Pertuzumab and trastuzumab are monoclonal antibodies commonly used in the treatment of HER2+ breast cancer. Each targets a different epitope on the HER2+ receptors, resulting in complementary mechanisms of action. Common ocular side effects of trastuzumab include increased tearing and conjunctivitis, and there have been rare cases of severe retinal toxicity. Pertuzumab can cause conjunctivitis. In June 2020, the FDA approved pertuzumab, trastuzumab, and hyaluronidase (Phesgo) as a subcutaneous injection for treatment of HER2+ early stage and metastatic breast cancer. The most commonly reported side effects of this injection are alopecia, nausea, diarrhea, anemia, and asthenia. We present a case of gradual, painless, and bilateral vision loss in a patient following a Phesgo injection.

The patient is a 62-year-old woman who presented to the ophthalmology clinic in December 2021 with progressive, painless bilateral vision loss. The patient had a history of ER-, HER2+ ductal carcinoma. She had previously received six rounds of chemotherapy consisting of Taxotere, Carboplatin, Herceptin, and Perjeta (TCHP) for 5 months. After completing chemotherapy, she began maintenance therapy, consisting of Perjeta (pertuzumab) injections. She tolerated these treatments without any adverse ocular side effects. One month prior to coming to clinic, the patient received a Phesgo injection in place of her regular infusion. The patient reported blurred visual acuity a few days following the injection.

On the initial ophthalmic exam, the patient’s vision was 20/60 right eye and 20/400 left eye. Intraocular pressure was normal and dilated fundus exam revealed subretinal fluid and optic disc edema, signs of active inflammation. MRI brain and orbit and laboratory workup including for giant cell arteritis, infectious, and other inflammatory causes were ordered. The patient was started on prednisone 60mg daily. The workup was unrevealing. One month later (January 2022), visual acuity worsened with left vision reduced to counting fingers, however, subretinal fluid improved. Seven months later (July 2022), visual acuity improved to 20/60 right eye and 20/125 left eye. Fundus exam revealed bilateral optic nerve pallor, with subretinal fluid resolved.

In conclusion, given the time course of the injection followed by rapid onset of ocular side effects and the otherwise unrevealing workup, we believe the patient’s findings were due to the Phesgo injection. The patient suffered permanent optic nerve damage and her vision did not return to baseline following cessation of the medication. To our knowledge, this is the first documented case of optic neuropathy following Phesgo injection. With the increased emergence of targeted therapies, it is vital for oncologists and ophthalmologists to collaborate to ensure early recognition of and rapid response to potentially detrimental ocular side effects.