

## Abscess in Neck Masquerading as Infected Thyroglossal Cyst: A Case Report

Jha A<sup>1</sup>, Lamichanne S<sup>2</sup>, Jha S<sup>1</sup>

<sup>1</sup>Assistant Professor, Department of Radiology, Institute of Medicine, Tribhuvan University Teaching Hospital, Maharajgunj, Kathmandu, <sup>2</sup>Radiologist, Nepal Armed Police Force Hospital, Balambu, Kathmandu, Consultant Radiologist, Department of Radiology, Kanti Children's Hospital, Maharajgunj, Kathmandu, Nepal

Received: May 12, 2021

Accepted: June 22, 2021

Published: June 30, 2021

### Cite this paper:

Jha A, Lamichanne S, Jha S. Cold abscess in neck masquerading as infected thyroglossal cyst: A case report. *Nepalese Journal of Radiology*. 2021;11(2):52-5. <https://doi.org/10.3126/njr.v11i2.40108>

### ABSTRACT

Midline cystic neck swellings are often seen in younger patients and may have several causes. Sonography is the initial imaging modality followed by a Computer Tomography (CT) scan with MRI being reserved as a problem-solving tool or for preoperative extent evaluation. Pathology usually uses fine-needle aspiration cytology to confirm the diagnosis. We report a case where a cold abscess presenting as cystic midline neck swelling in a young patient, was misinterpreted as an infected thyroglossal cyst on sonography. The presence of lesions consistent with pulmonary tubercular infection helped clinch the diagnosis on the CT scan. This case also highlights the fact that whenever possible a common cause should be sought for different lesions occurring simultaneously.

**Keywords:** Abscess, Biopsy, Fine-Needle, Thyroglossal cyst.

### CASE REPORT

A 17-year-old boy presented with pediatric OPD with a progressive anterior midline neck swelling of two-month durations causing difficulty in swallowing. There was no history of fever, weight loss, or cough. Examination showed a large fluctuant anterior neck swelling in the midline and right paramedian location

with an internal component causing narrowing of the ipsilateral oropharyngeal lumen. Sonography revealed a well-defined complex cystic lesion in the same location with internal echoes and no vascularity. So, a provisional diagnosis of the infected thyroglossal cyst was made and further imaging was performed to evaluate the extent.

In the contrast-enhanced CT scan, there was a well-defined irregular shaped cystic lesion with few septae, in the midline and right lateral aspect of the neck which was seen extending from the pharyngeal sub-mucosal

**Correspondence to:** Dr. Anamika Jha

Department of Radiology

Institute of Medicine,

Tribhuvan University Teaching Hospital

Maharajgunj, Kathmandu, Nepal

Email: [dranamikajha@gmail.com](mailto:dranamikajha@gmail.com)



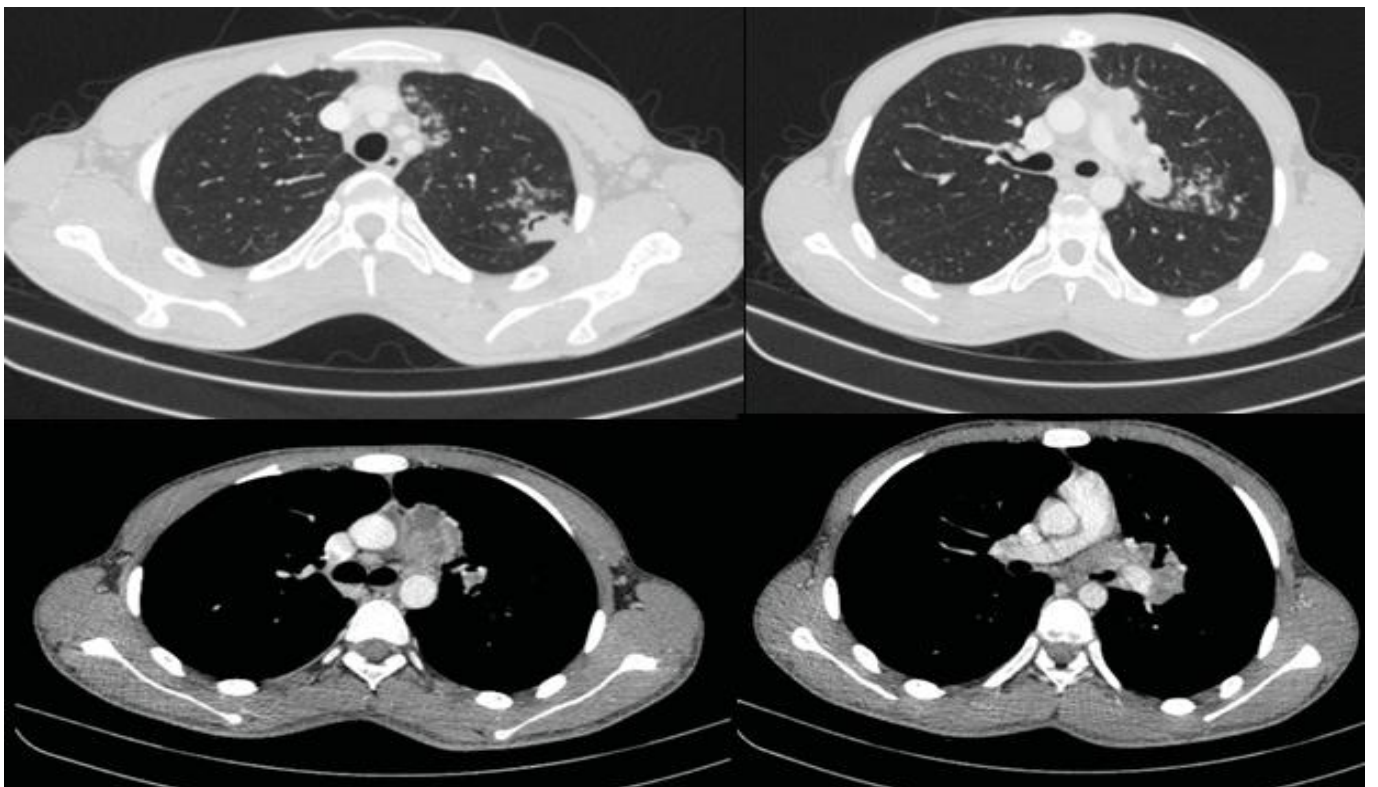
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space on the right side at the level of oropharynx up to the anterior midline of the sub-hyoid region

at the level of the thyroid cartilage.



**Figure 1:** (a) and (b)- axial contrast-enhanced CT of the neck showing the irregular cystic lesion with enhancing walls occupying the right side and midline of the neck  
(c)- sagittal reformatted image showing the craniocaudal extent of the lesion running near the hyoid bone



**Figure 2:** Axial CT images (a) and (b)- Lung window and (c) and (d)- mediastinal window images show cavity in the apicoposterior segment of the left upper lobe, centrilobular nodules in the left upper lobe, and necrotic conglomerate lymph nodes in left hilar and paraaortic regions of the mediastinum

This lesion was seen extending in close relation to the hyoid bone, along with the posterior, right, and anterior aspects, the bulk being posteroinferior to

the hyoid bone, causing significant oropharyngeal luminal narrowing. The lesion showed peripheral rim enhancement on post-contrast images (Figure

1). Simultaneously noted was an 18x15mm sized thin-walled cavitory lesion in the apicoposterior segment of the left upper lobe with surrounding centrilobular nodules, tree in bud opacities, and patchy consolidations. A heterogeneous mass measuring about 3.8 x 3.1 cm was seen in the paraaortic region of mediastinum likely coalescent necrotic lymph nodes. Similar necrotic lymph nodes were also seen in the left hilar and subcarinal regions (Figure 2).

Diagnostic aspiration of the cystic swelling in the anterior midline was done which yielded about nine milliliters of pus-like fluid. Microscopic examination of the aspirate showed sheets of neutrophils and scattered histiocytes in a necrotic background without obvious granulomas or atypical cells. Zeihl-Neelsen stain was positive for acid-fast bacilli. So, a final diagnosis of Pulmonary Tuberculosis with a cold abscess in the neck was made. The patient improved with anti-tubercular treatment.

## DISCUSSION

Cystic midline masses are commonly encountered in imaging and include various congenital and acquired causes. While there may be several differentials for midline neck cystic lesions, the two closest for our case were an infected thyroglossal cyst and a cold abscess of the neck.

Thyroglossal duct cysts are the commonest congenital lesions of the neck in children and young adults, which commonly occurs in the midline. These cysts are caused due to obliteration of the thyroglossal duct and lie in the tract of the thyroglossal duct which is the path of migration of thyroid primordium in embryonic life. The migration of thyroid primordium begins at the foramen cecum at the base of the tongue and then loops around the hyoid bone anteriorly and inferiorly and descends anteriorly to the thyrohyoid membrane into the orthotopic location in the infrahyoid portion of the neck.<sup>1,2</sup> The lesion simulated a thyroglossal cyst due to its midline and slight right paramedian location, craniocaudal extension from the region of the base of the tongue up to the anterior infrahyoid region, running in close relation to the hyoid bone.

Moreover, the course of the lesion in our case was posterior to the hyoid bone while thyroglossal cysts are anterior. The irregular shape of the lesion in our patient was also unusual for a thyroglossal duct cyst. These findings along with the presence of a cavitory lesion, nodules, and patchy consolidation in the lung with necrotic coalescent lymph nodes in the left hilum and mediastinum highly suggestive of tubercular infection favored a diagnosis of a tubercular cold abscess. Tubercular infections are very common in our part of the world. In the neck there are varied manifestations of tubercular infection with multiple areas of anatomic site involvement, lymphadenitis being the most common.<sup>3</sup> Cold abscess is one such manifestation of tubercular infection and may occur in different neck spaces.<sup>4</sup>

The other causes of cystic lesions in the neck include dermoid cyst, epidermoid cyst, ranula, and lymphangioma. Dermoid and epidermoids are usually seen on the floor of the mouth and present as a unilocular cystic lesion, sometimes containing internal echoes. Dermoid may show fat, mixed-density fluid, and calcification (<50%). A "sac-of-marbles" appearance has been described in dermoid cysts when fat coalesces to form nodules in the cystic lesion appearing echogenic on sonography and hypodense on CT scan.<sup>5</sup> Ranula is also common on the floor of the mouth and arises in the sublingual space. Sometimes it extends into the submandibular space when it is called a plunging ranula. Lymphangioma is more common in the posterior triangle of the neck rather than in the anterior midline but rarely they may also present anteriorly. They usually have a multilocular appearance on imaging and generally appear as poorly margined mass insinuating between tissue planes.<sup>5,6</sup>

## CONCLUSION

Differential diagnosis of cold abscess needs to be considered for midline cystic lesions in the neck, especially in countries where tuberculosis is endemic. A single diagnosis should be sought whenever possible, to explain two different lesions occurring simultaneously in a patient.

## CONFLICT OF INTEREST

None

## SOURCES OF FUNDING

None

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