

Prevalence of neck masses in Salahaddin government

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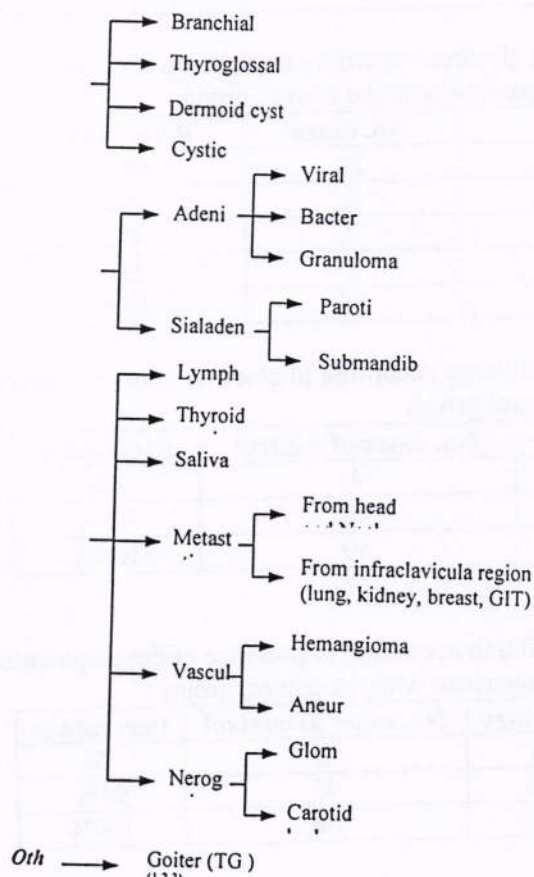
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Abstract

Over a period lasting from February 2006 to October 2007, a description study of 146 patients from (both sex) with neck masses, were divided into two age groups: - pediatric age group (≤ 15 years), & adult age group ($> 15-66$ years). Diagnosis of neck mass was done depending on clinical examination, radiological examination & FNAC. Neck mass was seen in 33.6 % in pediatric age group (≤ 15 years), while the remainder 66.4% of the total cases, seen in adult ($>15 - 66$ years). It was found that 78.1 % of neck masses were benign (congenital or acquired), most of them (38.6 %) seen in pediatric age group, malignant neck masses found in 21.9 % of the patients. In pediatric age group, congenital neck masses were seen in highest percent (60.5 %), followed by acquired benign mass (especially lymphoid hyperplasia) found in 27.6 %, where as malignant neck masses were seen in lowest percentage (15.6 %). However, NHL appeared to be most common cancer in pediatric age group (62.5%). In adults, acquired benign neck masses (especially thyroid related mass) were most common (72.4 %) than congenital neck mass (39.5 %). Secondary malignant lesions that involved cervical lymph nodes in adults found in highest percent (94.6 %) than primary malignant lesions (71.4 %).

Introduction

Neck masses are common problem in both children and adults and can be classified into the following:



The differential diagnosis of neck mass covers a broad spectrum of diseases & carries implication for management.

When examining a patient with a neck mass, the physicians, first consideration should be the patient's age group (Pediatric up to 15y, young adult 16-40y, older adult > 40 year), with each group, the incidence of congenital, inflammatory & neoplastic disease must be considered. In pediatric age group & young adult, patients exhibit inflammatory & congenital masses seen more frequently than neoplastic neck mass. While in adult older than 40 years, neoplastic mass seen frequently.⁽¹⁾

The next consideration should be location of neck mass. This is important in the differentiation of congenital & developmental mass because they occur in consistent location. The spread of head & neck carcinoma is similar to inflammatory disease, generally following an orderly lymphatic spread. The appearance & Location of metastatic neck mass may be the key to identifying the primary tumor.⁽¹⁾

Visualization & Palpation are the most important component of the physical examination. The size of the mass, its relationship to the surrounding structure, the consistency of the mass, the presence of

pulsation or thrills, listening for bruits all important in diagnosis of neck mass.

The test used for diagnosis of neck mass includes radiological study (Ultrasonography, angiography, CT-scan, MRI). Usually simple noninvasive, non-costly ultrasonography will identify solid from cystic lesion, while pulsatile or compressible mass or mass with bruits or thrill angiography will be needed.^(4,5,6)

The aim of this study are :- To determine the most professional diagnosis of the neck mass according to the patient's age & to deal with neck masses with scientific methods in the diagnosis of them.

Patients and methods

Over a period lasting from February 2006 to October 2007, 146 patients (from both sex) with neck masses were studied prospectively at Salahuddin government at Tikrit teaching hospital.

Patients divided into two age group.

- a. First age group ($\leq 15y$).
- b. Second age group ($16 - 66y$)⁽¹⁾.

The diagnosis of the patients with neck-mass made by physical examination, radiological examination and fine needle aspiration cytology of the mass.

Find needle aspiration cytology (FNAC) is the study of cells obtained by negative vacuum system provided by a disposable syringe⁽⁷⁾.

FNA biopsy has become standard in making both diagnostic and management decision on neck masses, accuracy of (FNAC) 90 - 98 %⁽⁸⁾.

Result

In this study, the patients categorized according to age group into pediatric age group ($\leq 15y$) which comprise 33.6 % of total number of patients presented with neck mass, and adult age group ($16-66y$) with mean age 48 year group (66.4 %).

It has been found that 78.1 % of neck masses were benign (either congenital or acquired), 38.6% of these lesions found in pediatric age group, while malignant neck masses found in 21.9% of the patients, most

of them ((84.4%)) where in adult age group.

Table (1) showed that congenital neck mass presented in highest percentage ((60.5 %)) where in pediatric age group while, secondary lymphoid malignant tumor found in lowest percentage (5.6%) in the same age group, other neck masses include acquired benign and primary malignant ((lymphoid or non-lymphoid)) tumor presented in 27 and 28.6% respectively.

Table (2) revealed that branchial cleft cyst (BCC) had the highest percentage (70.6%) in pediatric age group, while in adults, lymphangioma found to be the highest percentage (66.7%) as congenital neck mass.

Thyroid gland, salivary glands and cervical lymph nodes were the most common sites for both benign and malignant neck tumors in childhood and adults. Other tumors, less commonly seen include rhabdomyoma and lipoma (table 3).

Acute thyroiditis found to be most common thyroid disorders in pediatric age group (66.6%). Other thyroid disorders seen mostly in adults and varied from colloid goiter to papillary carcinoma of thyroid gland (90.5%) and (100%) respectively as shown in table (4).

In this study, salivary gland tumors never seen in pediatric age group and the most common salivary gland tumors, that seen in adults, include pleomorphic adenoma and swelling of salivary glands due to sialoectasis table (5).

Table (6), showed that reactive hyperplasia of cervical lymph nodes, mostly due to viral or bacterial infection, were seen in childhood as a common benign lymph nodes disorders in pediatric age group. Tuberculous lymph - adenitis found in high percentage (60%) in adult (table 6).

According to lymphoid malignancy, it has been found that primary lymphoid malignancy found in 40%, while secondary lymphoid malignancy found in 60% of total number of patients with cancer.

In pediatric age group, as seen in table 7, NHL seemed to be the most common

cancer (62.3%) while HL was found commonly in adult (75%).

Undifferentiated cancers of cervical lymph nodes seemed to be the most secondary cancer in children (25%). It was found that SCCa that involved lymph nodes are more common (50%) than adenocarcinoma involved lymph nodes in adults (40%).

Discussion

Pediatric patients generally exhibit inflammatory more frequently than congenital neck masses and developmental more than neoplastic masses: this incidence is similar to that found in younger adults. In contrast, the first consideration in older adults should always be neoplasia with less emphasis on inflammatory masses and even less emphasis on congenital masses (¹).

Jim C. et al in 1997 had been found that in pediatric & younger adult population, the neck masses were typically inflammatory followed by congenital or developmental abnormalities (9). Steven T. et al in 2003 observed that congenital masses, inflammatory & infectious lesions, benign neoplasm & vascular malformations encountered in pediatric neck mass. Fortunately, malignant neck mass in children are rare (10).

Came H. et al in 2004 had been described that branchial cleft cyst can present at any age & it is the most common congenital lesions in adults (11).

Cystic hygroma usually present in childhood, although thyroglossal cyst usually present in childhood, but may be found later in life.

Jonas T. et al in 2006 found that individual younger than 40 years are overwhelmingly diagnosed with differential processes like congenital & inflammatory lesions, while patients older than 40 years, more than 60 % of lesions are associated with malignancy (12).

Lee Z. et al in 2007 had been found that most growth in head & neck in children were related to infection, inflammation, fluid collection & tumor.

It is very rare that children develop a cancer, lymphoma or sarcoma of these areas. The lymph nodes of the neck region may

become enlarged during childhood. Most of the time, this reaction in nature & related to inflammation or infection. Salivary gland and thyroid glands tumors in childhood are rare (13).

In this study, the patients classified as pediatric age group (≤ 15 years) & adult (> 15 years). In pediatric age group, congenital neck mass (60.5%), followed by benign acquired (27.6%), while malignant neck lesions were the lowest percent of incidence (15.6%).

In adult, most of the lesions were malignant (84.4%) & the secondary cancers (squamous cell carcinoma involved cervical lymph node) had been showed in highest percent, followed by benign acquired (72.4%) & congenital neck masses (39.5%).

Neck mass is a common presentation of patients in all age groups, it may be caused by a cystic lesion, an inflammation, degenerative process, or a benign or malignant neoplasm.

For adequate management, the exact nature of the process has to be revealed. Thus scientific dealing with the problem based on clinical examination of the lesion with history taking, with consideration of the age of the patient & location of the lesion, microscopic evaluation with radiological evaluation improving the accuracy rate for the diagnosis of the neck mass.

It has been found that in pediatric age group congenital or developmental lesion & inflammatory process (especially those related to lymphoid tissue) followed by malignant neoplasia seen in this study.

However the congenital together with inflammatory neck mass are still the common problem in young adult, while malignant neoplasia has been found to be commonest in adult patients older than 40y.

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Table (1) types of neck masses, total number in children & adults

Types or neck mass	Total no.	Children		Adults	
		No.	%	No.	%
Congenital	38	23	60.5	15	39.5
Acquired benign	76	21	27.6	55	72.4
Malignant (primary)	14	4	28.6	10	71.4
Malignant (secondary)	18	1	5.6	17	94.4
Total	146	49		97	

Table (2) congenital neck mass in children & adults

Congenital neck mass	Total no.	Children		Adults	
		No.	%	No.	%
Branchial cleft cyst	17	12	70.6	5	29.4
Dermoid cyst	13	7	53.8	6	46.2
Thyorglossal cyst	5	3	60	2	40
Lymphangioma	3	1	33.3	2	66.7
Total	38	23		15	

Table (3) other tumors in children & adults

Other tumors	Total no.	Children		Adults	
		No.	%	No.	%
Rhabdomyoma	3	1	33.3	2	66.7
Lipoma	2	0		2	100
Total	5	1		4	

Table (4) thyroid lesions in children & adults

Types or neck mass	Total no.	Children		Adults	
		No.	%	No.	%
Acute thyroiditis	3	2	66.6	1	33.4
Colloid goiter	21	2	9.5	19	90.5
Toxic goiter	3	-		3	100
Ectopic thyroid	1	-		1	100
Cystic nodule	4	-		4	100
Papillary carcinoma	2	-		2	100
Total	34	4		30	

Table (5) salivary gland lesions in children & adult

Salivary glands	Total no.	Children		Adults	
		No.	%	No.	%
Pleomorphic adenoma	6	-	-	6	100
Siallectasis	5	-	-	5	100
Total	11			11	

Table (6) lymph node lesions in children & adults

Lymph node lesion	Total no.	Children		Adults	
		No.	%	No.	%
Reactive hyperplasia	13	9	69.2	4	30.8
Tuberculous	10	4	40	6	60
Suppurative	5	3	60	2	40
Total	28	16		12	

Table (7) malignant tumor of lymph node, primary & secondary malignant tumors in children & adults.

Malignant tumor	Total no.	Children		Adults	
		No.	%	No.	%
A- Primary					
NHL	8	5	62.5	3	37.5
HL	4	1	25	3	75
B- Secondary					
Squamous	9	-	-	9	100
Adenocarcinoma	5	-	-	5	100
Undifferentiated	4	1	25	3	75
Total	30	7		23	