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Peripheral Facial Paralysis Post-Vaccination with COVID-19: About Two Cases Observed at the University Hospital of Conakry

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Abstract

Peripheral facial palsy (PFP) is a frequent symptom, dominated by idiopathic forms. Those of toxic origin are rare and poorly documented in the literature. We report the case of two patients with an abrupt onset and rapid resolution of PFP following COVID-19 vaccination. Case 1: Male patient, 45 years old, without any particular history benefited from a corticosteroid therapy (Predsone 1 mg/Kg/D for 10 days) and the evolution was favorable with a total recovery of the facial motricity at D21. Case 2: Female patient, 55 years old, without any particular history. She benefited from a corticotherapy (Predsone 1 mg/Kg/J for 10 days), the evolution was also favorable with a total recuperation of the facial motricity at D20. The clinical examination and the etiological research did not show any specific cause. None of our patients benefited from neurophysiological exploration and the biological assessment did not reveal any particularities. The evolutionary profile of this facial paralysis was compatible with a toxic cause. Peripheral facial paralysis, although often idiopathic, can result from a toxic cause. The direct causal link is often difficult to establish and most often relies on a graded approach based essentially on history and imaging.

Subject Areas

Infectious Diseases, Public Health

Keywords

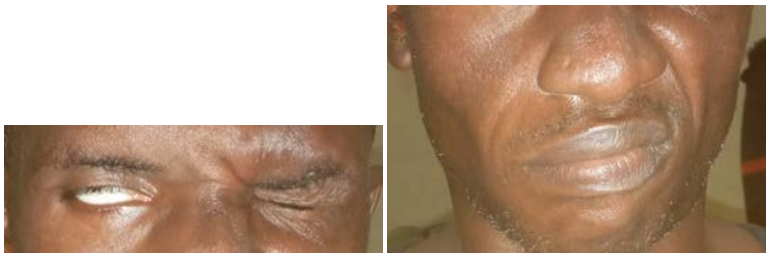
Peripheral Facial Paralysis, Vaccination, COVID-19, Conakry

1. Introduction

Coronavirus 2019 (COVID-19) has become the fastest-spreading pandemic of the 21st century. Globally, the number of cases has reached 175 million in June 2021 [1]. With medical and technological advances, the ability to produce accelerated and approved vaccines is now a reality, as evidenced by the production of COVID-19 vaccines. Advances in computational biology, protein engineering and gene synthesis, and new manufacturing platforms have enabled the production of vaccines with speed and precision [2]. In addition to the known minor risks associated with vaccine administration, it may be necessary to consider potential new side effects profiled with the accelerated production of vaccines [3]. The FDA recommends increased surveillance for Bell's palsy as a potential side effect of the administration of the vaccines to larger populations worldwide [4]. In Guinea, to our knowledge, there was no case of peripheral facial palsy complicating a COVID-19 vaccination described. The objective of this study was to describe the first cases of post-vaccination peripheral facial palsy with COVID-19 in two patients (one female and one male).

2. Observations

Case 1: A 45-year-old shopkeeper consulted for a sudden right facial asymmetry that had been developing for 24 hours following a COVID-19 vaccination. He had presented himself on March 25, 2021 at a vaccination site against COVID-19 given the vaccination campaign launched by the government, where he received his first dose of vaccine Sinopharm right. The next day, after a few hours of facial paresthesias, the patient observed the appearance of a right facial asymmetry. There was no particular history. There was no evidence of medication, influenza infection in the previous days or exposure to cold. Clinical examination showed a right facial palsy of peripheral type with Charles-Bell sign, classified as Housse-Brackman grade IV (**Figure 1**). There was no rash in the Ramsey-Hunt area. Otoscopy was normal. The rest of the neurological examination was unremarkable. The general examination did not show any particular signs. No imaging was performed at this stage. Corticosteroid treatment (Prednisone 1 mg/Kg/D for 10 days) was prescribed with eye protection measures. A



(a) (b)

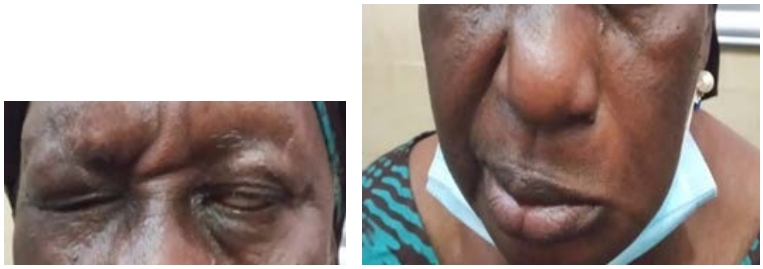
Figure 1. Housse-Brackman grade IV peripheral facial palsy: (a) Charles Bell sign on the right; (b) Effacement of the right nasolabial fold with deviation of the labial commissure on the left.

first clinical check-up at D5 noted a remarkable improvement with a PFP classified as Housse-Brackman grade II. The control at D21 showed a total recovery of the facial motricity.

Case 2: A 30-year-old female patient, mother of two, without profession, consulted the neurology department for brutal facial asymmetry evolving for six hours, following a vaccination against COVID-19. In view of the vaccination campaign launched by the Guinean government against COVID-19, the patient went to a vaccination site, where she received a dose of the Sinopharm anti-covd-19 vaccine on her left arm. Seven hours later the patient observed the sudden appearance of a left facial asymmetry. She had no particular history. There was no evidence of influenza infection in the previous days or of exposure to cold. Clinical examination showed a left facial palsy of peripheral type with Charles-Bell sign, classified as Housse-Brackman grade IV (**Figure 2**). There was no rash in the Ramsey-Hunt area. Otoscopy was normal. The rest of the neurological examination was unremarkable. The general examination did not show any particular signs. No imaging was performed at this stage. Corticosteroid treatment (Prednisone 1 mg/Kg/D for 10 days) was prescribed with eye protection measures. A first clinical check-up at D5 noted a remarkable improvement with a PFP classified as Housse-Brackman grade II. The control at D20 showed a total recovery of the facial motricity.

3. Commentary

Adverse events of the new COVID-19 vaccinations are constantly evolving and receiving attention in both medical journals and the media [5]. Unilateral facial nerve palsies have been reported in the initial clinical trials of the three major vaccines approved for use in the United Kingdom [6]. In the phase 3 trials of the Moderna mRNA COVID-19 vaccine, four cases of Bell's palsy were reported: three in the vaccine arm and one in the placebo arm involving over 30,420 randomized participants [7]. Bell's palsy has previously been linked to influenza vaccinations. In 2004, the inactivated intranasal influenza vaccine was shown to significantly increase the risk of Bell's palsy and was discontinued [8]. An increased incidence of Bell's palsy has also been described with the administration



(a) (b)

Figure 2. Housse-Brackman grade IV peripheral facial palsy. (a) Charles-Bell sign on the left; (b) Effacement of the left nasolabial fold with deviation of the labial commissure on the right.

of other multiple influenza and meningococcal vaccines, although a causal relationship has not been established [9]. A possible mechanism of action could involve reactivation of dormant virus in the central nervous system (CNS) causing facial nerve inflammation or edema after vaccine administration. A proposed mechanism of idiopathic facial palsy suggests reactivation of latent herpes virus in a mechanism similar to Ramsay Hunt syndrome and reactivation of varicella zoster virus [10]. A review of the current literature produced two definitive case reports of unilateral facial nerve palsy occurring after receiving Pfizer-BioNTech COVID-19 vaccine. In Los Angeles, a 57-year-old woman developed severe Bell's palsy 36 hours after her second dose of vaccine [11]. The dose was administered 19 days after the first dose. The patient had left facial paralysis and improved with an antiviral and a steroid. It should be noted that the patient had a history of three previous episodes of Bell's disease paralysis that affected him on both sides. Similarly, unilateral facial nerve palsy was reported in a healthy 37-year-old Italian man, occurring 5 days after his first vaccine dose. The patient had no significant medical history or Bell's palsy and improved somewhat with high-dose steroids [4]. We have described the first cases of post-vaccination peripheral facial paralysis in Guinea. As reported in the literature [4] [11], these observations show two cases of sudden onset PFP, most likely secondary to anti-COVID vaccination 19. They thus open the possibility, at least theoretically, of an etiopathogenic responsibility, although a causal relationship cannot be established.

4. Conclusion

Given the rapid deployment of the COVID-19 vaccine, it is essential that clinicians be vigilant and report adverse events in a timely manner. Health professionals should continue to report and share these findings to further investigate the potential for a causal relationship and the pathophysiology underlying Bell's palsy. A longitudinal cohort study could be used for further analysis of these cases.

Conflicts of Interest

The authors declare no conflicts of interest.

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