Answers to Audience Questions - WSPOS World Wide Webinars

WWW 8 – Season 2 – Early Onset Esotropia


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1. For refraction why not use atropine?

   YM: One drop of atropine is dilating the pupil for 3-7 days. There is no need for such inconvenience.

   AA: Atropine is better able to cause full cycloplegia in dark skinned infants than cyclopentolate so we tend to use it more often, however we avoid the drops and use more of the ointment to reduce the amounts absorbed into the circulation

   LH: Due to possible side effects and long time of cycloplegia, while cyclopentolate has a very similar effect.

   FCC: I use atropine as long as it will not disturb school activities. Otherwise, I will use cyclopentolate mixed with tropicamide and phenylephrine.

   BG: We prefer atropine cycloplegia from time to time. Especially in esotropia cases we need a full cycloplegia. When we target to eliminate all refractive error effects, the use of atropine cycloplegia will give us perfect results. As our policy, we use cyclopentolate drops for light iris, atropine cycloplegia for deep dark iris.

   RK: Atropine not required in all cases as similar effect can be obtained by Cyclopentolate and the duration of action is much lesser. However, in PAET and Acquired esotropia cases I do atropine refraction before performing surgery.

   BVR: Combination of 1% tropicamide and 1% cyclopentolate gives cycloplegia comparable to 1% atropine with benefits of less severe side effects and a shorter duration of action of drugs. Studies have shown no statistically significant difference in the mean spherical equivalent values using the two drug regimens vs atropine 1%.

2. What is everyone atropine's refraction protocol like?

   YM: In selected cases, when there is residual ET despite giving the full correction, we can try giving atropine drops three times a day for two days and then refract. Usually that gives additional 0.5-1.0D that sometimes is the solution for the residual ET

   AA: Atropine ointment/gel instilled 3 times a day for 3 days then on morning of refraction, none should be instilled, then refract(give paracetamol to baby if there is fever or as prophylaxis to avoid fever

   LH: Do not use it.

   FCC: Patients with strabismus, 1 drop atropine 3x a day for 3 days prior to consult

   BG: We do not have either atropine drops or ointments in our drug market. We prescribe the drops according to patients' age, and give atropine drops two times a day for three days. Then we measure the refractive errors.

RK: Same as above Q1

BVR: I have stopped using Atropine in my practice from past 20yrs now. Repeat refraction with Cyclopentolate1% & Tropicamide 1% + Phenylephrine combo does uncover +0.5to + 1D more.

3. I rarely have patients with light irides, in that case is cyclopentolate 1% sufficient enough?

   YM: I use cyclopentolate 1% + Tropicamide routinely in all cases

   AA: This should be enough. But watch out for reactions

   LH: I use cyclopentolate + tropicamide also.

   FCC: Yes. I wait 45 mins after instillation of Cyclopentolate + Tropicamide + Phenylephrine mix before doing my refraction

   BG: If the refraction is found same on 3 measurements, 1% cyclopentolate is sufficient. If the measurements after 45 minutes following instillation still found with changed values, adding Tropicamide drops, most of the time, does not change the results. In this case, Atropine drops 2 times a day for 3 days will give us correct refractive errors.

   RK: In majority of the cases, it is enough.

   BVR: Cyclopentolate 1% & Tropicamide 1% +Phenylephrine combination instilled 2 times separated by 20 mins does provide adequate cycloplegia equal to atropine even in dark irides. Make sure not to put too many drops of Cyclopentolate to avoid psychosis.

4. What is the right age for taking up the child for strabismus surgery in DRS?

   YM: If there is good binocularity we can wait until the age of 3-4 years. If not – ASAP.

   AA: Surgery should generally be avoided in DRS if the child is straight in primary, however if not, wait until the child is at least 2 years or till child allows accurate measurements.

   LH: If not an extreme AHP nor amblyopia, I wait until 3 years old.

   FCC: If patient has significant AHP and at risk for amblyopia

   BG: If we talk about real surgery, if patient have esotropia in primary position and serious abduction deficit >-4, without abnormal head position, I don't wait for any certain age for surgery. Because above situation prepares deep amblyopia. In this situation strabismus surgery and amblyopia therapy may be performed together. In our practice, we inject Botulinum toxin, which is not real surgery, to the medial rectus muscle on effected eye(s). Botox injection may help to ensure the Duane diagnosis and to check the abduction capacity and decrease the deviation amount and also stimulates the operation for plane for future. Otherwise, if there is early esotropia with Duane syndrome, with less than 20-25pd with slight AHP we can wait up to 3-4 years.

   RK: Around 2-3 years of age. If one can accurately measure the deviation, ahp, retraction, overshoot etc., even earlier; say 14-18 months of age.

   BVR: Would operate ET Duane whenever child has significant head posture. Earliest age is 1 yr. and after. In cases of bilateral ET Duane, I would operate earlier as these children cannot adopt a head posture to maintain binocularity.

5. AHP in Duane Syndrome: how to measure it? Any App for smartphone?

   YM: Exact measurement is not so important.

   AA: A goniometer or the protractor from a student's mathematical set can be used

LH: I use the photo editor of iPhone that rotates the picture and can give you the exact angle of rotation of the face.

BG: We use strabismus goniometer which I bought from one stand during the AAO meeting. But one of the architectural goniometers easily used for measurement.

RK: One can use goniometer esp. in older children.

BVR: I don't measure AHP in Duane syndrome as surgery is not based on the amount of Head turn, unlike in Congenital Nystagmus.

6. Why do you think age at presentation differs so much between countries?

YM: Depends on the availability of medical care

AA: Depends on whether there is health insurance

LH: I agree with YM and AA.

FCC: It depends on both availability of medical care and cost of health care.

BG: I also agree with YM and AA

RK: Parental education, awareness, referral by paediatrician etc. matters. Sometimes in countries like in India opinion of the grandparents and elders matters before a mother can bring the child to a doctor.

BVR: Age at presentation depends on availability of trained paediatric ophthalmologist. Much depends on paediatricians, as in most cases they are the ones who refer these children to paediatric ophthalmologist.

7. Is Botox considered before 12 months and if so at what age?

YM: I would use it whenever I feel surgery is needed

AA: Botox is better when prolonged anesthesia is a risk to the patient. So any age when this is so, it can be used. Though I hardly use Botox as it is not as available where I work, from age of 9months it can be used if available

LH: I use Botox from 6 months old and up.

BG: I use Botox from 6 months old and up but my dosage is always same 3U per muscle

RK: I think it can be used in infants more than 6 months of age; though I do not have much experience.

BVR: I do not use Botox in Infantile ET.

8. Under what kind of anaesthesia / sedation do you give Botox injections in infants? Laryngeal Mask Anaesthesia yes or no? Or just inhalatory?

YM: Laryngeal mask. It's much more convenient

AA: Laryngeal mask airway is best , once you put a tube , might as well do the surgery

LH: Laryngeal mask or inhalatory depending on anesthesiologist and also if is one eye or both.

BG: Our anesthesia department prefer inhalation for injection. If we plan same time examination under general anesthesia, they use laryngeal mask.

RK: Laryngeal mask

BVR: I do not use Botox in Infantile ET.

9. Till what age do we need to undercorrect the ET in CVI?? If child is presenting for surgery at around 10-12 years of age, do we need to still undercorrect??

   YM: For patients with mature visual system I would not under-correct.

   AA: In my hands, undercorrecting them leaves a large residual, so tend to do same dosage as in normal kids and go for same outcome: leave them slightly ET

   LH: I always undercorrect around 20% of regular dosage of surgery.

   FCC: I undercorrect regardless of age

   BG: I plan 10-20% less correction.

   RK: I always under correct by 10-15%.

   BVR: Under-correct by reducing 0.5 mm on each side regardless of age, in children with ET & CVI.

10. What is the angle you consider more than two muscle surgery in infantile ET?

    YM: 50PD

    AA:50pd

    LH: More than 65PD

    FCC: > 50PD

    BG: I use always two muscles. I perform faden operation if the patient has over 50pd esotropia.

    RK: > 60-65 PD.

    BVR: Maximum BMR of 11.5mm measured from limbus or 6.5mm from insertion does correct up to 55 - 60 PD in Infantile ET. Beyond 60 PD you need to add graded single LR resection and beyond 80PD we add graded both eyes LR resection. When doing LR resection in both eyes , I do not recess the MR beyond 11mm from limbus. As it is known that insertional distance of medial rectus muscle varies, I tend to measure from the limbus.

11. Any contraindication of cyclopentolate in case of convulsion?

    YM: Yes. I would not use it in this situation

    AA: Not appropriate in kids who tend to have this.

    LH: If kid is controlled under medications, I use 1 drop plus tropicamide. Never had complications.

    FCC: Yes, avoid cyclopentolate

    BG: If kid is controlled under medications, I use this drop under pediatrician's observation. 45 minutes after last instillation, I measure de refractive condition.

    RK: Yes. I use Homatropine in these cases.

    BVR: I haven't had any problems using Cyclopentolate in children with convulsions under control with medical treatment.