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Paper #0037 - Orbital Cellulitis in Children

Ahmed Al-Hinai, John Little, Robert Polomeno

Abstract:

Purpose: Orbital cellulitis is a serious disease, which requires immediate diagnosis and management to prevent potential, serious complications. Orbital cellulitis in patients, who were admitted to a children's hospital over an 11-year period, were studied to determine the epidemiological and clinical features.

Study design and method: Hospital files of children with orbital cellulitis admitted from April 1, 1992 to March 31, 2003, were reviewed. All cases admitted during this period were included in the study.

Results: From the data base of 488 cases of preseptal and orbital cellulitis, 47 children (9.63%) with orbital cellulitis were hospitalized during this period. 70% were males. There was no significant difference between right and left sided orbital cellulitis. The common etiology was sinusitis (89.36%). The average age of patients was 7.44yrs (0.08-16yrs). 76.60% of cases were under the age of 10 years. Most cases occurred in winter months. The common symptoms were swelling around the eye and fever. Proptosis was present in 87.23% of the total cases. Positive blood cultures were obtained in 23.08%. Surgical treatment was required for 34.04%. The majority of cases (43/47) recovered completely from the disease, except for four children (8.51%), who developed severe, permanent, ocular and neurological complications.

Conclusion: In order to achieve the best clinical outcome, children with orbital cellulitis require immediate medical therapy and, when indicated, surgical intervention to prevent serious complications.

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Paper #0055
Bilateral endogenous endophthalmitis secondary to Neisseria Meningitidis

Mathieu Caissie, Patrick Hamel

Abstract:

We report a first seen case of endogenous endophthalmitis secondary to Neisseria Meningitidis in a 5-month-old girl at the Sainte-Justine Hospital in Montreal. We provide an insight on the clinical signs, the investigation and the treatment of endogenous endophthalmitis. We include a brief review of the literature on the subject.

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Paper #0061
Central Venous Sinus Thrombosis in the Pediatric age group

Mohammed Al-Abri, John Little

Abstract:

Objectives: To determine the various clinical presentations, predisposing factors, management and outcome of central venous sinus thrombosis (CVST) at a children's hospital during a one year period.

Design: Retrospective, chart review.

Methods: Patients diagnosed with CVST for the period between January 1994 and December 2004 were identified and the above mentioned objectives were obtained.

Results: Fifteen patients (8 boys and 7 girls) were diagnosed with CVST with a mean age of 4 years (range 5 days to 17 years). The clinical presentations were; seizure (5 patients), headache (4 patients), neurological deficit (3 patients), head trauma (one patient), fever (one patient) and no symptoms (one patient). Seven of the 15 patients had ocular involvement; papilledema with 6th cranial nerve palsy (3 patients), papilledema alone (3 patients) and pale disc (one patient). The predisposing factors were infections (5 patients), protein C deficiency (4 patients), birth asphyxia and iron deficiency anemia (2 patients respectively), skull fracture and oral contraceptive pills (one patient respectively) and no predisposing factor was identified in one patient. One sinus was affected in 67% and more then one sinus was affected in 33% of cases. The transverse sinus was affected in 73 % of all cases. Based on the etiology, treatment modalities were anticoagulation, antibiotics, anticonvulsants, acetazolamide and/or surgery. Sinus recanalization was achieved within few weeks to few months in all patients and 6th C.N. palsy has resolved completely within 2 months. Papilledema was gradually resolved within10 months in all cases without visual sequel except for one case where it resulted in optic atrophy, impaired color vision and persistent enlarged blind spot. None of the patients died.

Conclusions: Central venous sinus thrombosis is not as infrequent as thought to be and occasionally might lead to devastating clinical outcome if not recognized and managed appropriately. A high index of suspicion is crucial. Complete and comprehensive history, visual evaluation and follow up assessment are extremely important in patients with CVST.

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Paper #0066
Phaces Syndrome in an Omani Child: a Case Report

Ahmed Al-Waily, Sana Al-Zuhaibi, Dilip K. Sankhla, Anuradha Ganesh, Roshal L. Koul

Background: PHACES syndrome is a neurocutanous syndrome with multiple organ malformations. PHACES is an acronym that represents the clinical features of this syndrome posterior cranial fossa abnormalities particularly a Dandy-Walker like cyst, hemangioma of the face, arterial malformation, coarctation of the aorta, eye malformations, and sternal deformities.

Objectives :
1) To report a child with a large right-sided facial hemangioma, abnormal ophthalmic findings and a multiple central nervous structural and vascular anomalies.
2) To discuss the possibility that this child's findings could represent the PHACES syndrome.
Study design: Observational case report.

Method: An 8month old female child with a right-sided large facial hemangioma was referred to the ophthalmology department to rule out Sturge Weber syndrome. The child was subjected to detailed ocular, pediatric and neuroradiologic evaluations.
Result: The facial hemangioma was located in the right half of the face along the distribution of the 5th cranial nerve with overlying soft tissue hypertrophy. The child was developmentally delayed. She had a large angle exotropia of the right eye, complete right upper eyelid ptosis and an iris coloboma. Examination of the right fundus showed a colobomatous optic disc and vascular anomalies. Neuroimaging revealed a large posterior cranial fossa cyst, mild hydrocephalus and anomalous cerebral and orbital vasculature. The left eye ophthalmic examination was normal.

Discussion: PHACES syndrome affects 19.7% of all children with hemangioma. It is commonly seen in females (90%). Ophthalmic anomalies have been reported in 20% of cases. Multiple cases have been reported previously with variable presentations. Most of these presented with a triad of a large facial hemangioma, posterior cranial fossa anomalies and ophthalmic anomalies. Our patient presented with four of the six major components of the PHACES syndrome.

Conclusion: Our case underscores the importance of being aware of the systemic associations of hemangiomas. PHACES syndrome should be considered in patients with large facial hemangiomas and ophthalmic anomalies. They should be therefore subjected to a complete ophthalmologic and systemic evaluation. This necessitates a
Multi-disciplinary approach with the involvement of the pediatric ophthalmologist, pediatric neurologist, neuroradiologist, cardiologist, neurosurgeon and dermatologist.

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Paper #0082 - Results and Complications of Implementing the ETROP Guidelines at a Canadian Tertiary Referral Centre

Stephen Conti, Peter Kertes, Wai-Ching Lam, Manoj Parulekar, Nasrin Tehrani

Abstract:

Purpose: The purpose of this study is to compare the outcomes and complications of laser treatment for threshold ROP before and after adopting guidelines from the Early Treatment for Retinopathy of Prematurity (ETROP) trial in a large tertiary referral centre.

Methods: Single centre retrospective chart review. This is a consecutive study of infants treated with laser photocoagulation for threshold ROP from 2001 to 2006 at the Hospital for Sick Children. The anatomical and functional results in both groups for 2.5 years prior to adopting the ETROP criteria (CRYO-ROP study guidelines) will be compared to our results over 2.5 years following implementation of the ETROP recommendations.

Results: There were 92 infants treated during the study period. The parameters that will be compared between the CRYO-ROP group and the ETROP group include: average age and birth weight, the average corrected age of infants at the time of treatment, average number of laser burns placed, the anatomical outcomes, the need for supplemental treatment, visual outcomes, and complications from treatment and anaesthesia. We will also evaluate the timing of referrals to our unit for treatment in both groups.

Conclusion: The adoption of the ETROP guidelines in the clinical setting has led to an increase in overall treatments. This study will compare the anatomical and visual outcomes of a large number of infants from just before and after the implementation of the ETROP guidelines.

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Paper #0106
Stereotactic external beam irradiation for retinoblastoma

Anne-Sophie Carret, Carolyn R. Freeman, Patrick Hamel, John Little, David Roberge, Rosanne Superstein

Abstract:

Purpose: To report the successful treatment of a unilateral unifocal retinoblastoma lesion in a 13 month old girl using stereotactic external beam irradiation.

Methods: A CT Scan of the orbit was obtained for radiotherapy treatment planning with a stereotactic frame in place. The eye was immobilized using a suction lens. Tumour was contoured on CT images. A margin of 3mm was added to the planning target volume. The treatment was delivered under general anaesthesia. A total dose of 45 Gray was given in 25 daily fractions over 5 weeks.

Results: Weekly CT Scans for treatment verification confirmed the accuracy of treatment as well as a progressive reduction in tumour volume during treatment.

Conclusion: Stereotactic radiotherapy treatment may be a very effective treatment option in some selected cases of retinoblastoma.

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Paper #0110
Are There Predictors of Outcome in Acute Neonatal Dacryocystitis?

Maryse Bouchard, Sam Daniel, John Little, Lauren Segal

Abstract:

Purpose: To describe the presentation, etiology, course, treatment and outcomes in acute neonatal dacryocystitis at a children's hospital. To evaluate the predictive value of selected factors on several outcome measures.

Methods: A retrospective (1989-2004) chart review examining potential predictors of outcomes in cases of neonatal dacryocystitis that required hospital admission; these included patient demographics, history, physical exam, microbiology and treatment. The individual predictors were grouped and analyzed using logistic regression analyses to determine if they could predict clinical outcomes; these included the need for surgical intervention, complications, possible relapse, and prolonged admission.

Results: Demographic data showed a median age of presentation of 1 month and F:M ratio of 1.2:1. The infants presented throughout all four seasons, with an increase in spring, and decrease in fall. Fourteen percent of infections were bilateral and 87 percent of cases were congenital. Cultures showed gram-positive bacteriology in 71 % of patients, gram-negative bacteriology in 65% of patients. Most patients grew 1-2 organisms in the eye. Respiratory tract flora accounted for 85% of cultures whereas flora of maternal origin accounted for only 3% positive cultures. Ten percent of patients did not show positive cultures. Dacryostenosis and dacryocystocele and a combination of both were the most frequent causes of nasolacrimal duct obstruction. With respect to outcome measures, surgery was carried out during the initial admission in 25% of cases and 14 percent were brought to surgery at a later date. Complications were seen in 26% of cases. Fourteen percent of patients experienced a relapse. Forty three percent of patients had a prolonged admission.

Eleven sets of predictors were found to be predictive of the outcomes at $p < 0.05$. Five individual predictors were identified. (Need for surgery: summer visit (RR 0.07) and number of organisms cultured (RR 2.92); prolonged admission: previous medical visit (RR 0.17); complications: yellow discharge (RR 0.05) and fever (RR 11.47)).

Conclusion: We have identified several potentially promising predictors of clinical outcomes in neonatal dacryocystitis. Direct clinical application of these results is not recommended due to the low statistical power of this preliminary study. Future studies on the predictive values of the aforementioned predictors are needed. This could aid clinicians in the individualization of medical and surgical therapies and facilitate counseling on a child's potential clinical course and eventual prognosis.

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Paper #0117
Endoscopically Assisted Strabismus Surgery

Saeed Al-Ghamdi, François Coderre, Martin Desrosiers, Siew Yoong Hwang, Norman Mainville

Abstract:

Purpose: 1) To describe a transnasal, endoscopic method for accessing and evaluating traumatized or severely constricted medial rectus muscles. 2) To describe the subsequent strabismus surgical management of 3 such cases.

Methods: Using FESS (Functional Endoscopic Sinus Surgery) techniques, the medial rectus muscles of 3 patients were explored. Patient #1 underwent endoscopically assisted medial rectus muscle recessions followed by strabismus surgery to free MR adhesions and to recess the inferior recti. Patient #2 was explored endoscopically but the severely disrupted medial rectus could not be repaired. Subsequent vertical rectus muscle transposition was performed. Patient #3 was examined transnasally and medial rectus adhesions and scar tissue were freed up, facilitating follow-up traditional strabismus surgery.

Results: Patient #1 improved from an esotropia of >100 PD preoperatively to an esotropia of < 5 PD postoperatively. Patient #2 changed from an exotropia of 70 PD to an exotropia of 8 PD; Patient #3 improved from an exotropia of 30 PD to < 5 PD. Although there was minimal improvement in range of ocular motility in these cases, all showed significant improvement in head position.

Conclusion: Transnasal endoscopic surgery allows enhanced posterior orbital access providing a way to evaluate or retrieve contracted, transected or disrupted extraocular muscles. Further corrective strabismus surgery can then be implemented.

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Paper #0118
A new Web-based video teaching module for strabismus surgery

Michael Flanders, Norman Mainville

Abstract:

Purpose: The purpose of this presentation is to present a new video-based teaching module for strabismus surgery which is being developed in our department for resident education.

Methods: A collection of videos will be integrated into a teaching module and placed on a Web-based platform (Microsoft FrontPage 2003). The videos, with sound track, detail several aspects of strabismus surgery including anesthesia, basic surgical skills, common procedures (recessions, resections, displacements, disinsertions, myectomies, tenotomies, tucks) as well as more complex procedures (re-operations, restrictive myopathies). The effectiveness of this module will be assessed by evaluating resident knowledge prior to and following completion of the teaching module.

Results: Data pre- and post- module completion will be collected and analyzed to determine the effectiveness of this teaching tool.

Conclusion: We believe that this catalogue of strabismus surgical procedures will be useful in the development of surgical skills by residents in ophthalmology or by ophthalmologists with an interest in strabismus surgery.

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Paper #0131
Identifying the Prevalence of Retinopathy of Prematurity in Saskatchewan and evaluating the efficiency of the Screening Program

Frozan Qasemi

Abstract:

Purpose: The aim of this study is to present a comprehensive overview of the prevalence and outcome of treating Retinopathy of Prematurity (ROP) with laser and evaluate the efficacy of ROP screening program in Saskatchewan. This has not been studied previously.

Methods: Data was obtained from 418 ROP charts that were available at Saskatoon City Hospital and the review was limited to the cases that presented between 1999 and 2006.

Results: Of the 418 cases, 85 neonates were determined to have ROP upon initial assessment and 63 developed it later. Progression to threshold ROP was noted in 24 (28.2%) and 19 (30.2%) of these infants, respectively. Hence, a total of 43(10%) infants needed laser treatment, of which 5 (1.1%) had unfavourable outcome following surgery. Secondly, of the 43 infants that reached threshold and required surgery, 42 (97.7%) had less than 29 weeks gestational age and birthweight below 1098g; only 1 (2.3%) infant was 32 weeks and had a birthweight of 1230g.

Conclusion: In this regional study of infants, the prevalence of threshold ROP was high (10%) but most of these cases had a favourable outcome after laser surgery (98.9%). This study also supports evidence from other studies where screening for ROP may be restricted to infants with birthweight below 1250g who completed more than 29 weeks gestation; however, high index of suspicion is required for a few other referred cases.

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Paper #0197
Superior Oblique Tendon Expander Surgery: The Experience at Sainte-Justine's Hospital from 2000 to 2006

Maryam Aroichane, Nicola Fallaha, Patrick Hamel, Jean-Louis Jacob, Luis H.Ospina, Daniela Toffoli

Abstract:

Purpose: The purpose of this study was to compare the outcomes of superior oblique tendon expander surgery as used in three pathologies, including: Brown's Syndrome (BS), superior oblique overaction (SOO) and inferior oblique palsy (IOP).

Methods: Retrospective chart review of 21 patients who underwent superior oblique tendon expander surgery at HSJ between March 2000 and 2006. Included were patients with BS, IOP and primary SOO. Excluded were patients with less than a 5 month follow-up period, concomitant surgery on horizontal rectus muscles with superior or inferior tendon displacement, and concomitant surgery on other oblique or vertical rectus muscles. Study parameters included: age, race, sex, surgeon, previous extraocular muscle surgeries, and pre and postoperative visual acuity, stereopsis, hypotropia, A-Pattern, superior oblique overaction and elevation in adduction deficit. Also included were spacer length, follow-up time, adverse events and number of reoperations.

Results: 21 charts were reviewed, 20 patients were included. All patients were between the ages of 2 and 12 years. Length of follow-up was between 5 months and 5.4 years. 11 patients were classified as having primary SOO, 5 as having BS and 4 as having IOP. Spacer lengths were between 4 and 7 mm. Degrees of pre and postoperative hypotropias were compared for each of the three pathologies, showing clinical improvement without statistical significance. A statistically significant improvement was found however, when comparing degrees of pre and postoperative hypotropias for all three pathologies combined ($p=0.022$). Improvement in the pre and postoperative A-pattern was found for primary SOO ($p=0.002$), whereas only clinical improvement was noted for IOP ($p>0.05$). Improvement in superior oblique overaction was noted for both primary SOO ($p=0.000$) and IOP ($p=0.015$). Adverse events included 4 patients with iatrogenic transitory Brown Syndrome and 2 patients necessitating removal of the silicone expander.

Discussion: In this study, greatest improvements achieved with the silicone tendon expander were seen for level of superior oblique overaction (IOP and primary SOO) as well as for A-pattern in primary SOO. Improvements in pre and postoperative hypotropias were not noted to be statistically significant for the three pathologies when analyzed individually, but achieved statistical significance when analyzed as a whole, likely due to small n values. In this study, there were a certain number of adverse events, including 20% of patients developing iatrogenic Brown syndrome and 10% necessitating removal of the silicone expander.