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TO ASSESS THE ROLE OF CONTRAST ENHANCED CT NECK IN THE EVALUATION OF NECK MASSES (SPECTRUM OF DIFFERENT NECK MASSES) AT P.B.M. HOSPITAL BIKANER.

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ABSTRACT

Background: Neck swelling or neck mass is a very common presentation encountered in clinical practice. Materials and Methods: A prospective study of 50 cases in a clinically suspected neck masses was studied for a 1 year period. Contrast enhanced CT of neck was done using Philips MX 16 CT Scanner with 3-5 mm axial sections. Result: In the present study, lymph nodal masses accounted for 15 cases and rest of 35 cases had non-nodal neck masses. 56%neck mass were malignant and 44% were benign nature. Conclusion: The accuracy of MDCT for predicting the benign or malignant nature of the mass, and its extent was found to be very high.

KEY WORDS: Computed tomography, Infection, Neck mass.

INTRODUCATION

Neck masses can be grouped into two types: 1). Nodal masses and 2). Non-nodal masses.Both types can appear as benign or malignant lesions[1]. Coupled with a detailed physical examination and modern endoscopy, imaging has become indispensable in the characterization andstaging of neck pathology. Computed Tomography provides essential information about the deep extension of clinically detected masses and may delineate additional clinically unsuspected lesions[2]. The utilization of Multidetector Computed tomographyhas resulted in improved resolution and significant decrease in scan acquisition time. Other advantages are improved temporal resolution into arterial and venous phases, volume acquisition of data enabling convenient retrospective reconstructions, isotropic viewing and unlimited reformations leading to increased lesion conspicuity[3].

MATERIALS AND METHODS

A prospective study of 50 patients who are clinically suspected of neck masses referred from ENT was studied in department of Radiology, Sardar Patel Medical College and Hospital, Bikaner from June 2015 to May 2016. Computed tomography (CT) of neck was done using Philips MX 16 CT Scanners with 3-5 mm axial sections and reformatted images to study in multiple planes. A 4-6 hours of fasting for contrast study and prior written consent was taken.

INCLUSION CRITERIA: All patients with neck masses referred to Radio-diagnosis department.

EXCLUSION CRITERIA: Pregnant mothers Impaired RFT History of contrast allergy.

Table No 1: Spectrum Of Different Neck Masses

NECK MASSES	No.of patients	%
Lymph Nodal mass	15	30
Thyroid lesion	10	20
Vascular malformation	5	10
Developmental lesion	6	12
Inflammatory lesion	4	8
Salivary gland lesion	4	8
Nerve sheath tumor	2	4
Miscellaneous	4	8

Total	50	100

In the present study, lymph nodal masses accounted for 15 cases and rest of 35 cases had non-nodal neck masses.

Table No 2: Nature of Different Neck Masses

Nature Of Masses	No.of patients	%
Benign lesion	22	44
Maligant lesion	28	56
Total	50	100

56%neck mass were malignant and 44% were benign nature.

10 patients presented with neck masses of thyroid origin. A female preponderance was noted in patients with thyroid masses. 6 patients hadmultinodular goitre, 2 patients had papillary carcinoma and one patient had an anaplastic thyroid carcinoma. Microcalcification was seen in one case with papillary carcinoma of thyroid. Coarse calcification was seen in both benign as well as malignant pathologies.

Five patients with vascular malformations were evaluated in this study. Two patients had low flow vascular malformations and Two patients had high flow vascular malformations and one patients had lymphangioma.

Six patients presented with neck masses of developmental origin. Four cases were branchial cleft cysts and two were thyroglossal duct cysts.

Four patients presented with neck masses of inflammatory origin. Two patients had retropharyngeal abscess, one case had cellulitis of neck and one had Ludwig's angina.

Four patients had salivary gland lesions, Two were benign and Two were malignant parotid tumours.

Four patients had nerve sheath tumours (schwannomas). All four were in the carotid space. The lesions showed mild contrast enhancement and were displacing the carotid arteries anteriorly, internal jugular vein posteriorly. It indicates the lesion was of vagal nerve origin.

Four patients showed miscellaneous lesions like lipomas. These were well defined lesions with fat attenuation and multiple internal septations .Most common site being posterior triangle.

DISCUSSION

CT has proved to be proved to be sensitive and reliable in the evaluation of various disease processes. Coupled with a detailed physical examination and modern endoscopy, imaging has become indispensable in the characterization and staging of neck pathology[2]. It is non-invasive, non-operator dependent and permits the accurate measurement of tissue attenuation coefficient. Spiral CT improved the examination quality, reducing the sedation time and requiring lower radiation doses[4]. Multi slice spiral CT using multiple detector rows is the latest advancement in CT technology. Use of multiple detector rows allows faster scanning and thinner collimation[5].

Intravenous contrast agent is used to study the enhancement characteristics of the lesion. Nonionic contrast is preferred, especially in high-risk, pediatric, or elderly patients in whom the rapid bolus can produce nausea or vomiting[2].

Commonest neck masses in the present study were lymph nodal masses (30%). Lymph nodes enlarge secondary to either neoplastic or benign processes. Neoplastic lymph nodes can be due to primary lymphoma or due to secondary to systemic lymphoma, squamous cell carcinomas of aerodigestive tract (gingiva-buccal carcinoma, laryngeal and pharyngeal carcinomas). Benign lymph nodes are due to infections (Tuberculosis, fungal, toxoplasma etc), other systemic diseases like sarcoidosis, Kimura's and castleman's disease. However, because the imaging characteristics in all of these diseases are nonspecific, the diagnosis is based on the combination of history, clinical findings, imaging, and laboratory data. The role of imaging is to locate the node disease and to evaluate any associated findings such as necrosis or abscess formation as well as soft tissue infiltration.

Large homogeneous lymph nodes, sometimes with a thin capsule, are most commonly encountered in lymphoma, sarcoidosis, and infectious mononucleosis. Cross-sectional imaging cannot reliably differentiate Hodgkin's from non-Hodgkin's lymphoma[1].

Tubercular lymphadenitis on CT initially shows homogenous attenuating enlarged nodes, later central hypoattenuation caseous necrosis. There can be matting of nodes and peripheral enhancement. Very rarely, can show calcification in late stages[6].

CONCLUSION

The accuracy of MDCT for predicting the benign or malignant nature of the mass, and its extent was found to be very high. MDCT with its multiplanar imaging capability and newer advances like volume rendering can identify the feeding arteries and draining veins in vascular malformations. It is also helpful in localizing the primary in cases of secondary cervical lymph nodes of unknown primary.

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