

CONFERENCE ABSTRACT

SCIENTIFIC MEETING OF VICTOR BABES UNIVERSITY OF MEDICINE AND PHARMACY DOCTORAL SCHOOL AND ROMANIAN ACADEMY OF MEDICAL SCIENCES, DECEMBER 2016, TIMISOARA, ROMANIA

MORPHOLOGIC CHANGES IN THE INJURED ANTERIOR CRUCIATE LIGAMENT (ACL) CORRELATED WITH THE EXPRESSIONS OF PROTEIN S100 AND NFAP: MAJOR THERAPEUTIC IMPLICATIONS OR A FALSE GATEWAY TOWARDS IMPROVING ACL RECONSTRUCTION?

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Key words: Anterior cruciate ligament (ACL), protein S100, neurofilament associated protein (NFAP), remnant stumps, nervous fibers, free nerve endings

OBJECTIVES AND BACKGROUND

To examine the morphological features of the anterior cruciate ligament (ACL) stumps following injury and to assess their correlation with protein S100 and neurofilament associated protein (NFAP).

MATERIALS AND METHODS

We selected a total number of 102 cases of ruptured ACLs. 56 cases out of the total number of cases were immunohistochemically assessed for protein S100 and 46 cases out of the total number of cases were immunohistochemically assessed for NFAP.

RESULTS

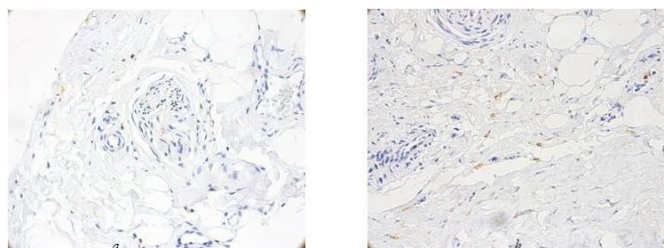
Both markers were identified in the synovial tissue, in the quasi-normal ligament and in the disrupted ligament. Protein S100 was positive in the nervous structures of the synovial and ligament tissues. NFAP expression was predominantly found in the free nerve endings and small nervous fibers of the synovial tissue and ligament tissue. A greater number of NFAP positive free nerve endings were detected in the quasi-normal ligament.

CONCLUSIONS

Ruptured ACL specimens do not present an arbitrary persistence of nervous fibers in the remnant stumps and may not ensure a successful recovery of the

patient following ACL reconstruction procedures in all clinical cases.

Figure 1. NFAP expression in the synovial tissue, in the quasi-normal ligament and the disrupted ligament. Note the presence of small positive nervous structures (a) and the presence of large nervous fibers showing a mid-low, focal reaction, restricted to the cytoplasm of a few Schwann cells (b).



REFERENCES

1. Anderson MJ, Browning WM 3rd, Urbani CE, Kluczynski MA, Bisson LJ. A Systematic Summary of Systematic Reviews on the Topic of the Anterior Cruciate Ligament. *Orthop J Sports Med.* 2016;4:2325967116634074, doi: 10. 1177.
2. Sanders JO, Brown GA, Murray J, Pezold R, Savarino KS. Treatment of anterior cruciate ligament injuries. *J Am Acad Orthop Surg.* 2016; Epub ahead of print.
3. Hsia AW, Anderson MJ, Heffner MA, Lagmay EP, Zavadovskaya R, Christiansen BA. Osteophyte formation after ACL rupture in mice is associated with joint restabilization and loss of range motion. *J Orthop Res.* 2016;doi: 10. 1002.