



BIOLOGIC AUGMENTATION OF SUPRASPINATUS TENDON HEALING WITH THE USE OF COMPOSITE OF AMNION MEMBRANE AND MESENCHYMAL STEM CELL

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ARTICLE INFO

Published: 26th August 2018

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KEYWORDS

Supraspinatus repair;
Amnion membrane;
Mesenchymal stem cell

SUMMARY

Background: Large or massive of supraspinatus tear generally do not heal or retear, while smaller tears have a lower retear rate. The purpose of this study is to determine if composite of amnion membrane and mesenchymal stem cell can enhance functional result of supraspinatus tendon repair. **Material and Method:** Retrospective comparative study of twenty-one patients of totally tear supraspinatus tendon in Dr Setomo General Hospital from 2005 – 2017, who underwent decompression acromioplasty and supraspinatus repair. The patients received one of three treatments and grouped as follow: (group 1) composite of amnion membrane and mesenchymal stem cell, (group 2) amnion membrane, (group 3) just supraspinatus repair. Functional result was examined by using component of Constant score: (1) pain, (2) activity daily living, (3) shoulder movement, included: flexion, lateral elevation, external rotation, and internal rotation. **Result:** There are 21 patients and 23 shoulders. The average ages of group 1, 2, and 3 are 49,6, 50, 4, and 52-year-old respectively. The average of follow up time of group 1, 2, and 3 are 47, 20, and 66 month respectively. According to Pain and Activity Daily Living score, there are significant different between group 1 and group 2, between group 1 and 3, but there is no significant different between group 2 and 3. According to movement score especially external and internal rotation there are significant different between group 1 and group 2, between group 1 and 3, but there is no significant different between group 2 and 3. Based on movement score of shoulder flexion and lateral elevation, there are no significant different between groups. **Discussion:** Poor connective tissue healing according Arnoczky model are: limited access to reparative cells, poor availability of bioactive factors, and degradation outpaces synthesis. Addressing the above problem so after repairing supraspinatus it is better augmented by composite of amnion membrane and mesenchymal stem cell or composite of amnion membrane. **Summary:** Composite of amnion membrane and mesenchymal stem cell in supraspinatus repair can optimize supraspinatus repair and regeneration.