



Abstract: 4503

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# HERPES ZOSTER REACTIVATION AFTER EPIDURAL STEROID INJECTIONS: A COMPREHENSIVE RETROSPECTIVE STUDY

Laura Furtado Pessoa de Mendonca, Johanna Mosquera-Moscoso, Sebastian Encalada, Alejandro Hallo-Carrasco, Scott Palmer, Chsitine Hunt  
Mayo Clinic

## Introduction

Herpes Zoster (HZ) is an infection caused by the reactivation of the latent Varicella zoster virus (VZV) within a sensory ganglion, leading to painful skin lesions localized along dermatomes. Age, female sex, ethnicity, and immunocompromising conditions are risk factors for HZ. Local steroid injection is a common procedure for pain management, but it increases the risk of reactivation of infections due to secondary immunosuppression. Epidural steroid injections (ESI) are part of treatment for chronic back pain and consist of injecting a steroid preparation into the epidural space to provide symptom relief and reduce inflammation. Though rare, herpes zoster has been reported following ESIs. In this retrospective study, we aimed to evaluate the prevalence of herpes zoster reactivation after an epidural steroid injection at Mayo Clinic.

## Materials and Methods

A retrospective chart review was conducted, including all patients who reported a new herpes zoster event within 31 days after receiving an epidural steroid injection at Mayo enterprise from 01-01-2000 to 02-07-2023. Information on patient demographics, procedure details, and potential risk factors for HZ was recorded. The potential risk factors for herpes zoster were assessed, focusing on the association with immunocompromised status and vaccination status. This study was determined to be exempt from the requirement for IRB approval.

## Results/Case Report

A total of 105 patients were screened, and 24 individuals (22.85%) met the inclusion criteria. Within this subgroup, there were 14 female patients (58%) and 10 male patients (42%). The age range was 34 to 90 years old, with a median of 70.5 years. All 24 patients identified as not Hispanic/Latino and belonged to the white-Caucasian ethnicity (Table 1).

The timeframe from the procedure day until infection varied from 4 to 31 days, with a median of 18 days. The most frequent indication for the procedure was radiculopathy, observed in 19 patients (79.16%). The lumbar region was the most frequent injection target (n=16; 66.67%). Dexamethasone 10 mg was the predominant steroid preparation (n = 13; 54.17%), followed by betamethasone 6 mg (n = 7; 29.17%). The thoracic region was the most commonly HZ-affected site, accounting for 29.17% (n = 7) of cases, followed by the gluteal area, which represented 20.83% (n = 5)

of cases.

Immunocompromised status was determined based on the presence or history of malignancy, chronic immunosuppression, diabetes, or autoimmune diseases. Among the patients included in the study, 14 individuals (58.33%) had an identified immunocompromised status. Regarding vaccination status, complete vaccination was defined as receiving at least two doses before infection. Our findings revealed that 18 patients (75%) had an incomplete vaccination status at the time of infection, as depicted in Figure 1.

Additionally, 5 patients met the criteria for the herpes zoster (HZ) analysis but did not fall within the 31-day timeframe. The remaining patients were found to either have herpes zoster before the steroid injection or have HZ diagnosis excluded after further investigation.

## Discussion

This comprehensive chart review identified that 24 patients manifested an HZ outbreak within 31 days of an epidural steroid injection. The temporal association raises the question of whether epidural steroid injections may increase the risk of VZV reactivation, resulting in HZ. Although the exact mechanism of how corticosteroids increase the risk of HZ reactivation has yet to be fully understood, steroid injections may lead to local and systemic immunosuppression. This wide range of effects could also explain the contrast between the distribution of affected dermatomes when compared to the site of the injection. In this study, only half of the patients manifested HZ near the injection site.

Our results showed agreement with current shingles epidemiology, especially regarding risk factors such as female gender, age above 60 years old, and white ethnicity. cases. The current Herpes zoster vaccine is over 90% effective in preventing shingles in adults 50 years and older after a two-dose regimen. However, the shingles vaccination status among this cohort was incomplete in 75% of the cases, which may have increased their risk of developing shingles.

Causative relation cannot be affirmed due to the retrospective aspect of our review and the presence of other multiple risk factors associated with shingles outbreak. We also acknowledge that due to the change in the shingles vaccine, some patients had an incomplete vaccination status that could be attributed to the availability of only a live attenuated vaccine that was contraindicated for patients with immunosuppression.

Epidural steroid injections are common procedures in pain practice that may be associated with shingles outbreaks despite being rare. Nonetheless, post-herpetic neuralgia is the most common complication of herpes zoster, showing high morbidity and impact on the patient's life. This scenario highlights the relevance of shingles vaccination, which should be addressed and possibly emphasized for patients with an incomplete status during clinical practice before undergoing ESI, even though it is already a standard procedure.

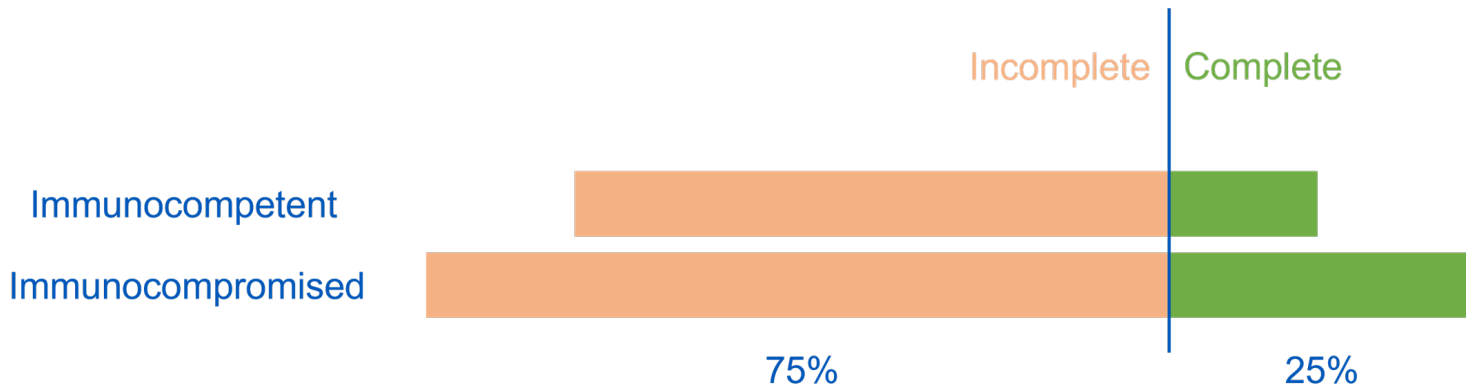
## References

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## Disclosures

No

Tables / Images



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	Number	Percentage
<b>Gender</b>		
Female	14	58%
Male	10	42%
<b>Race</b>		
White-Caucasian	24	100%
<b>Ethnicity</b>		
Not Hispanic or Latino	24	100%

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