ABSTRACT BOOK

The XV ISD-DE Congress

June 17–19, 2026

Tallinn, Estonia

ISD-DE
2026

ISD-DE
INTERNATIONAL SOCIETY OF
DACRYOLOGY AND DRY EYE

EESTI OFTALMOLOOGIDE SELTS
Estonian Society of Ophthalmology

EAST TALLINN
CENTRAL HOSPITAL

visit estonia

Visit Tallinn

BILATERAL OCULAR SURFACE SQUAMOUS NEOPLASIA IN ANHIDROTIC ECTODERMAL DYSPLASIA SYNDROME: OVERPOWERING THREE DEVILS AT ONCE!

Shalin Shah , SNEH Care

Nutan Shah , SNEH Care
Sonali Mehta , Eye Q

Introduction - We present a case of pediatric bilateral ocular surface squamous neoplasia (OSSN) in Anhidrotic Ectodermal Dysplasia (AED) syndrome. Methods - A 13-year-old male presented with a bilateral temporal limbal mass for 9 months. The mass was reddish, elevated with papilliform growth, with dilated vessels and hairpin vessels. An anterior segment OCT showed an abrupt transition in epithelium, with no involvement of corneal stroma or underlying sclera. The past use of Interferon-α2b drops for 4 months had no benefit. The patient had hair loss, nail changes, anhidrosis, flaky skin, dry eyes, & primary immunodeficiency. The patient was given topical chemotherapy with Mitomycin-C 0.02% regimen, with adequate lubrication. Wide margin surgical excision of the residual lesion with cryotherapy at the margins was done with surface reconstruction. Results - After four cycles, a significant reduction in height, width & limbal extent was noted. Residual lesion was excised with a 4 mm margin. Histopathology showed carcinoma in situ with reparative changes post-chemotherapy in the substantia propria. Margin and base clearance were confirmed. The ocular surface reconstruction with amniotic membrane was successful, with preservation of 20/20 OU vision. The patient is on follow-up for 18 months post-intervention, with no recurrence. Conclusion - OSSN, immunodeficiency, and dry ocular surface – 3 challenges present concurrently in the patient, can be a task to manage. The use of interferon-α2b is moot in these cases, due to the underlying immunocompromised state. Maintaining the balance between chemotherapy cycles and surgical excision with surface reconstruction in dry eye disease can help achieve optimal results.

HIGH RISK CHARACTERISTICS OF EYELID BASAL CELL CARCINOMA IN YOUNG PATIENTS

Lipaz Varkel , Tel-Aviv Medical center

Maxim Bez , Tel-Aviv Medical center
Nadav Anteby , Tel-Aviv Medical center
Muhammad Abumanhal , Tel-Aviv Medical center
Igal Leibovitch , Tel-Aviv Medical center
Ran Ben-Cnaan , Tel-Aviv Medical center
Shelly Yacubovich , Tel-Aviv Medical center

Introduction Eyelid basal cell carcinoma (BCC) is the most common malignant eyelid tumor, but it is relatively uncommon in young adults, and potential age related differences in tumor behavior, surgical complexity, and postoperative ocular surface morbidity remain poorly characterized. Understanding whether younger patients harbor more aggressive disease or experience distinct functional sequelae, such as postoperative dry eye disease, may refine thresholds for biopsy, reconstruction planning, and follow up. We therefore compared demographic, clinicopathologic, surgical, and outcome characteristics of eyelid BCC between patients under 40 years and those over 40 years, aiming to identify age related differences with potential management implications. Materials and Methods We performed a retrospective cohort study of 132 consecutive eyelid BCCs between the years 2017–2024. Collected data included demographics (age, sex, Fitzpatrick type) and selected risk factors (outdoor/UV exposure, tanning history, immunosuppression, prior BCC); clinical presentation (eye laterality, eyelid subsite, lesion size, margin involvement, periocular signs); histopathology (dominant subtype, high risk features, perineural/lymphovascular invasion); and outcomes (complications, adjuvant therapy, follow up duration, local recurrence, new periocular/distant events). Groups (<40 y vs >40 y) were compared using appropriate parametric or nonparametric tests for continuous variables and exact or χ^2 tests for categorical variables, with two sided α=0.05. Results Among 132 eyelid BCCs, 23 occurred in patients under 40 y and 109 in patients over 40 y. Females were more frequent in the younger group (73.9%) than in the older group (48.6%; OR 2.99, 95% CI 1.10–8.17; p = 0.038). High risk histology (micronodular + morpheaform) was also more common in younger patients (17.4%) versus older patients (2.8%; p = 0.018). Revision stages to achieve margin free resection were required in 30.4% young patients versus 11.0% older patients (OR 3.54, 95% CI 1.21–10.33; p = 0.024). Local recurrence occurred in 26.1% younger versus 6.4% older patients (OR 5.14; p = 0.011). Postoperative dry eye disease was also more frequent in younger patients than in older patients following surgical removal (34.7% versus 10.2% respectively; p = 0.034). Conclusions Collectively, younger patients demonstrated female predominance, higher odds of aggressive histology, greater need for revision to clear margins, higher local recurrence, and a greater propensity for postoperative dry eye disease. Clinically, these age related differences support a lower threshold for

biopsy of suspicious eyelid lesions in young adults, as well as heightened attention to perioperative ocular surface protection and counseling regarding dry eye symptoms. These findings should inform patient counseling and resource allocation and merit prospective, multicenter validation with attention to etiologic factors (UV exposure, indoor tanning, hereditary predisposition) and mechanisms underlying increased postoperative dry eye disease in younger patients.

SCLERAL LENS AS A BARRIER FOR BURN PEDIATRIC PATIENTS WITH SEVERE EYELID RETRACTION

Mor Schlesinger , Sheba Medical Center

Sharon Armarnik , Sheba Medical Center
Ayelet Priel , Sheba Medical Center

Introduction: Facial burn patients suffer from surface disease evolving from eyelid retraction, decreased blinking, long term anesthesia and hospital aquired infections. During their hospitalizationa multidisciplinary team is usualy involved. Skin grafts and eyelid reconstructions in particular are postponed if an infection occurs due to lower rates of success resulting from failure of grafts. In order to postpone reconstruction- patients are often treated with lubrication and tarsoraphies that create cheesewiring and local infections methods: 3 burn pediatric patients >80% with eyelid retraction and a systemic infection were measured in the ICU by an optometrist and a scleral reservoir lens was tailor made. ICU team were educated to preserve cleaning and maintanence of the lens Results: All 3 patients had full protection of the cornea for 3-6 weeks untill reconstruction took place. The treatment assisted the patients, but also the reconstrucion team that could plan the surgery in the right timing Conclusion: Scleral reservoir lenses are a good option for the burn patients when reconstruction needs to be postponed. It serves the patient if awake-since a tarsoraphy can be avoided. It is important to educate the ICU team since those patients are not at the Ophthalology department and the use of these lenses are not common practice

EVALUATION OF A SKILL TRANSFER PROGRAM FOR ENDOLUMINAL LACRIMAL DUCT RECANALIZATION: A SURVEY IN JAPAN

Tomoyuki Kamao , Ehime University Graduate School of Medicine

Arisa Mitani , Ehime University Graduate School of Medicine
Atsushi Shiraishi , Ehime University Graduate School of Medicine

Introduction and Objective; Endoluminal lacrimal duct recanalization (ELDR) is widely performed in East and Southeast Asia for the treatment of lacrimal duct obstruction. However, an appropriate training model for acquiring ELDR skills has not been well established. In Japan, the Japanese Society of Lacrimal Passage and Tear Dynamics conducts a hands-on Skill Transfer Program and Dacryoendoscopic Surgery Course. This study aimed to investigate the current status and educational impact of these training courses. Methods; Participants who attended seven training sessions held between 2013 and 2019 were invited to complete a web-based questionnaire (SurveyMonkey®) consisting of 16 items. Invitation emails were sent to 170 past participants, and responses were collected anonymously. Results; Fifty-three valid responses (31.2%) were obtained. Before attending the course, 24 participants (51.1%) had no prior experience in diagnostic and therapeutic dacryoendoscopy, 15 (31.9%) had performed fewer than 10 cases, and 6 (12.8%) had performed 11–100 cases. After training, 35 participants (74.5%) performed ELDR, 15 (31.9%) performed dacryocystorhinostomy, and 13 (27.7%) did not perform any lacrimal surgery. The number of ELDR procedures performed after training was none in 10 (21.3%), ≤10 in 4 (8.5%), 11–100 in 22 (46.8%), and >100 in 9 (19.1%). Support at the initiation of ELDR included instructors from other institutions (44.7%), in-house mentors (23.4%), or none (19.1%). Reported difficulties included handling complex cases (14.9%), lack of institutional support (12.8%), and discrepancies between models and clinical practice (4.3%). Conclusions; The Skill Transfer Program organized by the Japanese Society of Japanese Society of Lacrimal Passage and Tear Dynamics has contributed to promoting the dissemination and practical application of ELDR in Japan, serving as an effective model for structured surgical training.

ASSESSMENT OF UPPER AND LOWER TEAR MENISCI IN LACRIMAL PASSAGE OBSTRUCTION USING A VERTICALLY WIDE OCT ACQUISITION WITH ANTERIOR SEGMENT OCT

Sujin Hoshi , University of Tsukuba

Keita Kikuchi , University of Tsukuba
Kuniharu Tasaki , University of Tsukuba
Takahiro Hiraoka , University of Tsukuba

Introduction; Tear meniscus alterations are characteristic features of lacrimal passage obstruction; however, how the upper tear meniscus behaves in relation to the lower tear meniscus remains insufficiently clarified. This study aimed to evaluate both upper and lower tear menisci using a vertically wide optical coherence tomography (OCT) acquisition obtained within a single measurement using an anterior segment OCT system. Methods; Eyes were categorized into lacrimal passage obstruction or non-obstruction groups based on lacrimal irrigation testing. A vertically extended OCT acquisition spanning 16 mm in the superior–inferior direction was performed with an anterior segment OCT device (CASIA2, Tomey corp., Japan). Each acquisition consisted of seven cross-sectional scans obtained at 1-mm intervals, allowing simultaneous capture of upper and lower tear menisci in a single measurement. Tear meniscus height (TMH) and tear meniscus area (TMA) were quantified using device-integrated analysis software. Median values were compared between groups, and superior–inferior differences were examined. Results; Sixty eyes were analyzed. Median upper TMH was greater in the obstruction group than in the non-obstruction group (0.22 vs. 0.16 mm), and upper TMA was similarly higher (0.02 vs. 0.01 mm^2). Lower TMH and lower TMA were also increased in obstructed eyes (0.32 vs. 0.19 mm and 0.03 vs. 0.01 mm^2, respectively). All parameters demonstrated statistically significant increases in the obstruction group ($p < 0.05$). The median difference between upper and lower TMH was 0.10 mm in obstructed eyes and 0.06 mm in non-obstructed eyes. Although superior–inferior differences were generally small, a subset of obstructed eyes exhibited marked asymmetry driven by disproportionately increased lower TMH. Conclusion; A vertically wide OCT acquisition enabled simultaneous capture of upper and lower tear menisci within a single measurement, providing detailed quantitative assessment of tear distribution in lacrimal passage obstruction. Impaired drainage was associated with increased upper and lower tear meniscus dimensions, with more pronounced increases inferiorly. This imaging approach may enhance diagnostic evaluation and clinical decision-making in lacrimal passage disorders.

POPULATION DIFFERENCES IN LONG-TERM REOPERATION RISK FOLLOWING DACRYOCYSTORHINOSTOMY: A MULTICENTER PROPENSITY-MATCHED COHORT ANALYSIS

Reem Agbareia , Hadassah Medical Center

Itay Nitzan , Hadassah Medical Organization and Faculty of Medicine, Hebrew University of Jerusalem, Israel

Ofira Zloto , Goldschleger Eye Institute, Sheba Medical Center, Tel-Hashomer, Israel

Zvi Gur , Hadassah Medical Organization and Faculty of Medicine, Hebrew University of Jerusalem, Israel

Introduction: Population and ethnic disparities have been reported across multiple ophthalmic procedures, yet their relevance to lacrimal surgery outcomes remains uncertain. This study evaluated whether database-recorded demographic population categories are associated with reoperation risk following dacryocystorhinostomy (DCR). Methods: Adults aged ≥18 years who underwent DCR between 2005 and 2025 were identified from a multicenter electronic health-records database using standardized procedural and diagnostic codes. Database-recorded population category—categorized as White, Asian, Black or African American, and Other—was the primary exposure. Each non-White population group was compared with a 1:1 propensity-score–matched (PSM) White cohort balanced for sociodemographic factors, comorbidities, and healthcare utilization. Patients with congenital lacrimal anomalies or lacrimal gland malignancy were excluded. Reoperation, defined as repeat DCR, was assessed over 10 years beginning 90 days after the index procedure. Cox regression estimated hazard ratios (HRs), Kaplan–Meier curves illustrated cumulative incidence, and log-rank tests evaluated differences. Results: Following PSM, the Asian, Black or African American, and Other population groups were compared to matched White cohorts (1,820, 744, and 629 patients per group, respectively). Reoperation occurred in 255 Asian (14.0%) vs 190 White (10.4%) patients (HR 1.32; 95% CI 1.09–1.59; p = 0.004), and in 75 Other population group (11.9%) vs 62 White (9.9%) patients (HR 1.58; 95% CI 1.13–2.22; p = 0.007). No significant difference was observed for Black or African American patients (11.2% vs 8.6%; HR 1.27; 95% CI 0.92–1.76; p = 0.153). Sensitivity analyses excluding deaths and adjusting for healthcare utilization confirmed the robustness of these results. Conclusions: Asian and Other database-recorded population group demonstrated higher long-term reoperation risk after DCR compared with White patients, while no significant difference was observed for Black or African American patients. These findings highlight potential anatomic, procedural, or systemic contributors and emphasize the importance of equitable evaluation and management in lacrimal surgery outcomes.

CDCR – IS THERE AN OPTION TO REPLACE THE LESTER JONES TUBE WITH AN AUTOLOGIC MATERIAL?

Mor Schlesinger , Sheba Medical Center

Ofira Zloto , Sheba Medical Center
Arkadi Yakirevich , Sheba Medical Center
Ayelet Priel , Sheba Medical Center

introduction- CDCR is a surgery performed when a proximal lacrimal obstruction is found. Due to the tube substance, its plaacement and complexity of fixation, surgery success has been sub optimal. There are many complications to the surgery including foreign body sensation, tube clogging, extrusion and misplcement Methods- surgical tecnique uses the nasolacrimal duct as a stent connecting the conjunctival orrifice to the lacrimal sac results- three cases have been performed in patients with proximal lacrimal obstruction- surgical technique will be shown conclusions- CDCR is the only surgical proedure for complete proximal lacrimal obstruction. The NLD transposition surgery is a good alternative using an autologous stent

FLOSSING THE TUBE

Zoran Zikic , University Eye Clinic Zvezdara, Milos Eye Clinic Medigroup

Introduction To present a novel, simple and atraumatic way to clean a clogged lacrimal by-pass glass tube using orthodontic expanding dental floss. Methods The expanding dental floss lead thread is inserted into the proximal part of the tube and retreived from the nose with a fine nasal forceps. The tube is cleaned with a back and forth motion and, finally extracted through the nose. Ten clogged lacrimal by-pass glass tubes were cleaned using expanding dental floss with a lead thread (group 1), whereas 5 tubes were cleaned with irrigation under pressure, with a 2 ml syringe and a lacrimal cannula (group 2). Results During the follow up period of 6 months, 2 (20%) tubes in group 1 needed additional cleaning, compared to 3 (60%) of tubes from group 2. Conclusion Expanding dental floss is has a large surface area and is designed to clean food debris and plaque (biofilm) from interdental space and orthodontic devices, while being gentle to the periodontium and the gums. This is why it is so efficient in cleaning the inside of a Lester Jones tube, without having to remove the tube. Although interdental brushes have been advocated for the same purpose, because of a limited length, they cannot clean longer tubes. Also, the bristles of these brushes can be quite abrasive to the conjunctiva and nasal mucosa. A relative drawback is the need for a nasal endoscope and a fine nasal retreival instrument.

PRIMARY CANALICULITIS: CHANGING PRACTICE PATTERN OVER THE LAST THREE DECADES AT A TERTIARY CARE SETUP

Lavanya Maddi , LV Prasad Eye Institute

Nandini Bothra , LV Prasad Eye Institute
Mohammand Javed Ali , LV Prasad Eye Institute

Introduction: To compare the demographics, clinical features and changes in management pattern of primary canaliculitis at a tertiary care eye institute Methods: Single-center, retrospective, interventional study. Clinical records of all patients diagnosed with primary canaliculitis and treated at Dacryology clinic in a tertiary care hospital, between 2015 and 2025 were reviewed. Data analysis included demographic profile, clinical presentation, microbiological profile, and management outcomes. The management outcome was further analyzed regarding conservative management, punctal dilatation with non-incisional canalicular curettage and punctoplasty with canalicular curettage. The data parameters obtained were compared with the historical published data of the earlier two decades from the same Institute. Results: Of the 138 patients, 82(59%) were women. Mean age at presentation was 57 years. Right eye was involved in 51(37%) patients, left eye in 84(61%) patients, and both eyes in 3(2%) patients. The mean delay in diagnosis was 11 months. Lower canaliculus was involved in 81(59%) patients, upper canaliculus in 38(28%) patients, and both canaliculi in 19(13%) patients. The most common presenting symptom was epiphora, noted in 68(49%) patients, the most common clinical sign was purulent discharge from puncta seen in 68(49%) patients. Microbiological workup was available in 117 patients, of whom 103(88%) yielded positive results. The most common isolate was streptococcus species in 27(26%) patients. Conservative management (oral and topical antibiotics, punctal dilatation with expression of canalicular contents) was done in 19(13%) patients. Punctal dilatation with non-incisional canalicular curettage was done in 78(57%). Punctoplasty with canalicular curettage was done in 41(29%) patients. 114(82.5%) patients showed complete resolution with single intervention, 22(16%) with two interventions, 2(1.5%) with three interventions. Recurrence was noted in 10(7%) patients that subsequently resolved with treatment. Conclusion: There is changing trend towards punctal dilatation with non-incisional canalicular curettage as the primary procedure with advantages of quicker resolution and reduced morbidity.

RESULTS OF A THREE-MONTH PROSPECTIVE STUDY ON ENDONASAL DCR SURGERY: IS STENTING REALLY NECESSARY?

Ekaterina Kondratishko , Rīga Stradiņš University, JSC Veselības Centru Apvienība, Medical centre "Consilium Medicum"

Girts Brigis , Rīga Stradiņš University
Aleksejs Derovs , Rīga Stradiņš University

Introduction and Objective: Endonasal dacryocystorhinostomy (endoDCR) has become a widely accepted alternative to external DCR for treating nasolacrimal duct obstruction (NLDO). Traditionally, silicone stents are routinely inserted to prevent postoperative restenosis; however, recent studies question their necessity. This prospective study aimed to compare the three-month outcomes of endoDCR performed with and without silicone stents and to determine whether stenting improves surgical success or affects complication rates. Methods: A prospective comparative study was conducted on patients with primary NLDO who underwent endoscopic endoDCR between October 2023 and October 2025. Participants were divided into three groups: Group A (non-stented), Group B (stented for 1 month), and Group C (stented for 3 months). Exclusion criteria included previous DCR, traumatic or tumorous lacrimal obstruction, and systemic inflammatory disease. All procedures were performed by the same surgical team under standardized conditions. Postoperative follow-up at one, three, and six months included endoscopic assessment of stoma patency, functional testing, and patient self-assessment questionnaires. Results: To date, 81 patients have been included: 25 in Group A, 28 in Group B, and 28 in Group C. At the three-month follow-up, symptomatic success (resolution of epiphora) was achieved in 76% of non-stented cases and 82.2% of stented cases ($p = 0.723$, Fisher's exact test). Granulation tissue developed in 24% of non-stented and 39.3% of stented eyes ($p = 0.214$, Chi-square test), while adhesions occurred in 8% and 10.7%, respectively ($p > 0.999$). Two cases of spontaneous stent extrusion were observed. Early postoperative infections were more frequent in stented cases. No severe complications occurred. Conclusions: Three-month results show no significant advantage of routine silicone stenting in endonasal DCR. Stenting was associated with higher early granulation and infection rates. Selective stenting may be reserved for anatomically narrow lacrimal sacs or complex nasal conditions, optimizing outcomes while reducing cost and morbidity. Keywords: Endonasal dacryocystorhinostomy, nasolacrimal duct obstruction, silicone stent, granulation, prospective study

3D COMPUTED TOMOGRAPHY-DACRYOCYSTOGRAPHY (3D CT-DCG) AND THE CONTRAST AGENTS: DIRECT COMPARISON OF LIPIODOL AND BARIUM SULFATE

Rafal Nowak , Jozef Strus City Hospital

Izabela Nowak-Gospodarowicz , Military Institute of Medicine-National Research Institute
Aleksandra Kinga Kicinska , Military Institute of Medicine-National Research Institute
Marek Rekas , Military Institute of Medicine-National Research Institute
Maja Nowak , Jozef Strus City Hospital
Mohammad Javed Ali , L.V. Prasad Eye Institute

Introduction: Imaging of the lacrimal drainage pathway plays an important role in the selection of an appropriate surgical treatment method. Three-dimensional computed tomography–dacryocystography (3D CT-DCG) is increasingly used to characterize lacrimal drainage disorders, yet the optimal contrast agent remains unclear. This study aimed to directly compare two contrast agents—barium sulfate (BS) and lipiodol (LP)—in terms of filling performance and structural detail in 3D CT-DCG. Methods: A prospective interventional study was conducted on 15 lacrimal drainage systems from 14 consecutive patients with clinically confirmed nasolacrimal duct obstruction. Each lacrimal system underwent two contrast-enhanced CT-DCG examinations: first with LP, followed one week later by BS. Subsequently, 3D reconstructions were generated according to standardized published protocols. A dedicated 3D analysis software quantified (i) the volume of the reconstructed lacrimal pathway, reflecting the filling capacity of the contrast agent, and (ii) the number of distinct faces composing the 3D object, representing anatomical detail. Statistical analysis was performed using R (version 4.3.2). Results: BS provided markedly superior filling of the lacrimal system compared with LP. The mean reconstruction volume was 55.2 mm^3 with LP versus 244.2 mm^3 with BS ($p < 0.001$). Across all examined systems, BS resulted in at least a 94% increase in volume ($p < 0.001$). BS also enabled improved delineation of anatomical structures, including clearer visualization of nasolacrimal duct stenoses and obstructions. In cases with dacryoliths, BS highlighted filling defects more conspicuously and allowed more intricate appreciation of the presumed shape and size of the dacryolith compared with LP. Conclusion: This study provides the first direct head-to-head comparison of BS and LP for 3D CT-DCG. BS consistently demonstrated superior filling capacity and enhanced anatomical detail, facilitating improved assessment of stenosis, obstruction, and intraluminal pathology. Given its performance and cost advantages, BS represents a robust and practical alternative to LP for 3D CT-DCG imaging.

ENLARGED AGGER NASI CELL AND ENDONASAL DACRYOCYSTORHINOSTOMY – DEALING WITH AN UNINVITED GUEST DURING LACRIMAL SURGERY!

Shalin S Shah , SNEH Care

Nutan Shah , SNEH Care
Uday Gajiwala , Tejas eye hospital

Introduction: Endoscopic endonasal dacryocystorhinostomy (DCR) is a routinely performed lacrimal surgery, involving the removal of the lacrimal bone and frontal process of the maxilla. The agger nasi cell is an anteriorly located ethmoidal air cell, which may extend anteriorly into the lacrimal bone. Pneumatization of the lacrimal bone may pose a surgical challenge during endonasal DCR surgery, where the air cell may hinder the surgical approach to the lacrimal sac. Methods: A retrospective analysis of surgical records was done between January 2024 to October 2025 at the four centres where endonasal DCR surgery is regularly performed for dacryocystitis cases. A total of 11 cases were noted, where an extended agger nasi cell was noted extending into the lacrimal bone, during the surgical dissection, before osteotomy creation. The surgical videos of the cases were analysed. The challenges during the surgical steps for the removal of the agger nasi cell, the position of the lacrimal sac, and the creation of the lacrimal sac flaps were evaluated for potential complications. The post-op follow-up and surgical results at 6 months were analysed. Results: All of the 11 cases showed a distinct bulge in the lateral wall of the nose, anterior and inferior to the axilla of the middle turbinate bone. The dissection and reflection of the nasal mucosal flap was a challenge due to the absence of a solid bone support underneath. The bone removal and opening of the pneumatized lacrimal bone were achieved through blunt dissection with periosteum elevator and nasal forceps. The lateral wall of the cell was removed using ronguers. An adequate exposure of the fundus of the lacrimal sac proved to be a challenge due to the thicker portion of the frontal process of the maxilla, just adjacent to the superior border of agger nasi cell. It was essential to debride the mucosa of the agger nasi cell to prevent surgical failure. At 6 months follow-up, all cases showed a deep base of the endosteum, with a visible canalicular opening. Conclusion: An extended agger nasi cell lying medial to the lacrimal sac can present as a surgical challenge for beginner surgeons during endonasal DCR. We provide step-by-step guidance for adequate osteotomy creation and lacrimal sac exposure for optimal results.

COMPLICATIONS IN NON-INCISED DACRYOCYSTITIS WITH ABSCESS FORMATION

Jan Polzer , University Hospital Zurich, Zurich, Switzerland

Sophia Näther , University Hospital Zurich, Zurich, Switzerland
Karla Chaloupka , University Hospital Zurich, Zurich, Switzerland

Introduction: Treatment of acute dacryocystitis often includes an abscess incision unless it evacuates spontaneously. Once the pus is released, the acute infection calms down. This report presents two patients with lacrimal stenosis whose delayed management resulted in prolonged disease, illustrating the importance of early drainage as well as timely dacryocystorhinostomy (DCR). Methods: We report two patients with recurrent dacryocystitis and prolonged morbidity due to delayed treatment of the infection and the originating lacrimal stenosis. Management decisions, clinical progression and surgical interventions were documented longitudinally. Results: Patient 1: A 45-year-old female with a history of recurrent dacryocystitis due to postsaccal stenosis led to the recommendation for DCR. Surgery was initially declined. The patient represented years later with acute dacryocystitis progressing to spontaneous cutaneous perforation leading to a wide necrotic wound and delayed wound healing. Patient 2: A 48-year-old female presented with a history of chronic intermittent swelling over the lacrimal sac for years. The patient refused the treatment of the lacrimal stenosis. While traveling in a hot desert, severe dacryocystitis with extensive facial swelling occurred. The swelling reacted well to the given antibiotics. However, a naso-ocular abscess formation persisted. The patient refused over several weeks an incision. Due to her collagen rich skin the abscess did not perforate spontaneously. Once the patient agreed to incision, the red nodule had formed a compact wide inflamed scar hindering the wearing of glasses and contact lenses. At first, the anxious patient agreed only to the resection of the nodule. After another dacryocystitis, she finally agreed to perform a combined resection with a DCR. Beyond local tissue destruction, case reports have documented central retinal artery occlusion and acute vision loss associated with untreated dacryocystitis, suggesting possible infectious or inflammatory vascular compromise in advanced disease stages. Conclusions: Anxious patients can hesitate and refuse necessary treatments. These cases demonstrate that delayed treatment of dacryocystitis can promote additional complications and prolonged morbidity.

THIRTY-YEAR EVOLUTION OF ENDONASAL DACRYOCYSTORHINOSTOMY WITH TUBE PLACEMENT: A MULTIDISCIPLINARY TEAM APPROACH IS KEY TO SUCCESS. EXPERIENCE AND A VIDEO CASE REPORT

Mihkel Plaas , Tartu University Clinic

Mari Petraudze , Tartu University Clinic
Vahur Ristioja , Tartu University Clinic
Imbi Kuus , Tartu University Clinic

Title: Thirty-Year Evolution of Endonasal Dacryocystorhinostomy with Tube Placement: A Multidisciplinary Team Approach is Key to Success. Experience and a Video Case Report. Background: Endonasal dacryocystorhinostomy (DCR) with silicone intubation is a standard procedure for nasolacrimal duct obstruction. This study summarizes the 30-year surgical evolution, procedural outcomes, and key technical insights from the Tartu University Hospital Centre, where an average of 25 procedures are performed annually. We justify the multidisciplinary team approach for this procedure. Case Report and Methods: We present a video case of a 19-year-old female with post-traumatic right-sided glaucoma who subsequently developed painful medial lower eyelid swelling on the same side. Lacrimal syringing and probing showed mucous secretion regurgitation. A joint ophthalmology and ENT endonasal DCR was performed on the right side, featuring wide bony resection and near-complete lacrimal sac exposure. A large concrement (dacrolith) was identified and removed from the inferior aspect of the lacrimal sac. Simple probing and stenting alone would have failed to address this issue. Results: Over the 30-year period, a significant number of procedures were performed, demonstrating a clear trend towards refined endoscopic techniques and improved instrumentation. Statistical analysis reveals high long-term patency rates. The accompanying case report critically underscores the necessity of creating a sufficiently wide bony and mucosal fenestration to ensure marsupialization of the sac, prevent postoperative stenosis, and manage intraoperative complications such as bleeding. Conclusion: This experience argues that a multi-specialty team approach, wide surgical exposure, and thorough anatomical knowledge allow the procedure to be performed effectively with a 0-degree endoscope, minimizing the risk of misorientation. These elements are crucial for successful outcomes.

CHALLENGES IN JONES TUBE MANAGEMENT: A CASE REPORT

Elina Parkassevitš , East Tallinn Central Hospital

Reili Rebane , East Tallinn Central Hospital
Kadi Palumaa , East Tallinn Central Hospital

Introduction and Objective: Conjunctivodacryocystorhinostomy (CDCR) with Jones tube placement is the standard treatment for complete canalicular obstruction. This case report aims to illustrate how recurrent inflammation, nasal anatomy, and prior lacrimal interventions contribute to Jones tube–related complications and to highlight surgically relevant strategies for long-term success. Methods: A single-patient observational case report is presented. Results: A 54-year-old female with a history exceeding ten years of chronic ocular surface disease and bilateral epiphora is described. Her course included recurrent keratitis initially attributed to herpes infection, suspected autoimmune epitheliopathy, and later Salzmann nodular degeneration. Prolonged topical corticosteroid therapy led to secondary glaucoma and cataract formation. Multiple prior lacrimal procedures, including probing and bicanalicular and monocanalicular intubations, were unsuccessful, and progressive herpes-related cicatrization resulted in complete bilateral canalicular obstruction. Left-sided CDCR with a StopLoss Jones tube was performed in 2022, followed by right-sided CDCR in 2024. Postoperative complications included recurrent tube obstruction and migration, conjunctival granulomatous and epithelial ingrowth, intraluminal blockage, and nasal mucosal overgrowth. Nasal endoscopy demonstrated distal tube compression against a deviated nasal septum, causing functional obstruction. Modified septoplasty with selective mucosal resection and limited ethmoid bone removal restored tube alignment and patency. Recurrent conjunctival overgrowth required repeated excisions, intralesional triamcinolone injections, and tube repositioning using the lasso technique to prevent tube sinking. Despite episodic herpetic reactivation and autoimmune corneal inflammation, bilateral tube patency and symptomatic relief were ultimately achieved. Conclusions: Jones tube failure is frequently multifactorial, driven by chronic inflammation, altered nasal anatomy, and extensive prior lacrimal surgery. Careful patient selection, meticulous tube positioning, routine endoscopic evaluation, and proactive management of ocular and nasal inflammatory disease are essential for durable CDCR outcomes in complex clinical settings.

DACRYOENDOSCOPIC SURGERY USING HEADS-UP DISPLAY

Mari Goto , Tokyo Metropolitan Komagome Hospital

Koichi Kosaka , Tokyo Metropolitan Komagome Hospital

【Introduction】Surgery with heads-up display (HUD) is reported to minimize the surgeon's postural stress and improve visualization compared to microscope alone in cataract, retina, glaucoma, cornea, strabismus and blepharoptosis surgeries. However, there has so far been no report of dacryoendoscopic surgery utilizing HUD. We performed a preliminary study concerning application of HUS system in dacryoendoscopic surgery. 【Methods】Consecutive cases series of dacryoendoscopic surgery performed under local anesthesia from May 2025 to Oct 2025 utilizing HUD was retrospectively analyzed. NGENUITY 3D HUD system (Alcon) was connected to the microscope (OPTI Lumera 700, Zeiss), and images from the dacryoendoscope (Fibertec) and microscope were displayed side to side on a 55 inch surgical display placed approximately 1.2 meters in front of the surgeon. 【Results】The series included 60 cases (79 eyes), age 29~90 (average 69.1±standard deviation 14.4) years old. Thirteen cases (14 eyes) were males and 47 cases (65 eyes) were females. The obstructed site was canaliculus alone in 32 eyes, lacrimal duct alone in 19 eyes, canaliculus and duct combined in 28 eyes. The operation time was 4~54 (19.9±10.5) minutes. Of the 6 cases with operation time of 30 minutes or more, 4 were bilateral and all had canaliculus and duct obstruction. All cases were successfully intubated with lacrimal stents after opening the obstructed site under dacryoendoscopy. Both surgeons (M.G. and K.K.) agreed that dacryoendoscopic surgery with HUD was beneficial compared to microscope alone in the following points. Firstly, the surgeon was able to maintain a relaxed upright neck and head position looking straight ahead throughout surgery. Secondly, the system allowed 48% higher magnification compared to microscope alone improving visualization of the punctum. Thirdly, the high dynamic range surgical camera enabled dimming the light from the microscope reducing the patient's photophobia. 【Conclusion】Dacryoendoscopic surgery using HUD appears feasible and may provide ergonomic advantages.

COMPARATIVE SUCCESS OF EARLY ENDONASAL VS DELAYED EXTERNAL DCR IN ACUTE DACRYOCYSTITIS WITH FISTULA – ENDEAR-2 TRIAL

Shalin Shah , SNEH Care

Nutan Shah , SNEH Care
Uday Gajiwala , Tejas Eye Care

Introduction - Acquired lacrimal fistula is classically managed with a surgical fistulectomy along with dacryocystorhinostomy (DCR) surgery for the underlying dacryocystitis. The cases undergoing endoscopic endonasal DCR surgery may need an additional fistulectomy for a persistent fistula, as per the conventional literature. We plan to evaluate cosmetic outcomes of endonasal DCR with de-epithelisation of fistula compared to external DCR with fistulectomy surgery in cases of dacryocystitis with fistula. Methods: A retrospective analysis was performed at three centres, where endonasal DCR with fistula de-epithelisation or external DCR with fistulectomy surgeries are performed for dacryocystitis patients with an acquired lacrimal fistula. All consecutive patients meeting the study criteria and undergoing surgical treatment at the three centres between January 2024 and April 2025 were analysed. The cases with prior lacrimal surgeries, traumatic causes, or a history of lacrimal neoplasm were excluded from the study. All the surgeries were performed by a single surgeon, without employing anti-fibrotic agents or silicone intubation tubes. The success rates at six months, complications of surgery, skin healing, and cosmetic outcomes were evaluated. Results: A total of 104 cases of dacryocystitis with acquired lacrimal fistula were analysed. 51 cases had undergone endonasal DCR with de-epithelisation & 53 cases were treated with an external DCR with fistulectomy. The demographic distribution of patient characteristics was similar in both groups. The anatomical and physiological success rates were similar in both groups at 96.1% (49/51) and 96.2%(51/53), respectively. 49/51 cases from the endonasal DCR group showed good healing with formation of a pigmented lesion at the site of the fistula. The external DCR with fistulectomy showed minimal scarring in 45/53 cases. 6 other cases in the external fistulectomy group showed hyperpigmented scar, with a hypertrophic scar in 2 of these cases. 2 cases in each group had failure of DCR with persistence of the fistula. Both cases of persistent fistula in the endonasal DCR group had a history of persistent fistula for greater than 6 months before intervention. Conclusion: This study shows that early endonasal DCR with de-epithelisation has non-inferior outcomes as compared to the conventional external DCR with fistulectomy surgery. Though the fistula heals with pigmentation, the risk of hypertrophic scarring is lower with endonasal surgery.

ELDR IN PEDIATRIC LACRIMAL OBSTRUCTION: CLASSIFICATION AND RESULTS

Nozomi Matsumura , Kanagawa Children's Medical Center

Satoshi Goto , St. Marianna University School of Medicine
Tomoko Ohno , Kanagawa Children's Medical Center
Jutaro Nakamura , Kanagawa Children's Medical Center
Toru Suzuki , Suzuki Eye Clinic

Introduction: To classify pediatric lacrimal duct obstruction based on dacryoendoscopic findings obtained during endoscopic lacrimal duct recanalization (ELDR) and underlying etiologies, and to evaluate treatment outcomes. Methods: This prospective study included 245 consecutive pediatric patients (338 eyes; ≤15 years) with lacrimal duct obstruction who underwent ELDR under general anesthesia at Kanagawa Children's Medical Center from 2011 to July 2025. Patients were categorized according to the etiology and dacryoendoscopic findings of obstruction, and treatment outcomes were analyzed. The association between systemic syndromes and surgical success was statistically evaluated. Results: The mean age was 46 ± 33 months; 153 were boys. Thirty-four eyes (10%) had a history of failed probing. Diagnoses (including overlaps in cases with bilateral involvement) were: congenital nasolacrimal duct obstruction (CNLDO) in 120 cases (157 eyes, 47%; simple 71%, complicated 29%, dacryolith 4.5%), congenital punctal atresia in 66 cases (88 eyes, 26%; 26% coexisting with CNLDO), secondary acquired nasolacrimal duct obstruction (SANDO) in 36 cases (38 eyes, 11%; 94% following epidemic keratoconjunctivitis), systemic syndromes in 24 cases (41 eyes, 12%; Down syndrome 58%), and anomalies of the lacrimal duct or inferior nasal meatus in 11 cases (14 eyes, 4%). Overall outcomes were: success 93.0%, fair 5.0%, and fail 2.1%. Success rates were 98.0% (291/297 eyes) without systemic syndromes and 65.9% (27/41 eyes) with them (Fisher's exact test, $p<0.001$, odds ratio 25.1, 95% CI 8.9–70.8). Four of six failures were cured by dacryocystorhinostomy (DCR). Conclusions: Dacryoendoscopic evaluation enables accurate classification and understanding of pediatric lacrimal disorders, potentially redefining conventional categories based on blind probing. ELDR-guided, etiology-based treatment yields high success rates while minimizing the need for DCR. Surgical success was significantly lower in children with systemic syndromes.

THE STONE THAT CRIED: AN INFECTIOUS DACRYOLITH MASQUERADING AS “CHRONIC NLDO”

Gangadhara Sundar , National University Hospital

Dayna Yong , National University Hospital

Introduction: Dacryolithiasis within the nasolacrimal sac is an uncommon cause of acquired nasolacrimal duct obstruction (NLDO), often overlooked on imaging and possibly harbouring chronic infection. We present a rare case of a large, conforming infectious dacryolith causing progressive NLDO, describing its clinical course and diagnostic challenges. Methods: A single retrospective case review of bilateral sequential nasolacrimal duct obstruction. Results: A 60-year-old Indian male, a chronic smoker, presented in 2013 with left intermittent tearing and discharge. Dacryocystography showed partial left NLDO with distension, while the right side was reported as normal. He underwent endoluminal lacrimal duct recanalisation (ELDR) with balloon dacryoplasty and intubation. Post-operatively he remained intermittently symptomatic with relief from forced lacrimal irrigation with expulsion of mucus casts. 9 yrs later, he developed an acute dacryocystitis and was advised an Endonasal Endoscopic DCR(EndoDCR). He instead opted for a trial of ELDR with limited relief. Two years later, owing to recurrent infections he underwent a right EndoDCR with bicanalicular intubation. Intraoperatively, a large dacryolith (1.2x0.7x0.3cm) was found within a markedly distended nasolacrimal sac, its shape conforming to the sac wall. Cultures grew Actinomyces and Fusobacterium species. Retrospective review of previous dacryocystography suggested that presumed patent areas could have represented filling defects from smaller non-calcified dacryoliths, which were not visible on computed tomography scan. The patient has remained asymptomatic one year post-surgery. Conclusion: This is a rare case of slowly progressive bilateral lower NLDO with distension from an enlarging dacryolith moulding to the distal lacrimal drainage system. Chronic mucus retention and infection likely contributed to stone formation and sac distension, presenting with intermittent tearing with ball valve effect.

INTRAOPERATIVE NASOLACRIMAL DUCT MUCOSAL PATTERNS IN COMMON CANALICULAR OBSTRUCTION: A MODEL FOR EVALUATING POSTOPERATIVE HEALING AFTER ELDR

Akemi Iwasaki , Otaki Eye Clinic

Yoichi Manabe , Otaki Eye Clinic

Purpose: The nasolacrimal duct (NLD) often exhibits diverse mucosal changes, but these patterns are difficult to evaluate in diseases such as chronic dacryocystitis, where severe inflammation obscures anatomical structure. Common canalicular obstruction (CCO), in contrast, preserves NLD architecture and reliably heals after endoluminal lacrimal duct recanalization (ELDR), making it an ideal model for studying NLD mucosal pathology. This study aimed to characterize intraoperative dacryoendoscopic NLD findings in CCO and to assess how these patterns relate to mucosal healing three months after tube removal. Methods: A retrospective review was performed on 155 ELDR procedures for CCO between February and December 2024. After excluding cases with confounding factors, 47 eyes (mean age 74.2 years) were included. Thirty-three of these underwent dacryoendoscopic evaluation three months after silicone tube removal. Results: Intraoperative NLD findings were classified into six groups: normal mucosa (n=23), submucosal narrowing (n=8), spiral obstruction (n=6), extremely narrow residual lumen with submucosal white granular tissue (n=8), fibrotic obstruction (n=1), and adhesive viscous mucosa (n=1). At three months, irrigation confirmed patency in 41 of 42 evaluated eyes (97.6%). Postoperative findings among the 33 re-examined eyes were: normal (N=16), discoloration only (W=7), mild stenosis (S1=6), severe stenosis (S2=3), and obstruction (O=1). Normal intraoperative mucosa predicted favorable outcomes (N=13, W=2). Submucosal narrowing showed varied healing (N=2, W=3, S1=1). Spiral obstruction showed limited improvement (N=1, W=1, S1=1). The group with an extremely narrow residual lumen and submucosal white granular tissue exhibited the highest rate of postoperative stenosis (W=1, S1=3, S2=3, O=1). A chi-square test demonstrated a significant association between intraoperative and postoperative classifications ($p = 0.0059$). Conclusion: CCO serves as a valuable model for evaluating NLD mucosal pathology during ELDR. Intraoperative dacryoendoscopic patterns strongly correlate with postoperative mucosal healing. Normal mucosa predicts favorable outcomes, whereas moderate-to-severe obstruction—particularly cases with an extremely narrow residual lumen and submucosal white granular tissue—is associated with persistent stenosis.

CONSEQUENCES OF PREMATURE SILICONE STENT LOSS FOLLOWING ENDONASAL DACRYOCYSTORHINOSTOMY

Reem Agbareia , Hadassah Medical Center

Neofytos Mavris , Hadassah Medical Center
Zvi Gur , Hadassah Medical Center

Introduction Dacryocystorhinostomy (DCR) remains the definitive surgical intervention to restore tear drainage in primary acquired nasolacrimal duct obstruction. The role of silicone stents in enDCR is contentious. There remains limited evidence regarding the impact of stent duration on surgical outcomes in endonasal DCR (enDCR). Recommendations range from six weeks to six months, aiming at preventing fibrotic stenosis of the newly formed ostium. Given the varied practices and the absence of a consensus on the optimal duration for stent placement, this study aims to evaluate whether premature silicone stent loss (<2 months) after primary enDCR affects surgical success. Methods Single-center retrospective cohort of adults with primary acquired nasolacrimal duct obstruction who underwent primary enDCR with bicanalicular intubation (August 2020–December 2024). The primary outcome was surgical success—absence of symptomatic epiphora/infection and/or patent lacrimal irrigation—assessed ≥3 months postoperatively. Outcomes were compared between eyes with “premature” stent loss and those without (“late”). Results We included 107 eyes (mean age 60.3±17.8 years; 72.9% female). Median follow-up was 239 days (IQR 137–592). Premature stent loss occurred in 21 eyes (19.6%), with a median time to loss of 14 days (range 6–35). Overall surgical success was 86.9% (93/107). Success was comparable between premature and late groups: 85.7% (18/21) vs 87.2% (75/86), p=1.00. Complications were uncommon (2.8% overall) and similar between groups (4.8% vs 2.3%, p=0.48). Revision surgery was required in 12.1% overall (14.3% premature vs 11.6% late, p=0.72). Most premature losses occurred within 30 days, and early loss was not associated with surgical failure. Conclusions In primary enDCR with bicanalicular intubation, premature stent loss within two months was not associated with reduced surgical success or higher reoperation rates. Conservative management with close follow-up is reasonable after early loss, and shorter stent-retention protocols may be considered; prospective studies should define the optimal duration.

NAVIGATING ANATOMICAL CHALLENGES IN ENDOSCOPIC DCR: A PROSPECTIVE ANALYSIS

Ekaterina Kondratishko , Rīga Stradiņš University, JSC Veselības Centru Apvienība

Introduction and Objective: Endonasal dacryocystorhinostomy (endoDCR) requires not only surgical skill but also adequate anatomical space for safe instrument manipulation. Anatomical variations such as septal deviation, bullous middle turbinate, or lateral displacement of the lacrimal sac may complicate the procedure. This study aimed to analyze key anatomical landmarks relevant to endoDCR and their potential surgical implications. Methods: A prospective comparative study was conducted on patients with primary nasolacrimal duct obstruction (NLDO) who underwent endoscopic endoDCR between October 2023 and October 2025. Endonasal endoscopy and computed tomography were used to assess the nasal septum, size and position of the middle turbinate, lacrimal sac topography, presence of a prelacrimal recess, attachment of the processus uncinatus, and prominence of the crista lacrimalis. Results: Ninety-one patients were included. Septal deviation obstructing access was found in 37.4%, hypertrophic middle turbinate in 18.7%, and pneumatized agger nasi cell in 68.1%. A prelacrimal recess was present in 19.8%, and a poorly developed crista lacrimalis in 18.7%. The lacrimal sac was located beneath the middle turbinate in 46.2% and anterior to it in 53.8%. The processus uncinatus attached anterior to the lacrimal duct in 24.2%, directly to it in 33%, and posteriorly in 42.9%. Conclusion: Anatomical variability of the lateral nasal wall significantly affects endoDCR planning and execution. Comprehensive preoperative endoscopic and radiological evaluation allows anticipation of surgical challenges, improving safety, efficiency, and outcomes. Keywords: Endoscopic dacryocystorhinostomy, nasolacrimal duct obstruction, nasal anatomy, middle turbinate, septal deviation, processus uncinatus, prelacrimal recess

POSTOPERATIVE OUTCOMES OF ENDOSCOPIC ENDONASAL DACRYOCYSTORHINOSTOMY WITH ADJUNCTIVE USE OF FIBRIN GLUE

Yasushi Fujita , Oculofacial Clinic Osaka

Yohei Sato , Oculofacial Clinic Osaka
Miwa Aikawa , Oculofacial Clinic Osaka
Tomoyuki Kashima , Oculofacial Clinic Tokyo

Introduction: Fibrin glue (Beriplast®), a human plasma-derived hemostatic and adhesive agent, is widely used in various surgical procedures to enhance tissue adhesion and hemostasis. This study aimed to evaluate the postoperative outcomes of endoscopic endonasal dacryocystorhinostomy (EEDCR) with the adjunctive application of fibrin glue at the anastomosis site. Methods: A retrospective analysis was conducted on 93 patients (133 sides; 24 males, 69 females; mean age 64.4 ± 16.2 years) with primary nasolacrimal duct obstruction who underwent EEDCR between March 2022 and August 2024. All procedures were performed under general anesthesia in an outpatient setting. Fibrin glue was applied around the lacrimal sac–nasal mucosa anastomosis site to promote tissue adhesion, facilitate healing and ensure hemostasis. Patients with canalicular obstruction were excluded. One case, in which an intraoperative mass was suspected, was treated via external dacryocystorhinostomy. Surgical time, anatomical success rates, and postoperative complications were reviewed. Mean follow-up duration was 9.1 ± 6.3 months. Results: The mean surgical duration was 30.9 ± 15.0 minutes. No intraoperative complications occurred. The anatomical success rate was 98.4%. Cases of symptomatic recurrence were successfully managed with revision EEDCR. One patient experienced mild postoperative epistaxis, which was controlled with conservative outpatient care. Conclusion: Endoscopic endonasal dacryocystorhinostomy with adjunctive fibrin glue application demonstrated excellent surgical outcomes and a low recurrence rate compared to previously reported outcomes. Additionally, EEDCR performed under general anesthesia in an outpatient setting demonstrated safety profile.

THE CHALLENGE OF CONTINUITY – ENHANCED TEAR PRODUCTION AS POTENTIAL TRIGGER OF LACRIMAL GLAND INFLAMMATION AND DRY EYE DISEASE

Gysbert van Setten , Karolinska Institutet, St Eriks Eye Hospital

Introduction: The current classification of dry eye disease outlines two main patho-mechanisms for ocular surface lubrication deficiencies of leading to the clinical entity currently summarized under the term dry eye disease: Evaporative dry eye (also qualitative dry eye) and aqueous-deficient (quantitative dry eye) disease. Significantly and continuously enhanced tear production can lead over time to both of them. Enhanced tear production is one of the reasons for the “Watery Eye”. As response to irritative simuli (Dryness, Cold, Pain) intense tearing is considered a discomfort and disturbing. By nature, however, it could be more. It could be one of the main factors triggering that what later becomes the vicious circle of dry eye disease. This is supported by the presented results. Methods: Presence of flow sensitive G protein-coupled receptor 68 (GPR-68) was investigated immuno-histochemically in human lacrimal gland tissue. GPR-68 is associated with inflammatory processes. Results: G protein-coupled receptor 68 (GPR-68).is present in the acini and the ducts of the human lacrimal gland Conclusion: G protein-coupled receptor 68 (GPR-68) is located in the ducts of the human lacrimal gland. It is possible that increased, excessive, flow it might play a decisive role in the onset of focal inflammation. Such inflammation, when prolonged or chronic, could lead to impaired function of the lacrimal gland. Triggers of excessive tearing such as environmental challenges, surgical disturbance of ocular surface structures and profile, prolonged irritation irritation, could have a significant role in the pathophysiology of dry eye, and should be treated early. It is suggested to treat the earlier stages of lubrication deficiencies with a higher priority as today as they offer a real good option to maintain Homeostasis and postpone the onset of Heterostasis and Allostasis.

CAN TEARS TRACE ELEMENTS LEVELS PREDICT PRIMARY ACQUIRED NASOLACRIMAL DUCT OBSTRUCTION?

Yoav Vardizer , Bnai-Zion medical center

Yaakov Rabinovich , Bnai-Zion medical center

Introduction- Primary acquired nasolacrimal duct obstruction (PANDO) is considered idiopathic in most cases. Trace elements in biofluids are gaining recognition as potential biomarkers for systemic and ocular health. This study was aimed to characterize and compare the elemental composition of tear and blood samples in patients with PANDO and healthy controls using particle-inducedX-ray emission (PIXE), a high-sensitivity technique suitable for small-volume samples. Method-A prospective, comparative study was conducted on 30 participants 15 withPANDO and 15 controls matched by age and gender. Tear and blood samples were analyzed via PIXE. Statistical methods included univariate tests, and multivariate analyses (PCA, PLS-DA, PERMANOVA), including hierarchical clustering to assess for group differences. Results-Twelve elements were identified in tears and eleven in blood samples. Elevated Na and Cl levels were detected in both affected (Na: $p = 0.003$, Cl: $p = 0.031$) and unaffected eyes (Na: $p = 0.001$, Cl: $p = 0.033$) of PANDO patients. Additionally, P ($p = 0.021$) and S ($p = 0.041$) were significantly higher in tears from unaffected PANDO eyes. Multivariate analysis confirmed a distinct tear elemental profile in PANDO patients compared to controls, primarily driven by differences in sodium levels. Inra-individual comparisons between affected and unaffected eyes in unilateral PANDO cases showed no significant differences. Blood samples showed no differences, with only Cu significantly elevated in PANDO patients ($p = 0.034$), and no clear group separation in multivariate or clustering analyses. Conclusion-Surprisingly, both the affected and unaffected eyes of PANDO patients showed distinct elemental profiles, differing from healthy controls. This suggests bilateral subclinical changes that may precede obstruction. The altered tear composition appears to reflect localized ocular processes rather than systemic influences. Taken together, these insight highlight tear elemental analysis as a promising, non-invasive tool for understanding PANDO and identifying at-risk individuals.

MULTICENTER CLINICAL VALIDATION OF A SMARTPHONE-BASED DIAGNOSTIC MODEL FOR DRY EYE DISEASE

Takenori Inomata , Juntendo University Graduate School of Medicine

Ken Nagino , Juntendo University Graduate School of Medicine
Yuichi Okumura , Juntendo University Graduate School of Medicine
Masahiro Yamaguchi , Juntendo University Graduate School of Medicine
Takashi Itokawa , Toho University Omori Medical Center
Daisuke Tomida , Tokyo Dental College Ichikawa General Hospital
Yukinobu Okajima , Toho University Omori Medical Center
Hirotsugu Kasamatsu , Tokyo Dental College Ichikawa General Hospital
Takefumi Yamaguchi , Tokyo Dental College Ichikawa General Hospital
Yuichi Hori , Toho University Omori Medical Center
Jun Shimazaki , Tokyo Dental College Ichikawa General Hospital
Shintaro Nakao , Juntendo University Graduate School of Medicine

Introduction: To evaluate the diagnostic performance of the DEA01 smartphone-based system for dry eye disease (DED) using a multivariate model incorporating app-based Ocular Surface Disease Index (OSDI) scores and maximum blink interval (MBI). Methods: This multicenter, open-label, prospective, cross-sectional study (May 2023 and September 2024) analyzed the Full Analysis Set (FAS, n =245) and Per Protocol Set (PPS, n=242). Participants completed app-based OSDI and MBI measurements (test method), followed by standard DED evaluation using paper-based OSDI and tear film breakup time. Diagnostic performance was assessed using sensitivity, specificity, concordance rate, predictive values, and ROC analysis. Results: In the FAS, 102 participants were diagnosed with DED by the standard method. The multivariate app-based model achieved 82.0% sensitivity, 72.5% specificity, and a 72.5% concordance rate, with an AUC of 0.835 (95% CI, 0.786–0.884). PPS results were comparable (82.0% sensitivity, 72.5% specificity, 72.2% concordance rate, and AUC 0.835 [95%CI, 0.786-0.884]). Conclusion: DEA01 demonstrated strong and reproducible diagnostic ability across both FAS and PPS, supporting its potential as a practical, noninvasive screening tool for DED.

ASSOCIATION OF REBAMIPIDE OPHTHALMIC SUSPENSION WITH LACRIMAL DUCT OBSTRUCTION AND DACRYOCYSTITIS: A NATIONWIDE LARGE-SCALE STUDY UTILIZING THE JMDC MEDICAL CLAIMS DATABASE

Ken Nagino , Juntendo University

Atsushi Shiraishi , Ehime University
Akie Midorikawa-Inomata , Juntendo University
Atsuko Eguchi , Juntendo University
Shintaro Nakao , Juntendo University
Takenori Inomata , Juntendo University

Purpose: To evaluate the association between administration of rebamipide ophthalmic suspension (RBM) and the onset of lacrimal duct obstruction and dacryocystitis. Methods: Patients registered in the Japan Medical Data Center (JMDC) claims database from January 2016 to December 2022 who had a diagnosis related to dry eye disease were included. The occurrence of diagnostic codes related to lacrimal duct obstruction or dacryocystitis was defined as the onset of the conditions. Descriptive statistics were calculated for the incidence of lacrimal duct obstruction and dacryocystitis after RBM prescription. Logistic regression analysis was performed to assess the association between RBM prescription and the onset of these conditions. Results: A total of 1,070,771 patients were included in this study (mean age: 45.8 ± 11.9 years; 628,557 females [58.7%]; and 56,155 patients [5.2%] with RBM prescriptions). The median time from initial RBM prescription to onset was 505 days (interquartile range: 115.5–1,053.5) for lacrimal duct obstruction and 325 days (interquartile range: 27–917) for dacryocystitis. The number of patients with lacrimal duct obstruction was 13,245 (1.3%) overall and 1,640 (2.9%) after RBM prescription. The number with dacryocystitis was 4,033 (0.3%) overall and 482 (0.9%) after RBM prescription. The incidence rates were significantly higher following RBM prescription ($P < 0.001$). Multivariable analysis adjusting for age, sex, and prior history of lacrimal duct obstruction or dacryocystitis showed that RBM prescription was significantly associated with the onset of these conditions (odds ratio [95% confidence interval]: lacrimal duct obstruction, 1.207 [1.116–1.307], $P < 0.001$; dacryocystitis, 1.158 [1.001–1.339], $P < 0.001$). Conclusion: A significant association was identified between RBM prescription and the onset of lacrimal duct obstruction and dacryocystitis. Regular evaluation for nasolacrimal duct narrowing is important during long-term RBM treatment to prevent these adverse effects.

NEW ETAO CLINICAL SCORE TO DEFINE THE RISK OF DRY EYE PRIOR TO OCULAR AND OCULOPLASTIC SURGERY

Hervé Chenal , IEVR / IEOS

Pablo Dighiero , IOOS

Introduction and objective: To define and explain the use of a new, simple, clinical and reproducible eTAO score to assess the risk of dry eye for each patient prior to eye and oculoplastic surgery. Unlike previous scores, this score can be calculated without expensive equipment, using only a slit lamp, forceps and fluorescein. Our concept: 'A score for every day for all ophthalmologists!' Methods: Presentation of clinical criteria and use of AI software to score individual risk of dry eye. Results: After using the eTAO score on several thousand patients and statistically validating the clinical criteria selected in order to determine as accurately as possible the risk of dry eye for each patient in the preoperative assessment. Conclusion: Use shows the strength and simplicity of the eTAO score for any pre-operative assessment, whatever the surgery envisaged (universal nature), but also the possible use of a specific form of the eTAO score for diagnosing and monitoring dry eye.

HYALURONAN EYE DROPS – NOT JUST A TEAR SUBSTITUTE

Wolfgang Müller-Lierheim , i.com medical GmbH

Forty-four years have passed since Polack and McNiece published the results of their study on treating severe keratitis sicca eyes using diluted Healon®, a viscoelastic fluid containing hyaluronan (HA) used during cataract surgery. Since then, HA has become one of the most widely used hydrating and lubricating ingredients in artificial tears worldwide. The molecular weight of HA not only determines mucoadhesive and viscoelastic flow characteristics but also influences its physiological activities. There is growing evidence that very high molecular weight HA (vHMW-HA, ≥3.0 MDa) has multiple beneficial effects on ocular surface health. This presentation will first review the penetration of vHMW-HA into the corneal epithelium and its effect on resident immune cells and corneal nerves. It will then highlight the consequences of this for modulating inflammation and preserving and restoring corneal nerve structure and function. The second part will discuss clinical applications based on these properties, including postoperative healing of the ocular surface and long-term therapy, particularly for severe dry eye patients, as well as minimising therapy-related adverse effects, such as inflammation associated with the long-term use of topical medications to lower intraocular pressure (IOP). Overall, this talk emphasises the therapeutic potential of vHMW-HA eye drops, which goes far beyond their well-known role as a tear substitute.

MICROBIOMA AND DRY EYE

Mari Tamsalu , East Tallinn Central Hospital

The Abstract will be added.

ASSOCIATION BETWEEN ESTROGEN CONTAINING THERAPIES AND INCIDENCE OF DRY EYE DISEASE AND CHALAZIA

Sonul Mehta , Hospital of the University of Pennsylvania

Introduction: observational studies have shown poorer TBUT and Schirmer scores and greater prevalence in dry eye symptoms during third trimester. No studies to date on association of hyperestrogenic states and chalazia and mgd. Purpose of this study is to evaluate the role of hyperestrogenic states and its association with mgd and chalazia. Methods: retrospective analysis Results/Conclusion: IVF and HRT were associatied with increased risk of chalazia and MGD/DES.

INITIAL EXPERIENCE WITH MITOMYCIN INTRAVASCULAR CHEMOEMBOLIZATION TO TREAT CORNEAL NEOVASCULARIZATION

Mikk Pauklin , Tartu University Hospital

Introduction: Corneal neovascularization may decrease visual acuity and increases the likelihood of corneal graft rejection. Therefore, different treatment methods including argon laser treatment of the vessels, fine needle cautery, subconjunctival bevacizumab injections, bevacizumab eye drops and corneal crosslinking have been published, all with different rates of success and side effects. In 2022, a new method to treat corneal neovascularization called mitomycin intravascular chemoembolization (MICE) was published. Aim of the presentation if to report our first experience with MICE to treat corneal neovascularization. Methods: Patients who had established corneal neovascularization after different types of keratitis were treated by injecting 0.01ml 0.04% mitomycin C with a 33G needle into the peripheral larger blood vessels about 1 mm from the limbus. In most cases several injection were performed into several larger vessels. In first cases, additional fine needle cautery and subconjunctival bevacizumab injections were performed, to ensure proper vessel closure. Just MICE followed by subconjunctival bevacizumab injection was performed in later cases. All patients were treated with either antibiotics and corticosteroids eye drops or ointment for at least a week, followed by loteprednol eye drops for 2 months. Results: Most blood vessels remained closed during a follow-up period. A second treatment to address some open vessels was performed in three patients. No infections, corneal perforations or other complications occurred. Conclusions: MICE seems to be a promising new treatment method for corneal neovascularization, either as a standalone procedure or in combination with other methods.

IATROGENIC DRY EYE DISEASE: MECHANISMS AND MITIGATION STRATEGIES IN OCULAR SURGERY

Páll Kaarel Laas Sigurðsson , East Tallinn Central Hospital

Iatrogenic Dry Eye Disease: Mechanisms and Mitigation Strategies in Ocular Surgery Introduction Iatrogenic dry eye disease (DED) is a common but under-recognised consequence of ocular surgery, caused by disruption of the ocular surface functional unit (OSFU). With rising volumes of cataract, refractive, glaucoma, corneal, strabismus, pterygium and oculoplastic procedures, surgery-induced DED has a substantial, partly preventable impact on visual quality, comfort and patient satisfaction. Methods This narrative, mechanism-focused review integrates evidence from scientific literature, summarising clinical, imaging, experimental and histopathological data on how major ocular surgeries affect corneal innervation, epithelial integrity, goblet and meibomian gland function, tear dynamics and inflammatory signalling. Evidence-based mitigation strategies are summarised with emphasis on OSFU-sparing approaches. Results Across procedures, converging neurotrophic, inflammatory, toxic and mechanical insults destabilise tear homeostasis and perpetuate hyperosmolar epithelial damage. Cataract surgery is framed as a ubiquitous trigger of “surgical temporary ocular discomfort syndrome”, driven by clear-corneal denervation, microscope-light exposure, tear film washout and preservative or povidone-iodine toxicity. Corneal refractive procedures exemplify neurotrophic DED: LASIK causes extensive nerve transection and risk of neuropathic pain, PRK induces intense surface inflammation, whereas SMILE better preserves sub-basal nerves. In glaucoma, long-term preserved therapy, trabeculectomy blebs, antimetabolites and drainage devices create a cumulative surface-injury model, while conjunctiva-sparing MIGS with drop reduction appears more ocular-surface friendly. Corneal transplantation—especially penetrating keratoplasty—plus strabismus, pterygium and oculoplastic surgery further disturb innervation, goblet cells, eyelid mechanics and tear distribution. Mitigation options include “treat-first” optimisation of occult DED, light and fluid management, preservative-free protocols, nerve-sparing procedure selection (EK, SMILE, MIGS, MISS) and emerging biologic or neuro-regenerative therapies. Conclusions Iatrogenic DED is best conceptualised as a “double-hit” phenomenon, where surgery superimposes targeted OSFU injury on pre-existing surface fragility. Recognising shared mechanisms enables systematic screening and proactive protection to prevent transition from transient postsurgical discomfort to chronic, vision-threatening DED.

EFFICACY OF 0.1% CYCLOSPORINE A CATIONIC EMULSION IN TREATING DRY EYE DISEASE

Wiktor Stopyra , MW-med Eye Centre

Introduction: Dry eye disease (DED) is a multifactorial disorder of the ocular surface characterized by tear film instability and inflammation, leading to discomfort, visual disturbance, and potential damage to the ocular surface. Cyclosporine A (CsA) is an immunomodulatory agent that reduces ocular surface inflammation. The aim of this study was to assess the efficacy of 0.1% cyclosporine A (CsA) cationic emulsion (CE) in the treatment of DED, as evaluated by the Ocular Surface Disease Index (OSDI). Methods: Patients with DED characterized by corneal fluorescein staining (CFS) grade ≤ 3 on the Oxford scale and a Schirmer test score < 10 mm/5 min were enrolled in this observational, prospective, single-center study. Participants received once-daily topical CsA CE. The efficacy of the treatment was evaluated at 30-, 60-, and 90-day follow-up visits using the OSDI questionnaire. Both the overall OSDI score and subscale scores for ocular symptoms (OS), vision-related function (VRF), and environmental triggers (ET) were analyzed. Results: Twelve patients (10 women and 2 men) with baseline OSDI scores ranging from 27.08 to 70.03 (mean ± SD: 48.2 ± 11.8) were included. Baseline subscale scores for OS, VRF, and ET were 66.6 ± 16.8, 42.2 ± 12.0, and 42.2 ± 12.5, respectively. A statistically significant improvement was observed after 30 days for OSDI (45.5 ± 10.0; p = 0.011), and after 90 days for both total OSDI (35.4 ± 7.4; p = 0.003) and its subscales: OS (47.2 ± 10.9; p = 0.005), VRF (30.5 ± 6.1; p = 0.003), and ET (33.3 ± 11.2; p = 0.008). Conclusions: Topical CsA CE significantly reduced symptoms in patients with DED. The greatest improvement was observed after 90 days of treatment, with significant recovery across total OSDI and all subscales (OS, VRF, and ET).

THIRTEEN YEARS OF AUTOLOGOUS SERUM EYE DROP PREPARATION IN A SMALL-COUNTRY SETTING: TRANSITION FROM CLINICIAN-BASED PRODUCTION TO A TISSUE BANK MODEL AT EAST TALLINN CENTRAL HOSPITAL

Marge Martjak , East Tallinn Central Hospital

Reili Rebane , East Tallinn Central Hospital

Introduction: Autologous serum eye drops (ASED) are an established advanced therapy for severe dry eye disease and ocular surface disorders, but access can be limited in small countries without commercial supply options. This study describes thirteen years of experience with ASED preparation, including the transition from clinician-prepared drops to a regulated tissue-bank-based model, and evaluates preparation volumes, workflow development and future innovations to improve accessibility. Methods: Data from 2011–2024 were reviewed, including patient eligibility screening, preparation workflow, infectious disease testing, serum concentration selection and sterility controls. Results: In the early period, ASED were prepared directly by ophthalmologists treating severe dry eye. Since 2022, preparation has been performed by trained specialists in a controlled cleanroom environment using validated procedures. Most preparations used a 20% serum concentration, with 30% applied when clinically indicated. Annual preparation sessions and total units produced were analysed. During the last three years, ASED were prepared for 34, 36 and 37 patients, corresponding to 50, 58 and 63 preparation sessions. Total units produced were 4069, 7290 and 6301 per year. A single preparation session yielded approximately 90–120 units, with the majority dispensed for patient use. Structured screening, sterile preparation and microbiological testing ensured product safety. The transition to a controlled preparation environment improved standardisation, reliability and capacity. In a small-country context with no commercial alternatives, local preparation remained essential for ensuring treatment access. Planned innovations include transitioning from syringe-based packaging to pre-sterilised vial systems and developing the capability to prepare allogeneic serum drops for patients unable to donate blood. Conclusions: This thirteen-year experience demonstrates that autologous serum eye drop preparation is feasible, safe and clinically valuable even in a small-country setting with limited commercial supply options. Transitioning from clinician-led production to a regulated tissue bank–based model significantly improved process standardisation, product quality, and long-term sustainability. As demand continues to increase, upcoming developments – including vial-based packaging and introduction of allogeneic serum eye drop capability – are expected to further strengthen access to advanced therapies for patients with severe dry eye disease.

WIDEN YOUR VISION: CONGENITAL LACRIMAL SYSTEM AND SYSTEMIC ABNORMALITIES

Karla Chaloupka , University Hospital Zurich

Karla CHALOUPKA - Head of Oculoplastics, Orbital and Lacrimal Surgery at the University Hospital Zurich, Switzerland Karla Chaloupka, MD, PhD, private docent, is the founder and head of Oculoplastics, Orbital and Lacrimal Surgery Unit at the University Hospital Zurich since 2003. She graduated in 1994 at the University in Zurich, covered general surgical training during 1995-1998 including the completion of a thesis at the University in Basle and the Royal Free Hospital in London, followed by the ophthalmic training in Basle, Lucerne and Geneva. She was a consultant/chef de clinic in neuroophthalmology and oculoplastics in Geneva. She did an OPAL-Fellowship in Australia with A. McNab 2004/2005, a PhD in Nanotechnology at the UCL, London and the habilitation at the University Hospital Zurich, Switzerland. She is teaching at the University Zurich, and is a worldwide invited lecturer and hands-on surgeon (most recent invitations include to, Estonia, Indonesia, Nepal, Czech Republic, Mexico...). Since 2006 she is involved in a humanitarian project in the south of Mexico which became part of the national training system and was honored with prestigious prizes. Her research interests include bench to bedside solutions (e.g. development and patent filing of a synthetic lacrimal canaliculus based on nanotechnology), innovative approaches in lymphangioma, facial palsy and reconstructive surgery.

LACRIMAL FINDINGS IN ECTRODACTYLY-ECTODERMAL DYSPLASIA-CLEFTING (EEC) SYNDROME AND CORNELIA DE LANGE SYNDROME

Richard Allen , Texas Children's Hospital

Introduction Congenital lacrimal abnormalities are largely isolated, most commonly due to congenital nasolacrimal duct obstruction. Some genetic syndromes are associated with congenital lacrimal abnormalities. Methods The purpose of this study is to report the lacrimal abnormalities associated with two syndromes: Ectrodactyly-Ectodermal Dysplasia-Clefting (EEC) syndrome and Cornelia de Lange syndrome. This is a retrospective, non-comparative study reporting the lacrimal abnormalities associated with EEC syndrome and Cornelia de Lange syndrome. After IRB approval, the medical chart at Texas Children's Hospital in Houston, TX was queried for both EEC syndrome and Cornelia de Lange syndrome. Date completion is underway. Charts identified were reviewed for documented lacrimal abnormalities. Results Preliminary data show a prevalence of nasolacrimal duct obstruction in both groups along with varying forms of canalicular and punctal agenesis. Nasolacrimal duct obstruction was primarily treated with endonasal dacryocystorhinostomy (DCR). Conclusion Lacrimal abnormalities are associated with EEC and Cornelia de Lange syndrome. The native excretory tear system should be preserved, if possible. Nasolacrimal duct obstruction in these patients often requires treatment with a DCR.

A GENETICALLY CONFIRMED CASE OF LADD SYNDROME WITH CONCURRENT EPIPHORA AND DRY EYE DISEASE

Teele Palumaa , East Tallinn Central Hospital

Kadi Palumaa , East Tallinn Central Hospital

Introduction: Lacrimo-auriculo-dento-digital (LADD) syndrome is a rare autosomal-dominant ectodermal dysplasia (<1 in 1,000,000), affecting the lacrimal and salivary glands/ducts, ears, teeth, and distal extremities. Typical ocular findings include lacrimal gland or punctal hypoplasia/aplasia, nasolacrimal duct obstruction with epiphora, and keratoconjunctivitis, with possible hearing impairment, limb anomalies, and hypodontia. Methods: We present a case of LADD syndrome. Clinical data were obtained from medical records and ophthalmic examination. Results: A 30-year-old female presented with lifelong bilateral epiphora and chronic ocular surface inflammation. Slit-lamp examination showed bilateral punctate epitheliopathy and signs of dry eye disease (DED), more pronounced in the right eye (Schirmer 2/4 mm, TBUT 3/4 s, Oxford grade 3/2). Lacrimal probing demonstrated obstruction of both lower canaliculi and absence of the left upper punctum. Bicanalicular silicone intubation was performed bilaterally. Despite occluded left upper punctum, canaliculus was identified. After tube removal, epiphora resolved on the right but persisted on the left. External dacryocystorhinostomy (DCR) was performed on the left side one year later, and epiphora resolved. Bilateral DED has persisted throughout 8 years of follow-up and is managed with lubricants, autologous serum drops, and topical ciclosporin. Systemic features included characteristic ear morphology, mild unilateral hearing loss, and congenital hip subluxation requiring surgery shortly after birth. She has received hormonal replacement therapy since adolescence. Genetic counselling identified a heterozygous FGFR2 missense variant (NM_000141.4(FGFR2):c.1942G>A), consistent with LADD syndrome; the same variant was found in her father, who had hearing and dental abnormalities and a history of unilateral hip replacement, but no current epiphora or dry eye after childhood lacrimal probing. Conclusion: Managing LADD syndrome can be challenging when lacrimal outflow obstruction coexists with significant DED. Although the patient and her father carried the same FGFR2 variant, the patient exhibited a more severe phenotype, consistent with variable expressivity and potentially influenced by hormonal factors.

LACRIMAL DRAINAGE SYSTEM ANOMALIES IN PATIENTS WITH TESSIER CLEFTS 3 AND 4

Nandini Bothra , LV Prasad Eye Institute

Mohammad Javed Ali , LV Prasad Eye Institute
Sneha Bhopatkar , LV Prasad Eye Institute

Purpose To discuss the various lacrimal drainage system (LDS) anomalies in patients presenting with Tessier clefts 3 and 4. Methods Retrospective, interventional study of all patients presenting with Tessier clefts 3 and 4 with lacrimal drainage system anomalies over a study period of 14 years (Jan 2011 – Jan 2025). Demographic details including the age, sex, type of Tessier cleft, laterality and lacrimal drainage anomalies were noted. Interventions and the outcomes were documented. Results 29 eyes of 17 patients with Tessier cleft number 3 and 4 deformities were included in the study. Seven patients had Tessier cleft number 3 deformity and ten patients had Tessier cleft number 4 deformity. Males were more affected than the females (11:6). Average age of the patients at presentation was 9.94 years (range: 3-39 years). 12 eyes of seven patients presented with Tessier cleft number 3 deformity and 17 eyes of 10 patients had Tessier cleft number 4 deformity. Tessier cleft number 3 showed more common involvement of proximal LDS while Tessier cleft number 4 involved both the proximal as well as distal LDS frequently. Conclusion Tessier cleft 3 and 4 can be associated with varied proximal and distal LDS anomalies. Management is challenging and need individualized treatment approach depending on the symptomatology and the part of the LDS involved.

CONGENITAL ANOMALIES OF THE LACRIMAL DRAINAGE SYSTEM: DIAGNOSTIC AND THERAPEUTIC APPROACHES

Irina Kornilova , VCA AIWA Clinic

Jekaterina Kondratishko , VCA, AIWA Clinic, RSU

Congenital anomalies of the lacrimal drainage system represent a major cause of epiphora in pediatric patients and pose diagnostic and therapeutic challenges beyond routine congenital nasolacrimal duct obstruction (CNLDO). Less frequent conditions such as punctal agenesis, canalicular atresia, and complex craniofacial anomalies require specialized approaches. Objective: To present a structured clinical framework for the diagnosis and management of congenital lacrimal drainage disorders, with a focus on decision-making in both common and complex cases. Methods: A stepwise algorithm is outlined, starting with clinical history and ophthalmic examination, followed by fluorescein dye disappearance test (FDDT), lacrimal irrigation, and probing under anesthesia. Adjunctive imaging—ultrasound, dacryoscintigraphy, or CT-dacryocystography—is applied in selected cases. Nasal endoscopy is recommended where intranasal anomalies are suspected or initial interventions have failed. Results: The majority of simple CNLDO cases resolve spontaneously or respond well to conservative measures. Probing between 6–12 months remains the standard first-line intervention. Refractory cases may benefit from silicone intubation or balloon dacryoplasty. Rare anomalies such as punctal or canalicular agenesis may require individualized surgical management, including conjunctivodacryocystorhinostomy (CDCR) in selected cases. Conclusion: A systematic, age-adjusted approach enables early and accurate diagnosis of congenital lacrimal anomalies, improving anatomical and functional outcomes. Multidisciplinary collaboration—including pediatric ophthalmology, otolaryngology, and radiology—remains essential in complex or atypical presentations.

FAMILIAL LATTICE CORNEAL DYSTROPHY TYPE I CAUSED BY A TGFBI MUTATION (C.370C>T; P.ARG124CYS) IN A MOTHER AND DAUGHTER, GENETICALLY CONFIRMED CASES IN ESTONIA

Ann-Marii Joab , East Tallinn Central Hospital

Kadi Palumaa , East Tallinn Central Hospital

Purpose Lattice corneal dystrophy type I (LCD I) is a rare autosomal dominant stromal dystrophy caused by mutations in the TGFBI gene. The disease is characterized by amyloid deposition within the corneal stroma, leading to progressive stromal opacification, recurrent corneal erosions, and gradual visual impairment. Clinical manifestations typically begin in the first or second decade of life and progress slowly over time. Unlike some other lattice dystrophy variants, LCD I is limited to the cornea and is not associated with systemic involvement. Methods We report a familial case involving a mother and her daughter. Clinical findings, imaging results, and treatment history were reviewed from medical records. Both patients underwent a comprehensive ophthalmic examination, including best-corrected visual acuity (BCVA), slit-lamp biomicroscopy, and anterior segment optical coherence tomography (AS-OCT). Anterior segment photography was obtained to document corneal findings. Genetic testing was performed to identify pathogenic variants in the TGFBI gene. Written informed consent was obtained from both patients. Results A 52-year-old mother and her 17-year-old daughter presented with blurred vision and recurrent corneal erosions. Slit-lamp examination revealed bilateral branching stromal opacities characteristic of lattice corneal dystrophy. The mother demonstrated more advanced stromal haze with BCVA of 0.3/0.4 decimal, whereas the daughter showed milder findings with BCVA of 0.9/0.9. decimal. AS-OCT demonstrated hyperreflective stromal deposits consistent with amyloid accumulation. Genetic analysis identified a pathogenic TGFBI mutation (c.370C>T; p.Arg124Cys), confirming the diagnosis of LCD I. At the most recent follow-up, the disease remained clinically stable in both patients. Conclusion This report describes the genetically confirmed cases of lattice corneal dystrophy type I in Estonia. Early recognition and genetic confirmation of inherited corneal dystrophies are important for accurate diagnosis, appropriate patient management, long-term monitoring, and genetic counselling.

A NOVEL CTNND1 VARIANT ASSOCIATED WITH BLEPHARO-CHEILO-ODONTIC SYNDROME AND COMPLEX LACRIMAL SYSTEM ANOMALIES – CASE REPORT

Martin Toomas Sõmera , East Tallinn Central Hospital

Kadi Palumaa , East Tallinn Central Hospital

Introduction: Blepharo-cheilo-odontic syndrome is a rare autosomal dominant ectodermal dysplasia caused by pathogenic variants in the CTNND1 gene, with only a few cases reported in the literature. Methods: This is a single-patient case report. Clinical findings, laboratory results, and treatment course were reviewed from the medical record. Written informed consent was obtained from the patient's parent. Results: We describe a 7 year old girl presenting with recurrent lacrimal system obstruction complicated by acute dacryocystitis. The patient has a history of congenital lacrimal anomalies, including atresia of the superior lacrimal puncta of both eyes and abnormal development of the inferior punctae requiring multiple lacrimal duct probings in early childhood. Genetic testing using a 4700-gene panel identified a heterozygous nonsense variant in CTNND1. Additional congenital anomalies included aortic coarctation, renal hypoplasia, dental abnormalities, and eyelid malformations, consistent with blepharo-cheilo-odontolic syndrome. Following medical treatment of the acute dacryocystitis on the right side, the patient underwent external dacryocystorhinostomy with identification of the superior canaliculus. Results: At the most recent follow-up, the patient had no epiphora and no recurrence of infection. Conclusion: This case expands the phenotypic spectrum of CTNND1- related disease. Early recognition of genetic diseases is beneficial for surgical planning, multidisciplinary care, and accurate genetic counseling.

MEDICATION-INDUCED EPIPHORA: TWO CASE REPORTS

Elena Scherrer , Talacker Augenzentrum Zürich

Karla Chaloupka , University Hospital Zurich

Introduction Obtaining a detailed systemic medication history is essential, as medication-induced epiphora is often underrecognized. Oncological therapies, such as CDK4/6 inhibitors used in metastatic breast cancer, may lead to increased lacrimation, while anticholinergic agents can induce tear-film instability and reflex tearing. Recognizing medication-related mechanisms is crucial to avoid unnecessary interventions and provide patient-specific counselling. Methods We report two patients with epiphora in whom a medication-related component was suspected. Clinical history was reviewed with a particular focus on systemic medication. Slit-lamp examination including tear break-up time and assessment of the lacrimal drainage system was performed. Results Case 1: Anticholinergic treatment A patient with long-standing anticholinergic treatment for pulmonary asbestosis reported episodic epiphora for more than 15 years. A previous lateral canthopexy did not relieve symptoms. Examination showed a patent lacrimal system and signs of tear-film instability. Anticholinergic medication reduces parasympathetic stimulation of the lacrimal glands, decreasing basal tear secretion and promoting tear-film instability. This causes increased evaporation and reflex tearing. Case 2: Abemaciclib A patient reported significant increase in tearing several weeks after starting Abemaciclib (CDK4/6 inhibitor) for metastatic breast cancer. Mild tearing had been present before therapy. Examination showed early presaccal stenosis and tear-film instability. Chemotherapy-related inflammatory changes can contribute to canalicular stenosis, therefore, pre-treatment evaluation of the lacrimal system and, in selected cases, consideration of prophylactic stenting may be advisable. CDK4/6 inhibitors have been associated with increased lacrimation, although underlying mechanism remains unknown. No pror ophthalmologic records were available, so the contribution of stenosis cannot be fully determined. However, the temporal correlation with Abemaciclib initiation suggests a pharmacological component. Conclusion These cases demonstrate different mechanisms of medication-induced epiphora. Anticholinergic-related tear-film instability with reflex tearing and increased lacrimation associated with Abemaciclib. Awareness of medication-related causes is necessary to avoid unnecessary interventions and to enable targeted management.

PRP THERAPY IN THE MANAGEMENT OF POST-TRAUMATIC PERIORBITAL SCARS FOLLOWING BLAST INJURIES

Mariia Borkhalenko , Bogomolets National Medical University

Sergiy Rykov , Bogomolets National Medical University
Oksana Petrenko , Bogomolets National Medical University
Maryna Tselishcheva , Universidad de Malaga

Introduction Post-traumatic scarring in the periorbital region after blast-related injuries remains one of the most challenging problems in reconstructive ophthalmic surgery. Although platelet-rich plasma (PRP) is widely used in dermatology and aesthetic medicine, there are no published data specifically addressing its application for correcting periorbital scars following explosive trauma. This study was designed to fill that gap by examining whether PRP can restore scar structure and quality in this unique clinical context. The primary objective was to evaluate the clinical efficacy of PRP therapy in improving tissue architecture, microcirculation, and functional skin properties in patients with established post-traumatic periorbital scars. Methods We conducted a prospective evaluation of 50 patients aged 35–45 years with established post-traumatic periorbital scars. All participants received a course of nine PRP injections administered at one-week intervals. Tissue condition was assessed using a multimodal approach that included standardized clinical examination, ultrasonographic imaging, and patient-reported outcomes collected via structured questionnaires. Follow-up evaluations were performed at three-week intervals during the treatment course and again at three months after completion of therapy to document the durability of response and any adverse events. Results By the third procedure, improvement in microcirculation within the scar area was observed clinically in the majority of patients (70%). After six sessions, ultrasonography demonstrated decreased tissue echogenicity in 63% of cases, consistent with restoration of cellular composition and new collagen formation (neocollagenesis). At three months post-treatment, 75% of patients exhibited visible lightening and softening of the scars, and 58% reported improved facial mobility attributable to reduction in skin contracture. Throughout the observation period, no adverse reactions to PRP injections were recorded, and patient-reported tolerance was favorable. Conclusion PRP therapy demonstrates high clinical efficacy for restoring the structure and quality of post-traumatic periorbital scars following blast injuries. The treatment promotes neocollagenesis, enhances tissue trophism and microcirculation, and improves skin elasticity and functional mobility, with an excellent safety profile and no observed adverse reactions. These findings support the incorporation of PRP into comprehensive rehabilitation strategies for periorbital scarring after explosive trauma and justify further controlled studies to validate and extend these outcomes.

HAEMOLACRIA IN A TEENAGE GIRL

Lisette Olie , UMCG

Introduction: Haemolacria is a rare condition in which a person bleeds from the eye. It is usually unilateral, benign, and self-limiting. Haemolacria can find its source at any point along the anterior ocular surface, ocular adnexa and lacrimal system, from tear production to tear drainage, including the lacrimal gland, the conjunctiva, the canaliculi or the lacrimal sac. Blood in the tear film can even represent regurgitation of nasal or sinus bleeding to the ocular surface. We report a case of a 12 year old girl with hyper-eosinophilic syndrome (HES) who visited our ophthalmology-department with bloody tears in the left eye. The bloody tears arose spontaneously and were present until the day after the initial visit. The symptoms increased with exertion. Six months later her other eye developed the same symptoms. Methods: We performed additional diagnostics starting with a MRI to rule out malignancy and to exclude vascular abnormalities. Patient was referred to the ENT- and allergy department to rule out an endonasal or allergic cause. We did blood tests, tried occluding punctum plugs and did a partial resection of the ductus lacrimalis and later also an endonasal dacryocystorhinostomy (DCR) for the left eye. Results: Nothing abnormal was found, all possible causes were ruled out. Over time the frequency of haemolacria episodes decreased, patient experienced only occasional discomfort so we ended the follow up. Conclusion: Haemolacria looks intense but can be self-limiting. A cause is not always found. It's necessary to do extensive additional investigation to rule out malignancy. (We additionally have a case of a 6 month old baby we saw recently with unilateral bloody tears when crying heavily. We're planning to perform a MRI and can add this case to the poster, but have not enough information yet to describe in this abstract)

EVALUATION OF TWO METHODS FOR ASSESSING EPIPHORA – THE MACRO-TEAR MENISCUS HEIGHT (MACRO-TMH) AND THE TMH

Tsugihisa Sasaki , Sasaki Eye Clinic

Tomomi Higashide , Kanazawa University
Taeko Oota , Tonami General Hospital

Introduction: To evaluate two methods for assessing epiphora—the macro–tear meniscus height (macro-TMH) and the TMH. Methods: This retrospective study included 25 eyes of 25 patients (6 men, 19 women; 66.7 ± 15.8 years) who underwent lacrimal surgery at our institution between October 2024 and May 2025 and were diagnosed with successful outcomes, and 24 eyes of 18 cataract patients without lacrimal disease (4 men, 14 women; 68.7 ± 11.2 years). Tear meniscus height (TMH, mm) was measured using OCT (Nidek RS-3000A) and anterior-segment attachment. Macro-TMH was defined as TMH multiplied by the fluorophotographic macro-grading, obtained using fluorescein dye and a custom-made UV-cut black light. Macro-grading was categorised as Grade 1: no overflow of tear fluid; Grade 2: overflow of it from either the temporal or nasal side of the conjunctival sac; Grade 3: overflow of it from both sides or centrally. TMH, macro-TMH, and macro-grading were compared between the lacrimal-disease and non-disease groups using the Mann–Whitney U test. Pre- and postoperative values were compared using the Wilcoxon test. Surgical success was defined as restored patency with reduced TMH; failure as absent patency with unchanged or increased TMH. A significance level of $P < 0.05$ was used. Results: No ocular adverse events related to the UV-cut black light occurred. TMH, macro-TMH, and macro-grading were significantly higher in the lacrimal-disease group (0.56 ± 0.32 mm, 0.85 ± 0.68, 1.4 ± 0.51) than in controls (0.23 ± 0.05 mm, 0.23 ± 0.05, 1 ± 0) ($P < 0.001$). Significant improvements were observed from pre- to postoperative periods. The AUC for macro-TMH was 0.94 (cutoff 0.34), while that for TMH was 0.90 (cutoff 0.34). TMH did not correlate with macro-grading ($P = 0.54$), whereas macro-TMH showed significant correlation ($P < 0.01$). Conclusions: TMH, macro-TMH, and Munk scores are suitable for qualitative assessment of pre- and postoperative outcomes. For objective evaluation of epiphora severity, macro-TMH appears superior to TMH alone.

PROBLEMATIC PEDIATRIC EPIPHORA CASES – WHAT TO DO?

Aleksandra Jakubaszek , Professor Jan Bogdanowicz MD Children's Hospital

Agata Wisniewska , Professor Jan Bogdanowicz MD Children's Hospital

Introduction and objective: To present cases of lacrimal obstruction that failed previous attempts of treatment and to propose possible diagnostic plan for further management. Methods: The medical records of 46 children (ages 2–17 years; median age 4) with epiphora were retrospectively reviewed. The cohort included patients who continued to exhibit symptoms despite prior interventions, such as repeated lacrimal duct probing, intubation, treatment following trauma, or lacrimal reconstruction. All children underwent evaluation through clinical history, physical examination, and computed tomography (CT) imaging with contrast to assess periocular pathology and the nasolacrimal drainage system, including potential abnormalities of the orbit, sinuses, and other facial structures. CT scans were performed under general anesthesia. Results: Of the patients evaluated, 12 (26.09%) had isolated lacrimal stenosis requiring nasolacrimal surgery, while 15 (32.61%) presented with both lacrimal stenosis and laryngological issues and therefore required combined nasolacrimal surgery and laryngological treatment. Ten patients (21.74%) had laryngological conditions such as maxillary or ethmoidal sinusitis that required only laryngological management. Allergy was identified in 4 cases (8.69%). Craniofacial abnormalities accounted for the remaining 5 cases (10.86%). Conclusions: CT imaging of the lacrimal drainage system is valuable for evaluating patients with symptoms of lacrimal drainage obstruction, as it provides detailed visualization of both the nasolacrimal system and adjacent anatomical structures. It can aid in planning further surgical procedures as well as non-surgical management. In particularly complex cases, performing a dacryocystorhinostomy should be considered.

PAPILLARY CHANGES OF THE LACRIMAL TRACT MUCOSA FOLLOWING CHRONIC DACRYOLITHIASIS – A CASE REPORT

Rafal Nowak , Jozef Strus City Hospital

Maja Nowak , Jozef Strus City Hospital
Piotr Jakub Gaca , Medical University of Lublin
Mohammad Javed Ali , L.V. Prasad Eye Institute

Introduction: Chronic dacryolithiasis, defined as the long-standing presence of dacryoliths within the lacrimal tract, may lead to persistent inflammation and secondary structural changes of the mucosa. Papillary or papilloma-like alterations have been described sporadically, but their long-term clinical behavior remains insufficiently documented. The objective of this report is to present a case of recurrent dacryolithiasis associated with marked papillary mucosal changes of the canaliculi and to discuss the evolution of these findings over a prolonged follow-up period. Clinical history: A 78-year-old patient with a three-year history of purulent discharge and recurrent inflammation of the right lacrimal system underwent routine dacryological evaluation, including inspection, palpation, lacrimal irrigation, probing, and nasal endoscopy. Clinical findings: Dilatation of the proximal portions of both lacrimal canaliculi was observed on the right side, with purulent discharge from the lacrimal puncta. The lacrimal drainage system was obstructed on irrigation. Management: Step1: Canalicular marsupialization supported by endoscopic visualisation of the canaliculi was performed, with removal of dacryoliths and evaluation of the mucosa. Follow-up examinations were conducted at two weeks and one month. After a three-year interval without medical supervision, the patient re-presented with recurrent symptoms and a palpable medial eyelid mass. Step 2: A second-stage intervention consisting of endoscopic canalicular marsupialization with dacryolith removal, followed by endoscopic dacryocystorhinostomy (EnDCR) with Crawford intubation, was performed. Postoperative assessments were conducted up to 12 months. Results: During the first procedure, endoscopy revealed numerous large papillary projections within the markedly dilated canaliculi. Initial postoperative improvement was achieved, but symptoms recurred within two years. Re-evaluation demonstrated similar extensive papillary mucosal changes and abundant dacryoliths in both canaliculi, with progression toward the lacrimal sac. Complete removal of dacryoliths combined with endoscopic DCR resulted in full symptom resolution. At 12-month follow-up, canalicular endoscopy confirmed a normal mucosal surface without papillary lesions. Conclusion: This case demonstrates that long-standing dacryolithiasis may induce extensive papillary hyperplastic changes of the lacrimal tract mucosa. These lesions can persist or recur if dacryoliths are not definitively eliminated. Combined endoscopic canalicular marsupialization and endoscopic DCR may restore mucosal integrity and long-term patency.

SEVERITY-BASED TREATMENT OUTCOMES OF CANALICULAR OBSTRUCTION TREATED WITH DACRYOENDOSCOPY: A RETROSPECTIVE STUDY

Akiko Sawa , Hyogo Prefectural Amagasaki General Medical Center

Futoshi Taketani , Hyogo Prefectural Amagasaki General Medical Center
Chika Miyazaki , Hyogo Prefectural Amagasaki General Medical Center

Introduction; Acquired canalicular obstruction develops due to inflammation caused by various factors. In Japan, the Yabe–Suzuki classification is widely used to assess disease severity and correlates well with treatment indications. In the most severe cases (Grade 3), conjunctivodacryocystorhinostomy is generally performed. However, some patients opt for endoluminal lacrimal duct recanalization (ELDR), involving probing with bougies or dacryoendoscopy, or direct incision with a scalpel, followed by lacrimal stent intubation. Nevertheless, few studies have reported treatment outcomes of this procedure. The primary outcome of this study was to evaluate the surgical outcomes of ELDR according to disease severity. Secondary outcomes included comparing treatment results between Grade 3 cases related to S-1 and those due to other causes, and assessing the association between treatment outcomes and both the duration of S-1 administration and the interval from starting S-1 to lacrimal surgery. Subjects and Methods; We conducted a retrospective study at a tertiary eye care center from January to December 2023, including 41 eyes of 33 patients with canalicular obstruction who underwent ELDR. Only Grade 2 or Grade 3 cases with at least 2 months of follow-up were analyzed (17 eyes with Grade 2, 24 eyes with Grade 3). Treatment outcomes were evaluated based on subjective symptoms, the lacrimal irrigation test, and tear meniscus height (TMH). Results; Symptoms and irrigation test findings were worse in Grade 3 than in Grade 2. Postoperative TMH did not differ significantly between the groups. All Grade 3 cases underwent direct incision with a scalpel, whereas one Grade 3 case and all Grade 2 cases underwent probing with dacryoendoscopy. All cases associated with S-1, epidemic keratoconjunctivitis, uveitis, postoperative intraocular surgery, and herpetic keratoconjunctivitis were classified as Grade 3. Among Grade 3 cases, outcomes did not differ significantly between S-1–related and other etiologies. In S-1 cases, longer S-1 administration and longer intervals to lacrimal surgery tended to be associated with poorer outcomes. Conclusion. More severe canalicular obstruction was associated with poorer treatment outcomes.

FEASIBILITY STUDY OF LEARNING CURVE ANALYSIS AND SIMULATION-BASED TRAINING IN INTRANASAL SUTURING FOR ENDONASAL DACRYOCYSTORHINOSTOMY

Shin Takahashi , Takahashi E.N.T.&Eye Clinic

Kana Takahashi , Jouri Cosmos Eye Clinic

Introduction: Intranasal suturing in endonasal dacryocystorhinostomy (DCR) represents one of the most technically demanding steps of the procedure and can have a significant impact on operative efficiency and outcomes. Gaining a better understanding of the learning curve for this critical step, as well as clarifying the role of simulation-based training, may provide valuable insights into improving surgical education and performance. Methods: A total of 53 consecutive DCR procedures performed by a single surgeon between 2024 and 2025 were analyzed (41 pre- and 12 post-intervention cases). Operative time for the intranasal suturing step was the primary outcome, and variability in suturing time and redo counts were secondary outcomes. The learning curve was modeled using a power-law function (T = a × N^b), and performance trends were assessed with cumulative sum (CUSUM) analysis. Pre- and post-intervention outcomes were compared using bootstrap confidence intervals. Simulation-based training was conducted using the ESS Training Model (NIKKEN CORPORATION, Japan), a nasal cavity training model with a silicone-based mucosal layer, developed for practicing intranasal procedures under endoscopic visualization. Each post-intervention case was preceded by 10 practice suturing sessions on the day prior to surgery. Results: Preliminary analysis indicates a downward trend in suturing time with increasing case numbers and improved performance stability after simulation-based training. Full analysis is ongoing to explore trends toward a potential proficiency threshold and to estimate the training effect. Conclusions: This pilot study suggests that learning curve analysis can clarify the process of technical improvement and that simulation-based training may accelerate skill acquisition in intranasal suturing for DCR.

VALIDATION AND CLINICAL APPLICATION OF THE LATVIAN VERSION OF THE FIVE-FACTOR GLASGOW BENEFIT INVENTORY (GBI-5F)

Sofija Korņilova , Riga Stradiņš university

Ekaterina Kondratishko , Riga Stradiņš university

Introduction and Objective: The Five-Factor Glasgow Benefit Inventory (GBI-5F) is an updated version of the original GBI designed to assess patient-perceived outcomes across five dimensions: General Health, Support, Quality of Life, Self-Confidence, and Social Involvement. This study aimed to validate the Latvian-language version of the GBI-5F and to review its clinical applicability across medical disciplines. Methods: A literature review of studies indexed in MedLine (PubMed.gov) was performed to identify clinical applications of the GBI and GBI-5F. For the validation process, the GBI-5F was translated into Latvian using the standard forward–backward translation method, following international guidelines. Nine medical experts evaluated the relevance and clarity of each item. The Content Validity Index (I-CVI and S-CVI) was used to quantify expert agreement, and Cronbach's alpha was calculated to assess internal consistency. Results: The Latvian version of GBI-5F demonstrated excellent content validity (S-CVI/Ave = 0.94) and strong reliability (Cronbach's $\alpha = 0.87$). The questionnaire was well understood by participants and is suitable for assessing post-intervention quality-of-life outcomes. Internationally, the GBI-5F has shown broad applicability in otolaryngology, ophthalmology, urology, and other clinical fields. Conclusions: The Latvian GBI-5F is a valid, reliable, and culturally adapted instrument for evaluating patient-reported outcomes after medical or surgical interventions. Its successful validation enables standardized data collection and facilitates international comparisons in quality-of-life research. Keywords: GBI-5F, validation, translation, quality of life, questionnaire reliability, patient-reported outcomes.

COMPARISON BETWEEN DACRYOENDOSCOPIC FINDINGS AND SYRINGING TEST RESULTS IN DIAGNOSING LACRIMAL PASSAGE OBSTRUCTION

Kayo Shinomiya , Tokushima University

Fumiko Murao , Tokushima University
Yoshinori Mitamura , Tokushima University

Purpose: To evaluate the diagnostic accuracy of dacryoendoscopy compared with lacrimal irrigation (syringing) in patients with lacrimal passage obstruction or stenosis, and to assess the usefulness of endoscopy in identifying multiple or complex obstructive sites. Methods: A retrospective review of 81 patients (102 sides) who underwent dacryoendoscopic surgery at Tokushima University Hospital between January 2018 and December 2020. Pre-operative syringing findings were compared with intra-operative dacryoendoscopic diagnoses regarding obstruction site and extent. During irrigation, the pattern of reflux was used to localize the site of obstruction: reflux through the same punctum indicated canalicular block, reflux through the opposite punctum suggested common canalicular obstruction, and mucopurulent reflux or absence of flow into the nose indicated nasolacrimal duct obstruction. Results: The overall concordance between dacryoendoscopic and syringing findings was 80.4% (82/102 sides). The highest concordance was observed in nasolacrimal duct obstruction (93.3%) and the lowest in common canalicular obstruction (62.5%). Among cases judged by syringing as common canalicular obstruction, 37.5% showed additional nasolacrimal duct involvement on endoscopy. Dacryoliths were detected and removed in three cases. Conclusions: Lacrimal irrigation provides valuable clues to the obstruction site based on reflux patterns, but its diagnostic precision is limited. Dacryoendoscopy offers direct visualization, enabling accurate localization and simultaneous treatment, particularly in cases with multiple or distal lesions.

CLINICAL OUTCOMES OF ENDOLUMINAL LACRIMAL DUCT RECANALIZATION (ELDR) FOR LACRIMAL DUCT STENOSIS AND OBSTRUCTION

Ayano Sakuma , Yamaguchi University

Masanori Mikuni , Yamaguchi University
Fumiaki Higashijima , Yamaguchi University
Naoyuki Yamada , Yamaguchi University
Kazuhiro Kimura , Yamaguchi University

Introduction and Objective; Endoluminal lacrimal duct recanalization (ELDR) is a minimally invasive procedure performed under direct visualization with a lacrimal endoscope to treat lacrimal duct stenosis and obstruction. This study aimed to evaluate the clinical outcomes of ELDR performed at our institution. Methods; We retrospectively analyzed 233 Japanese adult patients (54 males, 179 females; mean age, 70.9 ± 12.3 years; range, 21–93) who underwent ELDR between September 2020 and September 2025. Bilateral procedures were performed in 137 patients, right-sided in 54, and left-sided in 42. ELDR at our institution involved direct endoscopic probing or sheath-guided endoscopic probing to open stenotic or obstructed segments, followed by sheath-guided intubation. The site of stenosis or obstruction was identified intraoperatively, and canalicular obstruction was classified according to the Yabe–Suzuki classification. Results; The success rates (number of successful cases / total cases) were as follows: punctal stenosis 100% (65/65), punctal obstruction 80.0% (24/30), canalicular stenosis 100% (54/54), canalicular obstruction Grade 2 65.2% (15/23), Grade 3 58.3% (21/36), common canalicular stenosis 100% (125/125), common canalicular obstruction 98.3% (59/60), nasolacrimal duct stenosis 99.0% (98/99), and nasolacrimal duct obstruction 93.1% (81/87). Among successfully recanalized canalicular obstruction cases with at least one year of follow-up, re-obstruction occurred in 7 of 11 Grade 2 cases (63.6%) and 9 of 17 Grade 3 cases (52.9%), with most recurrences occurring 3–4 months postoperatively. Conclusions; ELDR achieved high success rates in cases of lacrimal duct stenosis. However, canalicular obstruction Grades 2 and 3 showed lower success and higher early recurrence rates. Therefore, careful case selection is essential when considering ELDR.

CLINICAL CHARACTERISTICS AND OUTCOMES OF LACRIMAL DRAINAGE PATHWAY DISEASE – ASSOCIATED KERATOPATHY

Hiroki Tan , Uwajima City Hospital

Tomoyuki Kamao , Ehime University Graduate School of Medicine
Hidenori Inoue , Ehime University Graduate School of Medicine
Koji Toriyama , Ehime University Graduate School of Medicine
Arisa Mitani , Ehime University Graduate School of Medicine
Yuki Takezawa , Ehime University Graduate School of Medicine
Yuri Sakane , Ehime University Graduate School of Medicine
Atsushi Shiraishi , Ehime University Graduate School of Medicine

Introduction: Lacrimal drainage pathway disease–associated keratopathy (LDAK) is a distinct clinical entity characterized by noninfectious peripheral corneal ulceration associated with lacrimal canaliculitis or chronic dacryocystitis. This study aimed to describe the clinical characteristics and outcomes of patients with LDAK based on a case series from our institution. Methods: We retrospectively reviewed 22 patients (23 eyes) diagnosed with LDAK between April 2007 and December 2024. Demographic data, type of lacrimal drainage pathway disease, corneal findings, microbiological results, and treatment outcomes were analyzed. The primary outcome measure was the time from treatment of the lacrimal drainage pathway disease to complete corneal re-epithelialization. Results: The study included 9 men and 13 women (mean age, 80.0 ± 7.3 years). Ten eyes (43.5%) had lacrimal canaliculitis and 13 eyes (56.5%) had chronic dacryocystitis. All eyes exhibited noninfectious corneal ulcers with few cellular infiltration; 11 eyes (47.8%) developed corneal perforation. The most frequently isolated organisms from the lacrimal duct were Actinomyces spp. in canaliculitis (4 isolates) and Staphylococcus aureus and Streptococcus spp. in chronic dacryocystitis (4 isolates each). Following treatment of the lacrimal drainage pathway disease—such as removal of concretions, endoluminal lacrimal duct recanalization, or sac lavage—epithelial defects healed rapidly. The mean interval to full re-epithelialization was 13.1 ± 4.7 days. Conclusions: LDAK is presented as a peripheral, non-infectious corneal ulcer frequently leading to perforation in elderly patients with lacrimal canaliculitis or dacryocystitis. Early recognition and treatment of the underlying lacrimal disease result in rapid and complete corneal healing. Clinicians should consider LDAK when encountering corneal ulcers with little to no cellular infiltration and excessive discharge.

THE PRIMARY PATIENT WITH EPIPHORA: AN OPHTHALMOLOGIC ALGORITHM FOR THE DIAGNOSIS AND MANAGEMENT OF LACRIMAL DRAINAGE DISORDERS

Irina Kornilova , VCA AIWA Clinic

Jekaterina Kondratishko , VCA AIWA Clinic, RSU

Abstract: Background: Epiphora is a prevalent symptom encountered in ophthalmic practice, frequently resulting from anatomical or functional abnormalities of the lacrimal drainage system. Accurate identification of the underlying etiology is essential for effective management and prevention of chronic complications such as dacryocystitis or ocular surface disease. Purpose: To present a structured, evidence-based approach to the initial evaluation and management of patients with epiphora due to disorders of the lacrimal outflow system. Methods: This review synthesizes current diagnostic protocols, including detailed anamnesis, slit-lamp biomicroscopy of the puncta and eyelids, lacrimal syringing and probing, fluorescein dye disappearance test (FDDT), primary and secondary Jones tests, and diagnostic imaging modalities such as dacryocystography, computed tomography (CT), magnetic resonance imaging (MRI), and nasal endoscopy. The diagnostic utility and indications of each modality are discussed. Results: Etiological classification of lacrimal outflow obstruction is presented, differentiating congenital, acquired, inflammatory, infectious, traumatic, and iatrogenic causes. Evidence-based treatment strategies are reviewed, including conservative therapy for functional epiphora, minimally invasive interventions (e.g., silicone tube intubation), and surgical procedures such as external and endonasal dacryocystorhinostomy (DCR). Special considerations for pediatric cases and management of recurrent or refractory obstructions are addressed. Conclusion: A systematic, anatomically guided approach to the diagnosis and treatment of lacrimal drainage system disorders significantly improves clinical outcomes in patients presenting with epiphora. Early identification of the obstruction site and timely selection of an appropriate therapeutic strategy — whether conservative, interventional, or surgical — are key to successful management.

UNUSUAL CASES OF JONES TUBE INSERTION

Zoran Zikic , University Eye Clinic Zvezdara, Milos Eye Clinic Medigroup

Introduction The aim is to present two unusual cases that required the insertion of a Lester Jones tube in order to cure epiphora in the only seeing eye. Methods The first patient had multiple surgeries of recurrent squamous cell carcinoma of the face and eyelids, which resulted in the exenterantion of the right orbit and amputation of right half of nose, as well as in cicatricial changes of the inner angle of the left eye. The main subjective complaint was of reduced vision of the left (only) eye, due to a narrow eyelid fissure and epiphora. The absence of medial canthal soft tissue support led to several inferior migrations of the glass tube, necessitating removal from the nasal side. Ultimately, a translid insertion of the tube was performed, which had a favourable outcome. The second patient was a victim of a wild bear attack, with significant traumatic loss of bony and soft tissue on the right side of the head, including the right eye. The patient had a problem with ptosis and epiphora on the left (only) eye. A CT scan revealed that there was osteo-synthetic material in the path of a potential Jones tube and the lower conjunctival fornix was very deep. The tube had to be inserted through the medial part of the orbital floor, together with partial resection of the middle turbinate. Results Both patients had an improvement in their epiphora, a reduction of Munk score from 5 to 2, as well as a consequent improvement in quality of vision of the only seeing eye. In the follow up period of 3 years for the first patient, and 3 months for the second, no tube migrations or other complications were noted. Conclusion Insertion of a Lester Jone stube can be a challenge in some cases, due to altered anatomy, requiring an unconventional approach.

DRY SOCKET, WET GLAND? IMAGING LACRIMAL AND MEIBOMIAN FUNCTION POST-ENUCLEATION

Elin Bohman , Sankt Erik Eye Hospital/ Karolinska Institutet

Malin Malmsjö , Lund University Clinical Sciences, Lund, Sweden
Johanna Berggren , Lund University Clinical Sciences, Lund, Sweden
Olof Neumann , Lund University Clinical Sciences, Lund, Sweden
Rafi Sheikh , Lund University Clinical Sciences, Lund, Sweden

Abstract Background/Aims: The impact of eye removal on lacrimal gland function remains unclear. Many patients with ocular prostheses report discomfort, and the dry anophthalmic socket syndrome (DASS) has recently been described. However, findings regarding tear secretion in anophthalmic sockets are conflicting. Previous studies have relied on the Schirmer test, which is not considered reliable in this context. In this study, we used direct imaging of the lacrimal gland to assess tear production in anophthalmic sockets. We also investigated the relationship between meibomian gland area and dry eye symptoms. Methods: Twelve patients with unilateral ocular prostheses were included. Tear secretion from the lacrimal gland was measured using high-resolution imaging techniques. Meibomian gland morphology was evaluated using meibography, and dry eye symptoms were assessed using the 5-item Dry Eye Questionnaire (DEQ-5). Results: There was no significant difference in tear secretion between the anophthalmic and contralateral eyes. However, the meibomian gland area was significantly reduced in the eyelids on the side of the prosthetic eye. Seven patients reported symptoms of dry eye in the anophthalmic socket, compared to only two in the contralateral eye. Conclusions: Tear secretion from the lacrimal gland appears to be preserved in anophthalmic sockets. However, structural loss of meibomian glands on the side of the prosthesis may contribute to the frequent symptoms of dryness and discomfort reported by these patients. This suggests that meibomian gland dysfunction plays a key role in the pathophysiology of DASS, and should be considered when evaluating and managing these patients.

ATYPICAL LACRIMAL DRAINAGE SYSTEM GRANULOMAS

Nandini Bothra , LV Prasad Eye Institute

Mohammad Javed Ali , LV Prasad Eye Institute

Purpose To report the presentation, management and outcomes of cases presenting with granulomatous diseases of the lacrimal drainage system. Methods Retrospective analysis of cases presenting with atypical lacrimal drainage system granulomatous diseases over a study period of 2 years (August 2023 to September 2025). Inclusion criteria were biopsy proven lacrimal drainage system granulomatous diseases. Demographics, symptomatology and signs, treatment, histopathology and outcomes were analysed. Computed tomography scans with or without dacryocystography was performed in every case. Results During the study period, five such cases were found in the database with average age of the patients being 62.4 years (range: 43-70 years) and there were 3 females and 2 males. The diagnosis of the granulomatous diseases after thorough histopathological and immunohistochemical analysis were one each of sclerosing non-specific orbital inflammatory disease (NSOID), non-sclerosing NSOID and xanthogranuloma of the lacrimal sac and two cases of lacrimal sac fungal granuloma. Conclusion Granulomatous lesions of the lacrimal drainage system are a common occurrence and can be differentiated from malignancy if we have a high index of suspicion along with a good histopathology.

LACRIMAL AND ORBITAL SYSTEM INVOLVEMENT IN HPV-11–ASSOCIATED RECURRENT SINONASAL INVERTED PAPILLOMATOSIS PROGRESSING TO ADENOSQUAMOUS CARCINOMA: A COMPLEX MULTIDISCIPLINARY CASE

Sophia Näther , Department of Ophthalmology, University Hospital Zurich, University of Zurich, Switzerland

Christian Meerwein , Department of Otorhinolaryngology, Head and Neck Surgery, University Hospital Zurich, University of Zurich, Switzerland
Michael Soyka , Department of Otorhinolaryngology, Head and Neck Surgery, University Hospital Zurich, University of Zurich, Switzerland
Karla Chaloupka , Department of Ophthalmology, University Hospital Zurich, University of Zurich, Switzerland

Introduction: HPV-associated sinonasal papillomatosis is typically benign yet characterized by recurrences and a low rate of malignant transformation. Orbital involvement is distinctly uncommon and likely indicates malignancy. We present a rare case of extensive multifocal HPV-11–positive inverted papillomatosis progressing to adenosquamous carcinoma with orbital infiltration, first presenting as a lacrimal infection, highlighting diagnostic challenges and multidisciplinary management. Methods: We retrospectively reviewed clinical, radiologic, surgical, and histopathologic data of a 44-year-old woman followed since 2018. Surveillance included serial nasal endoscopy, CT/MRI, and PET-MRI. The patient underwent multiple endonasal resections, submucosal cidofovir injections, Gardasil vaccination, canalicular exploration, lacrimal sac surgery, combined ENT–ophthalmology debulking procedures and placement of intraorbital drug-eluting beads (cidofovir and bevacizumab in Stimulan®). Systemic therapy included induction chemotherapy. Results: From 2018, the patient experienced recurrent endonasal HPV-11–positive inverted papillomas and underwent six transnasal-endoscopic resections. In 2025 she developed medial canthal swelling and epiphora. Acute ophthalmological presentations included a medial canthal abscess and necrotic canaliculitis. Orbital exploration revealed extensive papillomatous infiltration of the medial eyelids, pre-saccal tear pathways, caruncle, and deep medial orbit. The majority of the tumor volume was debulked while preserving essential extraocular muscles and conjunctiva. Histopathology demonstrated transformation to invasive adenosquamous carcinoma in the orbit. PET-MRI showed extensive papilloma involvement of the frontal sinus, septum, nasolacrimal system, and bilateral orbits. Induction chemo-immunotherapy with cisplatin/docetaxel and pembrolizumab led to marked regression of the remaining left orbital mass and allowed deferral of exenteration. Right-sided progression required additional debulking for histologic clarification. Conclusions: This case demonstrates the malignant potential of HPV-11–associated sinonasal inverted papillomatosis with orbital involvement. Persistent epiphora in patients with recurrent sinonasal papillomatosis should prompt ophthalmologic evaluation and imaging. Multidisciplinary management is crucial in advanced disease affecting the orbit and lacrimal

pathways, underscoring the necessity for long-term surveillance and adaptable treatment strategies.

LACRIMAL SAC RECONSTRUCTION WITH LABIAL MUCOSA IN RECURRENT SQUAMOUS PAPILLOMA – A CASE REPORT

Rafal Nowak , Jozef Strus City Hospital

Maja Nowak , Jozef Strus City Hospital
Piotr Jakub Gaca , Medical University of Lublin
Mohammad Javed Ali , L.V. Prasad Eye Institute

Introduction: Large defects of the lacrimal sac following mass excision or recurrent pathology present a reconstructive challenge, particularly when nasal mucosa is inaccessible. We report a case of recurrent lacrimal sac lesion initially managed by endoscopic dacryocystorhinostomy (DCR) and subsequently treated with external DCR and reconstruction using a labial mucosal graft. Clinical history A 61-year-old male presented with chronic unilateral tearing and purulent discharge associated with a gradually enlarging medial canthal mass. Clinical findings Standard lacrimal evaluation, including irrigation and probing, revealed a distended lacrimal sac with reflux of purulent material. Nasal endoscopy demonstrated septal deviation but adequate access for endoscopic surgery. Management Step1: Initial management included endoscopic DCR with lesion debulking and Crawford bicanalicular intubation. Progressive regrowth at the osteotomy site was observed postoperatively. Computed-tomography dacryocystography (CT-DCG) demonstrated residual sac filling with a soft-tissue mass protruding into the nasal cavity. Step 2: A revisional external DCR under endoscopic control, with lacrimal sac reconstruction using a labial mucosal graft, was performed. The superior part of the lacrimal sac, including the internal canalicular opening, was removed because of residual papilloma tissue arising from this area. The graft, measuring 3 × 1.5 cm, was harvested from the lower labial mucosa and sutured to the remaining sac tissue. Crawford stents were reinserted. Outcome: Postoperative follow-up at 2 weeks, 1, 2, 3, 4, and 6 months showed progressive healing and restoration of lacrimal function. The reconstructed sac and ostium remained patent, with complete symptom resolution (Munk score 0) and no recurrence clinically or endoscopically. Conclusions: Reconstruction of the lacrimal sac with a labial mucosal graft can restore physiologic drainage in cases with extensive sac wall loss and limited nasal mucosa availability. This case highlights the importance of individualized reconstructive planning in complex lacrimal pathology and demonstrates successful anatomical and functional outcomes.

ISOLATED CANALICULAR PSEUDOEPITHELIOMATOUS HYPERPLASIA: CLINICAL SPECTRUM, PROPOSED MANAGEMENT, AND OUTCOMES

Lavanya Maddi , LV Prasad Eye Institute

Nandini Bothra , LV Prasad Eye Institute
Mohammad Javed Ali , LV Prasad Eye Institute

Introduction and Objective: Canalicular obstructions account for approximately 4.5% of all cases of epiphora. Acquired obstructions may result from inflammation, infection, trauma, drug-induced reactions, systemic diseases, iatrogenic causes, or involutional changes. Chronic ocular surface inflammation can induce epithelial proliferation known as pseudoepitheliomatous hyperplasia (PEH), characterized histologically by downward epithelial projections forming rete pegs. PEH has been described in the eyelid, conjunctiva, cornea, and punctum, but canalicular involvement has not been well documented. This study presents a series of three cases of isolated canalicular pseudoepitheliomatous hyperplasia (ICPEH), establishing it as a distinct clinical entity causing epiphora secondary to mechanical secondary acquired lacrimal duct obstruction. Methods: This retrospective interventional case series included biopsy-proven cases of canalicular PEH. Preoperative dacryoendoscopy was performed to determine the extent of the lesion. A rectangular punctoplasty was used to access and excise the mass. Demographic data, clinical findings, imaging features, surgical details, histopathology, and outcomes were analyzed. Results: Four canaliculi from three patients presented with epiphora without discharge. Examination revealed pinkish elevated lesions arising from the vertical canalicular walls, filling the punctal opening without distorting punctal rims (3/4 canaliculi). Lesion surfaces showed speckled pigmentation or a greyish membrane-like appearance. One case presented as diffuse canalicular swelling mimicking canaliculops. Dacryoendoscopy localized the lesion to the vertical canaliculus without extension beyond the ampulla. Complete excision was achieved through punctoplasty, and histopathology confirmed PEH. Conclusion: The present study described the clinical spectrum, anterior segment optical coherence tomography, dacryoendoscopy, surgical technique, histopathology, and outcomes of a previously not-recognized entity—“isolated canalicular pseudoepitheliomatous hyperplasia.” The study is the first step in further characterizing the clinical and radiological aspects of ICPEH.

ENDOSCOPIC FINDINGS OF THE LACRIMAL SAC IN A CASE OF LACRIMAL SAC DUCTAL ADENOCARCINOMA: CHRONOLOGICAL CHANGES OVER NINE MONTHS FROM INITIAL EXAMINATION

Maki Hayami , Matsumoto eye clinic

Yuichi Kaji , Matsumoto eye clinic
Satoshi Goto , St.Marianna University School of Medicine
Yasuhiko Fujioka , Juntendo University Urayasu Hospital
Koichi Matsumoto , Matsumoto eye clinic
Isana Nakjima , Kochi Medical School
Hideki Tsuji , The Cancer Institute Hospital of JFCR

【Introduction】 We report a case of dacryocystitis initially presenting with serous epiphora, which was subsequently diagnosed as lacrimal sac adenocarcinoma approximately one year after onset. This report highlights the dacryoendoscopic findings observed from the initial presentation through to definitive diagnosis. 【Methods and Results】 An 84-year-old man developed serous epiphora around November 2023. He was referred to our hospital with a presumptive diagnosis of chronic dacryocystitis. Dacryoendoscopic examination revealed two mushroom-shaped polyps with smooth surfaces and marked friability within the lacrimal sac lumen. Given the possibility of malignancy, the patient was referred to a university hospital for further evaluation. A biopsy performed there in April 2023 showed a benign tumor, and imaging studies demonstrated no malignant features. Lacrimal intubation surgery was subsequently performed, leading to resolution of the epiphora. The patient was then referred back to our hospital for follow-up observation. After tube removal, the patient re-presented in November of the same year with recurrent serous epiphora. Repeat dacryoendoscopy demonstrated a dramatically different appearance compared to nine months earlier: the sac lumen was now filled with friable, whitish, elevated tissue. The patient was again referred to the university hospital, where a diagnosis of lacrimal sac adenocarcinoma was made following excision of the lacrimal sac. Further evaluation at a cancer specialty center confirmed ductal adenocarcinoma of the lacrimal sac. Primary ductal adenocarcinoma of the lacrimal sac is exceedingly rare, with only a few cases reported worldwide. Careful and continued observation is warranted in this patient.
【Conclusion】 Serous epiphora is not necessarily indicative of a neoplasm; it can also occur in cases of canaliculitis or dacryocystitis. In the present case, persistent serous epiphora initially diagnosed as dacryocystitis resolved temporarily after lacrimal intubation surgery but recurred within a short period, ultimately leading to the diagnosis of lacrimal sac adenocarcinoma. The dacryoendoscopic findings demonstrated striking progression over time. These observations underscore the importance of careful and ongoing follow-up in patients presenting with persistent or recurrent serous epiphora.

EPIPHORA AND PATENT SYRINGING – WHAT IS IT?

Karla Chaloupka , University Hospital Zurich

Sonja Frimmel , TAZZ Eyeclinic Zurich

We present a patient with two years history of watery left eye. Due to patent syringing her symptoms were ignored. We found on palpation a tumor. In MRI a malignant lesion arising from the sinus was found causing her watery eye. Despite all treatment the outcome was fatal. This shall be a reminder to use also palpation as a examination tool.

New technologies in dry eye management

DRY EYE SYNDROME IN ADULTS DURING WAR

Tetyana Tabalyuk , private medical licence Corneal Services V&T

Introduction. Dry Eye Syndrome (DES) affect more the half of the general population worldwide. We decided to study the influence of wholescale war on DES in adults as have been living more than 3,5 years in it. Methods. We have included in this study 500 practically healthy patients (1000 eyes) during period 2022-2025 aged 18-85 years without eye diseases. We investigated everyone with the help of Dry Eye Module MediWorks for photo slit lamp S390-L Firefly WDR. Everyone filled an Ocular Surface Disease Index (OSDI) questionnaire. Most persons under follow-up were women (79 %) of young age (18-44 years) (45 %). 100 patients from group (200 eyes) underwent photobiomodulation (PBM) with the help of MyMask (Espansione Group) and passed diagnostic and OSDI before and after treatment. Results. DES mainly light degree (78 %) was revealed in all investigated individuals. We analyzed all additional factors that can cause eye surface dryness while taking a medical history. So in light degree DES (100 eyes) after 1 FBM non-invasive Tear Breakup Time (NIBUT) increased from 9,8±1,3 to 16,4±2,1 s (p 0,01), Tear Meniscus Height (TMH) changed from 0,17 ± 0,03 to 0,24 ± 0,04 mm (p>0,05), lipid layer improved from 3 (50 %) to 4 (90 %) level, Meibomian Gland Loss (MGL) decreased from 34,7±3,9 to 23,1±3,4 % (p<0,05), Redness Score reduced from 16,4±2,3 to 8,3±1,9 % (p<0,01), OSDI statistically significant (p< 0,001) improved from 23,4±2,4 to 7,9±2,8 points. In middle degree DES (60 eyes) after 2 FBM NIBUT increased from 3,7±2,0 to 11,6±2,6 s (p<0,05), TMH changed from 0,11±0,03 to 0,22±0,04 mm (p<0,05), lipid layer improved from 2 (20 %) & 3 (80 %) to 3 (15 %) & 4 (85 %) level, MGL decreased from 43,7±4,6 to 27,5±5,4 % (p<0,05), Redness Score reduced from 27,3±4,2 to 16,8±3,8 % (p>0,05), OSDI statistically significant (p<0,001) improved from 29,2±2,8 to 13,3±3,1 points. In severe degree DES (40 eyes) after 3 FBM NIBUT increased from 2,2±1,1 to 9,7±2,6 s (p<0,01), TMH changed from 0,36±0,03 to 0,25±0,04 mm (p<0,05), lipid layer improved from 2 (25 %) & 3 (75 %) to 3 (40 %) & 4 (60 %) level, MGL decreased from 61,3±5,2 to 37,2±6,1 % (p<0,01), Redness Score reduced from 28,9±2,9 to 17,6±2,8 % (p<0,01), OSDI statistically significant (p<0,001) improved from 54,1±4,0 to 27,2±3,8 points. Conclusion. The study found that DES more visible in women during war as probably men more often take part in military process and have no time for such trivia. It depends on good sleep, level of stress, anxiety, lightening, environment, visual hygiene with gadgets etc. Severity of eye dryness increasing with age, hormone and metabolism imbalance and its mainly does not have essential bilateral difference. In light degree and younger persons DES there is insufficiency of tear film height while in severe cases and elderly – excess it level perhaps cause age changes of eyelids and lacrimal system. Photobiomodulation proved to be effective and safe option in Dry Eye management of adults even in war period. Follow visual rules and breaks while watching gadgets, eating healthy food, using of anti stress and anti insomnia technics as much as possible when rockets and drones are over head extending the effect of procedure and necessity of it repeat.