How to treat accommodative spasms in adults and children

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These studies are conducted without any commercial interests.

Objective:

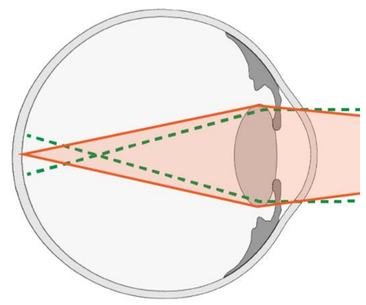
The objective of this study is to show the results in patients treated with accommodative spasms, in childhood and in adulthood.

Method:

The cases of 4 patients, two children and two adults, who presented accommodative spasm, were reviewed.
Complete ophthalmic examination included refraction measurement with 1% cyclopentolate solution.

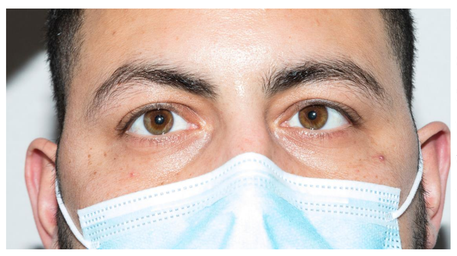
Basic characteristics of accommodative spasm:

- Sustained ciliary muscle dysfunction.
- Blurred vision at distance.
- Pseudomyopia.
- The spasm may be isolated or in some cases accompanied by alteration in myosis and convergence.
- Treatments: Visual hygiene advice, positive lenses, visual and/or cycloplegic therapy to relax ciliary muscle.



Results:

Case	Age	Signs Symptoms	Stere-opsis	VA without glasses (decimal)	Subjective refraction and VA with best corrected	Objective refraction and VA with cycloplegia	Diagnosis	Treatment	Post treatment follow-up
1	14	Blurred vision for the last 3 months, dizziness and intermittent horizontal diplopia	Negative	RE: 0,5 LE: 0,6	RE: +2.50-1.00x175° (0.6) LE: +3.00-0.75x165° (0.6)	RE: +2.75-1.25x175° (0,9) LE: +2.75-1.25x165° (0,9)	Accommodative spasm	RE: +2.50-1.00x180° LE: +2.50-1.00x170° + Cyclopentolate 1% for 10 alternate days	• After 1 month the visual acuity improved progressively and treatment with visual therapy was not necessary.
2	12	Blurred vision for the last week	400”arc	RE: 0,5 LE: 0,6	RE: -0.75 (0.6) LE: -0.50 (0.6)	RE: +1.25-0.25x175° (0,7) LE: +1.00-0.50x165° (0,8)	Accommodative spasm	RE: +0,50 LE: +0,50 + Cyclopentolate 1% in weekend	• After 1 month visual acuity improved progressively, stereopsis improved to 40" arc and treatment with vision therapy was not necessary.
3	30	Strabismus on rise	Negative	RE: 0,15 LE: 0,15	RE: -1.50-0.25x130° (1) LE: -1.50-0.50x60° (1)	RE: -0.25x130° (1) LE: -0.75x55° (1)	Accommodative spasm and convergent strabismus	RE: -0,50 / LE: -0,50 (to drive) + Cyclopentolate 1% and subsequent strabismus surgery: Faden both medial rectus and 4mm recoil of the left medial rectus)	• After 1 month VA without correction RE 0.4 / LE 0.5, and pseudomyopia remained. • After 1year the VA without correction RE 0.5 / LE 0.4, and stereopsis 200"arc. • After 2 years the VA without correction OD 0.4 / OI 0.6, and stereopsis 140"arc.
4	26	Headache, eye pain, photophobia and visual loss *Normal neurological examination	• Visual exploration was not possible in the 1st visit. The symptoms kept him unable to open his eyes. • Treatment was initiated with artificial tears and atropine 0.5% to improve symptoms and to be able to explore. • In 15 days, symptoms improved and could be explored: 40” arc	RE: 1 LE: 1	RE: +0,75 (1) LE: +0,75 (1) *Accommodation Test: altered *NPC: remote	No need to measure	Accommodative spasm and convergence insufficiency secondary to spasm	RE: +0,75 LE: +0,75 + Atropine 0,5%	• During the treatment the visual acuity was maintained at 100% and the symptoms were progressively reduced. • Although an attempt was made to initiate vision therapy to help relax the accommodation, the patient reported eye discomfort when practicing it and the treatment was stopped.



Case 3: Left eye convergent strabismus in the first visit with Hirschberg test.

Case 4: Examination of the near point of convergence in convergence insufficiency secondary to accommodative dysfunction. Picture 1: Convergence is maintained. Image 2: Moving the fixation stimulus closer causes the left eye to break the convergence.

Conclusions

- Cycloplegic exploration is the key to diagnose the accommodative spasm.
- Treatment with 1% cycloplegic, sometimes it is necessary to repeat several times. Glasses with all the refraction with cycloplegic helps to solve the spasm completely or partially.
- In some cases treatment with atropine 0.5% was necessary.
- Adult age combined with convergent strabismus hinders the process of recovery from spasm.
- The stereopsis deficit is another associated characteristic of pseudomyopia, although there is no presence of strabismus.
- The goal would be to restore visual acuity, relax accommodation and improve binocular vision.