Research contribution

INTRODUCTION

Along with the triangular fibrocartilage complex (TFCC), the distal part of the interosseous membrane - the distal oblique bundle (DOB) - is the most important stabilizer of the distal radioulnar joint (DRUJ) and enables unrestricted pro- and supination of the forearm. Dynamic bidirectional instability of the DRUJ, as a result of TFCC injury, is often underestimated or missed but can be highly disabling due to pain and significant functional impairment. Stabilization of the DRUJ may offer relief in cases where malunion and osteoarthritis of the DRUJ are ruled out. In 2015, the description of a new percutaneous tenodesis technique for DRUJ stabilization was co-authored by fellowship director Dr Hannemann. A tendon autograft, usually the palmaris longus, at the position of the DOB is used to stabilize the DRUJ. The goal of this study is to evaluate the long-term outcome of this percutaneous DRUJ stabilization technique.

PATIENTS AND METHODS

Between January 2011 and December 2020, all patients treated using this percutaneous DOB reinforcement technique were prospectively enrolled in this study. All patients suffered from chronic bidirectional DRUJ instability. Bidirectional instability was defined as a combination of ulnar palmar subluxation in supination and ulnar dorsal subluxation in pronation. The majority of patients suffered from TFCC injury after a previous distal radius fracture. In case of simultaneous malunion of the distal radius, only patients with persistent bidirectional instability after malunion correction were included.

This research project is conducted on different levels. My scientific contribution was obtaining patient reported outcomes. In all patients, functional outcomes using Quick DASH and PRWHE scores were determined prior to treatment. All patients were contacted for final evaluation of outcomes with aforementioned scores.

RESULTS

33 patients were treated using this percutaneous DRUJ stabilization technique. All patients suffered from abnormal and painful laxity in the DRUJ in both dorsal and palmar direction, leading to chronic ulnar discomfort and pain during loaded supination. 5 patients did not meet inclusion criteria due to concomitant hand and wrist problems. The remaining 28 patients were included and contacted for a final evaluation of outcomes. 16 patients answered the questionnaires. QuickDASH scores determined at 54 months postoperatively (range 6 – 118 months) showed an improvement of 30 points. PRWHE scores showed an improvement of 34 points. Three cases of recurrent bidirectional instability of the DRUJ were observed during follow-up (10,7%).

DISCUSSION

The technique of percutaneous distal oblique bundle reinforcement is an effective and easy technique for treatment of chronic instability of the distal radioulnar joint in patients with chronic DRUJ instability. The long-term results are very promising and as a result our technique offers a good alternative to existing more invasive procedures in patients with clinical symptoms of chronic instability or laxity of the DRUJ due to TFCC injury. Further research and especially prospective comparative studies including other procedures for treatment of DRUJ instability would be useful.