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ATYPICAL HEAD AND NECK MASSES AND THEIR DIAGNOSTIC REALITIES IN PAEDIATRIC AGE GROUP

Objective:
Objective of this study was to correlate between clinical diagnosis and histopathological findings and to highlight frequency of problems and diagnostic accuracy.

Material & Methods:
Atypical head and neck swellings among all pediatric group admitted and surgically managed at TUTH Pediatric Surgery Unit from December 2011 to December 2012 were analyzed from hospital records. All patients had surgical excision of swellings and histopathological reports was evaluated.

Results:
This was a restrospective study. Ten pediatric patients with various types of head and neck swellings; four males and six females under 10 years of age were included in this study. Maximum cases were within 1- 5 years ages. Thyroglossal cysts, Lipoma and Meningo myelocele were frequent and distinct. Other different types of head and neck swellings were hemangioma or arterio-venous malformations, lymphangiomas, dermoid cysts and lymphomas.

Conclusion:
Pediatric atypical head and neck swelling are of different characteristic thus diagnostic dilemma is present. However congenital origin of swellings were very high. Surgical excision and biopsy will be diagnostic and curative as well. Limited series in our study is difficult to conclude the problems. Continuous studies with large sample size are needed to conclude about these problems.

Key Words: Atypical, Head Neck, Swelling, Pediatric ages.

INTRODUCTION:

Swellings in head and neck regions in pediatric age group are very common problems. Differences in ages, sizes, stages of growth and development in pediatric population are variable and their characteristics are also different. Immunologically also this group is weak and vulnerable to repeated infections of various organs and systems. In pediatrics infective and non-infective swellings around head and neck are common. Mostly lymphadenopathy of cervical regions, post occipital areas, axilla and inguinal areas are very common due to infective or inflammatory or reactive origins. These typical head and neck swellings are common though occasionally the final diagnosis is elusive. Similarly atypical swellings are found but their characteristics do not matches with typical swellings and their sites. Mostly head and neck mass/ swellings in pediatric ages are inflammatory, congenital developmental defects and benign or malignant tumors[1-2]. Thus final diagnosis is made by histopathological studies.

Congenital swellings as developmental anomalies are as, thyroglossal cysts or fistula, branchial cysts or fistulas, lymphangiomas, cervical meningo-myelocele, lipomas, cystic hygroma, lymphomas, haemangiomas, malignancies and metastasis may present as atypical swelling with diagnostic challenge. Generalized lymph nodes swelling around head and neck regions could be a clue for some systemic diseases as, leukemia, infective conditions, human immune deficiency viral (HIV) diseases, tuberculosis and malignancies. Rabdomyo-sarcomas, nasopharyngeal carcinoma, thyroid carcinomas and eosinophilic granuloma are also noted in pediatric head and neck tumors[2]. Ragesh et al noted about 54 % head and neck swellings in children to be of inflammatory origin, 30 % congenital developmental anomalies and 16 % due to neoplastic origin[1]. Whereas a report from Cincinnati Children's hospital USA mentioned that 54 % swellings were due to congenital anomalies, 27 % are inflammatory, 14 % were due to neoplastic and rest were benign tumors[3]. Congenital or acquired head and neck swellings in pediatrics are usually detected, during bath, hair combing or oiling by parents or caretakers. Long duration of swellings around head and neck without signs of inflammation could be due to malignant conditions[4]. We analyzed the clinical diagnosis of head and neck swellings and correlated them with their biopsies reports in our patients. The aim is to get clinically correct diagnosis regarding swellings in head and neck in pediatric age group.

MATERIAL AND METHODS:

This was a restrospective study assessing hospital records from Tribhuvan University Teaching Hospital pediatric surgery unit from December 2011 to December 2012 of paediatric patients with head and neck swellings. We excluded typical solitary, matted and pus discharging sinuses from the swellings or swellings associated with surrounding inflammations. Only atypical unusual swellings with age below 15 years were included. Demographic analysis and correlation of clinical diagnosis and biopsy reports was don. The biopsy procedures were, either total excision or wedge resection biopsies under general anaesthesia. Histopathological reports were collected from pathological department. Fine needle aspiration cytology (FNAC) study were non conclusive in all of these study cases.

RESULTS:

Total 10 cases of atypical head and neck swelling in pediatric age groups from five months to 12 years age were admitted and biopsies were performed under general anaesthesia. Female out numbered the male in our series. Table 1 shows the detailed age groups.

Tab. 1: Age distribution amongst paediatric patients with atypical swellings

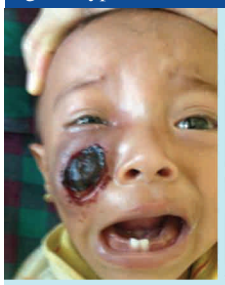
Sex / Age	0-1 years	1 – 3 years	4-5 years	5-10 Yrs	10+ Yrs	Total
Male	0	1	3	0	0	4
Female	1	2	1	1	1	6
Total	1	3	4	1	1	10

Majority of our cases with head and neck swelling were within 1-5 years of age. Most cases had swelling since birth. However in three cases the swelling were noticed after birth at 45 days, three month and one year of age. They were respectively lymphoma, lipoma and thyroglossal cyst.

DISCUSSIONS:

Many authors have mentioned that majority of head and neck swellings in children are due to inflammatory conditions 54 % by Ragesh[1], 27 % from Cincinnati children's hospital[3]. Similarly, congenital head and neck masses are 30 % and 54 % and neoplastic swellings are 16 % and 14 % mentioned respectively by Ragesh and Cincinnati. Where as in resource limited countries, inflammatory origin of head and neck masses are very common due to community acquired infections from school or from large family members. These swellings usually are and disappear by around 6-8 weeks durations[4]. In immune

Fig.1: Atypical Head and Neck swellings



Infective mass of face

Infected Thyroglossal cyst

Haemangioma cheek

Congenital Neck Lipomas

Tab.2 : Types of neck swelling and co-relation between CT/ USG

SN	Clinical diagnosis	No	Sex / Age	CT/ USG findings
1.	Lymphoma	1	M/5 years	Cervical mass
2.	Haemangioma	1	M/5 years	Haemangioma ? Nerve sheath tumor
3.	Soft tissue swelling of neck	1	F/ 7 years	Not done
4.	Thyroglossal cysts	2	F/ 4 years	USG Thyroglossal cyst
			F/ 12 years	USG Thyroglossal cyst
5.	Meningomyelocele	2	F/ 5 months	MMC with teathering
			F/ 3 years	MMC with teathering
6.	Dermoid cyst	1	M/ 5 years	Hypodense cyst in neck
7.	Lipoma neck	2	M/ 2 years	Lipoma ,Posterior neck
			F/ 2.5 years	MRI: Paramedian subcutaneous lipoma

Tab.3: Histopathological findings and its corelation with clinical diagnosis

SN	Clinical Diagnosis	No.	Histopathological findings
1.	Lymphoma	1	Non Hdgkin's lymphoma
2.	Neck swelling	1	Haemangioma
3.	Neck soft swelling	1	AV malformation.
4.	Thyroglossal cyst	2	Thyroglossal cyst
5.	Meningo myelocele	2	Meningo myelocele with teathered cord.
6.	Dermoid cyst	1	Dermoid cyst of neck.
7.	Lipoma	2	Lipoma.

compromised cases the swelling may persists longer. Swellings other than inflammatory origin and complicated chronic swellings also may persist for longer durations. These could be either congenital or malignant swellings[5-9]. Thorough clinical evaluation and early diagnosis may help to reduce the undesirable effects of such problems in children. Even if they are malignant conditions, if diagnosed in early stages might be curable.

The patterns of atypical head and neck swellings in pediatric population have shown variations according to services available and experiences developed in the centers of excellence. In resource constrain countries more inflammatory head and neck swellings are common than in developed countries, where non-inflammatory or developmental anomalies are common[9-12]. This could be because of more common public concerns and readily available services.

In our series the numbers of the patients are limited because of shortly established unit and have to cater to varieties of cases. Most head and neck masses are referred directly to Otorhinolaryngology department by different surgeons and physicians. Thus these cases might have been less in our unit. Our patterns of atypical swelling of head and neck in pediatric population is almost similar to western countries studies[1-4]. Our center is also one of the referral center in our part therefore most complicated cases are being referred for better services thus we get complex and complicated cases and manage them accordingly. The clinical diagnosis is not only adequate but also challenging in atypical swellings around head and neck in pediatric ages. However other modalities of investigation as MRI or CT angiogram will help to diagnose the mass of vascular origin and malignancies[13].

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