USG of the Larynx
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Introduction: The relevance of ultrasonographic examination of the larynx in clinical practice has been limited, especially in comparison to its usage for other parts of the body. However, the easy availability of ultrasonography facilities coupled with its lower costs as compared to standard investigations like CT Scans warrants an investigation into its effectiveness for investigating laryngeal disorders.

Chan et al (2011) compared the use of ultrasonography and non-contrast-enhanced magnetic resonance imaging (MRI) for detection and staging of glottic carcinoma and suggested that USG could be used as a non-invasive complementary modality for detection and initial staging of glottic carcinoma. Ultrasonography, at present, seems to have the potential to take on that role to a large extent.

Objective: To assess the potential of ultrasonography as a diagnostic tool for laryngeal neoplasms.

Materials and Methods:
Selection of patients: Inclusion criteria: Patients who presented to the Department of Otolaryngology and Head and Neck Surgery OPD of Medical College and Hospital, Kolkata between April 2012 and October 2012 and were suspected to have laryngeal lesions including malignant neoplasms and benign structural lesions of the vocal folds were included in the study. Exclusion criteria: Patients who had had any previous laryngeal surgery or radiotherapy were excluded from the study.

Equipment used: Ultrasonography was performed using a Philips USG machine. Contrast enhanced Computerised tomography scanning was done and Videolaryngoscopy was performed using a 90° Hopkins endoscope with an attached recording apparatus.

Procedures: Each patient was examined clinically by indirect laryngoscopy and evaluated further with an ultrasonographic examination, a computerised tomographic scan and a videolaryngoscopy. Depending on the pathology suspected, the patient was posted for the appropriate surgical intervention. Patients with benign structural lesions of the vocal cord were posted for microlaryngoscopic examination and subsequent surgery while those with suspected neoplasms were posted for microlaryngoscopicexamination or direct laryngoscopy examination (depending on the size of the lesion estimated preoperatively) and subsequent surgical intervention or biopsy as required.

Results: A total of 26 patients were included in the study; 18 were male while 8 were female patients. 14 patients were subsequently diagnosed to have benign lesions (6 male; 8 female) while 12 patients were subsequently diagnosed to have malignant disease (all males). Detection rates for benign lesions were 92.9% (13 out of 14 cases) for ultrasonography and CT scan whereas it was 100% (14 out of 14 cases) for videolaryngoscopy. Detection rates for malignant neoplasms were 83.3% (10 out of 12 cases) for Ultrasonography, 83.3% for CT scan (10 out of 12 cases) and 91.7% (11 out of 12 cases) for Videolaryngoscopy.

Determination of extent of extralaryngeal spread of malignant tumours was comparable between Ultrasonography and CT Scan (both detected 5 such cases) while videolaryngoscopy was able to determine the extralaryngeal spread of only 2 out of the 5 cases.

Discussion: Ultrasonography can be a useful diagnostic tool for diagnosis of laryngeal neoplasms and determination of extent of spread of malignant ones. During our study, we found ultrasonography to have some distinct advantages -

a) It is cheap as compared to CT Scan and more readily available.

b) It is non-invasive.

On the other hand, the problem with the procedure is that it is dependent on the examiner. However, as the radiologist becomes more conversant with the procedure, the results are certain to improve.

Conclusion: Ultrasonography is yet to be established as a routine diagnostic tool for laryngeal neoplasms. However, our study shows that its detection rates are comparable to established diagnostic modalities and in addition, it has some distinct advantages. Chan et al (2011) reported the reliability of ultrasonography as a diagnostic tool for laryngeal neoplasms. It is our opinion that Ultrasonography can be used as a non-invasive complementary diagnostic tool.

References: