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Case Study on the Effects of Early Mobilization in the Post-Surgical Recovery of Athletes with Open Triangular Fibrocartilage Complex Repair

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Abstract : The triangular fibrocartilage complex (TFCC) is one of the crucial stabilizing ligaments of the wrist. The TFCC is also subject to excessive stress amongst performance athletes and enthusiasts. The excessive loading of the TFCC may lead to a partial or complete rupture that requires surgery. The recovery from an open TFCC surgical repair may take several months. Immobilization of the repaired wrist for a given period is part of all the current protocols in the post-surgical treatment. The immobilization to prevent the rotation of the forearm can last from six weeks to eight weeks with the wrist held in a neutral position. In all protocols reviewed, the pronosupination is only initiated between the 6th week and 8th week or even later after the cast is removed. The prolonged immobilization can cause stiffness of the wrist and hand. Furthermore, the entire period of post-surgical hand therapy has its economic impact, especially for performing athletes. However, delayed mobilization, specifically rotation of the wrist, is necessary to allow ligament healing. This study aims to report the effects of early mobilization of the wrist in athletes who had an open surgical repair of the TFCC. The surgery was done by the co-author, and the hand therapy was implemented by the main author. The cases documented spans from 2014 to 2019 and were all performed in Dubai, United Arab Emirates. All selected participants in this case study were provided with a follow-up questionnaire to ascertain their current condition since their surgery. The respondents reported high satisfaction in the results of their treatment and have verified zero re-rupture of their TFCC despite mobilizing and rotating the wrist at the third-week post-surgery during their hand therapy. There is also a negligible number of respondents who reported a limitation in their ranges of pronosupination. This case study suggests that early mobilization of the wrist after an open TFCC surgical repair can be more beneficial to the patient as opposed to the traditional treatment of prolonged immobilization. However, it should be considered that the patients selected in this case study are professional performance athletes and advanced fitness enthusiasts. Athletes are known to withstand vigorous physical stress in their training that may correlate to their ability to better cope with the progressive stress that was implemented during their hand therapy. Nevertheless, this approach has its merits, and application of it may be adjusted for patients with a similar injury and surgical procedure.

Keywords : hand therapy, performance athlete, TFCC repair, wrist ligament
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