigations were unremarkable except for low haemoglobin (4.8 gm %).

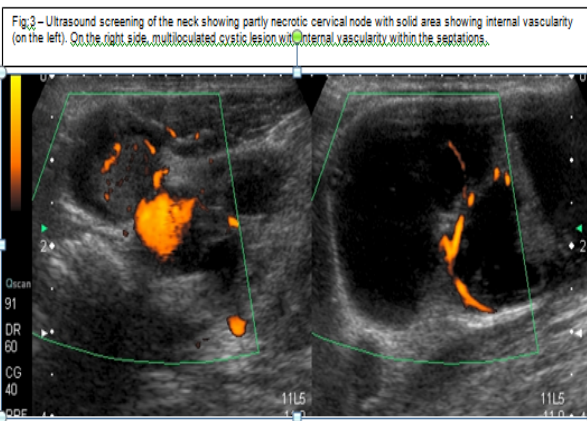
**Plain radiograph of chest (Fig:1)** showed a smooth lobulated soft tissue swelling in the left side of the neck and adjacent supraclavicular region causing mild deviation of trachea to the right side. No cavitation or calcifications within the lesion. Lung fields were clear.



Fig: 1 – Chest X-ray showing smooth lobulated soft tissue swelling in the left side of the neck causing mild tracheal deviation to the right side

**Contrast enhanced CT images of the neck (Fig:2)** showed a well-defined multiloculated lesion with lobulated margin in the left side of the neck deep to the sternocleidomastoid muscle and lateral to the carotid space measuring ~ 6.5 x 7 x 12.5 cm (AP x TR x CC) with enhancing internal septations.

Significant left level 2, 3 and 6 cervical nodes with necrosis and solid enhancing components. Ultrasound screening was done for the cystic lesion and cervical nodes (Fig:3).



Also, there was a small well-defined hypodense lesion in the thyroid on CT (Fig:4) for which ultrasound (Fig:5) screening

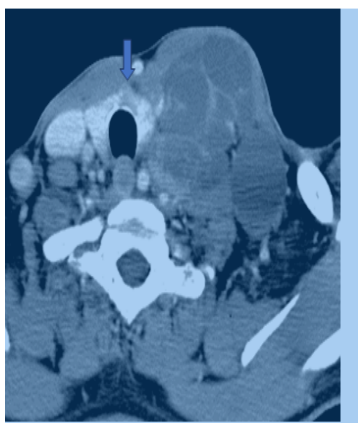
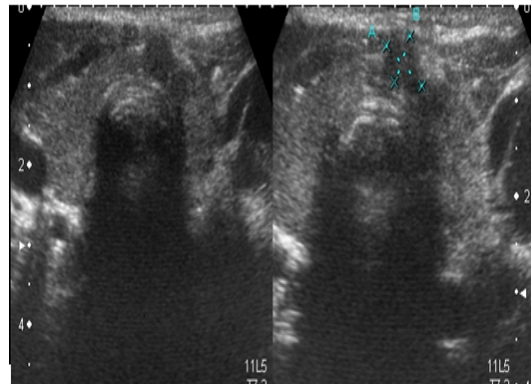


Fig:4-CECT neck showing a well-defined hypodense lesion in the isthmus of thyroid gland.

Fig:5- Ultrasound screening of the neck showing a well-defined hypoechoic lesion in the isthmus of thyroid gland.



Imaging differentials given for the multiloculated cystic lesion were cystic schwannoma and cystic nodal metastasis. Ultrasound guided FNAC was suggested either from the thyroid nodule or from the cervical nodes.

Following which the patient underwent USG guided FNAC from the isthmus nodule and the left cervical node which came as papillary carcinoma of thyroid with nodal metastasis. The patient underwent total thyroidectomy, modified radical neck dissection 3 and central compartment neck dissection. Histopathology of the surgical specimen came as classical variant of multifocal papillary carcinoma of thyroid with nodal metastasis.

### Discussion:

Cystic nodes in the neck can be metastatic, infective or inflammatory in nature. Eighty percent of the cystic masses in patients over 40 years of age are due to necrotic lymph nodes(3). The most common primary to cause cystic nodal metastasis in the neck is papillary carcinoma of thyroid. Lymph node metastases from papillary thyroid carcinoma tend to completely cavitate (40%), and although usually multiple, in a minority of cases (6%) a single completely cystic node may be present (4). They tend to have septations, mural nodules and relatively thick walls (4). The most common infective aetiology for cystic nodal mass is tuberculosis. Tuberculous lymphadenitis has a predilection for the posterior triangle of the neck. On imaging, a necrotic discrete or conglomerate lymph nodal mass with surrounding soft-tissue oedema is seen (5). Abscesses may occur anywhere in the neck, but common locations are the sub-mandibular, retropharyngeal, and parotid spaces. On US, an abscess appears as a hypo- to anechoic mass, with peripheral thick, shaggy margins. On CT, an abscess usually appears as a single or multiloculated low-density area with rim enhancement. Internal gas

collections may be present (6). The common inflammatory aetiology for cystic nodal mass include SLE, Kawasaki disease etc.

Imaging plays a major role in identifying the most probable aetiology for the cystic nodal mass and to differentiate cystic nodal mass from other cystic lesions in the corresponding region of the neck. High-resolution ultrasound is the initial imaging investigation for neck tumours. It is readily available, inexpensive, with no harmful radiation. Doppler applications help in further characterization. Ultrasound can also be used for real-time guidance for fine-needle aspiration cytology (FNAC) or biopsy.

Ultrasound plays an important role in differentiating reactive and malignant lymph nodes. On grey scale, features like matting and surrounding tissue oedema favours reactive / infective over malignancy. On Doppler examination, reactive nodes exhibit hilar vascularity, whereas malignant nodes show peripheral / capsular vascularity, avascular areas, displacement of vessels and aberrant course of hilar vessels.

Cross-sectional imaging techniques such as computed tomography (CT) and magnetic resonance imaging (MRI) play a supplementary role in the image interpretation. It helps in

Submental region	Dermoid / Epidermoid Ranula
Midline	Thyroglossal duct cyst Acute suppurative thyroiditis Colloid / haemorrhagic thyroid nodule Thymic cyst
Submandibular region	Cystic metastatic node Second branchial cleft cyst Abscess Plunging ranula
Parotid region	First branchial cleft cyst Acquired or congenital parotid cysts Warthin's Necrotic parotid node Vascular malformations
Along cervical chain	Cystic metastatic node Vascular malformation Second branchial cleft cyst Abscess
Posterior triangle	Cystic metastatic node Lymphatic malformation Venous malformation Tuberculous lymphadenitis

## Conclusion

Even though there are many causes for cystic masses in the neck, site of involvement, appropriate clinical setting like age and chronicity of symptoms, clinical and radiographic correlation will help in reaching the diagnosis.

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