

CASE REPORT

Bell's Palsy After Astra Zenica COVID-19 Vaccination

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Abstract

We present a case of peripheral facial palsy developing after the first dose of AZD1222, Astra Zeneca's COVID-19 vaccine. A 31-year-old female received her first dose of AZD1222 vaccine against COVID-19. Later the same day, she developed swelling around her neck and head. The next day, she woke up with hanging eyelid, hanging mouth and loss of sensibility on the left side of her face- indications of peripheral facial paralysis. She later on developed hyperesthesia on the upper extremities. Before vaccination, the patient was healthy and had no history of neurological disease. She fully recovered from the paresis after 2-3 days. Five months after she received her first and only dose of the vaccine, she still complains of severe hyperesthesia in her upper extremities. There have been several international case reports of Bell's palsy after COVID-19- vaccination, but Bell's palsy is not yet a confirmed adverse effect of any COVID-19 vaccine. The aim of this case report is to raise awareness about Bell's palsy as a possible adverse effect of Astra Zeneca's COVID-19 vaccine.

Keywords: Post Covid Vaccine, Bells Palsy, Immune Reaction

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BACKGROUND

An otherwise healthy woman in her 30s was vaccinated against COVID-19 with Astra-Zeneca's AZD1222 vaccine. The day after, she developed peripheral facial paralysis or Bell's palsy, followed by numbness and hyperesthesia in her right arm. Before vaccination, she was in good health and has never experienced any paralysis or sensory disturbances. At clinical control 5 months later, she still suffers from hyperesthesia in the upper extremities, especially on the right side, where touch causes discomfort. She has also developed skin changes (hematomas) in warm conditions, but the initial facial paralysis spontaneously regressed within one day.

CASE PRESENTATION

A 31-year-old woman working as a nursing assistant was referred to the local hospital by her General Practice (GP) due to symptoms following vaccination with AZD1222 against COVID-19. Apart from hip dysplasia, this patient was previously healthy and did not use any medication. On the same day after the first dose of vaccine, she developed skin rash resembling a bruise on her upper body (Figures 1 and 2) and swelling around her neck and face. The next day, she woke up with fever and the clinical picture of right peripheral facial nerve palsy (Figure 3).



Figures 1 and 2 : shows bruise on her upper body and swelling around the face and neck. (Taken by the patient and used with consent from the patient)



Figure 3- shows right peripheral facial nerve palsy: affection of the forehead, the eye and the corner of the mouth. (Taken by the patient and used with consent from the patient)



As the figures show, the forehead, the eye, and the corner of the patient's mouth were affected on the right side. In addition, the patient had blurred vision on the affected eye. Shortly after, the swelling on the right side of her face worsened, and there was numbness and weakness of the right arm for a few minutes. Worsening episodic numbness continued afterwards that she had to shake her arm to relieve symptoms. The patient has never experienced similar symptoms before. Paresis of the face completely regressed spontaneously after 2-3 days, without the patient seeing a doctor or undergoing treatment. The patient first

consulted her GP 6 weeks after the onset of symptoms because of persistent skin changes or bleeding on the upper body, especially with hot showers or physical activity (Figures 1 and 2), and was referred to the thrombosis and hemostasis clinic because of suspicion of bleeding disturbances. Based on the images the patient brought to the consultation, peripheral facial nerve palsy was suspected. The patient was then referred for neurological examination and simultaneously underwent blood work up to check for an underlying myeloproliferative disease (MPN) based on the high Hb, mild leukocytosis, and heat-related skin changes. Neurological anamnesis and examination revealed no suspicion of a central cause of paresis or an ischemic cerebral vascular event. Hyperesthesia was noted on the right side, in addition to mildly decreased strength in the hip and knee joints. The latter is probably due to the patient's known hip dysplasia and tendonitis.

Due to the patient's increased and marginal leukocytosis and elevated hemoglobin, control blood samples, including BCR-ABL, JAK2, exon12, CALR and MPL mutation samples, were taken to the molecular pathology department of OUS to rule out MPN and chronic myeloid leukemia (CML). She was thoroughly examined physically both by a hematologist and a neurologist. There was no evidence of thrombosis or underlying blood disease, including negative mutation tests for MPN and CML, normal coagulation and hemostasis work up, normal serum erythropoietin, and normal MRI of the cerebrum.

The figures the patient took by herself and brought to the consultation were not entirely illustrative, but best covering. Based on the clinical picture, clinical examination, and neurological assessment, the patient was diagnosed with peripheral facial nerve palsy without underlying disease or evidence of thrombosis, which resolved completely. The patient's symptoms were probably due to her COVID-19 vaccination with AZD1222. After 5 months, she was still troubled by severe hyperesthesia of the upper body; light touch of her arms was especially painful. She also struggled with inflammation of her right arm, possibly from tendinitis, which she previously had suffered from. She still has a tendency to bruise (similar to Figures 1 and 2) during exercise or after taking a hot shower, but this has decreased.

There were no new episodes of suspected ischemic cerebrovascular events, except for weakness in her right arm, which she still experiences. The patient has not taken any new medications nor has she been exposed to anything other than the AZD1222 vaccine. Although it cannot be proven, it is likely that there is a connection between the patient's Bell's palsy and the AZD1222 vaccination. There have been similar reports from people who have been vaccinated with other COVID-19 vaccines previously.

OUTCOME AND FOLLOW-UP

The patient had completely recovered from the peripheral facial paralysis after 2-3 days, without undergoing treatment. After 5 months, she was still troubled by severe hyperesthesia of the upper body, and she still has a tendency to bruise during exercise or after taking a hot shower, but this has decreased and is controlled by her GP.

DISCUSSION

The aim of this case report is to raise awareness of Bell's palsy as a possible side effect of Astra Zeneca's COVID-19 vaccine. The development of facial nerve palsy may be due to local pressure from the swelling of the face and neck, but we cannot rule out the possibility that the palsy is due to inflammatory and immunologic mechanisms triggered by the vaccine.

To our knowledge, this is the first case reported in Norway of peripheral facial paralysis following the Astra-Zeneca vaccine. Several cases of facial paralysis have been reported after COVID-19 vaccines in other countries.(1) In December 2020, a study reported four cases of peripheral facial nerve palsy in individuals who received Pfizer's COVID-19 vaccine, while no one in the control group (placebo) had similar symptoms. In a study of Moderna's COVID-19 vaccine, it was reported that three participants in the intervention group and one in the control group developed peripheral facial nerve palsy.(1) Subsequently, several cases of peripheral facial nerve palsy as a possible side effect of COVID-19 vaccines have been reported internationally.

In the United States, the Food and Drug Administration (FDA) reported that there is no definite link between the COVID-19 vaccine and Bell's palsy.(1) In contrast, the National Health Service (NHS) in the United Kingdom confirmed that Bell's palsy is one

of the side effects of the COVID- 19 vaccine.
(2)

According to the FDA, the number of reports of facial paralysis following COVID-19 vaccination received to date is not significantly higher than the naturally expected incidence- they do not indicate increased risk following COVID-19 vaccination, but this may be due to under-reporting.(1) Bell's palsy has previously been described as a complication of influenza vaccination.(3) In 2004, the inactivated intranasal influenza vaccine was shown to increase the risk of Bell's palsy; after this finding, the vaccine was discontinued.(3)

Despite the risk of developing Bell's palsy, the FDA and the NHS, as well as the WHO have approved Pfizer's and Moderna's COVID-19 vaccines because the potential benefits of these vaccines outweigh the risk of facial paralysis, which usually resolves spontaneously.(2,4)

LEARNING POINTS/TAKE HOME MESSAGES

Peripheral facial paralysis can occur following the COVID-19 vaccination.

The paresis usually goes in remission in a few days, and often spontaneously.

It has not been reported recurrence after new vaccinations.

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Conflict of Interest

No interest.

Support Resources

Non.

Ethical Declaration

Non.

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