



VARICELLA ZOSTER VIRUS INFECTIONS

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November 28, 2024

EXANTHEMATOUS DISEASES

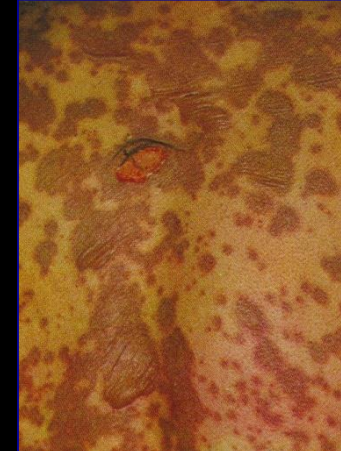
INFECTION

RASH

NON-INFECTIOUS



Measles



Drug reaction

Recognition of infectious rash is very important for the patient, those who have been in contact with the patient, and public health.

IMPORTANT ISSUES IN THE DIAGNOSIS OF INFECTION RELATED EXANTHEMATOUS DISEASES

1. **Exposure:** Have you been in contact with a patient with a rash in the last 1-2 weeks in the history?
2. **Previous rash disease:** Have you been a rash disease in the past?
3. **Vaccination history**
4. **The presence and features of the prodromal period**
5. **Characteristics of the rash:** Onset site, maculopapular or maculopapular...
6. **Presence of pathognomonic findings**
7. **Diagnostic laboratory tests:** Measles IgM and IgG

DISEASES THAT CAUSE MACULOPAPULAR RASH

Measles

Rubella

Scarlet fever

Roseola infantum

Erythema infectiosum



Staphylococcal toxic shock syndrome

Typhus

Meningococcemia

Toxoplasmosis

Cytomegalovirus infection

Infectious mononucleosis

Enteroviral infections

Toxic erythema

Drug rashes

Kawasaki disease

DISEASES THAT CAUSE PAPULOVESICULAR RASH

Chickenpox



Smallpox

Monkeypox

Eczema herpeticum

Eczema vaccinatum

Coxsackie virus infections

Rickettsial pox

Impetigo

Insect bite

Dermatitis herpetiformis

CHICKENPOX

| | |
|-------------------|--|
| CAUSATIVE AGENT | Varicella-Zoster virus |
| COMMON AGE | <15 Years |
| TRANSMISSION | <i>Postnatal infection</i> transmitted by droplet and direct contact. <i>Congenital infection</i> transplacental transmission |
| INCUBATION PERIOD | 10-21 days (average 14-16 days) |
| PRODROME | Mild fever, malaise, loss of appetite before 24 hours from rash |

CHICKENPOX

RASH

The rash starts from the trunk and face and spreads to the whole body
Rash is also seen on the scalp
It is in the form of papule, vesicle and crusty lesions
Lesions continue to appear for 3 days
It form painful lesions in the mouth and genital area
Lesions are itchy
The fever may be high during the exanthematous period.

CHICKENPOX



Polimorph rash

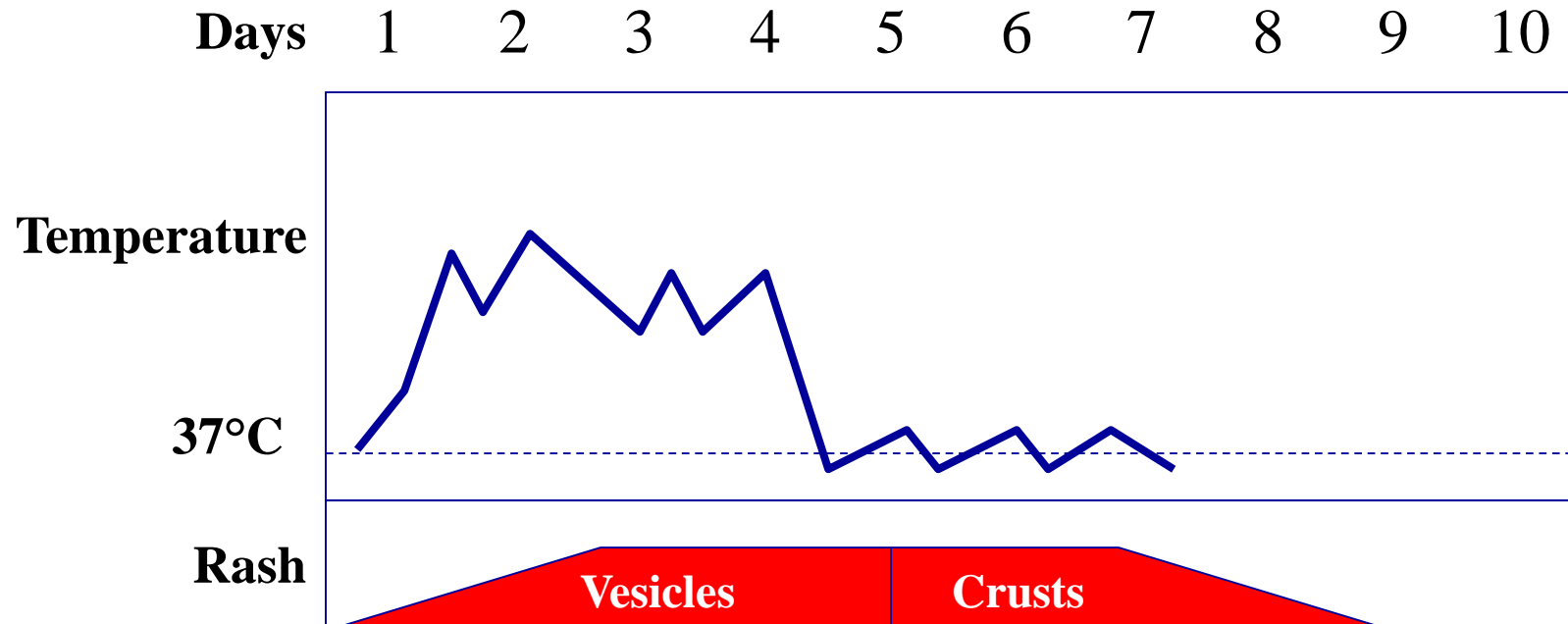


Oral chickenpox lesions



Severe chickenpox rash

CHICKENPOX



CHICKENPOX

Complications

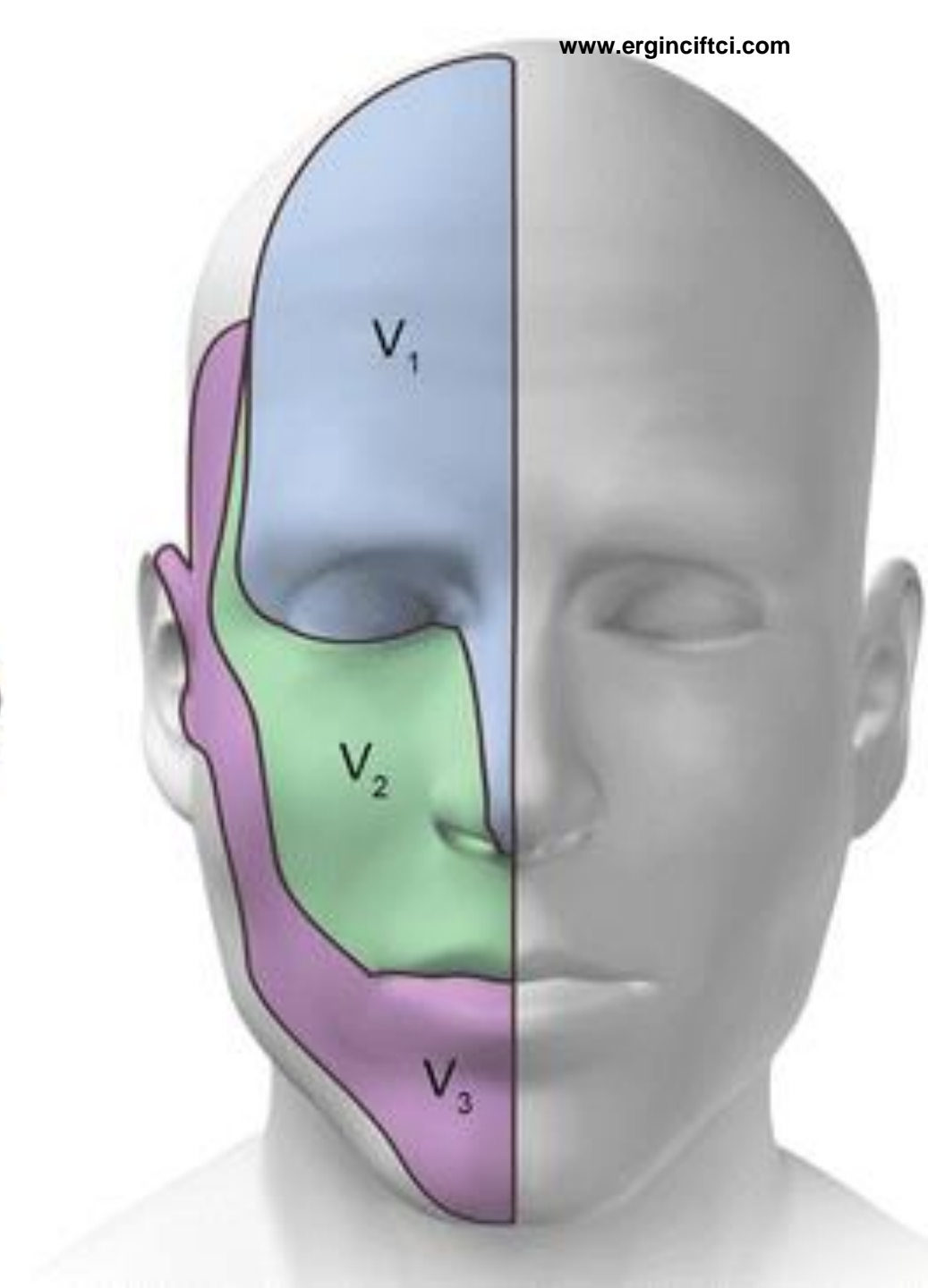
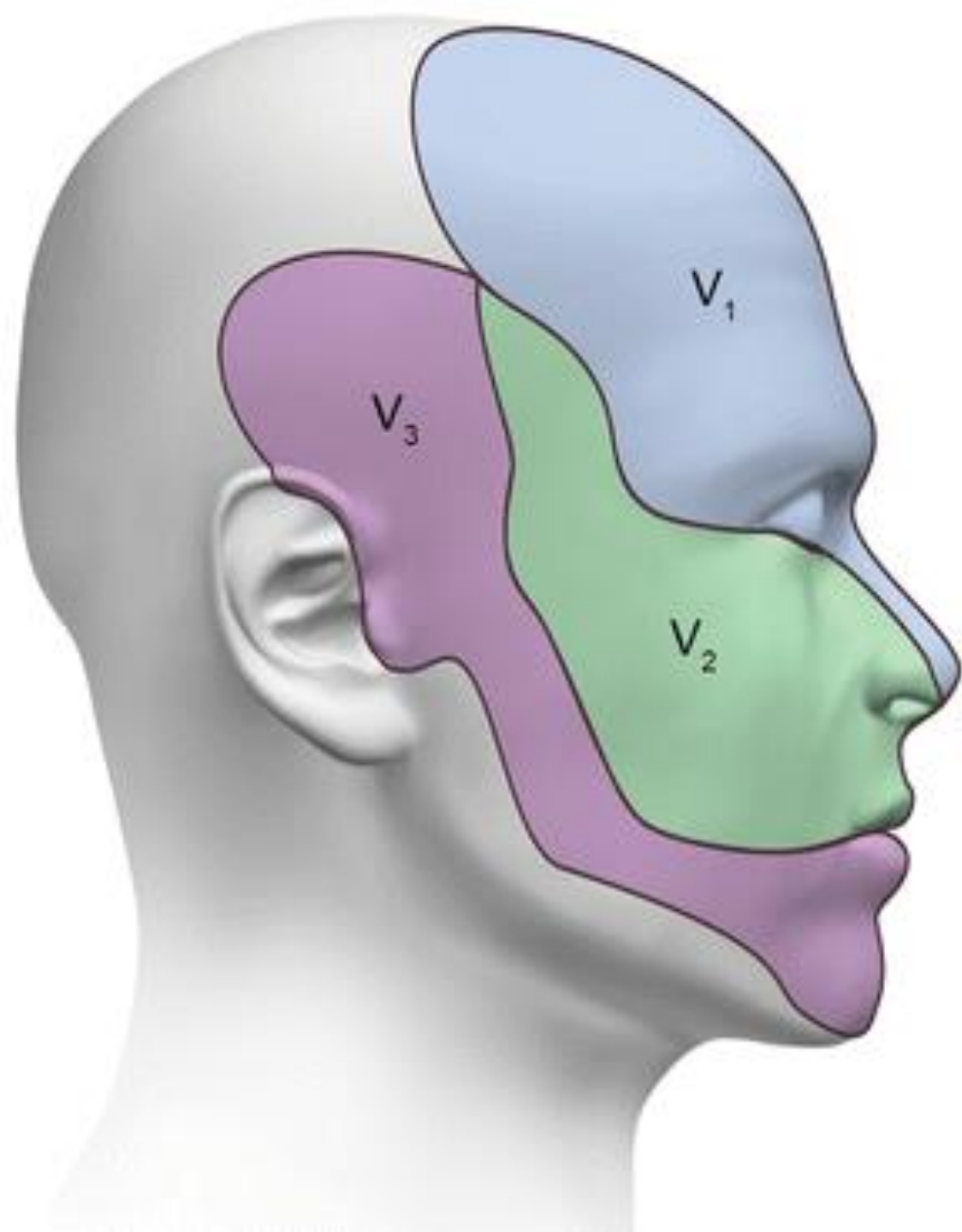
- ❑ Secondary skin infections
- ❑ Pneumonia
- ❑ Hepatitis
- ❑ Arthritis
- ❑ Thrombocytopenia
- ❑ Reye's syndrome
- ❑ Encephalitis, meningitis, cerebellar ataxia
- ❑ Herpes zoster
- ❑ Congenital varicella syndrome



Herpes zoster



Herpes zoster



CASE REPORT

Trigeminal herpes zoster: early recognition and treatment are crucial

Ben Lovell



Herpes Zoster Affecting All Three Divisions of Trigeminal Nerve in an Immunocompetent Male: A Rare Presentation

Kikkeri Narayanasetty Naveen,
Addagadde Venkataramana Pradeep¹,
Jinka Satyanarayana Arun Kumar²,
Spandana Prakash Hegde,
Varadraj Vasant Pai,
Sharatchandra Bhimrao Athanikar

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Indian Journal of Dermatology 2014;59(4):423



Figure 1: Multiple grouped vesicles distributed along ophthalmic, maxillary, and mandibular division of Trigeminal nerve

Herpes Zoster Affecting All Three Divisions of Trigeminal Nerve in an Immunocompetent Male: A Rare Presentation

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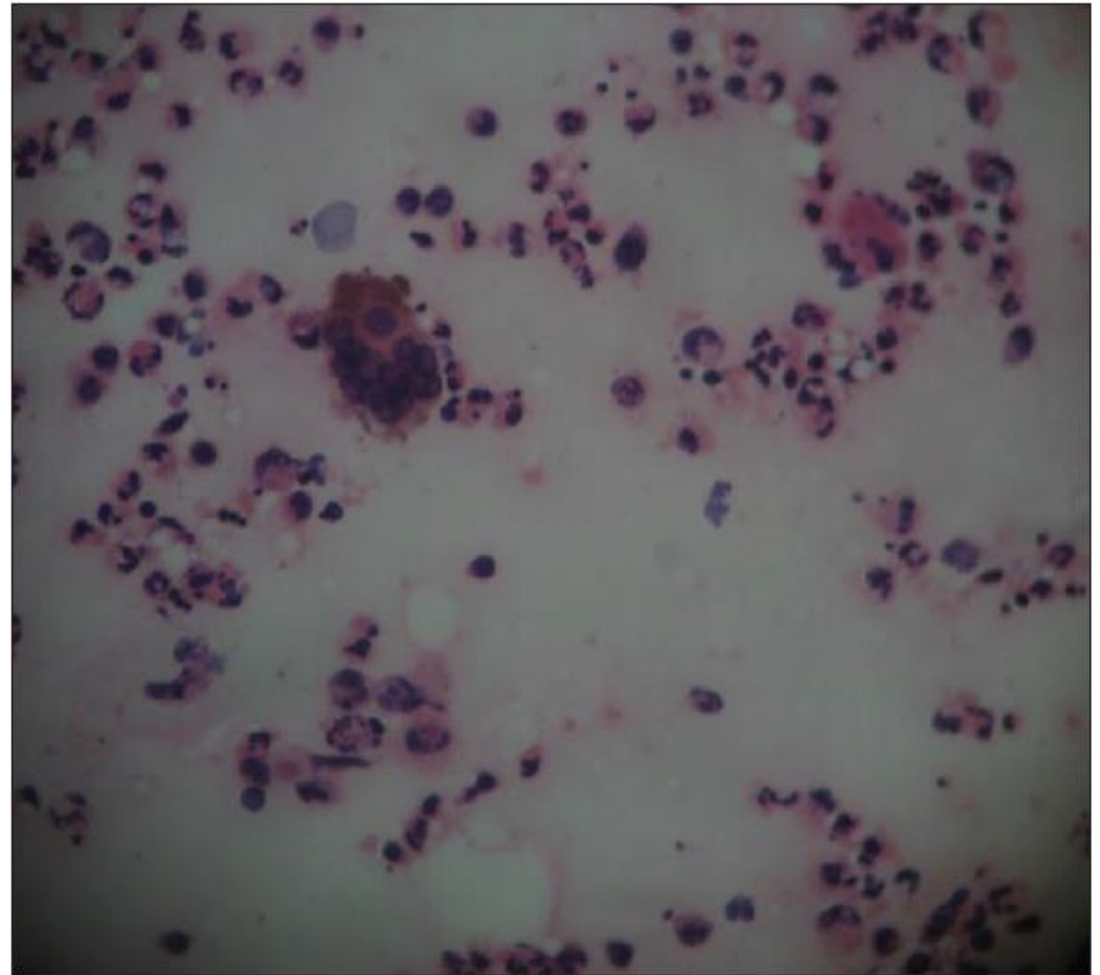


Figure 2: Tzanck smear showing multinucleate giant cell (H and E, x40)

CHICKENPOX

Complications

PREGNANCY PERIOD

The first 20 weeks



Congenital varicella syndrome

Depends on mother's chickenpox immunity

Embryopathy risk $\leq 2\%$

The last 20 weeks



**Herpes zoster
in infancy or childhood**

5 days before delivery
2 days after delivery



**Severe varicella infection
in newborn**

CHICKENPOX

Complications

| | |
|---------------------------|---|
| Skin | Cicatricial lesions, hypopigmentation, bullous lesions |
| Extremities | Hypoplastic limbs, muscular atrophy/denervation Finger anomaly/absence |
| Eyes | Chorioretinitis, microphthalmia, anisocoria |
| CNS | Cortical atrophy, encephalitis, mental retardation, convulsion |
| GIS | Esophageal dilatation/reflux |
| Urinary system | Hydronephrosis/hydroureter |

CHICKENPOX

Complications



Cicatricial scarring



Extremity anomaly

CHICKENPOX

| | |
|-------------------|--|
| INFECTIOUS PERIOD | <p>Begins 1-2 days before rash</p> <p>Lasts until all the vesicles have crusted</p> |
| PREVENTION | <p>Active immunization: Varicella vaccine. Live-attenuated vaccine. Single dose is administered at the age of 12 months.</p> <p>2nd dose can be given at 4-6 years old.</p> <p>After chickenpox exposure, can be given in the first 3-5 days.</p> <p>Passive immunization: Varicella-zoster immune globulin (VZIG)</p> <p>After chickenpox exposure, should be given VZIG within the first 10 days.</p> <p>IVIG 400 mg/kg</p> |
| TREATMENT | <p>Paracetamol or Ibuprofen (Aspirin is contraindicated! Reye syndrome)</p> <p>Acyclovir</p> <ul style="list-style-type: none">≥13 years old childrenPeople who are infected by household transmissionSevere clinical illnessChronic skin or lung diseaseReceiving long-term salicylate therapyUsing aerosol steroidsImmunodeficiency |

EXANTHEMATOUS DISEASES

Causative Agent

Measles: It is an RNA virus of the Paramyxoviridea family

Scarlet Fever: Group A beta-hemolytic streptococcus (*Streptococcus pyogenes*)

Rubella: It is an RNA virus from the Togaviridae family.

Fifth Disease: Parvovirus B19 (DNA virus)

Sixth Disease: Human Herpesvirus-6 and 7 (DNA virus)

Chickenpox: Varicella-Zoster virüs (DNA virus)



Koplik's spots



Red strawberry tongue



Forchheimer's spots



Nagayama's spots



Oral chickenpox lesions

EXANTHEMATOUS DISEASES

Incubation Period

Measles: 8-12 days

Scarlet Fever: 1-7 days (average 2-4 days)

Rubella: 14-21 days.

Fifth Disease: 4-28 days (average 16-17 days)

Sixth Disease: 5-15 days (average 10 days).

Chickenpox: 10-21 days (average 14-16 days)



Koplik's spots



Red strawberry tongue



Forchheimer's spots



Nagayama's spots



Oral chickenpox lesions

EXANTHEMATOUS DISEASES

Prodrome

Measles: Fever, dry cough, rhinorrhea, conjunctivitis, photophobia, Koplik spots

Scarlet Fever: High fever, sore throat, abdominal pain, vomiting

Rubella: Mild fever, headache, malaise, mild rhinorrhea and conjunctivitis without photophobia, Lymphadenopathies may be noticed at least 24 hours before the rash
Retroauricular, suboccipital, and posterior cervical LAP, Forchheimer's spots

Fifth Disease: It is usually mild, mild fever (15-30%), headache, arthralgia, myalgia

Sixth Disease: High fever lasting 3-5 days, irritability, febrile convulsion

Chickenpox: Mild fever, malaise, loss of appetite before 24 hours from rash



Koplik's spots



Photophobia



Conjunctivitis



Forchheimer's spots



Posterior auricular
lymph nodes

EXANTHEMATOUS DISEASES

Rash

Measles: Begins 3 days before rash, lasts up to 4-6 days of rash

Scarlet Fever: Highest during acute infection, it then subsides and lasts for weeks.
With appropriate antibiotic treatment, not contagious after 24 hrs.

Rubella: Begins 7 days before rash, lasts up to 7 days after the rash appears
The newborns with congenital rubella can spread the virus with nasopharyngeal secretions and urine for up to 1 year.

Fifth Disease: Contagious before the rash appears, not contagious after rash begins
Patients with aplastic crisis contagious for 1 week

Sixth Disease: Contagious permanently

Chickenpox: Begins 1-2 days before rash, lasts until all the vesicles have crusted



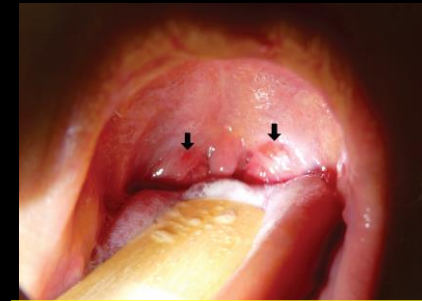
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Forchheimer's spots



Nagayama's spots



Oral chickenpox lesions

EXANTHEMATOUS DISEASES

Treatment

Measles: Vitamin A

Scarlet Fever: Penicillin

Rubella: None

Fifth Disease: None, IVIG in some cases

Sixth Disease: None

Chickenpox: Acyclovir



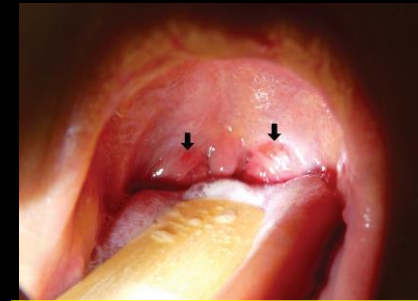
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Red strawberry tongue



Forchheimer's spots



Nagayama's spots



Oral chickenpox lesions

EXANTHEMATOUS DISEASES

Vaccine

Measles: MMR vaccine, MMRV vaccine

Protective if given within the first **72 hours** after contact

Scarlet Fever: None

Rubella: MMR vaccine, MMRV vaccine

Fifth Disease: None

Sixth Disease: None

Chickenpox: Varicella vaccine

After chickenpox exposure, can be given in the first **3-5 days**.



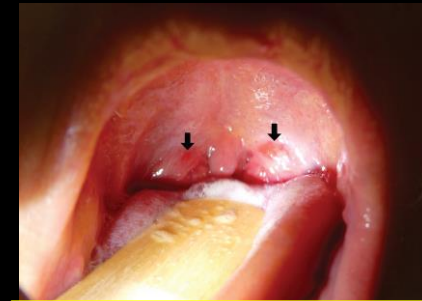
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Red strawberry tongue



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Nagayama's spots



Oral chickenpox lesions

EXANTHEMATOUS DISEASES

Immunglobulin for Prevention

Measles: Yes. Protective if given within the first **6 days** of exposure

Scarlet Fever: None

Rubella: Yes (Only for pregnant)

Fifth Disease: None

Sixth Disease: None

Chickenpox: IVIG, VZIG (For immunocopromised children and adults)

Protective if given within the first **10 days** of exposure



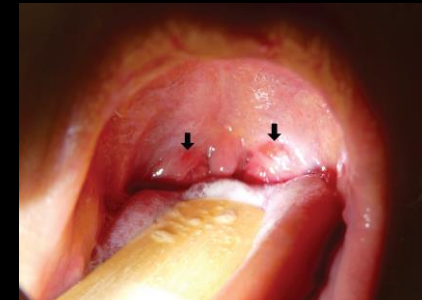
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Red strawberry tongue



Forchheimer's spots



Nagayama's spots



Oral chickenpox lesions