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American Journal of Ophthalmology

Volume 128, Issue 4, October 1999, Pages 522-524

Brief Reports

Residual ethanol content of donor sclera after storage in 95% ethanol and saline rinse of various durations 1

Data from this study were presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO), Fort Lauderdale, Florida, March 15, 1998.

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Abstract

PURPOSE

: Some surgeons are wary of using alcohol-preserved sclera for allografts because they fear a toxic effect on surrounding tissue after placement. We set out to determine the amount of ethanol remaining in scleral allograft material after storage in 95% ethanol.

METHODS

: Sixty half scleras from 30 donors were preserved in 95% ethanol for an average of 31 ± 14 days (range, 11 to 50 days). Rehydration was performed by soaking each half sclera in 4 success of

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balanced salt solution. Half scleras were randomly assigned to six groups of 10 each. Assays for ethanol were performed on the following groups: no balanced salt solution soak and balanced salt solution soak for 10 minutes, 20 minutes, 30 minutes, 40 minutes, and 50 minutes. Ethanol assay was performed by Headspace Gas Space Chromatography at ChemaTox Laboratory, Inc, Boulder, Colorado.

RESULTS

: The 10 half scleras without balanced salt solution soak had a mean (\pm SD) ethanol level of 175 ± 14.1 mg per g of sclera. After 10 minutes of balanced salt solution soak, the level decreased to 7.57 ± 1.56 mg per g, then 3.77 ± 3.02 mg per g at 20 minutes, 1.59 ± 0.61 mg per g at 30 minutes, 1.07 ± 0.30 mg per g at 40 minutes, and 0.96 ± 0.26 mg per g at 50 minutes. Approximately 96% of the ethanol is leached out of the half sclera by 10 minutes and 98% by 20 minutes.

CONCLUSIONS

: For sclera preserved in 95% ethanol, soaking in balanced salt solution for 20 minutes or longer leeches approximately 98% of the ethanol from the preserved donor sclera.

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¹ This study was performed at the Rocky Mountain Lions Eye Bank, Denver, Colorado.

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