The causes of unilateral elevated intraocular pressure (IOP) in patients with anterior uveitis are multiple. In particular, herpetic intraocular inflammation, PSS, and FHIC are entities known to induce ocular hypertension. Each of these conditions has distinctive clinical features (table 1), and must be excluded when managing hypertensive uveitis. AC paracentesis may direct specific therapy in some of these patients.¹

PSS or Glaucomatocyclitic Crisis is an entity characterized by recurrent episodes of unilateral elevated IOP. A significant rise in IOP (often to 40–60 mmHg) makes these episodes occasionally acutely painful; often there is vague discomfort. During an attack there are typically few ocular signs, with the exception of a mild anterior chamber inflammatory reaction. Despite repeated episodes, the stigmata of chronic anterior chamber inflammation remain absent and the angle remains open. Years may pass between episodes. When considering the possibility of PSS, exclude a herpetic etiology; carefully inspect for sectoral iris atrophy. Patients with PSS appear to develop fewer hypertensive episodes with age, and may eventually

References

Practical Tips:
Diagnostic consideration in unilateral hypertensive uveitis

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Core concepts
• Clinical examination permits a differential diagnosis of unilateral hypertensive anterior uveitis.
• Distinguish between the various causes of unilateral hypertensive anterior uveitis, particularly Posner Schlossman Syndrome (PSS), Fuchs Heterochromic Iridocyclitis (FHIC) and Herpetic (Herpes Simplex virus, HSV and Varicella zoster virus, VZV) anterior uveitis.
• Recognize that these can coexist with underlying chronic open angle glaucoma.
• Recognize that PSS is not always a ‘benign’ condition.
• Consider an anterior chamber (AC) paracentesis if it may alter management of a patient, particularly in cases that are immunocompromised or with severe anterior uveitis where a targeted treatment is available.
• Understand which infections to exclude when performing polymerase chain reaction (PCR) such as Herpes Simplex Virus (HSV) Varicella Zoster Virus (VZV), Cytomegalovirus (CMV) and Rubella. Know that not all infections are treatable.
• Treatment of infectious agents might not prevent the development of glaucomatous optic neuropathy and inflammation may return when therapy is ceased. The glaucoma management in unilateral hypertensive uveitis is frequently surgical.

The causes of unilateral elevated intraocular pressure (IOP) in patients with anterior uveitis are multiple. In particular, glaucoma drainage device, infection and amblyopia. Hypotony is a common problem in paediatric uveitic patients post glaucoma surgery even in the absence of overdrainage. If trabeculectomy is performed then tight scleral flap sutures are mandatory. Non-flow restricted glaucoma drainage devices (GDD) should have an intraluminal stent (e.g. 3/0 supramid or 3/0 nylon) in addition to an extraluminal occlusive suture (e.g. 6/0 vicryl), to reduce the risk of post-operative hypotony.

Adequate immunosuppression is crucial in the management of these children. This means the early recognition of poor control with topical agents allowing the institution of systemic steroid sparing agents.
cease having episodes. Nonetheless, a subset of patients with PSS develop chronically elevated IOP, requiring long-term medical therapy or filtration surgery. Although the precise cause of this disorder is not known, CMV and HSV have been implicated as possible causative agents. If an underlying viral source is found, treatment should be aimed at its eradication.2

FHIC is a predominately unilateral condition with chronic low-grade intraocular inflammation. This disorder can be associated with glaucoma, and more commonly, cataract. There are numerous findings that may lead one to suspect FHIC as a cause of a hypertensive uveitis: keratic precipitates in this population tend to be round, small, or stellate, and to be distributed over the entire corneal endothelium (Figure 1). As with PSS, there is a notable absence of peripheral anterior synechiae. Anterior chamber reaction is moderate at most, and mild anterior vitreous inflammation may be seen. The involved eye may be hyper- or hypochromic compared with the fellow eye. Patients with this disorder tend to be asymptomatic, and do not generally require therapy for their inflammation. Glaucoma can be difficult to treat in those patients who develop IOP rise. Infectious agents have been postulated to induce FHIC, particularly Rubella, HSV and CMV.2,3

The role of AC paracentesis in management of hypertensive anterior uveitis remains contentious. It may be beneficial in patients who are immunocompromised; in severe cases of suspected HSV/VZV anterior uveitis requiring long-term valacyclovir; or with PSS or FHIC when CMV is suspected, as it may direct treatment of these disorders (i.e. management of CMV with oral or topical gancyclovir). Topical gancyclovir has fewer side effects than oral. While some sources suggest AC paracentesis is a safe adjunct in the management of anterior uveitis, others question the routine value of this technique, suggesting it rarely changes management and carries a tangible complication risk.4,5 With a positive PCR result, therapy may be initiated, but ocular symptoms may return if therapy is stopped. Additionally, treatment of the infectious agent may not influence the progression of the glaucoma. The glaucoma in this setting frequently requires surgery. Thus, risks of long-term treatment must be weighed against disease severity.2

### References


### Table 1: Clinical findings in hypertensive anterior uveitis

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Keratic Precipitates</th>
<th>Anterior Chamber Reaction</th>
<th>Angle</th>
<th>Lens</th>
<th>Vitreous</th>
<th>Differentiating Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posner-Schlossman Syndrome</td>
<td>Usually Few</td>
<td>Mild</td>
<td>Nil, open</td>
<td>Generally normal</td>
<td>Nil</td>
<td>Few defining signs</td>
</tr>
<tr>
<td>Herpes Simplex Virus, Varicella Zoster Virus</td>
<td>May have ‘mutton fat’ appearance</td>
<td>Mild- severe</td>
<td>Nil to signs of chronic uveitis</td>
<td>Generally normal</td>
<td>May have mild to severe vitritis</td>
<td>Sectoral or diffuse iris atrophy</td>
</tr>
<tr>
<td>Fuchs Heterochromic Iridocyclitis</td>
<td>Stellate, diffuse</td>
<td>Mild- moderate</td>
<td>Fine vessels, open</td>
<td>Cataract (initially PSCC)</td>
<td>Mild cellular response</td>
<td>Iris heterochromia</td>
</tr>
</tbody>
</table>

![Figure 1: Fuchs heterochromic iridocyclitis](image-url)