Early Functional Results and Activity Participation After Proximal Row Carpectomy

Hande USTA1, Ali KITİS1, Merve SARIPEK1, Umut ERASLAN1, Ali Çağdas YORUKOĞLU², Ahmet Fahir DEMİRKAN²

1 Pamukkale University, School of Physical Therapy and Rehabilitation, Denizli/TURKEY.
2 Pamukkale University, Faculty of Medicine, Department of Orthopedics and Traumatology, Denizli/TURKEY.

Objective
The aim of this study was to evaluate early functional status and activity participation of the patients who diagnosed with carpal degeneration and lunatum avascular necrosis and treated by proximal row carpectomy procedure.

Methods
15 patients (9 female, 6 male) were followed in Pamukkale University Department of Physical Therapy and Rehabilitation Hand Therapy Unit between April 2013 and July 2017 were included in this study. The mean age of the patients was 36.93 ± 14.57 (19-67) years. The surgical technique, dorsal approach, was performed for all patients by the same surgical team. Both groups started physiotherapy program (Table 1) within post-op 5-7 days by attending weekly sessions for 12 weeks.

Table 1. Standard therapy protocol

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<td>• 3 M ™ Coban and tube grip bandage treatment for edema</td>
<td>• Additional exercises for the wrist joint</td>
<td>• Starting to progressive resistive exercises</td>
<td>• Performing the assessments. Control and advices.</td>
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<td>• Contrast bath</td>
<td>[radial and ulnar deviation exercise]</td>
<td>[Theraputty, Digi-flex, hand-master, 0.5-2 kg dumbbells]</td>
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<td>• Retrograde massage</td>
<td>[Wrist flexion and extension, Dart Throwing Motion (DTM), thumb extension, abduction, adduction, opposition and reposition, active blocking, tendon gliding exercises for other fingers, shoulder and elbow range of motion exercises (if there is a limitation)]</td>
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The body function and structure were evaluated with Visual Analogue Scale (VAS), Range of Motion (ROM), Grip and Pinch Strength. Activity participation assessments were done with Michigan Hand Outcomes Questionnaire (MHOQ) and Quick-Disabilities of the Arm, Shoulder and Hand (Q-DASH). Also, Short Form-36 (SF-36) was used to evaluate Quality of Life and Beck Anxiety Inventory was done. All measurements were performed at 12th weeks. Data were analyzed using appropriate statistical methods.

Results
Suffering time of the patients from degeneration or necrosis was between 5 months and 25 years. Occupations were worker (n=9), housewife (n=4), official (n=2). 8 patients had dominant, 7 patients had nondominant extremity injury. Return to work time was 17.01 ± 14.56 months. Patients had minimal pain as well as during activity (4.23 ± 3.41) was more than sleeping and resting. When affected extremity compared to the contralateral, there was a statistically significant difference in both joints ROM, grip and pinch strengths (p<0.05) (Table 2).

The patients were reached up to 60% of ROM and approximately 30% of grip and pinch strengths of the contralateral extremity. Q-DASH results were found to be 51.20 ± 19.69. SF-36 results have remained under the Turkish population norm for physical (p<0.05) and mental (p<0.05) roles/functions subtitles. Beck Anxiety Inventory results (9.93 ± 10.69) showed mild anxiety symptoms.

Conclusions
As a result of this study, proximal row carpectomy surgery, a salvage procedure, appears to affect patients in every aspects of biopsychosocial model in early term. Improvement of pain and ROM were provided with regular early physiotherapy however, recovery of grip and pinch strengths are insufficient. Functional recovery outcomes were partly reflected to daily life and activity participation (Figure 1-2).

Figure 1
Figure 2

Also, difficulties in the physical and mental roles/functions of the patients, leading to deterioration of quality of life and mild anxiety because of long suffering and return to work times. So, hand therapy program should continue until the patients transfer their gains to daily living and work.

References