

INTRODUCTION

Neck swellings are a common presentation in children and often cause significant concern despite most being benign. They present a diagnostic challenge due to overlapping clinical and imaging features. Classification can be based on location, with midline swellings frequently congenital such as thyroglossal duct or dermoid cysts, and lateral swellings often inflammatory or infectious like lymphadenitis or abscesses. Etiologically, they may be congenital, inflammatory, neoplastic, or vascular, arising from diverse tissues including skin, fat, or muscle. Accurate diagnosis requires integration of history, clinical examination, and imaging. Ultrasonography is the first-line modality, providing valuable information for narrowing the differential diagnosis, assessing extent, and monitoring response to treatment, although it may not always be definitive. A sound knowledge of neck embryology, anatomy, and fascial planes further enhances diagnostic accuracy and guides appropriate management.

AIM OF THE WORK

The aim of this work was to assess the role of ultrasound in identification and differential diagnosis of pediatric neck swellings.

PATIENTS AND METHODS

PATIENTS: This study was conducted on 30 patients of pediatric age group (up to 18 years) presented with neck swellings who are referred to the radiodiagnosis department for imaging assessment at Alexandria University Hospitals.

METHODS: All patients were subjected to: Full history taking and full clinical examination, all patients underwent ultrasound as the primary imaging modality, with CT or MRI performed when further characterization was required. The radiological findings were correlated with medical treatment, surgical and histopathological outcomes.

RESULTS

This study was conducted on 30 patients of pediatric age group (up to 18 years) presented clinically with neck swellings who are referred to the radiodiagnosis department for imaging assessment at Alexandria University Hospitals.

Table 1: Distribution of the studied cases according to composition (n = 30)

Composition	No.	%
Solid	16	53.3
Cystic	14	46.7

Table 2: Distribution of the studied cases according to the final diagnosis (n = 30)

Final Diagnosis	No.	%
Reactive lymphadenitis	9	30.0
Lymphoma	3	10.0
Granulomatous lymphadenitis	1	3.3
Suppurative lymphadenitis	1	3.3
Thyroglossal cyst	8	26.7
2 nd branchial cleft cyst	3	10.0
Cystic hygroma	2	6.7
Fibromatosis colli	2	6.7
Epidermal inclusion cyst	1	3.3



Figure 1: 7 years old girl complained of bilateral painless neck swellings. (A) longitudinal gray-scale US image of hypoechoic upper and middle deep cervical lymph nodes shows cortical widening and preservation of oval shape with hyperechoic fatty hilum (arrow) These lymph nodes were associated with an upper respiratory infection. (B) shows hilar vascularity on color Doppler study (arrow head). It was diagnosed as reactive cervical lymphadenopathy. They resolved by antibiotics.

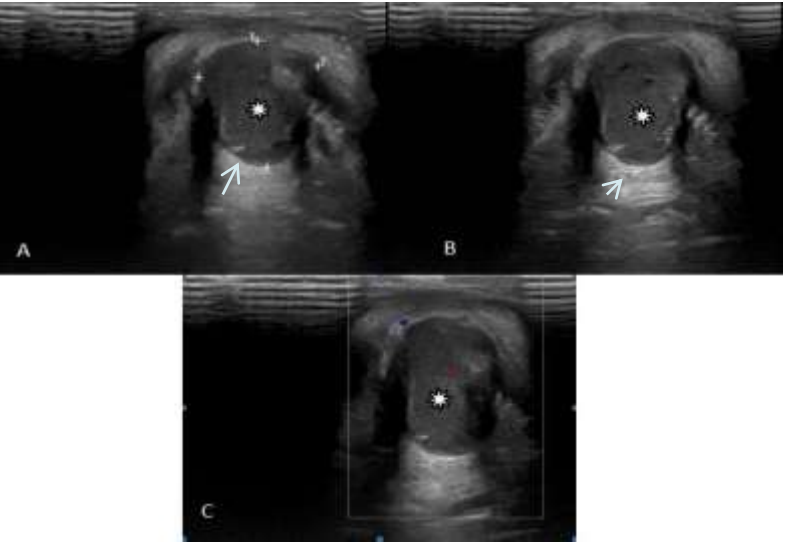


Figure 2: 4 years old boy complained of midline slightly painful neck swelling mobile with swallowing. (A and B) grey scale US shows cystic well-defined lesion with hypoechoic echotexture (turbid content; asterisk) still noted posterior acoustic enhancement (arrow). (C) Color Doppler shows absence of vascularization. According to the site and ultrasound features, it was diagnosed as infected thyroglossal cyst, confirmed by surgical removal and histopathology.

CONCLUSION

US is the most appropriate imaging examination for pediatric neck swellings. It is frequently the initial clinical investigation that guides further imaging, or treatment plans.

The utility of US in diagnosing pediatric neck swelling, reveals the ability of US to define the nature of the lesion whether it is cystic or solid, precise location, vascularity, and other associated findings, which all subsequently drive to reach the final diagnosis.

US is frequently effective in providing a definitive diagnosis (combined with appropriate clinical assessment), however, due to the overlapping features of the lesions, it can be more useful in reducing the differential diagnosis and guiding further assessment.