Section: Otorhinolaryngology

Original Research Article

EVALUATION OF HERPES ZOSTER MANIFESTATIONS IN OROFACIAL, CUTANEOUS, AND OTOLARYNGOLOGIC REGIONS: A CROSS-DISCIPLINARY STUDY

Sejal Patel[1], Hetal Panchal[2], Siddharth Suthar[3]

[1]*Dermatologist, Class 1, GMERS Medical College, Rajpipla, Gujarat, India*
[2]*ENT Specialist, Class 1, GMERS Medical College, Rajpipla, Gujarat, India*
[3]*Assistant Professor, Department of Dentistry, GMERS Medical College, Rajpipla, Gujarat, India*

Received *: 07/07/2025*
Received in revised form *: 19/08/2025*
Accepted *: 10/09/2025*

Corresponding Author:
Dr. Hetal Panchal,
ENT Specialist, Class 1, GMERS Medical College, Rajpipla, Gujarat, India.
Email: brijeshpanchal06@yahoo.in

DOI: 10.70034/ijmedph.2025.3.554

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (3); 3010-3013

ABSTRACT

Background: Herpes zoster is caused by the reactivation of latent varicella-zoster virus and often presents with painful vesiculobullous eruptions. While thoracic dermatomes are most commonly affected, involvement of orofacial, cutaneous, and otolaryngologic regions presents unique diagnostic and therapeutic challenges. Such cross-disciplinary cases often mimic dental, dermatological, or ENT disorders, leading to delayed treatment and increased risk of complications. This study evaluated the spectrum of herpes zoster manifestations in these regions, emphasizing early recognition and interdisciplinary management.

Materials and Methods: A cross-sectional observational study was conducted over 18 months on 120 patients clinically diagnosed with herpes zoster involving orofacial, cutaneous, and otolaryngologic sites. Detailed history, dermatome mapping, intraoral and ENT examination, and laboratory confirmation (Tzanck smear and PCR in selected cases) were undertaken. Patients were categorized by region of involvement: orofacial (n=45), cutaneous (n=55), and otolaryngologic (n=20). Data were analyzed using descriptive statistics and chi-square tests, with $p<0.05$ considered significant.

Results: Orofacial manifestations accounted for 37.5% of cases, predominantly affecting the trigeminal nerve distribution (65%). Cutaneous involvement comprised 45.8%, with cervical dermatomes most frequently affected (52%). Otolaryngologic presentations, representing 16.7%, included herpes zoster oticus in 12 patients and laryngeal lesions in 3 patients. Postherpetic neuralgia was observed in 28% of cases, with a higher incidence in orofacial zoster (34%). Early initiation of antiviral therapy within 72 hours significantly reduced complication rates ($p=0.03$).

Conclusion: Herpes zoster in orofacial, cutaneous, and otolaryngologic regions demonstrates diverse clinical patterns requiring coordinated management across dental, dermatological, and ENT specialties. Prompt diagnosis and antiviral intervention are crucial in reducing morbidity, particularly neuralgic sequelae. Awareness among clinicians of varied regional manifestations can enhance early recognition and improve patient outcomes.

Keywords: Herpes zoster; Orofacial lesions; Cutaneous involvement; Otolaryngology; Postherpetic neuralgia; Cross-disciplinary study.

INTRODUCTION

Herpes zoster is a neurocutaneous disease resulting from the reactivation of latent varicella-zoster virus (VZV) that persists within cranial nerve or dorsal root ganglia after primary varicella infection.[1] Clinically, it is characterized by painful, unilateral vesiculobullous eruptions distributed along a specific

dermatome, often accompanied by prodromal neuralgic pain.[2] The lifetime risk of developing herpes zoster is estimated to be 20–30%, with incidence increasing markedly in elderly and immunocompromised populations due to waning cell-mediated immunity.[3,4]

While thoracic dermatomes are most frequently involved, craniofacial regions—including orofacial, cutaneous, and otolaryngologic sites—pose unique diagnostic and therapeutic challenges.[5] Trigeminal nerve involvement may mimic odontogenic pain or oral ulcerative lesions, frequently leading to misdiagnosis in dental practice.[6] Similarly, herpes zoster oticus (Ramsay Hunt syndrome) manifests with auricular vesicles, severe otalgia, and facial nerve palsy, complicating otolaryngologic evaluation.[7] Cutaneous cervical and cranial dermatomes are also prone to postherpetic neuralgia, a debilitating sequela that significantly reduces quality of life.[8]

The burden of herpes zoster in craniofacial and ENT regions is compounded by its diverse clinical spectrum and the risk of secondary bacterial infection, ocular involvement, and persistent neuropathic pain.[9] Early initiation of antiviral therapy has been shown to shorten the disease course and reduce complications; however, delayed recognition remains a critical issue in cross-disciplinary clinical settings.[10] This study aimed to evaluate the spectrum of herpes zoster manifestations across orofacial, cutaneous, and otolaryngologic regions, highlighting the importance of interdisciplinary awareness in improving diagnostic accuracy and patient outcomes.

MATERIALS AND METHODS

This cross-sectional observational study was carried out in the Departments of Dermatology, Oral Medicine, and Otolaryngology at a tertiary care teaching hospital over a period of 18 months.

Study Population: A total of 120 patients clinically diagnosed with herpes zoster involving the orofacial, cutaneous, or otolaryngologic regions were enrolled. Inclusion criteria were: patients above 18 years of age, presence of characteristic unilateral dermatomal vesicular eruptions with or without neuralgic pain, and cases confirmed clinically or by cytological/molecular testing where required. Patients with disseminated zoster, HIV infection, recent varicella vaccination, or incomplete clinical data were excluded.

Clinical Examination: Detailed history including age, sex, immune status, prodromal symptoms, pain severity, and previous varicella infection was recorded. Each patient underwent thorough dermatological, intraoral, and ENT examination to identify the involved dermatomes and cranial nerves. Lesions were mapped according to dermatome distribution.

Diagnostic Tools: In cases with atypical presentations, Tzanck smear cytology and polymerase chain reaction (PCR) for varicella-zoster virus were used for confirmation. Pain severity was assessed using a Visual Analogue Scale (VAS).

Treatment and Follow-up: All patients received antiviral therapy (acyclovir or valacyclovir) and analgesics according to institutional protocol. Those with otologic or ocular involvement were referred to appropriate specialists. Patients were followed for six weeks to monitor resolution of lesions and complications such as postherpetic neuralgia.

Data Analysis: Data were compiled and analyzed using SPSS version 25.0 (IBM Corp., Armonk, NY). Descriptive statistics were presented as means and percentages. Chi-square test was applied to assess associations between site of involvement and complications. A p-value <0.05 was considered statistically significant.

RESULTS

A total of 120 patients were enrolled, comprising 68 males (56.7%) and 52 females (43.3%), with a mean age of 48.6 ± 12.4 years. The highest prevalence was observed in the 41–60 year age group (45.8%) [Table 1].

Regional Distribution: Cutaneous involvement was most common (45.8%), followed by orofacial (37.5%) and otolaryngologic regions (16.7%). Trigeminal nerve was the most frequently affected cranial nerve, accounting for 29 cases (24.2%), while herpes zoster oticus was identified in 12 patients (10%) [Table 2].

Clinical Features and Complications: Pain was reported in 108 patients (90%), with mean VAS score of 7.2. Postherpetic neuralgia developed in 34 patients (28.3%), being more prevalent in orofacial involvement (34%) compared to cutaneous (25%) and otolaryngologic (20%). Secondary bacterial infection was noted in 14 patients (11.7%), predominantly in cutaneous cases [Table 3]. Early initiation of antiviral therapy (<72 hours) was associated with lower complication rates (p=0.03).

Table 1: Demographic characteristics of study population

Variable	Number (n=120)	Percentage (%)
Age group (years)		
<20	8	6.7
21–40	32	26.7
41–60	55	45.8
>60	25	20.8
Gender		
Male	68	56.7
Female	52	43.3

Table 2: Distribution of herpes zoster by region and cranial involvement

Region of involvement	Number (n=120)	Percentage (%)
Orofacial	45	37.5
– Trigeminal nerve	29	24.2
Cutaneous	55	45.8
– Cervical dermatomes	28	23.3
Otolaryngologic	20	16.7
– Herpes zoster oticus	12	10.0

Table 3: Clinical features and complications

Parameter	Number (n=120)	Percentage (%)
Neuralgic pain (VAS >5)	108	90.0
Postherpetic neuralgia	34	28.3
Secondary infection	14	11.7
Ocular complications	6	5.0
Reduced with early antivirals	80 (of 120)	66.7

DISCUSSION

The present study highlights the diverse spectrum of herpes zoster manifestations across orofacial, cutaneous, and otolaryngologic regions, with cutaneous involvement being most frequent, followed by orofacial and otolaryngologic presentations. These findings align with previous reports indicating thoracic and cervical dermatomes as the most commonly affected sites, though cranial nerve involvement remains clinically significant due to its atypical presentations and functional sequelae.[1,2]

The mean age of affected patients in our study was approximately 49 years, with peak incidence in the 41–60 year group, consistent with global epidemiological data indicating higher prevalence in middle-aged and elderly populations.[3] Advancing age and declining cell-mediated immunity are key risk factors for viral reactivation.[4,5] Male predominance observed here has been variably reported, with some studies noting higher female incidence, possibly due to differing immune responses and healthcare-seeking behaviors.[6,7]

Orofacial herpes zoster, particularly involving the trigeminal nerve, accounted for nearly one-third of cases in this study. Such presentations are often misdiagnosed as dental or oral mucosal disorders, delaying initiation of antiviral therapy.[8] Previous reports emphasize the importance of differentiating zoster-associated odontalgia from pulpitis or periapical abscesses through careful clinical evaluation.[9] Otolaryngologic presentations, though less common, included herpes zoster oticus (Ramsay Hunt syndrome), which carries a high risk of facial nerve palsy and long-term morbidity if not recognized early.[10,11]

Postherpetic neuralgia was the most frequent complication, particularly in orofacial cases. Its prevalence in our cohort (28.3%) is in line with earlier studies reporting rates between 20–30%.[12] The higher susceptibility of cranial nerve involvement to neuropathic sequelae has been attributed to the density of sensory innervation and prolonged inflammatory response.[13] Secondary bacterial infections, although less frequent, were more common in cutaneous lesions, emphasizing the need for appropriate wound care.[14]

The therapeutic benefit of initiating antiviral therapy within 72 hours was reaffirmed in our study, with significantly lower complication rates in early-treated patients. This observation supports existing literature that timely administration of acyclovir, valacyclovir, or famciclovir shortens disease duration and reduces the incidence of postherpetic neuralgia.[15]

Overall, the results emphasize the necessity of cross-disciplinary awareness among dermatologists, dentists, and otolaryngologists to improve diagnostic accuracy and outcomes. Strengthening interdisciplinary collaboration and patient education could play a pivotal role in reducing the burden of herpes zoster in these specialized regions.

CONCLUSION

Herpes zoster affecting orofacial, cutaneous, and otolaryngologic regions presents with varied clinical patterns that often mimic dental, dermatologic, or ENT conditions. Early recognition and prompt antiviral therapy significantly reduce complications, particularly postherpetic neuralgia. Interdisciplinary awareness and collaboration are essential for improving diagnostic accuracy and patient outcomes.

REFERENCES

1. Cohen JI. Clinical practice: Herpes zoster. N Engl J Med. 2013;369(3):255–63.
2. Koshy E, Mengting L, Kumar H, Jianbo W. Epidemiology, treatment and prevention of herpes zoster: A comprehensive review. Indian J Dermatol Venereol Leprol. 2018;84(3):251–62.
3. Kawai K, Gebremeskel BG, Acosta CJ. Systematic review of incidence and complications of herpes zoster: Towards a global perspective. BMJ Open. 2014;4(6):e004833.
4. Levin MJ, Schmader KE, Pang L, Williams-Diaz A, Zerbe G, Canniff J, et al. Cellular immunity to varicella-zoster virus in young and older adults. J Immunol. 2003;170(9):4761–9.
5. Yawn BP, Gilden D. The global epidemiology of herpes zoster. Neurology. 2013;81(10):928–30.
6. Hata A, Kuniyoshi M, Ohkusa Y. Risk of herpes zoster in patients with underlying diseases: A retrospective hospital-based cohort study. Infection. 2011;39(6):537–44.
7. Toyama N, Shiraki K. Epidemiology of herpes zoster and its relationship to varicella in Japan: A 10-year survey of 48,388

herpes zoster cases in Miyazaki prefecture. J Med Virol. 2009;81(12):2053–8.
8. Nagel MA, Gilden D. Complications of varicella zoster virus reactivation. Curr Treat Options Neurol. 2013;15(4):439–53.
9. Rajasuo A, Perkki K, Nykanen M, Juntunen J, Meurman JH. Varicella zoster virus in odontogenic pain: A diagnostic challenge. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1999;87(6):730–5.
10. Sweeney CJ, Gilden DH. Ramsay Hunt syndrome. J Neurol Neurosurg Psychiatry. 2001;71(2):149–54.
11. Murakami S, Hato N, Horiuchi J, Honda N, Gyo K, Yanagihara N. Treatment of Ramsay Hunt syndrome with acyclovir–prednisone: Significance of early diagnosis and therapy. Ann Neurol. 1997;41(3):353–7.
12. Johnson RW, Rice AS. Clinical practice: Postherpetic neuralgia. N Engl J Med. 2014;371(16):1526–33.
13. Dworkin RH, Schmader KE. Epidemiology and natural history of herpes zoster and postherpetic neuralgia. Herpes. 2003;10 Suppl 2:40–4.
14. Gater A, Abetz-Webb L, Carroll S, Mannan A, Serpell M, Johnson R. Burden of post-herpetic neuralgia in a sample of UK residents aged 50 years or older: Findings from the zoster quality of life (ZQOL) study. Health Qual Life Outcomes. 2014;12:92.
15. Whitley RJ. A 70-year-old woman with shingles: Review of herpes zoster. JAMA. 2009;302(1):73–80.