A Case of Permanent Optic Nerve Damage Following a Phesgo Injection

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Introduction

- Pertuzumab and trastuzumab are monoclonal antibodies used in the treatment of HER2+ breast cancer.1
- Each targets a different epitope on HER2 receptors, resulting in complementary mechanisms of action.1
- In June 2020, the FDA approved pertuzumab, trastuzumab, and hyaluronidase (Phesgo).2
- Phesgo is a subcutaneous injection for the treatment of HER2+ breast cancer and metastatic breast cancer.2
- We present a case of progressive, painless, and bilateral vision loss in a patient following a Phesgo injection.

Patient History

- The patient is a 62-year-old woman with a history of ER- and HER2+ ductal carcinoma.
- She had previously received six rounds of chemotherapy consisting of Taxotere, Carboplatin, Herceptin, and Perjeta (TCHP) for five months.
- After completing chemotherapy, she began maintenance therapy, consisting of Perjeta infusions, that she tolerated well without any ocular side effects.

Visual Exam Results

<table>
<thead>
<tr>
<th>Date</th>
<th>Visual Acuity Right eye</th>
<th>Visual Acuity Left eye</th>
<th>Tonometry (Applanation)</th>
<th>Dilated Fundus Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/09/21</td>
<td>20/60 +2</td>
<td>20/400</td>
<td>Normal</td>
<td>Subretinal fluid and disc edema</td>
</tr>
<tr>
<td>12/16/21</td>
<td>20/300</td>
<td>Counting fingers (CF)</td>
<td>Normal</td>
<td>Improved subretinal fluid and optic nerve pallor</td>
</tr>
<tr>
<td>1/18/22</td>
<td>CF</td>
<td>CF</td>
<td>Normal</td>
<td>Improved subretinal fluid and mild optic nerve pallor</td>
</tr>
<tr>
<td>2/15/22</td>
<td>20/200</td>
<td>20/200</td>
<td>Normal</td>
<td>Resolved subretinal fluid and mild optic nerve pallor</td>
</tr>
<tr>
<td>7/12/22</td>
<td>20/125</td>
<td>20/125</td>
<td>Normal</td>
<td>Mild optic nerve pallor</td>
</tr>
</tbody>
</table>

Discussion

- Chemotherapeutics commonly cause ocular side effects such as conjunctivitis or tearing, but they rarely cause severe vision loss.
- She initial rounds of TCHP chemotherapy as well as the Perjeta infusions without any ocular side effects.
- Her ocular side effects only manifested following the Phesgo injection. An otherwise extensive workup was negative.
- Possible explanations for the observed side effects include the formulation of the injection or the route of administration (injection vs previous infusions).
- Unfortunately, the patient’s vision did not return following cessation of the Phesgo injection, which has resulted in permanent optic nerve damage and vision loss.

Conclusions

- This is the first case, to our knowledge, that reports optic neuropathy following a Phesgo injection.
- With the increased emergence of targeted therapies, it is vital for oncologists and ophthalmologists to collaborate to ensure early recognition and response to potentially detrimental ocular side effects.

References


Figure 1. Intravenous fluorescein angiography of the right eye (A) showing optic disc leakage, indicative of edema. A color fundus photo of the left eye (B) showing an edematous disc, most pronounced nasally.