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Collaborative Working: Tips and advice for practitioners from the orthoptist's perspective.

21st May 2019

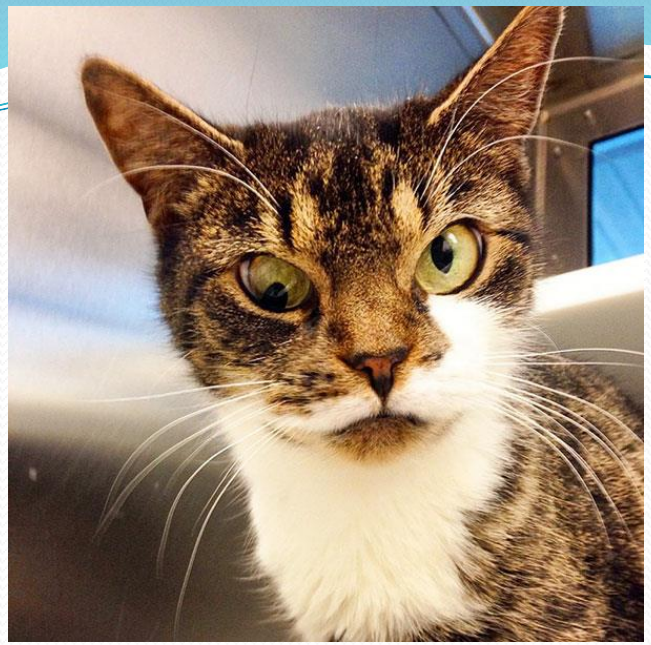
Topics to be discussed;

- Pseudo squint
- Amblyopia
- Intermittent exotropia
- Specific reading difficulties
- Visual Stress disorder
- Incorporation of prisms in the adult population.

Pseudo squint

- Under 3's (*up to approx 5 years*)
- Normal binocular development results in deviations up to 6 months of age. *(sl longer in prems)*

- Affected by;
  - **Epicanthus**, seen in most babies, generally resolves by age 5.
  - Race
  - eye colour, inc heterochromia
  - IPD wide IPD= exo, narrow IPD eso
  - facial asymmetry, birthmarks
  - ptosis
  - Iris anomalies, coloboma
  - Angle kappa

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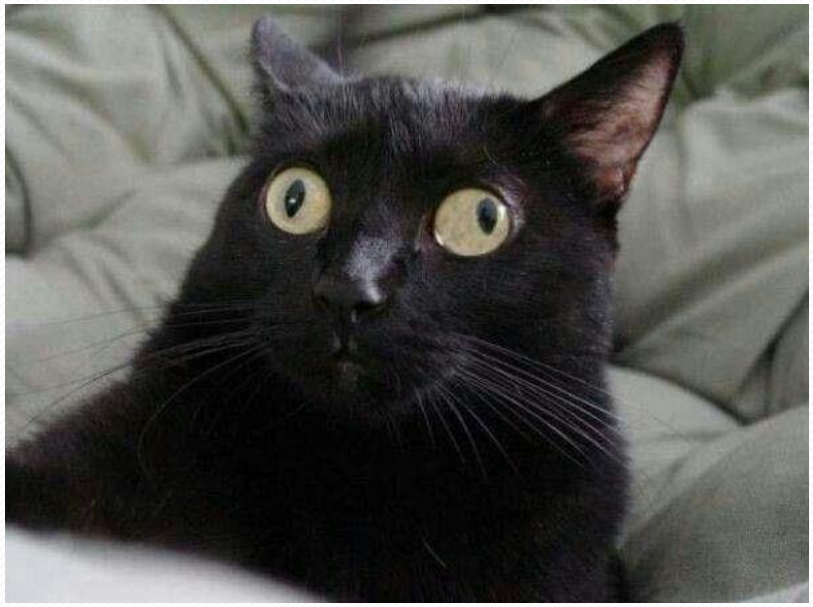

Pseudo squint cont;

- Under 5 years presenting with parental concern of squint.

- Take into account:
  - Seen on side gaze only/photos only
  - Family history*
  - birth history (prematurity, multiple births, low weight)*
  - Squint getting worse/better in last few months*
  - Not seen by mother (generally pseudo)

    - *=refer to the orthoptists

Pseudo squint cont;

- Orthoptic investigation:
  - History, what exactly has been seen?
  - Forced choice, observation of behaviours with occlusion.
  - Corneal reflections.
  - Cover/uncover test
  - Ocular movements *duanes/browns etc*
  - 20^ motor fusion
  - Stereopsis (less important in the under 2's if negative)
  - Photoscreener

Pseudo investigation cont

- **Cyclopegic refraction.** *For a minority of pseudos, usually with family history or prematurity.*

- *From our audits, once pass the initial orthoptic examination only a 1-3% chance of having a true squint (decreasing with age at intitial test). 4-5% went on to have a refractive error picked up at school screening in line with the population norms.*

- Video pseudo

- Video esotropia with epicanthus

- Video angle kappa

Amblyopia

- Full cyclopegic refraction issued in all cases.
- 18 weeks of refractive adaptation given before therapy commenced
  - *Exclusion those with VA less than 0.5*
- All patients (over 2 years) offered conventional occlusion/atropine/partial occlusion

Too late to occlude??

- PEDIG (2005) report success with amblyopia therapy up to age 18.*

- Greater prognosis if;
  - Never treated before
  - Microtropic
  - Anisometropic, refractive effect significant
  - Motivation!
- Please consider referral for “older patients” (>8 yrs) especially with the above criteria or those “lost to follow up”

“Older referrals”

- Full cyclopegic refraction
- Adaptation period varies according to the individual circumstances.
- Need to consider intractable diplopia
  - Density of suppression
  - Presence of binocularity
- Treatment at home not at school (embarrassment)
- Tend to lean towards occlusion as can easily stop if diplopia noted.

Regressed amblyopia

- Previously treated and discharged from orthoptics
- Regression needs to be at least **2 log units**
- Consider age/previous compliance or attendance
- Discharge letter from orthoptics- last VA recorded?

Amblyopic?

- Normal vision is regarded as 0.2 (6/9.5) therefore we do not treat any patients with this or better VA
  - School screening pass is 0.2 or better

- See the following referrals…

Miss [redacted] attended our practice on 19/03/2019 for a routine eye examination. The results of my examination are as follows :

Patient Details :

Right Dist :	6/48	-1.00	6/10+2 N5
Left Dist :	6/38	-1.25	6/10+3 N5

IOP :

Signs/Symptoms : Px came in for a routine sight test for the first time with our practice as current frames were damaged. Last sight test at a different practice was 24/05/18. No other symptoms/concerns. Px is type 1 diabetic

VA's unaided are reduced from 6/12 r&l at last test to re 6/48 le 6/38. Corrected VA's today are reduced from 6/7.5 r/l to 6/10+ since last test. A change in myopia found and new rx found and prescribed.

Fundus appears healthy. No other abnormalities found today.

Please refer px to an ophthalmologist promptly for a second opinion in large change in unaided visions as rx today does not improve vision to what it was at last sight-rule out any underlying pathology.

Additional Information : Due to the above I'd appreciate a referral to a specialist within the next 6 weeks

Prescription details from current sight test: 22 February 2019

	Vision	Sph	Cyl	Axis	Prism H	Prism V	VA	Add	Near VA	Previous VA
RE	6/6	0.00	-0.50	90			6/5		N5	
LE	6/7.5	0.00	-0.75	85			6/7.5		N5	

RE Intra-Ocular Pressure mmHg	
LE Intra-Ocular Pressure mmHg	

RE Disc Appearance	**Visual Fields**
LE Disc Appearance	

Reason for Referral: Binocular Anomaly / Paediatric Ophth

Px previously seen for occlusion therapy but did not comply. Kayla's mother is very keen to try this again.
VA relatively good but I wonder if Kayla would benefit from another attempt before the age of full visual development.
Please refer for assessment.

DOB : 26/06/2012 NHS No.:

Address: [redacted]

Telephone

Prescription details from current sight test: 11 September 2018

	Vision	Sph	Cyl	Axis	Prism H	Prism V	VA	Add	Near VA	Previous VA
RE	6/6	+1.25					6/6			
LE	6/6	+1.25					6/6			

RE Intra-Ocular Pressure mmHg	
LE Intra-Ocular Pressure mmHg	

RE Disc Appearance NORMAL	**Visual Fields**
LE Disc Appearance PALE DISC	

Reason for Referral: Other

SYMPTOMATIC PX CAME FOR AN EYE EXAMINATION.

MUM HAS NOTICED NTAI KEEPS COMPLAINING THAT HE CAN'T SEE FROM HIS LE IF HE LOOKS STRAIGHT AHEAD. THESE PROBLEMS STARTED AFTER NTAI FELL OFF HIS SEGWAY IN APRIL. THE SYMPTOMS HAVE REMAINED CONSTANT. HE WAS SEEN IN CAUSALTY AND DISCHARGED WITH NO REPORTED EYE PROBLEM.

UPON EXAMINATION I FOUND:
1) LE PALE DISC
2) LE VA- 6/6- OBTAINED WITH PERIPHERAL VISION(HEAD TURN TO RIGHT SIDE)
3) NO CENTRAL VISION IN LE

Added after meeting*

- Anisometropes with good vision post critical period;
- We advise them to keep their glasses wear full time until age approx 10 years *(finishing primary)*

- *For example rx; R +3.50/+1.50 x90 L +0.75/+0.25*
- *No further risk of amblyopia after this age and good acuity with the left eye uncorrected.*

Intermittent exotropias

- Near, distance (true/simulated) and non-specific
- Tends to be worse in summer (bright light)

- When to treat?
  - Causing asthenopia, diplopia, headaches, eye closure
  - Cosmetic concern from the child
  - Noted by parents more than 50% of the waking hours

Intermittent exotropias: management

- Management options;
  - **Orthoptic exercises**; only if less than 20^ BI, good motivation, conv exercises stereograms. Delaying the inevitable?
  - **Minus lens therapy**; upto -3.0Ds of over minus correction, small angles work best (upto 25^ BI)
  - **Surgery**; medial rectus resection/bilateral rectus recessions/recess resect, wears off in approx. 10 years depending on post op result (consec esos fair best)
  - **Leave alone?**

- Aim; improved functional control, less asthenopia, (improved cosmesis)
- Loss of panoramic vision?

Case study 1.

- 10 years old
- Optom referral following annual check,
- Myopic -3.25/-0.50 X180 R&L 6/6 E.E
- Mum noting squint when without glasses (swimming etc)
- Optom noted an “easily breaking down exophoria **WITH** glasses” therefore referred in to Orthoptics.

Case 1, Orthoptic findings

- Vision; R 0.0 L 0.1 Th cr logMAR
- Cover Test; c gls N&D) Mod exophoria c fair rec
- Controlled Binocular acuity; N&D 6/6
- Prism fusion range; N&D) excellent
- Stereopsis; 85” of arc Frisby
- PCT; c gls N) 35^ BI D) 20^BI
- =non-specific exophoria with excellent control
- Not noted by mum often, not bothering child at all, no asthenopia or cosmetic concerns
- **DISCHARGED**

Case 2.

- 17 years old
- Optom referral following c/o noting RE drift
- Wearing -0.75/+0.75 x 95 -0.25/+0.25 x 85 2^BI EE
- Diplopia and headaches for last few months
- Referred to Orthoptics

Case 2. Orthoptic findings

- Vision; c gls R 0.1 L 0.0 Thomson LogMAR
- Cover test; c gls N&D) Mod exophoria c fair rec
- Prism fusion range; excellent
- Controlled binocular acuity; c gls N&D 6/6
- Stereopsis; 85” of arc
- PCT; c gls N) 40^ BI D) 20^ BI
- = decompensating exophoria with symptoms
- Referred to clinical lead for surgical listing.

Case 2. results

- Had Right medial rectus recession 6mm

- 3 months post op;
  - Patient very happy and symptom free
  - Glasses discontinued
  - Excellent control (same as pre-op
  - PCT N) 18^ BI D) 16^ BI
  - Advised to seek re-referral if symptoms recur, could try prismatic glasses or further surgery
  - **DISCHARGED**

Specific reading difficulties

- Convergence insufficiency
  - NPC less than 10cms (or of can only be maintained at this point with significant effort)
  - Orthoptic exercises, 5x/day, 3 mins with rest for 2 weeks.
  - Should be treated and discharged within 6 weeks
  - Possibility of Ophthalmologist referral if concerned about the none improvers.

  - Many improve immediately, *?never had a problem*
  - Motivation? At least 12 years old, patient needs to be symptomatic.

Specific reading difficulties cont

- Accommodative insufficiency
  - Consistently below expected for age
  - Bilateral in majority of cases (*unless local trauma*)
  - Disuse
    - High hypermetropes or high myopes after correction
  - Early symptom of glaucoma in presbyopes
  - Poor general health
  - Following virus, especially glandular fever
  - Local trauma, usually temporary
  - Drugs, antihypertensives and antidepressants

Accommodative insufficiency cont

- Asthenopic symptoms
  - May note micropsia
- Secondary convergence insufficiency common

- Cyclo refraction
- If nil, issue up to +2Ds near correction
- Treat any associated convergence weakness

Visual Stress

- Meares-Irlen
- RCO recommendation of full optometrical and orthoptic examination to rule out more common issues first:
  - Accommodative squint,
  - convergence/accommodative insufficiency,
  - Near exophoria.
- We refer to Bradford University for a formal diagnosis & Treatment.

- *Evidence to support that overlays don't have an effect.* *(Ritchie et al 2011)*
  - *Very small numbers of clinical significance but not statistically significant.*

Incorporation of prisms; Adult patients

- A difficult one! Especially in intermittent deviations
- Full dissociative measurement with prism cover test vs fixation disparity
- Prisms into trial frame and check with cover test in free space?

Adult prisms

- Longstanding elderly patients with distance diplopia- small horizontal prisms work wonderfully.
- Small vertical corrections
- Very little symptomatic value in incorporating low (less than 5-10^) horizontal prism at **near**.
- Small prism incorporations can make it more difficult for the orthoptist
  - Errors in ultimate dispensing

	Sph	Cyl	Axis	Prism	Base	VA	Pinhole	Add	Near Vision	Previous corrected VA on (date)
Right	+1.00	-0.25	130		6/4-	0.5^OUT				
Left	+0.75	-0.25	70		6/4-	OS^OUT				

	Right eye	Left eye	
Visual fields	Normal/enclosed (if abnormal)	Normal/enclosed (if abnormal)	
Optic nerve ends	0.25 C:D	0.5 C:D	
Intraocular pressure Time	mm Hg	mm Hg	Applanation/non contact/ Other

Additional information

Cycloplegic refraction ☐ Dilated fundus examination ☐

- Px attended today c/o reduced DV - gradual onset + intermittent vertical diplopia - random onset ≈ 2 weeks.
- Cycle examination revealed hyperopic Rx as above + associated reduced VA as above.
- There was no diplopia present today or any sign of vertical oculomotor imbalance.
- Please refer to HES - Routine - to investigate nature of reduced VA + symptoms of diplopia.

GOS 18 Part One – This part must accompany any referral made to an Eye Department

STATEMENT: The reason for this referral has been explained to the patient or guardian who agrees to it. The patient or guardian also consents to information being exchanged between the Hospital Eye Service, their General Medical Practitioner, and optometrist or ophthalmic medical practitioner (delete any not consented to) F.A.O GP please also check px for diabetes due to fluctuation in VA/Sx as described above.

If appropriate, Guardian's name and address

Signed (optometrist/OMP) [illegible] GOC/GMC No.

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Questions?

Any requests?

- Inclusion in the correspondence?
- Don’t imply surgery as can mislead the patient.
- Don’t advise too late for amblyopia therapy

Thank you!

References

- Current Opinion in Ophthalmology 2002.Volume 13(5), pp 337-340 Clinical research in pediatric ophthalmology: The Pediatric Eye Disease Investigator Group

- Objectively monitored patching regimens for treatment of amblyopia: randomised trial . *BMJ 2007* Catherine stewart

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- Randomized trial of treatment of amblyopia in children aged 7 to 17 years. PEDIG 2005 Archives of Ophthalmology