

# Infectious mononucleosis complicated by hypoglossal nerve palsy

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## ABSTRACT:

— Neurological complications may rarely occur in infectious mononucleosis (IM), including neuritis. All the cranial nerves can be implicated, probably as a consequence of the massive neurotropism of Epstein-Barr virus. Here, we describe a case of hypoglossal nerve palsy complicating IM in a 15-year-old girl. Hypoglossal nerve palsy presented with left deviation of the tongue. The patient was treated with steroids for several weeks, until complete resolution of the palsy.

— **Key words:** EBV, Infectious mononucleosis, Nerve palsy.

## INTRODUCTION

Infectious Mononucleosis (IM) is a disease primarily caused by Epstein-Barr virus (EBV) infection<sup>1</sup>, member of the  $\gamma$ -herpesvirus family. It is largely spread among the general population (about 90%, frequently in adolescents and young people in developed countries)<sup>1</sup>, with no seasonal predilection, and it is usually transmitted through saliva. In some cases, it can also be transmitted through blood transfusion<sup>2</sup>, solid organ transplantation<sup>3</sup>, and hematopoietic cell transplantation<sup>4</sup>. The incubation period ranges from four to six weeks<sup>5</sup>. Typical clinical manifestations of IM include: pharyngitis, cervical lymph node enlargement, fatigue (with myalgia and malaise) and fever. Most of them last ten days, but fatigue and cervical lymph node enlargement can persist for more than three weeks<sup>1</sup>. Other clinical findings include abdominal pain, hepatitis (which occurs in 75% of cases, with hepatomegaly and elevation of alanine aminotransferase levels), splenomegaly, nausea, vomiting, palatal petechiae, periorbital and eyelid edema<sup>1</sup>. Rash is usually seen in patients taking penicillin, resulting from transient penicillin hypersensitivity<sup>6</sup>. A practical way to diagnose IM is the use of laboratory tests showing the presence of heterophile antibodies (Paul-Bunnell reaction)<sup>1</sup>. However, laboratory confirmation relies on the evaluation of specific antibodies: VCA IgM and IgG, EBNA-1 IgG, usually measured

with an enzyme immunoassay platform<sup>1</sup>. Complications can occur in around 1% of cases and include airway obstruction (because of lymph node enlargement), streptococcal pharyngitis, meningoencephalitis, hemolytic anemia, thrombocytopenia, and splenic rupture<sup>1</sup>. In addition, some neurological complications related to EBV infection may rarely occur, the most frequent of which are represented by cranial nerve palsies<sup>7-15</sup>.

Here, we describe a rare case of hypoglossal nerve palsy complicating IM in a 15-year-old girl during hospitalization.

## CASE REPORT

In August 2013, a 15-year-old female student was admitted to our Unit, with a 10-day history of fever, sore throat and cervical lymph node enlargement gradually worsening. On admission, blood tests documented leukocytosis (white blood cells 17,200/ $\mu$ l, lymphocytes 43.8%). VCA IgM antibodies were positive. Physical examination showed bilateral laterocervical lymph node enlargement (maximum diameter 7 cm). The oral cavity presented marked tonsillar hypertrophy, with bulky tonsils occupying the most part of the oropharynx and whitish exudate on their surface. There was also hepatosplenomegaly. The patient was started on infusional an-



**Figure 1.** Left deviation of the tongue during infectious mononucleosis

tibiotic therapy with clarithromycin and steroids. A Computed Tomography scan of the neck confirmed the clinical picture described above. After two days, a partial regression of signs and symptoms was observed, especially regarding the lymph node enlargement. However, the patient presented oral thrush and was started on fluconazole. Suddenly, she noticed a left deviation of the tongue (Figure 1). A magnetic Resonance Imaging of the brain was unremarkable, with the exception of bilateral otomastoiditis.

A EBV-related hypoglossal nerve palsy was suspected. The patient went on with steroids for two weeks. After two weeks, we started to de-escalate steroid therapy. The patient was discharged after a 3-week hospital stay. However, due to the persistence of both otomastoiditis and tongue deviation, further Ear-Nose-Throat and neurologic reevaluations were performed until the complete resolution of the clinical picture.

## DISCUSSION

Neurological complications may rarely occur in IM, including meningitis, encephalitis, cranial nerve lesions, mononeuritis, polyneuritis and spinal cord lesions. Transient psychotic episodes have also been described<sup>15</sup>.

All the cranial nerves can be implicated<sup>7-15</sup>, although a widespread involvement of multiple cranial nerves is very rare<sup>15</sup>. A plausible explanation is the massive neurotropism of herpesvirus<sup>16</sup>. In our case, a potential explanation was also the mechanical compression of the hypoglossal nerve caused by the presence of otomastoiditis.

The pathological lesions of the nervous structures found in IM include dense perivascular cuffing and infiltration of the parenchyma with atypical mononuclear cells<sup>15</sup>.

However, the prognosis is usually good even if healing requires several weeks: the mean time for a complete recovery ranges from 70 days to 240 days<sup>15</sup>.

The use of steroids is also controversial: on the one hand, some authors recommend their use to improve the neurological picture; on the other hand, there is no clear-cut evidence, as steroid therapy may enhance viral replication<sup>15</sup>.

## CONFLICT OF INTEREST:

*The Authors declare that they have no conflict of interests.*

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