

РЕЗЮМЕТА НА НАУЧНИТЕ ТРУДОВЕ

НА

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## Хабилитационен труд - реферирани статии

1. Valcheva K, Murgova S, Duhlenki B, Hristova I. Congenital nasolacrimal duct obstruction: epidemiology and risk factors. **Journal of IMAB**, 2019, 25(1): 2317-2322; ISSN: 1312-773X

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Original article

### CONGENITAL NASOLACRIMAL DUCT OBSTRUCTION: EPIDEMIOLOGY AND RISK FACTORS

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**SUMMARY**  
**Purpose:** To discuss the various epidemiological aspects and the impact risk factors for developing CNLDO in children.  
**Material/Methods:** An analytical observational case-control study.  
One hundred and thirteen children diagnosed and probed for CNLDO in Eye clinic-Pleven were included in a case group. A control group consist of 121 children without CNLDO. All of the parents answered questions from specially designed questionnaires related to the pregnancy of the mother, antenatal risk factors and child's health in the neonatal period.  
**Results:** The demographic profile of the evaluated children in the case group was: 49.6% males and 50.4% females; 33% cases were with affected right eye, 37% left eye, and 30% individuals with bilateral CNLDO after birth. Median gestational age of the children with CNLDO was 40.0. Risk factors for CNLDO development are antibiotics intake and consuming alcohol during the pregnancy.  
**Conclusion:** Congenital nasolacrimal duct obstruction affects full-term born children. Detection of the risk factors for developing CNLDO will improve methods for the prevention of this disease.

**Keywords:** CNLDO, epidemiology, risk factors,

Although there exist numerous publications on the management of CNLDO, published reports on the epidemiology of this disorder are uncommon. Little is known about the risk factors for this condition. The role of genetics has not been thoroughly investigated in CNLDO. Risk factors for congenital anomalies at all may include maternal infections during pregnancy, exposure to radiation, consuming medications, and some occupational hazards [8]. These are similarly implicated in CNLDO. Several studies have documented the possible association between the incidence of CNLDO and delivery by Cesarean section compared with vaginal delivery [9,10].  
The aim of this study was to determine the various epidemiological aspects and the risk factors for developing CNLDO in children.

**MATERIALS AND METHODS**  
An analytical observational case-control study was undertaken in the Eye Clinic at University Hospital - Pleven, Bulgaria. The Commission of the Ethics of Research Activities in the Medical University of Pleven reviewed and approved the protocol for the study. The statistical data for the population of live birth children in the Pleven district are taken by the National Statistical Institute of the Republic of Bulgaria.  
A retrospective review of the medical records between 2006 and 2016 identified 224 children with CNLDO

2. **Кр. Вълчева, Сн. Мургова, Г. Николов.** Конгенитална обструкция на назолакрималния канал – резултат от приложения метод на лечение. – **Медицински преглед**, 57, 2021, № 1, 27-33.

**Конгенитална обструкция на назолакрималния канал – резултат от приложения метод на лечение. – Медицински преглед, 57, 2021, № 1, 27-33.**

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**Резюме:** Целта на настоящото проучване е да се направи оценка на резултата от приложения метод на лечение при конгенитална обструкция на назолакрималния канал. Проведено е проспективно проучване на 167 очи при 131 пациенти с вродена обструкция на нососълзния канал за период от 2 години. Терапевтичният подход при новооткритите случаи включва два етапа. Първо: консервативно лечение с прилагане на масаж по метода на Криглер в домашни условия. В случай на неуспех се предприема втори етап: оперативно лечение в Очна клиника – Плевен – сондиране на слъзните пътища. Резултатът от приложения метод на лечение се оценява въз основа на анамнеза за сълзене, регургитационния тест и каналчевата проба с флуоресцеин. Консервативното лечение при конгениталната обструкция на назолакрималния канал е успешно при 115 (68,9%) от проследените очи. Средният период на проследяване до момента на излекуване по медианата е 3,0 месеца (от 1,0 до 13,0 месеца). Останалите 52 (31,1%) очи са без промяна в състоянието, което налага оперативно лечение. Еднократно сондиране е приложено на 50 очи (96,2%). Постоперативният резултат от процедурата е излекуване при 46 (88,5%) очи, съмнителен при 4 (7,7%) и неуспешен при 2 (3,8%) очи. Неуспешните случаи са ресондирани. Конгениталната обструкция на назолакрималния канал се лекува успешно с консервативна терапия. В случаите, налагащи оперативно лечение, еднократното сондиране е с висок процент успеваемост.

**Ключови думи:** конгениталната обструкция на назолакрималния канал, масаж по Криглер, сондиране

3. Valcheva KP, Murgova SV, Krivoshiiska EK. Success Rate of Probing for Congenital Nasolacrimal Duct Obstruction in Children. *Folia medica*, 2019, 61(1), 97-103; ISSN: 0204-8043

**ORIGINAL ARTICLE, MEDICINE**

## Success Rate of Probing for Congenital Nasolacrimal Duct Obstruction in Children

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**Key words:** probing, congenital nasolacrimal duct obstruction, success rate

**Citation:** Valcheva KP, Murgova SV, Krivoshiiska EK. Success rate of probing for congenital nasolacrimal duct obstruction in children. *Folia Med (Plovdiv)* 2019;61(1): doi: 10.2478/folmed-2018-0054

**Aim:** To determine the success rate of initial and repeated probing for congenital nasolacrimal duct obstruction (CNLDO) in children between 2-41 months.

**Patients and methods:** One hundred and twelve children aged 1.8 to 13 years responded to the control examination. They were diagnosed with CNLDO in the past and now included in a retrospective study. The mean follow-up period was 5.2 years (from 0.6 to 11.6 years). Patients were divided into two groups according to their age at the time of surgery: group A (2-12 months) and group B (13-41 months). Probing and irrigation of NLD was performed in the Eye Clinic in Pleven under general anesthesia in all subjects.

A controlled examination was done to evaluate the effect of probing on the basis of a history of watery eyes, regurgitation test, and dye disappearance test (DTT).

**Results:** Of the 131 eyes in 112 children, 110 eyes (84%) had one probing and 21 eyes (16%) had repeat probing. Success rate of the initial probing was 90% (99 of 110) for all patients' eyes: 89% (70 of 79) in group A and 94% (29 of 31) in group B. The cure rate of the repeat probing was 76% (16 of 21) for all patients: 88% (7 of 8) in group A and 69% (9 of 13) in group B. The overall success rate of probing was 88% (115 of 131).

**Conclusion:** Nasolacrimal duct probing followed by irrigation is a commonly performed, highly successful treatment for congenital nasolacrimal duct obstruction in children. The success rate for initial and repeated nasolacrimal duct probing is not affected by age.

### BACKGROUND

Epiphora in newborns is a common condition. The incidence of this abnormality is 20% of all infants

and administration of topical antibiotics is considered the first-line treatment, and results in a cure rate greater than 90%.<sup>4,5</sup>

4. Kirkova, R., Murgova, S., Kirkov, V., Tanev, I. Personalized Approach in Treatment of Neovascular Age-Related Macular Degeneration. *Journal of Personalized Medicine*, 2022, 12(9): Article number 1456; ISSN: 2075-4426



Article

## Personalized Approach in Treatment of Neovascular Age-Related Macular Degeneration

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**Abstract:** Background: Age-related macular degeneration (AMD) is a progressive, degenerative disease of the central retina. AMD is subdivided into “dry” (atrophic), “wet” (exudative), and neovascular (nAMD) forms. In recent years, the concepts about nAMD changed with the development of optical coherence tomography–angiography (OCT-A) and intravitreal anti-VEGF treatment. The aim of this study was to define the morphologic type of the neovascular membrane (NVM) before treatment with OCT-A and to register vascular remodeling after treatment with anti-VEGF. We also analyzed the relationship between NVM and visual acuity. Methods: The study was retrospective and included 119 patients with newly diagnosed, treatment-naïve nAMD. All the patients underwent full ophthalmic examination and also fluorescein angiography and optical coherence tomography–angiography (OCT-A). Results: Based on the collected data, we found repetitive regularities. Conclusion: The analysis of our results could be used as prognostic markers for the evolution of the disease and as a basis for new treatment strategies, depending on the naïve NVM morphologic type.

**Keywords:** OCT-A; neovascularization; AMD; anti-VEGF; vascular remodeling; personalized; approach



**Citation:** Kirkova, R.; Murgova, S.; Kirkov, V.; Tanev, I. Personalized Approach in Treatment of Neovascular Age-Related Macular Degeneration. *J. Pers. Med.* **2022**, *12*, 1456. <https://doi.org/10.3390/jpm12091456>


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### 1. Introduction

5. Snezhana M, Georgi B. OCT Results in Myopia: Diagnostic Difficulties in Clinical Practice? *Journal of Clinical Medicine*, 2022, 11(12): Article Number 3430, pp. 1-7, e-ISSN: 2077-0383

Article

# OCT Results in Myopia: Diagnostic Difficulties in Clinical Practice?

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**Abstract:** Background: Optical coherence tomography (OCT) is a modern, non-invasive technique for examining the posterior segment of the eye in vivo. The quality of images is crucial for the diagnostic process. Despite good image quality and high signal strength, we still obtain images with less relevant diagnostic data, especially in relation to RNFL and GCL thickness in myopic and hyperopic eyes. Aim: To evaluate the change of RNFL, GCL thickness and rim and disk areas in myopic eyes that underwent OCT examination before and after refractive correction with contact lenses or glasses. Method: A prospective cross-sectional pilot study included 43 eyes in 22 patients with myopia and hyperopia, with or without astigmatism. Patients were examined using OCT with and without contact lenses or glasses. Results: RNFL thickness, GCL thickness, rim area and disk area average and minimum values were significantly changed after correction with glasses or contact lenses. Conclusion: Myopic patients with greater than  $-2.50$  D have to be examined using OCT with their contact lens or glasses corrections in the case of borderline data. Uncorrected myopic eyes show a thinner RNFL and GCL and smaller disk areas, which may mislead ophthalmologists.

**Keywords:** OCT; myopia; hyperopia; RNFL thickness



Citation: Snezhana, M.; Georgi, B.  
OCT Results in Myopia: Diagnostic

## 1. Background

Optical coherence tomography (OCT) is a modern, non-invasive technique for ex-




6. Georgi Balchev, Chavdar Balabanov & Snezhana Murgova (2023) Retrospective demographic analysis of 450 eyelid tumours, *Biotechnology & Biotechnological Equipment*, 37:1, 243-249, DOI: [10.1080/13102818.2023.2181021](https://doi.org/10.1080/13102818.2023.2181021)

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OPEN ACCESS 

## Retrospective demographic analysis of 450 eyelid tumours

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### ABSTRACT

Eyelids are a small anatomical structure, yet they contain several histological layers from which benign and malignant tumours can originate. Compared to other parts of the face, the eyelids are often the first place where neoplasms or disease changes are noticed. The aim of this study was to analyze eyelid tumours over a 10-year period. A retrospective study of 436 patients (450 eyes) who underwent oculoplastic surgery in an ophthalmology department over a 10-year period was performed. Descriptive, dispersion and correlation analyses were performed. The demographic analysis provided a clear assessment of the distribution and incidence of eyelid tumours according to age, size, histology and place of residence. Age and malignancy were in a positively significant relationship and increased together. The cases of benign eyelid tumours began to increase in terms of number out of the total cases observed after the age of 40, and malignant tumours after the age of 60. The trend in benign tumours continued until the age of 70, when the increase became four-fold, after which they decreased again at the expense of malignant tumours, which were already increased six-fold by the age of 70. Eighty percent of all malignant tumours of the eyelids were diagnosed after 60 years of age. A patient with an eyelid tumour is to be referred for treatment to an ophthalmologist by medical specialists of all specialties. Early patient referral is directly related to treatment success.

### ARTICLE HISTORY

Received 27 December  
2022  
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### KEYWORDS

Eyelid tumour;  
demographic analysis;  
oculoplastic surgery;  
basal cell carcinoma;  
squamous cell carcinoma

## Introduction

Eyelids are a small anatomical structure, yet they contain several histological layers from which both benign and malignant tumours can originate. Their skin is the thinnest and most sensitive part of the skin on the

The most common eyelid tumours are those of the first group – epidermal. Of them, 85% are in one of three groups – benign proliferations, basal cell carcinoma and melanotic lesions. In the remaining 10–15%, other tumours of the eyelids are present

7. Balchev G, Balabanov C, Murgova S. Glabellar flap technique in oculoplastic surgery. *Indian Journal of Ophthalmology*, 2022, 70(1): 281-286; ISSN:0301-4738

## Surgical Technique

### Glabellar flap technique in oculoplastic surgery

Georgi Balchev, Chavdar Balabanov, Snezhana Murgova

Facial skin defect reconstruction in medial-canthal area of the lids can be a challenge even when performed by a skilled surgeon. The excision of large tumors in this area leads to significant surgical defects that cannot be repaired by merely closing the wound. The glabellar area provides a source of redundant skin with similar characteristics to that of the medial-canthal lid area. The purpose show the possibility of the glabellar flap technique surgery in patients after tumor excision in the medial canthal area with the formation of a large surgical defect and especially those with defect under the medial canthal tendon. We selected 15 well-documented retrospective cases of patients operated over 2 years and followed up for a minimum of 36 months, who underwent surgery with a glabellar flap technique. Patients were operated with V-Y glabellar rotation, advancement, or combined transposition flap techniques. According to the defect's location, we divided the patients into three groups: upper, medial, and lower surgical defects. A satisfactory functional result was obtained in all the patients. In most of them, the cosmetic results were also good. No additional surgical procedures were required in any of the patients. Our experience showed excellent results with the glabellar flap technique in all three types of lesions in the medial canthal zone—upper, medial, and especially lower which until recently was thought to be inappropriate.

**Key words:** Glabellar flap, nasal reconstruction, ocular tumors, oculoplastic surgery

Facial skin defect reconstruction in medial-canthal area of the lids can be a challenge even when performed by a skilled surgeon. The excision of large tumors in this area makes surgical defects impossible to repair by just closing the wound. Medial canthal area is constructed by relationship of eyelids, brow, nose, cheek and share their unique anatomy. All adjacent structures in the area have different textures, thickness, color, and anatomical features to be addressed and present difficulties in wound repair and surgical planning.<sup>[1,2]</sup> There are several basic surgical techniques for closing a medial defect: a direct closure, suitable for defects

von Graefe, and later by Joseph (1931), Labott (1933), and Limberg (1939).<sup>[4,5]</sup> The technique of glabellar flap was also described as the V-Y technique. There are many alternatives and modifications of the primary technique such as "banner" flap, dorsal nasal flap, bilobed flap, rhomboid flap, and even "Batman" flap, all well described by authors of different medical specialties, and less often by ophthalmologists.<sup>[1,2,5-7]</sup>

#### Aim

This article aims to share our experience with the glabellar flap technique in patients after tumor excision in the medial canthal area with the formation of a significant surgical defect

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8. Balchev G, Balabanov C, **Murgova S**. SMO (Smoothened transmembrane protein) inhibitors (Vismodegib) in treatment of Basal Cell Carcinoma (BCC) of ocular adnexa. *J of IMAB*. 2020 Apr-Jun;26(2):3102-3106. DOI: [10.5272/jimab.2020262.3102](https://doi.org/10.5272/jimab.2020262.3102)



## SMO (SMOOTHENED TRANSMEMBRANE PROTEIN) INHIBITORS (VISMODEGIB) IN TREATMENT OF BASAL CELL CARCINOMA (BCC) OF OCULAR ADNEXA.

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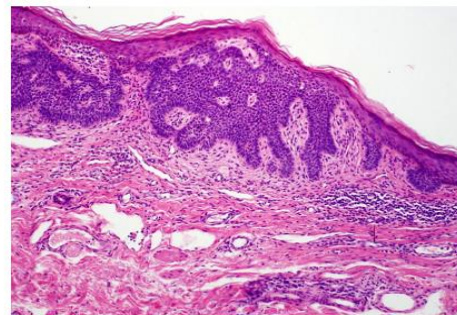
### SUMMARY

Basal Cell Carcinoma (BCC) is one of the well spread malignant skin cancers. Eighty percent of it occurs in the head-neck area of which 20% in the eyelids. The major genes for BCC are: PTCH1 and PTCH2. PTCH1 suppresses transmembrane Smoothened (SMO) protein, while PTCH2 have his role uncleared, but there are evidences for involvement in Hedgehog signalling pathway. From all cases of BCC of adnexa, advanced BCC represents a small percentage of 1-10%. Advanced BCC has his two forms of metastatic mBCC and local advanced laBCC. The surgical approach is a mainstay in the treatment of BCC. Some cases the anatomical and functional results are expected to be poor, due to difficult location of the tumour, such patients with laBCC and mBCC can benefit from medical treatment together with surgery and radiotherapy or alone. Systemic treatment, as of Vismodegib is a good candidate for these patients with mild to moderate side effect's profile.

**Keywords:** basal cell carcinoma, Eyelid, Oncology, Vismodegib, Ophthalmology, free cutaneous graft

Aetiology and risk factors are grouped like: 1. Age over 50 years. 2. History of sun or UV exposure, 3. Fair skin, 4. Male Caucasian gender, 5. History of skin cancer, 6. Chronic infections or skin inflammation [14, 9].

Fig. 1.



9. G. Balchev, Z. Gey, S. Murgova, B. Duhlenki, Ts. Stoyanov. A Rare Case of Supraorbital Artery Malformation. **Journal of Biomedical and Clinical Research**, 2023, ISSN: 1313-6917

*Balchev G. et al. A rare case of vascular malformation in the orbit*

### Case Report

## A RARE CASE OF VASCULAR MALFORMATION IN THE ORBIT

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### Summary

We present the case of an 87-year-old female with a one-week history of redness, swelling, and pain in the left eye, accompanied by headache and neck pain. Computed tomography (CT) scan demonstrated extreme enlargement of the supraorbital artery, engaging the superior rectus muscle of the left eye. We could not find similar articles in well-recognized scientific networks. Conservative treatment was conducted, with no improvement. The patient refused surgery.

**Keywords:** vascular malformation, orbit, supraorbital artery.

## EXTERNAL CONGENITAL LACRIMAL SAC FISTULA: A CASE REPORT

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**Abstract.** Congenital lacrimal fistula is a developmental abnormality. This is a case of a patient with an external congenital lacrimal sac fistula. Surgical treatment was used to correct the condition. Immediate postoperative results were seen. To present a case of a patient with an external congenital lacrimal sac fistula, in which surgical treatment was applied and immediate postoperative results with a good outcome were seen. A 3-year-old boy with an external congenital lacrimal sac fistula presented to our clinic. The skin orifice was observed on the left eye in a typical place – located in the inferomedial aspect of the medial canthal angle. The patient was treated in the at the Eye clinic, at university hospital "Dr. Georgi Stranski" – Pleven, Bulgaria. He underwent a surgical procedure – simple fistula excision (closed fistula excision). The surgical technique was a successful closed fistula excision. In the immediate postoperative period there were no complications such as infection, recurrence or worsening of the epiphora, poor cosmetic results, bleeding or damage to the lid structures or nose. The prognosis for patients with congenital lacrimal fistulas is quite good. Many are asymptomatic and those who have symptomatic epiphora or mucoid discharge can be successfully treated by surgery. Several surgical options exist – closed fistula excision, dacryocystorhinostomy (DCR) with fistula excision and fistula excision with nasolacrimal intubation. Symptomatic congenital lacrimal sac fistulas can be treated successfully with excision alone.

**Key words:** Congenital lacrimal fistula, surgical treatment, postoperative results

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### INTRODUCTION

tion, the upper part of the cord forms the canaliculi and the lower part forms the nasolacrimal canal [4].



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1. Murgova S, Balabanov Ch, Barzashka E. **Idiopathic acquired nonhistaminergic angioedema – A case report** *J of IMAB*. 2019 Jan-Mar;25(1):2358-2361. DOI: [10.5272/jimab.2019251.2358](https://doi.org/10.5272/jimab.2019251.2358)

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Journal of IMAB - Annual Proceeding (Scientific Papers). 2019 Jan-Mar;25(1)

Case report

## IDIOPATHIC ACQUIRED NONHISTAMINERGIC ANGIOEDEMA – A case report

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2) Department of clinical toxicology, University Hospital “Dr Georgi Stranski” - Pleven, Medical University - Pleven, Bulgaria.

### SUMMARY

Angioedema is a self-limited, localized swelling that involves subcutaneous tissue or mucosa of the face and other areas. It affects males and females equally, usually during the 3rd and 4th decades of life.

We present a patient with angioedema of the head and neck with a typical clinical picture of an acquired type and with a normal level of C1-INH. Initially the patient was treated with a combination of drugs for allergy. However the swelling did not respond to the therapy and fresh frozen plasma was added. After the 10th day, the edema began reducing progressively.

Despite the controversies in the literature we demonstrate that FFP is useful not only to ameliorate the acute attack but also for prophylaxis.

**Keywords:** angioedema, allergy, fresh frozen plasma,

### CASE REPORT

A 43-year-old woman presented to the ophthalmology clinic with mild eyelids swelling and foreign body sensation, mainly in the left eye. The history of the patient showed only working in a dusty environment and recurrent episodes of mild eyelids swelling. The patient was in good health and had an allergic predisposition to some foods and drugs. The allergic reaction was suspected, and recommended treatment of corticosteroid was administered. On the next day, no clinical response was noted and the edema extended to the right eye. Antihistamine was then added to the therapy, but without improvement. The swelling involved the eyelids of the eyes, the left side of the face, and mild edema of the tongue and the neck. The patient was in poor general condition, with ataxia and dysarthria, and tracheostomy was done (Figure 1). Routine laboratory blood and urine tests were normal. Immune status (C1, C3, ANA, ANCA, SS-A,/RoEIA) was also normal.

2. Valcheva KP, Murgova SV. Refraction in Children with Unilateral and Bilateral Congenital Nasolacrimal Duct Obstruction. **Journal of Biomedical and Clinical Research**.;12(1):47-52.



**DOI:10.2478/jbcr-2019-0007**

**Original Articles**

**REFRACTION IN CHILDREN WITH UNILATERAL AND BILATERAL CONGENITAL NASOLACRIMAL DUCT OBSTRUCTION**

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**Summary**

The study aimed to identify the type of refraction in children with unilateral and bilateral congenital nasolacrimal duct obstruction (CNLDO) who underwent nasolacrimal duct probing. One hundred and twelve children aged 1.8 to 13 years, diagnosed with CNLDO, were included in a retrospective study. All the patients had their visual acuity examined, and their refractive status was evaluated. The refractive errors of both eyes were noted, followed by an appropriate management plan. Of the 112 children, 79 (70.5%) had a unilateral obstruction, and 33 (29.5%) had bilateral obstruction. Nine children (11.4%) in the former group and six children (18.2%) in the latter group were with visual acuity <0.8. The most frequent refractive error among the studied children was hyperopia. No statistically significant difference ( $p>0.05$ ) between refraction of the two eyes in the evaluated children were found. Amblyopia risk factors were identified in 9 of the patients (8.0%). CNLDO did not adversely affect the refractive status. However, amblyogenic risk factors were found more often in our patients, as compared to general populations. Therefore, a detailed evaluation should be performed to find out these risk factors.

**Key words:** refractive status, risk factors, congenital nasolacrimal duct obstruction

3. Г. Балчев, Сн. Мургова. Медикаментозен подход в лечението на напреднал базалноклетъчен карцином на придатъците на окото. – **Медицински преглед**, 57, 2021, № 3, 19-22.

## МЕДИКАМЕНТОЗЕН ПОДХОД В ЛЕЧЕНИЕТО НА НАПРЕДНАЛ БАЗАЛНОКЛЕТЪЧЕН КАРЦИНОМ НА ПРИДАТЪЦИТЕ НА ОКОТО

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## THERAPEUTIC APPROACH IN THE TREATMENT OF ADVANCED BASAL CELL CARCINOMA OF OCULAR ADNEXA

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<b>Резюме:</b>	<p>Базалноклетъчният карцином (BCC) е един от най-разпространените малигнени кожни тумори в областта на окото и придатъците му. Развива се бавно и рядко метастазира. 80% от случаите се наблюдават в областта на главата и шията, 20% от които са в областта на клепачите. Гените, които е установено, че са свързани с BCC, са: PTCH1 и PTCH2. PTCH1 потиска трансмембрания Smoothened (SMO) протеин, докато PTCH2 е с неясна роля, но има доказателства за участието му в сигналния път на „Таралежа“ (Hedgehog). От всички случаи на BCC в околоочната област напредналият BCC представлява малък процент – около 1-10%. Групата на напредналият BCC се разделя на 2 подгрупи: локално авансирал (laBCC) и метастатичен (mBCC). Лечението на BCC на окото и придатъците му бива главно хирургично. В случаите, при които BCC прогресира до метастатичен mBCC (около 1%) или до локално авансирал laBCC (по-малко от 10%), пациентите се нуждаят не само от хирургичен подход, но и от медикаментозен и/или радиотерапия. Медикаменти за локална терапия са 5-fluorouracil, Imiquimod, а за системна – Vismodegib, Sonidegib, Itraconazole.</p>
<b>Ключови думи:</b>	базалноклетъчен карцином, тумори на клепачите, окулопластична хирургия
<b>Адрес за кореспонденция:</b>	<i>Д-р Георги Йорданов Балчев, e-mail: georgi@balchev.org</i>
<b>Abstract:</b>	<p>Basal Cell Carcinoma (BCC) is one of the well spread malignant skin cancers. Eighty percent of it occurs in the head-neck area, of which 20% in the eyelids. The major genes for BCC are: PTCH1 and PTCH2. PTCH1 suppresses trans-</p>

4. Murgova S, Balchev G. Ophthalmic manifestation after SARS-CoV-2 vaccination: a case series. **Journal of Ophthalmic Inflammation and Infection**, 2022, 12(1): Article number 20, pp. 1-4, ISSN: 1869-5760

Murgova and Balchev  
*Journal of Ophthalmic Inflammation and Infection* (2022) 12:20  
<https://doi.org/10.1186/s12348-022-00298-y>

Journal of Ophthalmic  
Inflammation and Infection

**BRIEF REPORT**

**Open Access**

# Ophthalmic manifestation after SARS-CoV-2 vaccination: a case series



Snezhana Murgova and Georgi Balchev\*

## Abstract

**Background:** The aim of this report is to describe ocular side effects in patients who received one of the two COVID-19 vaccines – Astra Zeneca or Pfizer-Biontech and to contribute to the common understanding of the COVID-19 vaccination process.

**Results:** Three patients reactivated underlying herpetic disease and developed uveitis and keratitis. Two of them were vaccinated with Pfizer and one was with Astra Zeneca. Two patients were vaccinated with Pfizer-Biontech and had thrombosis on the 8th and 10th days following the day of vaccination. The man has diagnosed with nonarteritic anterior ischemic optic neuropathy and the woman had a subarachnoid haemorrhage, ptosis of upper eyelid and deviated eyeball.

**Conclusion:** There is a causal relationship between vaccines and the underlying disease. For more details, further large studies are necessary.

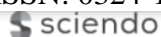
**Keywords:** COVID-19, Vaccination, Ophthalmology, Uveitis, Occlusion

## Background

In its quest to control the COVID-19 pandemic, humanity is undergoing the fastest and most widespread launch of vaccines in its own history [1]. For years, a link between vaccination and the occurrence of ophthalmic manifestations has been established. There is a

Oxford-AstraZeneca) [13, 16]. The immunological mechanism behind vaccines is extremely complex, which inevitably leads to unexpected side effects. Detailing and documenting these side effects is of particular interest to the current pandemic.

5. Valcheva KP, **Murgova SV**. Conservative Treatment for Congenital Nasolacrimal Duct Obstruction—Factors Affecting the Success. *Acta Medica Bulgarica*, 2021, 48(2): 25-28; ISSN: 0324-1750



10.2478/AMB-2021-0019

## CONSERVATIVE TREATMENT FOR CONGENITAL NASOLACRIMAL DUCT OBSTRUCTION – FACTORS AFFECTING THE SUCCESS

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**Abstract. Aim:** To examine the success rate and factors affecting the effect of conservative treatment for congenital nasolacrimal duct obstruction (CNLDO) in children. **Methodology:** A prospective study was made on 167 eyes of 131 patients with clinical signs of CNLDO. All of them were initially treated nonsurgically with Crigler massage. The curative effect of this management was evaluated on the basis of no history of watery eyes, negative regurgitation test, and dye disappearance test 0 or 1 grade. Exploratory analyses assessed whether baseline characteristics including age, gender and laterality were associated with the probability of CNLDO resolving without surgery. If the nonsurgical treatment failed, probing was done in the Eye Clinic in Pleven. **Results:** The conservative treatment for CNLDO with Crigler massage was successful in the majority of treated cases – in 115 out of 167 eyes with CNLDO (68,9%). The remaining 52 (31,1%) eyes were probed. Age ( $p = 0,001$ ) and laterality ( $p = 0,001$ ) were found to be associated with resolution of the clinical signs. **Conclusions:** Nonsurgical management for CNLDO was successful initial treatment in patients with this pathology. The Crigler massage was more effective in children up to 12 months of age with unilateral obstruction.

**Key words:** congenital nasolacrimal duct obstruction, conservative treatment, Crigler massage

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## Публикации и доклади, публикувани в нереферирани списания с научно рецензиране или в редактирани колективни токове

1. Valcheva, K., **S.V. Murgova** and Balabanov, Ch.B. Prophylactic Screening Program of Children's Vision in the City of Pleven, Bulgaria. *International Journal of Current Research and Academic Review*, 2016, 4(8): 22-29; ISSN: 2347-3215



## International Journal of Current Research and Academic Review

ISSN: 2347-3215 Volume 4 Number 8 (August-2016) pp. 22-29

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doi: <http://dx.doi.org/10.20546/ijcrar.2016.408.002>



### Prophylactic Screening Program of Children's Vision in the City of Pleven, Bulgaria

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#### KEYWORDS

Screening,  
children,  
visual acuity,  
refractive error,  
amblyopia.

#### A B S T R A C T

To determine the frequency of reduced vision and the type and degree of refraction abnormalities in children 3 to 6 years of age in preschool within the territory of Pleven. The children ages 3 to 6 that attend preschools in the territory of Pleven who have passed through the free preventative eye examination are 2332. The screening took place during October 2013 through January 2014. Every child had an observable decrease visual acuity were asked to return for a comprehensive exam at the Ophthalmology Clinic at the University Hospital Dr. Georgi Stanski in Pleven. As a result of the preventative exams of the 2332 responding and examining children, it can be determined that there is a deviation from normal vision within 236 (10.1%) children. All of them were directed for a specialized visual exam. Forty-four children (18.6%) showed up and induced a cycloplegia. Thirty-one children (13.1%) was written an optical correct. Within 18 (58.1%) of these children normal visual acuity was achieved with corrective lenses. However, within 12 (38.7%) children, due to amblyopia, the available corrective lenses did not have the same result. Early detection and treatment of refractive errors in children would lead to normal physical, neurological, and emotional development.

#### Introduction

2. Вълчева К., Мургова С., Балабанов Ч. Болнична епидемиология на пациенти с глаукома по материали на очна клиника – гр. Плевен. *Глаукоми*, 2017; 2(6): 21-25

## Болнична епидемиология на пациенти с глаукома – по материали на Очна клиника – гр. Плевен\*

Кр. Вълчева, С. Мургова, Ч. Балабанов

Очна клиника – МУ Плевен

### Hospital Epidemiology of patients with glaucoma – by materials in Eye clinic – Pleven

Valcheva Kr., Murgova S., Balabanov Ch.

Eye clinic-MU, Pleven



#### **Резюме:**

*Цел:* Да се направи сравнителен анализ на пациенти с глаукома, лекувани в Очна клиника – Плевен през 2010 и 2015 г.

*Материал и метод:* Направено е ретроспективно проучване на база история на заболяването на пациентите с водеща диагноза глаукома, лекувани в стационара на Очна клиника – гр. Плевен за 2010 г. и за 2015 г.

*Резултати:* За изследвания период са преминали общо 163 пациенти, от които за 2010 г. – 89 и за 2015 г. – 74 пациенти. Разпределението по пол за 2010 г. е 40 мъже и 49 жени, а за 2015 г. – 38 мъже и 36 жени. Средната възраст на пациентите за 2010 г. е 71.6 г., а за 2015 г. – 71.3 г. Средната продължителност на болничния престой за 2010 г. е 6.73 дни (от 2 до 18 дни), а за 2015 г. – 1.64 дни.

През 2010 г. 39 са консервативно лекувани, а 50 са хирургично обработени, а за 2015 г. – хирургично обработени са 36 човека (38 очи), а 38 са лекувани консервативно.

*Заключение:* Направеното изследване показва, че се наблюдава тенденция в намаляване на броя на хоспитализираните пациенти и значително скъсяване на болничния престой.

**Ключови думи:** глаукома, епидемиология

#### **Summary:**

*Purpose:* To assess the clinical characteristics of glaucoma patients in eye clinic – Pleven for the years 2010 and 2015.

*Material and method:* This was a retrospective hospital – based study. The study included patients who had a diagnosis of glaucoma and treated in the eye clinic for years – 2010 and 2015.

*Results:* A total of 163 glaucoma patients were identified for the years 2010 and 2015. For 2010 the women were 49, and men – 40, for 2015 – 36 women and 38 men. The average age of patients was 71.6 years for 2010 and 71.3 years for 2015. The mean duration of hospital staying was 6.73 days for 2010 and 1.64 days for 2015. 39 patients had conservative treatment, and 50 were surgically treated for 2010, and for 2015 – 36 patients were surgically treated and 38 had conservative treatment.

*Conclusion:* The research shows that there is a tendency to reduce the number of hospitalized patients and significantly shorter hospital stay

**Keywords:** glaucoma, epidemiology

3. В. Иванчева, С. Мургова, Г. Балчев, К. Вълчева. *Едностраниен ли е псевдоексфолиативният синдром? In vivo анализ на ретинната микроструктура.* Глаукоми, 2019; 2(8): 17-21

## Едностраниен ли е псевдоексфолиативният синдром? In vivo анализ на ретинната микроструктура

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### Pseudoexfoliation Syndrome: is it unilateral? Analysis of retinal microstructure in vivo

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#### Резюме

**Цел:** Да се направи оценка на ретинната микроструктура на пациенти с клинично унизатерален псевдоексфолиативен синдром (ПЕС), с помощта на оптична кохерентна томография (ОСТ).

**Материали и методи:** В проучването са включени двете очи на двадесет пациенти с клинично едностраниен псевдоексфолиативен синдром, и двадесет прохвално подобрени очи на 20 здрави контроли субекти. Изследваните очи са разделени в три групи. В група А са очите с клинично видим псевдоексфолиативен материал ( $n = 20$ ), група Б включва контралатералните очи без клинично идентифицируеми псевдоексфолиации ( $n = 20$ ), в група В са здравите контролни очи ( $n = 20$ ). Измерена е дебелината на перипапиларния ретинен неврофибрилерен слой (RNFL) и макулните параметри (mRNFL, GCL+, GCL++ , macular volume) с 3D OCT Topcon 2000 FA+.

**Резултати:** Дебелината на перипапиларния RNFL е със значими разлики при изследваните групи, като RNFL е по-тънък в очите с псевдоексфолиации. Разлики се откриват и в макулните параметри, като стойностите са по-ниски в група А и Б в сравнение с контролната група В.

**Изводи:** Псевдоексфолиативният синдром е свързан с по-тънък ретинен неврофибрилерен слой и по-ниски стойности на макулните параметри и в двете очи на пациентите с клинично едностраниен ПЕС, дори и при нормални стойности на вътреочното налягане. Необходими са по-задълбочени проучвания, за да се оцени значимостта на псевдоексфолиацията като ендемичен самостоятелен рисков фактор за промени в ретинната микроструктура.

**Ключови думи:** псевдоексфолиативен синдром, ретинна микроструктура, оптична кохерентна томография

#### Abstract

**Aim:** To evaluate retinal microstructural changes in clinically unilateral pseudoexfoliation syndrome (PEX) using optical coherence tomography.

**Materials and methods:** Eyes of 20 patients with clinically unilateral PEX and 20 control subjects were divided into three groups. Group A included eyes with clinically visible pseudoexfoliation material ( $n = 20$ ); group B included fellow eyes ( $n = 20$ ); group C consisted of healthy control eyes ( $n = 20$ ). Peripapillary RNFL thickness and measurement of macular parameters (mRNFL, GCL+, GCL++, macular volume) by 3D OCT Topcon 2000 FA+ were performed on all subjects.

**Results:** Peripapillary RNFL thickness was significantly different between groups and it was thinner in PEX than healthy subjects. Macular parameters were also significantly different between groups. GCC parameters were significantly thinner both in PEX eyes and in fellow eye than in healthy subjects.

**Conclusion:** Even in eyes with normal IOP, PEX is related with thinner pRNFL and macular parameters in both eyes of subjects with unilateral PEX even in eye with good IOP control. Further studies are necessary to evaluate whether pseudoexfoliation itself could play a role as an independent risk factor for retinal microstructural changes.

**Keywords:** pseudoexfoliation syndrome, retinal microstructure, optical coherence tomography.



4. G. Balchev, Ch. Balabanov, S. Murgova. Neurofibromatosis – diagnostic challenges. Български офталмологичен преглед, 2020, 1(64): 46-49; ISSN: 1311-0624

## НЕВРОФИБРОМАТОЗА, ДИАГНОСТИЧНИ ПРЕДИЗВИКАТЕЛСТВА

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**Резюме.** Неврофиброматозата е рядко заболяване и в класическия си тип не е трудна за диагноза, но когато клиничната находка не е типична, представлява диагностичен проблем. **Цел** – да се представи клиничен случай на неврофиброматоза, който е представлявал диагностичен проблем поради нетипичната си изява. Описано е едногодишно проследяване и лечение на 1 пациент с неврофиброматоза в Очна клиника, УМБАЛ – Плевен. Първоначално е лекуван за кератит според оплакванията и клиничната картина. При следващо посещение – оплаквания от двойни образи, екзофталам. От образната диагностика – туморно образувание в орбита. Биопсиран 3-кратно поради несъответствие на клиничната картина с находката. Приложена стероидна терапия при първото изостряне на общата симптоматика с добро повлияване, което допълнително замъглява диагнозата. Частична резекция на туморни маси на 2-ри по време на 2-рата биопсия. **Резултати** – известно повлияване от противовъзпалителна терапия в началото на изявата на заболяването при все още неясна диагноза. По-обширната биопсия допринесе за намаляване на двойните образи, без съществена редукция на екзофталама. Диагнозата е поставена след 3-та кожна биопсия. **Заключение** – рядко заболяване, изискващо мултидисциплинарен подход. Налага се допълнително проследяване на прогресията на орбитните фиброми с оглед последваща орбитална хирургия и/или лъче- или химиотерапия.

**Ключови думи:** неврофиброматоза, тумор, орбита, екзофталам

## NEUROFIBROMATOSIS – DIAGNOSTIC CHALLENGES

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**Abstract.** Neurofibromatosis is a rare disease and in its classical presentation is not difficult to diagnose, but when the clinical finding is not typical it becomes a diagnostic problem. **Aim:** to present a clinical case of neurofibromatosis that was a diagnostic problem because of its atypical manifestation. Clinical case description: one-year follow-up and treatment of a patient with neurofibromatosis at the UMHB Pleven Eye Clinic. The patient was treated initially for keratitis according to the clinical presentation and patient's complaints. During the second visit complaints of double images and exophthalmos were reported. CAT showed tumor formation in the orbit. Trifold biopsy was made due to inconsistency of the clinical picture with the finding. Steroid therapy was applied at the first visit showing good response, and of course clouded the diagnosis. Partial resection of tumor masses was made during the 2nd visit and 2nd biopsy. **Results** showed some response to anti-inflammatory therapy and yet unclear diagnosis. A larger biopsy contributed to the reduction of double images without significant reduction in exophthalmos. The diagnosis was made after the 3rd skin biopsy. **Conclusion:** a rare disease requiring a multidisciplinary approach. Further monitoring of the progression of orbital fibromas and/or subsequent orbital surgery and/or radiation or chemotherapy is required.

**Key words:** neurofibromatosis, tumor, orbit, exophthalmos

5. П. Чумпалова-Тумбева, К. Стойчев, М. Стоименова-Попова, С. Мургова, Г. Балчев, З. Гей, М. Игнатова. Ниво на тревожност и депресия сред пациенти с глаукома, хоспитализирани в Клиника по очни болести в Плевен за период от една година. *Глаукоми*, 2021; 1(10): 27-30

## Ниво на тревожност и депресия сред пациенти с глаукома, хоспитализирани в Клиника по очни болести в Плевен за период от една година

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Assessment of anxiety and depression in glaucoma patients hospitalized in the Clinic of Ophthalmology in Pleven for a period of one year

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### Резюме

**Цел:** Да се определи честотата на депресия и тревожност сред пациенти с глаукома, хоспитализирани в Клиника по очни болести към УМБАЛ „Д-р Георги Странски“ ЕАД – Плевен за периода м. декември 2019 г. до м. декември 2020 г.

**Материали и методи:** Проведахме проспективно едногодишно проучване сред хоспитализирани пациенти в Клиника по очни болести с диагноза глаукома и suspectна глаукома. Всеки един от пациентите беше помолен да попълни Самооценъчна скала за оценка на тревожност на Цунг, Самооценъчна скала за депресия на Цунг. Беше обобщена информацията за глаукомата и провежданото медикаментозно лечение след преглед от офталмолог.

**Резултати:** Изследвахме общо 62 пациенти, от тях 69% жени и 31% мъже. След обработката на самооценъчните скали за тревожност се установи, че при 53% има повишена тревожност. Резултатите от самооценъчната скала за депресия показват, че 48% от изследваните пациенти са с повишен депресивитет.

**Заключение:** Резултатите от нашето проучване показват, че нивото на тревожност и депресия при пациенти с глаукома са по-високи от тези в общата популация. За да се постигне по-добро качество на живот на тези пациенти, трябва да се въведе мултидисциплинарен подход при лечението им.

**Ключови думи:** глаукома, тревожност, депресия

### Abstract

**Aim.** Assessment of anxiety and depression among glaucoma patients hospitalized in the Clinic of Ophthalmology at the University Hospital „Dr. Georgi Stranski“ EAD – Pleven for the period December 2019 to December 2020.

**Materials and methods.** We conducted a prospective one-year study among hospitalized patients at the Clinic of Ophthalmology with a diagnosis of glaucoma and suspected glaucoma. Each patient was asked to complete a Zung Anxiety Self-Assessment Scale, a Zung Depression Self-Assessment Scale. Information on glaucoma and ongoing medical treatment was summarized after examination by an ophthalmologist.

**Results.** A total of 62 patients, of whom 69% were women and 31% were men. After processing the self-assessment anxiety scales, it was found that 53% had increased anxiety. The results of the self-assessment scale for depression show that 48% of the studied patients have increased depression.

**Conclusion:** The results of our study show that the levels of anxiety and depression in glaucoma patients are higher than those in the general population. In order to improve the quality of life of these patients a multidisciplinary approach in their treatment should be introduced.

**Key words:** Glaucoma, anxiety, depression

6. Йорданов Г., Мургова С, Йорданов Й. Херпес симплекс вирус и ендотелът. Български офталмологичен преглед, 2016, (1): 16-22; ISSN: 1311-0624

## ХЕРПЕС СИМПЛЕКС ВИРУС И ЕНДОТЕЛЪТ

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### Herpes Simplex Virus and Endothelium

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#### Резюме

Човекът е единственият естествен гостоприемник на Херпес Симплекс Вирус (ХСВ). Инфекцията с него води до разнообразни по форма, проявление и локализация очни изменения. Причинява рецидивиращи роговични инфекции -херпетичен кератит и кератоувент, чийто усложнения са причина за намалено зрение.

Цел: Да представим проява на локализирана роговична ендотелна декомпенсация, стромален оток, нови съдове и намалено зрение, при пациент с рецидивиращ ХСК (>4 рецидива за 6 г.) след рутинна, некомплицирана факоемулсификация.

**Материал и методи:** Представяме мъж на 53 г., с анамнеза за множество рецидиви на херпетичен стромален кератит, започнали преди 7 години и трайно намалено зрение в дясното око, поради цикатрикс и комплицирана катаракта. Роговичните изменения са документирани с фотография на преден очен сегмент, топография (Atlas 9000, Carl Zeis Meditec), анализатор на вълновия фронт (WASCA, Carl Zeis Meditec) и ендотелен анализ (Pentacam, Oculus).

**Резултати:** Анализът на топографията, вълновия фронт, ендотелната карта и съоставката им с локализацията на процеса на фотографиите на предния очен сегмент ни дават обяснение за механизма на намалено зрение в очи с рецидивиращи стромални кератити.

**Заклучение:** Рецидивиращият ХСК може да бъде предпоставка за локализирана ендотелна декомпенсация, увеличена корнеална дебелина (в активната фаза), изразени цикатрициални промени при пореден пристъп, неоваскуларизация на роговицата след катарактална хирургия - всички те водещи до трайно намалено зрение.

Считаме, че разбиранята ни за кратка медикаментозна профилактика при херпетичен стромален кератит ( 800 мг Aciclovir дневно в периода след остро възпаление) се нуждаят от съществена ревизия. Предвид отдалечеността във времето - 6 месеца след интервенцията, вероятността вътреочната хирургия да е отключващ фактор за поредния рецидив на HSV кератит е минимална.

**Ключови думи:** Роговица, кератит, Херпес симплекс вирус (ХСВ), рецидив, профилактика на рецидиви.

7. Киркова Р., Мургова С., Танев И. „Макулна дегенерация, свързана с възрастта – нови диагностични възможности“, GP medic – 2022; (2): 50-52 ISSN 2603-4719

## Макулна дегенерация, свързана с възрастта – нови диагностични възможности

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Макулната дегенерация, свързана с възрастта (МДСВ), е прогресиращо, дегенеративно заболяване, засягащо централната ретина. Заболяването е сред водещите причини за слепота в световен мащаб. МДСВ се дели на „суха“ и „влажна“ форма – и двете водят до невъзвратима загуба на зрение, силно нарушаваща качеството на живот на пациентите. От 2007 г. насам „влажната“ форма на заболяването успешно се лекува и контролира с интравитреално приложение на анти-VEGF препарати. Поради огромната социална значимост на заболяването е важно общопрактикуващите лекари да насочват възрастното население за редовни офталмологични прегледи. Целта на настоящата статия е представяне на нов, неинвазивен и минимално щадящ пациентите метод за диагностика на МДСВ – оптична кохерентна томография-ангиография (ОСТ-А)

**Ключови думи:** МДСВ, анти-VEGF, ОСТ-ангиография

8. Мургова С, Стоянов Л, Лалев М, Вълчева К, Ангелов И, Йорданов Й. Перiorбитална дирофилариоза – два случая в Плевенския регион. HIV/AIDS съвременни проблеми. Екзотични инфекциозни и паразитни заболявания. стр. 25-30; ISBN 978-619-237-044-2

## Периорбитална диروفилариоза – два случая в Плевенски регион

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Дирофиляриозата е трансмисивно заболяване причинено от нишковидни нематоди от род *Dirofilaria*. С най-голямо медицинско значение са опаразитяванията с *Dirofilaria immitis* и *Dirofilaria repens*. Вектори са различни видове комари. *D. repens* обичайно паразитира в подкожието на кучето и други месоядни животни, а човек е случаен гостоприемник и не е източник на инвазия. В човека паразита не може да се развие до имагиналната си форма, мигрира и се открива с различна локализация – подкожие, периорбитално, субконюнктивално, в белите дробове и др.

През последните години интересът към заразяването на човека с *D. repens* в България нарасна, поради увеличени брой регистрирани пациенти. Съобщаваме за два нови случая на периорбитална диروفилариоза, лекувани в Очна клиника на Университетска болница – Плевен, за период от 5 месеца.

Паразитите са екстрахирани от назалната част на долен и горен клепач. Хистологичните изследвания показаха наличие на надлъжни и напречни набраздявания на тегумента, което е видов белег на *D. repens*.

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**Ключови думи:** Дирофиляриоза, *Dirofilaria Repens*

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