CASE REPORT

Molluscum contagiosum: report of one case with overview

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SUMMARY

Molluscum contagiosum is a common skin and mucosal disease of viral origin, caused by molluscum contagiosum virus (MCV) virus of poxvirus family. With the eradication of smallpox, MCV is now the only member of the poxvirus family that causes substantial disease in humans. Though frequently reported, its unusual clinical presentation makes its diagnosis a challenging task. We discuss a case of molluscum contagiosum in a 30-year-old woman along with a review of aetiology, histopathology and different possible treatment modalities.

BACKGROUND

Molluscum contagiosum (MC) is a superficial, localised skin infection. Acquisition of the virus follows contact with infected persons or contaminated objects and sources such as towels, sponges, swimming pools, public baths, tattoo instruments, gymnasium equipment, instruments used in beauty salons, and mostly affects young children, sexually active adults and immunosuppressed persons especially those with HIV. The virus invades the skin and forms firm, flesh-coloured, doughnut-shaped bumps, about 2–5 mm in diameter whose sunken centres contain a white, curdy-type material.

CASE PRESENTATION

A 30-year-old woman presented to the department of oral medicine and diagnosis for a routine checkup. Medical history revealed that she had blisters and suffered from itching on the hands since the age of 3 to 4 years old. She had not taken any treatment. Past dental history was non-contributory. Family history revealed that she was married since 5 years and no such lesions were present in her spouse. General physical examination revealed reddish pink coloured, semitransparent papules on the skin of both the hands, which were fluid filled, roughly oval in shape, measuring approximately 2–3 mm in size. On palpation, these were soft in consistency, non-compressible and randomly distributed. There was no history of surface discharge or alteration in their size. No such lesions were present elsewhere on the body. Routine blood investigations along with western blot test were advised and patient was found to be HIV negative. Histopathology revealed hypergranulosis and characteristic molluscum bodies. On the basis of case history and clinical findings, working diagnosis of MC was made which was confirmed by the presence of molluscum bodies in histopathology report (figure 1A–C).

INVESTIGATIONS

- ▶ Biopsy: reveals characteristic molluscum bodies
- ▶ Light cryotherapy
- ▶ Electron microscopy: reveals characteristic brick-shaped poxvirus particles.

DIFFERENTIAL DIAGNOSIS

In immunocompromised patients, the differential diagnosis of molluscum contagiosum virus (MCV) disease can include:

- ▶ Atypical mycobacterial infection
- ▶ Cryptococcosis
- ▶ Pyogenic granuloma
- ▶ Basal cell carcinoma
- ▶ Histoplasmosis
- ▶ Penicilliosis
- ▶ Pneumocystosis
- ▶ Keratoacanthoma

TREATMENT

Treatment varies according to the clinical presentation of the disease.

- ▶ In young immunocompetent children, aggressive treatment should not be attempted as it causes scarring. Instead, continuous application of surgical tape to each lesion after bathing can yield better results.
- ▶ If the lesions are limited and child is cooperative, light cryotherapy, application of trichloroacetic acid or removal by curettage are other treatment modalities. Application of eutectic mixture of local anesthetics (EMLA) cream for 1 h before any painful treatment can further relieve the distress. Topical 5% sodium nitrite with salicylic acid can also be used.
- ▶ In adults with genital involvement, removal by curettage or cryotherapy is most effective. Screening for other probable coexistent sexually transmitted disease (STD) should be compulsorily done.

OUTCOME AND FOLLOW-UP

The prognosis was good with only possible complication being temporary discoloration.

DISCUSSION

MC was first described in the medical literature in 1817. Its viral aetiology was determined by Juliusberg.¹ A revolutionary breakthrough came in 1996, when the genome of this tumorigenic virus was sequenced. It is caused by MCV of the Poxviridae family, the largest human lesion-forming virus.²

It has a round or rectangular form. Its genome is contained in a linear double-stranded DNA

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Figure 1 (A–C) (A) Extra oral profile of the patient. (B) Histopathological view showing hypergranulosis and characteristic molluscum bodies. (C) Reddish pink coloured, oval, semitransparent papules measuring 2–3 mm in size, seen over the skin of hands.

segment, encoding an antioxidant selenoprotein (MC066L) which absorbs active metabolites of oxygen, thus protecting the cells from ultraviolet and peroxide damage. The virus infects epidermal keratinocytes and viral replication occurs in the cytoplasm of these cells. This infection results in a significant loss of S-100 protein-positive dendritic cells in mid and upper layers of overlying epidermis thereby causing local modulation of cytokines and a decrease in the number of Langerhans cells.^{3–4} Poxviruses utilise the microtubule cytoskeleton within the cytoplasm of eukaryotic cells for movement into the human host cell during establishment of infection and for facilitating the continued spread of virus infection.⁵

MC is caused by up to four closely related types of poxvirus, MCV 1–4 and their variants. Although the proportion of infection caused by the various types varies geographically, throughout the world MCV 1 infections are most common. In young children virtually all infections are caused by MCV 1. There is no difference in the anatomic region of isolation with regard to infecting type. In patients infected with HIV MCV 2 causes majority of infections. Three groups of individuals are most commonly affected: young children, sexually active adults and immunosuppressed persons especially those with HIV. MC is mostly transmitted by direct skin-to-skin contact through wet skin. Swimming pools are usually affected with infection.

MC is characterised by the appearance at the sites of inoculation of virus round, shiny, semitransparent papule of dense elastic consistency with a smooth surface, clear border and a characteristic concavity visible in the centre. The colour varies from flesh and pink to dark red with a violet shade. They are not inclined to grouping or mixing, but they can mix to a large rounded lesion (giant molluscum). Pressing the MC papule with forceps eliminates the core mass from the central part. Irritated lesions may become crusted, even pustular simulating secondary bacterial infections. This may proceed spontaneous resolution. Lesions that rupture into dermis may elicit a marked suppurative inflammatory reaction that resembles an abscess.⁶

Dermatitis surrounding a lesion usually heralds the resolution of that lesion. Lesions tend to be on face, trunk and extremities. Genital lesions occur as a part of wider distribution, occurs in about 10% of childhood cases. In adults, MC is sexually transmitted and other STD may coexist. Common sites are lower abdomen,

upper thighs and penile shaft in men. Mucosal involvement is rarely seen. Immunosuppression, either T cell immunosuppression (HIV, sarcoidosis and malignancies) or abnormal cutaneous immunity (atopic dermatitis) predisposes the individual to infection. In around 10% lesions surrounding eczematous reaction is present. Erythema annulare centrifugum may also be associated. Isomorphic phenomenon is a routine feature of these lesions.

Histopathological examination reveals the lesions involving the follicular epithelium. The lesion is acanthotic and cup shaped. In the cytoplasm of prickle cells, numerous small eosinophilic and later basophilic inclusion bodies called molluscum bodies or Henderson-Paterson bodies are formed. Eventually, their bulk compresses the nucleus to the side of the cell. In the fully developed lesion each lobule empties into central crater. Characteristic brick-shaped poxvirus particles are seen in electron microscopy in epidermis.

Although oral lesions are not usually seen but as reported by Knapp and Uohara and by Swan and his colleagues, these lesions have appeared as small, multiple white or pink nodules which enlarge, proliferate and coalesce or appear as papillomatous, bulbous masses scattered over or diffusely involving the dorsum of tongue, buccal mucosa, palate, gingival or alveolar ridge.⁷

This infection spreads by direct skin-to-skin contact, especially by scratching the lesion. Anyone who has skin-to-skin contact with an infected person is at risk of getting infected and it can be more severe among people with a weaker immune system. Thus, patients should be advised not to share towels with other family members and proper protective measures (like wearing gloves) should be taken while examining such patients.

Thus to conclude, dentists can play a key role in diagnosing and managing such cases in their day-to-day clinical practice by eliciting a thorough case history and keen observation while examination.

Learning points

- ▶ Molluscum contagiosum (MC) is a viral disease that spreads by direct skin-to-skin contact. It may present in the oral cavity as white or pink nodules which enlarge, proliferate and coalesce or appear as papillomatous, bulbous masses. While examining these patients, dentists should take proper protective measures and should look for the associated cutaneous lesions. To sum up, this paper focuses on creating awareness about this disease among dental fraternity.
- ▶ It is important for a dentist to diagnose MC because:
 - Apart from being a skin disease, it presents with such oral manifestations that are not easy to differentiate from that of other diseases.
 - Pain is not a usual feature of this disease, so most of the times its diagnosis is an accidental finding during routine examination at dental visit.
 - As the lesions spread along the scratch lines (isomorphic phenomena/Koebner's phenomena), early diagnosis by a dentist and referral to dermatologist can cease further progression of the disease.
 - As the disease spreads through contact with infected person (sexually transmitted disease) or contaminated objects (towels, sponges, beauty saloons and swimming baths) so a dentist can spread awareness regarding course of disease and modes of prevention among patients.
 - Basic knowledge regarding this disease and taking protective measures (wearing gloves) can also help dentists from being infected.

Competing interests None.

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