**Bilateral central serous chorioretinopathy caused by intranasal corticosteroids: A case report and review of the literature**

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**ABSTRACT**

The relationship between systemic corticosteroids and central serous choriorretinopathy (CSC) has been well established; however, there also appears to be an association with intranasal corticosteroids. A search of the English literature revealed only 3 reported cases of CSC linked to intranasal corticosteroid use and clinical improvement was observed after cessation of the steroid agent. We present an additional case of bilateral CSC resulting from intranasal corticosteroid use and review the literature regarding this uncommon side effect.

Otolaryngologists, as frequent prescribers of these medications, should be aware of their myriad side effects, including ophthalmologic conditions such as CSC.

**REFERENCES**


**CASE REPORT**

The patient is a 48-year-old female seen for rhinosinusitis and allergic rhinitis over a two-year period in the otolaryngology clinic of a tertiary-care medical center. The patient reported a history of undergoing a septoplasty in the past but denied other medical problems or previous surgeries. Her nasal symptoms were largely controlled with a combination of fluticasone propionate nasal spray and oral second-generation anti-histamines; however, compliance with these medications was intermittent. Episodes of acute rhinosinusitis were treated with courses of oral antibiotics and corticosteroids as indicated and a further work-up, including nasal endoscopy and CT scan of the paranasal sinuses, was normal.

During the course of treatment the patient gradually developed intermittent blurring of vision in both eyes and was referred for ophthalmologic evaluation. In the month preceding the onset of these symptoms, she reported more regular usage of her prescribed medications, including the intranasal corticosteroid spray. The most recent documented course of oral corticosteroids the patient had received was more than a year prior. Subsequent ophthalmologic evaluation including a funduscopy examination (**Figure 1**), optical coherence tomography (**Figure 2**) and fluorescein angiography confirmed a diagnosis of bilateral CSC. After exclusion of other possible causative factors, the condition was attributed to her use of intranasal corticosteroids. The medication was promptly discontinued with gradual recovery of vision over a period of two to four weeks. The patient was thereafter maintained on alternative non-steroidal therapy including an intranasal anti-histamine spray and continued use of oral second-generation anti-histamines along with close ophthalmologic follow-up.

**DISCUSSION**

Intranasal corticosteroids are prescribed by a variety of healthcare professionals, predominantly for the treatment of allergic rhinitis and chronic rhinosinusitis. Studies have demonstrated an overall low bioavailability for intranasal antibiotics and corticosteroids, but there may still be potential systemic sequelae.

CSC is characterized as an idiopathic serous detachment of the sensory retina indicative of the diagnosis of CSC. Symptoms can also be bilateral and include other ocular disturbances.

Diagnostic tools include:
- Funduscopy exam
- Fluorescein angiography
- Optical coherence tomography
- The primary treatment for CSC is observation.
- Patients currently using corticosteroids should be advised to stop them.
- In 3 previous reported cases of intranasal steroid-induced CSC, as well as our own, clinical improvement in vision was observed after cessation of the steroid agent (**Table 1**).
- Alternative therapeutic agents should be employed in these cases, with close ophthalmologic follow-up.

**CONCLUSIONS**

CSC appears to be an uncommon side effect of intranasal corticosteroid sprays.

Otolaryngologists should be aware of CSC, its presenting symptoms and management.

The risk of CSC and other ophthalmologic side effects should be considered prior to initiating and during the course of intranasal steroid use.

Empiric discontinuation of therapy may be indicated for patients with ocular complaints, along with a complete ophthalmologic evaluation.

**Table 1. Reported cases of intranasal corticosteroid associated CSC**

<table>
<thead>
<tr>
<th>Case</th>
<th>Age</th>
<th>Sex</th>
<th>Laterality</th>
<th>Condition</th>
<th>Medication</th>
<th>Time to onset</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>45</td>
<td>F</td>
<td>Left</td>
<td>Bronchitis</td>
<td>Fluticasone</td>
<td>6 days</td>
<td>Improved at 6 months</td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>M</td>
<td>Right</td>
<td>AR</td>
<td>Beclomethasone</td>
<td>4 weeks</td>
<td>Improved at 1 month</td>
</tr>
<tr>
<td>33</td>
<td>41</td>
<td>M</td>
<td>Bilateral</td>
<td>AR</td>
<td>Beclomethasone</td>
<td>4 weeks</td>
<td>Improved at 6 months*</td>
</tr>
<tr>
<td>44</td>
<td>48</td>
<td>F</td>
<td>Bilateral</td>
<td>AR</td>
<td>Fluticasone</td>
<td>6 weeks</td>
<td>Resolved at 1 month</td>
</tr>
</tbody>
</table>

AR = Allergic rhinitis

*Current report

*Patient did not return for follow-up and reported subjective improvement when contacted by telephone

**Figure 1.** Funduscopy examination. A) Right and B) left, showing serous retinal detachment indicative of the diagnosis of CSC. C) Right and D) left, two weeks after cessation of steroids with improvement in visual acuity from 20/50 to 20/30 and 20/60 to 20/40 respectively.

**Figure 2.** Optical coherence tomography. A) Left and B) right, showing serous detachment of the sensory retina indicative of the diagnosis of CSC. C) Left and D) right, two weeks after cessation of steroids showing improvement in separation from the retinal pigment epithelium.