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Prevalence of dengue induced orofacial Lesion in Durg-Bhilai City, Chhattisgarh: A survey

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Abstract

Background: Dengue fever, a mosquito-borne viral disease, is increasingly prevalent in tropical and subtropical climates. Besides common systemic symptoms, dengue may lead to less common manifestations such as orofacial lesions. The prevalence of these lesions can provide additional insights into the disease's clinical spectrum.

Objective: To evaluate the prevalence and characteristics of dengue-induced orofacial lesions in the Durg-Bhilai region of Chhattisgarh, India.

Methods: A cross-sectional study was conducted between January 2024 and June 2024 in Durg-Bhilai. The study population included patients diagnosed with dengue fever, confirmed through serological tests. Clinical examinations focused on identifying orofacial lesions were performed. Data on the incidence, types, and duration of lesions were collected and analyzed.

Results: Out of 200 confirmed dengue cases, 30 patients (15%) presented with orofacial lesions. The lesions commonly observed were petechiae (60%), gingival bleeding (30%), and oral ulcers (10%).

Conclusion: Orofacial lesions, though not frequently discussed, are a notable manifestation of dengue fever in Durg-Bhilai. These findings underscore the need for heightened awareness among clinicians to include orofacial examination in the routine clinical assessment of dengue patients. Further studies are warranted to explore the pathophysiological mechanisms and potential implications for disease management.

Keywords: Durg-Bhilai, Chhattisgarh, dengue fever, orofacial lesions, prevalence, petechiae, gingival bleeding, oral ulcers

Introduction

Dengue fever, attributable to the dengue virus and predominantly spread by *Aedes* mosquitoes, represents a major public health concern within tropical and subtropical regions globally. The disease exhibits a spectrum of clinical manifestations, varying from mild febrile illness to more severe forms such as dengue hemorrhagic fever and dengue shock syndrome. Typical systemic symptoms associated with dengue include high fever, intense headache, retro-orbital pain, myalgia, arthralgia, and rash. Nevertheless, the disease may also present with numerous atypical manifestations that extend beyond these systemic symptoms^[1, 2].

Of particular interest are the orofacial lesions associated with dengue fever, which are less frequently reported but can provide critical insights into the disease's broader clinical impact. These manifestations include petechiae, gingival bleeding, and oral ulcers, which can arise during the acute febrile phase of the infection. Understanding the prevalence and characteristics of these lesions is essential for comprehensive patient care and can aid in early diagnosis and management of the disease^[3-5].

This study aims to investigate the prevalence and characteristics of dengue-induced orofacial lesions in the Durg-Bhilai region of Chhattisgarh, India. By focusing on a specific geographical area with a high incidence of dengue, this research seeks to contribute valuable data to the existing literature, emphasizing the importance of orofacial examinations in the routine assessment of dengue patients. This knowledge could potentially lead to better-integrated clinical practices and improved patient outcomes in dengue-endemic regions.

Materials and Methods

This cross-sectional research was carried out in the Durg-Bhilai region of Chhattisgarh, India. The study spanned from January 2024 to June 2024 and involved patients admitted to local healthcare facilities with a verified diagnosis of dengue fever.

Study Population: Individuals included were those diagnosed with dengue fever, confirmed by serological tests (NS1 antigen, IgM, and IgG tests). Inclusion criteria comprised patients of all ages and genders who provided informed consent to participate. Exclusion criteria were patients with pre-existing orofacial lesions unrelated to dengue or with a known history of bleeding disorders.

Sampling Method: A convenience sampling technique was employed, where all eligible and consenting patients presenting during the study period were included. The sample size was 200 patients.

Clinical Examination: A thorough orofacial examination was performed on each patient by trained clinicians. The examination focused on identifying the presence of petechiae, gingival bleeding, and oral ulcers. Details such as the type, location, and number of lesions were recorded.

Data Collection: Data were collected using structured case report forms, documenting patient demographics, clinical symptoms, the timing of lesion appearance, and their duration. The main variables of interest included the incidence and types of orofacial lesions.

Results

Out of 200 confirmed dengue cases, 30 patients (15%) presented with orofacial lesions. The lesions commonly observed were petechiae (60%), gingival bleeding (30%), and oral ulcers (10%). The majority of lesions appeared during the acute febrile phase of dengue. There was no significant difference in prevalence between males and females.

Discussion

The present study sought to investigate the prevalence and characteristics of dengue-induced orofacial lesions in the Durg-Bhilai region of Chhattisgarh, India. The findings reveal that orofacial manifestations, although not commonly emphasized in clinical discussions, are indeed a significant aspect of the clinical spectrum of dengue fever.

Our study found that 15% of dengue patients exhibited orofacial lesions, with petechiae being the most common type (60%), followed by gingival bleeding (30%) and oral ulcers (10%). These results align with other studies indicating that mucocutaneous manifestations, including orofacial lesions, can occur during dengue infections. The high incidence of petechiae and gingival bleeding can be attributed to the thrombocytopenia and vascular fragility associated with the viral infection.

The majority of lesions appeared during the acute febrile phase of dengue, suggesting a close temporal relationship between the viremia and the onset of these manifestations. This observation supports the hypothesis that the hemorrhagic tendencies in dengue are more pronounced during the viremia phase due to enhanced capillary fragility and platelet dysfunction^[6]. No significant gender differences were observed in the prevalence of orofacial lesions. This is

consistent with existing literature, which suggests that the gender of the patient does not significantly influence the incidence of hemorrhagic manifestations in dengue.

The identification of orofacial manifestations has important clinical implications. Orofacial lesions often cause discomfort and may indicate more severe hemorrhagic complications. Clinicians treating dengue patients should be aware of these potential manifestations, as timely identification and management can mitigate patient discomfort and prevent complications. Routine orofacial examination should become part of the clinical assessment in dengue cases^[7, 8].

The pathophysiological mechanisms underlying these lesions likely involve a combination of direct viral effects on endothelial cells, immune-mediated damage, and coagulopathy^[9]. However, our study did not delve into these mechanisms, underscoring the need for further research in this area.

While this study provides valuable insights, it is limited by its cross-sectional nature and relatively small sample size. Future research should aim for larger, longitudinal studies to better understand the temporal dynamics and long-term outcomes of dengue-induced orofacial lesions. Additionally, studies exploring the molecular and immunological basis of these lesions could provide deeper insights into their pathogenesis.

Conclusion

Orofacial lesions are a noteworthy and prevalent manifestation of dengue fever in the Durg-Bhilai region. Increased clinician awareness and routine orofacial examinations could improve patient management and outcomes. Further research is essential to elucidate the underlying mechanisms and optimum management strategies for these manifestations.

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