LIMBAL STEM CELL DEFICIENCY

The limbus is not the end of the road, but rather the beginning, in managing ocular surface disease.

BY JACOB LANG, OD, FAAO

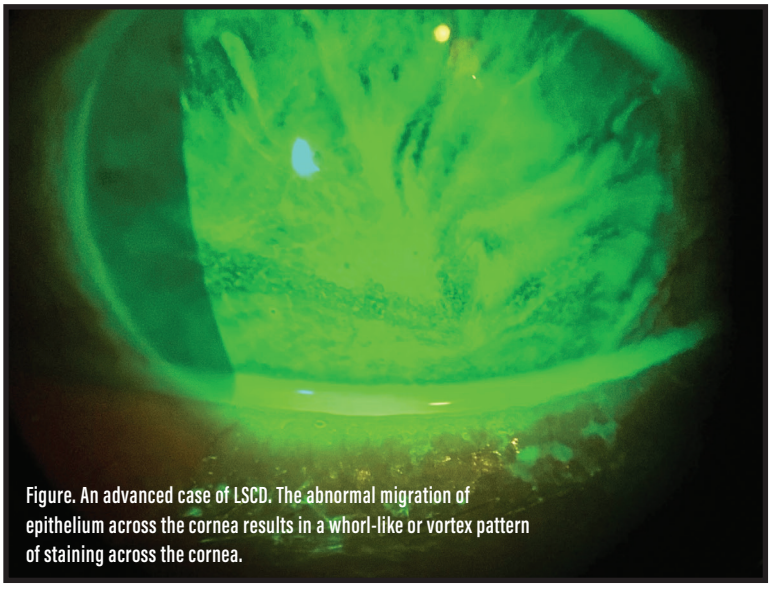

Figure. An advanced case of LSCD. The abnormal migration of epithelium across the cornea results in a whorl-like or vortex pattern of staining across the cornea.

In recent years, our profession has seen remarkable advances in the treatment of corneal blindness, from procedures such as Descemet stripping automated endothelial keratoplasty and Descemet membrane endothelial keratoplasty, to keratoprosthesis and emerging cell-based therapies. Despite these breakthroughs, many patients with limbal stem cell deficiency (LSCD; Figure) remain inadequately treated. This is a significant concern, especially when we have well-established protocols for managing LSCD with ocular surface stem cell transplantation (OSSTx) combined with systemic immunosuppression (SI), which have been documented in peer-reviewed journals for more than 3 decades.[1-4] However, these treatments are underused, and many patients are referred to centers that do not specialize in them.[1]

LSDC LOWDOWN

LSCD causes symptoms similar to those of dry eye disease and is estimated to affect up to 167,500 individuals in the United States, yet only a fraction of these patients receives appropriate care.[1] The number of OSSTx procedures completed annually remains low, with only about 20 cornea specialists nationwide regularly performing these surgeries. This lack of engagement in advanced treatments such as OSSTx with SI is alarming, considering the substantial improvements made in surgical techniques and systemic immunosuppression protocols over the years.

Because patients may present with nonspecific complaints that are common to many ocular surface disorders, a major issue is frequent misdiagnosis, leading to inappropriate treatment, such as with penetrating keratoplasty or keratoprosthesis. These procedures can worsen the patient's condition in the setting of LSCD, leading to poor outcomes and complicating future treatments.[1] Penetrating keratoplasty, in particular, is commonly applied in cases where it has little chance of success, leaving patients with multiple failed grafts and an even more compromised ocular surface.

Additionally, there seems to be a hesitancy among cornea specialists regarding the management of systemic immunosuppression, which is crucial for the success of OSSTx. Despite the well-documented safety and efficacy of these protocols,[5] many surgeons are reluctant to adopt them, possibly due to a lack of familiarity with the necessary monitoring and collaboration with transplant nephrologists.

BE AN ADVOCATE FOR YOUR PATIENTS

LSCD is a blinding disease that demands our attention and expertise. It is not realistic to expect every cornea surgeon to perform OSSTx with SI, but major ophthalmology centers should develop programs in collaboration with regional clinics to make these treatments more accessible. Let's work together to ensure that the advances in our field benefit all who need them.

In this spirit of advocacy, organizations such as the Holland Foundation for Sight Restoration[6] exist to address the significant unmet need of corneal transplantation for patients who have severe ocular surface disease. Using such organizations as a resource and sharing them with patients can help build on everyone's knowledge base. ■

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