

WWW 1 Panellists



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Case 1 - Exotropia in CFEOM: Can we do better?

Panellists: Cumhuri Sener (CS,) Federico Velez (FV) & Ramesh Kekunnaya (RK)

1. At what age is it reasonable to do surgery at congenital fibrosis?

CS: There is no comparative data. However, the general principle is to avoid amblyopia. In most cases the condition is very complex and a detailed exam including each eye's and both eyes' motility, saccade velocity, aberrant innervation, alphabetical pattern is essential for a successful strategized surgery. The common mistake in terms of preventing amblyopia due to ptosis and excessive head posture is planning a ptosis correction before the strabismus correction.

FV: Depends on other factors. Head posture, fusion. Ptosis. Amblyopia. Sooner correction is ideal but in general is delayed by family members

RK: Depends on a case to case basis, severity of limitation, amount of ptosis, cosmetic concerns by the patient and parent. Earlier the better, but generally when the child starts walking.

2. Medial rectus is hypo plastic; can we try medial rectus attached to ppl?

CS: I am not sure what ppl stands for. But, any muscle tissue is useful in CFEOM surgery.

FV: Yes, to fix eye medially. Hypoplastic muscle can be used to fix the eye to periosteum. Other options include silicon, sutures, periosteal flap

RK: Yes, muscle can be anchored to medial palpebral ligament. Personally, I don't perform this procedure.

3. Inf rectus recession might have exacerbated exotropia in pp; how about disinheriting inf. oblique to take out abduction factors?

CS: I do not see an indication for IO surgery in this case. XT should be dealt with more straight forward approaches.

FV: it is definitely a possibility. An option was to do a nasal transposition. However, the adducting effect is limited when recessed. The main factor in this patient was the superior oblique. I agree eliminating abducting forces may help.

RK: IO myectomy is an option to get rid of the abduction force, but one needs to be careful in the presence of hypotropia, which can be exaggerated.

4. How about nasal transposition of left IR with the 2nd surgery (re-advancement)? That may help with the XT.

CS: It would be useful. I strongly recommend its use in cases with A-pattern.

FV: I agree. It was discussed. Including a small resection

RK: Yes, this could be an option, in fact on both sides even during the first surgery.

5. What are the systemic implications of knowing the Genetic types of CFEOM?

CS & FV: Gene Reviews. Congenital Fibrosis of the Extraocular Muscles Mary Whitman, David G Hunter and Elizabeth C Engle. However, genetic analysis is yet unfortunately not capable of giving exact phenotypes. We still have to systemically investigate for associated disorders.

6. Why is there such head turn with such poor fusion (poor vision OS)?

CS: The right eye had much better vision and he had left turn and chin up, because the adduction and the supraduction are limited, that is the resting position of the right eye. He needs to put extra effort in order to bring the eye towards the centre. Posture is not related with binocularity here.

FV: The fixing eye was the right eye. That eye is fixed in exotropia and hypotropia. This patient is unable to realign the fixing eye under monocular conditions.

7. Is there a role for doing ciliary artery sparing surgery on the inferior rectus to avoid ant seg ischemia?

CS: Ciliary vessels are usually thin and enmeshed into the fibrotic muscle, very difficult to dissect without interrupting the branches. Different than ordinary vertical recti.

FV: Yes, it is possible. However, this muscles may be abnormal and difficult to dissect blood vessels. But it is possible.

RK: Not impossible, but generally in CFEOM CASES the extra ocular muscles are tight, abnormally thin etc. Hence it is difficult to separate the ciliary vessels. Additionally, IR was very tight here. Even disinserting the muscle itself, is a challenge.

8. In cases of significant ptosis and IR restriction and chin up in CFEOM, would presence of significant ptosis affect your decision in weakening the IR?

CS: No. In these cases, upper lid usually follows the position of the globe. Once the hypo is effectively dealt, there is a good chance that the upper lid is carried towards up with the globe.
Ptosis correction is the last step.

FV: In general, this patient result in under correction. The answer is yes. Because the limited motility will limit how much ptosis correction is possible. This can be limited by the risk of severe dryness.

RK: No, it's best to relieve the restriction created by tight IR by doing fairly moderate amount of IR recession. Generally, there is undercorrection of hypotropia in CFEOM cases. Later one can decide about lid surgery.

9. Is there any operation done in the childhood in this patient?

CS: Yes, please see the 1st question.

FV: Surgery can be done at any time considering other factors such as torticollis, risk of amblyopia, fusion

RK: Yes, of course. He could have had his surgery much earlier. He didn't even know his eye alignment could be improved. He basically came in with a complaint of vision in his left eye. We then explained the possibility of eye muscle surgery to him, for which he agreed. He was so happy (even with the residual XT) on his last visit and said he now holds his head straight and can even see something with his left eye.

10. Options to treat a variant of CFEOM - which muscles should be touched? And how to decide for planning if MRI shows hypoplasia of muscles and there is large Exotropia with hypertrophic and -2 limitation of adduction and elevation was present?

CS: For the chronological evolution of surgical decision making and the largest surgical case series report with pretty much of the raw data, please see our article; Strabismus surgery in CFEOM, a paradigm; Ophthalmic Genet. 2014 Dec;35(4):208-25. And Our chapter CCDD, in Traboulsi, Utz (eds) Practical Management of Paediatric Ocular Disorders and Strabismus. MRI is useful but not essential for a strabismus surgical plan in CFEOM.

FV: Recommend to consider the importance of the superior oblique in the clinical pattern. A fibrotic SO causes exotropia and hypotropia. With hypertropia in abduction of the non-fixing eye. Recessing the IR in hypotropic eyes may not be the may muscle. this can cause more exotropia and the A pattern is not caused by this muscle.

RK: In this scenario of large exotropia and hypotropia with -2 elevation and adduction large LR recession +/- periosteal fixation and MR resection and SO weakening would be the best option. But we need to consider other factors such as FDT, etc. before deciding. MRI can be supplementary, but we cannot decide solely based on MRI findings.

11. It would be useful to use traction sutures in the reoperation.

CS: Traction suture is very useful at any stage. Please see our article above.

FV: Can help. Consider attaching to periosteum

RK: Yes, can be considered and is useful.

12. How about transposition of split lateral rectus towards medial rectus

CS: EOM and the orbital soft tissue are very tight in CFEOM; I have not attempted that.

FV: could be an option if not tight and not fibrotic

RK: That may not be an option since LR and other muscles are very tight in CFEOMS, so it will be difficult transpose the split LR to MR in these cases. Hence I would not consider it.

13. Any role for sending biopsy of the muscles?

CS: The diagnosis of CFEOM in general is clinically very straight forward. In obvious cases; pathological specimen of the EOM is inconclusive other than fibrosis and disorganisation, including the electron microscopy in our cases and also for the literature. There are some subtle cases even in the same family, such that one may easily overlook them and classify as normal. Please see Sener EC et al Archives of Ophthalmology 01 Aug 2000, 118(8):1090-1097. Unfortunately, milder cases usually do not need any surgery, and therefore I have no experience about their histopathology.

FV: If the genetic testing confirmed CFEOM, I don't see any extra useful information. If the clinical pattern was similar but the genetic testing was negative, I think there is value, but the pathologist should look beyond H-E typical stains.

RK: No. Role of biopsy is limited in this typical CFEOM.

14. How long did you wait between surgeries for avoid to anterior segment ischemia?

CS: I usually wait at least 6 months for another surgery. I eventually end up operating on 3 recti in most of the severe cases (please see our article above). I always keep in mind that a. some of the EOM can be missing (the count may seem to be normal in some sections of the orbital imaging but does not have to make the insertion on the sclera.) b. Ciliary vessels can be missing or very thin. I had only one adult case in whom I noticed a sudden corneal haze with just 1 muscle operation,

and I stopped to add any more muscle at that moment. The cornea cleared next morning without anterior chamber reaction. I was unable to verify ASI with angiography.

FV: Anterior segment circulation studies indicate 4 months. I always recommend to consider if possible and indicated find out if the anterior segment perfusion is normal.

RK: 3 - 4 months in risky patients. Otherwise I perform 3 muscles surgery simultaneously in young and healthy patients. Please ref to our publication: *Tibrewal S, Kekunnaya R. Risk of Anterior Segment Ischemia Following Simultaneous Three Rectus Muscle Surgery: Results from a Single Tertiary Care Centre. Strabismus. 2018 Jun;26(2):77-83.*

15. Would you have considered plication as an alternative to resection in this particular case?

CS: Please see my article above. Resections or plications can be an essential part for a successful outcome, they are effective in CFEOM and in fibrotic muscles as a tether. I prefer plication over resection in every case.

FV: I would not consider either. These muscles are atrophic. It is like resecting a denervated muscle. It was the authors' choice to do this. But I personally don't do this if the muscle is denervated and small and fibrotic.

RK: I would perform resection. Plication in my opinion is not good enough when you specifically need a large tethering effect esp. in CFEOM.

16. Have you had cases of CFEOM where there was conjunctival scarring? and if yes, how is that managed?

CS: The fornix is short; it may be difficult to reach to the insertion. I perform modified Swan or rarely fornix incision. I try to leave the limbus intact for the circulation although there is not strong evidence for that. However, patient may also need the limbal area for a filtering procedure in the future. In very few cases I had difficulty to close the conjunctiva and would need a small piece of amnion.

FV: Tight conjunctiva is very common in longstanding restrictive strabismus. I recommend to recess the conjunctiva preserving the fornix. For these cases I recommend to do limbal or paralimbal incisions because it releases more tension than fornix incisions.

17. I was to do bilateral LR recession 15 mm and bilateral IR recession 6 mm.

CS: Please see my article above. Recessions alone are ineffective unless you combine that with a pulling force to the opposite direction. This patient is an exception to our proposed paradigm. I would not choose to do an IR surgery in this patient as the 1st procedure.

FV: Not sure what is the question. This seems to be a surgical option preference

RK: Just LR recession is not sufficient as you can see residual XT in spite of large surgery on both sides. In this case IR was very very tight as we all saw on the FDT video. Hence that was an intraoperative decision to perform IR recession in left eye.

18. Remember importance in children case of Type 3 for MRI to rule out possible associated anomalies.

CS: Any type of CCDD has systemic associations. The patient must be evaluated completely starting with a thorough physical examination of the systems. It takes a multidisciplinary approach. Then you can decide what kind of further tests non-invasive or invasive.

FV: Totally agree. Genetic and imaging testing are important. These are conditions that can go beyond the eyes

RK: Yes, always need to rule out associated ocular and systemic associations. Even muscle anomalies can be seen intraoperatively.

19. Is there any role for Botox in CFEOMS?

CS: Please see our articles above. In mild cases and at very young age there might be a role (This comment is an extrapolation from our data of Botox being effective in ET Duane cases younger than 7 months of age; JAAPOS 2019). In severe cases that can be used as an adjunct to the surgery but ineffective alone.

FV: Very limited. Not for fibrotic hypoplastics denervated muscles. Perhaps for the secondarily enlarged muscles. But limited.

RK: No, as a primary mode. Can be used to augment the effect recession.

20. Any suggestions for residual bilateral hypotropia with chin up after maximum IR recession and SR resection in CFEOM type 3?

CS: Please see our article at the Ophthalmic Genetics. SO or horizontal muscle superior offsets can be useful.

FV: Always look at the SO tendon. Recommend the following reference; very helpful: Shoshany et. Al. (J AAPOS 2019;23:325.e1-6)

RK: SO weakening is the best option

21. What is the reason for the large head posture?

CS: Please see the answer above for 6.

FV: Large fixed exotropia and hypotropia of the fixing right eye

RK: Right eye was his fixing eye which was in abducted position and hypotropic, which led patient to adopt a very large left face turn and chin elevation (he also had significant adduction and elevation limitation). To bring the eye into field of vision he had to adopt an AHP.

22. What is the genetic pattern in this particular patient?

CS: I do not think that was available.

FV: It was not available.

RK: Was not performed for this patient.

23. Were you not worried about anterior segment ischemia since you operated on more than two muscles per eye?

CS: Please see above answers.

FV: it would have been very concerned. I believe the chemosis seen in the left eye on postoperative day 1 could represent ASI

RK: Please see the reply to question number 14. He was healthy and there was no other muscle or ciliary vessel anomalies intraoperatively, hence 3 rectus muscle and SO muscle surgery was done. In most situations I perform 3 muscles surgery simultaneously in young and healthy patients. Please ref to our publication: *Tibrewal S, Kekunnaya R. Risk of Anterior Segment Ischemia Following Simultaneous Three Rectus Muscle Surgery: Results from a Single Tertiary Care Centre. Strabismus. 2018 Jun;26(2):77-83.*

24. Did you rule out left 3rd N palsy?

CS: Basically CFEOM is a complex of congenital cranial nerve paralysis by definition.

FV: Differential diagnosis. For sure a possibility

25. Why wasn't nasal transposition of IR planned with IR recession in the first surgery in this case??

CS: Please see above. I would not do the IR for this case as the 1st surgery, if I did I would.

FV: Not sure. Good question. I would have transposed the muscle to the MR muscle for the exotropia

RK: Yes, we could have done that. But I have some reservation esp. when I am transposing the SO to MR, hence decided against it. Shifting LIR towards MR could have helped.

26. Which genetic panel?

CS: Please see the Gene Reviews 2019

FV: Recommend to read Gene Reviews. Congenital Fibrosis of the Extraocular Muscles Mary Whitman, David G Hunter and Elizabeth C Engle

RK: Most common genes involved are: KIF21A, PHOX 2A, TUBB3 for CFEOM1, CFEOM2, and CFEOM3

27. Was nasalisation of IR done in this case of CFEOM?

CS: Please see above

FV: Surgeons did not do this

RK: Please see answer to Q 25

28. It is said that because of anomalies of the extraocular muscles, anterior segment ischemia can occur with even a single muscle surgery. Is it safe to do three muscle surgery in the eye?

CS: Please see above

RK: Please see answer to Q 23. There were no other anomalies in the rectus muscles other than tightness

29. Is it advisable to resect in CFEOM?

CS: Yes, please see above

FV: Yes, if the muscle is not fibrotic or denervated

KR: Ref to Q 15

30. Why was it necessary to operate the right eye? Any role for LR to MR transposition in such cases?

CS: In order to correct the head posture, we need to target the fixing eye

FV: The right eye was the fixing eye. Not operating on this eye would have not correct the head posture

RK: Also please refer to Q 12

31. Didn't you worry about any segment ischemia?

CS: Please see above.

FV: Yes, I was. As a matter of fact, the significant chemosis seen in the left eye postoperatively could be a sign of a subclinical anterior segment ischemia

RK: Please refer to Q 23. Dr. Velez: Chemosis developed after few days due to exposure, remember he also had lagophthalmos. There were no cells / flare in the AC, neither corneal oedema. When the eye came down from hypertropia swelling came down (after second surgery). Whenever we perform 3 rectus muscle surgery we examine them very closely to rule out possibility of even mild ASI.

32. Role of adjustable sutures?

CS: Please see my article "a paradigm". I do not recommend for recession. For plication, resection or stay sutures I did not find them effective enough in my hands.

FV: Yes, you can use. But it is really rare to over correct this patient. Hang back can work but the problem is undercorrection and the muscle reinserting on the sclera at an undesirable position.

RK: I do not perform adjustable suture surgery. In fact, it is not a good idea esp. in cases where muscles are so tight.

33. Why operate on the left eye at all especially considering pre-operative exposure, and head posture was completely driven by the right eye and not double vision?

CS: Patients are very concerned about their appearance

FV: Very large disfiguring exotropia in a young patient. Very much indicated

34. How can you do this 6 muscles surgery at same time without scleral haematoma?

CS: Nice and gentle surgery is important. I use microscope and take my time.

FV: More concerns with anterior segment ischemia

RK: In this case we operated on 3 muscles in the right eye and 4 in the left eye. Hence total of 7 muscles. Gentle handling during surgery, fornix based incision, post op ICE packs and anti-inflammatory tablets give a lot comfort to the patients in the post op period.

35. I operated a case of CFEOM with exotropia with alternate hypertropia of non-fixing eyes, intraoperatively muscles were replaced by fibrous tissue. I got good cosmetic alignment but then it recurred after 1 year. What is best way to approach such cases? Why was hypertropia alternating?

CS: Hypertropia in CFEOM is not uncommon especially following the surgery for chin up cases. It is usually a result of a condition called synergistic vertical deviation which is a form of aberrant innervation. Please see the article above; "a paradigm".

FV: Hypertropia is an effect of the fixation duress. Undercorrections are very common specially in cases of fibrotic muscles. You may need to go back and consider maximal recession

KR: What was the primary surgery? SO muscle could have been tight in this case, which could have led to Alternating Hypertropia esp. in abduction.

36. Anyone does more surgery to get a little hypercorrection in the immediate post op period?

CS: Hypercorrection of exotropia in this case is very unlikely, but the vertical. Please carefully observe the saccades, ductions, versions and the FDT preoperatively.

FV: You need to do as much as needed to release restrictions. It is hard to determine the dose response in a patient like this one.

RK: Agree. Ideally we need to have ET on the first post op day to have good long term alignment. But not possible to achieve the same in every case.

Case 2 - Exotropia and convergence insufficiency: Do something or nothing?
Panellists: *Massimiliano Serafino (MS), Mauro Goldchmit (MG) & Daisy Godts (DG)*

37. What about modified Scott procedure?

MS: Possible but better in adjustable

38. The case presented by Dr. Serafino was an accommodative convergence insufficiency, where patient do not accommodate and do not converge, therefore, is it reasonable to use positive lenses to encourage accommodation and consequently convergence?

MS: It is reasonable, but temporary measure

39. In Multiple sclerosis there is IC and XT also, sometimes without diplopia.

MS: If no diplopia I would argue against surgery, or if patients really want it I suggest a trial with prism @d or @N

40. Is all strabismus make diplopia?

MS: After surgery diplopia disappeared. So it was related to strabismus only

41. Should we neuroimage orbits to rule out flap tears in all head trauma related injuries?

MS: According to Irene Ludwig, orbital imaging is not able to detect flap tears. There was no history of orbital trauma, but only head (them back) trauma

42. Can resect recess of lateral rectus be an option to collapse NDD?

MS: Yes, it is according to Scott, but better in adjustable

43. How frequently do you depend on synoptophore for detecting binocularity situation?

MS: In case I suspect a central disrupt of fusion or a preop torsional diplopia

DG: I do not depend on synoptophore to detect diplopia, better measure with prisms, synoptophore is not a natural situation

44. What about the use of FADDEN RL for the far / near incomitance?

MS: Faden is irreversible procedure. That is the reason I do not like it. May be a modified faden described by Scott (in adjustable)

MG: Faden to the LR is indicated when the deviation is greater at distance and in my experience is not a procedure with good results.

45. What surgery would you choose if the patient had just a small deviation for distance (4 - 6 PD) and a large deviation (20 - 25 PD) for near?

MS: Just bilateral medial rectus elevation (one tendon)

MG: One MR small resection

DG: First do a PAT (prism adaptation test)

46. Is the prism trial gone with Fresnel prisms or incorporated prisms? How long would you trial prisms for?

MS: 15 days

MG: I personally would not indicate prisms in this case

DG: In the clinic with trial frame, in case BSV we can prescribe Fresnel before the non-dominant eye (small amount <15 PD) or if the patient has no glasses than ground-in prisms divided over both glasses

47. What about bilateral MR resection in those cases with good fusion?

MS: Fine but you should test with prims before surgery

MG: This is a possible surgical plan but with high risk of creating an ET for distance

48. What do you do if you have traumatic loss of fusion?

MS: Surgery for cosmetic issue

MG: Patient should be informed about possible intractable diplopia

DG: Try to correct the angle with prism (if angle is small) and hope the patients gets fusion again, also Botox can be tried in larger angles, as permanent option surgery and correct with prisms residual angle if necessary to achieve superimposition. If none of these work: occlusion by patch, lens or IOL

49. I am also an Orthoptist from Portugal and I agree with application of convergence exercises. Would you prefer exercises just with prisms or with synoptofore? In your experience, which one is the most efficient?

DG: Push-up exercises and jump convergence + with prisms

50. Wouldn't it be easier to shift down lateral rectus if you are already doing a lateral surgery?

MS: It is possible but there is not enough data. Anyway it is possible

MG: MR acts more for near

51. Post op results of this converge. Insufficient!

MS: Sorry, I do not have full access at the chart so far

52. Which angle do you do surgery on? The one which is near or the far / or an average?

MS: Bil Lat rectus recession for angle @D and Bilateral medial elevation (one tendon)

MG: I'll plan for the distance deviation increasing the MR resection

53. Why not bimedial resection?

MS: (a) Resection is less predictable. (b) it is not true that medial rectus resection works better at N. Resections increase the elastic force then create restriction. It means, in case of medial rectus resection, that create a restriction in abduction, i.e. @D

MG: Answer above

54. In how much of near - distance disparity do you do MR upshift?

MS: Up to 30 PD if patient is potentially fusing, 8-10 PD if not. Anyway we need more data

55. Maybe it responded better on lateral rectus recession because it had contracture?

MS: At Forced duction test - no contracture

MG: The major problem is the CI and not the LR contracture

56. Our experience with Botulinum toxin has been bad and temporal resulting in diplopia at distance vision when injecting in lateral rectus.

MS: I personally do not like or use botulinum

DG: Botox gives always temporary results, if diplopia at distance you know you do less surgery

57. Is adjustable surgery an option?

MS: Yes, it could be; it is surgeon experience dependent

MG: Yes, it can be done under adjustable. It is not my preference.

58. I agree that exercises for CI are always worth trying; would you agree that improvement is less likely in cases due to trauma?

DG: Yes, because head trauma can damage the Edinger–Westphal nucleus and then convergence and probably also accommodation will not improve if damage is permanent

59. Which is better - orthoptics or surgery?

MS: I think orthoptic is a temporary measure or is a way to understand if patient will get better with surgery

DG: Orthoptics, if to improve convergence and fusion, which improve the results of surgery. Orthoptics and prisms can be used in small deviations, surgery in larger ones

60. For how long do you wait, after a head trauma, to do surgery?

MS: 6 months if no improvement

MG: At least 3-6 months checking the stability of the measurements

DG: At least six months; in the meantime, prisms, botox or occlusion (less preferred)

61. Instead of a shift, can we do a differential resection / plication of the medial rectus?

MS: Yes, it is possible, but I suggest in this case an adjustable

MG: Yes

62. Daisy, should we give exercise with prisms?

DG: Yes, if the patient cannot see single without, you need to do the exercises with prisms: prisms to see 1 image than improve convergence

63. Does the presence of Central Fusion Disruption affect your surgical planning?

MS: Not the planning, but I would tell patient he will be diplopic after surgery (100%)

MG: Answered above

DG: Yes, surgery has to be exact, because fusion cannot correct residual deviations after surgery

64. Is there a maximum prism angle beyond which convergence exercises will not work and surgery becomes necessary?

DG: Always try to improve convergence even in large angles because after surgery you need good convergence too. Exercises do not exclude surgery.

65. Would a trial of prism fusion help us identify if there is a central fusion disruption due to head trauma?

MS: Agree

MG: Yes

DG: Yes

66. Whether fields were tested which itself might have caused XT?

MS: No hemianopsia

67. If prism trial is not always available, what surgery will you choose?

MS: Bilateral LR recession for D angle and bilateral medial rectus elevation (What I did)

MG: Recess-resect or the one that was done

68. What is the cut off to defer the convergence exercise? In this case would convergence exercise really help?

DG: You have to try to see if it helps. In manifest XT without convergence then directly surgery, but in case of trauma perhaps it can recover.

69. Chances of landing up with diplopia for reading? Is there any table to know how much disparity can be usually corrected with MRE?

MS: Unfortunately not; but up to 30 PD if patients is potentially fusing. 8-10 PD if not. Anyway we need more data

DG: Overcorrection leads to diplopia at distance, undercorrection in diplopia at near, residual angles can be corrected by prisms

70. Result of bilateral recession in XT?

MS: It is fine but you have to figure out which angle you want to correct, Then I suggest a prism trial first

71. Is CA/C ratio useful?

MS: It is often low in those cases

DG: Yes, but this was a case of trauma

72. Was the convergence insufficiency corrected fully in this case - Post op?

MS: I do not have full access to charts so far. Anyway patient was happy and angle @d and n within a range of fusion

73. What about vision therapy without surgery for convergence insufficiency?

DG: I don't do vision therapy. Convergence and fusion exercises only to improve results or to treat small deviations

74. Can Medial Rectus transposition lead to torsional strabismus and diplopia?

MS: Although possible, cyclofusion guarantees fusion and avoid postop torsional diplopia

75. Do you consider slanted LRs recession in this type of cases?

MS: I do not like it because data in literature show same effect for same pattern with different slanting procedures

76. Why can't we do stage medial rectus resection of both eyes for case with convergence insufficiency?

MS: It is an option if in adjustable to avoid persistent postop diplopia

MG: Answered above

77. What is the treatment for accommodational insufficiency XT?

MS: Surgery. I suggest bilateral lateral rectus recession for angle @D and bilateral medial rectus elevation

DG: Accommodation should always be measured in patients with convergence problems because it is related, Not in old people of course

78. Bilateral recession in case of large angle XT?

MS: Yes, but I would suggest a trial with prism first

79. How much elevation of MR do you do?

MS: one tendon

80. In such a case would you consider adjustable Faden on MR?

MS: Yes, it is an option

81. Should we do a patch test for convergence in sufficiency to rule out true or pseudo convergence insufficiency?

MS: Absolutely yes

DG: If any doubts yes, but always test NPC and NPA, also do a prism adaptation test and if necessary measure near deviation with +3D lenses

82. Success rate of surgery for convergence insufficiency?

MS: It depends on the technique, but with proper technique and if patients are potentially fusing, low risk of persistent postop diplopia

Case 3 - Exotropia, Nystagmus and Anomalous Head Posture: What do we do?
Panellists: Richard Hertle (RH), David Granet (DG) & Lionel Kowal (LK)

83. How do you do orthoptics in nystagmus?

RH: See free article <https://www.ncbi.nlm.nih.gov/pubmed/18300086>

DG: Orthoptic exercises cannot improve nystagmus, only if less nystagmus when better binocular vision; so promote fusion.

84. Is it possible that correcting XT will increase the nystagmus and HP because of reducing convergence?

RH: No

DG: In this patient, the eyes are in ADDuction not convergence. Convergence nulls are more common in INS, ADDuction in FMNS, with fusion convergence can help

LK: Very unlikely

85. I think that prisms can be used instead of overminus at presbyopic ages.

RH: Yes

DG: Yes

LK: No experience

86. What is the foveation period / NAFX whether it improved after surgery?

RH: Yes, it improves, each patients NAFX is different.

87. I have successfully treated a patient with orthoptic exercises and infantile nystagmus syndrome but have to have fair potential to fuse to start with.

RH: OK

88. We are talking about fusion, the fusion will be very weak, due to a difference in vision. Should we not take the AHP as main complaint?

RH: I don't understand the question?

DG: The AHP was better at near with fusion. Fusion in FMNS changes the nystagmus.

LK: That may be correct, but If a child needs a HUGE face turn to optimise acuity, it may be physically uncomfortable and the child may prefer orthopaedic 'comfort' to best vision

89. Could we use prisms to make the child fuse interim to Sx?

RH: Yes

DG: It could be tried.

90. Null point; it's about innervation. What about recess of the lateral rectus for the xt and perform fadenoperation for the medial rectus, which its going to work mostly in adduction but no primary position:

RH: Can be tried

DG: Depending upon alignment you might prevent fusion.

LK: MR Faden [or, my preference, MR Pulley suture] will not have enough effect on aDduction to reduce the face turn. You need to cripple aDduction [e.g. 6 - 7 mm MR recess AND Faden / pulley suture] to achieve that.

91. What is the recommended age for nystagmus sx in a child with AHP?

RH: My opinion, when they are on their feet, e.g., 10-16 months of age.

DG: Usually by the time they can walk you can get good measurements.

LK: Sometime after:

1. They are walking and
2. You have been able to assess the child confidently and accurately, and
3. (if you have the facility) After confident eye movement recordings.
4. If there is an in-office hint of (so-called) convergence null for distance, after the child has had a trial of 7^ BOOU to see if they will use the convergence null when walking around.

You can consider the reduced vision in some kids with Infantile nystagmus to be amblyogenic. There MAY be benefit if doing early surgery if it improved acuity.

92. I think botulinum toxin can play a role to diagnose what will happen after surgery.

RH: OK

DG: Not really in this case.

LK: I can't think of a case where it might have been useful

93. If there was no strabismus, would you operate for alternate face turn if patient needs for cosmesis?

RH: Yes

DG: The fusional status would matter

LK: Yes

94. How does the surgery impact on the nystagmus?

RH: Improved

DG: It is a combination of fusion and the T & R procedure.

LK: Often improves it

95. With the near was he alternating his face turn?

RH: Only when tropic

96. How much was the head posture?

RH: Variable, depending on amount of occlusion and fixation target, but up to 40 degrees

LK: Dr. Hertle mentioned 40-45 degrees

97. Should this PAN be operated for their face turn? And how to titrate for the surgery?

RH: This is not PAN

DG: Usually one position is more common.

LK: If the PAN patient has a convergence null for distance, I do BMR 3 - 5 mm [I do a Prism Adaptation Test first] plus Tenotomy-resuture of lateral rectus OU. If there is no confident convergence null for distance, Tenotomy-resuture all horizontal recti

98. Sometimes we see INS waveforms with FMNS waveforms; how to diff between INS with LATNET COMPONENT or FMNS with latent?

RH: Only way is eye movement recordings

DG: Eye movement recordings are key. At a young (infant) age many waveforms can be noted.

99. Will just FADEN suffice in alternating head turn?

RH: I don't know, but my guess would be no.

DG: No, the child was exotropic. The FADEN would made convergence/fusion worse.

LK: Are you referring to alternating face turn of the Ciancia type [FMNS]? Faden [my preference is the slightly safer MR pulley suture] is inadequate, you need MR recess as well. If you are referring to the alternating face turns of PAN, see Q 97

100. Would you do a prism adaptation test prior to surgery?

RH: Not for this patient, but a good idea

DG: Not needed.

LK: In the case that was presented, no

101. What about making B. L. Recession of Great amount plus B.M. Recession of little amount?

RH: Many things can be tried

DG: That is used when fusion is poor.

LK: In the presented case, the issues were 1. XT and 2. alternating face turns driven by aDduction nulls. A small BM recess is unlikely to have any useful effect on the aDduction null - you need a large mechanical deficit of the MR to achieve that. That will then require a very large LR recess OU to fix the initial XT AND the iatrogenic XT created by the MR surgery