CASE REPORT

An unusual presentation of herpes infection in the head and neck

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ali.sanei-moghaddam@nhs.net**SUMMARY**

Herpes simplex virus (HSV) is among a spectrum of viruses known to affect the upper aerodigestive tract. Gingivostomatitis and pharyngitis are the most common clinical manifestations of first-episode HSV infection, whereas recurrent herpes labialis is the most common clinical manifestation of reactivation HSV infection. Herpetic viral infections seldom attack the larynx. Laryngeal disorders provoked by the herpes virus are characterised by a large spectrum of presentations and polymorphisms, and can simulate mucous lesions such as an extensive laryngeal neoplasm (supraglottic tumour). We report a case of a 69-year-old woman, smoker, who presented with a large ulcerated supraglottic mass mimicking laryngeal cancer, requiring emergency tracheostomy for worsening stridor, which turned out to be an HSV laryngitis superimposed onto an underlying Streptococcus A lower respiratory tract infection. The patient was treated for Streptococcus A infection and her symptoms resolved following treatment. Patient's tracheotomy tube was removed on follow-up appointment.

BACKGROUND

Herpes simplex viruses (HSV-1, HSV-2; herpes virus hominis) produce a variety of infections involving mucocutaneous surfaces, the central nervous system (CNS) and occasionally visceral organs.^{1 2} Both HSV-1 and HSV-2 can cause genital and oral-facial infections, and the infections caused by the two subtypes are clinically indistinguishable.¹

The clinical manifestations and course of HSV infection depend on the anatomical site involved.

Herpetic viral infections seldom attack the larynx,³ and the percentage of herpetic laryngitis, in relation to those of other natures, is 1%. A peculiar finding is the sudden development of this condition, suggesting an acute inflammatory reaction.²

Laryngeal disorders provoked by the herpes virus are characterised by the large spectrum of presentations and polymorphisms, and can simulate mucous lesions, laryngeal tuberculosis, fungal infection, syphilis, abscess or non-specific laryngeal inflammation (granulomatous disease) and it should always be considered as a differential diagnosis, especially in cases with an atypical presentation.²

CASE PRESENTATION

We report a case of a 69-year-old woman who was admitted under the ear nose and throat (ENT) surgeons with stridor. Fibreoptic nasendoscopy revealed a large ulcerated supraglottic mass arising

Figure 1 Axial CT of the neck showing supraglottic mass (arrow).

from the right vocal cord causing airway obstruction. She required an urgent tracheostomy upon admission to secure her airway. Multiple biopsies were taken from the larynx simultaneously.

A CT scan of the neck was reported as '2.7×1.8 cm solid lesion arising from the right vocal cord. 10 mm right cervical lymph node. Could not exclude malignancy' (figures 1 and 2).

Figure 2 Axial CT of the neck showing right cervical lymph node (arrow).

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A chest CT confirmed several subcentimetre mediastinal nodes, bilateral lower lobe consolidation and a right pleural effusion, but no destructive bone lesions were identified.

Abdominal ultrasound scan showed widespread hyperechoic liver lesions consistent with metastases.

The original pathology report confirmed signs of 'dysplasia difficult to grade' and suggested further biopsies.

The patient also had a pruritic rash which was diagnosed by the dermatologists as erythema marginosum and a possible *Streptococcus* group A infection.

She then had to have further biopsies of the supraglottic lesion, which did not show any dysplasia or malignancy, but confirmed an HSV1 laryngitis based on immunohistochemistry.

The patient subsequently underwent an abdominal CT showing a diffuse heterogeneous enhancement pattern to the liver but with no evidence of primary or metastatic disease.

She was also tested for hepatitis A, B, C, HSV1, cytomegalovirus and Epstein-Barr virus serology as well as autoimmune markers which all came back as negative, apart from HSV1 IgG which was 18.1 (HSV1 IgG > 1 is seropositive).

TREATMENT

She was treated for *Streptococcus* group A respiratory tract infection but no treatment for herpes laryngitis was indicated as per the infectious diseases team advice.

OUTCOME AND FOLLOW-UP

Following discharge from the hospital with a tracheostomy, she was reviewed in the ENT outpatient clinic a month later with no signs of a supraglottic mass and was subsequently decannulated.

DISCUSSION

HSV is one among a spectrum of viruses known to affect the upper aerodigestive tract, although it is usually confined to the lips and oral cavity.⁴ It is transmitted via saliva, and it can produce a constellation of symptoms in its host that range from vague malaise to life-threatening illness.^{1 4}

Despite being quoted as rare, this affliction has been known for a considerable time. Broadbent wrote the first report of paralysis associated with herpes in 1866 more than a century ago.

However, it was Meyer, in 1879, who first described laryngeal herpes.²

Herpetic viral infections seldom attack the larynx, and the percentage of herpetic laryngitis, with regard to those of other natures, is 1%. A peculiar finding is the sudden development of the condition, suggesting an acute inflammatory reaction along with severe pain of herpetic neuralgias.²

Laryngeal disorders provoked by the herpes virus are characterised by the large spectrum of presentations and polymorphism, and can simulate mucous lesions such as extensive laryngeal neoplasms (supraglottic tumour),² laryngeal tuberculosis, fungal infection, syphilis, abscess, non-specific laryngeal inflammation (granulomatous disease) or laryngotracheitis.⁵ Owing to the difficulty of a differential diagnosis, laboratory studies as well as direct laryngoscopy and biopsy are often required.

While staining of scrapings from the base of the lesions with Wright's, Giemsa's (Tzanck preparation), or Papanicolaou's stain to detect giant cells or intranuclear inclusions of HSV infection is a well-described procedure, few clinicians are skilled in these techniques, the sensitivity of staining is low (<30% for mucosal swabs), and these cytological methods do not differentiate between HSV and varicella zoster virus infections. Host responses influence the acquisition of HSV disease, the severity of infection and the frequency of recurrences. Both antibody-

mediated and cell-mediated reactions are clinically important. Immunocompromised patients with defects in cell-mediated immunity experience more severe and more extensive HSV infections than those with deficits in humoral immunity, such as agammaglobulinaemia. Multiple cell populations, including natural killer cells, macrophages and a variety of T lymphocytes, play a role in host defences against HSV infections, as do lymphokines generated by T lymphocytes.¹

HSV infection is best confirmed in the laboratory by detection of virus, viral antigen or viral DNA in scrapings from lesions. HSV DNA detection by (PCR), when available, is the most sensitive laboratory technique. The sensitivity of all detection methods depends on the stage of the lesions (with higher sensitivity in vesicular than in ulcerative lesions), on whether the patient has a first or a recurrent episode of the disease (with higher sensitivity in first than in recurrent episodes), and on whether the sample is from an immunosuppressed or an immunocompetent patient (with more antigen or DNA in immunosuppressed patients).¹

There is increasing evidence that the herpes virus contributes in various steps along the carcinogenic cascade. In fact, HSV antibodies are elevated in some patients with oral cancer.

Studies have demonstrated that herpes virus acts synergistically with tobacco to produce oral cancer in animals. It is possible that cigarette smoking predisposes patients to mucosal HSV infection by suppressing the host defences, such as natural killer cell activity, that are required to control HSV.⁴

There are still controversies surrounding the treatment of HSV infection. Acyclovir, valacyclovir and famciclovir—have proved effective in shortening the duration of symptoms and lesions of mucocutaneous HSV infections in both immunocompromised and immunocompetent patients.¹

Our case presented with all signs and symptoms of laryngeal cancer except for the duration of symptoms. She did not have any antiviral treatment as it was believed to be a reactivated herpes infection secondary to an underlying *Streptococcus* group A chest infection.

Learning points

- ▶ Gingivostomatitis and pharyngitis are the most common clinical manifestations of first-episode herpes simplex virus-1 (HSV-1) infection, while recurrent herpes labialis is the most common clinical manifestation of reactivation HSV-1 infection.
- ▶ Herpetic viral infections seldom attack the larynx.
- ▶ Supraglottic mass due to HSV infection develops suddenly, suggesting an acute inflammatory response.
- ▶ High degree of suspicion and a detailed history followed by immunohistochemistry and/or serological tests can confirm the diagnosis.
- ▶ HSV DNA detection by PCR, when available, is the most sensitive laboratory technique.
- ▶ There are controversies concerning HSV infection treatment. Our patient fully recovered from herpes laryngitis without any antiviral treatment.

Competing interests None.

Patient consent Obtained.

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