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New Reviews – January 2015
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Surgical interventions for primary congenital glaucoma

Updated Reviews – January 2015
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Current Issue

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1. Title: Acute macular neuroretinopathy: A case report and review of the literature, 2002-2012
Citation: Ophthalmic Surgery Lasers and Imaging Retina, January 2015, vol./iss. 46/1(114-124), 2325-8160;2325-8179 (01 Jan 2015)
Author(s): Aziz H.A., Kheir W.J., Young R.C., Isom R.F., Dubovy S.R.
Language: English
Abstract: Acute macular neuroretinopathy (AMNR) is a rare condition that primarily affects young women in their reproductive years. Many of the affected young women are on oral contraceptives. Patients report a sudden decrease in visual acuity, usually a few days after the onset of a febrile illness, with paracentral scotomas either unilaterally or bilaterally. Although AMNR was initially thought to be an inner retinal pathology, with the publication of 84 case reports in the English medical literature and the advent of new imaging modalities, it is now thought to be a disease of the outer retina. In 2003, Turbeville et al published a review of more than 41 AMNR cases reported from 1975 to March 2002, which summarized the available literature and suggested potential fields of research to be explored. This article summarizes the 43 case reports that were published in the English literature from April 2002 to October 2012 and also presents a unique case of AMNR.
Publication type: Journal: Review
Source: EMBASE
Full text: Available ProQuest at Ophthalmic Surgery, Lasers and Imaging Retina

2. Title: Advances in cataract surgery: Preserving the corneal endothelium
Citation: Current Opinion in Ophthalmology, January 2015, vol./iss. 26/1(22-27), 1040-8738;1531-7021 (12 Jan 2015)
Author(s): Ho J.W., Afshari N.A.
Language: English
Abstract: Purpose of review Cataract surgery is known to lead to some degree of corneal endothelial cell loss (ECL). The purpose of this review is to describe how recent technological advancements such as femtosecond laser-assisted cataract
surgery (FLACS) affect corneal endothelium during cataract surgery. Recent findings have suggested that FLACS may reduce the amount of required ultrasound energy used in cataract surgery, a factor known to be directly related to ECL. Several recent studies demonstrate either no difference or less ECL with FLACS than with standard phacoemulsification 1-3 months after surgery. However, results at 6 months show comparable ECL between the two techniques. Other recent advancements in surgical technique, such as bixial microincision surgery, result in similar ECL rates to that of standard phacoemulsification. The use of ultraviolet light in the newly developing light-adjustable intraocular lenses does not increase ECL. Studies show either similar results or less ECL with the use of the newer viscous-dispersives when compared with other viscoelastic devices. Other aspects such as the use of intracameral injections have no adverse effects on corneal endothelium.

Summary

Newly emerging cataract surgical techniques cause comparable ECL to that of conventional phacoemulsification. Femtosecond laser-assistance may reduce ECL, but likely only in the early postoperative period. Further studies are needed to better elucidate short and long-term effects of FLACS on the corneal endothelium. Viscous dispersives may offer equal or increased protection of the corneal endothelium during surgery compared with viscoelastic devices currently in wide use, but further studies are required to support these results.

Publication type: Journal: Review
Source: EMBASE

3. Title: Age-related macular degeneration: Advances in management and diagnosis
Citation: Journal of Clinical Medicine, February 2015, vol./is. 4/2(343-359), 2077-0383 (11 Feb 2015)
Author(s): Yonekawa Y., Miller J.W., Kim I.K.
Language: English
Abstract: Age-related macular degeneration (AMD) is the most common cause of irreversible visual impairment in older populations in industrialized nations. AMD is a late-onset deterioration of photoreceptors and retinal pigment epithelium in the central retina caused by various environmental and genetic factors. Great strides in our understanding of AMD pathogenesis have been made in the past several decades, which have translated into revolutionary therapeutic agents in recent years. In this review, we describe the clinical and pathologic features of AMD and present an overview of current diagnosis and treatment strategies.

Publication type: Journal: Review
Source: EMBASE

4. Title: An update on ocular melanoma
Citation: Diagnostic Histopathology, January 2015, vol./is. 21/1(19-25), 1756-2317;1876-7621 (01 Jan 2015)
Author(s): Kalirai H., Coupland S.E.
Language: English
Abstract: Melanoma is the most common type of primary cancer to affect the adult eye. Approximately 95% of ocular melanomas are intraocular and arise from the uvea (i.e. iris, ciliary body, and choroid), while the remaining 5% are located in the conjunctiva. Although both uveal and conjunctival melanomas are derived from melanocytes, uveal melanoma is clinically and biologically distinct from conjunctival melanoma, and indeed from its more common cutaneous counterpart. Intense efforts have recently been made to understand the molecular pathobiology involved in the development of ocular melanomas, and in their progression. Molecular advances, particularly for uveal melanoma, have enhanced prognostication and the identification of rational therapeutic targets for disseminated disease. In this review, recent advances in the molecular characterization of both uveal and conjunctival melanomas are discussed, and how these may be used to develop personalized therapeutic strategies.

Publication type: Journal: Review
Source: EMBASE

5. Title: Bevacizumab versus ranibizumab for neovascular age-related macular degeneration: A meta-analysis of randomized controlled trials
Citation: Retina, February 2015, vol./is. 35/2(187-193), 0275-004X;1539-2864 (06 Feb 2015)
Author(s): Chen G., Li W., Tzekov R., Jiang F., Mao S., Tong Y.
Language: English
Abstract: PURPOSE:: To evaluate the relative efficacy and safety of bevacizumab versus ranibizumab for the treatment of the neovascular form of age-related macular degeneration. METHODS:: A comprehensive literature search using the Cochrane Methodology Register to identify randomized controlled trials comparing bevacizumab with ranibizumab in patients with neovascular age-related macular degeneration. Efficacy estimates were determined by comparing weighted mean differences in the change of best-corrected visual acuity and central macular thickness from baseline. Safety estimates were determined by calculating the risk ratio for rates of death, arteriothrombotic events, venous thrombotic events, and at least 1 serious systemic adverse event. Statistical analysis was performed using the RevMan 5.1 software. RESULTS:: A total of 6 randomized controlled trials were selected for this meta-analysis, including 2,612 patients (1,292 patients in the bevacizumab group and 1,320 patients in the ranibizumab group). There were no significant differences between bevacizumab and ranibizumab in best-corrected visual acuity mean change at 1 year or 2 years (weighted mean
difference = -0.40, 95% confidence interval [CI], -1.48 to 0.69, P = 0.47 and weighted mean difference = -1.16, 95% CI, -2.82 to 0.51, P = 0.17, respectively). Ranibizumab was found to be more efficacious in reducing central macular thickness at 1 year (weighted mean difference = 4.35, 95% CI, 0.92-7.78, P = 0.01). The pooled risk ratios comparing the rates of serious systemic adverse events at 1 year and 2 years were slightly in favor of ranibizumab (risk ratio = 1.24, 95% CI, 1.04-1.48, P = 0.02 and risk ratio = 1.20, 95% CI, 1.05-1.37, P = 0.008, respectively), whereas the rates of death, arteriothrombotic events, and venous thrombotic events did not differ statistically. CONCLUSION:: Bevacizumab and ranibizumab had equivalent efficacy for best-corrected visual acuity in the treatment of neovascular age-related macular degeneration. Ranibizumab tended to have a better anatomical outcome. There were no differences between drugs in rates of death, arteriothrombotic events or venous thrombotic events, and differences in rates of serious systemic adverse events that require further study.

Publication type: Journal: Article
Source: EMBASE
Full text: Available Retina (Philadelphia, Pa.) at Retina

6.Title: Clinical management of proliferative vitreoretinopathy: An update
Citation: Retina, February 2015, vol./is. 35/2(165-175), 0275-004X;1539-2864 (06 Feb 2015)
Author(s): Khan M.A., Brady C.J., Kaiser R.S.
Language: English
Abstract: BACKGROUND:: Proliferative vitreoretinopathy (PVR) remains the most significant obstacle to successful retinal reattachment surgery. Preclinical studies continue to add insights into the complex molecular events leading to PVR development, helping to identify new targets for potential prophylactic or therapeutic agents. This article reviews the recent evidence supporting surgical and medical treatments for PVR. METHODS:: PUBMED was used for literature search. Clinical studies regarding surgical management of PVR from January 1, 2000 to August 1, 2014 were included. Clinical studies regarding medical management of PVR from January 1, 2000 to August 1, 2014 were included if the design of study was a randomized controlled trial. RESULTS:: Many recent studies have evaluated surgical and medical strategies for the treatment and prevention of PVR. Newer vitreoretinal surgery technology (23- and 25-gauge vitrectomy) and tamponade agents (heavy silicone oils) have been studied. Medical therapies evaluated include antiinflammatory agents, low molecular weight heparin, 5-fluorouracil, 13-cis-retinoic acid, and daunorubicin, amongst others. CONCLUSION:: Surgical management with pars plana vitrectomy, with or without scleral buckle or inferior retinectomy, remains an effective treatment for PVR-related detachments. Consensus regarding a preferred surgical strategy remains controversial. Many medical therapies have been studied but fail to demonstrate a statistically significant benefit in clinical trials. Further studies to clarify the efficacy of available and novel treatment options are warranted.

Publication type: Journal: Review
Source: EMBASE
Full text: Available Retina (Philadelphia, Pa.) at Retina

7.Title: Clinical staining of the ocular surface: Mechanisms and interpretations
Citation: Progress in Retinal and Eye Research, January 2015, vol./is. 44/(36-61), 1350-9462;1873-1635 (01 Jan 2015)
Author(s): Bron A.J., Argueso P., Irkoc M., Bright F.V.
Language: English
Abstract: In this article we review the mechanism of ocular surface staining. Water-soluble dyes are excluded from the normal epithelium by tight junctions, the plasma membranes and the surface glyocalyx. Shed cells can take up dye. A proportion of normal corneas show sparse, scattered time-dependent, punctate fluorescein uptake, which, we hypothesise, is due to a graded loss of the glyocalyx barrier, permitting transcellular entry into pre-shed cells. In pathological staining, there is little evidence of 'micropooling' at sites of shedding and the term 'punctate erosion' may be a misnomer. It is more likely that the initial event involves transcellular dye entry and, in addition, diffusion across defective tight junctions. Different dye-staining characteristics probably reflect differences in molecular size and other physical properties of each dye, coupled with differences in visibility under the conditions of illumination used. This is most relevant to the rapid epithelial spread of fluorescein from sites of punctate staining, compared to the apparent confinement of dyes to staining cells with dyes such as lissamine green and rose bengal. We assume that fluorescein, with its lower molecular weight, spreads initially by a paracellular route and then by transcellular diffusion. Solution-Induced Corneal Staining (SICS), related to the use of certain contact lens care solutions, may have a different basis, involving the non-pathological uptake of cationic preservatives, such as biguanides, into epithelial membranes and secondary binding of the fluorescein anion. It is transient and may not imply corneal toxicity. Understanding the mechanism of staining is relevant to the standardisation of grading, to monitoring disease and to the conduct of clinical trials.

Publication type: Journal: Review
Source: EMBASE

8.Title: Clinics of ocular tuberculosis
Citation: Ocular Immunology and Inflammation, February 2015, vol./is. 23/1(14-24), 0927-3948;1744-5078 (01 Feb 2015)
Abstract: Purpose: Ocular tuberculosis is an extrapulmonary tuberculous condition and has variable manifestations. The purpose of this review is to describe the clinical manifestations of ocular tuberculosis affecting the anterior and posterior segments of the eye in both immunocompetent and immunocompromised patients. Methods: Review of literature using Pubmed database. Results: Mycobacterium tuberculosis may lead to formation of conjunctival granuloma, nodular scleritis, and interstitial keratitis. Lacrimal gland and orbital caseating granulomas are rare but may occur. The intraocular structures are also a target of insult by M. tuberculosis and may cause anterior granulomatous uveitis, anterior and posterior synechiae, secondary glaucoma, and cataract. The bacillus may involve the ciliary body, resulting in the formation of a localized caseating granuloma. Posterior segment manifestations include vitritis, retinal vasculitis, optic neuritis, serpiginous-like choroiditis, choroidal tubercules, subretinal neovascularization, and, rarely, endophthalmitis. Conclusions: The recognition of clinical signs of ocular tuberculosis is of utmost importance as it can provide clinical pathway toward tailored investigations and decision making for initiating anti-tuberculosis therapy.

Publication type: Journal: Review
Source: EMBASE

9. Title: Corneal stroma microfibrils
Citation: Experimental Eye Research, March 2015, vol./is. 132/(198-207), 0014-4835;1096-0007 (March 01, 2015)
Author(s): Hanlon S.D., Behzad A.R., Sakai L.Y., Burns A.R.
Language: English
Abstract: Elastic tissue was first described well over a hundred years ago and has since been identified in nearly every part of the body. In this review, we examine elastic tissue in the corneal stroma with some mention of other ocular structures which have been more thoroughly described in the past. True elastic fibers consist of an elastin core surrounded by fibrillin microfibrils. However, the presence of elastin fibers is not a requirement and some elastic tissue is comprised of non-elastin-containing bundles of microfibrils. Fibers containing a higher relative amount of elastin are associated with greater elasticity and those without elastin, with structural support. Recently it has been shown that the microfibrils, not only serve mechanical roles, but are also involved in cell signaling through force transduction and the release of TGF-beta. A well characterized example of elastin-free microfibril bundles (EFMBs) is found in the ciliary zonules which suspend the crystalline lens in the eye. Through contraction of the ciliary muscle they exert enough force to reshape the lens and thereby change its focal point. It is believed that the molecules comprising these fibers do not turn-over and yet retain their tensile strength for the life of the animal. The mechanical properties of the cornea (strength, elasticity, resiliency) would suggest that EFMBs are present there as well. However, many authors have reported that, although present during embryonic and early postnatal development, EFMBs are generally not present in adults. Serial-block-face imaging with a scanning electron microscope enabled 3D reconstruction of elements in murine corneas. Among these elements were found fibers that formed an extensive network throughout the cornea. In single sections these fibers appeared as electron dense patches. Transmission electron microscopy provided additional detail of these patches and showed them to be composed of fibrils (~10nm diameter). Immunogold evidence clearly identified these fibrils as fibrillin EFMBs and EFMBs were also observed with TEM (without immunogold) in adult mammals of several species. Evidence of the presence of EFMBs in adult corneas will hopefully pique an interest in further studies that will ultimately improve our understanding of the cornea’s biomechanical properties and its capacity to repair.

Publication type: Journal: Review
Source: EMBASE
Full text: Available Elsevier at Experimental Eye Research

10. Title: Current medical and surgical therapeutic approaches to cystoid macular edema in uveitis
Citation: Expert Review of Ophthalmology, February 2015, vol./is. 10/1(49-58), 1746-9899;1746-9902 (01 Feb 2015)
Author(s): Schaal S., Reddy S.V., Kaplan H.J.
Language: English
Abstract: Cystoid macular edema (CME), a frequent complication of uveitis, is defined as central retinal thickening caused by accumulation of intra-retinal fluid in the outer plexiform and inner nuclear layers of the retina. Chronic retinal edema can lead to vision loss secondary to photoreceptor impairment and retinal pigment epithelium dysfunction. Patients suffering from CME often complain of decrease in visual acuity, contrast sensitivity and difficulty performing near tasks such as reading. The pathophysiology of CME revolves around disruption of the blood-retinal barrier due to release of pro-inflammatory mediators and/or Muller-cell dysfunction. Imaging modalities have advanced in recent years allowing earlier detection and better management of uveitic CME. Though often managed medically, when CME is refractory to anti-inflammatory therapy such as corticosteroids and/or immunomodulators, underlying mechanical causes such as vitreo-macular traction and internal limiting membrane gliosis must be considered as causes of CME formation. In such cases, Pars-plana vitrectomy with internal limiting membrane peel may be undertaken. New intraoperative optical coherence tomography, carry the promise of better and more accurate surgical manipulations.
11. Title: Diabetes, fasting glucose, and the risk of glaucoma: A meta-analysis

Citation: Ophthalmology, January 2015, vol./is. 122/1(72-78), 0161-6420;1549-4713 (01 Jan 2015)
Author(s): Zhao D., Cho J., Kim M.H., Friedman D.S., Guallar E.
Language: English

Abstract: Topic: We performed a systematic review to summarize the association of diabetes and blood glucose levels with glaucoma, intraocular pressure (IOP), and oculur hypertension in the general population. Clinical Relevance: Diabetes has been proposed as a risk factor for glaucoma, but epidemiologic studies have been inconsistent, and the association is still controversial. Furthermore, no systematic reviews evaluated other metabolic abnormalities, such as the metabolic syndrome, with the risk of glaucoma. Methods: We identified the studies by searching the PubMed and EMBASE databases. We used inverse variance weighted random-effects models to summarize relative risks across studies. Results: We identified 47 studies including 2,981,342 individuals from 16 countries. The quality of evidence generally was higher in the cohort compared with case-control or cross-sectional studies. The pooled relative risk for glaucoma comparing patients with diabetes with those without diabetes was 1.48 (95% confidence interval [CI], 1.29-1.71), with significant heterogeneity across studies (I² = 82.3%; P < 0.001). The risk of glaucoma increased by 5% (95% CI, 1%-9%) for each year since diabetes diagnosis. The pooled average difference in IOP comparing patients with diabetes with those without diabetes was 0.18 mmHg (95% CI, 0.09-0.27; I² = 73.2%), whereas the pooled average increase in IOP associated with an increase in 10 mg/dl in fasting glucose was 0.09 mmHg (95% CI, 0.05-0.12; I² = 34.8%).

Conclusions: Diabetes, diabetes duration, and fasting glucose levels were associated with a significantly increased risk of glaucoma, and diabetes and fasting glucose levels were associated with slightly higher IOP.

Publication type: Journal: Review
Source: EMBASE
Full text: Available Ophthalmology at Salisbury District Hospital Healthcare Library

12. Title: Efficacy and adverse events of aflibercept, ranibizumab and bevacizumab in age-related macular degeneration: A trade-off analysis

Citation: British Journal of Ophthalmology, February 2015, vol./is. 99/2(141-146), 0007-1161;1468-2079 (01 Feb 2015)
Author(s): Schmid M.K., Bachmann L.M., Fas L., Kessels A.G., Job O.M., Thiel M.A.
Language: English

Abstract: Topic: To quantify the gain in visual acuity and serious side effects of ranibizumab, bevacizumab and aflibercept in age-related macular degeneration (AMD). Clinical relevance: There is an ongoing debate about the optimal treatment of AMD with these three antivascular endothelial growth factor (anti-VEGF) treatments. Methods: Network meta-analyses. (Pre)Medline, EMBASE, SCOPUS, Cochrane Library (until April 2013), Science Citation Index and reference lists were searched for placebo-controlled randomised trials or head-to-head comparisons. Outcomes were 1-year follow-up data of visual acuity (letters gained) and serious (vascular death, any death, stroke, myocardial infarction, transient ischaemic attack) and thrombotic events. Two investigators independently assessed eligibility and quality of included studies and extracted data. Results: 11 trials (enrolling 8341 patients) assessing five active treatments were included. Compared with placebo, all anti-VEGF treatments had a significantly higher percentage of letters gained: ranibizumab 0.3 mg 2.39% (95% CI 1.59 to 3.19; p<0.001), ranibizumab 0.5 mg 3.56% (95% CI 2.58 to 4.13; p<0.001), bevacizumab 1.25 mg 2.14% (95% CI 0.47 to 3.82; p<0.012), aflibercept 0.5 mg 2.91% (95% CI 0.99 to 4.82; p=0.003) and aflibercept 2 mg 3.44% (95% CI 1.73 to 5.14; p<0.001). Compared with placebo, serious side effects were higher in all other treatments: ranibizumab 0.3 mg 4.41% (95% CI 3.42 to 5.40; p<0.001), ranibizumab 0.5 mg 5.33% (95% CI 4.37 to 6.30; p<0.001), bevacizumab 1.25 mg 5.58% (95% CI 3.67 to 7.60; p<0.001), aflibercept 0.5 mg 5.65% (95% CI 3.28 to 8.02; p<0.001) and aflibercept 2 mg 5.29% (95% CI 3.18 to 7.39; p<0.001). Compared with placebo, systemic thrombotic events also occurred more often in all other treatments. Conclusions: The study revealed only a modest superiority of aflibercept 2 mg and ranibizumab 0.5 mg over other formulations and dosages.

Publication type: Journal: Review
Source: EMBASE
Full text: Available The British journal of ophthalmology at British Journal of Ophthalmology

13. Title: Efficacy and safety of deep anterior lamellar keratoplasty vs. penetrating keratoplasty for keratoconus: A meta-analysis

Citation: PLoS ONE, January 2015, vol./is. 10/1, 1932-6203 (29 Jan 2015)
Author(s): Liu H., Chen Y., Wang P., Li B., Wang W., Su Y., Sheng M.
Language: English

Abstract: Purpose: To evaluate difference in therapeutic outcomes between deep anterior lamellar keratoplasty (DALK) and penetrating keratoplasty (PKP) for the clinical treatment of keratoconus. Methods: A comprehensive search was
Conducted in Pubmed, EMBASE, Cochrane Library, and Web of Science. Eligible studies should include at least one of the following factors: best corrected visual acuity (BCVA), postoperative spherical equivalent (SE), postoperative astigmatism and endothelial cell count (ECC), central corneal thickness (CCT), graft rejection and graft failure, of which BCVA, graft rejection and graft failure were used as the primary outcome measures, and postoperative SE, astigmatism, CCT and ECC as the secondary outcome measures. Given the lack of randomized clinical trials (RCTs), cohort studies and prospective studies were considered eligible. Results: Sixteen clinical trials involving 6625 eyes were included in this review, including 1185 eyes in DALK group, and 5440 eyes in PKP group. The outcomes were analyzed using Cochrane Review Manager (RevMan) version 5.0 software. The postoperative BCVA in DALK group was significantly better than that in PKP group (OR = 0.48; 95% CI 0.39 to 0.60; p < 0.001). There were fewer cases of graft rejection in DALK group than those in PKP group (OR = 0.28; 95% CI 0.15 to 0.50; p < 0.001). Nevertheless the rate of graft failure was similar between DALK and PKP groups (OR = 1.05; 95% CI 0.81 to 1.36; p = 0.73). There were no significant differences in the secondary outcomes of SE (p = 0.70), astigmatism (p = 0.14) and CCT (p = 0.58) between DALK and PKP groups. And ECC in DALK group was significantly higher than PKP group (p < 0.001). The postoperative complications, high intraocular pressure (high-IOP) and cataract were analyzed, fewer cases of complications occurred in DALK group than those in PKP group (high-IOP, OR 0.22, 95% CI 0.11-0.44, P < 0.001) (cataract, OR 0.22; 95% CI 0.08-0.61, P = 0.004). And no cases of expulsive hemorrhage and endophthalmitis were reported. Conclusion: The visual outcomes for DALK were not equivalent to PKP. The rate of graft failure was similar between DALK and PKP. Fewer postoperative complications occurred in DALK group, indicating that compared with PKP, DALK has lower efficacy but higher safety.

Publication type: Journal: Article
Source: EMBASE
Full text: Available ProQuest at PLoS ONE

14. Title: Estrogen signalling in the pathogenesis of age-related macular degeneration
Citation: Current Eye Research, February 2015, vol./is. 40/2(226-233), 0271-3683;1460-2202 (01 Feb 2015)
Author(s): Kaarniranta K., Machalinska A., Vereb Z., Salminen A., Petrovski G., Kauppinen A.
Language: English
Abstract: Age-related macular degeneration (AMD) is a multifactorial eye disease that is associated with aging, family history, smoking, obesity, cataract surgery, arteriosclerosis, hypertension, hypercholesterolemia and unhealthy diet. Gender has commonly been classified as a weak or inconsistent risk factor for AMD. This disease is characterized by degeneration of retinal pigment epithelial (RPE) cells, Bruch's membrane, and choriocapillaris, which secondarily lead to damage and death of photoreceptor cells and central visual loss. Pathogenesis of AMD involves constant oxidative stress, chronic inflammation, and increased accumulation of lipofuscin and drusen. Estrogen has both anti-oxidative and anti-inflammatory capacity and it regulates signaling pathways that are involved in the pathogenesis of AMD. In this review, we discuss potential cellular signaling targets of estrogen in retinal cells and AMD pathology.

Publication type: Journal: Review
Source: EMBASE

15. Title: Face-down positioning versus non-supine positioning in macular hole surgery
Citation: British Journal of Ophthalmology, February 2015, vol./is. 99/2(236-239), 0007-1161;1468-2079 (01 Feb 2015)
Author(s): Alberti M., La Cour M.
Language: English
Abstract: Aim: To evaluate the full thickness macular hole (FTMH) closure rate in patients positioning non-supine (NSP) compared with patients positioning face-down (FDP). Methods: We retrospectively reviewed two FTMH case series - postoperative positioning was FDP and NSP, respectively. All eyes were pseudophakic and treatment consisted of pars plana vitrectomy, internal limiting membrane peeling and per fluoropropane gas tamponade. Primary outcome measure was FTMH closure verified by optical coherence tomography. Secondary outcome was ETDRS visual acuity 6 months postoperatively. Results: Over 13.7 months 122 eyes were included in this study, 66 eyes in the FDP group and 56 eyes in the NSP group. Closure rates were 95.5% and 96.4% in the FDP group and the NSP group, respectively. Median postoperative visual acuity at 6 months was 69 ETDRS letters in both positioning groups (p = 0.64). Neither positioning group fully complied with the recommended positioning protocol. Conclusions: Results from consistent FTMH repair indicate similar anatomical success rates in FDP and NSP groups, suggesting that FDP is unnecessary. Objective monitoring of positioning would be beneficial in future FTMH studies to be able to adjust for positioning protocol compliance.

Publication type: Journal: Article
Source: EMBASE
Full text: Available The British journal of ophthalmology at British Journal of Ophthalmology

16. Title: Fundus autofluorescence imaging in age-related macular degeneration
Citation: Seminars in Ophthalmology, January 2015, vol./is. 30/1(65-73), 0882-0538;1744-5205 (01 Jan 2015)
Author(s): Batiotlu F., Demirel S., Ozmert E.
Abstract: Fundus autofluorescence (FAF) is a noninvasive imaging technology that provides information on the distribution of lipofuscin within the retinal pigment epithelial cells. Progressive accumulation of lipofuscin within retinal pigment epithelial cells is involved in the pathogenesis of age-related macular degeneration (AMD). Fundus autofluorescence imaging using a confocal scanning laser ophthalmoscope is a useful technique to identify high-risk characteristics in patients with nonexudative AMD. It gives also some valuable knowledge and clues in differential diagnosis of exudative age-related macular degeneration. This review comprises an introduction to fundus autofluorescence, a review of FAF imaging in AMD, and the recent classification of geographic atrophy (GA) and early AMD phenotypes by the Fundus Autofluorescence in Age-related Macular Degeneration Study. The association of phenotype and atrophy progression and choroidal neovascularization development are also summarized.

Publication type: Journal: Review
Source: EMBASE

17.Title: Gender and cataract-The role of estrogen
Citation: Current Eye Research, February 2015, vol./is. 40/2(176-190), 0271-3683;1460-2202 (01 Feb 2015)
Author(s): Zetterberg M., Celojevic D.
Language: English
Abstract: There is evidence from epidemiologic data that cataract is more common in women than men. This is not solely due to a higher risk of cataract formation in women, as is the case in the western world, but several population-based studies show that females have a higher prevalence of lens opacities, especially cortical. There is no firm evidence that lifestyle-related factors are the cause of this gender discrepancy. Focus has therefore been directed towards the role of estrogen in cataract formation. Although data on endogenous and exogenous estrogen involvement in cataractogenesis are conflicting, some studies have indicated that hormone therapy may decrease the risk of cataract and thus be protective. It has been hypothesized that the decrease in estrogen at menopause cause increased risk of cataract in women, i.e. not strictly the concentration of estrogen, but more the withdrawal effect. Estrogens are known to exert several anti-aging effects that may explain the longer lifespan in women, including metabolically beneficial effects, neuroprotection, preservation of telomeres and anti-oxidative properties. Since oxidative stress is considered important in cataractogenesis, studies have investigated the effects of estrogens on lens epithelial cells in culture or in animal models. Several investigators have found protection by physiological concentrations of 17beta-estradiol against oxidative stress induced by H2O2 in cultured lens epithelial cells. Although both main types of estrogen receptors, ERalpha and ERbeta, have been demonstrated in lens epithelium, most studies so far indicate that the estrogen-mediated protection in the lens is exerted through non-genomic, i.e. receptor-independent mechanisms, possibly through phosphorylation of extracellular signal-regulated kinase (ERK1/ERK2), a member of the mitogen-activated protein kinase (MAPK)-signaling pathway. Further studies are needed, both epidemiologic as to the role of hormone therapies, and laboratory studies regarding molecular estrogen-mediated mechanisms, in order to comprehend the role of estrogens on cataract formation.

Publication type: Journal: Review
Source: EMBASE

18.Title: Gender specific issues in hereditary ocular disorders
Citation: Current Eye Research, February 2015, vol./is. 40/2(128-145), 0271-3683;1460-2202 (01 Feb 2015)
Author(s): Iragavarapu S., Gorin M.B.
Language: English
Abstract: This review is intended to summarize the current knowledge from basic science and clinical medical literature cited within PubMed that pertain to gender-related factors and affect those individuals with hereditary ocular disorders. We consider gender-related biological factors that (a) affect disease onset and progression, (b) gender differences for major X-linked ocular disorders, (c) gender-specific conditions, (d) medications that may influence genetic eye disorders, and finally, (e) gender-related issues that influence the management and quality of life of these patients. Several studies have demonstrated the manner in which sex-related hormones in animal models are capable of influencing cell pathway and survival that are likely to affect hereditary eye disorders. There are very few clinical studies that provide compelling evidence for gender differences in human ocular conditions, other than for a number of X-linked disorders. Disease expression for X-linked disorders may be impacted by genetic mechanisms such as lyonization or uniparental disomy. Clinical evidence regarding the impact of gender-related medical conditions and therapies on eye conditions is extremely limited and primarily based on anecdotal evidence. Gender-specific factors may play a major role in the understanding biological pathways that influence the onset, rate of progression, and clinical findings associated with ocular genetic conditions. Clinicians need to be aware of the variable phenotypes observed in female carriers of X-linked disorders of gender specific issues, many of which are inadequately addressed in the current literature. Clinicians need to be sensitive to gender differences in social, cultural, and religious systems and they should also be aware of how their own gender biases may influence how they counsel patients. Finally, it is clear that the lack of effective clinical studies in this area creates an opportunity for future research that will have real benefits for these patients.

Publication type: Journal: Review
CONCLUSIONS AND RELEVANCE: We describe a new disease entity of unknown origin referred to as Landolt ring with or without treatments. The outcomes do not include epithelial disorders in the affected corneas or visual disruptions. Slitlamp examination indicates that Landolt ring resembles a Landolt ring in the epithelial cells. OBSERVATIONS: Eleven Japanese patients with specific epithelial lesions that resembled a Landolt ring were assessed. The main symptoms of Landolt ring were foreign body sensation and photophobia. Small lesions are sometimes connected to each other to form a large Landolt ring in a fractal pattern. Confocal microscopy reveals that the Landolt ring lesions are vesicular changes in the epithelial cells from the basal cell layer to the superficial cell layer without inflammation. The lesions form for weeks to months with sporadic exacerbations and natural remissions with or without treatments. The outcomes do not include epithelial disorders in the affected corneas or visual disruptions. CONCLUSIONS AND RELEVANCE: We describe a new disease entity of unknown origin referred to as Landolt ring-shaped epithelial keratopathy: A Novel Clinical Entity of the Cornea.
epithelial keratopathy, which is usually bilateral and characterized by specific Landolt ring-shaped focal epithelial lesions with vesicular changes only in the epithelial cells. The disorder has an insidious onset and self-limiting nature despite treatment and should be included in the differential diagnosis of corneal epithelial disorders.

**Publication type:** Journal: Article  
**Source:** EMBASE

22. **Title:** Lutein and zeaxanthin supplementation and association with visual function in age-related macular degeneration  
**Citation:** Investigative Ophthalmology and Visual Science, December 2015, vol./is. 56/1(252-258), 0146-0404;1552-5783 (16 Dec 2014)  
**Author(s):** Liu R., Wang T., Zhang B., Qin L., Wu C., Li Q., Ma L.  
**Language:** English  
**Abstract:** PURPOSE. To evaluate the effects of lutein and zeaxanthin on visual function in randomized controlled trials (RCTs) of AMD patients. METHODS. Relevant studies were identified by searches on PubMed, EMBASE, Web of Science, and Cochrane Library database up to April 2014. Three investigators independently determined the eligibility of RCTs, which compared lutein and zeaxanthin intervention with placebo. The adjusted weighted mean differences (WMDs) from each study were extracted to calculate a pooled estimate with its corresponding 95% confidence interval (CI). The main outcome measurements included visual acuity (VA), contrast sensitivity (CS), glare recovery time (GRT), and subjective perception of visual quality. RESULTS. Eight RCTs involving 1176 AMD patients were included in the meta-analysis. Xanthophyll carotenoid supplementation was associated with significant decrease in logMAR levels compared with the placebo group (WMD, -0.04; 95% CI, -0.06 to -0.03), and during intervention, each 1-mg/day increase in these carotenoids supplementation was related to a 0.003 reduction in logMAR level of VA. Remarkable benefit was also observed at all four spatial frequencies of CS (WMD ranging from 0.08-0.18; all P < 0.05) in contrast to placebo. Furthermore, association was observed between the postintervention increase in macular pigment optical density and improvements in VA (r = -0.58; P = 0.02), and in CS at 12 cycles/degree as well (r = 0.94; P < 0.001). CONCLUSIONS. Lutein and zeaxanthin supplementation is a safe strategy for improving visual performance of AMD patients, which mainly showed in a dose-response relationship.  
**Publication type:** Journal: Article  
**Source:** EMBASE

23. **Title:** Management of posterior uveal melanoma: Past, present, and Future: The 2014 Charles L. Schepens lecture  
**Citation:** Ophthalmology, February 2015, vol./is. 122/2(414-428), 0161-6420;1549-4713 (01 Feb 2015)  
**Author(s):** Shields J.A., Shields C.L.  
**Language:** English  
**Abstract:** Purpose To review the management of ciliary body and choroidal melanoma (posterior uveal melanoma [PUM]) over the last century with an emphasis on changing concepts. Design Retrospective review. Participants Review of personal experience over 40 years and pertinent literature on management of PUM. Methods Diagnosis and therapy for PUM. Main Outcome Measures Patient survival. Results In the early 1900s, most patients presented with a large symptomatic melanoma that necessitated enucleation, and the systemic prognosis was poor. In the 1970s, controversy erupted regarding the role of enucleation for PUM. Some authorities advocated prompt enucleation, and others proposed that enucleation promoted metastasis, known as the "Zimmerman hypothesis." Others recommended observation, withholding treatment until tumor growth was documented. During the 1970s, there was a trend toward eye-saving procedures, including laser photocoagulation, surgical removal of tumor, and techniques of radiotherapy. Despite local treatment success, systemic prognosis remained guarded with approximately 40% mortality overall. However, there was convincing evidence that smaller tumors offered a significantly better prognosis. Currently, there is a movement toward earlier identification and treatment of small melanomas using clinical factors predictive of malignant potential, in keeping with similar philosophy regarding other cancers. Further understanding of melanoma cytogenetics and molecular pathways have helped to recognize patients at risk for metastasis. At-risk patients are offered systemic therapeutic trials to prevent metastasis. We anticipate that the future management of PUM will focus on detection of clinical and imaging clues for earliest diagnosis, prompt local tumor treatment, and systemic targeted therapies for microscopic metastasis or prevention of metastasis. Personalized evaluation of patient-specific melanoma molecular pathway signature could allow for therapeutic intervention at a site specific to the pathway abnormality that leads to the development of melanoma. Conclusions Management of PUM has made major strides over the past century from the days of enucleation for massive, fatal tumor to early detection of smallest tumors with a more favorable prognosis. Current and future targeted specific tumor pathway interruption using systemic agents could improve survival.  
**Publication type:** Journal: Review  
**Source:** EMBASE  
**Full text:** Available Ophthalmology at Salisbury District Hospital Healthcare Library  
**Full text:** Available Ophthalmology at Ophthalmology

24. **Title:** Melanocytic lesions of the conjunctiva
25. Title: Meta-analysis of randomized controlled trials comparing latanoprost with other glaucoma medications in chronic angle-closure glaucoma

Abstract: PURPOSE: To evaluate the efficacy and safety of latanoprost compared with other glaucoma medications in the treatment of chronic angle-closure glaucoma (CACG) and to provide the basis for clinical medication. METHODS: Major literature databases were searched for randomized controlled trials (RCT) involving latanoprost among patients with CACG. Primary outcome measures were absolute changes in intraocular pressure (IOP) and incidence of ocular adverse events. Statistical analyses included the calculation of standardized mean difference (SMD) and relative risk (RR). The statistical analysis was performed using STATA version 12.0 software. RESULTS: Ten RCT involving 1096 patients were included in this meta-analysis. Analysis showed that latanoprost was not significantly different from other glaucoma medications in reducing IOP (SMD = 0.29, 95% confidence interval [CI] -0.02 to 0.59, p = 0.069). Further subgroup analysis revealed that latanoprost was superior compared with timolol (SMD = 0.64, 95% CI 0.46 to 0.82, p < 0.001) and marginally inferior to travoprost and bimatoprost (SMD = -0.19, 95% CI -0.35 to -0.02, p = 0.026). As for conjunctival hyperemia, latanoprost caused a higher proportion than timolol (RR = 2.36, 95% CI 1.27 to 4.37, p = 0.007). However, latanoprost was associated with lower incidence of conjunctival hyperemia (RR = 0.42, 95% CI 0.30 to 0.59, p < 0.001), and with fewer occurrence of other ocular side effects (excluding conjunctival hyperemia) than travoprost and bimatoprost (RR = 0.61, 95% CI 0.48 to 0.78, p < 0.001). CONCLUSIONS: Travoprost and bimatoprost are superior in IOP control than latanoprost, but latanoprost is better tolerated in patients with CACG.

Publication type: Journal: Review
Source: EMBASE

26. Title: Microvascular non-arteritic ocular motor nerve palsies - What we know and how should we treat?

Abstract: Patients with isolated unilateral pupil-sparing third or isolated fourth or sixth nerve palsies over 50 years are often diagnosed with "microvascular extraocular palsies". This condition and its management provoke divergent opinions. We review the literature and describe the incidence, pathology, clinical presentation, yield of imaging, and management. A retrospective diagnosis of exclusion has little practical use. We suggest a pragmatic approach to diagnosis, investigation, and management from initial presentation.

Publication type: Journal: Review
Source: EMBASE

27. Title: Misdirected aqueous flow in rhegmatogenous retinal detachment: A pathophysiology update

Abstract: It is widely accepted that the origin of subretinal fluid in rhegmatogenous retinal detachment (RRD) is liquid vitreous and that posterior vitreous detachment (PVD) and associated retinal tears are caused by vitreoretinal traction from intra-ocular currents, contraction of collagen fibers, and gravity. These explanations, however, are incomplete. We present a new synthesis of experimental and clinical evidence, updating understanding of fundamental pathophysiological processes in RRD. Misdirected aqueous flow is shown to more convincingly explain the origin of subretinal fluid in clinical RRD, to be the most likely cause of acute PVD and retinal tear formation, and also to contribute to initial detachment of
the retina at retinal tears. Misdirected aqueous flow in RRD is a pathophysiological process, rather than the "aqueous misdirection syndrome", and occurs without visible anterior chamber shallowing or acute glaucoma.

**Publication type:** Journal: Review  
**Source:** EMBASE  
**Full text:** Available Elsevier at Salisbury District Hospital Healthcare Library  
**Full text:** Available Elsevier at Survey of Ophthalmology

28. **Title:** Optical coherence tomography for the monitoring of neovascular age-related macular degeneration: A systematic review  
**Citation:** Ophthalmology, February 2015, vol./is. 122/2(399-406), 0161-6420;1549-4713 (01 Feb 2015)  
**Language:** English  
**Abstract:** Topic To compare the accuracy of optical coherence tomography (OCT) with alternative tests for monitoring neovascular age-related macular degeneration (nAMD) and detecting disease activity among eyes previously treated for this condition. Clinical Relevance Traditionally, fundus fluorescein angiography (FFA) has been considered the reference standard to detect nAMD activity, but FFA is costly and invasive. Replacement of FFA by OCT can be justified if there is a substantial agreement between tests. Methods Systematic review and meta-analysis. The index test was OCT. The comparator tests were visual acuity, clinical evaluation (slit lamp), Amsler chart, color fundus photographs, infrared reflectance, red-free images and blue reflectance, fundus autofluorescence imaging, indocyanine green angiography (ICGA), preferential hyperacuity perimetry, and microperimetry. We searched the following databases: MEDLINE, MEDLINE In-Process, EMBASE, Biosis, Science Citation Index, the Cochrane Library, Database of Abstracts of Reviews of Effects, MEDION, and the Health Technology Assessment database. The last literature search was conducted in March 2013. We used the Quality Assessment of Diagnostic Accuracy Studies 2 (QUADAS-2) to assess risk of bias. Results We included 8 studies involving more than 400 participants. Seven reported the performance of OCT (3 time-domain [TD] OCT, 3 spectral-domain [SD] OCT, 1 both types) and 1 reported the performance of ICGA in the detection of nAMD activity. We did not find studies directly comparing tests in the same population. The pooled sensitivity and specificity of TD OCT and SD OCT for detecting active nAMD was 85% (95% confidence interval [CI], 72%-93%) and 48% (95% CI, 30%-67%), respectively. One study reported ICGA with sensitivity of 75.9% and specificity of 88.0% for the detection of active nAMD. Half of the studies were considered to have a high risk of bias. Conclusions There is substantial disagreement between OCT and FFA findings in detecting active disease in patients with nAMD who are being monitored. Both methods may be needed to monitor patients comprehensively with nAMD.  
**Publication type:** Journal: Review  
**Source:** EMBASE  
**Full text:** Available Ophthalmology at Salisbury District Hospital Healthcare Library  
**Full text:** Available Ophthalmology at Ophthalmology

29. **Title:** Optical coherence tomography in retinal arterial occlusions: Case series and review of the literature  
**Citation:** Seminars in Ophthalmology, January 2015, vol./is. 30/1(74-79), 0882-0538;1744-5205 (01 Jan 2015)  
**Author(s):** Kapoor K.G., Barkmeier A.J., Bakri S.J.  
**Language:** English  
**Abstract:** Retinal arterial occlusions (RAOs) are an uncommon source of monocular vision loss, typically occurring in patients over the age of 60. Diagnosis is typically made by history and clinical examination, while ancillary testing may include fluorescein angiography. Optical coherence tomography (OCT) is not routinely utilized in the diagnostic assessment of RAO, and its role in the diagnosis and management of patients with RAO is still evolving. In this series, we review the literature on OCT findings in RAOs, particularly noting the role of OCT in delineating anatomic findings, chronicity and natural course, and functional outcomes. A case series of five patients with RAOs is provided to illustrate these findings.  
**Publication type:** Journal: Review  
**Source:** EMBASE

30. **Title:** Palinopsia revamped: A systematic review of the literature  
**Citation:** Survey of Ophthalmology, January 2015, vol./is. 60/1(1-35), 0039-6257;1879-3304 (01 Jan 2015)  
**Author(s):** Gersztenkorn D., Lee A.G.  
**Language:** English  
**Abstract:** Palinopsia, the persistence or recurrence of visual images after the stimulus has been removed, is a nonspecific term that describes multiple types of visual symptoms with a wide variety of etiologies. For example, palinopsia may be the presenting symptom of a potentially life-threatening posterior cortical lesion, yet it may also be a benign medication side effect. We comprehensively review all published cases and subdivide palinopsia into two clinically relevant categories: illusory palinopsia and hallucinatory palinopsia.  
**Publication type:** Journal: Review
31. Title: Pathophysiology and mechanisms of severe retinopathy of prematurity

Citation: Ophthalmology, January 2015, vol./is. 122/1(200-210), 0161-6420;1549-4713 (01 Jan 2015)
Author(s): Hartnett M.E.
Language: English
Abstract: Retinopathy of prematurity (ROP) affects only premature infants, but as premature births increase in many areas of the world, ROP has become a leading cause of childhood blindness. Blindness can occur from aberrant developmental angiogenesis that leads to fibrovascular retinal detachment. To treat severe ROP, it is important to study normal developmental angiogenesis and the stresses that activate pathologic signaling events and aberrant angiogenesis in ROP. Vascular endothelial growth factor (VEGF) signaling is important in both physiologic and pathologic developmental angiogenesis. Based on studies in animal models of oxygen-induced retinopathy (OIR), exogenous factors such as oxygen levels, oxidative stress, inflammation, and nutritional capacity have been linked to severe ROP through dysregulated signaling pathways involving hypoxia-inducible factors and angiogenic factors like VEGF, oxidative species, and neuroprotective growth factors to cause phases of ROP. This translational science review focuses on studies performed in animal models of OIR representative of human ROP and highlights several areas: mechanisms for aberrant growth of blood vessels into the vitreous rather than into the retina through over-activation of VEGF receptor 2 signaling, the importance of targeting different cells in the retina to inhibit aberrant angiogenesis and promote physiologic retinal vascular development, toxicity from broad and targeted inhibition of VEGF bioactivity, and the role of VEGF in neuroprotection in retinal development. Several future translational treatments are discussed, including considerations for targeted inhibition of VEGF signaling instead of broad intravitreal anti-VEGF treatment.
Publication type: Journal: Review
Source: EMBASE
Full text: Available Ophthalmology at Salisbury District Hospital Healthcare Library

32. Title: Patient-specific induced pluripotent stem cells (iPSCs) for the study and treatment of retinal degenerative diseases

Citation: Progress in Retinal and Eye Research, January 2015, vol./is. 44/(15-35), 1350-9462;1873-1635 (01 Jan 2015)
Language: English
Abstract: Vision is the sense that we use to navigate the world around us. Thus it is not surprising that blindness is one of people's most feared maladies. Heritable diseases of the retina, such as age-related macular degeneration and retinitis pigmentosa, are the leading cause of blindness in the developed world, collectively affecting as many as one-third of all people over the age of 75, to some degree. For decades, scientists have dreamed of preventing vision loss or of restoring the vision of patients affected with retinal degeneration through drug therapy, gene augmentation or a cell-based transplantation approach. In this review we will discuss the use of the induced pluripotent stem cell technology to model and develop various treatment modalities for the treatment of inherited retinal degenerative disease. We will focus on the use of iPSCs for interrogation of disease pathophysiology, analysis of drug and gene therapeutics and as a source of autologous cells for cell transplantation and replacement.
Publication type: Journal: Review
Source: EMBASE
Full text: Available Ophthalmology at Ophthalmology

33. Title: Pediatric cataract: Challenges and future directions

Citation: Clinical Ophthalmology, January 2015, vol./is. 9/(77-90), 1177-5467;1177-5483 (07 Jan 2015)
Author(s): Medsinge A., Nischal K.K.
Language: English
Abstract: Cataract is a significant cause of visual disability in the pediatric population worldwide and can significantly impact the neurobiological development of a child. Early diagnosis and prompt surgical intervention is critical to prevent irreversible amblyopia. Thorough ocular evaluation, including the onset, duration, and morphology of a cataract, is essential to determine the timing for surgical intervention. Detailed assessment of the general health of the child, preferably in conjunction with a pediatrician, is helpful to rule out any associated systemic condition. Although pediatric cataracts have a diverse etiology, with the majority being idiopathic, genetic counseling and molecular testing should be undertaken with the help of a genetic counselor and/or geneticist in cases of hereditary cataracts. Advancement in surgical techniques and methods of optical rehabilitation has substantially improved the functional and anatomic outcomes of pediatric cataract surgeries in recent years. However, the phenomenon of refractive growth and the process of emmetropization have continued to puzzle pediatric ophthalmologists and highlight the need for future prospective studies. Posterior capsule opacification and secondary glaucoma are still the major postoperative complications.
necessitating long-term surveillance in children undergoing cataract surgery early in life. Successful management of pediatric cataracts depends on individualized care and experienced teamwork. We reviewed the etiology, preoperative evaluation including biometry, choice of intraocular lens, surgical techniques, and recent developments in the field of childhood cataract.

Publication type: Journal; Review
Source: EMBASE

34. Title: Prophylactic treatment of retinal breaks - A systematic review
Citation: Acta Ophthalmologica, February 2015, vol./is. 93/1(3-8), 1755-375X;1755-3768 (01 Feb 2015)
Author(s): Blindbaek S., Grauslund J.
Language: English
Abstract: Prophylactic treatment of retinal breaks has been examined in several studies and reviews, but so far, no studies have successfully applied a systematic approach. In the present systematic review, we examined the need of follow-up after posterior vitreous detachment (PVD) - diagnosed by slit-lamp biomicroscopy or Goldmann 3-mirror examination - with regard to retinal breaks as well as the indication of prophylactic treatment in asymptomatic and symptomatic breaks. A total of 2941 publications were identified with PubMed and Medline searches. Two manual search strategies were used for papers in English published before 2012. Four levels of screening identified 13 studies suitable for inclusion in this systematic review. No meta-analysis was conducted as no data suitable for statistical analysis were identified. In total, the initial examination after symptomatic PVD identified 85-95% of subsequent retinal breaks. Additional retinal breaks were only revealed at follow-up in patients where a full retinal examination was compromised at presentation by, for example, vitreous haemorrhage. Asymptomatic and symptomatic retinal breaks progressed to rhegmatogenous retinal detachment (RRD) in 0-13.8% and 35-47% of cases, respectively. The cumulated incidence of RRD despite prophylactic treatment was 2.1-8.8%. The findings in this review suggest that follow-up after symptomatic PVD is only necessary in cases of incomplete retinal examination at presentation. Prophylactic treatment of symptomatic retinal breaks must be considered, whereas no unequivocal conclusion could be reached with regard to prophylactic treatment of asymptomatic retinal breaks.

Publication type: Journal; Review
Source: EMBASE

35. Title: Retinal detachment associated with ocular toxoplasmosis
Citation: Retina, February 2015, vol./is. 35/2(358-363), 0275-004X;1539-2864 (06 Feb 2015)
Author(s): Faridi A., Yeh S., Suhler E.B., Smith J.R., Flaxel C.J.
Language: English
Abstract: PURPOSE:: To assess the frequency of retinal detachment (RD) and associated clinical features in ocular toxoplasmosis. METHODS:: A review of the medical records of patients diagnosed with ocular toxoplasmosis and follow-up of 6 months or more was conducted. All patients were seen at the Casey Eye Institute at the Oregon Health & Science University over a 9-year period (2003-2012). Demographic data, presence of RD and/or vitritis, and treatments were reviewed. Main outcome measures were the rate of RD in ocular toxoplasmosis, degree of vision loss, and final anatomical status of the retina. Disease- and treatment-related factors associated with poor visual outcome were also analyzed. RESULTS:: Thirty-five eyes of 28 patients with ocular toxoplasmosis and sufficient follow-up were studied. Median age of patients was 40 years (range, 7-93 years). Median follow-up time was 22.5 months (range, 6-96 months). Four of thirty-five eyes (11.4%) developed RD with a frequency of 0.06 RD events per patient-year of follow-up in this sample in a single center. Of four patients with RD, three underwent pars plana vitrectomy and one underwent laser retinopexy. Two of the 4 patients had recurrent RD requiring scleral buckle. At final follow-up, all patients who underwent surgical repair had attached retinas; however, 3 of 4 patients had severe vision loss (20/200 or worse). CONCLUSION:: Retinal detachment occurred in 11% of eyes in this study that led to severe vision loss despite successful RD repair.

Publication type: Journal; Review
Source: EMBASE

Full text: Available Retina (Philadelphia, Pa.) at Retina

36. Title: Small pupil and cataract surgery
Citation: Current Opinion in Ophthalmology, January 2015, vol./is. 26/1(3-9), 1040-8738;1531-7021 (12 Jan 2015)
Author(s): Hashemi H., Seyedian M.A., Mohammadpour M.
Language: English
Abstract: Purpose of review Presence of a small pupil is still considered a major challenge for cataract surgeons. Appropriate mydriasis and maintaining it is of paramount importance to prevent potential serious complications. Recently, more interventions and instruments are available for the cataract surgeons to deal with these challenging cases. The intention of this review is to discuss the preoperative and intraoperative considerations and techniques for cataract surgery in small pupil and related conditions and to discuss new developments in management of small pupil in femtosecond laser-assisted cataract surgery. Recent findings There are new techniques and pharmaceuticals available to cataract surgeons in the setting of small pupil. Intracameral ketorolac may soon be available to maintain mydriasis and to
control pain and inflammation. Malyugin ring has been added to pupil expansion rings and has already been used for small pupil in different settings. In femtosecond laser-assisted cataract surgery, presence of a small pupil can now be managed by applying intracamer al mydriatics and intraocular devices successfully. Summary Accurate preoperative examinations adjunct with intraoperative use of appropriate pharmacologic and mechanical devices can yield favorable outcomes in cataract surgery with a small pupil.

**Publication type:** Journal: Review  
**Source:** EMBASE

37. **Title:** Systematic review and meta-analysis on the efficacy of selective laser trabeculoplasty in open-angle glaucoma  
**Citation:** Survey of Ophthalmology, January 2015, vol./is. 60/1(36-50), 0039-6257;1879-3304 (01 Jan 2015)  
**Author(s):** Wong M.O.M., Lee J.W.Y., Choy B.N.K., Chan J.C.H., Lai J.S.M.  
**Language:** English  
**Abstract:** Selective laser trabeculoplasty (SLT) is a relatively new type of laser used in treating open-angle glaucoma (OAG) and is reported to be equally efficacious to a first-line medication and argon laser trabeculoplasty (ALT). We summarize available evidence for considering SLT as an alternative treatment in OAG through systematic review and meta-analysis. Among OAG patients who range from newly diagnosed to those on maximally tolerated medical therapy, SLT results in a 6.9-35.9% intraocular pressure (IOP) reduction. Complications are rare and include an IOP spike requiring surgery, persistent macular edema, and corneal haze and thinning. Meta-analysis of randomized, controlled trials shows that SLT is non-inferior to ALT and medication in IOP reduction and also in achieving treatment success. Number of medications reduction is similar between SLT and ALT. More robust evidence is needed to determine its efficacy as a repeated procedure.  
**Publication type:** Journal: Review  
**Source:** EMBASE  
**Full text:** Available Elsevier at Salisbury District Hospital Healthcare Library

38. **Title:** The effect of amblyopia on visual-auditory speech perception: Why mothers may say “Look at Me When I’m Talking to You”  
**Citation:** JAMA Ophthalmology, January 2015, vol./is. 133/1(11-16), 2168-6165 (01 Jan 2015)  
**Author(s):** Burgmeier R., Desai R.U., Farner K.C., Tiano B., Lacey R., Volpe N.J., Mets M.B.  
**Language:** English  
**Abstract:** IMPORTANCE: Children with a history of amblyopia, even if resolved, exhibit impaired visual-auditory integration and perceive speech differently. OBJECTIVE: To determine whether a history of amblyopia is associated with abnormal visual-auditory speech integration. DESIGN, SETTING, AND PARTICIPANTS: Retrospective observational study at an academic pediatric ophthalmology clinic with an average of 4 years of follow-up. Participants were at least 3 years of age and without any history of neurologic or hearing disorders. Of 39 children originally in our study, 6 refused to participate. The remaining 33 participants completed the study. Twenty-four participants (mean [SD] age, 7.0 [1.5] years) had a history of amblyopia in 1 eye, with a visual acuity of at least 20/20 in the nonamblyopic eye. Nine controls (mean [SD] age, 8.0 [3.4] years) were recruited from referrals for visually insignificant etiologies or through preschool-screening eye examinations; all had 20/20 in both eyes. EXPOSURES: Participants were presented with a video demonstrating the McGurk effect (ie, a stimulus presenting an audio track playing the sound /pa/ and a separate video track of a person articulating /ka/). Normal visual-auditory integration produces the perception of hearing a fusion sound /ta/. Participants were asked to report which sound was perceived, /ka/, /pa/, or /ta/. MAIN OUTCOME AND MEASURE: Prevalence of perception of the fusion /ta/ sound. Prior to the study, amblyopic children were hypothesized to less frequently perceive /ta/. RESULTS: The McGurk effect was perceived by 11 of the 24 participants with amblyopia (45.8%) and 9 all controls (100%) (adjusted odds ratio, 22.3 [95%CI, 1.2-426.0]; P = .005). The McGurk effect was perceived by 100% of participants with amblyopia that was resolved by 5 years of age and by 100% of participants whose onset at amblyopia developed at or after 5 years of age. However, only 18.8% of participants with amblyopia that was unresolved by 5 years of age (n = 16) perceived the McGurk effect (adjusted odds ratio, 27.0 [95%CI, 1.1-654.0]; P = .02). CONCLUSIONS AND RELEVANCE: This pilot study suggests that children with a history of amblyopia have impaired visual-auditory speech perception. Early childhood appears to serve as an approximate time point for the development of successful visual-auditory fusion, by which time amblyopia must have either resolved or begun. Interventions to resolve amblyopia may not only influence visual acuity but may also influence the perception of sound.  
**Publication type:** Journal: Article  
**Source:** EMBASE

39. **Title:** The immunopathogenesis of birdshot chorioretinopathy; a bird of many feathers  
**Citation:** Progress in Retinal and Eye Research, January 2015, vol./is. 44/(99-110), 1350-9462;1873-1635 (01 Jan 2015)  
**Author(s):** Kuiper J., Rothova A., de Boer J., Radstake T.  
**Language:** English
Abstract: Birdshot chorioretinopathy (BSCR) is a bilateral chronic intraocular inflammation or posterior uveitis that preferentially affects middle-aged Caucasians. BSCR is characterized by distinctive multiple choroidal hypopigmented lesions in combination with retinal vasculitis and vitritis, and the extraordinary feature that virtually all patients are HLA-A29 positive. Its pathophysiology is still poorly understood. BSCR is the strongest documented association between HLA and disease in humans, which makes it an excellent model for studying the underlying immuno-genetic mechanisms of HLA class I-associated diseases. Although the association with HLA-A29 suggests that it is directly involved in the presentation of peptide antigens to T cells, the exact contribution of HLA-A29 to the pathophysiology of BSCR remains enigmatic. This article revisits the HLA-A29 peptidome using insights from recent studies and discusses why HLA-A29 can be considered a canonical antigen presenting molecule. The first genome-wide association study facilitated novel concepts into a disease mechanism beyond HLA-A29 that includes strong genetic predisposition for the ERAP2 gene that affects antigen processing for HLA class I. Furthermore, patients manifest with pro-inflammatory cytokine profiles and pathogenic T cell subsets that are associated with IL-17-linked inflammation. We are beginning to understand that the underlying biology of BSCR comprises various pathologic aspects branched into multiple molecular pathways. We propose to employ Systems Medicine to reveal their dynamic interplay for a holistic view of the immunopathology of this intriguing archetypal HLA class I-associated disease.

Publication type: Journal: Review
Source: EMBASE

40. Title: The relationship between Graves' ophthalmopathy and dry eye syndrome
Citation: Clinical Ophthalmology, December 2015, vol./is. 9/(57-62), 1177-5467;1177-5483 (31 Dec 2014)
Author(s): Selter J.H., Gire A.I., Sikder S.
Language: English
Abstract: Background: A complex relationship between Graves' ophthalmopathy (GO) and dry eye syndrome exists. New research brings more insight into the association between these two diseases. Methods: A review of the literature was conducted using the query terms "Graves' Ophthalmopathy", "Thyroid Eye Disease", and "Dry Eye" in MedLine (PubMed) and Scopus. A total of 55 papers were reviewed. Case reports were excluded. Conclusion: This review paper shows the close relationship between dry eye syndrome and GO. The underlying mechanisms behind their association suggest mechanical impairment of orbital muscles and immune-mediated lacrimal gland dysfunction as the causes of dry eye in GO patients. However, there are a variety of treatment options available for patients with GO with signs of dry eye, which help combat this issue.
Publication type: Journal: Review
Source: EMBASE

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