

Plexx[®] Plus
Made in Italy



Experience new treatments modality in **ophthalmology**

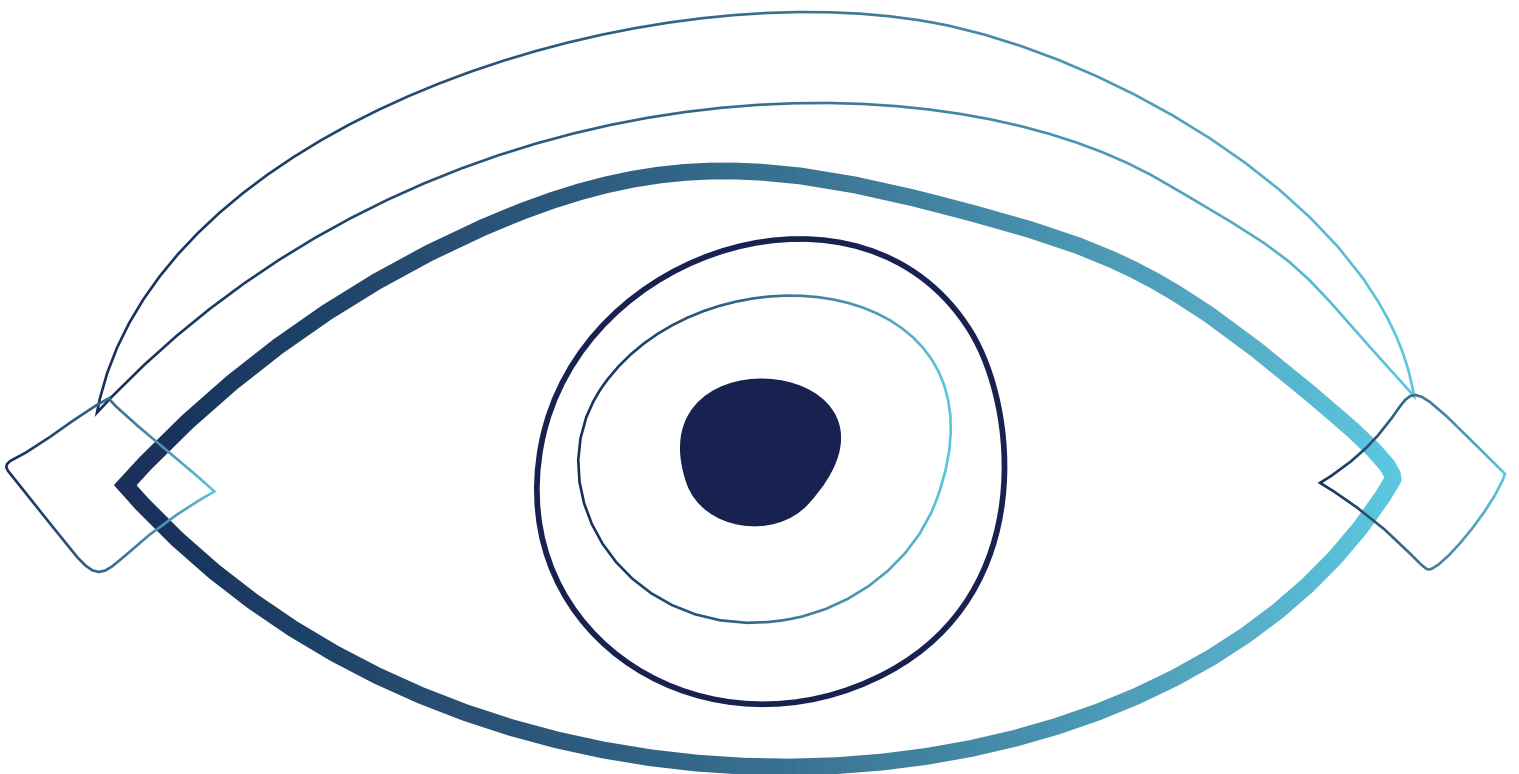
G|M|V

Plexr® Plus

After laser, Ultrasound and IPL, **Plexr® comes as a new and less invasive modality to the ophthalmic world.**

GMV is proud to be the first and pioneer manufacturer of the unique Plasma technology used in the field of ophthalmology.

Plexr® is a patented technology and a registered trademark, currently sold in more than 60 countries all around the world.

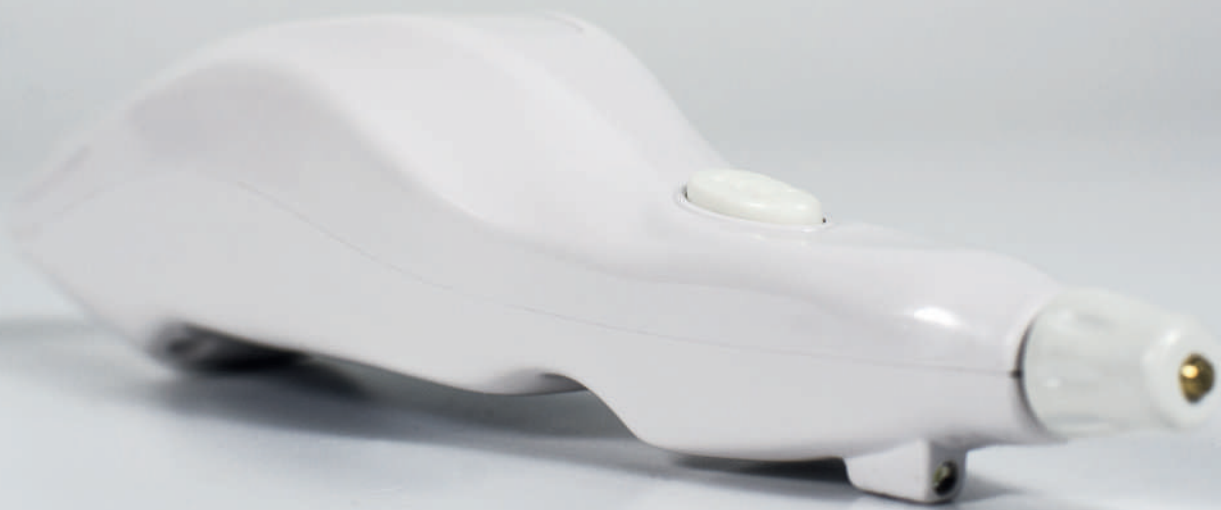


- **WIRELESS HANDPIECES** with three different energies
- **TOUCH SCREEN DISPLAY** with video tutorial
- **UNLIMITED SOFTWARE** updates through USB



CE0051

- **DIFFERENTS** energies for specific treatments
- All the technological **FUTURE IN YOUR HANDS**





PRINCIPLE OF ACTION

Atoms are the elements of molecules; when the interaction among molecules is high, they result in a solid, able to maintain shape a volume until an extremely high strength can break such interaction. When the interaction is weak among molecules, this can result respectively in a liquid, maintaining volume but losing shape, or in a gas, which maintains no shape or volume, but occupies all the available space. When an external energy can split the molecules of the gas in positive and negative parts, we reached the fourth state of the matter: **plasma**. When activated, **Plexr®** ionizes the air between the tip of the device and the human body by generating an appropriate potential difference. The electric breakdown of the air is around 3000 V per mm, depending from some factors such as humidity and bodies the physical phenomenon is generated by. Using the Plexr / Plexr Plus signal parameters, around half millimetre is the needed distance for the ionization of the air atoms. No plasma is generated when the probe is in direct contact with the tissue or too distant from it.

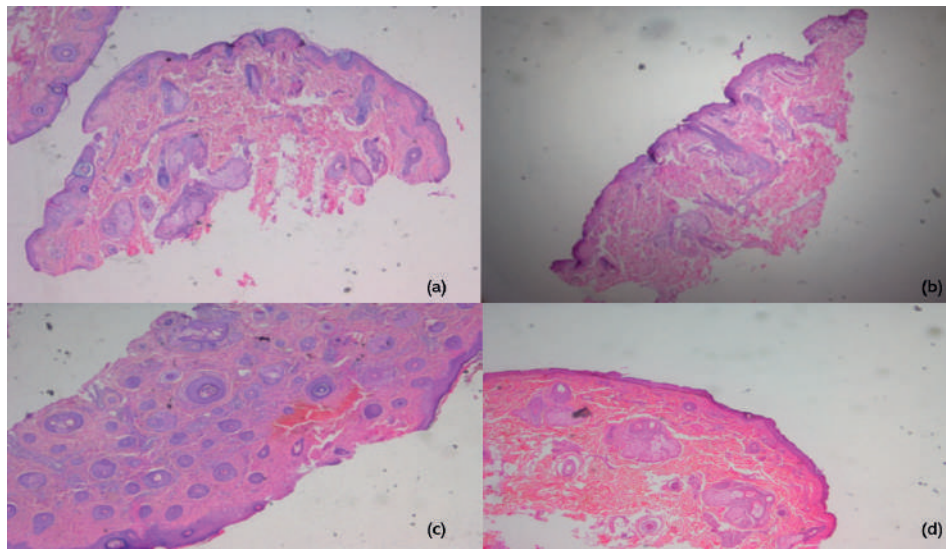
SCIENTIFIC RATIONALE

Plasma as the fourth state of matter has been used in various industries more than 100 years ago. Plasma enters the medical field more than two decades ago, but we have seen numerous applications in the treatment of various diseases. One of the newest plasma applications is its entry into the field of ophthalmology, which GMV is proud to have used **Plexr® as the first plasma generator to treat more than ten ocular diseases.**



SAFETY AND EFFICACY AT FIRST

The plasma generation is similar to a micro lightning bolt that acts directly only on the epidermis. When it acts on the skin, Plexr® sublimates corneocytes (it is a direct passage from solid state to gas state). Before sublimating, the corneocytes transmit a selective estimated quantity of energy that reaches the right deepness of dermis, without irradiation (laser/light) or electric shock (radioscalpel/current). No any form of energy is delivered directly from the device to the deeper tissue, no eddy currents are generated.

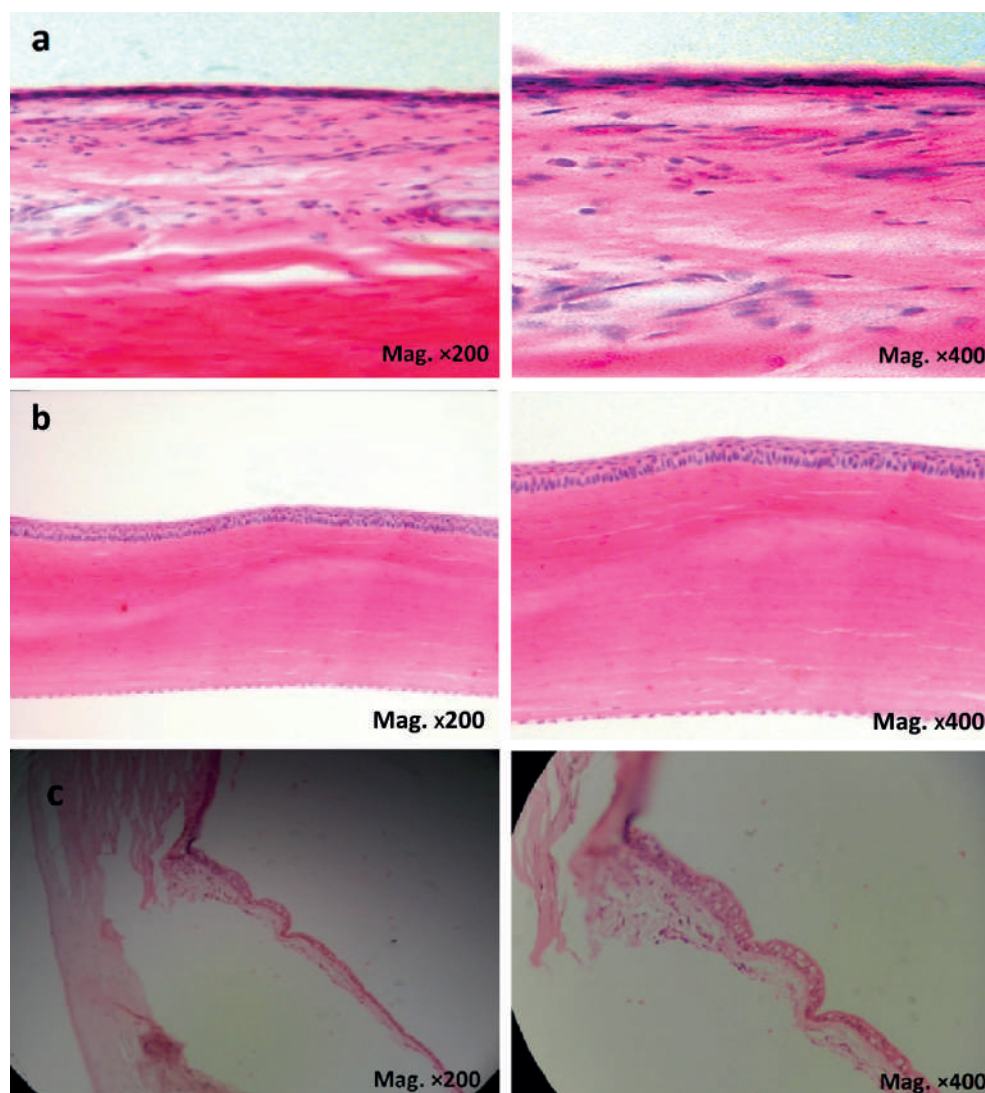


Gloustianou et al, 2016. Presentation Of Old And New Histological Results After Plasma Exeresis (Plexr) Application (Regeneration Of The Skin Tissue With Collagen III). Histology of PLEXR with (H-E). a) Normal skin before Plexr application. The thickness of dermis and underlying subcutaneous tissue was measured at 1635,579 μm . b) Skin immediately after PLEXR application. Loss of the epidermis with preservation of the basement membrane. In the underlying subepithelial dermis a band of homogenized collagen of considerable thickness is observed. c) Skin (a week later). Central gap with hemorrhage and adjacent areas of reepithelialization. d) Skin (a month later). Results demonstrated that there is complete reepithelialization of the epidermis (Figure 9). Absence of subepithelial band of homogenized collagen and dermal thickness including underlying subcutaneous tissue is increased at 2316,518 μm (measured with IMAGE ANALYSIS OLYMPUS).





It is important to note that the safety of plasma treatment with Plexr® at ocular surface has been demonstrated in an animal study and this study was published in the Journal of Clinical Plasma Medicine. This patented technology offers an alternative to invasive surgical procedures, reducing recovery time and any complications that can arise before and after surgery and so is as an innovative development in aesthetic medicine and rejuvenating treatments by utilizing Plexr®. In addition, in this technology heat is not spreading to the surrounding area, meaning it is perfect to operate on areas (such as eyelids), that are not suitable for other devices like radiofrequency scalpels or lasers (Nejat et al, 2019).



Nejat et al. 2019, Safety Evaluation of the Plasma on Ocular Surface Tissue: an Animal Study and Histopathological Findings. Effects of the plasma on histological changes (H & E staining) in the conjunctival (a), cornea (b), and limbus (c) tissues after one month exposure to plasma. a) No prominent pathologic findings were evident in conjunctiva after one month; b) H & E sections of the cornea shown repaired corneal epithelial lining without inflammation; c) Similar to group B, H & E sections of the limbus show tissue with regenerated epithelial cell hlining, with cytoplasmic vacuolization.





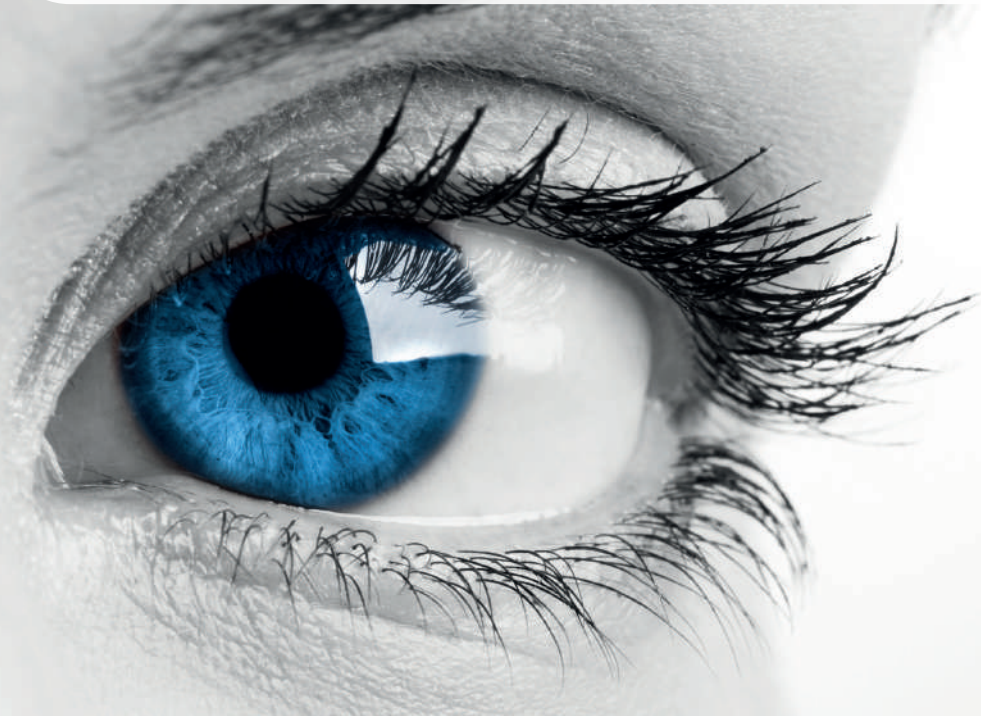
More than ten ocular diseases

Currently Plexr® is used in treatment of following ophthalmic disorders:

- Dermoid and Lipodermoid
- Conjunctivochalasis
- Chalazion
- Conjunctival Cyst
- Conjunctival Nevous
- Punctal Occlusion (dry eye disease)
- Conjunctival Concreations
- Entropion
- Ectropion
- Pseudophakic Bullous Keratopathy
- Pterygium Removal
- Pterygium Removal with Conjunctival Autograft
- Sutureless AMT fusion
- Lid margin cyst and tumor
- Xanthlasma
- Congenital unilateral Ptosis

This innovative project, called "PANIS Method", has been developed by Iranian Vision Research Center. The aim is to introduce a new treatment method, working on precise guide line for best and most effective office-based technique in applying plasma for treatment of a number of ocular surface disorders.

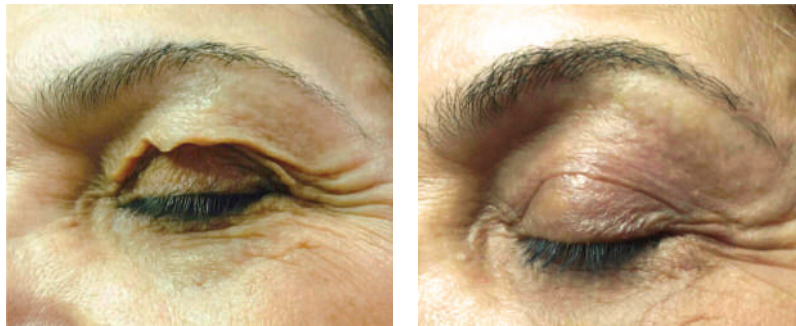
*PANIS is abbreviation of: Plasma Assisted Non Invasive Surgery.
(Panis in iranian language means SWEET and is iranian girl name).*



WHY PLEXR® IS UNIQUE

Superiority of Plexr®, compared to traditional methods, can be summarized in the following points:

- Versatility: it can work completely safely and effectively both on skin and on ocular surface, as scientifically proven and published on international literature
- Do not need to take the patient to the operating room (completely office-based)
- There is no need of anesthesia or stitches
- It costs less
- The global result is safer for the patients



Non surgical Blepharoplasty: one of the gold standard skin treatment with Plexr®

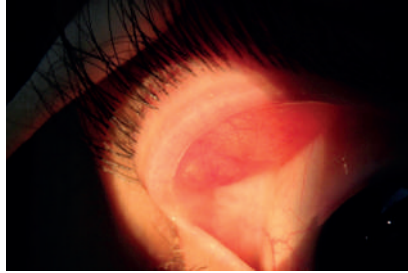
SCIENTIFIC LITERATURE

- Nejat F, Jadidi K, Eghtedari S, Nabavi NS. Sublimation of Benign Conjunctival Nevi Using Plasma-Assisted Noninvasive Surgery: A Clinical Case Series. Iran J Med Sci 2023
- Nejat F, Jadidi K, Amoli FA, Bagheri S, Aghamollaei H, Nejat MA, Nabavi NS, Eghtedari S. Safety evaluation of the atmospheric low-temperature plasma (ALTP) on the conjunctiva: an animal study and histopathological findings; 6-month follow-up. BMC Ophthalmol. 2021
- Nejat F, Jadidi K, Adnani SY, Nabavi NS, Nejat MA. A Novel Approach to Treatment of Conjunctival Cyst Ablation Using Atmospheric Low-Temperature Plasma. Clin Ophthalmol. 2020
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- Nejat F, Nabavi NS, Nejat MA, Aghamollaei H, Jadidi K. Safety evaluation of the plasma on ocular surface tissue: An animal study and histopathological findings. Clinical Plasma Medicine, 14. 2019
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- Gloustanou G, Sifaki M, Tsioumas SG, Vlachodimitropoulos D, Scarano A. Presentation Of Old And New Histological Results After Plasma Exeresis (Plexr) Application (Regeneration Of The Skin Tissue With Collagen III). Pinnacle Medicine & Medical Sciences. 2016

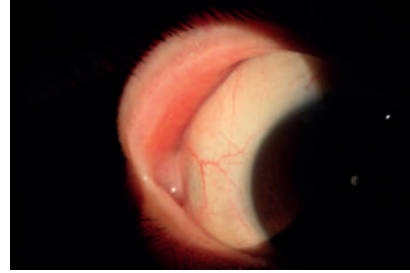
Read all the articles about Plexr® in ophtalmology: <https://pubmed.ncbi.nlm.nih.gov>

Results. PANIS method with Plexr®

Chalazion

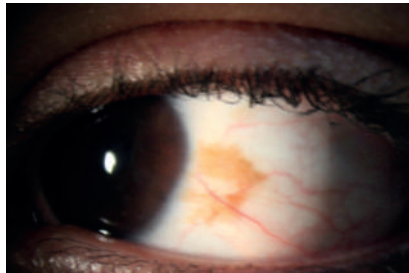


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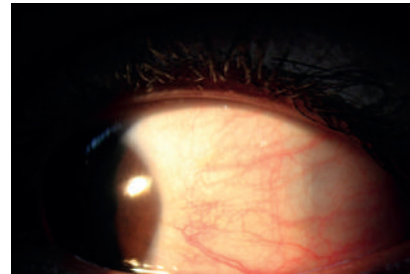


After

Conjunctival nevus

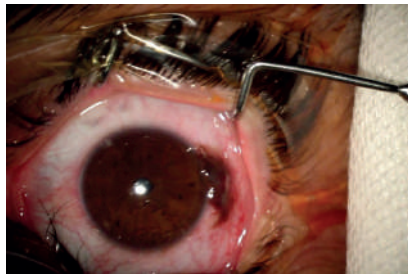


Before



After

Conjunctival nevus with AMT



Before

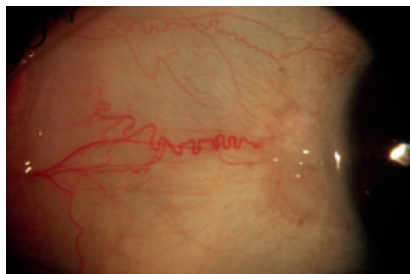


After

Pinguecula



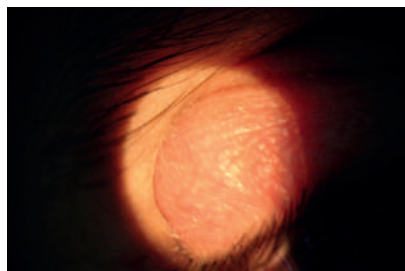
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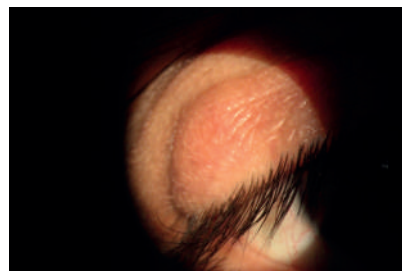
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Results. PANIS method with Plexr®

Chalazion

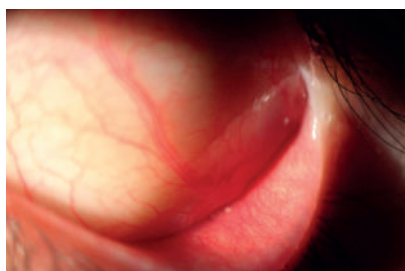


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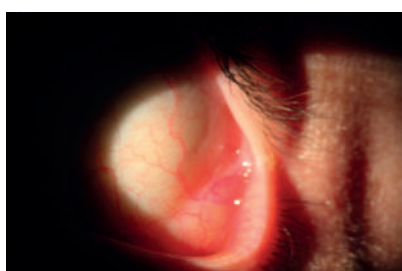


After

Conjunctival Concretion

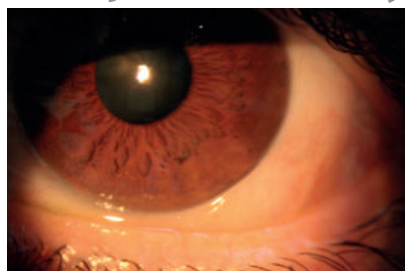


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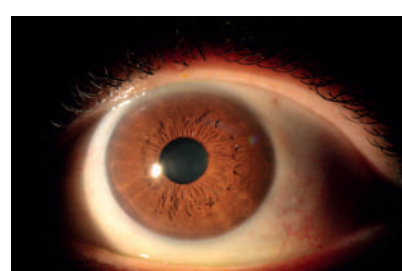


After

Conjunctival Cyst

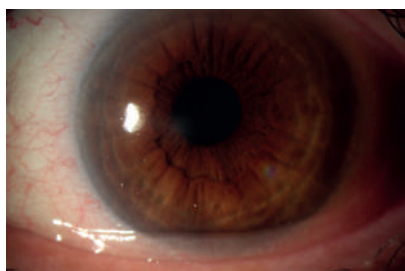


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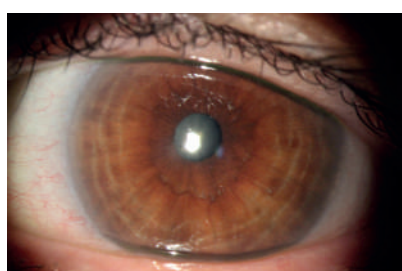


After

Conjunctivo chalasis



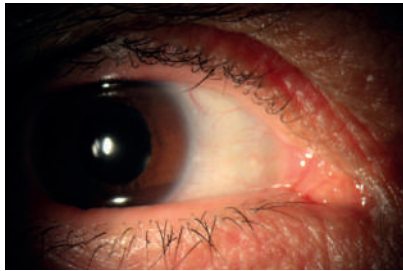
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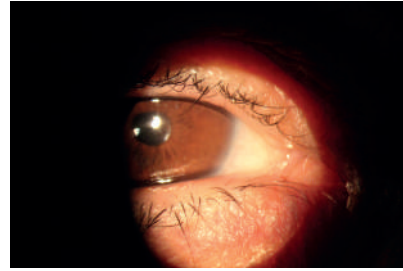
After

Results. PANIS method with Plexr®

Ectropion

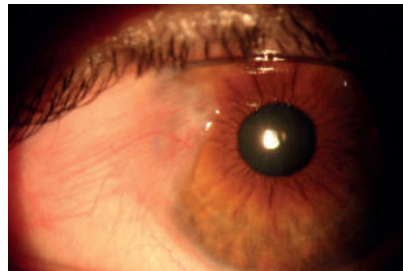


Before



After

Pterygium

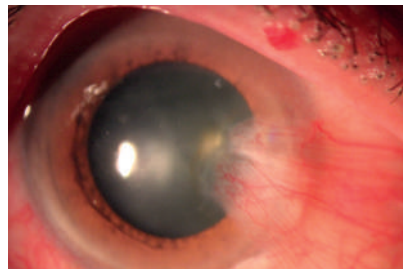


Before



After

Pterygium



Before

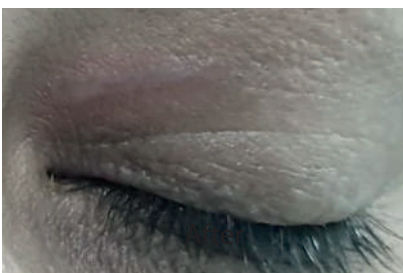


After

Xanthelasma



Before



After



www.gruppogmv.com

