



# Monkeypox and the eye

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## KEYWORDS

monkey pox, Orthopoxviruses, transmission, communicable disease, conjunctivites, blepharites, scleritides, keratitides, uveitides, acquired blindness, pandemic, COVID 19

## Dear Editor

Monkeypox, a zoonotic disease caused by an *Orthopoxvirus*, presents as a smallpox-like illness with transmission between humans or between humans and certain animals. Monkeypox was discovered in Denmark over six decades ago; however, the source of the disease remains unknown. The modes of transmission include respiratory droplets and direct contact with skin or mucous membranes [1-5]. The presence of the virus is confirmed by laboratory testing. However, clinicians should make a provisional diagnosis before a laboratory diagnosis in suspected cases. Various strategies should be applied to reduce the risk of contracting the disease, such as strict hand hygiene, social distancing, mask-wearing, and surface disinfection [1-5]. These strategies are quite similar to those used in preventing coronavirus disease 2019 (COVID-19) transmission.

Figure 1 displays the ocular manifestations of monkeypox, which mostly involve the outer segment of the eye, including the eyelid and adnexa. Manifestations may include vesicular rash of the peri-ocular skin, deformity and edema of the eyelids, focal conjunctival lesions, conjunctivitis, blepharitis, blepharoconjunctivitis, scleritis, corneal opacities and ulcerations, corneal melt, keratitis, uveitis, and subsequently, blindness (Figure 1) [2-7]. Because monkeypox is rare, there are no epidemiological studies pertaining to the ocular manifestations of this disease. However, the findings are similar to those of other eye infections encountered in the daily practice of ophthalmologists. Therefore, measures should include proper medical and social history taking, full ocular examination, and a multidisciplinary team approach involving clinicians, nurses, virologists, veterinarians, and public or primary health care experts [8] to promptly identify infection in suspected cases.

During an ocular examination, the distance between the patient and the examiner is as little as 20 cm, and the time required for a complete ocular assessment is within hours. This may include history documentation, visual acuity assessment, intraocular pressure measurement, pupil dilation, and posterior segment examination [9]. During ocular examination, close contact with the patient is inevitable [4]. Therefore, the ophthalmologists, optometrists, orthoptists, ophthalmic nurses, and other eye care professionals are at risk of exposure to all infectious diseases, including monkeypox.

Additionally, eye care providers may have a substantial role in detecting these diseases, as some cases may present with eye manifestations. History can repeat itself—before COVID-19 became widespread, an ophthalmologist had predicted the pandemic. A few days later, he was hospitalized with fever and cough, and he ultimately died. However, his sincere efforts to alert the world to the virus [9] demonstrated the significant role of eye care providers in detecting infectious diseases.

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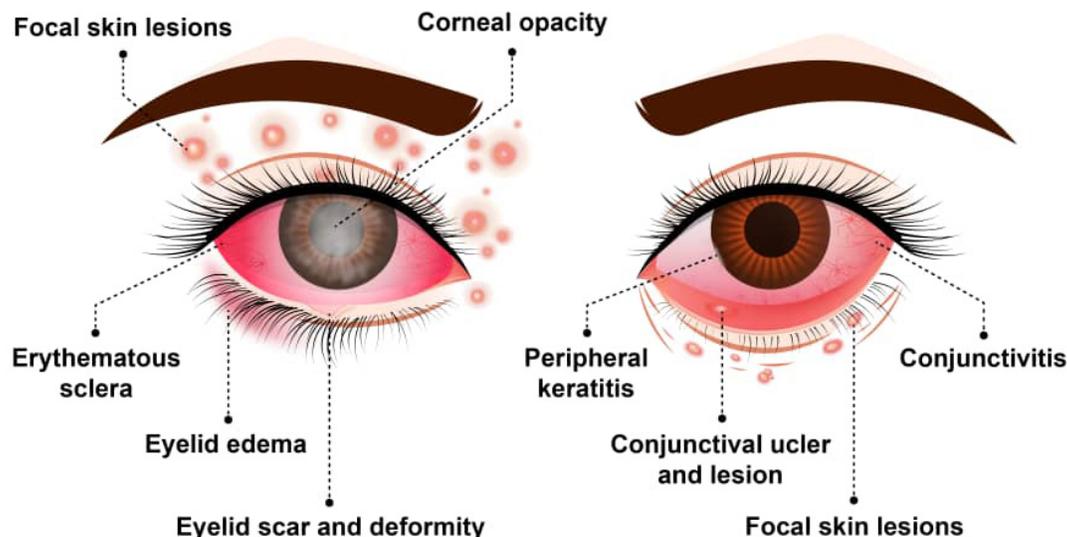
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**Figure 1. Ocular manifestations of monkeypox. This figure has been reused with modification with the permission of *Med Hypothesis Discov Innov Ophthalmol* [7].**

Furthermore, a study on monkeypox in human immunodeficiency virus-infected individuals revealed the possible coexistence of sexually transmitted diseases and monkeypox, emphasizing the importance of excluding concurrent sexually transmitted diseases in these patients [10]. From an ophthalmic standpoint, manifestations of monkeypox in the posterior segment are exceedingly rare [11]. However, the ocular manifestations of sexually transmitted diseases, such as panuveitis, choroiditis, vasculitis, retinitis, and optic neuropathy, are potentially sight-threatening conditions and must be excluded. This may require a full posterior segment examination in the eye clinic.

In summary, monkeypox warrants international concern as a public health emergency [12]. The coincidence of monkeypox with a wide range of sexually transmitted diseases may necessitate a full ocular examination to prevent ocular complications in suspected cases. To our knowledge, ocular complications mostly involve the anterior and outer segments of the eye, which if left untreated, may lead to blindness. Specific evidence-based clinical guidelines are required for the assessment, investigation, and management of suspected monkeypox in high-risk patients, highlighting the potential role of local and international organizations pertaining to ocular health.

### ETHICAL DECLARATIONS

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**Conflict of interests:** None

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