



Overview of cowpox disease

Dr. Ashutosh Kumar Mall*

Senior Scientist (Genetics & Plant Breeding), Division of Crop Improvement, ICAR-Indian Institute of Sugarcane Research, Lucknow-226002, Uttar Pradesh, India

*Corresponding author. E-mail: ashutosh.mal@icar.gov.in

Received 7 June 2021; Accepted 22 June 2021; Published 30 June 2021

Cowpox is a virus bone skin infection caused by the catpox virus. This is a member of the *Orthopoxvirus* family, which includes the variola virus which causes smallpox. Cowpox is similar to but more mild than the highly infectious and sometimes more deadly than smallpox disease. Cowpox should also not be confused with cowpock, which is an alternative name for a condition called milker's nodules, which is caused by a parapox virus.

The cowpox virus got its name approximately hundreds of years ago by a rash which developed in dairymaids those who are touched the udders of infected cows. Then in 1770, an English farmer noticed that dairymaids that had infected and recovered from cowpox not only became immune to further cases of cowpox, but also to the more serious viral disease called smallpox. In 1796 an English physician, Dr Edward Jenner used this cowpox virus to inoculate a patient to avoid them from contracting smallpox. Hence this was the first and only successful vaccination performed.

Nowadays, cowpox is a rarest disease. It mostly encounters in Great Britain and some European countries. Cows are no longer the main carrier of this virus instead of cow woodland rodents are the natural hosts of this virus, who then pass it on to domestic cats when cat takes rodent as food. Human cases are very rare and are most often contracted from the scratch or bite of domestic cats, hence this is otherwise known as catpox. Although human-to-human transmission has not been found till date, patients must be made aware that their lesions are potentially infectious.

It appears that most cases of human cowpox occur in young people 50% of patients belong to less than 18 years age group. This is possibly due to the fact that younger people may have closer contact with animals such as cats or maybe they have not been vaccinated against smallpox, which may confer some protection against cowpox.

Sign and symptoms:

Most human cases of cowpox found as one or a small number of pus-like lesions on the hands and face, which then ulcerate and form a black scab before healing on their own. This process may be taking up to 12 weeks, with the following skin findings over that period:

- After infection Days 1–6: the site of infection appears as an inflamed macule.
- Days 7–12: the inflamed lesion becomes raised (a papule), then develops into a vesicle.
- Days 13–20: the vesicle becomes filled with blood and pus and eventually ulcerates. Other lesions may develop close by.
- Weeks 3–6: the ulcerated wound turns into a deep-seated, hard, black crusty eschar, which is surrounded by redness and swelling.
- Weeks 6–12: the eschar begins to flake and slough and the lesion heals, often leaving a scar.

Other symptoms from cowpox are fever, tiredness, vomiting, and sore throat. Eye complaints such as conjunctivitis, periorbital swelling and corneal involvement have been reported. Enlarged painful local lymph nodes may also develop.

Treatment:

Till date there is no proper cure for cowpox but this disease is self-limiting. The human immune response is sufficient to control the infections on its own. The lesions heal by themselves within 6–12 weeks of infection. Sometimes patients often are left with scars at the site of the healed pox lesions. Patients must feel unwell and require bed rest and supportive treatment. Wound dressings or bandages may be applied to lesions to avoid spread to other sites and potentially to other people.

Patients with underlying skin conditions like atopic dermatitis may be at greater risk of common cowpox.