Eye Casualty Guidelines - East Surrey Hospital

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1. Aim

The aim of these guidelines is to provide a basic management plan for a range of conditions likely to be seen in Eye Casualty. In particular they are meant to outline what investigations may be appropriate from Eye Casualty and provide guidance for appropriate referral on of the patient. They are not meant to replace textbooks, which will contain far more detail, but should be used in conjunction with them.

2. Principles

Eye Casualty is the appropriate setting for patients with urgent or acute eye problems. It should not be replacing outpatients. Patients with chronic or non - urgent conditions should be investigated and treated from clinic not casualty. **We do not encourage multiple reviews in Casualty. Suitable cases for Casualty follow-up should be those requiring review within 2 weeks (e.g. trauma, corneal ulcers and severe iritis).**

a) Patients should only be **followed up** a **maximum of twice in casualty**. Patients who need more than 2 reviews or review in >2 weeks must be booked into and seen in a Consultant clinic.
b) Think carefully if a patient needs to be followed up at all or simply advised to return if the condition is not settling.

3. General guidance

Clearly it is hoped that all patients will be accurately diagnosed and appropriately treated, however that does not mean that every last detail needs to be sorted out in casualty. The important step is to distinguish serious pathology from more minor conditions. Remember many conditions are not sight threatening and are self-limiting.

Any referrals regarding **children**, or cases with suspected **endophthalmitis or retinal tears/detachments** should be **prioritised** and seen before other referrals where possible to ensure prompt management.

As a general rule:

- Always check visual acuity.

- If the visual acuity is reduced always try and explain why.

- Have a low threshold for a dilated fundal examination.

- Have a low threshold for glucose and BP measurements.

- Ask for help when needed, but bear in mind need for urgency, i.e. now, today, in outpatients.

- Try and make a diagnosis and or action plan.

- Write this clearly in the notes.

- Sign legibly and use stamp where possible.

Eye Casualty Rules

Respect the rules and all members of staff. Remember the emergency service is a team effort and not only the on call Drs responsibility.

When booking, respect the template and be mindful of your colleagues.

Arrange follow ups in CAS with the Triage/CAS nurse; allow max number of 2 in max interval 2 weeks; refer to specialised clinic or discharge.

To arrange appointment in specialised clinic fill in the referral form to the relevant consultant and leave with the notes for him/her to review.

To book an appointment in General clinic use the outcome form with clear instructions on it, send to reception.

Take ownership of your patients and follow them up in your clinic unless they require specialist input (see above).

Hold and answer the bleep at all times when your turn on the Rota.

Secure cover for the bleep if your turn, but not able to hold it, do not ask the nurses to answer it.

Do not accept referrals on the bleep; ask an e-referral to be sent. The bleep is for advice or for immediate emergencies only, please feed this back to referral source when misused.

Follow the guidelines template to triage the letters.

Allow time in clinic to prioritise triaging the urgent letters if requested by the nurses. This to help your colleagues on call to see the patients as early and efficiently as possible.

Letters triaged by a Consultant cannot be re-graded.

Never accept referrals on the bleep for out of hours unless on call, inform the nurse to enter the patient on the system.

All complex cases for on call should be discussed with the on call doctor. Regular communication enables the smooth running of the service.

Accept the possibility that not all cases will be true emergencies and should always be urgent.

Sight- threatening cases must always be prioritised and seen by the on call Dr during clinic before 5 p.m.; they should be added to the clinic list as an extra.

If the referral letter doesn’t contain all the important information to secure proper triaging, ask the nurse to reject it via email.

Do not hesitate to propose new ideas, everyone's opinion is valued.

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ACUTE PRIMARY ANGLE CLOSURE GLAUCOMA

Risk Factors for PACG

Age: Most common in 55-70 age group

Sex: More common females

Race: More common Asian/Chinese/Eskimo

Refraction: More common hypermetropes

Lens Status: crystalline or cataractous lens

Symptoms:

Pain in the eye, radiating to brow then headache, haloes around white light sources, then blurring of vision.

Unwell, nausea, vomiting. May have had sub-acute attacks previously with above symptoms, which resolved spontaneously.

Signs:

Patients may have some or all of signs below

Normal or reduced visual acuity

IOP elevated (variable range 22-80 mmHg)

Injected

Corneal oedema

Unreacting pupil

Oval pupil

Shallow anterior chamber

Disc may be normal, swollen or cupped

Gonioscopy: no angle structures visible and/or PAS. Always do gonioscopy in fellow eye as this helps to confirm angle configuration.

Treatment:

Stage 1

1. 500mg acetazolamide orally if not vomiting or IV slowly if unwell.

   Check for Sulphonamide allergy first; caution in patient with Sickle Cell disease.

2. G Timolol 0.5% stat if no contraindication

   G. Iopidine stat

   G. Predsol 0.5% x 3 stat

3. Analgesics and antiemetrics as indicated.

   Lie Supine in a bright room while waiting Acetazolamide and drops to work

4. After 1 hour, recheck IOP and Pilo 4% x 3 drops stat in affected eye.

Stage 2

After further 30 minutes check IOP.

If not reduced consider:

1. 50% glycerol 1g/kg orally (caution in diabetics)
2. If still vomiting consider 20% Mannitol IV 1-1.5g/kg given over 45 minutes.
3. Inform senior colleague on call at this stage.

Stage 3

1. Perform YAG peripheral iridotomy as soon as cornea is clear and patient is well enough.
2. Continue G.Predsol 0.5% QDS, G.Timolol 0.5% BD in affected eye (and G.Pilo 2% ODS if above has not controlled IOP)
3. Perform PI in fellow eye.
4. Refer to Glaucoma consultant. Always book with Visual Fields on the day

ACUTE ORBIT

History:

Symptoms of acute infection, fevers, rigors

History of sinusitis

Any history of thyroid dysfunction or systemic symptoms associated

Previous history of orbital inflammatory disease

Systemic symptoms of Wegeners / vasculitis

Known systemic malignancy esp. lymphoma

Examination:

Document soft tissue involvement – mark extent if suspicion of cellulitis and document any necrosis, fluctuant swelling, crepitus or skin anaesthesia

Ptosis or lid retraction, ocular movements

Optic nerve function: Acuity, RAPD, colour vision

Exophthalmometry

Auscultate if any signs of CCF

Investigations:

Systemic observations – temperature, BP, pulse

FBC, ESR, CRP, U&Es and consider TFT+ TBII if suspicion of TED

CT orbits with contrast

Action:

Discuss with the Eye Cas registrar/Consultant

Consider admission

If suspected orbital cellulitis follow protocol in paeds section

Do not give steroids without consultation with Oculoplastic consultants unless emergency situation with optic nerve compromise

Consider NSAIDS whilst waiting test results/definitive diagnosis

Urgent discussion with oculoplastics consultants in QVH recommended

NEUROLOGICAL (Acute)

Refer acute neurological cases (e.g. aneurysms) to the Neurosurgery team at St Georges.

Use www.referapatient.org to refer. Please access this webpage and select the 'make a referral' button and fill out the necessary information and clinical details. Once submitted, the on-call neurosurgery doctor will be informed of the referral by text and will review and respond at the earliest opportunity. The response will be received as a pdf letter which will be emailed to the (secure) address provided by the referrer. If you wish to speak to a doctor whilst completing a referral, please contact St George's Hospital switchboard on **020 8672 1255** and ask for the 'On Call Neurosurgery Registrar' or access their bleep (**7242**) via the automated bleep desk. They may be unable to answer immediately if they are taking another call so please wait for a reply.

Contact the local PACS transfer teams or radiographers to send any relevant imaging at the earliest opportunity via the **Image Exchange Portal (IEP)**. If your case is urgent then please specify that these scans should be transferred as a '**Blue Light Transfer**'.

For further information, visit: https://www.stgeorges.nhs.uk/service/neuro/neurosurgery/

If a patient has been found to have an abnormality with the **pituitary** gland then they must have an endocrine work-up/review here at East Surrey Hospital → refer to Dr Sunil Zachariah.

Subsequently, refer the patient to → Miss Joan Grieve at Queen Square. Do not refer to St. Georges.

For other presentations e.g. papilloedema, optic neuritis, diplopia, ptosis, cranial nerve palsies please see section on Neuro-Ophthalmology pages 39 – 47.

Eye casualty guidelines

SASH

Endophthalmitis

Protocol

Perform Vitreous Tap +- AC tap as soon as possible after diagnosis of Endophthalmitis

- If post anterior segment procedures do an AC tap as well
- If post intravitreal injection just vitreous tap

Vitreous tap: (Step wise instructions)

- Proxymetacaine anaesthesia
- Povidone iodine prep
- Lidocaine 1% sub conjunctival
- Use 2ml dry syringe with blue 23g needle. Insert into mid vitreous cavity 3-4 mm posterior to limbus.
- Extract fluid slowly (if you can see fluid you have enough – only 0.2ml required).
- Withdraw needle, use separate prepared intravitreal injections in insulin syringe with mounted needle. Inject through the same area.
- Plate sample - one drop into each of two sets of agar, a slide and aerobic then anaerobic blood culture bottles.
- Antibiotic choice:
  Ceftazidime 0.2mg **AND**
  vancomycin 1mg
  If allergic to ceftazidime use:
  Amikacin 0.4mg
  (All are given in 0.1ml volume)

Bring Specimens to Pathology Lab reception, Dr has to inform Crawley Hospital that specimens are on route.

List of Items needed to assist if requested:

- TAP pack- available in the drug cupboard on Limpsfield ward
- Trolley
- 2 packs (3 AGAR PLATES), and 2 blood culture bottles: These are kept in the Haematology fridge, ESH Path reception, ground floor (available 24 hrs,7 days a week)
  Contact details: bleep 554/553 or ext. 6459/6456
  Dr to collect from the lab or ask a porter to bring the plates on site URGENTLY

- Povidone iodine 10%, Vancomycine 500mg/1000mg ampoule AND Ceftazidime 250 mg/500mg/1g/2g ampoule- available in the drug cupboard on Limpsfield ward
- Pencil to write on the slide
- Enough patient labels
- 2 secure plastic bags for specimens
- Endophthalmitis register – in the drug cupboard on Limpsfield ward

NB: 1.Please check Expiry dates for Agar plates and culture bottles, if out of date contact path lab which receive these from microbiology department Crawley 2. Please enter the procedure in the register and complete DATIX report.

Dilution methods for Intra-vitreal Antibiotics:

Vancomycin 1mg/0.1ml:

From 500mg Vancomycin Ampoules: Dissolve 500mg vancomycin in 10ml 0.9% sodium chloride (=50mg/ml), then make volume up to 50ml in a 50ml syringe with 0.9% sodium chloride (=10mg/ml), inject 0.1ml (=1mg) into mid vitreous.

From 1gm Vancomycin Ampoules: Dissolve 1000mg vancomycin in 10ml 0.9% sodium chloride taken from a 100ml small saline infusion bag (=100mg/ml), reinject into same 100ml bag (=10mg/ml), inject 0.1ml (=1mg) into mid vitreous.

Ceftazidime 1mg/0.1ml:

From Ceftazidime 250mg injection: Use a 20ml syringe to draw up 10ml of 0.9% sodium chloride. Dissolve 250mg of Ceftazidime in saline, withdraw into syringe then make up to 12.5ml with 0.9% sodium chloride(=20mg/ml). Inject 0.1ml (0.2mg) into mid vitreous.

From Ceftazidime 500mg injection: Use a 50ml syringe to draw up 10ml of 0.9% sodium chloride. Dissolve 500mg of Ceftazidime in saline, withdraw into syringe then make up to 25ml with 0.9% sodium chloride(=20mg/ml). Inject 0.1ml (0.2mg) into mid vitreous.

From Ceftazidime 1g injection: Use 10ml syringe to draw up 10ml 0.9% sodium chloride from a 100ml bag of saline. Dissolve 1000mg Ceftazidime in the saline, withdraw into syringe then inject into 100ml saline bag (=20mg/ml). Inject 0.1ml (0.2mg) into mid vitreous.

From Ceftazidime 2g injection:(Only use 2g Ceftazidime if you have no choice) Use 10ml syringe to draw up to 5ml of 0.9% sodium chloride from a 100ml bag of saline. Take an additional 5ml of saline from an ampoule into same syringe. Dissolve 1000mg Ceftazidime in the saline, withdraw into syringe and discard 5ml of this solution, inject the rest 5ml into the 100ml saline bag (=20mg/ml). Inject 0.1ml (0.2mg) into mid vitreous.

Amikacin 0.4mg/0.1ml: From 500mg injection: Withdraw entire vial into a 25ml syringe, make up to 25ml with normal saline. Inject this 25ml into a 100ml normal saline bag and mix. The resultant solution is 0.4mg in 0.1ml

GIANT CELL ARTERITIS (GCA, Arteritic anterior ischaemic optic neuropathy)

GCA is an ophthalmic emergency. Referrals to Ophthalmology for review should only be accepted if there are ocular symptoms e.g. reduction in visual acuity.

Presentation:

Sudden drop in VA (usually <6/60), New onset headache, Scalp tenderness, Jaw claudication, Night sweats, weight loss, myalgia.

Examination:

Check VA, RAPD, colour vision. Routine anterior segment examination followed by dilated fundus examination to visualise optic disc for pallor/swollen disc, peripapillary haemorrhages and cotton wool spots.

Palpate both temporal arteries to see if they are pulsatile and any associated tenderness.

Also look for Anterior ischaemic optic neuropathy (AION)*, Central retinal artery occlusion, Cilioretinal artery occlusion or branch artery occlusion and ocular motility abnormality. Lack of clinical findings in the fundus doesn't exclude GCA.

*(**Non** arteritic AION is more common than arteritic, characteristics include: younger age group, vascular risk factors, altitudinal field defects, often less severe visual loss, crowded disc – check other eye: if disc not crowed then suspect arteritic).

Investigation:

- ESR (usually high but *can be normal therefore need to do CRP as well;* Remember other causes of high ESR: e.g. cancer, myeloma; infection; endocarditis)

- CRP

- FBC (normocytic, normochromic anaemia, high platelets)

- U+E and glucose (baseline tests as patient may need steroids)

- Baseline blood pressure

- Consider urgent diagnostic temporal artery biopsy/ ultrasound

Management:

GCA (Arteritic anterior ischaemic optic neuropaty) with visual loss is an emergency *– risk of visual loss in 2nd eye within 24h*

Treat immediately and discussing with on-call Consultant with input from Medical on-call team. Also hand over the patient to the medical team for further review and follow up. Review in ophthalmology under the care of the on call consultant, refer to Rheumatology.

1. Admit

2. IV steroids (e.g. iv Methylprednisolone 1g OD for 3 days, followed by oral prednisolone 1-2mg/kg OD and slow taper over months. If methylprednisolone not available then use hydrocortisone 100mg iv).

3. Aspirin 75mg od po unless contraindications

4. Lansoprazole 30mg od po

5. Bone protection

GCA with moderately reduced vision:

Start on oral prednisolone 1-2mg/kg OD and follow in clinic under the care of the on call consultant. Consultant on call should be informed of all patients commenced on steroids or requiring a temporal artery biopsy for suspected giant cell arteritis**.**

GCA without any ophthalmic symptoms should not usually be accepted to CAS & needs to be referred to Rheumatology/Acute Medicine for management

Precautions with steroids:

Monitor Blood pressure and BM

CXR to rule out old TB

Dipstick urine +/- MSU

Advise against smoking, increase Vit. D, calcium

Low sugar diet.

Rheumatology referral for osteoporosis management, follow up, bone densitometry

Temporal artery biopsy (TAB) procedures are not carried out by the Ophthalmology team at ESH. The vascular team carry out this procedure. They can be contacted via sash.vascularinpatientreferrals@nhs.net and their fax number is 01737 231 876.

ORBITAL CELLULITIS

This is infection of soft tissue behind the septum i.e. fat and muscles. It is an ophthalmic and medical emergency which can lead to permanent loss of vision and death from intracranial complications. It is commoner in children than adults. For paediatric orbital cellulitis see page 50.

Assessment includes:

- ➔ history = recent sinus infection, orbital/neurosurgery to head/face, trauma, dental infections, systemic bacteraemia
- ➔ examination = swollen lids with skin changes e.g. necrosis, **chemosis, proptosis, restricted eye movements**, reduced vision and colour vision, & patient may have an RAPD

Management:

These patients should be jointly be managed with the ENT team +/- Oculoplastic team

- ➔ admission for IV antibiotics, also blood tests (blood culture, FBC)
- ➔ imaging (CT orbits/sinuses/brain)
- ➔ ENT assessment for sinus drainage
- ➔ Daily observation of visual function

Antibiotic choice:

First line

- ➔ Co-amoxiclav 1.2g IV TDS 1 week

If Penicillin allergic:

- ➔ Cefuroxime 1.5g IV TDS (+ Metronizadole 400mg PO TDS (or IV 500mg TDS if unable to take PO)

If severe Penicillin allergy (e.g. anaphylaxis):

- ➔ Teicoplanin 800mg IV stat then 400mg IV OD (if <80kg) or 600mg IV OD (if > 80kg) + Gentamicin 5mg/kg/day (Will need drug levels monitoring) + Metronizadole 400mg PO TDS (500mg IV TDS if unable to take PO)

Restricted for ENT recommendation only:

First line in Orbital cellulitis → Ceftriaxone 2g IV OD + Metronizadole 400mg PO TDS (500mg IV TDS if unable to swallow)

RETINAL DETACHMENT

For all retinal detachments, if Mr Herbert is around please discuss with him as he may be able to accommodate the patient and if not then refer to Moorfields/Brighton VR Fellow in hours or if out of hours then discuss with their A&E/On-call doctor.

ACUTE ANTERIOR UVEITIS IN ADULTS

Uveitis refers to the presence of intraocular inflammation. Every effort should be made to establish a specific diagnosis, though this may not always be achieved at the first visit. A specific diagnosis will inform on prognosis, guide management, avoid mis-management, and establish a relationship (if any) to systemic disease.

The anatomical and clinical classifications of uveitis are the cornerstones of diagnosis.

ANATOMICAL CLASSIFICATION - defines the predominant anatomical location of inflammation in the eye.

· Anterior uveitis: Anterior chamber

· Intermediate uveitis: Vitreous cavity

· Posterior uveitis: Retina and / or choroid

· Pan-uveitis: All above locations equally involved

CLINICAL CLASSIFICATION - defines the clinical association or aetiology of the inflammatory process.

· Non-infectious with no known systemic association (e.g. isolated AAU; Birdshot retinochoroiditis)

· Non-infectious with known systemic association (e.g. ankylosing spondylitis;sarcoidosis)

· Infectious (eg ARN; TB)

· Masquerade – can be non-malignant (e.g. chronic RD) or malignant (e.g.intraocular lymphoma)

· Medication induced (e.g. rifabutin)

DOCUMENTATION

A thorough history and examination are essential, and a meticulous documentation of the findings at the first visit is crucial in the process of diagnosis. It is often at presentation that clinical signs are at their most meaningful, before time and treatments alter them. Lack of good documentation at this stage cannot be rectified later – so your notes are vital.

Good drawings speak volumes. Please include: presence of globe injection; the character & distribution of KPs; other corneal changes where relevant; AC cells & flare, fibrin or hypopyon; the state of the iris and pupil, lens changes; the state of the vitreous cavity; and a fundus drawing.

New presentation (i.e. new patients or existing patients with first casualty visit with flare up of symptoms) should be assessed before tonometry and mydriasis in order to properly document all anterior segment findings (e.g. redness, corneal sensation.

RECURRENT UNILATERAL (NON-GRANULOMATOUS) ACUTE ANTERIOR UVEITIS (“AAU”)

Acute anterior uveitis (AAU) that is unilateral at presentation and non-granulomatousis the commonest form of uveitis in adults and is strongly associated with HLA B27 antigen. We use the term AAU to refer to a particular clinical syndrome described below, rather than its strict semantic definition.

Features of the syndrome of Acute Anterior Uveitis

1. Anterior uveitis

2. Acute course - sudden in onset (developing over hours to days) and limited in duration (usually less than 3 months). Untreated, the symptoms may escalate rapidly over 1 – 3 days.

3. Unilateral but subsequent attacks may affect either eye. The fellow eye may become involved before the inflammation in the first eye has settled, but bilateral simultaneous involvement is rare, and should raise suspicion of alternative diagnoses.

4. Onset with redness, discomfort, pain, photophobia, blurred vision

5. Recurrent unilateral attacks (affecting either eye)

6. Age at onset of 1st attack < 40 years , between 16 – 40 years

7. No granulomatous features (KPs no more than dust, cannot be easily individualised, no iris nodules)

8. Posterior synechiae, anterior chamber fibrin, or hypopyon may be present in severe attacks

9. Significant vitritis, cystoid macular oedema, or disc swelling may occur in severe attacks

10. Ankylosing spondylitis or another HLA B27 associated disease (e.g. psoriatic arthritis, Crohn's disease, ulcerative colitis, Reiter's disease) present in only about 50% cases

11. Clinical features (ocular or systemic) do not suggest another diagnosis

12. Posterior uveitis (retinitis, choroiditis, or retinal vasculitis) is not consistent with "AAU" and suggests a different diagnosis. Note: Dilated examination of both eyes is essential to exclude posterior segment inflammation.

An important role of the ophthalmologist is to identify associated systemic disease in these patients and to arrange appropriate referral (refer to spondyloarthritis screening tool in eye casualty).

TREATMENT – General Principles

There is a tendency to under-estimate the severity of attacks, and a tendency to under-treat attacks even when severe. A casual approach to treatment even when the severity at the first visit appears to be mild, can lead to inadequate control of inflammation.

Be aware of:

· The inherent nature of HLA B27-associated AAU is rapid escalation of severity over 1 -3 days (it is not uncommon for a transformation from mild uncomplicated disease to blinding and painful disease to occur in this time frame). Occasionallythis escalation occurs later.

· The general principal therefore is to treat aggressively early, observe improvement, and only then to slowly taper treatments.

· Persisting redness, photophobia, pain, involuntary eye closure – these usually indicate problems with uncontrolled inflammation in the absence of another confirmed explanation.

· 1st attack patients. The first attack is frequently the most severe and prolonged for several reasons (late presentation, unfamiliarity with drop instillation, tendency to relax therapy when symptoms better). Greater vigilance required in these patients. **Discuss all 1st attack patients with Consultant on call especially if severe or complicated disease**

· Poor compliance or likelihood of poor compliance. Consider medical and social factors that may lead to difficulties with self-medication. Greater vigilance required in these patients.

Treatment:

1. Topical & Sub-conjunctival Corticosteroid Intensive (hourly, sometimes more frequently) topical steroid using a strong preparation such as g.prednisolone acetate 1% (g.PredForte 1%) is essential in the early stages. If compliance with this very frequent regimen cannot be guaranteed or if the attack is very severe at onset, sub-conjunctival corticosteroid (e.g. betamethasone 4mg or dexamethasone 4mg), repeated if necessary, is important.
2. Topical Cycloplegic Mydriasis - The importance of this cannot be overstressed. Effective cycloplegic mydriasis achieves pain relief and will shorten the duration of an attack. The persistence or progressive accumulation of posterior synechiae is associated with several complications (persistent inflammation, macular oedema, cataract, glaucoma,complicated future cataract surgery). Every effort should be made to produce maximal mydriasis at the first visit, and the state of the pupil and the end of the consultation should be documented.
   In the acute situation, patients who have not responded to one application of topical mydriatic should be given intensive g.cyclopentolate 1% and g. phenylephrine 2.5% (one drop of each every 5 minutes for up to 30 minutes).

Note: g.Phenylephrine 10% is specifically contraindicated in children, elderly patients, and patients with hypertension or other cardiovascular disease. It has significantly greater systemic side-effects and offers little advantage over 2.5% as a mydriatic.

(AT PRESENT, MYDRICAINE IS NOT AVAILABLE IN THE DEPARTMENT BUT IT IS IN THE PROCESS OF BEING RE-INTRODUCED)

Sub-conjunctival Mydricaine: Use if intensive topical mydriasis fails to achieve good mydriasis. The injection can be repeated at daily intervals if required.

Mydricaine No 2 is the formulation for adults, aged 16 – 75 years. It comes as 0.5ml ampoule. It contains atropine 1mg, adrenaline solution 1 in 1000 0.12ml [=0.12mg], and procaine 6mg.

Mydricaine No 1 is the formulation for children and adults over 75 years. It comes as 0.5ml ampoule and contains the same constituents at half the doses.

Acute and transient anxiety, tremor, pallor, tachycardia, and hypertension are not uncommon after Mydricaine injection, and patients may need to keep lying down for a while post-injection. Rarely, cardiac arrhythmias occur (call on-call medical SpR in this event).

Following these acute treatments, mydriasis should be maintained with anticholinergics such as g.cyclopentolate 1% qds until the next review.

When to consider ward admission:

· Severe disease at onset with hypopyon and / or intense vitritis

· Escalating inflammation despite intensive therapy

· Uncontrolled pain

· Problems with compliance

In some patients with exceptionally severe and blinding disease, systemic steroids will be necessary.

INTRA-OCULAR PRESSURE

Most patients with AAU will have a normal or low IOP at presentation (the IOP then rising as inflammation is controlled). A minority will have high IOP at presentation (causes include marked fibrin or "plastic" aqueous, accumulated PAS, or rarely pupil block). The principles of treatment of the AAU are the same in these patients and the IOP should be controlled medically as needed. In patients who are "steroid responders", never undertreat with steroid for fear of an IOP rise – treat the inflammation as needed; review soon & treat IOP on its merits (consider **Loteprednol** if inflammation not too severe and IOP proving difficult to control. **(Loteprednol has to be requested specifically in advance from pharmacy on a "one off exemption form" as it is non-hospital formulary)**

FOLLOW-UP OF AAU

· In most patients, management of the entire acute episode should occur within eye casualty. All patients should be reviewed soon in eye casualty (time interval is a clinical judgement, but in general should not exceed one week). This is because of the inherent tendency of inflammation to escalate early during an attack.

· Patients already under active clinic follow-up – refer back to uveitis/MR service after any urgent problems have been addressed.

· Patients who have had recurrent attacks, who know their disease well and whose AAU is settling well or has settled at casualty follow-up visits:

- Discharge with a decreasing scale of treatment over several weeks and advice to return if further problems

- If there is concern of an undiagnosed systemic association, refer to uveitis/MR service

- Patients with typical recurrent unilateral non-granulomatous AAU who have had uncomplicated disease and who know their disease & symptoms well are advised to keep a bottle of topical steroid (e.g. g.PredForte 1%) and mydriatic (e.g. g.cyclopentolate 1%) unopened at home. They should dilate their pupil and use the steroid drop frequently in the event of a flare up when they are sure this has occurred. Such early treatment will enhance recovery. However, this advice is not a substitute for ophthalmological diagnosis and supervision, and these patients are also advised to attend eye casualty within 24 hours. This advice should **not** be given to those who have not had recurrent attacks or those who are not very familiar with their disease & symptoms

SIMULTANEOUS BILATERAL ANTERIOR UVEITIS

· Treat as necessary with topical steroid and mydriatics.

· Refer all patients to the uveitis/MR service

CHRONIC ANTERIOR UVEITIS

· Treat as necessary with topical steroid and mydriatics.

· Refer all patients to the uveitis/MR service

INTERMEDIATE AND POSTERIOR UVEITIS

· Refer all patients to the uveitis/MR service

NOTE

· Certain forms of posterior segment intraocular inflammation are very urgent (eg macular threatening toxoplasma retinitis, CMV retinitis, acute retinal necrosis syndrome, infective endogenous endophthalmitis). These cases must be discussed with the consultant on call.

SUMMARY OF CONDITIONS TO REFER TO THE UVEITIS/MR SERVICE

· AAU –with severe or complicated disease or suspicion of underlying systemic association

· Any granulomatous form of uveitis

· All chronic forms of uveitis, regardless of anatomic location

· All intermediate uveitis

· All posterior uveitis

· All panuveitis

These guidelines are not for childhood uveitis. Children presenting with uveitis should be discussed with consultant on-call or the paediatric ophthalmology service.

BACTERIAL KERATITIS/CORNEAL ULCER

Document: contact lens use (type/duration of wear/last worn), preceding trauma, past corneal disease or surgery, topical drop use, systemic antibiotic or immunosuppressive Rx.

Microbiology samples:

Samples need to be sent as urgent and the microbiology lab informed by telephone – ask switchboard in hours. For out of hours contact Crawley Hospital ext 5332 and ask for the Microbiology lab technician to inform them. Take the sample yourself if out of hours to the Pathology lab in East Surrey Hospital.

Send contact lenses & case if possible, with consent from patient.

Wipe pus/mucus/debris with a sterile C&S swab & send for culture.

For small ulcers with insufficient to inoculate plates – place the sterile needle/blade directly into a universal container with a small amount of sterile water or saline for the lab to inoculate into BHI broth.

Scrape kits kept in the Haematology fridge, ESH Path reception, ground floor (available 24 hrs,7 days a week) Contact details: bleep 554/553 or ext. 6459/6456. Dr to collect from the lab or ask a porter to bring the plates on site URGENTLY

Use a green needle or blade, fresh for each plate or slide. Obtain samples from the advancing edge of the ulcer. Inoculate the surface of plates over the central cross and the slides in the etched circle. Kit in order of inoculation:

1) chocolate agar

2) slide (gram stain)

3) blood agar

4) Sabouraud's

Ensure each sample is labelled with a patient sticker, for the plates these should be stuck on the base of the plate (not between the lid and the base). The microbiology request form should have clear documentation of the contact telephone number for gram stain results. All samples to be sent as urgent.

Treatment: g Moxifloxacin 0.5% / Levofloxacin 0.5%, hourly plus Eye Cas follow up 24-48 hours. Consider additional cyclopentolate 1% TDS and oral NSAIDS for analgesia.

Depending on severity and difficulty of drop administration consider admission plus hourly G. Ofloxacin 0.3% and G. Cefuroxime forte hourly, alternating half hourly, seek senior &/or corneal specialist advice.

Severe Bacterial/Acanthamoeba/Fungal Corneal ulcer

These patients should be referred for onward management by the Cornea team at Queen Victoria Hospital in East Grinstead. Discuss in-hours (9am to 5pm) with them to take over care for urgent severe bacterial corneal ulcers failing to respond or patients with suspect/confirmed Acanthamoeba and/or fungal corneal ulcers. There is an 'SOS Nurse' at QVH working between 8am and approximately 4pm Monday to Friday on 01342 306782 and you can ring them to refer/discuss these patients too.

CELLULITIS in ADULTS

Pre-septal Cellulitis

This is infection of the soft tissues in the anterior portion of the eyelid before the septum thus not involving the orbital structures. It is much more common than Orbital Cellulitis and also commoner in children than adults.

Assessment includes:

→ history = ask re traum, chalazions/hordeolum,

→ examination = inflamed lids with oedema and erythema, white conjunctiva, normal eye movements and pupil as well optic nerve function

Management:

→ oral antibiotics or consider IV if severe pre-septal (See below)

→ review at 48 hours of starting treatment or SOS if any deterioration in symptoms

Antibiotic choice:

First line

→ Co-amoxiclav 625mg PO TDS 1 week

If Penicillin allergic:

→ Clarithromycin 500mg PO BD 1 week

If severe pre-septal:

→ Co-amoxiclav 1.2g IV TDS 1 week

CHEMICAL INJURY

A&E or Urgent Treatment Centre at Crawley usually see these patients first before referring on to us. Ensure patient has at least 1-2L irrigation or more until their pH reaches 7.

History

***Irrigate first to neutralise pH**– then take a history

What type of chemical – acids/alkali

When did it happen

Duration of contact with ocular surface

Quantity – volume of chemical if known

Examination (refer to Roper-Hall or Dua classification to grade degree of chemical injury and predict prognosis)

Evert eye lids and check fornices for any FB/residue of chemical e.g. cement/lime

Check for any symblepharon

Conjunctiva – injected/chemosis/haemorrhage/ulceration/necrosis or ischaemic(white)

→ check perilimbal area = any areas of blanced vessels? (indicates ischaemia)

→ quantify clock hours of limbal involvement

Check cornea – clear/hazy/opaque, surface area of epithelial defect

Check IOP

Check AC for inflammation (if you have a view)

Dilate and check fundus

Management

If severe injury – discuss with on-call Consultant and consider admitting patient for hourly drops (especially if pt is elderly/unable to do drops on their own) and discuss with Cornea team at Queen Victoria Hospital ASAP, consider referring to them for on going management.

Use preservative free drops ideally

Frequency drops may vary according to severity of injury

1. Topical antibiotics = p.f. Chloramphenicol 0.5% minimum QDS, can increase to 1-2hourly
2. Consider topical cycloplegics for comfort/AC activity = p.f. Cyclopentolate 1% TDS
3. Topical lubricants = p.f. Hyloforte or Carmellose 1% 1-4hourly
4. Topical steroids = Predsol 0.5-1.0% 4-8 times a day
5. Topical ascorbic acid = sodium ascorbate 10% up to 2 hourly (needs to be ordered specifically from pharmacy, not available routinely)
6. Oral ascorbic acid = 1g OD/BD
7. Oral Tetracycline e.g. Doxycycline 50-100mg OD for 1-3months

If IOP is raised – consider PO Diamox 250mg up to 4 times a day +/- topical beta-blocker e.g. Timolol 0.25/0.5% BD

Review daily if severe (and if not been accepted yet by Queen Victoria Hospital)

If less severe, review every 48hours and prolong interval if improving.

CONJUNCTIVITIS

Precautions

1. Steps must be taken to make sure you do not catch infection yourself or transmit it to other patients.

2. Do not applanate – if you do, **by mistake**, wash the tonometer head under the tap (when you wash your hands!) before placing it in hypochlorite/chlorhexidine solution.

3. Wash your hands.

4. Dispose of minims and tissues.

5. Wipe down chin and head rest of slit lamp and any other surfaces that may have become contaminated with tears with disinfectant spray and or wipes.

6. Warn patient not to go swimming and to use their own towel until the episode has cleared.

Swabs?

Will it change my management?

Not indicated unless:

· No improvement and diagnosis unclear, e.g. to distinguish between

adenoviral, chlamydial and Thygeson keratitis

· Rarely: If possible outbreak suspected for infection control.

Viral Conjunctivitis:

There is no indication for routine swabbing for viral conjunctivitis.

Chloramphenicol

- Evidence for aplastic anaemia due to absorption is minimal in adults.

- There is no logical basis for qds prescribing of drops. Antibiotic drops should be

administered hourly for two days rather than qds for one week. Ointment qds is

acceptable but bioavailablility is less predictable.

Management

1. Bacterial Conjunctivitis

Start topical antibiotic: 1st line: Chloramphenicol, Fucithalmic (Do not use fluoroquinolone antibiotics such as oflocaxin or ciprofloxacin.)

Educate patient about cleaning and contact

No routine follow up. Advice to return if not better.

2. Adenoviral Conjunctivitis

Cold compress, lubricants.

Acute: Topical antibiotic only if secondary bacterial infection

Late with subepithelial punctate keratitis:

a. Vision unaffected: no treatment. **No routine follow up**. Advice symptoms can last for a month. Re-attend if vision becomes affected.

b. Photophobia and reduced vision: Predsol 0.5% 4/3/2/1/d each week plus **clinic follow-up.**

Educate patient about cleaning and contact

3. Allergic Conjunctivitis Identify/remove allergen (consider regular eye drops: Opatanol BD Cetirizine 10mg po OD); Cold compress, lubricants

Educate patient**. No routine follow up**. Advice to see GP for persistent chronic symptoms

4. Chlamydial Conjunctivitis

Diagnosis Persistent follicular conjunctivitis, usually unilateral, often quite productive of mucus

and discharge.

Investigations : The nursing staff will take a conjunctival swab (fornix scrape) with the specific kit and

send to microbiology.

A patient contact telephone number should be documented in the notes.

The patient does not need to be told to return, they will be informed of any positive result that affects their management.

Management:

The Doctor will contact the patient with a positive result and ask them to attend Eye Casualty. As a policy we do not give out test results over the phone.

The patient should be informed of the importance of:

• Treatment to avoid long term complications

• Partner notification and abstaining from unprotected sexual intercourse until they and their partner(s) have been treated

• Attendance at a Sexual Health / GUM clinic for full screening to exclude other STI Ideally the patient should be asked if they consent to referral to health advisor team. This will then allow them to have full STI screening, appropriate antibiotics and partner notification.

Patients, who refuse referral, are unable to attend, or require urgent treatment should be given oral antibiotics. There is no effective topical cure, lubricants may provide symptomatic relief.

Antibiotic therapy:

- 1st line: Azithromycin 1g po stat single dose
- 2nd line: doxycycline 100mg BD po 7 days
- 3rd line: erythromycin 500mg BD 14 days or ofloxacin 200mg BD 7 days

Caution with all during pregnancy and breastfeeding – seek advice.

EPISCLERITIS AND SCLERITIS

Episcleritis

Presentation: Redness, usually in a wedge shape, Discomfort/tenderness. Rarely watering and photophobia, Often recurrent Usually young – middle aged adults. Self-limiting (up to a few weeks), this does not lead to scleritis

Examination: Exclude uveitis. Note extent, presence of nodules, limbal inflammation. Dilated blood vessels are superficial & blanch significantly with topical phenylepharine 2.5%

Investigations: Nil required

Management: Topical lubricants, e.g. viscotears PRN

Only if symptomatic: Oral NSAIDS, e.g. ibuprofen 400mg QDS, If intolerant of oral treatment topical NSAIDS eg. ketorolac TDS. Rarely topical steroids e.g. predsol 0.5% 4/3/2/1 per day each week

Scleritis

Presentation: Deeper, more homogenous redness, with radially orientated vessels. Very painful – deep/boring pain, can wake from sleep. Pain on eye movements. Can cause reduced VA. Older patients (mean age 50's).Commonly associated with systemic inflammatory disorders.

Caution: posterior scleritis can present with little or no redness and scleromalacia can present with minimal symptoms.

Classification: Posterior (10%) or anterior (90%)

· Diffuse anterior - this is the most common (and benign) form, characterized by widespread inflammation of the anterior sclera. It accounts for about 50% of scleritis cases. It is not usually sight-threatening and tends to resolve

· Nodular - there are erythematous, tender, fixed nodules which, in 25% of cases, progress on to necrotizing scleritis. It commonly recurs.

· Necrotizing - this is less frequent (10% of cases) and is characterized by extreme pain and marked scleral damage; it is usually associated with underlying systemic disease. Where there is associated corneal inflammation, this is also known as sclerokeratitis.

· Scleromalacia perforans - (5% of cases) this is also known as necrotizing anterior scleritis without inflammation and is notable for its lack of symptoms. It is bilateral and is only seen with advanced rheumatoid arthritis (usually in women)

Examination findings:

Confluent deeper liverish redness, does not blanch significantly with topical phenylepharine 2.5% Exquisite tenderness over inflamed area. Note extent, presence of nodules, corneal involvement. Look for associated uveitis.

Check IOP

Scleral necrosis (yellowish nodules or patches) & thinning (blue-ish tinged/darker areas)

Rarely choroidal folds, disc swelling, proptosis with posterior involvement – look for the "T" sign on B-ultrasound. At least 50% of these patients have an underlying systemic disease and, in 15% of cases, the scleritis is the first presentation of a collagen vascular disorder, preceding it by one to several months:

· Rheumatoid arthritis is by far the most common.

· Wegener's granulomatosis,

· Relapsing polychondritis

· Systemic lupus erythematosus

· Reiter's syndrome

· Polyarteritis nodosa

· Ankylosing spondylitis.

· Gout

· Churg-Strauss syndrome

· Syphilis.

· Following ocular surgery (intense inflammation adjacent to the surgical site,

usually within six months of the procedure

· Local infection (pseudomonas aeruginosa, Streptococcus pneumoniae,

Staphylococcus aureus and varicella-zoster virus

Investigations

Initial treatment will usually involve systemic treatments and it is therefore important that investigations are performed BEFORE these are started, otherwise tests will be difficult / impossible to interpret.

BP, BM, Weight, Urine dipstick and analysis, FBC, ESR,U&Es, LFTs, Bone, ACE, CRP, HbA1C

Immunoglobulins, autoantibodies, Rheumatoid factor, ANCA, Treponemal serology VZV serology, CXR

Management

Often requires urgent multidisciplinary input and referral to uveitis service is generally advised.

Intense topical lubricants, consider punctual plugs for RA patients with bad hands.

If mild symptoms and non-nectrotizing disease only, oral NSAIDS, e.g. ibuprofen

400mg QDS or diclofenac 50mg TDS (check no contra-indications, and check BP and no concern re renal impairment)

Patients with severe pain, nectrotizing scleritis or posterior scleritis invariably require systemic steroid, with appropriate bone protection and gastro-protection. Systemic immune suppression may be required at

a later date. These patients should be managed by the On-call Reg with discussion regarding treatment, the need for admission and follow up arrangements with the Consultant on-call.

RED FLAGS

Always discuss these following cases with Consultant on Call:

· Patients with known systemic connective tissue disease: discuss with rheumatologist involved if possible

· Necrotizing scleritis – ADMIT under the care of the on call Consultant

· Posterior scleritis – will invariably need oral steroid

· Raised BP - ? underlying systemic vasculitis with renal involvement / caution with oral NSAID

· Proteinuria / Haematuria on urinalysis - ? underlying systemic vasculitis with renal involvement – AVOID oral NSAID.

· Scleritis occurring in the context of systemic / constitutional upset, uncontrolled BP, and haematuria / proteinuria is a MEDICAL EMERGENCY and should be discussed with the Consultant on-call and the duty Medical Registrar

· Associated corneal melt – ADMIT & involve corneal team (discuss with Cornea team at QVH)

HERPES VIRUSES

Herpes simplex keratitis:

Dendritic ulcer (epithelial disease): Oc Acyclovir 5 times daily maximum 2 weeks. **Discharge no follow up.**

Disciform keratitis (stromal &/or uveitis): Oc Acyclovir 5 times daily maximum 2 weeks if any associated epithelial disease. Oral acyclovir 400mg po BD. Add topical steroid Predsol 0.5% QDS once epithelial defect resolved if present. Consider increasing steroid frequency if significant uveitis and no epithelial defect

Refer to general clinic soon/1 month, continue treatment unchanged until then (to go to GP for repeat prescription).

Herpes zoster ophthalmicus:

Document corneal sensation and IOP

Treatment: Oral acyclovir 800mg x5 day for 1 week, if rash onset <5 days. Consider additional oc Acyclovir x5/d only if ocular surface involvement, eg. epithelial keratitis

Advise lubricants and oral NSAIDS for analgesia with GP f/u to discuss neuralgia

Cautious treatment of uveitis: predsol 0.5% QDS with oral ACV cover .Raised pressure: Timoptol 0.25% BD, **Eye Casualty follow up < 1week to ensure improved. Refer to general clinic soon/1 month if corneal or intra-ocular involvement**.

MEDICAL RETINA

This includes common acute presentations:

1. Age-related Macular Degeneration—Dry or neovascular; new or existing treated neovascular AMD

2. Myopic Macular degeneration

3. Retinal Vein Occlusion

4. Intravitreal injection complications

5. Central Serous Retinopathy

6. Retinal Artery Occlusion

In general, diagnosis of medical retina conditions requires knowledge of likely symptoms, a fair amount of proficiency in examining the fundus by slit lamp biomicroscopy with indirect lenses (90, 78 or 60 dioptre) and some ability to interpret OCT scans.

1. Age-Related Macular Degeneration (Dry)

Symptoms—reduced central visual acuity, difficulty with close work, inability to read even with reading glasses

Signs—can be few drusen or focal retinal pigment changes i.e. hyper or hypopigmentation or areas of geographic atrophy

Investigations—OCT to rule out exudative AMD if there is clinical suspicion

Management—explain condition to patient. Currently no treatment is available for dry AMD.

Explain regarding monitoring central visual acuity in **each individual eye**, particularly looking for central scotoma, distortion where straight lines appear wavy, difficulty seeing faces or reading text on TV etc. An Amsler grid is **not** necessary and everyday objects can be used to monitor changes in vision. Explain importance of reporting quickly to their optician or to CAS in hours (*out of hours attendance not required*).

Information leaflet is available in the department; this includes advice regarding healthy diet with plenty of fruits and vegetables and smoking cessation advice

Follow-up —If vision severely affected, may be eligible for registering as sight impaired, or may benefit from low vision aids, this can be achieved with an optician/LVA appointment without need for a Dr clinic visit.

ECLO officers are often available with an LVA appointment

Neovascular Age-Related Macular Degeneration (Exudative or Wet AMD)

New presentation:

Symptoms— affects patients over 50 years age. Recent onset central distortion, duration of symptoms (this is usually in weeks or days), reduction in near vision, recent difficulty with close work, central scotoma or referred with changes seen by optician at regular sight test.

Previous ophthalmic history especially glaucoma or cataract surgery

Enquire about smoking (current or previous) and driving status

Signs—central macular haemorrhage which can be red intraretinal or dark subretinal, pigment epithelial detachment seen as a central raised area on slitlamp indirect ophthalmoscopy, cystoid macular oedema, exudates clustering around fovea with a suggestive raised lesion.

Similar signs may be seen in a peripapillary distribution with central intraretinal fluid

Orange-brown nodules of polypoidal choroidal vasculopathy may also be noticed

Signs of dry AMD as detailed above may also coexist in the same eye or the fellow eye.

Investigations—OCT to detect intra or subretinal exudation or PED. Please look at OCT and write down your impression. Ask a senior if unsure.

If vision worse than 6/60, a refracted logMAR is advisable to check whether eligible

for treatment. NICE guidance is that vision should be 6/96 or better (i.e.25 letters on

ETDRS chart or better) for treatment with intravitreal injections of anti-VEGF.

Treatment - Seek advice from Medical Retina team which is doing a Macula clinic that session. They would advise about need for Fluorescein angiogram or possibility of commencing treatment right away. Give patients information leaflet regarding Macula treatment clinics if you are reasonably sure of diagnosis. Do not routinely book FFA from Eye casualty without consulting Med Ret Consultant. If confident with the diagnosis offer to the patient course of treatment, take **consent** and book for injection within 1 week if not possible on the day, **send the notes** to a MR consultant to apply for funding.

Give dietary and smoking cessation advice as above.

Advise regarding monitoring central vision in other eye as above.

Nutritional supplements may be used to reduce risk of other eye progressing to neovascular AMD—these are not prescription medicines but are available to buy at most chemists/pharmacies.

If they do not meet treatment criteria, consider eligibility for certificate of visual impairment or requirement for low vision aids and refer accordingly to clinic (see follow up advice for dry AMD as above).

Patients known to have exudative AMD

Patients already diagnosed and receiving anti-VEGF treatment may present with new symptoms due to worsening of their condition.

Symptoms and signs are the same as for new wet AMD as above.

History—ask regarding duration of symptoms, interval since their last injection

Look at the notes to get further details about their condition/treatment given (Lucentis or Eyelea).

Investigation—OCT to document any changes, compare change in vision/ fundus picture/ macular thickness from previous

Management—If the interval since their last anti-VEGF injection is >4 weeks, they may warrant another injection. Seek advice from Med Ret Fellow/ Consultant regarding arranging further treatment.

If interval since injection is less than 4 weeks, check that they have their next macula clinic appointment and advise them to keep it. Pass notes to their consultant to consider sooner review. Seek advice from Medical Retina Fellow if unsure.

For any other complications of injections see below in later section

2. Myopic Macular Degeneration

Signs and symptoms similar to exudative AMD, however the patients may be much younger and are usually highly myopic.

Investigation and management should be as for new exudative AMD (see above).

These OCT can be difficult to interpret and so there should be a high index of suspicion when symptoms are significant in somebody with axial myopia even if there isn't fluid apparent on OCT. Looking at the

entire OCT on the camera can give more information than OIS. Do consider referring to Macula clinic for treatment on the same day.

3. Retinal Vein Occlusion (Central, branch or haemiretinal)

Symptoms range from mild blurring to field defects to total loss of vision in one eye.

This may also be noticed by their optician and referred to CAS.

History—ask about duration of symptoms, past ophthalmic history especially glaucoma, medical history specifically regarding hypertension, diabetes and raised cholesterol. In younger patients (<45), ask regarding haematological problems or history of vasculitis

Signs—document best corrected visual acuity, intraocular pressure and look for afferent pupil defect. Look for rubeosis iridis preferably before dilating. Fundus examination will reveal superficial and deep retinal haemorrhages affecting the entire retina in CRVO or one sector in BRVO or one half (superior or inferior) in HRVO.

Macular oedema, tortuous engorged retinal veins, cotton wool spots and swollen optic disc may be present.

Features suggesting ischaemic CRVO are vision <6/60, relative afferent pupil defect, numerous cotton wool spots and should trigger searching for new vessels on the iris, disc or retina.

Investigation—Blood pressure and blood glucose help to look for systemic associations which can be flagged up to their GP. A full blood count and ESR would also help. OCT should be done if macular oedema is suspected.

Management

Explain the condition and need for repeated review to the patient. Information leaflets are available.

Of systemic associations--Any abnormal blood results should be communicated to the patient's GP. ***Please do not advise aspirin***.

Of the eye—If there is evidence of glaucoma or ocular hypertension, pressure lowering medication should be commenced right away. This is especially important for the fellow eye.

Macular oedema may need treatment with intravitreal steroid or antiVEGF—make a 'soon' referral to Medical retina clinic. Macular oedema due to BRVO may resolve spontaneously and can be observed for a few months depending on the overall clinical picture.

Rubeosis or new vessels on the disc or retina needs urgent panretinal photocoagulation—preferably by the on-call registrar that day if there is reasonable view of the fundus.

Follow up - All cases of retinal vein occlusion need to be reviewed at the Medical

retina clinic .

4. Intravitreal injection-related complications

Innocuous—the following need only reassurance. Injection information leaflets are available to explain.

· Conjunctival hyperaemia

· Sub-conjunctival haemorrhage

· Few floaters or visible air bubble/ steroid pellet

· Ocular surface features of dry eye—lubricants may be given.

· Post-injection corneal abrasion--Treat as any other abrasion.

Follow up for all above — keep their scheduled review appointments. Care should be taken not to give the patient the impression that they have developed an 'allergic reaction' to any of the drops or drugs unless this is truly the case.

Major—sight-threatening

→ Post-injection endophthalmitis

Symptoms—Rapid blurring or reduction of vision within 48-72 hrs of injection, numerous floaters, severe pain persisting to next day, sticky discharge.

Signs—Reduced VA from previous visit, cloudy cornea, flare and cells in anterior chamber, vitreous haze or cells or poor view of fundus.

Management - These need to be treated as infective and need **urgent** vitreous biopsy and intravitreal antibiotics. The on-call registrar and consultant have to be informed, as also theatre staff and microbiology **(see endophthlamitis guidelines pages 11-12).**

→ Post-injection raised intraocular pressure

Measures to lower IOP (see acute glaucoma section), ensure no features of endophthalmitis.

5. Central Serious Retinopathy

Symptom--disturbance in the central vision, which is variously described as a central cloudy/ grey/ brown/ blurred patch, remains in the same location. Ask regarding steroid treatment—any current or previous use in any form including non-prescription for body building, inhaled for asthma, nasal sprays for allergies.

Signs— Reduced visual acuity, may improve with +1D lens, Ring reflex around fovea, Raised area in macula with loss of foveal light reflex, RPE changes in same or fellow eye indicating previous episodes

Investigations - OCT helps to document subretinal fluid.

Management—no treatment required in the majority of patients. Explain self-limiting nature of this condition (4—12 weeks).

Follow up—routine referral to Medical retina clinic.

There are some conditions affecting the macula which do not need attention in the medical retina clinic but have been added here due to popular misconceptions

Macular hole—either full-thickness or lamellar

Epiretinal membrane

Vitreomacular traction

These are all *not medical retina* and these are all **not urgent**. If further management warranted, routine referral should be made to the vitreoretinal team.

6. Retinal artery occlusion (Central or branch)

Symptoms range from a small field defect in BRAO to sudden painless total loss of vision in CRAO.

Asymptomatic incidental arteriolar emboli do not require any investigation or management from EED. If incorrectly referred by opticians, they are be referred back to the GP for assessment of vascular risk factors.

History—ask about GCA symptoms if of appropriate age, hypertension, diabetes, cholesterol and smoking.

Signs

Signs of CRAO–afferent pupil defect, no perception of light or just PL/ HM vision, cherry red spot on fundus examination, discontinuous segments of the blood column in retinal arteries (cattle trucking).

Signs of BRAO—Retinal ischaemia in one quadrant or smaller area

Management—this should be treated as a TIA and the stroke risk needs to be evaluated. A stat dose of clopidogrel 75 mg should be given in eye casualty/out of hours clinic (if no contraindications) or 300mg stat Aspirin (if no contraindications), and advised to continue this via GP. A local TIA clinic referral should be made, use the referral form. Also seek advice from the TIA nurse on call re Clopidogrel/Aspirin if unsure. Patients should be advised not to drive for a month or at least until they are seen there.

In acute RAO (<8 hours), measures to re-establish circulation can be tried, such as IV acetazolamide 500mg, rebreathing into a paper bag, globe massage or paracenthesis.

If risk of GCA check inflammatory markers and treat accordingly (see neuro-ophthalmology

section).

Follow up—this is not a medical retina problem. This needs a ***routine general clinic*** *review* to ensure the patient has had review at the neurovascular clinic and that their stroke risk has been assessed. This also helps to check that the patient has access to low vision services or ECLO if required.

MEIBOMIAN GLAND DYSFUNCTION/MARGINAL KERATITIS

→ Meibomian gland dysfunction: Explanation that this is a chronic relapsing condition.

Lid hygiene & viscotears/other lubricants - patient information leaflet. **Discharge no follow up.**

→ Meibomian gland dysfunction + marginal keratitis

Confirm lesions are concentric with limbus and document clear interval. Document corneal sensation.

Treatment: G. Maxitrol qds for 10/7; Treat meibomian gland dysfunction as above. **Discharge no follow up unless** numerous relapses or significant underlying MGD – **refer to general clinic routine**

NEURO-OPHTHALMOLOGY

This section covers:

1. Papilloedema
2. Optic neuritis
3. Diplopia
4. Ptosis
5. Cranial nerve palsies

1. Papilloedema

Papilloedema is bilateral optic disc swelling due to raised intracranial pressure. The

visual function (visual acuity, colour vision and visual field) in early papilloedema can be within normal limits.

History

Headache

Transient visual obscurations (blurring or blacking out of one or both eyes for *seconds*)

Pulsatile tinnitus

Investigations:

Visual acuity, colour vision and red desaturation

Blood pressure (exclude malignant hypertension)

Urinalysis – for blood

Visual fields (enlarged blind spot)

Look for other neurological signs

Photography/OCT if available for baseline

NOTE: *VI nerve palsy can occur in raised intracranial pressure as a false localising Sign*

Action

Patient needs a scan (a CT will do) same day to rule out space occupying lesion.

To arrange an urgent scan Mon – Fri 9am – 5pm contact the CT department. Out of hours, ask for the on-call Radiologist.

Refer to Medical team – if CT normal will need MRI and LP

Consultant on call should be informed of ALL patients who require a scan or who are referred to Medics/Neurology.

What to do if patient is asymptomatic and referred to ask for an opinion on whether discs are swollen

1. check visual function (acuity, colour vision and visual fields) is normal

2. check there are no orbital signs and no RAPD

3. look for optic disc signs of swelling

a. hyperaemic disc

b. dilated capillaries on disc surface

c. thickened nerve fibre layer around disc, i.e. area of elevation extends across the disc margin to the peripapillary retina

d. haemorrhages or cotton wool spots on the disc

e. absence of venous pulsation (absent in 30% of the population anyway)

f. macular star of exudates

4. consider other tests to look for true disc swelling

a. optical coherence tomography of disc

b. autofluoresence

c. ultrasound (to look for disc drusen)

d. fluorescein angiogram (to look for disc leak)

If in doubt ask consultant on call.

2. Optic neuritis

Optic neuritis is the term for any optic nerve inflammatory condition: it does not indicate the aetiology and can be due to demyelination, sarcoid, infection and autoimmune conditions amongst others. Of these, only demyelinating optic neuropathy will show spontaneous visual improvement after about 2 weeks and it is this improvement that confirms a demyelinating aetiology.

NOTE*: not all young adults with optic neuropathy have optic neuritis.*

A diagnosis of optic neuritis can only be made in retrospect once spontaneous visual

recovery has started – it is best to tell the patient they 'probably have inflammation of the optic nerve' and need to be followed up in clinic to confirm the diagnosis. Optic neuritis and the link with MS can best be discussed in the clinic setting.

History:

Pain behind the eye, usually worse on eye movements

Acute visual loss: worsens for up to 2 weeks then stabilises. Spontaneous recovery starts at about 2 weeks

Visual photopsias may occur

Associated neurological symptoms or past history of neurological symptoms e.g. numbness, weakness of arm or leg, and vertigo

Examination:

Visual acuity (can be 6/6 to no perception of light)

Colour vision

RAPD testing

Visual field. If vision is worse than 6/18 do confrontation fields in the affected

eye and formal perimetry in the unaffected eye.

Typical field defect is central scotoma but field loss can be of any type

Optic disc normal or mildly swollen

Dilated fundoscopy to exclude other cause of reduced vision.

Atypical cases – consider **non**-demyelinating cause in any patient who has

1) severe pain

2) bilateral at onset

3) atypical fields e.g. hemianopic field defect

4) atypical age for first onset <16 or >50

5) very swollen disc (optic neuritis produces none or mild disc swelling)

6) macular star of exudates

Treatment

Over 90% of patients will regain vision of 6/12 or better

There is no treatment which will improve the final visual outcome

Steroids will hasten the visual recovery and should be considered in patients with very poor vision or who require good visual acuity for employment. Discuss with consultant on call if steroids to be used

ALL patients who are given steroids MUST have MRI to exclude other pathology – the natural history of the disease will be affected by the steroids.

Action

See consultant on call in 2 weeks then refer to neuro clinic -:

→ vision should have started to improve by then – if it hasn't then patient needs MRI of orbit and brain with contrast.

3. Diplopia

(also see cranial nerve palsies section on page 46)

Monocular diplopia: Persists with monocular occlusion

Cause is ocular or refractive

Refer to clinic appropriately or discharge

Binocular diplopia Due to abnormal ocular motility – see below

Double vision can be due to disease of:

Extraocular muscles (inc myasthenia, myositis)

Orbit (inc thyroid eye disease, space occupying lesion, inflammatory)

Cranial nerves

Brain

History

Monocular or binocular diplopia

Sudden or intermittent onset

Change with gaze direction or distance? (horizontal diplopia for distance is VI palsy until proven otherwise)

Variability?

Pain?

Associated symptoms – headache, neurological symptoms

Past history: vascular risk factors, cancer, smoking

Examination:

Visual acuity

Eye movements

Look for anisocoria (dilated pupil in III palsy suggests aneurysm,

Horner's syndrome in VI palsy suggests cavernous sinus lesion)

Ptosis (III palsy, myasthenia, Horner's syndrome) or lid retraction

Orbital signs

Cavernous sinus signs: Horner's syndrome, reduced corneal sensation

Cranial nerves (including corneal sensation)

Visual field to confrontation

Ocular examination

Dilated fundoscopy

Investigations:

Blood pressure

BM

ESR and CRP for giant cell arteritis if indicated

Orthoptic assessment

Always consider the possibility of giant cell arteritis

Further management

See cranial nerve palsies section below (page 48)

Blenderm over one lens of patient's glasses (orthoptics can supply plano spectacles with

blenderm if required).

Patients should be warned not to drive with one eye occluded until they have had a period of adaptation' (usually 6 weeks) and not to drive with double vision

Diplopia plus disc swelling or other neurological involvement:

Refer immediately to medics/neurology.

Consultant on call should be informed of ALL patients referred for scan or neurology opinion.

4. **Ptosis**

Can be due to disease of: Eyelid/ levator

Myasthenia/ myopathies

III nerve

Brain

Horner's syndrome – brain/ neck/ upper chest

History

Duration

Constant or intermittent?

Diurnal variation/ absent on waking? (myasthenia)

Associated symptoms:

Double vision

Pain

Myasthenic symptoms (shortness of breath, limb fatiguability, bulbar symptoms such as problems swallowing or chewing or change of voice on talking)

Past history: Trauma or recent head or neck surgery (carotid dissection/ Horner's) Cancer

Examination

Visual acuity

Eye movements (myasthenia, III Palsy)

Anisocoria (III palsy, Horner's syndrome)

Ptosis: measurement

Levator function

high skin crease? (aponeurotic ptosis)

fatiguability (myasthenia)

orbicularis oculi weakness? (myasthenia)

Orbital signs

Management

Depends on suspected diagnosis

Suspected myasthenia gravis – discuss with neurology/medical team

Third nerve palsy – see third nerve section below

Horner's syndrome –

Dilute Apraclonidine 0.5% test to confirm diagnosis: instill in both eyes, re-measure pupil size after 60 mins. Apraclonidine dilates Horner's pupil but not normal pupil. May be negative in very recent onset Horner's syndrome.

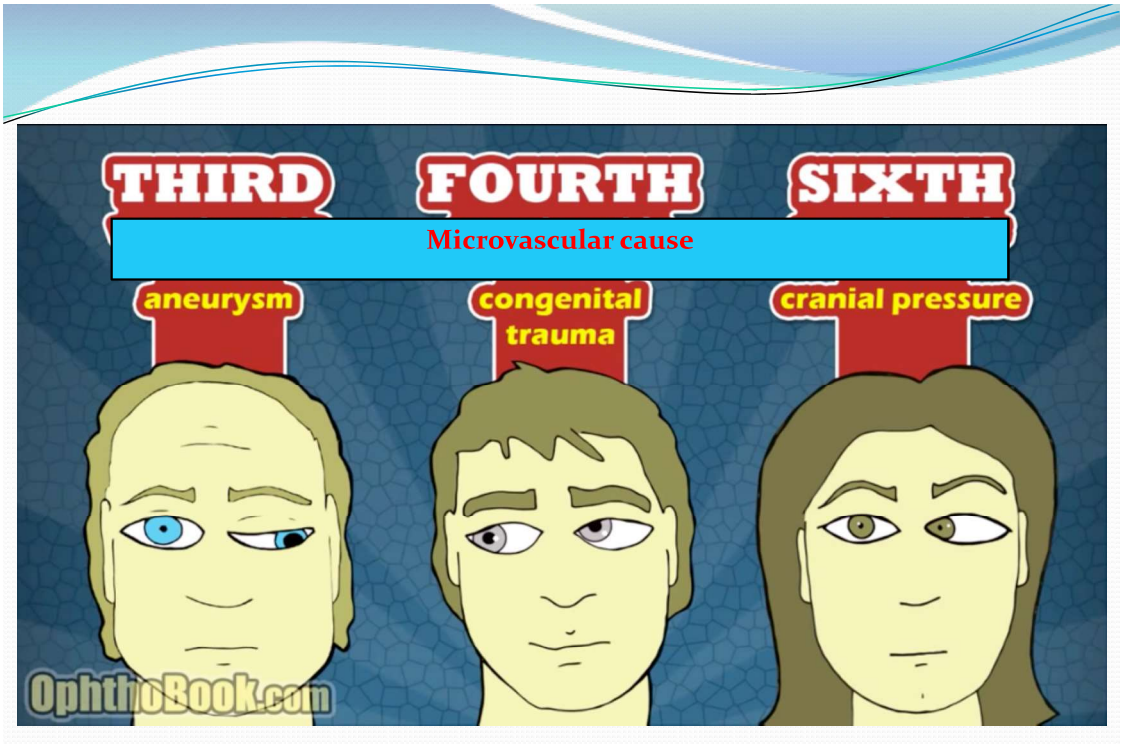
Horner's syndrome with neck or facial pain – suspect carotid dissection and refer neurology urgently – needs MRA (MR Angiography).

Horner's syndrome with VI palsy – suspect cavernous sinus lesion: requires imaging.

Isolated Horner's syndrome – discuss with Radiology/Neurology re: appropriate investigation

5. Cranial nerve palsies in adults (non-traumatic)

Summary of most common causes:



3rd CN palsy - III palsy cannot be said to be pupil sparing unless it is a COMPLETE III ie TOTAL palsy of SR, IO, IR and MR. Pupil involvement or pain suggests aneurysm (10-20% of 3d nerve palsies are due to aneurysm). ***ALL*** *III palsies need an MRAngiogram or CTAngiogram the same day whether pupil sparing and painful or not.*

4th CN palsy – Exclude history of trauma and previous squint/diplopia history. May be decompensated congenital 4th CN palsy. If patient is complaining of torsional diplopia (i.e. the images are vertical but also obliquely transposed) this indicates an acquired cause and is an important part of the history.

6th nerve palsy – Carefully document presence/absence of papilloedema to exclude raised ICP as a cause.

All CN palsies – History of cardiovascular risk factors, thyroid dysfunction. Consider GCA, migraine, myasthenia gravis, CVA, raised ICP as possible causes.

Any associated neurology, or young patient (<50) with no cardiovascular risk factors arrange urgent MRI.

Investigations for microvascular 3rd, 4th or 6th nerve palsy (unlikely under 50yo):

BP, urine, FBC, U+E, glucose, lipids, ESR/CRP

Start aspirin 75mg od po unless contraindicated

Patients must be advised not to drive until diplopia has resolved or is completely controlled with prisms.

Arrange Orthoptic review to document EOMs and exclude decompensated phoria or congenital causes. ***All patients showing no improvement by 3/12 will require a scan.***

Ensure blood results are followed up and any abnormalities communicated to GP.

GP manages cardiovascular risk factors.

Orthoptic follow up. Clinic follow-up in 3/12 (discharge if resolved or consider scan if no improvement).

OCULOPLASTICS

This section covers:

1. Peri-ocular lesions
2. Lid malposition
3. Lacrimal
4. Orbital fractures

1. Peri-ocular lesions

History:

How long have they noticed ANYTHING at that site?

Is it growing? Slowly or fast?

Any pain / tenderness / anaesthesia

Medications – any aspirin /clopidogrel / warfarin

Examination:

Palpate and stretch skin to assess **true** size then measure

Relation to other structures, i.e. lacrimal drainage, lid margin

Evidence of tissue destruction – loss of lashes, cicatricial ectropion

Evidence of deep fixation or orbital involvement (e.g. restricted eyemovements)

Action:

Photograph if at all possible

Definite chalazia, small skin tags etc refer to Minor ops list, (but remember BCCs frequently cystic)

BCC refer to oculoplastics routine QVH

Any other lesions suspicious of malignancy refer **urgently** to oculoplastic consultant (remember 2 week rule). Take patient telephone number and explain they may require a biopsy.

2. Lid malposition

Lower lid

Only refer if the patient is symptomatic and keen for surgical intervention- referral to Ms Nenova

Entropion:

1. If the cornea is severely affected, give lubricants, advice about taping refer **urgently**
2. If cornea no significant concern then refer routinely and discuss Botox with Ms Nenova

Upper lid

See neuro-ophthalmology section to exclude neurological causes. Ask about diplopia.

Evert upper lid and palpate orbit to exclude a mechanical cause.

Aponeurogenic ptosis: slow history; good levator function; high skin crease; often have evening fatigue

- **Routine** referral to oculoplastic clinic QVH

3. Lacrimal

Acute: treat ocular surface or allergic symptoms.

Chronic: **not** appropriate for eye casualty management or investigation (ie syringing)

- **Routine** referral to QVH oculoplastic clinic

Dacryocystitis:

→ treat with warm compresses and oral antibiotics (Co-amoxiclav 625mg TDS 10 days if not allergic) and refer to QVH for further management

Lacrimal gland swelling:

Unilateral or bilateral?

Any signs of infection?

Dacroyadenitis – treat with oral antibiotics (Co-amoxiclav 625mg TDS 7 days if not allergic)

Inflammatory – investigations for sarcoid: CXR and serum ACE

Neoplastic – consider lymphoma

- **Soon** referral to oculoplastic clinic at QVH

4. Orbital fractures

Orbital floor (maxillary bone) fractures are the commonest site seen following a blow from an object. Patients can also have multiple sites of orbital fractures from falls/other trauma etc.

Presentation:

Patients usually present to A&E/MIU first and will have had a CT facial bones, orbit and head done before being referred to Ophthalmology. In these cases their imaging would have also been discussed with the Maxillo-facial team at Royal Surrey County Hospital.

History:

Need to find out mechanism of injury. Ask for diplopia, pain, epistaxis and reduction in visual acuity.

Examination:

There is likely to be significant periorbital bruising and oedema/haemorrhage so the patients eye may be closed thus hard to assess VA but try to gently open the lids to check the VA and surface of the eye – any abrasions, subconjunctival haemorrhages, chemosis, pupil, hyphaema. IOP.

Also check for ocular movements, proptosis, enophthalmos, infraorbital anaesthesia, surgical emphysema and perform a dilated fundus examination to check the retina.

Severe pain or gaze evoked vasovagal symptoms especially in young person requires urgent surgery – discuss with max fax.

Management:

These patients will almost always be seen by the Maxillo Facial team at Royal Surrey County Hospital if found to have orbital fractures. If possible, try to arrange for an orthoptic assessment at East Surrey Hospital also.

If nil ocular pathology found on examination i.e full ROM, no diplopia, no anterior or posterior segment abnormality → discharge and does not need regular review in eye clinic. Advice patients not to blow their nose and keep OPA with Max Fax team.
If ocular pathology found in either anterior or posterior segment → manage accordingly and review in eye clinic. Patients will still need to go to Queen Victoria for their orbital fracture management additionally.

PAEDIATRIC EYE CASUALTY GUIDELINES

Paediatric patients should not be followed up in Eye casualty. Any paediatric patients that require review, or who have had further investigations ordered, must be referred to Miss Weston for clinic follow up. This can be done by passing the clinics notes to her secretary (Karen Pearce) with a referral note, or by emailing Miss Weston directly.

1. Bacterial conjunctivitis

→ in under 2 year olds – Treat with Fucithalmic ointment BD 4/7.

2. Conjunctivitis neonatorum

Typical time of presentation:

Chlamydial – 5-14 days after birth.

- Mucopurulent discharge. ***Swab prior to fluorescein.***

Gonococcal – 2-5 days after birth.

- Profuse purulent discharge, lid oedema, chemosis, corneal involvement. Risk of perforation.

Admit if suspicious of gonococcal conjunctivitis or if baby systemically unwell. Urgent bacterial and chlamydial swabs and slides for gram stain. Intensive g.chloramphenicol minims hourly plus systemic erythromycin for 1 week (50mg/kg/day in 4 divided doses). Consult microbiology once cultures known.

Chlamydial - continue systemic antibiotics for a further 2 weeks. Refer to paeds.

Gonococcal –Admit to paeds. IV/IM ceftriaxone single dose, or extended if systemic infection. Frequent saline lavage of discharge. Daily ophth review.

Mother will need referral to GUM for investigations and treatment.

3. Congenital NLDO

History of sticky eye since or shortly after birth. Non response to topical antibiotics from GP. White eye. Non-purulent discharge.

Advise against repeated courses of topical antibiotics. Conservative treatment – gentle lid cleaning as required and daily massage over inner canthus. Parent to seek GP referral to paeds clinic if not resolved by 18/12 of age. If dacryocystocele/amniocystocele or inferior punctual agenesis present, refer to paeds clinic. If there is an acute dacryocystitis treat with PO antibiotics and fucithalmic BD 7/7.

4. Phlyctenular keratitis

g.Predsol-N QDS and see in next available paeds clinic (discuss with KLW to arrange)

5. Chalazion

Same advice as given to adults. Reassure. Advise that may persist for several months. No onward referral necessary. Treat with oral antibiotics if infected. If multiple chalazia or very large with significant distorsion of the upper lid causing pressure on the globe in a child <6 years old, please refer to paeds (routine).

6. Pre-septal cellulitis

Mild lid swelling and erythema, white eye with normal ocular examination = oral antibiotics and review in Eye casualty in 48 hours or sooner if worsens at home.

Moderate to severe swelling/erythema - admit under paeds for IV antibiotics. Must be reviewed daily for VA, colour vision, pupillary responses, discs, EOMs. If history of choriza and any suspicion of post-septal spread request urgent ENT review.

7. Orbital cellulitis

Admit under Paeds for IV antibiotics and scan. Urgent ENT review as may require sinus drainage. Daily ophthalmology review as above.

8. ?Papilloedema in children

Opticians making referrals about children with raised optic discs querying papilloedma must provide the visual acuity and be asked if the child is symptomatic. If there is history of headache or reduced vision they must be seen the same day in eye casualty. **If VA is normal and asymptomatic grade to paediatric clinic within 6 weeks**. If seen in Eye Cas – arrange OCT and USS prior to clinic appointment.

9. Squint in children

History of head trauma, headache, or in the presence of other neurological symptoms refer immediately to paeds for admission and work up. Discuss with orthoptists for urgent review. In the absence of any of the above features, and any history of gradual or intermittent onset/family history of squint or high refractive errors **refer to KLW/RW who will grade to paeds clinic.**

10. NAI

If you receive a request on call to review a child with possible non-accidental injury you must perform a dilated fundal examination the same day. Document all findings with drawings (including negative findings) of the periorbital region and anterior segment as well as funduscopy. IF YOU FIND ANY POSITIVE FINDINGS YOU MUST CONTACT THE ON CALL CONSULTANT TO CORROBORATE YOUR FINDINGS. Otherwise you may be the one standing up in court!!

11. Vernal keratoconjunctivitis

Dexamethasone minims QDS 2/52, BD 2/52 (or FML/predsol 0.5% if mild presentation)
Opatanol BD (for sufficient time to cover the allergic season)
Celluvisc 0.5% or similar lubricant QDS/PRN
PO Piriton syrup

Follow up – refer to paeds clinic for review in 1 month. Discuss with KLW/RSW.

If severe – continue QDS dexamethasone until seen in clinic. If cobblestone papillae and shield ulcer discuss with KLW/RSW.

PENETRATING EYE INJURY

This is when an object/foreign body has penetrated into the eye but there is no exit wound i.e. it is not through and through.

History

Timing of injury

Mechanism of injury – type of object e.g. sharp/blunt, velocity

Pain

Diplopia

Nausea/vomiting

Time of last meal

Tetanus status

Medication allergies

Examination

*Instill topical anaesthetic first before proceding *

If penetrating object seen on slit lamp do not attempt to remove in first instance

External eye exam = check lids but do not force lids open, careful not to exert pressure on the globe

Check VA

EOM(where relevant)

Identify site of injury on the globe = anterior/posterior and if any obvious FB seen

Conjunctiva = SCH, laceration

Cornea = laceration, Siedels test

Pupils = shape, light reaction, RAPD

AC = depth, hyphaema, hypopyon

Lens = opacity, position, stability

Check IOP

Gonioscopy (if tolerable by pt)

Dilate for fundus exam = check optic nerve and macula, also retina especially periphery

Investigation

Consider plain X-ray orbit (upgaze and downgaze) or CT with 2mm slices

Management

1. Inform Consultant on-call promptly
2. Consent patient and keep NBM = prescribe analgesia and anti-emetic
3. Write up drug chart for patient
   = prescribe analgesia and anti-emetic
   = start p.f. topical antibiotic 30min-1hourly e.g. Levofloxacin, as well as systemic antibiotic PO Ciprofloxacin 750mg BD or IV antibiotics e.g Ceftazidime 1-2g stat dose up to TDS or IV Ciprofloxacin 400mg BD/TDS if Penicillin allergic (Adult only, consult BNF for Paediatric doses)

4. Organize CEPOD theatre (it is in main theatres on 1st floor, main theatre reception Ext 1616)
   → Bleep the following:

   - CEPOD coordinator #808 = inform them about patient and need for theatre

   - Anaesthetist on-call SpR #830 = inform them to assess patient for GA

[If adult and needs admitting overnight = ring bed manager to organize bed under General Surgery/Medicine/Surgical Assessment Unit short stay,

If child and needs admitting overnight = ring Outwood ward and discuss with Paeds Ward Sister to organise bed]

5. Fill out CEPOD booking form in main theatre (it is an online document on desktop outside CEPOD theatre)
6. Administer tetanus vaccine/toxoid if indicated
7. Intra-op = administer either intracamaral Cefuroxime or SC Dexamethasone and Gentamicin or intravitreal antibiotics (See Endophthalmitis protocol for guidance on dilution method for Ceftazidime/Vancomycin/Amikacin)
8. Collect AC/vitreous fluid sample if indicated and instill onto Agar plates and blood culture bottles (to be obtained from Path lab – see endophthalmitis guideline page 10-11) then hand deliver to Pathology lab (inform them beforehand of urgent sample which will need to be sent to Crawley Microbiology lab)

POSTERIOR VITREOUS DETACHMENT & FLASHES + FLOATERS

Clinical presentation:

Flashes +/- floaters of varying duration. It is very common, may be associated with retinal tear in 10% cases and symptoms are similar to retinal detachment.

Examination:

Dilate both eyes and examine for Weiss ring, tears/holes/RD.

Management:

Any referrals with Acute PVD symptoms (<1 week) either Floaters/flashing lights or both should be seen urgently i.e. same day, regardless of where the referral comes from.

Symptoms longer than 3 months → routine PCC clinic review.

Anything in between → at the discretion of clinician grading the referral.

1. If no tears seen → discharge the patient with PVD information leaflet and RD warning signs
2. If tear noted → for laser → then reviewed by person who lasered in 1 week and subsequently discharge
   (If post-laser not confident that it has reached anterior margin of tear → bring patient back to VR clinic within the same week and inform Mr Herbert)
3. If haemorrhagic PVD → see again in Eye Cas in 2 weeks to re-review or SOS if worsening symptoms/RD warning signs experienced by patient.

TIA (TRANSIENT ISCHAEMIC ATTACK)

A TIA is a sudden reversible loss of neurological function lasting < 24 hours (typically < 1 hour) due to loss of blood supply to the brain, spinal cord or retina.

Patients are often referred to the eye clinic from either GP services, opticians or even the TIA clinic with various visual symptoms. Please note the TIA clinic does not usually accept patients to their services if their presenting symptoms are visual in nature and the patient will need to be seen by Ophthalmology first before referring to TIA services if appropriate.

Presentation:

Amaurosis fugax (monocular, transient, painless loss of vision), diplopia.

Causes

1.Embolic (from carotid arteries or heart)

Patients with transient monocular blindness are at risk of hemispheric stroke (3-6% per year) and premature death from myocardial infarction. We therefore have a duty of care to recognise and appropriately investigate such patients.

2.Vasculitic (especially giant cell arteritis), less commonly thrombophilia or carotid artery dissection

History

Sudden onset of *severe* visual loss **over seconds to 1 minute**

Affects entire field of vision of the eye

Usually resolves fully within 10-15 mins (rarely lasts up to 1 hour)

No other neurological symptoms

Ask about giant cell arteritis symptoms

Loss of vision in both eyes is not due to emboli from the carotid artery and reflects posterior cerebral circulation problems

Transient monocular blindness in younger patients with break-up of the visual field

into pieces and positive visual phenomena is not likely to be embolic.

Examination:

Baseline vision, pupil reactions, anterior segment and dilated fundus examination → need to exclude ocular/retinal cause of symptoms e.g. artery/vein occlusion.

Pulse rhythm and rate (look for atrial fibrillation)

Cardiac & carotid examination (murmurs/ arrhythmia/bruits as source of emboli)

Investigation:

1. Check patients BP and BM in clinic to be able to fill out the ABCD2 score risk stratification on the TIA referral form (ask clinic nurses for the form).
2. Urgent ESR, CRP to exclude giant cell arteritis if clinically indicated.

Management:

1. Refer **urgently** to TIA clinic
   → Fill out TIA referral form (available in clinic) and bleep the Stroke nurses on 455 (24/7, 7 days a week) to inform them of patient.
   → Also fax referral to them (ask clinic nurses for help with faxing) and take their instructions re giving patient Aspirin/Clopidogrel and informing patient when and where they will review the patient (usually on Kingsfold unit within a day or two). Also make photocopy of the referral and give a copy to the patient
3. → Discharge from eye clinic with no follow up if no pathology found but if patient has e.g. retinal artery occlusion then to be reviewed as follow up in medical retina clinic.

Notify patients that DVLA rules state **no one may drive within a month of TIA or stroke**, but the patient does not need to inform the DVLA at this stage.