The guide also includes images and text to help differentiate the more common, self-limiting reactions from severe or life-threatening ones that typically require medical evaluation. This pocket guide provides health care personnel with the vaccinia (smallpox) vaccine.

Serious, life-threatening complications are rare and require medical intervention. However, vaccine-related events may be reported to the CDC for monitoring.

If a patient has never had a successful take, the patient and/or his/her guardian should be informed that he/she is almost certainly NOT infected with smallpox.

Vaccination Method & Reactions

Desirable Outcome

Syrupian Outbreak

Contraindications for Vaccinees & Their Close Physical Contacts (E.g., Household Members)

Vaccination Method

Recommended Vaccination Method

Local lymphadenopathy

Most vaccinations express only a cold front and local discomfort with localized redness and swelling.

Recommended Vaccination Method

Three vaccine types will be used in the coming years: (1) E.g., acne, burns, wounds, recent incisions, impetigo, contact dermatitis, sunlight; (2) E.g., immunosuppressive therapies; (3) E.g., extensive skin diseases; (4) E.g., pregnancy; (5) E.g., breastfeeding.

Vaccinia keratitis

Erythema multiforme

Progressive vaccinia

Accidental implantation

Vaccinia Immune Globulin (VIG) was produced in the 1960’s from plasma obtained from recently vaccinated individuals. Recently, intravenous VIG (IV-VIG) has also been used to prevent smallpox in exposed individuals. In 1968, IV-VIG was used to prevent 78,000 cases of smallpox in Africa.

The vaccinia (smallpox) vaccine is a live virus that multiplies in the superficial layers of the skin. It does not contain variola virus, the virus that causes smallpox. A successful take on normal skin causes a local reaction that typically resolves within about 1 week and results in immunity.

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ADVERSE REACTIONS

Severity:

- Life-threatening complications can develop.
- Rare cases of encephalitis occur 10-14 days after vaccination with headache, vomiting, and altered mental status.
- Occasionally, an individual may ingest vaccine accidentally or vaccinia can be transferred from hand to skin or to mucosa.
- Accidental implantation by autoinoculation or contact with a vaccinee whose lesion is in the form of crusts may also occur.
- The most common organisms are Staphylococcus aureus, Pseudomonas aeruginosa, and mixed cultures.
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Adverse Reactions:

- Bacterial Infections
- Bacterial infections of the vaccination site are not uncommon. Children are at greater risk if they receive multiple lesions, especially when their tendency to scratch an itching vaccination site.
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VIG: Indicated with extensive lesions.
- Vaccinia Immune Globulin (VIG) should be administered.
- VIG is recommended, but some experts believe that it can be omitted.

Vaccinia Keratitis
- VACCINIA KERATITIS
- Vaccinia keratitis can be imparted into the peripheral structures and enter the cornea. This may result in localized or diffuse keratitis, conjunctivitis, corneal ulceration, and increased risk of infection.
- The primary vaccinia infection fails to heal and eventually leads to ocular keratitis or keratoconjunctivitis.
- Most instances of generalized vaccinia, particularly in immunocompromised patients (cancer, immunosuppressive therapy, HIV/AIDS) are associated with subsequent corneal scarring or clouding.
- Mucosal involvement and evolution into SJS requires intensive administration of VIG.
- Complications include keratoconjunctivitis, disseminated vaccinia, and necrolytic erythroderma. Management is essential for patients succumbing to viral effect or to secondary fungal, parasitic, or bacterial infection.
- Vaccinia keratitis is an uncommon complication of vaccinia vaccination.
- The patient may experience severe pain and redness of the eye.

Progressive vaccinia is a rare complication occurring primarily in individuals with congenital T-cell deficiency, severe combined immunodeficiency (SCID), and patients with subsequent severe immunodeficiency who have received vaccinia immunization.
- VIG: Not recommended (if mild or limited - most instances)
- VIG: Indicated with extensive lesions.

Adverse Reactions:

- Severe - hospitalize
- Not recommended (exception: Stevens-Johnson Syndrome (SJS) - severe)
- Topical antiviral agents are the treatment of choice in consultation with an experienced ophthalmologist.
- A central, grayish, disciform corneal lesion is most typical.
- Vaccinia keratitis is caused by the vaccinia virus, sometimes with intravascular coagulation, and superimposed microbial infection.
- Early on the lesions are few, require no specific therapy. In some instances, with extensive lesions, or in recurrent disease, VIG is recommended.
- Complications include keratoconjunctivitis, disseminated vaccinia, and necrolytic erythroderma. Management is essential for patients succumbing to viral effect or to secondary fungal, parasitic, or bacterial infection.
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