



Medicine for Managers

Dr Paul Lambden BSc MB BS BDS FDSRCS MRCS LRCP DRCOG MHSM

Monkeypox

Monkey Pox is a virus which can be transmitted to humans from animals. The infection is endemic in the tropical rainforest areas of West and Central Africa and the illness normally presents with a fever and swollen lymph nodes as well as a distinctive rash. Although it can be serious in a small portion of human cases, it is normally self-limiting and resolves in 2-4 weeks. Only a relatively small number of people in the UK have been infected.

The virus is one of a group of such infections called **zoonoses** (a virus which can be transmitted to a human from an animal).

The virus is a type of **Orthopoxvirus** which is a part of the family of viruses called **Poxviridae**. The features of monkey pox resemble those of smallpox, which was globally eradicated in 1980.

For preventative purposes, there is a vaccine, using a similar formulation to the earlier smallpox vaccine which was first approved in 2019. Supply is very limited.

It is, fortunately, generally much milder and less contagious than smallpox, although severe cases do occur with a fatality rate of about four percent, particularly when appropriate supportive and therapeutic treatment is not available.

In the UK, with good therapeutic and supportive treatment, the fatality is below one percent.

Although smallpox no longer exists, there are stockpiles of smallpox vaccine which does provide protection against monkeypox and there is an anti-viral agent which can be used against the infection.

Various types of rats, mice and squirrels are susceptible to the virus, together with primates. The first human case was identified in Congo in the late 1960s and most human cases have since been diagnosed in the same area of West and Central Africa.

In Nigeria, a significant outbreak with over 500 suspected cases occurred in 2017 with about a dozen fatalities.

More remote cases have been identified in the USA, the UK, Israel and Singapore as well as a number of other non-endemic countries.

The mechanism by which the disease is acquired or transmitted is not fully understood. Animal-to-human transmission can occur with

direct contact with blood, bodily fluids or skin-to-skin contact. Eating inadequately cooked meat might be another route.

Human-to-human contact is principally by skin-to-skin contact in the presence of the rash, by droplets (coughing or sneezing) or face-to-face contact.

It can also be spread by touching clothing, bedding or towels used by someone who is infected. It is not known for certain whether it is spread by sexual intercourse.



Interestingly patterns of spread between humans might suggest it is becoming more transmissible because of the smallpox eradication and the cessation of smallpox vaccination programmes.

The incubation period is between 5-20 days.

It starts with fever, muscle pains, headache, backache and weakness and enlargement of lymph nodes.

About three days later, the rash appears. The skin eruption is more prominent on the face and the extremities and is less apparent on the trunk.

The inside of the mouth, the genitalia and the conjunctivae may also be affected.

The rash develops into fluid-filled vesicles which may become secondarily bacterially infected forming collections of pus. The number of vesicles may vary from a few to hundreds.

The disease usually lasts for between two and four weeks although some cases are severe and need more treatment.

In general the disease is more severe in children, those in poor health and with immune deficiencies and generally more common in those people below age 45.

The increased frequency in younger people may be associated with the residual effects of smallpox vaccination in older age groups.

In those people who become more ill, it is usually the result of secondary infection, such as bronchopneumonia, encephalitis and sepsis.

The appearance of the rash may make the diagnosis apparent, but monkeypox can be distinguished from either chickenpox or smallpox because of the characteristic lymph gland enlargement. The diagnosis can be confirmed by laboratory testing.

Management of monkeypox depends on the age of the patient and severity of the infection. It includes:

- Isolation, if necessary in a specialist medical unit
- All supportive measures including fluids, if necessary intravenously, and food to maintain nutritional status

- Approved anti-viral treatment if available
- Antibiotic treatment for any secondary bacterial infection

For preventative purposes, there is a vaccine, using a similar formulation to the earlier smallpox vaccine which was first approved in 2019.

Supply is very limited. Smallpox vaccine itself is estimated to be about 85% effective against monkeypox but again access is limited.

Other preventive measures are as for other infectious diseases.

Anyone developing a blistering rash should seek medical advice if:

- They have been to Central or West Africa within the previous three weeks

- They have had contact with someone with monkeypox within the previous three weeks.

The smallpox/monkeypox relationship

The last case of smallpox occurred in 1977. The disease was declared eradicated in 1980.

Smallpox vaccination was therefore stopped at least forty years ago.

However, microbiologists remain vigilant in case smallpox re-occurs through natural mechanisms, or accidental or deliberate release.

In preparedness for any re-emergence of smallpox newer vaccines and antiviral drugs are being prepared and they may prove valuable in the treatment of monkeypox.

paulambden@compuserve.com