

SMALLPOX LEVEL A LABORATORY GUIDELINES

Safety

This is a BIOSAFETY LEVEL 4 organism - DO NOT HANDLE SUSPECTED SMALLPOX SPECIMENS OR CULTURES!

Transmission

1. Transmission of the smallpox virus to humans can occur via fomites but more commonly occurs when aerosolized particles enter the respiratory tract.

Incubation

1. Incubation period is from 12-14 days.

Clinical Features

1. Abrupt onset of malaise, fever, vomiting, chills, backache, headache, and occasionally changes in mental status or an erythematous macular rash.
2. After 2-3 days, an enanthem and discrete papular rash begins on the face, hands and arms which later spreads to the legs and finally to the trunk.
3. Papules evolve into vesicles and then pustules as fever and pain persist.
4. Lesions are synchronous (all in the same phase of development) and most develop on the face and extremities.
5. The pustules form scabs which are INFECTIOUS until separation and often leave scarring.

Infections that may be confused with smallpox

1. The common infection that is most important to distinguish from smallpox is varicella (chicken pox). The following features are helpful in differentiating the two infections:
 - a. Chicken pox lesions are more superficial and asynchronous, appearing in “crops” (waves) with vesicles, pustules, and scabs all appearing together at the same time.
 - b. Lesions of chickenpox are denser over the trunk and do not appear on the palms or soles.
2. A less common infection also important to distinguish from smallpox is monkeypox which most often causes inguinal and cervical adenopathy.



SOUTH DAKOTA PUBLIC HEALTH LABORATORY

Environmental Health Testing | Forensic Chemistry | Medical Microbiology

Other syndromes with similar clinical features

1. Skin eruptions from certain drugs or exposures to skin contact agents which cause allergic dermatitis and erythema multiforme (reddish tubercles on the legs and forearms) must also be ruled out.

ANY SPECIMENS RECEIVED FROM A PATIENT WHOSE CLINICAL COURSE MATCHES THAT OF SMALLPOX should be reported to the South Dakota Department of Health Office of Disease Prevention (605)773-3737 or 1-800-592-1861. Arrangements for transportation will be made at that time.

Updated: May 2023