SmartXIDE2 SmartXIDE Touch

MEDICINE AND AESTHETICS

CO_2 Laser Treatment Periocular Area

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Introduction

The evolution of CO_2 laser systems has made it possible to develop new surgical methods, and thereby increase the surgical laser's range of applications. The extreme precision of these new systems allows numerous dermatological lesions to be vaporized even in particularly sensitive locations such as the periocular area, the outer ear, mucous and pseudomucous membranes.

New goals can now be achieved following the introduction of innovative CO_2 laser sources with power levels and pulse management options that enable complete and flexible control of ablation depth, while reducing thermal damage to surrounding tissue.

SmartXide Touch and SmartXide²

The versatility of these systems is due to the innovative **Pulse Shape Design** technology that introduces new pulse shapes, which have never before been used in laser surgery. The most suitable pulse type, energy level and duration can be customized, which means that tissue can be vaporized with extreme precision. In addition, the thermal effect is perfectly modulated for the action required and treatment tolerability, while combining efficacy and side effects low-risk.
The new generation of laser source, which represent the driving force of this novel technology, along with a flexible software management, enables refined and clean laser emission.

The new pulses provide greater choice of ablation and quicker recovery times. This in turn leads to appreciably better pain management and side effects.

With this technology, diversifying the choice of pulse can trigger various biological effects on tissue, stimulating the dermis to produce new collagen, naturally regenerating tissue texture or increasing skin firmness or softness.

S-Pulse mode acts more selectively on the papillary dermis with a rounder ablation shape, coagulating the surrounding tissues in a similar way to the previous SmartXide systems.

By contrast, **D-Pulse** mode has a significant in-depth effect on the reticular dermis, causing greater shrinkage and more evident coagulation.

Additionally, a third emission mode called **H-Pulse**, is recommended especially when using a freehand handpiece to vaporize skin lesions.
This mode has higher transmission power than S-Pulse and D-Pulse, which brings into play two further effects on tissue, depending on ~~the~~ therapeutic needs:

1. It can be used for a cooler, more delicate ablation, thanks to its extremely low emission times;
2. At the same emission times as the other types of pulse, a greater ablative action is produce.

The H-Pulse can achieve similar results to those of the Er:YAG laser, while retaining the features of the CO_2 laser wavelength with its high coagulation ability.

In particular, we observe a significant attenuation of the heat produced by the pulse, with high efficiency ablation. This is the right setting for performing extremely superficial vaporizations, which have reduced both healing times and the risk of side effects such as dyschromia or atrophy.

SmartXide² and SmartXide Touch enable the operator to visually assess the level reached, using “colour markers”, on a continuous basis (either vaporizing only the epidermis or extending the thermal effect to papillary or reticular dermis). This helps to correctly determine clinical end-point.

Both systems allow the operator to induce more precise and effective thermal action, targeted at the lesion while sparing adjacent perilesional areas, thus ensuring optimum re-epithelialization.

In addition, these lasers are particularly suitable for treating mucous and pseudomucous areas (oral cavity, lips, anal area, male and female genitals), due both to the thinner stratum corneum, and to the higher water content of these areas.

Advantages of CO_2 laser surgery

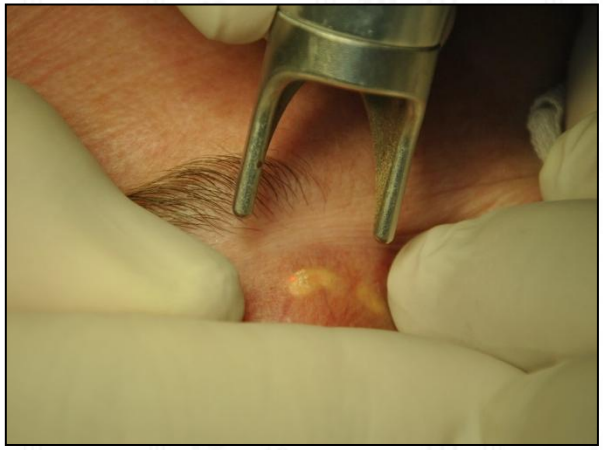
- Versatility
- Effectiveness
- Can treat multiple lesions in the same session
- No-contact surgery
- Visual feedback
- Haemostasis (vessels ø < 0.5 mm)
- Shrinkage
- Reduced postoperative oedema
- Slight pain (low operating parameters)
- Reduction in the number of local anaesthetics
- Fast re-epithelialization (7-15 days)
- Good aesthetic and functional results.

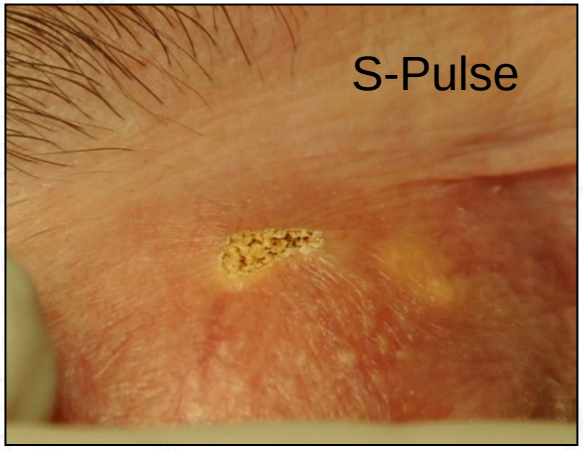
Conclusions

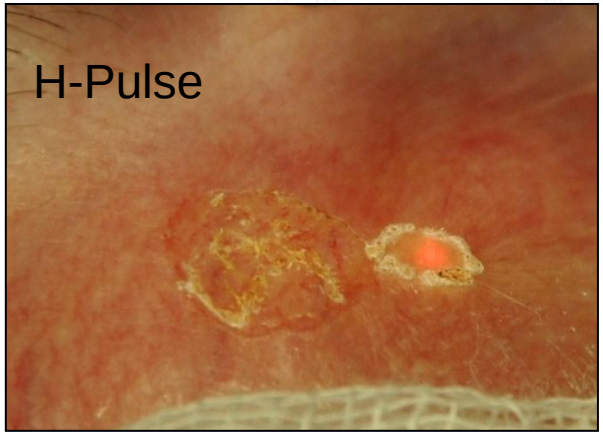
Surgical CO_2 laser was introduced as a tool for vaporizing and removing tissue, and remains the most versatile laser system used in dermatology.

The increasingly sophisticated pulse management of SmartXide² and SmartXideTouch systems optimizes heat transfer to the tissue, while minimizing side effects, precursors of unwanted outcomes (scarring and dyschromia).

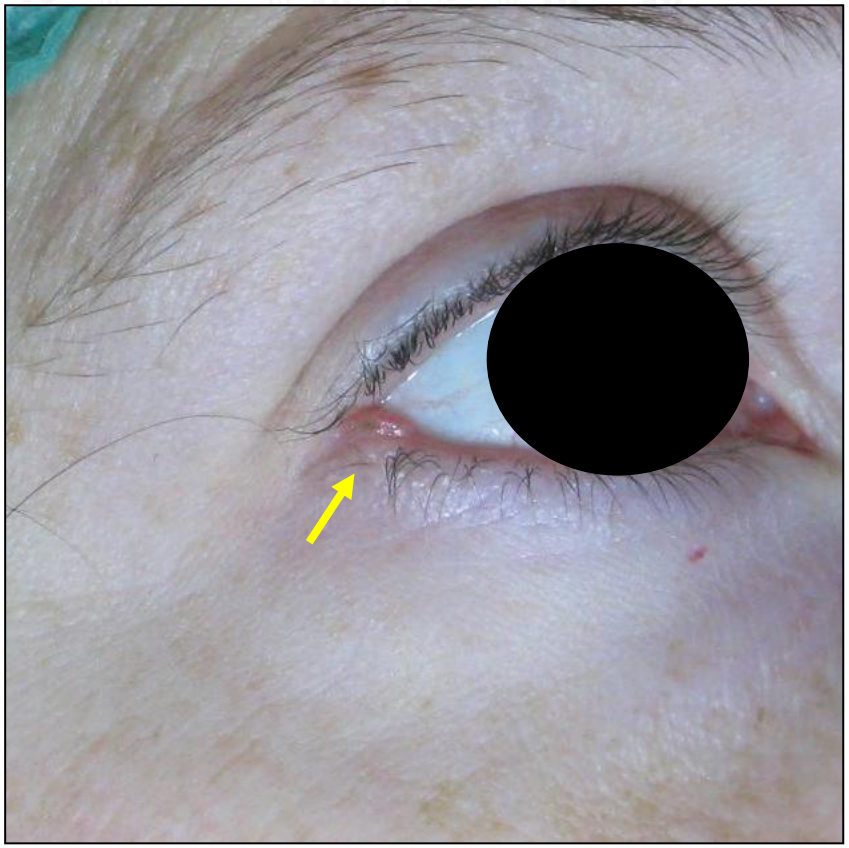
Procedure







Fibroma



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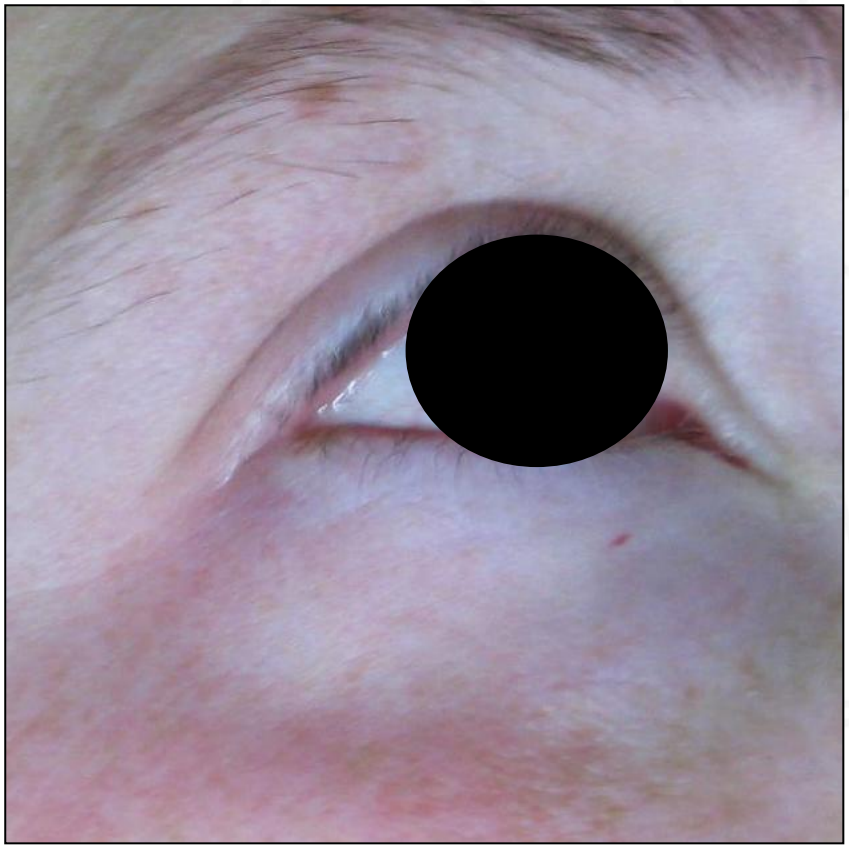
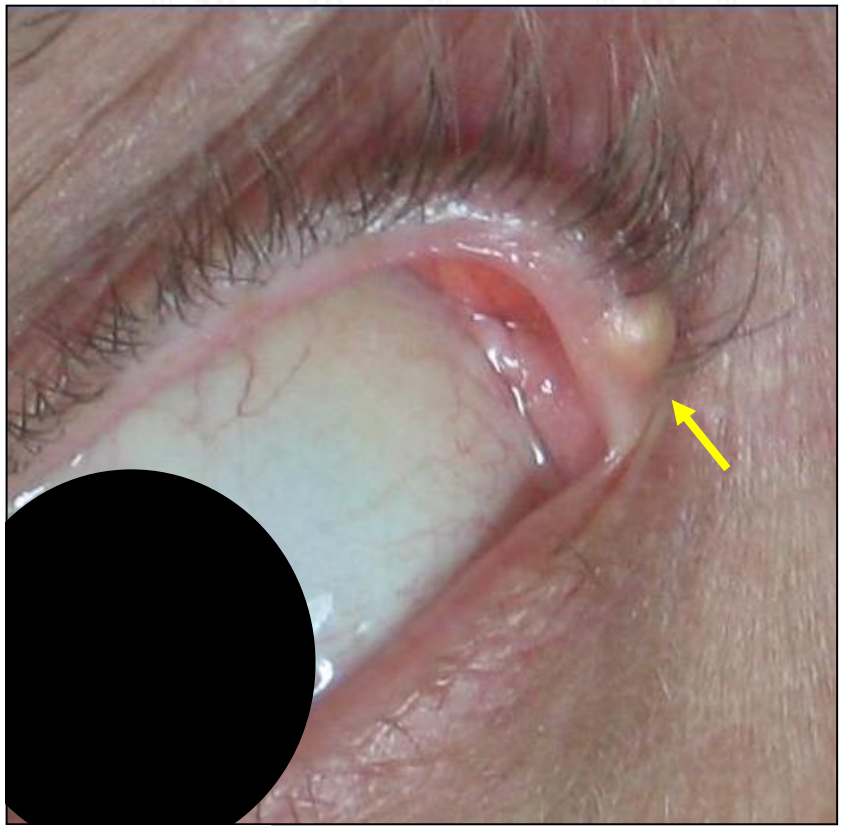


Immediately after

Courtesy of: G.Cannarozzo, M.D. – Florence, Italy & M.Sannino, M.D. – Naples, Italy

Sebaceous Cyst



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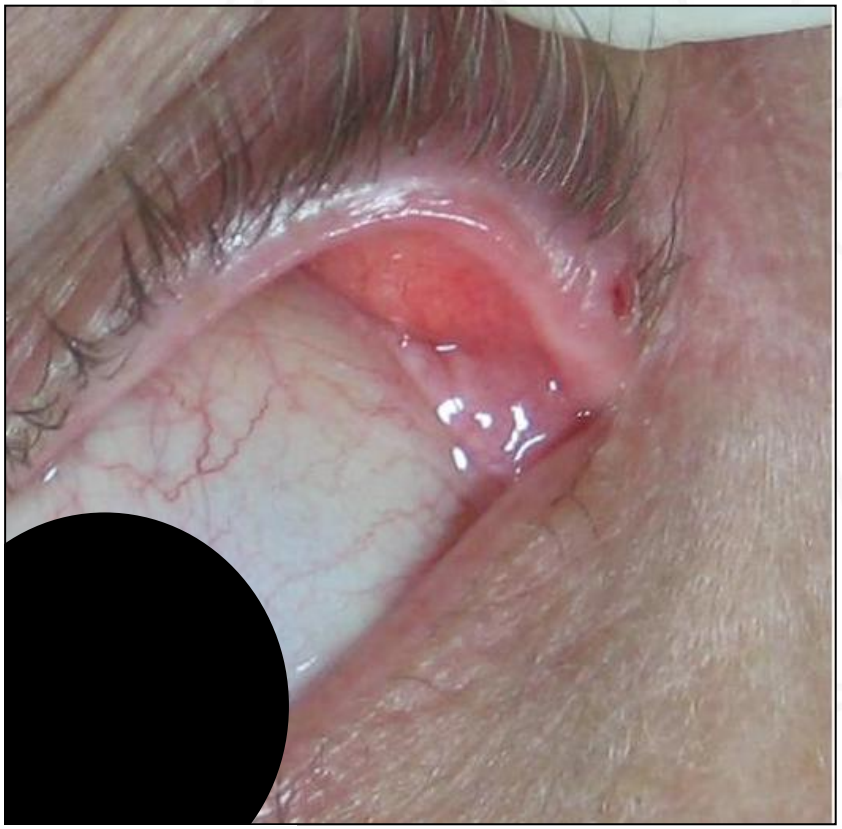

Immediately after

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Fibropapilloma

Before

14 days after treatment

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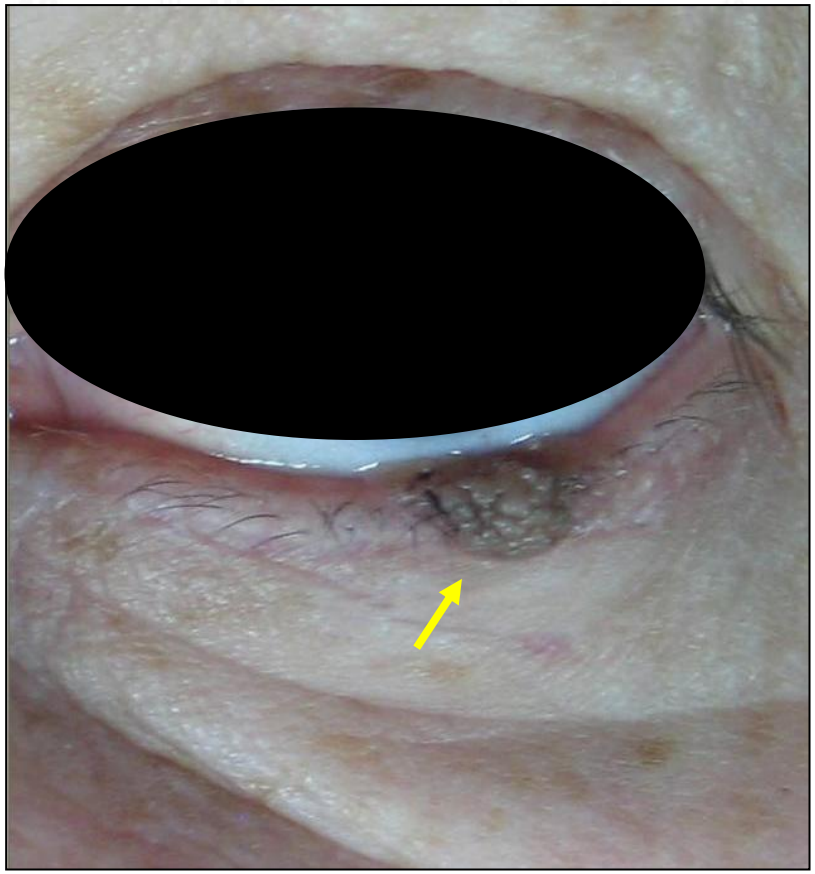
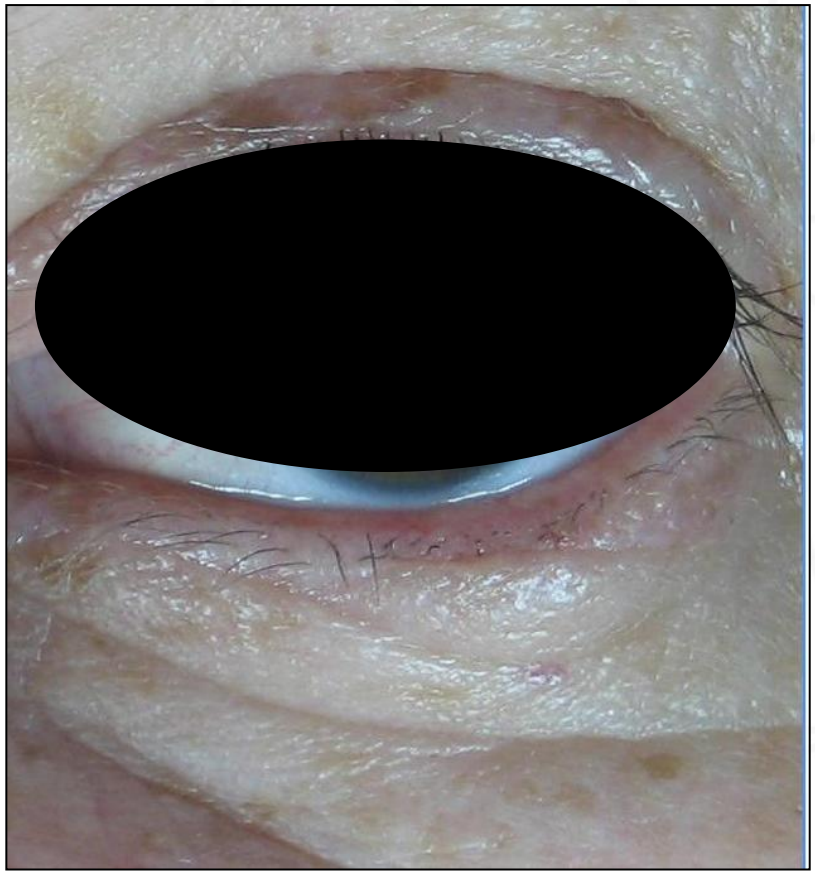
Seborrheic Keratosis



Before



7 days after treatment

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Milium

Before

After treatment

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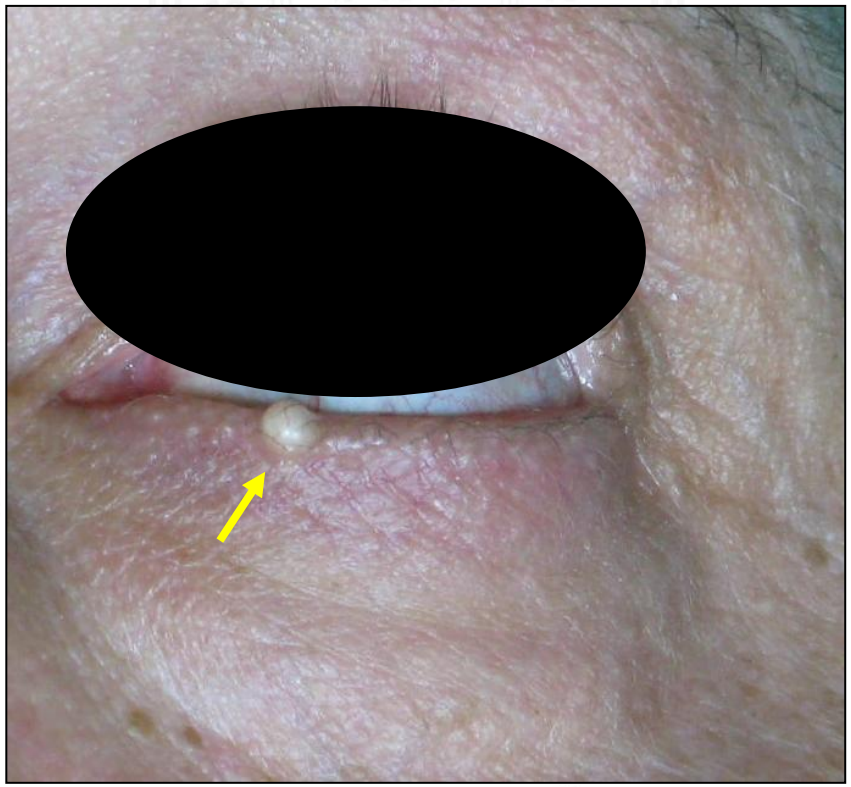
Seborrheic Keratosis

Before

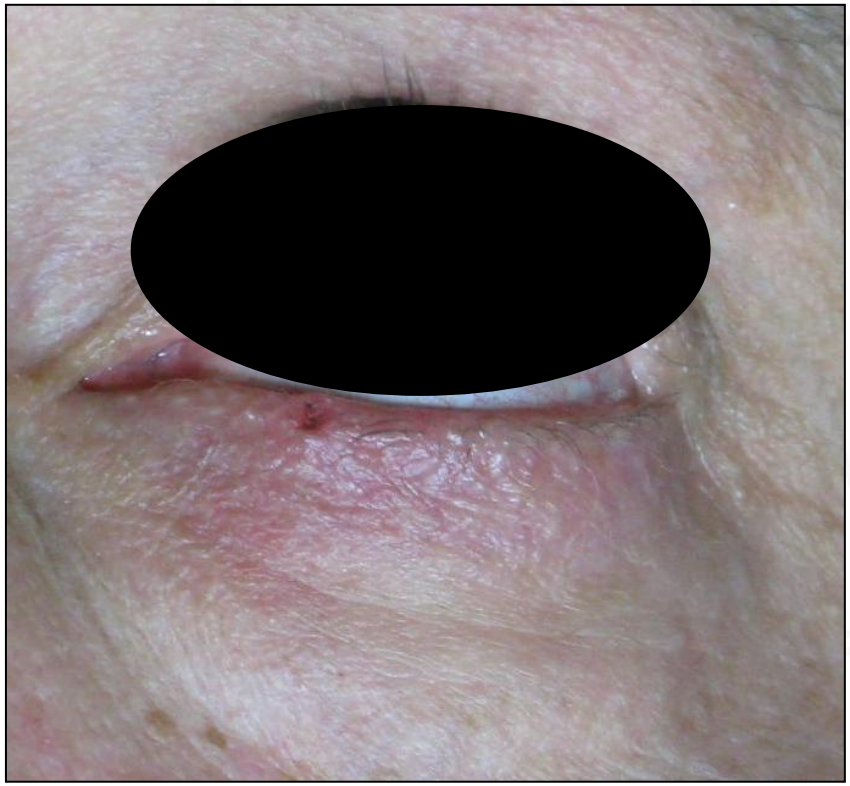
10 days after treatment

Courtesy of: G.Cannarozzo, M.D. – Florence, Italy & M.Sannino, M.D. – Naples, Italy

Sebaceous Cyst



Before



Immediately after

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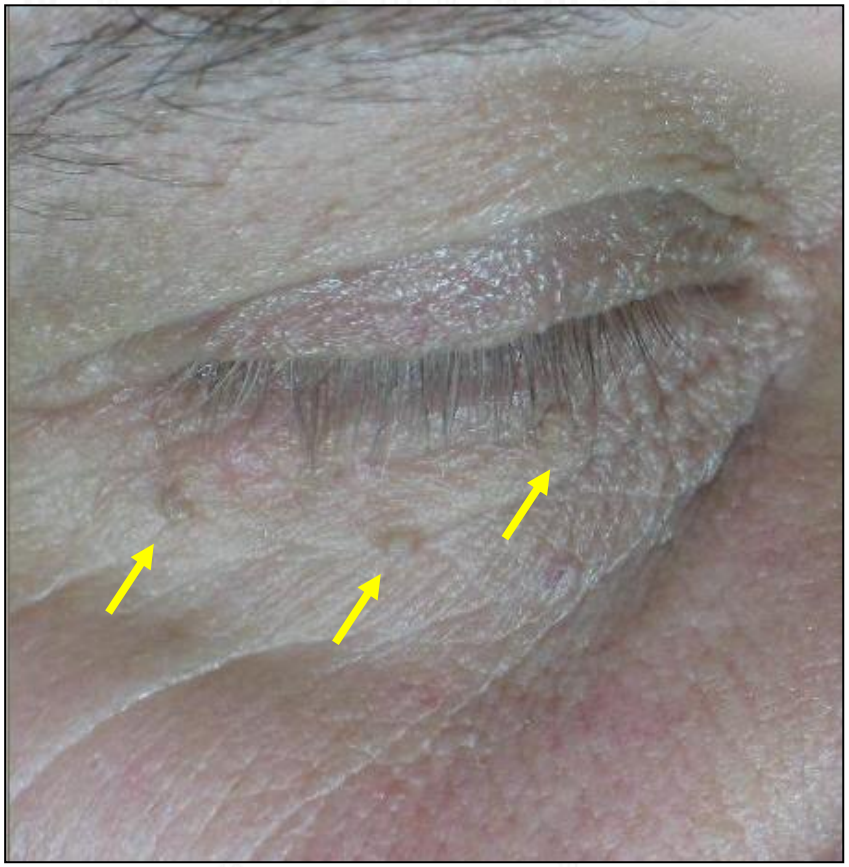
Fibropapilloma



Before

1 year after treatment

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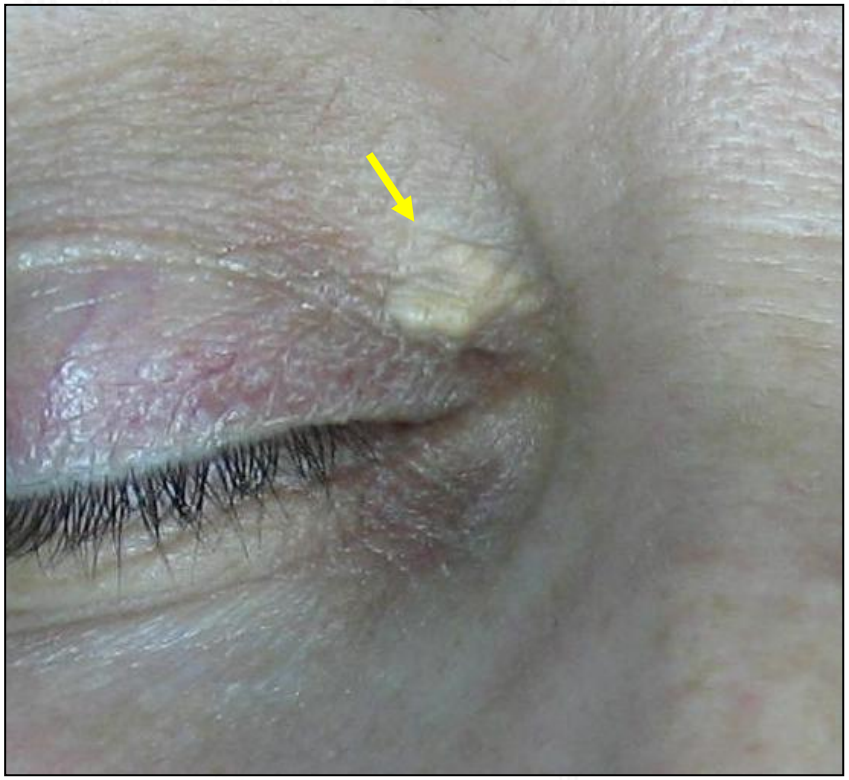
Xanthelasma



Before

1 year after treatment

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Xanthelasma

Before

1 year after treatment

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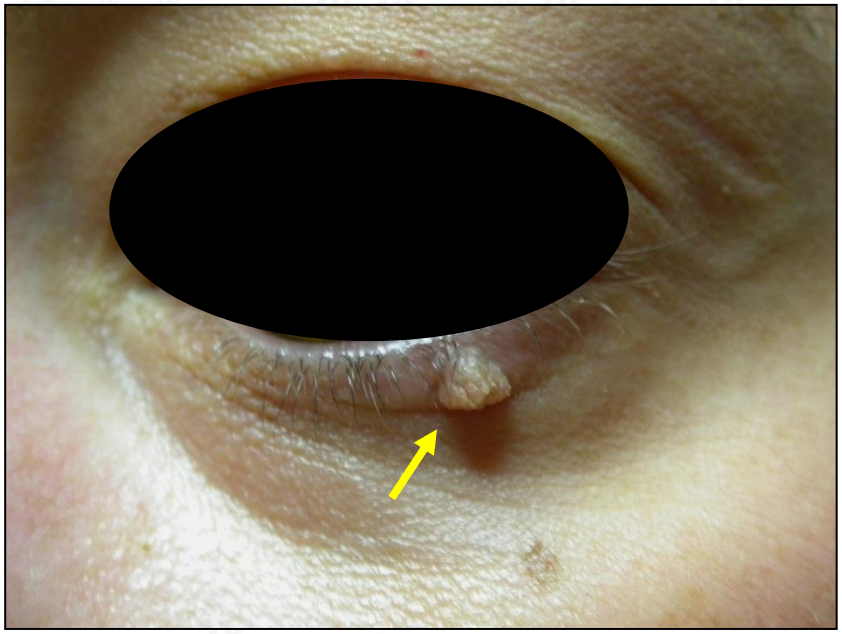
Verruca Vulgaris



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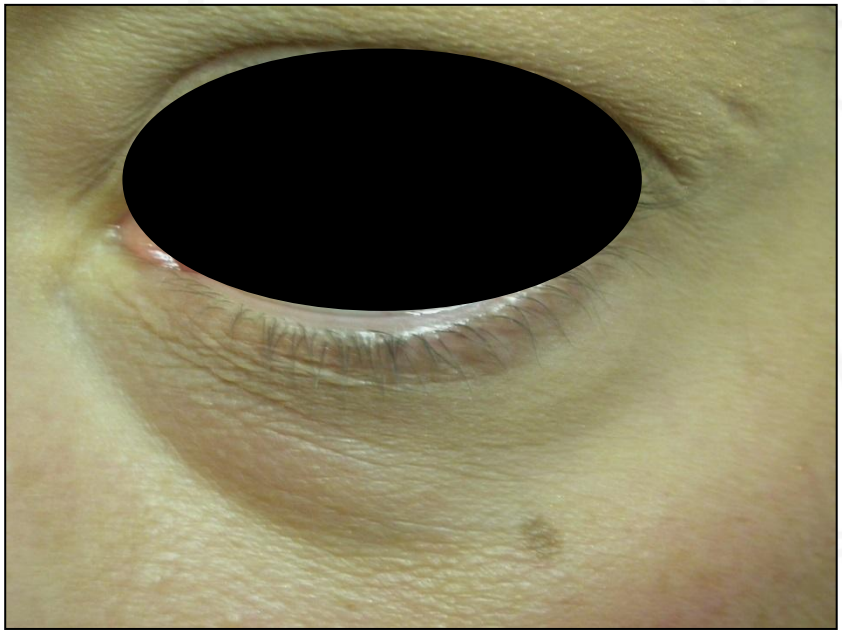

After treatment

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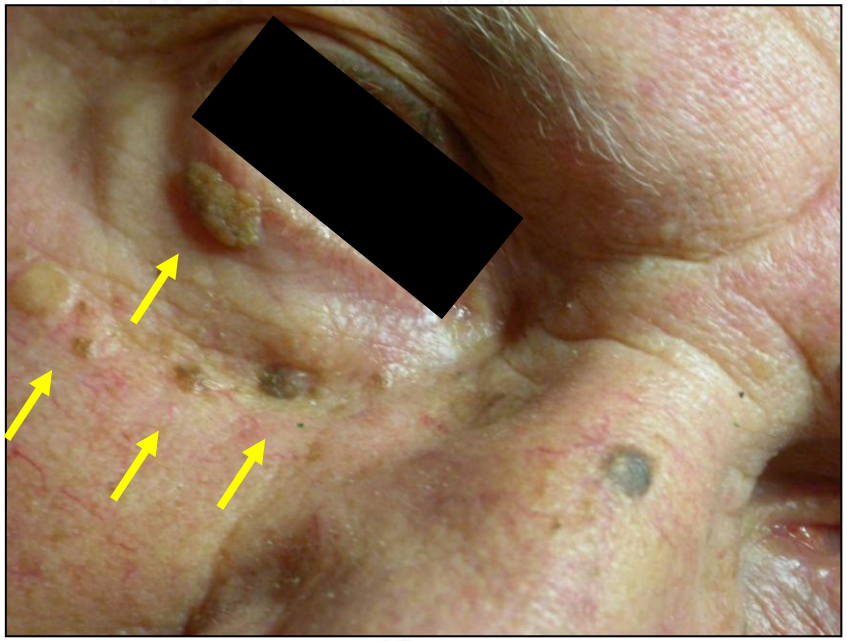
Seborrheic Keratosis and Sebaceous Cyst

Before

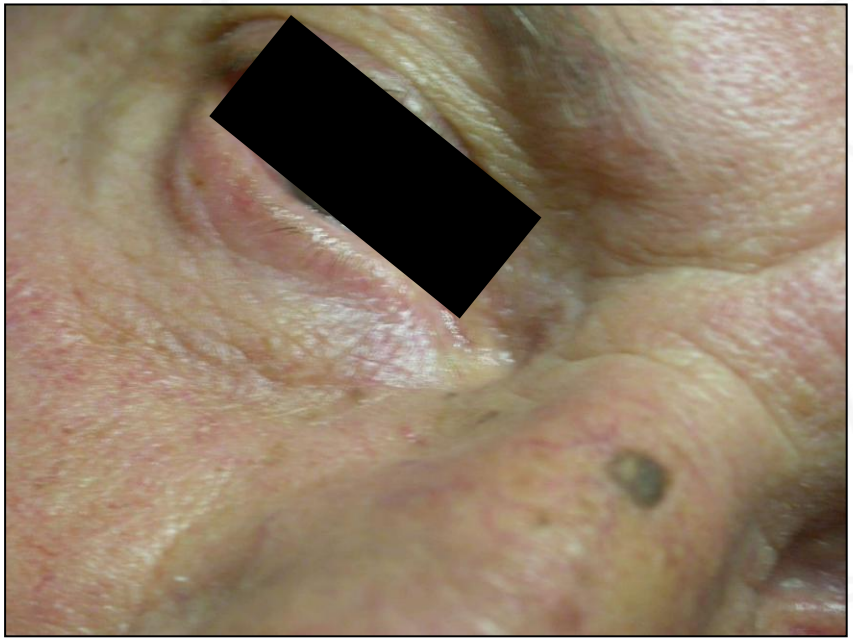
After treatment

Courtesy of: G.Cannarozzo, M.D. – Florence, Italy & M.Sannino, M.D. – Naples, Italy

Seborrheic Keratosis



Before



After treatment

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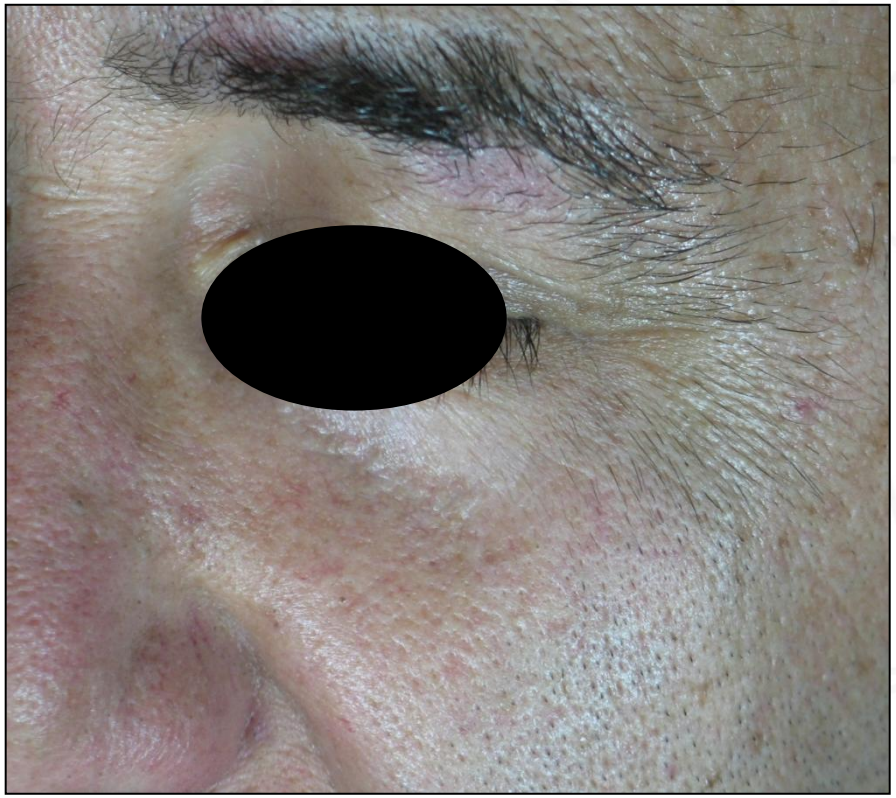
Seborrheic Keratosis

Before



After treatment

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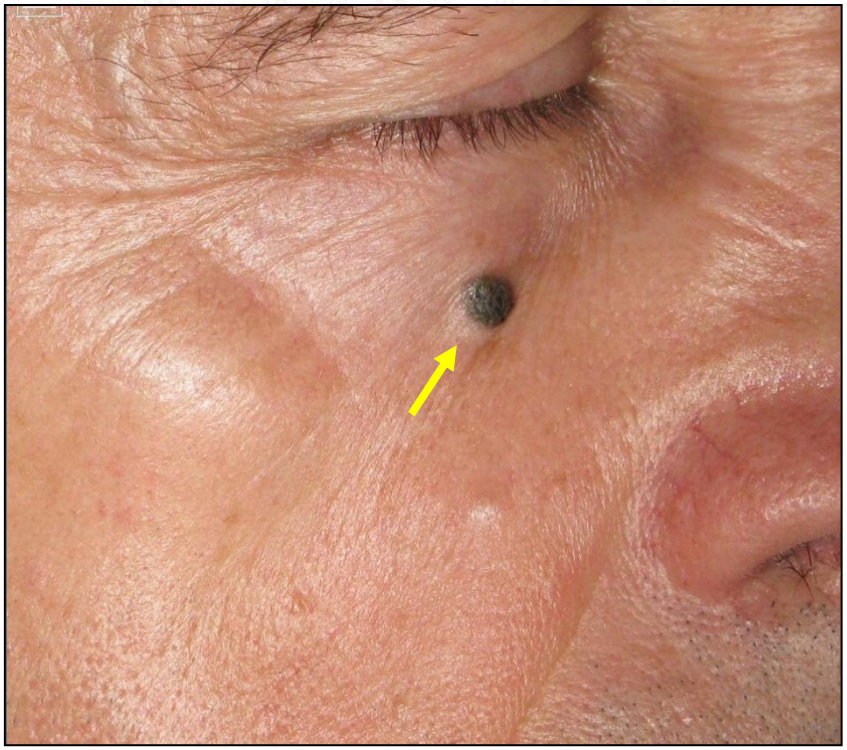
Seborrheic Keratosis



Before

14 days after treatment

Courtesy of: G.Cannarozzo, M.D. – Florence, Italy & M.Sannino, M.D. – Naples, Italy

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SmartXIDE Touch

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