



## KEY WORDS

- ✓ Electromyography
- ✓ Mesenchymal stem cell
- ✓ Peripheral nerve anastomosis
- ✓ Nerve regeneration
- ✓ Platelet rich plasma

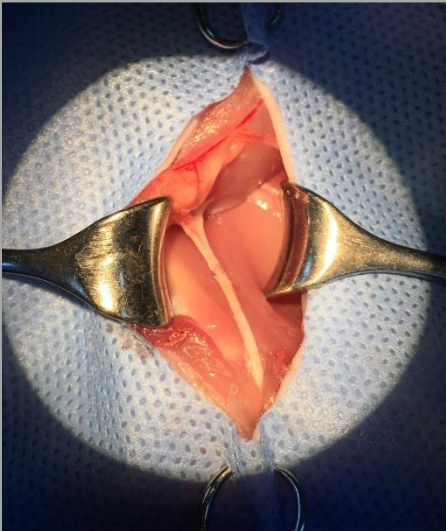
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# Comparative Investigation of Different Peripheral Nerve Anastomosis Techniques for Nerve Regeneration

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## THESIS ABSTRACT

In this study, it was aimed to compare different peripheral nerve anastomosis techniques in terms of nerve regeneration. A total of 56 adult Wistar Albino rats were used. The study was planned in two groups as epineural suture (D) (GRI; n=21) and tissue adhesive (FG) (GRII; n=21). GRI and GRII each consisted of 3 subgroups (n=7). Microsurgical nerve anastomosis (MCNA) was performed with D in GRI-D. PRP was applied to the MCNA region in GRI-DP and MSC was applied in GRI-DM. Nerve anastomosis was performed with FG in GRII-F (n=7). PRP was applied to the region after anastomosis with FG in GRII-FP and MSC was applied to the region in GRII-FM. Neurological examinations, gait analyzes and electromyography (EMG) of all rats were performed preoperatively and at postoperative 1, 2, 3, 4, 5, 6, 7 and 8 weeks. At the 8th postoperative week, the rats were sacrificed and the nervus ischiadicus of the rats was examined histopathologically. Statistical analysis was performed on the data.

In conclusion, anastomosis with epineural suture and FG provides effective kaopitation in peripheral nerve repair. Based on the improvement in sensory and motoric functions, electroneurography, needle EMG and histopathological data, local application of MSC to the region following nerve anastomosis with FG seems to be a more effective method in nerve injuries.

## APPLICATION AREAS OF THE THESIS RESULTS

Many surgical techniques are being developed for the repair of peripheral nerve injuries, but research continues on which technique is best. It is thought that the findings obtained from the study will contribute to other clinical and experimental studies to be planned in peripheral nerves.

## ACADEMIC ACTIVITIES

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