2. Were cases with >2 recurrences screened for diseases like mucous membrane pemphigoid? In cases with more than 2 recurrences, the author should have sent the histopathology sample for direct immunoflorescence to rule out mucous membrane pemphigoid.[1]
3. Though, conjunctival autograft is the standard procedure for pterygium; why was conjunctival autograft not used? The author could have used vertically split conjunctival autograft for double head pterygium.[2]
4. Why was the autologous limbal donor tissue taken from the same eye? This could have further worsened the LSCD. The purpose of SLET is to add additional limbal stem cells from the contralateral eye and not compromise the existing one.
5. The author mentioned the grade of inflammation to be moderate to severe in all cases. The author should have refrained from intervening in the inflamed eye.
6. The author has given a rationale of not touching the apparently healthy eye. The author has mentioned that the harvesting of limbal tissue could have resulted in focal LSCD in the donor eye. However, a long-term follow-up (with the longest follow-up of 20 yrs) of the donor eyes revealed that, despite harvesting limbal tissue (for conjunctival limbal autograft) of 120 to 180 degrees, there was no evidence of overt LSCD. Patients were maintaining stable ocular surface till the last follow-up.[3] We know that for SLET, only 2 clock hours of limbal tissue is harvested.

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Prabhakar Singh, MD
Amit Raj, MS
Abhishek Gupta, MS

Department of Ophthalmology, All India Institute of Medical Sciences, Patna, India

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Reply:

We thank Singh et al for their comments on our article entitled "Outcomes of Ipsilateral Simple Limbal Epithelial Transplantation, Tenonectomy, Mitomycin, and Amniotic Membrane Transplantation for Treatment of Recurrent Pterygium."[1] We thank them for their kind comments and an opportunity to provide clarification on some of the queries raised in their correspondence.

In this retrospective study, we reviewed the outcomes of recurrence and complications after receiving simple limbal epithelial transplantation (SLET) for the indication of recurrent pterygium. Singh et al astutely noted that pseudopterygium is often accompanied with other features of limbal stem cell disease (LSCD), and a significant proportion of our cases had preexisting LSCD (60%). On history, apart from previous pterygium-specific surgery, no other risk factors for chemical or thermal burn, previous ocular malignancy, or ongoing inflammation were identified. All recurrent episodes at presentation to our center had recurred in the same area as the previous pterygium. In addition, all cases of recurrent pterygium were noted to be slowly progressive, which is not a common feature of pseudopterygium. Intraoperatively a probe was unable to be inserted underneath the fleshy growth, which is consistent with pterygium and not pseudopterygium. Furthermore, histopathological analysis was able to confirm all cases as recurrent pterygium.

The correspondents also made excellent points about screening for mucous membrane pemphigoid in patients with more than 2 episodes of recurrence. Clinically, these patients did not report any other mucosal involvement of the oral or anogenital cavities. The ocular examination did not exhibit inflammation consistent with mucous membrane pemphigoid, there was no evidence of forniceal shortening, or were there any signs of conjunctival scarring in any other area than the area of previous surgery. In addition, the contralateral eye was completely healthy with no signs of ocular inflammation consistent with mucus membrane pemphigoid.

Singh et al also suggested the use of vertically split conjunctival autograft for double-headed pterygium as an alternative method of treatment. Conjunctival autograft was not used in our case series because the cause was surmised to be because of localized limbal stem cell failure and failure of the natural limbal barricade to conjunctival invasion, leading to recurrence of pterygium. The underlying hypothesis of LSCD, therefore, was treated with the SLET procedure to address this precise concern. Furthermore, given the size of the conjunctival graft required for both the medical and temporal (double-headed) pterygium, we were concerned about possibly causing further iatrogenic LSCD caused by using larger amounts of tissue.

The correspondents also raised concerns about why the autologous limbal donor was taken from the same eye, fearing that this could have worsened the LSCD. These concerns are certainly valid. In our case series, however, patients did not wish their good eye to be operated on, especially given that most of them had had more than 1 operation already from the same eye.

Singh et al also suggested that perhaps the intervention should not have been performed in the inflamed eye. Indeed, in all cases, the recurrence was elevated, and inflammation was moderate to severe and, therefore, warranted intervention. We do routinely use low-dose steroids to reduce severe ocular surface inflammation before intervention. However, one of the main reasons for surgically treating pterygium is chronic inflammation; this is even more prevalent in recurrent and aggressive pterygium, which we are reporting on in our study. We have tried treating these patients in the past with topical steroid drops with only minimal improvement, with inflammation that recurs when the drops are tapered, and this has not been a definitive treatment in these patients. The primary and chronic use of topical steroid drops is not a safe or effective means of managing primary or recurrent pterygium in our experience.

Finally, Singh et al also made excellent points about the risks of use of donor tissue from the contralateral healthy eye. We also agree that

long-term follow-up of donor eyes revealed no overt evidence of frank LSCD and that that risk is minimal. However, there will be instances in which patients will absolutely refuse operating on their good eye or will at least wish to try expansion of tissue from a healthy area of the affected eye before undergoing the same procedure of donor tissue from the contralateral healthy eye. The emotional and psychological well-being of patients is also important to consider, and in these instances, we do not believe that this is an entirely unreasonable approach for patients to take. One of the benefits we found in using the SLET procedure in this patient population was that because only a small donor stem cell biopsy is required, this can usually be harvested from the same eye without any undue consequences.

In summary, our study found that the outcomes of LSCD treatment of recurrent pterygium as a novel concept are successful in the short term. Further long-term studies are required to further establish long-term safety and outcomes of this treatment method.

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Tanya Trinh, MBBS, FRANZCO*
Michael Mimouni, MD*
Zale Mednick, MD, FRCSC*
Adi Einan-Lifshitz, MD*
Eyal Cohen, MD*
Gisella Santaella, MD*
Nir Sorkin, MD*,†
Allan Slomovic, MD, FRCSC*

*Department of Ophthalmology and Vision Sciences, University of Toronto, Toronto, Canada
†Department of Ophthalmology, Tel Aviv Medical Center and Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

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