

The Absorbable Plug

Although not a panacea for ocular surface disease, punctal occlusion is remarkably effective.

BY JAMES LEWIS, MD AND MARC MEYERS, OD

Thermal punctal occlusion has been our secret weapon against dry eye for years. The addition of collagen plugs and then silicone plugs to my armamentarium has greatly enhanced postoperative comfort for many of my patients. Punctal plugs ameliorate many symptoms of dry eye almost without exception. Most importantly, patients do not have to comply with a regimen, they do not need to commit to a surgery, and they do not have to endure discomfort.

HELP FOR LASIK PATIENTS

When OASIS Medical, Inc. (Glendora, CA) asked me to evaluate their SOFT PLUG Absorbable Plug-SA (Figure 1), I was happy to help. I did not know how I would use a plug that lasts for 3 or 4 months, but I was willing to try it. This plug works well for LASIK patients. Dr. Meyers and I have evaluated more than 24 patients in whom we inserted the SOFT PLUG following bilateral LASIK surgery. The clinical symptoms of these patients improved markedly: they had less foreign body sensation, irritation, photophobia, tearing, and visual fluctuation, as well as reduced fluorescein and Lissamine Green staining with less superficial punctate keratitis. The tear breakup time of the patients also improved, as did their tear meniscus. Also, the post-LASIK topographies showed improved validity (from improved mires).

SURGICAL REGIMEN

Following LASIK, I have inserted collagen plugs on a weekly basis in patients with presurgical signs of ocular surface disease, or in those at high risk for post-LASIK dry eye. I routinely practice preoperative lid hygiene, and I cut a nasal-based flap. I employ nonpreserved TheraTears (Advanced Vision Research, Woburn, MA) both pre- and postsurgically. Finally, I minimize the use of toxic topical medications, including anesthetics, NSAIDs, and antibiotics.

The SOFT PLUG has become an

important part of my ideal LASIK procedure. Once OASIS Medical, Inc. receives FDA approval, I will use this plug in the majority of my refractive procedures. LASIK patients choose to undergo surgery to get rid of their glasses; they are not interested in an intervention for keratoconjunctivitis sicca. Almost every patient of mine receives some type of plug prior to or immediately following LASIK.

PATIENT REQUESTS

The 2-mm long SOFT PLUG is made of an absorbable copolymer material, and is available in a 0.3-mm and 0.4-mm diameter. The larger of the plugs is a bit more difficult to insert, but overall the learning curve is trivial (Figure 2). The SOFT PLUG is inserted once and lasts throughout the LASIK-induced dry eye period. Collagen plugs, on the other hand, must be inserted frequently.

LASIK patients interpret the need for repeat collagen plugs as a nuisance; they conclude that silicone plug insertion after surgery is treatment for a complication. I have had only one patient refuse the SOFT PLUG after reading the requisite consent forms. In fact, several patients have requested the plug after hearing about other patients' experiences. Patients' relatives who did not undergo LASIK have also called our office requesting the SOFT PLUG. Out of 50 insertions in the study, no patients experienced untoward symptoms, and none requested that I remove the plug.



(Courtesy of OASIS Medical, Inc.)

Figure 1. The SOFT PLUG Absorbable Plug-SA is similar in size, shape, and ease of insertion to a standard collagen plug.

ANOTHER WEAPON IN THE FIGHT AGAINST DRY EYE

LASIK surgeons must address lid disease, pre-existing dry eye, and other conditions that can aggravate surgically induced dry eye. Preventive measures may include a preoperative course of tetracycline, doxycycline or minocycline, and warm compresses are always beneficial. In addition, patients should refrain from wearing contact lenses for as long as possible prior to surgery.



Figure 2. The SOFT PLUG does not require anesthetic for insertion, and it is well tolerated by the typical LASIK patient.

Intraoperative epithelial damage has been linked to diffuse lamellar keratitis as well as epithelial ingrowth. Maximizing tear film and thereby ocular surface health with punctal plugs can reduce this complication. My LASIK technique has gone through an extended evolution to eliminate these problems, and the SOFT PLUG is my latest optimization.

EASING THE POSTOPERATIVE PERIOD

I am amazed that so many postoperative symptoms are related to compromised tear film production and ocular surface vulnerability. During this period, the LASIK patient complains of inconsistent vision and "tired eyes." I am thrilled that punctal occlusion is successful at minimizing these symptoms.

In summary, LASIK induces 2 to 6 months of compromised tear production and ocular surface vulnerability. The SOFT PLUG improves ocular surface health during this period, and is well tolerated by LASIK patients. The SOFT PLUG Absorbable Plug-SA is the right tool at the right time. ■

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