

Headaches in ophthalmology (part 1)

Ophthalmologists see a large number of patients with headaches or facial pain in the ophthalmic outpatient clinics or in emergency clinics. Over two articles, I will discuss several causes of headaches, ocular manifestations and proposed management and referral options. It is beyond the scope of these articles to discuss the details of each case and its treatment protocols.

As these patients are presenting to ophthalmic departments, it would be useful to classify these headaches as headaches with red eye or headaches with white eye, then further subgroup each in order to find a likely diagnosis.

Headaches with red eye

There are examples of the common causes of headaches or ocular pain with red eye.

Herpes Zoster Ophthalmicus:

This viral infection tends to affect elderly or immunosuppressed patients. Sometimes, patients present with headaches and slightly red injected eye before developing the skin rash.

- **Key feature:** Taking patient history and examining the patient will probably show some cells in the anterior chamber. Patients might also have some corneal changes (micro dendritic ulcers).
- **Treatment:** Antiviral treatment with pain control.

Episcleritis / scleritis:

Episcleritis would usually present with sectoral or nodular redness with associated headaches or eye ache. It is important to differentiate that from scleritis. Usually the pain in scleritis is more intense and tends to happen at night. Most patients would have an inflammatory disorder such as rheumatoid arthritis.

- **Key feature:** Significant red eye with variable level of pain depending on if it is episcleritis or scleritis.
- **Treatment:** Steroids for scleritis.

Anterior uveitis:

Patients with reaction in the anterior chamber tend to present with light sensitivity and redness as well as headaches or eye aches. Seeing the patient on slit-lamp would show cells in the anterior chamber and further investigations might be needed.

- **Key feature:** Slit-lamp examination shows cells in the anterior chamber.
- **Treatment:** Topical steroids.

Table 1: Trigeminal autonomic cephalgias (TACs).

	Cluster headaches	Paroxysmal hemicranias	SUNCT	Hemicrania continua
M / F	3:1	1:3	8:1	1:2
Pain type	Piercing	Piercing	Stabbing	Pressing
Intensity	Extreme	Severe	Moderate / severe	Moderate
Duration	15-120 min	2-60 min	1-600 sec	Continuous with peaks
Frequency	Usually > 5 / day	Up to 30 / day	Up to 200 / day	Continuous
Autonomic features	Conjunctival, Horner's, lid oedema	Similar	Similar	Similar
Preventative treatment	Topiramate, verapamil	Indomethacin	Gabapentin, Topiramate, lamotrigine	Indomethacin
Abortive treatment	Sumatriptan	None	None	Indomethacin

Acute angle closure glaucoma:

Patients tend to present with excruciating headaches, eye pain and red eye, shallow or flat anterior chamber and raised intraocular pressure. It is sometimes difficult to diagnose sub-acute episodes of angle closure but taking a detailed history and performing gonioscopy would help with the diagnosis.

- **Key feature:** Shallow anterior chamber, narrow or occluded angles with raised intraocular pressure.
- **Treatment:** Anti-glaucoma treatment as per usual protocols.

Carotid cavernous fistula (CCF):

These cases present as headaches, slight eye redness with dilated conjunctival blood vessels and possible proptosis. Patients with acute CCF (fast flowing) could also present with cranial nerve palsies, proptosis with raised intraocular pressure.

- **Key feature:** Detailed history, possible trauma, vascular risk factors and identifying subtle signs such as dilated vessels and proptosis as well as an audible bruit.
- **Treatment:** Refer to neurovascular service.

Thyroid eye disease / orbital inflammation:

These patients tend to present with proptosis, red eyes and painful ocular motility rather than headaches.

- **Key feature:** Red, proptosed eyes with various ocular motility deficits. Blood tests would reveal derailed thyroid function tests. In inflammatory orbital disease might have raised inflammatory markers (ESR, CRP) and orbital imaging would show enlarged extraocular muscles (tendons spared in thyroid).
- **Treatment:** Usually steroids for inflammatory orbital disease and referral to endocrinology for thyroid patients and ophthalmic treatment depending on Clinical Activity Score (CAS) score and optic nerve functions.

Trigeminal autonomic cephalgias (TACs):

The TACs share features of unilateral headache and prominent parasympathetic autonomic features, which are lateralised and ipsilateral to the headache.

In these cases patients would usually have some redness along with their headaches. There are several types:

- Cluster headaches: usually men with multiple severe headache attacks usually in the early hours of the morning with red watery eye lasting 15-180 minutes.
- Paroxysmal hemicranias: very frequent attacks with severe orbital pain lasting 2-30 minutes with conjunctival injection and redness. Responds well to indomethacin.
- Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) and short-lasting unilateral neuralgiform headache attacks with cranial autonomic symptoms (SUNA): multiple episodes of headaches or orbital pain lasting less than 10 minutes or various ocular signs.
- Hemicrania continua: unilateral headache present for more than three months and periocular parasympathetic signs and responds to indomethacin.



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