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**Re: Qian et al.: Papilledema due to vaccine-induced thrombocytopenia**  
(*Ophthalmology*. 2022;129:190)



**TO THE EDITOR:** I commend the authors for reporting the ophthalmic features of a rare complication of one of the COVID-19 vaccines in their article.<sup>1</sup> The authors have reported a case of vaccine-induced thrombotic thrombocytopenia (VITT) presenting to the ophthalmologist with a history of blurred vision and on examination was found to have bilateral optic disc edema with superficial peripapillary hemorrhages. The visual acuity and the visual fields were reported to be normal. The magnetic resonance imaging with a venogram of the brain revealed cerebral venous thrombosis.

There are a few clarifications required in this case to enhance the understanding of ophthalmic implications of this vaccine-related rare complication. The patient presented with a history of blurred vision, however, the visual acuity and the visual fields were reported to be normal. The ophthalmic evaluation does not explain the cause of the presenting complaint. A possible explanation is that the visual field is not absolutely normal. The visual field in the left eye is suggestive of an enlarged blind spot. Second, the fundus photo is suggestive of mild blurring of the nasal disc margins bilaterally, with superficial retinal hemorrhages around the optic disc in the left eye (pointed at with black arrow marks in Figure C in the original article). The blurring of the nasal disc margins and the retinal hemorrhages cannot be attributed to an increased intracranial pressure (ICP) alone in the absence of features suggestive of venous stasis in the form of dilated tortuous retinal vessels. The explanation could be that there are 2 different pathologies that are the manifestations of a single vaccine-related complication called VITT, which may be responsible for the papilledema and retinal hemorrhages. The papilledema is probably caused by the increased ICP secondary to the cerebral venous thrombosis, but the retinal hemorrhages are caused by thrombocytopenia. The onset of thrombosis in these cases (VITT) is typically 1–2 weeks after vaccination and almost all are accompanied by thrombocytopenia.<sup>2</sup> Although thrombocytopenia alone is rarely sufficient to cause significant retinal hemorrhages, if combined with anemia, it is a known risk factor for the retinal hemorrhages in patients with idiopathic thrombocytopenic purpura.<sup>3</sup> There is another similar hematologic entity known as Moschowitz's disease or thrombotic thrombocytopenic purpura. Percival's classic paper suggests the retinal hemorrhages in thrombocytopenic purpura are seen in 20% of cases and are suspected to be due to the microangiopathy associated with the disease.<sup>4</sup>

Last, it would make the reporting more accurate if it included magnetic resonance imaging features suggestive of raised ICP such as flattening (denting) of the posterior sclera, widening of the perioptic space (subarachnoid), and vertical tortuosity of the orbital optic nerve.<sup>5</sup> Because the bilateral disc edema in this case is very subtle, a mention of the cerebrospinal fluid opening pressure after

lumbar puncture will definitely aid in confirming the diagnosis of an increased ICP.

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**REPLY:** We thank Dr Bassi for her interest in our work. She questions the correlation of blurry vision and normal visual fields and visual acuity and suggests that the visual field in the left eye is not normal. She says that the presence of peripapillary hemorrhages in the absence of venous stasis would not be explainable by papilledema and is rather secondary to thrombocytopenia. She then comments that our report would have been more accurate if it included other “[magnetic resonance imaging] features suggestive of an [increased intracranial pressure] such as flattening of posterior sclera, widening of perioptic space and vertical tortuosity of the orbital optic nerve ... a mention of cerebrospinal opening pressure after lumbar puncture will aid in confirming the diagnosis of increased [intracranial pressure].” We respond to all of these points.

First, the blind spot is slightly enlarged in 1 eye, and this could explain the patient's complaint of blurry vision; however, many patients with papilledema who have normal visual function as measured by central acuity and formal visual field testing complain of blurry vision. The explanation for this is likely the fact that even small changes in visual function, which are not captured by central acuity and static perimetry testing (such as decreased contrast, generalized decrease in sensitivity on visual field testing), are noticed by the patients and perceived as “blurry vision.”<sup>1</sup>

