Clinical Imaging 82 (2022) 1–4

Contents lists available at ScienceDirect

Clinical Imaging

journal homepage: www.elsevier.com/locate/clinimag

Neuroradiology

Left Bell's palsy following the first dose of mRNA-1273 SARS-CoV-2 vaccine: A case report

Michaela Cellina [a,*], Andrea D'Arrigo [b], Chiara Floridi [c], Giancarlo Oliva [a], Gianpaolo Carrafiello [d,e]

[a] Department of Radiology, ASST Fatebenefratelli Sacco, Milano, Ospedale Fatebenefratelli, Piazza Principessa Clotilde 3, 20121 Milan, Italy
[b] Department of Neurology, ASST Fatebenefratelli Sacco, Milano, Ospedale Fatebenefratelli, Piazza Principessa Clotilde 3, 20121 Milan, Italy
[c] Department of Radiology, Division of Special and Pediatric Radiology, University Hospital "Umberto I Lancisi Salesi", Via Conca 71, 60126 Ancona, AN, Italy
[d] Department of Radiology, Policlinico di Milano Ospedale Maggiore|Fondazione IRCCS Ca' Granda, Via Francesco Sforza, 35, 20122 Milano, Italy
[e] Università degli Studi di Milano, Via Festa del Perdono, 7, 20122 Milano, Italy

ARTICLE INFO

Keywords:
Bell's palsy
SARS-CoV-2 vaccine
Moderna vaccine
Facial nerve paralysis
COVID-19 vaccine side effects

ABSTRACT

Even though no definitive link has been established, Bell's palsy has been described as a potential side effect of SARS-CoV-2 mRNA vaccines in a few reports, and the US Food and Drug Administration has recommended strict surveillance of its occurrence in the vaccinated general population.

We present the case of a previously healthy 35-year-old female patient who developed Bell's palsy 12 h after receiving the first dose of the mRNA-1273 vaccine. Her general practitioner performed the diagnosis, and corticosteroid treatment was initiated, with slow symptoms improvement. The neurologist's evaluation and a contrast-enhanced brain Magnetic Resonance Imaging revealed a subtle enhancement of the left facial nerve, confirming the diagnosis of Bell's palsy.

1. Introduction

Two vaccines using mRNA technology are currently available against SARS-CoV-2 infection: BNT162b2 (Pfizer-BioNTech) and mRNA-1273 (Moderna). Bell's palsy has been observed as a potential side effect of both but without any defined causal relationship.[1] This disorder, also known as idiopathic peripheral facial paralysis, consists of rapid onset facial nerve paralysis. The peak age of presentation is between 15 and 50 years, with about 25 cases per 100,000 per year, without gender predominance.[2] It is currently a diagnosis of exclusion, supported by a typical presentation and usually encounters spontaneous resolution within 6–8 weeks in 70% of the cases. Timely treatment with corticosteroids raises the chance of full recovery to more than 90%.[2]

Two large phase 3 vaccine trials, based on data from 73,799 volunteers, 36,901 of whom got at least one vaccine dose, identified eight occurrences of probable Bell's palsy: seven from vaccinated participants and one from placebo recipients[3]: four incidences of Bell's palsy were recorded in the mRNA-1273 vaccine group, three in vaccine recipients and one in the placebo group[4]; whereas, in the case of the BNT162b2 vaccine, four vaccinated participants developed Bell's palsy.[1,3]

Even if a clear causal relationship between the administration of mRNA SARS-CoV-2 have not been identified, the US Food and Drug Administration recommended monitoring in the general population should be performed to determine the side effects profile of each vaccine.

We report the case of a 35-year-old previously healthy female who developed symptoms of left Bell's palsy after receiving the first dose of the mRNA-1273 vaccine. Brain Magnetic Resonance Imaging (MRI) demonstrated a subtle contrast enhancement of the left facial nerve, typical for this disorder. She received an oral steroid treatment with progressive clinical resolution.

2. Case presentation

A previously healthy 35-year-old Caucasian female, with no previous history of Bell's palsy or Herpes Simplex Virus type 1 infection, received the first dose of mRNA-1273 vaccination on August 6, at 9 a.m. On the same day, about 12 h later, she developed a deep left laterocervical pain and stiffness, followed by the sensation of not holding liquids properly in her mouth. On the next morning, after about 26 h from the injection, she

* Corresponding author.
E-mail address: michaela.cellina@asst-fbf-sacco.it (M. Cellina).

https://doi.org/10.1016/j.clinimag.2021.10.010
Received 26 August 2021; Received in revised form 16 October 2021; Accepted 25 October 2021
Available online 4 November 2021