



ORIGINAL RESEARCH PAPER

Radiodiagnosis

MULTI DETECTOR COMPUTED TOMOGRAPHY (MDCT) VS MAGNETIC RESONANCE IMAGING (MRI) IN EVALUATION OF NECK MASSES

KEY WORDS: Computed Tomography, Magnetic Resonance Imaging, Metastasis, Head and neck cancer, lymphadenopathy,

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ABSTRACT

OBJECTIVE: To evaluate the role of MDCT and MRI in neck masses for characterization based on location, extent, morphological characteristics , enhancement pattern and Outlining the extent in terms of involvement of adjacent structures, vessels and possible lymphadenopathy.

METHODS: A prospective observational study on MDCT and MRI of 40 patients with complaint of neck swelling was carried out for a period of 1 year (October 2017 to September 2018) in Radiology department of Geetanjali Medical College and Hospital .The data were collected , evaluated for the role of CT and MRI in different neck masses and outlining their extent .The follow up diagnosis was established on the basis of operative and histopathologic findings wherever possible.

RESULT AND CONCLUSION: In our study, 67.5% of patients were males and 32.5% were females. Out of 40 cases, 15 cases showed benign lesions and 25, showed malignant lesions. Males being affected more with both benign and malignant lesions. Tubercular lymphadenitis being most commonest benign cause had sensitivity and specificity of 85% and 93% on CT and 93% and 95% on MRI, with diagnostic accuracy being 92% and 94% on CT and MRI respectively. Other benign lesions like abscess, ranula etc having 100% diagnostic accuracy on CT and MRI. Primary carcinomas having almost 68% and 88% of diagnostic accuracy on CT and MRI, with metastatic lymphadenopathy having 92% and 94% of diagnostic accuracy on CT and MRI respectively.

INTRODUCTION

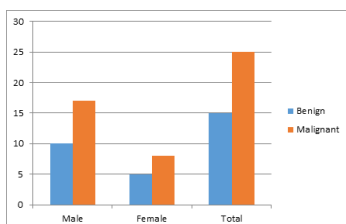
Neck comprises of wide variety of anatomical structures thereby neck masses include spectrum of lesions of diverse origin and can be congenital or acquired, inflammatory, vascular or neoplastic. A mass lesion in the neck can be a diagnostic challenge in patient of any age group. CT provides excellent differentiation of fat from other tissues and for evaluation of bone and calcifications, while MRI to a greater extent, is suitable for evaluation of soft tissues because of its intrinsic high soft tissue discrimination. Thus, to determine whether one of the two techniques is superior to other is critical, for providing guidance for clinical practice.

METHODS

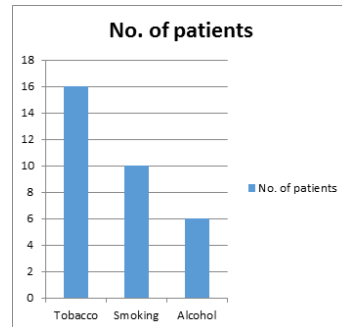
A prospective observational study was conducted in the Department of Radiology at Geetanjali medical college and Hospital, Udaipur. The study was carried out for a period of 1 year (October 2017 to September 2018) enrolling 40 patients . Patients referred for evaluation of neck masses and with previous history or diagnosed with neck masses(benign or malignant) /metastasis were evaluated. Detailed history was obtained from every patient including patient laboratory data, with particular interest in the results of the renal function tests. All multi- detector row CT examinations were performed with a 64 slices multi- detector row CT scanner SOMATOM Sensation (SIEMENS) which included pre-contrast and post-contrast images and MRI was done on 1.5 tesla Siemens Avanto machine .

RESULTS

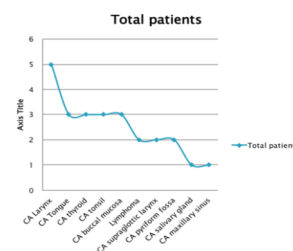
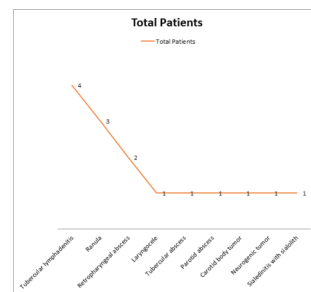
- In our study, 67.5% of patients were males and 32.5% were females.
- Out of 40 cases, 15 cases showed benign lesions and 25, showed malignant lesions.
- Age group between 11 to 30 yrs showed maximum no. of benign lesions and age group between 41 to 70 yrs, showed malignant lesions.
- Males being affected more with both benign and malignant lesions.



- Neck swelling along with dysphagia being the most common symptoms, followed by pain and hoarseness of voice.
- Most of the patients reported with dietary habits of tobacco chewing, followed by smoking and alcohol including both males and females.

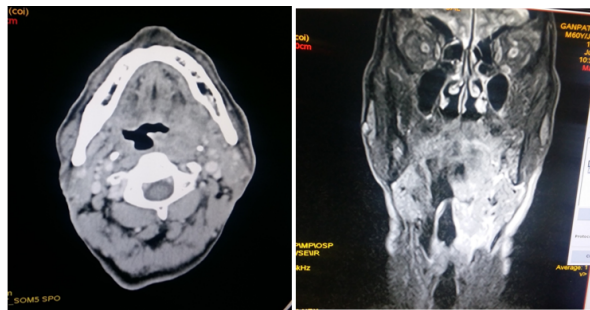


- The commonest benign cause being tubercular lymphadenitis, followed by ranula and retropharyngeal abscess and the commonest malignant being Ca larynx followed by Ca tongue and thyroid.

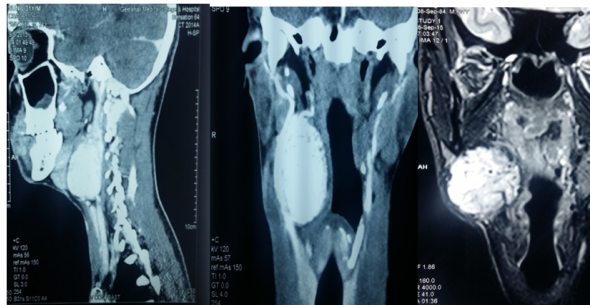


- Tubercular lymphadenitis being most commonest benign cause had sensitivity and specificity of 85% and 93% on CT and 93% and 95% on MRI, with diagnostic accuracy being 92% and 94% on CT and MRI respectively.
- Other benign lesions like abscess, ranula etc having 100% DA on CT and MRI. In carotid body tumor, CT & MRI had sensitivity and specificity of 90% & 100% and 75% & 80% respectively.
- Primary carcinomas having almost 68% and 88% of diagnostic accuracy on CT and MRI, with metastatic lymphadenopathy having 92% and 94% of diagnostic accuracy on CT and MRI respectively.

Case 1: 60 y/male presented with c/o neck swelling with heaviness and uneasiness in throat Diagnosed with Ca Tonsil with metastatic cervical lymphadenopathy.



Case 2: 31yr/F presented with right sided, painless neck swelling Diagnosed with Carotid body tumor



CONCLUSION

- Overall our study showed that both MRI & CT helps in localization and characterization of neck pathologies. CT being more useful in bony infiltration than MRI, whereas MRI being superior in soft tissue extension.
- Morphologic imaging techniques are crucial for therapy planning in primary neck carcinomas and their follow ups. The highest sensitivity and optimal anatomic information of the tumor site are provided by MRI, sensitivity and specificity being 92% and 90%. Diagnostic performance in lymph nodes is almost similar for MRI and CT with sensitivity & specificity of 93% & 95% and 85% & 93% respectively.

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