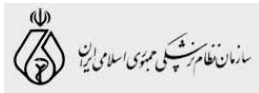




# خبرنامه انجمن فوق تخصصی استراییسم ونوروافتامولوژی

سال اول- تیرماه ۹۴ - شماره اول



گروه فوق تخصصی چشم پزشکی کودکان و استراییسم ایران



## به نام خالق زیبایی ها

### News& Updates:

۱- سیزدهمین نشست تخصصی فصلی گروه استراییسم ونوروافتامولوژی در تاریخ پنجشنبه ۷/۳/۱۳۹۴ در محل انجمن چشم پزشکی برگزار گردید. جلسه شامل ۳ بخش و سخنرانی در باره عوارض جراحی Case presentation, review article استراییسم بود.

2- ESA 2015\_37<sup>th</sup> meeting of European strabismological Association venice. Italy  
1394/7/9.....1394/7/12

## Recent Articles:

### 1-Inferior oblique recession in thyroid-related orbitopathy

Thyroid-related orbitopathy is a form of orbital inflammation associated with thyroid dysfunction, developing in many patients with Graves disease. Fibrosis of the inferior rectus muscle can lead to restricted elevation and vertical ocular misalignment, which may be improved by recessing this muscle.

In some patients, vertical misalignment persists after surgical weakening of one or more vertical rectus muscles. In this case series, unilateral inferior oblique recession as a secondary procedure after inferior rectus recession reduced hypertropia in primary gaze from  $9D \pm 3D$  to  $1.3D \pm 1.5D$  (mean  $\pm$  standard deviation) and largest hypertropia in side gaze from  $18.3 \pm 2.1D$  to  $3.3D \pm 1.5D$ . Postoperatively, all 3 patients were diplopia free in primary and downgaze

*Salchow,DJ, J AAPOS 2015;19:274-277.*

### 2- Choroidal thickness of children's eyes with anisometropic and strabismic amblyopia

Methods:

Forty patients with anisometropic amblyopia, 40 patients with strabismic amblyopia, and 40 age-matched controls were included in this cross-sectional study. Choroidal thickness was measured via the enhanced-depth imaging technique of spectral domain optical coherence tomography in all patients and controls. Choroidal thickness was measured at subfoveal area and at 500 mm intervals to the nasal and temporal to the fovea up to 2000 mm. Measurements were compared between the three groups.

#### Results:

The mean ages were 7.9  $\pm$  2.6 years (range, 4-13 years) in the anisometropic group, 9.0  $\pm$  3.7 (range 4-15 years) years in the strabismic group, and 8.4  $\pm$  2.6 years (range 4-15 years) in the control group. The mean subfoveal choroidal thickness in the anisometropic group was 362  $\pm$  82 mm in the amblyopic eyes and 301  $\pm$  54 mm in the fellow eyes; in the strabismic group, 413  $\pm$  82 mm in the amblyopic eyes and 316  $\pm$  54 mm in the fellow eyes. The mean subfoveal choroidal thickness was 310  $\pm$  78 mm in control eyes. The subfoveal choroids of both anisometropic and strabismic amblyopic eyes were significantly thicker than that of the fellow eyes of the corresponding groups and the control eyes ( $P \leq 0.05$  for all).

#### Conclusions:

The subfoveal choroid of eyes with anisometropic and strabismic amblyopia is significantly thicker than that of the fellow eye and the age-matched controls.

Aygit,ED, Yilmaz,I, Ozkaya,A, Alkin,Z,Gokyigit,B, Yazici,A, and Demirok,A ,J  
AAPOS 2015;19:237-241

[3-The accuracy of anterior segment optical coherence tomography \(AS-OCT\) in localizing extraocular rectus muscles insertions](#)

## Methods:

In this prospective, double masked, observational study the distance of the extraocular muscle insertion from the limbus measured by AS-OCT preoperatively was compared to intraoperative measurement using the surgical calipers. Consecutive patients 4-18 years of age undergoing primary or repeat strabismus surgery on horizontal or vertical rectus

muscles between September 2013 and May 2014 were included. Patients with any condition that interfered with imaging were excluded. Participants were asked to look in the direction opposite to the muscle to ensure that the middle third of the muscle was being imaged and measured.

## Results:

A total of 65 muscles were evaluated, including 9 muscles undergoing reoperation and 10 vertical rectus muscles. Of these, 62 muscles were successfully imaged. In all reoperated eyes, the AS-OCT measurements were within 1 mm of the intraoperative measurements. Overall, 89.7% (95% CI, 78.8%-96.1%) of the measurements were within the 1 mm difference considered “clinically acceptable.” The intraclass correlation coefficient comparing the reliability of the AS-OCT measurements with intraoperative measurements was 0.73 (95% CI, 0.53-0.85), or “good” agreement.

## Conclusions:

AS-OCT can accurately detect rectus muscle insertions in primary or previously operated cases in children as young as 4 years of age.

Ngo,CS), Smith,D, Kraft,SP, J AAPOS 2015;19:233-236

## 4-A Randomized Trial of Levodopa as Treatment for Residual Amblyopia in Older Children

Pediatric Eye Disease Investigator Group\*

Writing Committee: Michael X. Repka, MD, MBA,<sup>1</sup> Raymond T. Kraker, MSPH, Trevano W. Dean, MPH, Roy W. Beck, MD, PhD, R. Michael Siatkowski, MD, Jonathan M. Holmes, BM, BCh, Cynthia L. Beauchamp, MD, Richard P. Golden, MD, Aaron M. Miller, MD, MBA, Lisa C. Verderber, MD, David K. Wallace, MD, MPH

**Design:** Randomized, placebo-controlled trial.

**Participants:**

One hundred thirty-nine children 7 to 12 years of age with residual amblyopia resulting from strabismus, anisometropia, or both combined (visual acuity [VA], 20/50e20/400) after patching.

**Methods:**

Sixteen weeks of oral levodopa or placebo administered 3 times daily while patching the fellow eye 2 hours daily. Main Outcome Measures: Mean change in best-corrected amblyopic-eye VA at 18 weeks.

**Results:**

At 18 weeks, amblyopic-eye VA improved from randomization by an average of 5.2 letters in the levodopa group and by 3.8 letters in the placebo group (difference adjusted for baseline VA, +1.4 letters; 1-sided

P =0.06; 2-sided 95% confidence interval, -0.4 to 3.3 letters). No serious adverse effects from levodopa were reported during treatment.

### **Conclusions:**

For children 7 to 12 years of age with residual amblyopia after patching therapy, oral levodopa while continuing to patch 2 hours daily does not produce a clinically or statistically meaningful improvement in VA compared with placebo and patching.

Ophthalmology 2015;122:874-881

### [5-Z-myotomy of the inferior oblique for small incomitant hypertropia](#)

#### **Methods:**

The medical records of patients who underwent inferior oblique Z-myotomy at a single center from 2000 to 2005 were retrospectively reviewed. All patients had a mildly overacting inferior oblique ( $\leq +2$ ) and demonstrated fusion. All patients were diplopic, which was the indication for surgery. Pre- and postoperative deviation was measured and ocular motility was assessed.

#### **Results:**

Total of 38 patients were included. Of these, 24 underwent unilateral inferior oblique Z-myotomy; 5, bilateral Z-myotomy; 5, simultaneous contralateral inferior rectus recession;

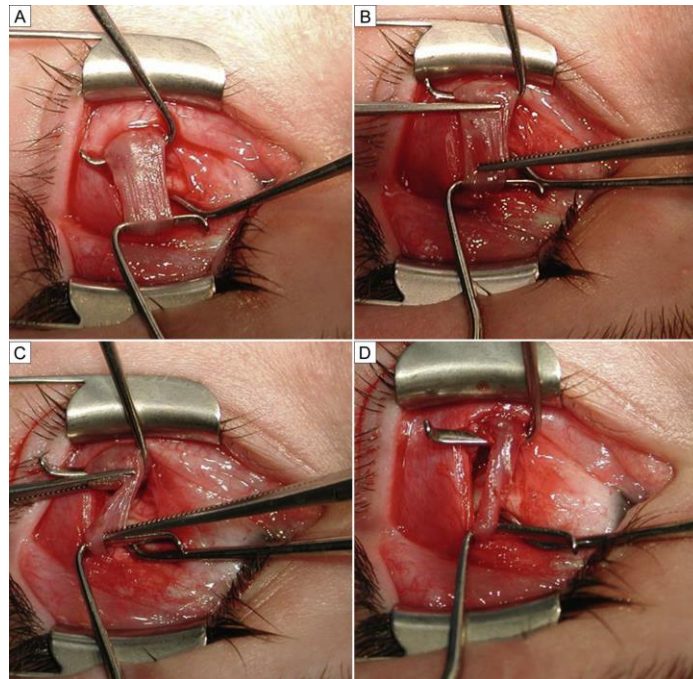
and 4, simultaneous contralateral inferior oblique recession. In most cases the postoperative measurements demonstrated an almost complete “collapse” of the

strabismus pattern. On average, a Z-myotomy procedure required 5-7 minutes to perform. There were no intraoperative complications or deviation overcorrections.

Conclusions:

The inferior oblique Z-myotomy is a straightforward, quick, sutureless procedure. It can serve as an effective alternative weakening procedure for normalization of ductions in cases of minimally overacting inferior oblique muscle with small incomitant hypertropias. The risk for symptomatic overcorrection is very small.

Cruz,FC, Robbins,SL, Kinori,M, Acera,EC , Granet,DB, J AAPOS 2015;19:130-134



Main surgical steps of the inferior oblique Z-myotomy procedure. This is a left eye seen from above (surgeon's view). A, The inferior oblique muscle is isolated and spread between two Green hooks. B, Opposing clamps are applied 10 mm apart from each other isolating 75% of the muscle belly. C, 75% of the muscle belly is cut and cauterized for hemostasis (muscle cuts alternately can be created with cautery alone or cautery clamps prior to scissors cuts). D, The inferior oblique muscle is weakened by lengthening the muscle.

## 6-Prediction of Juvenile-Onset Myopia

Karla Zadnik, OD, PhD; Loraine T. Sinnott, PhD; Susan A. Cotter, OD, MS; Lisa A. Jones-Jordan, PhD; Robert N. Kleinstei, OD, MPH, PhD; Ruth E. Manny, OD, PhD; J. Daniel Twelker, OD, PhD; Donald O. Mutti, OD, PhD;

### Design, setting, and participants:

The Collaborative Longitudinal Evaluation of Ethnicity and Refractive Error (CLEERE) Study was an observational cohort study of ocular development and myopia onset conducted at 5 clinical sites from September 1, 1989, through May 22, 2010. Data were collected from 4512 ethnically diverse, nonmyopic school-aged children from grades 1 through 8 (baseline grades 1 through 6) (ages 6 through 13 years [baseline, 6 through 11 years]).

### Main outcomes and measures:

We evaluated 13 candidate risk factors for their ability to predict the onset of myopia. Myopia onset was defined as  $-0.75$  diopters or more of myopia

in each principal meridian in the right eye as measured by cycloplegic autorefraction at any visit after baseline until grade 8 (age 13 years). We evaluated risk factors using odds ratios from discrete time survival analysis, the area under the curve, and cross validation.

### Results:

A total of 414 children became myopic from grades 2 through 8 (ages 7 through 13 years). Of the 13 factors evaluated, 10 were associated with the risk for myopia onset ( $P < .05$ ). Of these 10 factors, 8 retained their association in multivariate models: spherical equivalent refractive error at baseline, parental myopia, axial



length, corneal power, crystalline lens power, ratio of accommodative convergence to accommodation (AC/A ratio), horizontal/vertical astigmatism magnitude, and visual activity. A less hyperopic/moremyopic baseline refractive error was consistently associated with risk of myopia onset in multivariate models (odds ratios from 0.02 to 0.13,  $P < .001$ ), while near work, time outdoors, and having myopic parents were not. Spherical equivalent refractive error was the single best predictive factor that performed as well as all 8 factors together, with an area under the curve ( $C$  statistic) ranging from 0.87 to 0.93 (95% CI, 0.79-0.99).

#### Conclusions and relevance:

Future myopia can be predicted in a non myopic child using a simple, single measure of refractive error. Future trials for prevention of myopia should target the child with low hyperopia as the child at risk.

*JAMA Ophthalmol.* 2015;133(6):683-689.

#### 7-Low cerebrospinal fluid protein in prepubertal children with idiopathic intracranial hypertension

#### Methods:

The medical records of prepubertal and pubertal IIH patients and controls seen in the pediatric neuro-ophthalmology clinic at Duke between 2003 and 2013 were retrospectively reviewed. The control group consisted of children who had normal intracranial pressure on lumbar puncture performed to evaluate for headaches or anomalous-looking optic nerves. The records were analyzed with attention to demographic characteristics, clinical presentation, course, and lumbar puncture results.

## Results:

A total of 23 prepubertal children with IIH (age range, 0.75-13 years), 16 pubertal patients with IIH (age range, 13-21 years), and 12 controls (age range 3-14 years) were included. CSF analysis revealed that prepubertal children with IIH had significantly lower CSF protein levels (17.3  $\pm$  5.7 mg/dL) compared to pubertal subjects with IIH (23.4  $\pm$  8.4 mg/dL;  $P \leq 0.019$ ) or healthy controls (23.5  $\pm$  6.4 mg/dL;  $P \leq 0.011$ ). Furthermore, 9 of 23 prepubertal IIH patients (39%) had abnormally low CSF protein level (<15 mg/dL), compared to zero pubertal IIH patients ( $P \leq 0.005$ ) and zero controls ( $P \leq 0.015$ ). Acetazolamide increased CSF protein level in 100% of patients who underwent repeat lumbar puncture after starting the medication (average increase, 10.3  $\pm$  6.6 mg/dL).

## Conclusions:

Low CSF protein level may have diagnostic utility as a biomarker for prepubertal IIH. Furthermore, this finding suggests that some cases of prepubertal IIH may be caused by CSF overproduction rather than decreased CSF resorption.

Margeta, MA, Buckley, EG MD, El-Dairi, MA, J AAPOS 2015;19: 135-139

انجمن جراحان استراییسم ونوروافتالمولوژی  
گردآوری: دکتر محمد رضا اکبری  
mrakbari83@hotmail.com  
دکتر ستاره شمالی  
Setareh\_shomali2003@yahoo.com

انجمن چشم پزشکی ایران  
آدرس: تهران، خیابان کارگر شمالی، نرسیده به خیابان فاطمی، کوچه فردوسی، پلاک ۳، طبقه اول  
تلفن: ۰۶۱۹۰۶۱-۶۶۹۱۹۰۶۱ فاکس: ۰۴۰۴-۶۶۹۴۲۴۰۴ [www.irso.org](http://www.irso.org)