

Brief Research Report

Dan Med J 2023;70(5):A09220544

Characteristics of 86 individuals with mpox diagnosed at Copenhagen University Hospital

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Dan Med J 2023;70(5):A09220544

ABSTRACT

INTRODUCTION. Since the beginning of the mpox (previously called monkeypox) outbreak in 2022, almost half of cases in Denmark have been diagnosed at the Department of Infectious Diseases, Copenhagen University Hospital – Amager and Hvidovre Hospital. This article describes the patient cohort seen at the Department with a view to increasing knowledge of mpox among colleagues who are most likely to identify future cases.

METHODS. A retrospective observational study reporting patient characteristics, coinfections, clinical presentation and diagnostic delay among mpox cases diagnosed at the department between 23 May 2022 and 8 February 2023. Furthermore, a case report of a patient hospitalised with severe rectal pain is presented to highlight anorectal symptoms.

RESULTS. A total of 86 patients were diagnosed with mpox, all were men who have sex with men, with a median age of 39 years. Twenty-six patients (31%) took HIV pre-exposure prophylaxis, and 20 patients (24%) were people living with HIV. All patients (100%) presented with lesions, most frequently on or around the genitals. Twenty-nine patients (35%) had anorectal discomfort or pain. Seven patients (10%) had chlamydia, 19 (26%) gonorrhoea and two (5%) syphilis. In 13 cases (15%), mpox was not suspected at the first medical consultation, mainly because symptoms were attributed to a gonorrhoeal coinfection. Five patients (6%) were hospitalised for a median of three days.

CONCLUSION. As mpox may become endemic in Denmark, clinicians should remain aware of its symptoms and the risk of coinfection with sexually transmitted infections.

FUNDING. None.

TRIAL REGISTRATION. Not relevant.

In May 2022, the first reports of a global outbreak of mpox (previously called monkeypox) were published [1]. The mpox virus has caused sporadic outbreaks in parts of Central and West Africa since the 1970s [1, 2]. In the 2022 outbreak, more than 100 countries reported cases [3].

In Denmark, we have seen 196 cases as per 8 February 2023. Since mid-August 2022, smallpox vaccines have been available as mpox prophylaxis to risk groups, including men who have sex with men (MSM) who take HIV pre-exposure prophylaxis (PrEP), people eligible for PrEP and people living with HIV who are at a high risk of sexually transmitted diseases [4]. There is a concern that mpox may become endemic among risk groups in

Denmark [5] with four new cases being diagnosed in January 2023. Therefore, clinicians should remain aware of the disease and its presentation to prevent further spread.

In this article, we describe our experience with the handling of mpox at the Department of Infectious Diseases, Copenhagen University Hospital - Amager and Hvidovre. We hope to raise awareness of the disease among physicians, especially among surgeons, dermato-venerologists and general practitioners, who are likely to be the first clinicians to identify future cases.

METHODS

A retrospective observational study, reporting the age, gender, PrEP use and HIV status of patients diagnosed at the department between 23 May 2022 and 8 February 2023. The Danish Microbiology Database (MiBa) was used to identify co-infections with chlamydia, gonorrhoea or syphilis, defined as a positive test results within seven days of mpox diagnosis. Symptoms, incubation period, patient and doctor's delay were extracted from patient medical records. Patient delay was defined as time from first symptom to first medical contact and doctor's delay as time from first medical contact to diagnosis [6]. Percentages were calculated excluding missing values.

Additionally, to highlight the anorectal symptoms in the current mpox outbreak, we present a case report of a patient hospitalised with severe rectal pain.

Laboratory method

MPX virus (MPXV) was detected in clinical samples by real-time PCR according to Li et al. [7]. For whole-genome sequencing, MPXV DNA was amplified using a tiling PCR scheme [8] and sequenced on the GridION sequencer (Oxford Nanopore Technologies ONT, UK) for 12 hours.

Trial registration: not relevant.

RESULTS

A total of 86 patients were diagnosed with mpox. The median age of patients was 39 years (range: 20-60 years). All cases were MSM, 26 (31%) were taking HIV PrEP, and 20 (24%) were living with HIV, all were well treated (Table 1).

TABLE 1 Characteristics of patients diagnosed with mpox at the Department of Infectious Diseases, Copenhagen University Hospital – Amager and Hvidovre Hospital, between 23 May 2022 and 8 February 2023 (N = 86).

Age, median (range), yrs	39 (20-60)
MSM, n (%)	86 (100)
PrEP users, n (%)	26 (31 ^a)
People living with HIV, n (%)	20 (24 ^a)

MSM = men who have sex with men; PrEP = HIV pre-exposure prophylaxis.
a) Calculated excluding missing values.

All patients presented with lesions. Table 2 presents symptoms and anatomical locations of the lesions. In connection with the mpox diagnosis, seven patients (10%) tested positive for chlamydia, 19 (26%) for gonorrhoea and two (5%) for syphilis. In total, 13 patients (15%) were never tested for chlamydia or gonorrhoea and 44 (51%) were never tested for syphilis. Median incubation period, patient delay and doctors delay are presented in Table 2.

TABLE 2 Time measures, symptoms and sexually transmitted disease coinfections among mpox cases (N = 86).

	Median (range), days ^a	Patients, n (% ^a)
<i>Time measures</i>		
Incubation period	6 (3-19)	
Patient's delay	4 (0-21)	
Doctor's delay	0 (0-21)	
<i>Symptoms reported</i>		
Any lesion		86 (100)
Genital/perigenital lesions		47 (56)
Anal/perianal lesions		33 (39)
Oral lesions		9 (11)
Other lesions		40 (48)
Anorectal discomfort/pain		29 (35)
Lymphadenopathy		45 (68)
Fever		57 (75)
<i>Coinfections</i>		
Chlamydia		7 (10)
Gonorrhoea		19 (26)
Syphilis		2 (5)

a) Calculated excluding missing values.

In 13 cases (15%), mpox was not suspected at the first medical consultation, delaying diagnosis by a median of six days. Most commonly, in seven of the 13 cases, the patient was tested and treated for a gonorrhoeal co-infection. Five patients (6%) were admitted to hospital for a median of three days (range: 1-7 days) due to rectal pain (n = 2), penile swelling (n = 2) and/or superinfections (n = 3).

Case presentation

A 34-year-old MSM with no prior disease was referred to our department on suspicion of mpox. The patient had recently travelled to Spain for a pride festival, during which he had intimate contact with several men. Six days after exposure, the patient developed swollen lymph nodes, a feeling of fever and a perianal lesion. On examination, a single round perianal vesicle and bilateral swollen inguinal lymph nodes were found. Swabs from the throat and the perianal lesion were tested for mpox virus by PCR. The patient was sent home to self-

isolate since he did not initially require hospitalisation. Test results came back positive for mpox in both swabs the following day. After four days, the patient was readmitted due to increasing anorectal pain. Anal examination revealed a multitude of perianal vesicles and ulcerations. The patient was started on a regime of local and systemic pain killers and discharged after six days. He was instructed to self-isolate until all the lesions had scabbed, and the scabs had fallen off, which, in his case, occurred after three weeks.

Laboratory results

Viral lineage assignment revealed that the sample grouped within the newly proposed B.1 lineage [9], which is typical for the current European outbreak.



A patient with lesions characteristic of mpox. This is not the patient described in the case presentation. This image is reproduced with permission from the patient.

DISCUSSION

A total of 86 patients were diagnosed with mpox at the Department of Infectious Diseases, Copenhagen University Hospital - Amager and Hvidovre, corresponding to 44% of all cases in Denmark, as per 8 February 2023. In terms of age, gender and PrEP use, patients generally resembled those seen in other countries during the 2022 epidemic. We recorded a lower percentage of patients living with HIV (24%) than studies from other countries (range: 41-47%) [1, 10-12], which may possibly be explained by a lower HIV prevalence in Denmark.

In our experience, most mpox patients present with mild symptoms. All patients (100%) had lesions, most commonly around the genitals or anus, but also on other parts of the body, which is in line with reports from the 2022 epidemic [1, 11, 12]. In our study, 75% had fever compared with 53-63% in other studies, and 68% had lymphadenopathy compared with 42-59% in other studies [1, 10-12]. An overestimation in our study may have

been caused by missing data as the absence of these symptoms was not regularly mentioned in the medical records.

Coinfections with other sexually transmitted diseases (STDs) were common, especially gonorrhoea, for which concomitant infections were seen in 26% of cases, compared with 8% in an earlier study [1]. Only around half of cases in the present study were tested for syphilis, among whom 5% tested positive. For mpox patients who are not routinely screened for syphilis, testing may therefore be warranted.

In 15% of cases, mpox was not considered at the first medical consultation. In most of these cases, the patient was tested and treated for a concomitant gonorrhoeal infection, which may have been part of the reason why mpox was not suspected. This may cause further spreading of mpox as patients do not isolate and follow precautionary measures. We are unaware of other studies reporting on this issue.

We call on our colleagues to consider mpox when seeing patients with lesions and/or anorectal discomfort, especially if the patient is MSM. Mpox is not a highly infectious disease and typically spreads through close skin and mucosal contact with virus from vesicles. In the 2022 outbreak, transmission was explained by sexual contact, but there are examples in the literature of spread through non-sexual intra-family contact [13]. A risk exists of droplet spread from lesions in the mouth and throat and of indirect transmission. Healthcare professionals examining patients suspected for mpox should take precautionary measures as described in detail by national Danish authorities [14]. Second-generation modified vaccinia Ankara (MVA) vaccine (Imvanex/Jynneos) is offered to risk groups; in Denmark, risk groups are defined as MSM with multiple partners or recently diagnosed with other sexually transmitted diseases [14].

CONCLUSION

Mpox may become endemic among risk groups in Denmark. Clinicians should therefore remain aware of the symptoms, especially lesions and anorectal discomfort. Finally, the risk of coinfection with STDs, especially gonorrhoea, should be considered.

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Accepted 24 February 2023

Conflicts of interest Potential conflicts of interest have been declared. Disclosure forms provided by the authors are available with the article at ugeskriftet.dk/dmj

Cite this as Dan Med J 2023;70(5):A09220544

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