Multiple-Choice Answer Form Completion Time in Children With Amblyopia and Strabismus.

Kelly KR\textsuperscript{1}, Jost RM\textsuperscript{1}, De La Cruz A\textsuperscript{1,2}, Birch EE\textsuperscript{1,3}.

Author information

1 Crystal Charity Ball Pediatric Vision Evaluation Center, Retina Foundation of the Southwest, Dallas, Texas.

2 College of Optometry, University of Houston, Houston, Texas.

3 Department of Ophthalmology, University of Texas Southwestern Medical Center, Dallas.

Abstract

Importance:
Abnormal binocular experience during infancy or childhood from strabismus and/or anisometropia results in visual acuity deficits (eg, amblyopia) and impaired stereoacuity. These pediatric eye conditions have also been linked to slow reading and fine motor impairment.

Objective:
To assess an academic-related fine motor outcome-multiple-choice answer form completion time-in children with amblyopia and strabismus.

Design, Setting, and Participants:
In this cross-sectional study completed between May 2014 and November 2017 at a nonprofit eye research institute, 47 children with amblyopia treated for strabismus, anisometropia, or both, 18 children with nonamblyopic strabismus, and 20 normal controls were enrolled.
Exposures:
Children were asked to transfer the correct answers from a standardized reading achievement test booklet to a multiple-choice answer form as quickly as possible without making mistakes or reading the text.

Main Outcomes and Measures:
The time to complete the task was recorded and analyzed between groups.

Results:
Of the 85 included children, 40 (47%) were female, the mean (SD) age was 10.09 (0.91) years, and the last mean (SD) grade completed was 3.42 (0.92). Compared with children in the control group (mean [SD] time to completion, 230 [63] seconds), children with amblyopia (mean [SD] time to completion, 297 [97] seconds; difference, 63 seconds; 95% CI, 24-102; P = .001) and children with nonamblyopic strabismus (mean [SD] time to completion, 293 [53] seconds; difference, 68 seconds; 95% CI, 21-115; P = .002) required approximately 28% (95% CI, 20-37) more time to fill out a multiple-choice answer form. Completion time was not associated with etiology, visual acuity, or stereoacuity.

Conclusions and Relevance:
Multiple-choice answer forms typically accompany standardized testing in schools in the United States. Longer completion time in children with amblyopia or strabismus may affect a child's performance on tests using multiple-choice answer forms and may hinder academic success.

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Kassem A¹, Xue G¹, Gandhi NB¹, Tian J¹, Guyton DL².

Author information

1
The Krieger Children's Eye Center at The Wilmer Institute, The Johns Hopkins University School of Medicine, Baltimore, Maryland.

2
The Krieger Children's Eye Center at The Wilmer Institute, The Johns Hopkins University School of Medicine, Baltimore, Maryland. Electronic address: dguyton@jhmi.edu.

Abstract

PURPOSE:
To evaluate the success rate of adjustable suture techniques in horizontal eye muscle surgery in children ≤15 years of age over a 19-year period by a single surgeon.

METHODS:
The medical records of all consecutive patients in this age group who underwent horizontal eye muscle surgery from 1989 through 2012 were reviewed retrospectively. Patients were divided into two groups: those in whom a nonadjustable suture technique was used and those in whom adjustable sutures were used. The following data were collected: type of strabismus, preoperative measurements, postoperative results, and reoperation rates.

RESULTS:
A total of 116 cases in the nonadjustable group and 521 cases in the adjustable group were included. In the adjustable group, adjustment was performed in 63% of the cases, because of either an under- (41%) or overcorrection (22%). The adjustment procedure was performed under topical proparacaine in 15% of cases and under intravenous propofol in 85%. For the adjustable group, 3-5 minutes more per muscle intraoperatively and 15-20 minutes for adjustment were required. No complications were encountered during the adjustment procedures. Early success rate, defined as alignment within $8^\Delta$ of
straight at 3 to 6 months’ postoperative follow-up, was significantly greater in the adjustable group than in the nonadjustable group (77.7% vs 64.6% [P ≤ 0.03]). Of the adjustable patients, 15% required reoperation compared with 21% of the nonadjustable patients.

CONCLUSIONS:
Use of adjustable sutures in horizontal eye muscle surgery in children ≤15 years of age provided an improved success rate and fewer reoperations compared with nonadjustable sutures.

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Surgical outcomes and complications of sutured scleral fixated intraocular lenses in pediatric eyes.

Sen P¹, S VK², Bhende P², Rishi P², Rishi E², Rao C², Ratra D², Susvar P², Kummamuri S², Shaikh S², Gopal L².

Author information

1
Shri Bhagwan Mahavir Vitreoretinal Services, Sankara Nethralaya, Chennai, India.
Electronic address: parveensen@gmail.com.

2
Shri Bhagwan Mahavir Vitreoretinal Services, Sankara Nethralaya, Chennai, India.

Abstract

OBJECTIVE:
To study the outcome and complications of sutured scleral fixated intraocular lenses (SSFIOL) in children.

DESIGN:
Retrospective study.

SUBJECTS:
A total of 279 eyes of 230 children who underwent SSFIOL at ≤18 years of age in a tertiary eye care centre in India.

METHODS:
Treatment-naive children having traumatic cataract or subluxated lens underwent a single-sitting lensectomy and pars plana vitrectomy (PPV), along with SSFIOL insertion. Children with aphakia underwent PPV with SSFIOL, and vitrectomized eyes underwent only SSFIOL implantation. Fixation of SSFIOL was done by the 4-point ab externo fixation technique using 10-0 prolene suture.

MAIN OUTCOME MEASURES:
Preoperative and postoperative visual acuity, as well as intraoperative and postoperative complications.
RESULTS:
The mean age at which SSFIOL was performed was 10.8 ± 4.22 years. The most common indication of SSFIOL in our study was traumatic subluxation of lens (47.63%; n = 133 patients), followed by congenital subluxation in 38.7% (n = 108). Best-corrected visual acuity was maintained or improved from the preoperative visual acuity in 93.19% of eyes. The complications included choroidal detachment in 2.86% (n = 8), dispersed vitreous hemorrhage in 2.86% (n = 8), endophthalmitis in 0.72% (n = 2), raised intraocular pressure in 12.54% (n = 35), diplopia in 0.72% (n = 2), retinal detachment in 5.73% (n = 16), and dislocation of the SSFIOL in 4.6% (n = 13). The mean follow-up after SSFIOL implantation was 39.68 months.

CONCLUSIONS:
SSFIOLs are effective in correcting aphakia in children; long-term follow-up of these children is, however, necessary.

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Intravenous Steroids With Antibiotics on Admission for Children With Orbital Cellulitis.

Chen L†, Silverman N, Wu A, Shinder R.

Author information
1
Department of Ophthalmology, SUNY Downstate Medical Center, Brooklyn, New York, U.S.A.

Abstract

PURPOSE:
To compare the outcomes of children with orbital cellulitis treated with intravenous (IV) dexamethasone and antibiotics on admission to patients treated with antibiotics alone.

METHODS:
Prospective comparative interventional study. Forty-three children admitted to a tertiary institution with orbital cellulitis were enrolled. On admission, all patients were started on broad spectrum IV antibiotics and parents were offered IV dexamethasone (0.3 mg/kg/d every 6 hours for 3 days). Patients whose parents refused steroid treatment served as the control group.

RESULTS:
Twenty-eight (65%) patients received IV steroids and antibiotics on admission while 15 (35%) received IV antibiotics alone. Children who received IV steroids had significantly shorter hospital stays than those who did not receive steroids (3.8 ± 0.2 days vs. 6.7 ± 0.3 days; p < 0.001). This was true both for children who underwent surgery (5/28 with steroids, 3/15 without; 5.0 ± 0.7 days vs. 7.3 ± 1.2 days; p = 0.011) and for those who did not require surgical intervention (23/28 with steroids, 12/15 without; 3.6 ± 0.6 and 6.5 ± 1.0 days; p < 0.001). Side effects of steroid treatment were mild and did not require termination of therapy. During follow up, all study patients had returned to their baseline health without any cases of decreased vision or disease recurrence.

CONCLUSIONS:
The results of the current study give additional evidence to the relative safety and efficacy of systemic steroid use concurrently with IV antibiotics in children with orbital
cellulitis. This is the first study to recommend IV steroids on hospital admission and a standardized dosing regimen. Children who received steroids had a shorter hospital stay than those who did not.

Comment in


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OPTICAL COHERENCE TOMOGRAPHY ANGIOGRAPHY OF THE FOVEA IN CHILDREN BORN PRETERM.
Falavarjani KG$^{1,2}$, Iafe NA$^1$, Velez FG$^1$, Schwartz SD$^1$, Sadda SR$^1$, Sarraf D$^{1,3}$, Tsui I$^1$.

Author information
1
Department of Ophthalmology, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, California.
2
Eye Research Center, Rassoul Akram Hospital, Iran University of Medical Sciences, Tehran, Iran.
3
Greater Los Angeles VA Healthcare Center, Los Angeles, California.

Abstract

PURPOSE:
To compare the foveal avascular zone (FAZ) area measured by optical coherence tomography angiography in children who had been born preterm with age-matched controls.

METHODS:
In this cross-sectional observational comparative case series, 43 eyes of 26 children (28 eyes of 15 former preterm infants and 15 eyes of 11 former term infants) between the ages of 4 and 12 years old were included. Optical coherence tomography angiography with a scan size of 3 × 3 was performed for all eyes. Foveal avascular zone area was measured using the Optovue RTVue AVANTI instrument (Optovue Inc, Fremont, CA) software. Inner and outer retinal thicknesses were measured with the instrument caliper.

RESULTS:
A distinct FAZ was absent in 12 eyes (42.8%) of children with a history of preterm birth, however, it was present in all (100%) control eyes. The FAZ area was significantly correlated with gestational age ($r = 0.82$, $P < 0.001$) and birth weight ($r = 0.80$, $P < 0.001$). The gestational age was less than 29 weeks and birth weight was less than 1,480 grams in eyes with no distinct FAZ. Mean central foveal vessel density in the superficial capillary plexus was 41.8 ± 4.4% in the preterm group and 32.8 ± 5.8% in the
control group (P < 0.001). In all eyes, a significant negative correlation was found between the central foveal vessel density and gestational age (r = -0.63, P = 0.001) and birth weight (r = -0.59, P = 0.002). On spectral domain optical coherence tomography examination, the foveal depression was absent and the inner retinal layers were preserved in all eyes with absent FAZ. In all eyes, a significant negative correlation was found between the inner retinal thickness and gestational age (r = -0.68, P < 0.001) and birth weight (r = -0.61, P = 0.001). Ten eyes of 6 preterm children had a history of laser therapy for retinopathy of prematurity. A distinct FAZ was absent in six eyes (60%) with retinopathy of prematurity with history of laser therapy, and six eyes (33.3%) with preterm birth without laser therapy. Eyes with history of laser therapy had a statistically significantly higher inner retinal thickness and central foveal vessel density and smaller FAZ compared with the eyes with preterm birth without laser therapy (P < 0.001, P = 0.04 and P = 0.03, respectively).

CONCLUSION:
Optical coherence tomography angiography is a novel modality for noninvasive visualization of the retinal vasculature in pediatric patients and expands our knowledge of foveal abnormalities in retinopathy of prematurity. A small or absent FAZ seems to be a distinct sign of prematurity.

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