

Apoptosis in Damaged ACL

Yun Hack Shin, M.D., Chang Whan Han, M.D.

Department Orthopaedic Surgery, Daejeon St. Mary's Hospital, The University of the Catholic

Introduction

Apoptosis of fibroblast and synoviocyte in injured Anterior cruciate ligament was identified in the obtained samples during ACL reconstruction. We investigate apoptosis in the damaged ACL using the TUNEL staining and caspase staining.

Material and Methods

ACL samples were obtained from 21 patients (Male 15, Female 6) at the time of ACL reconstruction. Apoptotic fibroblast and synoviocyte were observed and counted in Hematoxylin and eosin-stained ACL samples. Apoptosis was verified by TUNEL, caspase staining, and electron microscopy.

Result

Apoptotic cells were frequently observed in torn ACL synoviocyte (73%), stromal fibroblast (23%), whereas normal hamstring tendon synoviocyte rarely showed apoptotic cells (1~5%), A finding that was further confirmed by TUNEL staining, caspase staining, and EM.

Conclusion

Apoptotic ACL synoviocyte and fibroblast were verified in damaged ACL. It might provide a new treatment method and investigation field in sports medicine.

Key word: ACL, Reconstruction, Apoptosis

Acknowledgment

The authors thank Cho Yoon Kyung