CASE REPORT

Self-inflicted herpetic whitlow

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SUMMARY

A 25-year-old dental radiographer reported to the outpatient department with lesions at the lower and upper lips which had later spread to his finger. On the basis of the given history and clinical features, a diagnosis of primary herpetic infection on the mouth followed by secondary infection on the finger was made and the patient was advised systemic and topical antiviral therapy following which his lesions healed uneventfully.

BACKGROUND

Herpetic whitlow is a herpes virus infection involving one or more digits.

Although herpetic lesions are a common entity, it is very important to emphasise the prevention of spread of the lesion from one part of the body to the other. Knowing how contagious the disease can be, one should take precautions while examining and treating such lesions and also advise the patient against touching the lesion and exercising adequate hygiene after touching them.

CASE PRESENTATION

A 25-year-old dental radiographer reported with reddish brown lesions involving the left lower lip, mid upper lip, palate and finger. The history revealed that he had suffered from fever 1 week previously followed by the development of reddish brown papular lesions on the left lower and mid upper lips along with the left side of the hard palate (figures 1 and 2). The lesions were associated with mild pain. The patient kept touching the affected area constantly, which also caused bleeding. Two days previously, he noticed a single vesicular eruption on the right index finger which scared him further and he reported to the outpatient department (figure 3). He was suffering from such lesions for the first time. He did not give a history of any medication.

On clinical examination, a reddish black papular lesion was observed in the left lower lip measuring

1×1.5 cm, extending across the lower left vermillion border of the lip. Multiple vesicles were seen in the upper lip region which appeared to coalesce together to form a brownish area measuring 1.5×2 cm, extending from the upper vermillion border of the lip to the upper labial mucosal region.

The lesional area of the upper lip appeared to be lacerated suggestive of mild traumatic irritation due to constant touching of fingers by the patient.

A yellowish white ulcerated area surrounded by erythematous borders was present in the left hard palate measuring 1×1.5 cm involving the rugae area. Another area of ulceration was situated just below the former lesion measuring 0.5×0.75 cm. The lesions were non-tender on palpation. However, bleeding was observed after palpation of the encrusted papular lesion of the lower lip.

Later, the patient also started to observe a vesicular growth measuring 1×1.5 cm in the right index finger, which was non-tender on palpation.

INVESTIGATIONS

A Tzanck smear (figure 4) test of the lesions was performed by taking a scraping of the lesion, which revealed the presence of multinucleated epithelial giant cells. Further, a serological test (ELISA) confirmed the presence of herpes simplex virus (HSV) infection.

DIFFERENTIAL DIAGNOSIS

Herpetic whitlow needs to be differentiated from infection of fingertip pulp (bacterial felon), cellulitis of the fingertip and bacterial paronychia. We made a final diagnosis of HSV infection on the basis of the history given by the patient, clinical and pathological examination and the absence of non-purulent pus, which is commonly associated with bacterial infection. Other vesiculoulcerative lesions, which should be differentiated from HSV infection, are herpetiform aphthous stomatitis, which is usually preceded by fever and malaise. The presence of pruritic skin lesions may differentiate Varicella Zoster Virus infection from HSV.

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Figure 1 Preoperative picture of the lesion and healed lesion after 1 week.

Figure 2 Preoperative lesion on the palate and healed lesion after 2 weeks.

Figure 3 Lesion depicting a herpetic whitlow and healed lesion after 1 week.

Characteristic lesions in the feet and hands may differentiate hand-foot-and-mouth disease from HSV. Vesiculations in case of erythema multiforme are absent and the lesions are usually larger. Acute necrotising ulcerative gingivitis and herpangina are usually limited to the gingiva and soft palate, respectively.

TREATMENT

The patient was treated with acyclovir 200 mg five times daily for 5 days along with a topical application of acyclovir ointment 2–3 times daily for 1 week.

OUTCOME AND FOLLOW-UP

After 1 week, the lesion on the upper lip, lower lip and finger had healed (figures 1 and 3). The oral medication was discontinued while the patient was asked to continue with a topical application on the palate for another 1 week. On the second follow-up, the palatal lesion had healed completely (figure 2).

DISCUSSION

Stern used the term *herpetic whitlow* for the first time in 1959 for describing 54 nurses with an infected finger. The term *whitlow* is derived from the Scandinavian term *whichflaw*, meaning a crack in the sensitive area around the nail.^{1–3}

The causative viruses for herpetic whitlow are HSV-1 and HSV-2, both belonging to the α -herpesviridae family.⁴ The path of this virus begins from an active lesion or infected secretions to the broken skin such as a torn cuticle of a finger or toe thus infecting the epithelial layer. Following this, the virus replicates and forms vesicles on the finger.⁵ In the present case, the virus was transmitted from the oral lesions to the finger, thus making the condition self inflicted.

Figure 4 Figure showing the Tzanck smear.

Detection of herpetic infections can be broadly classified into six categories, namely: morphological, immunomorphological, serological, virological, immunological and molecular virological. The commonly used techniques in dentistry are Tzanck testing (morphological), viral culture or direct immunofluorescence (immunomorphological).⁶

Treatment drugs for such lesions include acyclovir, valacyclovir or famciclovir, analgesics and antibiotics. The treatment regimen aims at halting replication of the causative virus, symptomatic pain relief and preventing bacterial superinfection. Use of dry dressing is advisable in order to prevent shedding of the lesion until it heals.^{5 7} Incision and drainage can cause viraemia and therefore should be discouraged.^{5 8} Surgical debridement is also not advocated due to the possible consequences of secondary bacterial infection or viral encephalitis.^{1 9}

The efficacy of antiviral medication in treating herpetic lesions is still being questioned by a few authors due to the limited number of studies. Gill MJ and Bryant HE conducted a double-blinded, placebo-controlled crossover study and observed that oral acyclovir administered during the prodromal stage of recurrent HSV-2 herpetic whitlow helped reduce the symptom duration from 10.1 to 3.7 days and positive viral cultures from 5.3 to 0.6 days.¹⁰ Fitzpatrick *et al* have suggested that the recurrence of herpetic whitlow can decrease with daily use of oral acyclovir.¹¹ Besides treating HSV infection, acyclovir also prevents recurrent infections in immunocompromised individuals.¹²

The present study supports the observation that the recurrence of herpetic whitlow can decrease with daily use of oral and topical acyclovir.

Severe intraoral lesions may affect the diet of an individual and may cause dehydration. Therefore, deficient dietary intake should be compensated for.⁶

The diagnosis and treatment of herpetic infections pose a significant risk to the health professionals involved. As in the present case, the technician would have probably acquired the primary infection from an infected patient. Therefore, it is extremely essential to take adequate precautions such as using gloves, following universal fluid precautions and avoiding contact with patients or their environments until the lesions heal.

Learning points

- ▶ Use adequate hygiene measures such as regular washing of hands and avoid touching the lesion to prevent spread of infection from one part of the body to the other.
- ▶ Herpetic whitlow needs to be differentiated from other lesions on the finger, such as bacterial paronychia or felon, especially in the absence of any oral or genital herpetic lesion.
- ▶ The recurrence rate of herpetic infection is high. The virus remains latent and symptoms have high recurrence rates especially in immunocompromised individuals.
- ▶ Herpetic infections are contagious and dental professionals are at high risk. Therefore, adequate precautions must be taken while in contact with affected individuals.

Competing interests None.

Patient consent Obtained.

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REFERENCES

- 1 Mohler A. Herpetic whitlow of the toe. *J Am Board Fam Pract* 2000;13:213–15.
- 2 Gill MJ, Arlette J, Buchan KA. Herpes simplex virus infection of the hand. *J Am Acad Dermatol* 1990;22:111–16.
- 3 Feder HM Jr. Herpetic whitlow in an infant without defined risks. *Arch Dermatol* 1995;131:743–4.
- 4 Stanberry LR. Pathogenesis of herpes simplex virus infection and animal models for its study. *Curr top Microbiol Immunol* 1992;179:15–30.
- 5 Wu IB, Schwartz RA. Herpetic whitlow. *Pediatr Dermatol* 2007;79:193–6.
- 6 Ajar AH, Chauvin PJ. Acute herpetic gingivostomatitis in adults: a review of 13 cases, including diagnosis and management. *J Can Dent Assoc* 2002;68:247–51.
- 7 Wilson R, Truesdell AG, Villines TC. Inflammatory lesions on every finger. *Am Fam Physician* 2005;72:317–18.
- 8 Szinnai G, Schaad UB, Heininger U. Multiple herpetic whitlow lesions in a 4-year-old girl: case report and review of the literature. *Eur J Pediatr* 2001;160:528–33.
- 9 Gill M, Arlette J, Buchan K, et al. Therapy for recurrent herpetic whitlow. *Ann Intern Med* 1986;105:631.
- 10 Gill MJ, Bryant HE. Oral acyclovir therapy of recurrent herpes simplex virus type 2 infection of the hand. *Antimicrob Agents Chemother* 1991;35:382–3.
- 11 Fitzpatrick TB, Johnson RA, Wolff K, et al. *Color atlas and synopsis of clinical dermatology: common and serious diseases*. 3rd edn. New York: McGraw-Hill, 1997.
- 12 Laskin OL. Acyclovir and suppression of frequently recurring herpetic whitlow. *Ann Intern Med* 1985;102:494–5.

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