ABSTRACT

Oral cavity lesions are a common health problem worldwide, with various causes ranging from infectious agents to tobacco and alcohol consumption. Early detection and accurate diagnosis of these lesions are crucial for optimal management and treatment outcomes. Magnetic resonance imaging (MRI) is a non-invasive imaging modality that has been used for the evaluation of various diseases and conditions, including oral cavity lesions. MRI has several advantages over other imaging modalities, including excellent soft tissue contrast and the absence of ionizing radiation. This cross-sectional observational study aimed to assess the diagnostic accuracy of 1.5 Tesla MRI in the detection of oral cavity lesions in a sample of 54 patients with clinically suspected lesions who underwent MRI imaging at a hospital in Kolkata, India. The study findings revealed that 1.5 Tesla MRI demonstrated high sensitivity and accuracy in the detection of both cancerous and non-cancerous lesions, making it a promising imaging modality for the evaluation of oral cavity lesions. The most prevalent oral cavity lesions detected in this study were miscellaneous lesions, followed by lesions suspicious for malignancy and solid lesions. The study found that miscellaneous lesions were the most prevalent (22.22%) among the detected oral lesions, followed by suspicious for malignancy (18.55%) and solid lesions (16.67%). The mean lesion size was 1.9 cm. Univariate and multivariate logistic regression models were used to evaluate the relationship between various factors and the presence of malignancy. The results showed that larger lesion size and suspicious for malignancy lesions were significantly associated with malignancy. In conclusion, the findings of this study suggest that 1.5 Tesla MRI can be a valuable tool for the evaluation of oral cavity lesions. The high sensitivity and accuracy of this imaging modality, coupled with its non-invasive nature, make it an attractive option for the early detection and diagnosis of oral cavity lesions, including those suspected to be malignant. Further studies with larger sample sizes and longer follow-up periods are warranted to confirm the potential of 1.5 Tesla MRI in the diagnosis and management of oral cavity lesions.

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