



## Reinfection of Chickenpox for the fourth time in an older adult

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**Abstract:** People with chickenpox often gain lifelong immunity after one infection. In most cases, chickenpox's natural immunity provides significant protection against reinfection. However, patients with a second reinfection have been encountered periodically. Neither population-based nor individual data are available on the frequency of reported second Varicella infections among Indians. The possibility of third-time reinfection is very rare, even in reputed literature. Here, we discuss a 68-year-old patient with four reinfections of chickenpox. Two reputed dermatologists confirmed his infection, and he recovered fully with Acyclovir and bed rest. The primary objective of this case report is to highlight the risk of chickenpox reinfections and reinfections occurring more than two times.

### Introduction

The varicella-zoster virus causes a contagious disease known as chickenpox due to primary infection in a previously uninfected person (Ayoade and Kumar, 2022). A virus called Varicella zoster (VZV) causes chickenpox, a highly infectious acute disease. Children account for approximately 90% of the cases, while adults account for fewer (Park, 2007). Around 7000 people worldwide die from varicella every year. A common disease in children in temperate countries, and adults in the tropics, Winter and Spring are the most common seasons for these cases. Four to ten-year-olds are most likely to be affected (Rice et al., 2018). Having a second attack after one is rare, giving durable immunity. The occurrence of chickenpox in an already infected person is called a 'reinfection' (Dubey et al., 2015; Ayoade and Kumar, 2022). The diagnosis is usually based on clinical signs, such as rash and epidemiological characteristics, such as contact with other Varicella cases (Dalya et al., 2008). In the event of reactivation of the virus, shingles, or herpes zoster, results. Varicella and herpes zoster can be transmitted by inhaling aerosolized fluids from skin lesions (Rice et al., 2018).

As a result of the introduction of vaccinations in 1995, the number of cases and complications associated with varicella has declined significantly. Infections are prevented by 75% to 90%, and severe diseases are prevented by 95%. It is recommended that children receive routine immunizations. It may still be beneficial for children to get immunized within three days after exposure (Kasabwala and Wise, 2018; Pereira, 2018; Shrim et al., 2018).

Signs and symptoms are the primary way to diagnose *Varicella* infection. A vesicle's fluid should be examined, non-crust lesions should be scraped. Blood testing can be done for evidence of an acute immune response. Polymerase chain reaction can be performed on skin samples, bronchoalveolar lavage samples, cerebrospinal fluid, and skin samples (Ayoade and Kumar, 2022).

Our case report illustrates *Varicella* recurrence in a 68-year-old patient who has had chickenpox three times early and this report highlights the fact that varicella has recurred for the fourth time.

### Case Report

A 68-year-old man, 163 cm tall, weighing 55 kilograms with no comorbidities and not on any



medications, had a mild headache and low-grade fever for a day. He also had severe asthenia and myalgia, which continued for three weeks. On the 4<sup>th</sup> day of the illness, maculopapular lesions (Fig.1) were observed on the trunk and limbs. Prior to onset of the skin rash, he denied taking any drugs, experiencing respiratory or gastrointestinal symptoms. These lesions turned into blisters with a typical dew on rose petal appearance (Fig. 2), inferring chickenpox, which was certified clinically by two dermatologists. Following this, Acyclovir 400mg QID was taken by the patient for seven days. There were nine lesions which crusted in 9-12 days. He recovered fully. When he was 15, 31, 68 years old, he had chicken pox thrice.

## Discussion & Conclusion

*Varicella* is a severe contagious disease, especially in young infants and adult's people. Vaccines have significantly reduced the number of cases and complications. The risk of reinfection is still present, even occurring for the 4<sup>th</sup> time in an average adult. It can be difficult to diagnose breakthrough *Varicella* due to its mild clinical features. There are no reported cases of four (4) reinfections in India along with breakthrough *Varicella* to the best of our knowledge. 24-48 hours before the rash appears, symptoms like fever, headache, anorexia, and abdominal discomfort may occur (Al-Turab and Chehadeh, 2018). Initially, the rash appears as maculopapular lesions on the scalp, face, upper arms,

**Table 1. Timeline of Chickenpox attacks on the patient**

Attack	Age of Attack	Clinical Details	Status
I	15 years	High-grade fever with body aches for three days. Lesions present.	Recovered
II	31 years	Fever and myalgia for four days. Contact present. About 60 lesions were present.	Recovered
III	62 years	Asymptomatic. About seven characteristic lesions were present.	Recovered
IV	68 years	As described above.	Recovered
I	15 years	High-grade fever with body aches for three days. Lesions present.	Recovered



**Figure 1. Maculopapular Rash**



**Figure 2. Dew on Rose Petal Appearance**

legs and torso. By 5-7 days, blisters, small bumps, and pustules will form with the characteristic 'Dew on Rose Petals' appearance. Following the onset of a rash, systemic symptoms typically resolve in two to four days. Adults can have an extensive rash and prolonged fever, as well as pneumonia, which is the most common adult complication (Freer and Pistello, 2018). In the dorsal ganglion, varicella remains latent after primary infection. Reactivation can occur later in life resulting in Herpes Zoster, more commonly known as Shingles. One chickenpox infection often offers lifelong immunity, but 2<sup>nd</sup> and 3<sup>rd</sup> time reinfections are a rarity even in literature. Hence, a fourth recurrence is highlighted here.

## Conflict of Interest

None

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