

- Pritchard C. Incidence of dissociated vertical divergence in intermittent exotropia. *Am Orthopt J* 1998;48:90-93.
- Mohney BG, Holmes JM. An office-based scale for assessing control in intermittent exotropia. *Strabismus* 2006;14:147-50.
- Hatt SR, Mohney BG, Leske DA, Holmes JM. Variability of control in intermittent exotropia. *Ophthalmology* 2008;115:371-6.
- Hatt SR, Liebermann L, Leske DA, Mohney BG, Holmes JM. Improved assessment of control in intermittent exotropia using multiple measures. *Am J Ophthalmol* 2011;152:872-6.

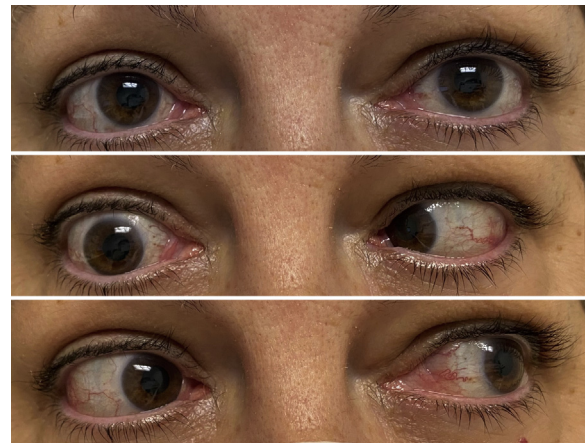
## Acute abducens nerve palsy following COVID-19 vaccination

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**We report the case of a healthy 59-year-old woman who presented with an acute abducens nerve palsy 2 days after receiving the Pfizer-BioNTech COVID-19 vaccine. In adults, such palsies are typically caused by microvascular disease or compressive tumors, although they have also been described after routine vaccinations. Given the temporal relationship between vaccination and the onset of symptoms, the lack of preexisting medical conditions, and unremarkable magnetic resonance imaging, the patient's abducens nerve palsy was felt to be related to her vaccination. This case highlights the importance of recognizing the potential of a COVID-19 vaccine to have neurologic sequelae similar to those that as have been reported with the virus itself as well as with other vaccines.**

### Case Report

A previously healthy 59-year-old woman presented emergently to the Bascom Palmer Eye Institute with acute binocular and painless, horizontal diplopia 2 days after receiving the Pfizer-BioNTech COVID-19 vaccine. She reported 1 day of fever; however, the remainder of her review of systems was unremarkable, and there were no other neurologic symptoms, including facial or generalized weakness, gait abnormality, paresthesias, and anosmia. At presentation, her best-corrected visual acuity was 20/25 in each eye. Intraocular pressure in each eye was within normal limits, and there was no afferent pupillary defect. On sensorimotor examination, the patient had a new right esotropia of 25 $\Delta$  in primary gaze, 30 $\Delta$  in right gaze, and 10 $\Delta$



**FIG 1.** External photographs demonstrating an esotropia and limitation to abduction of the right eye consistent with an abducens nerve palsy.

in left gaze as well as a severe abduction deficit of the right eye (Figure 1). Pictures taken before these ocular motor findings developed demonstrated no prior eye misalignment. Slit-lamp and fundus examination were unremarkable. The erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) were both mildly elevated, at 42 mm/hr and 0.8 mg/dL, respectively. Magnetic resonance imaging (MRI) of the brain and orbits with and without gadolinium at time of presentation showed no abnormal signal, enhancement, mass lesion or mass effect. The patient was diagnosed with an abducens nerve palsy with a likely association to the COVID-19 vaccine, given the temporal relationship. Although her fever resolved, her sensorimotor examination remained unchanged at the most recent follow-up.

### Discussion

Abducens nerve palsy is the most frequent isolated ocular motor nerve palsy, with an annual incidence of 11.3/100,000.<sup>1,2</sup> In children, abducens nerve palsies are often associated with trauma, elevated intracranial pressure, neoplasm, or viral infections.<sup>3</sup> In adults, they are more commonly caused by microvascular disease or tumors.<sup>1</sup>

Though rare, vaccination-induced ocular motor nerve palsies have also been reported. Excluding facial nerve palsies, abducens nerve palsies are the most frequent after routine immunization, followed by oculomotor and trochlear nerve palsies.<sup>4</sup> Abducens nerve palsies after immunization were first reported in 1983 by Werner and colleagues,<sup>5</sup> with 2 of 4 children having abducens nerve palsies that following immunizations for diphtheria-pertussis-tetanus and rubeolla-mumps-rubella virus. Abducens nerve palsies have also been reported in measles-mumps-rubella, hepatitis B, and annual influenza vaccines, with onset ranging from 2 days to 3 weeks from time of vaccination.<sup>6-8</sup> Postimmunization abducens nerve palsies typically

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