

## SURGICAL TREATMENT OF RADIAL NERVE INJURIES

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**Introduction:** The peripheral nerve injuries have an incidence of 2-3% from all traumatisms and represent a significant clinical and social problem. The anatomical emplacement of radial nerve in direct contact with humeral bone has importance because the humeral fractures are very frequent and between 3-18% of them are associated with radial nerve injuries. The indication to surgical treatment depends of the trauma nature and type of nerve injury.

**Purpose and Objectives:** The study aims to analysis the surgical treatment's particularities at radial nerve injuries, by determining the most affected age; assessing the etiological factors; highlighting the type of radial nerve injury and finally getting the results of remote.

**Materials and methods:** The study is retrospective one, based on a group of 91 patients with radial nerve injuries who were treated in the Department "Hand Surgery and Microsurgery" of Orthopedics and Traumatology Hospital from Chisinau during the years 2007-2011. With this lesion it was 51 men and 40 women affected, by the ratio of 1,3:1. The more affected age is between 30-59 years and account for almost 50% of our study.

The most important etiologic factors of radial nerve injuries are the displaced bone fragments of thoracic limb with 74 (82,22%) cases, of which 61 caused by fractures of the humerus and 13 of the forearm bones. Among other etiologic factors include lesions with sharp objects in 8 (8,89%) cases and machinery moving in 6 (6,67%) cases.

**Results:** According to the study, the treatment of choice to the radial nerve injuries is surgery, with 74 (81,32%) cases, thus made:

- neurolysis of radial nerve in 51 (68,92%) cases, for neuropraxia type (the easiest injury, with disruption of nerve's impulses conducting) and axonotmesis (when the lesions reaches only nerve bundles and endo-, peri- and epi-nerves remain wholly or partially preserved);
- neurorrhaphy of radial nerve in 14 (18,92%) cases, for neurtmesis type (total interruption of nerve), it were used epiperineural sutures in all cases;
- in 8 (10,81%) cases were irreversible damage of radial nerve, and tenomioplastic operations were necessary in order to restore the lost functions of the hand;
- in 1 (1,35%) case, neuroma of the superficial branch of radial nerve, the surgical excision was necessary.

The results of remote were performed according to Michigan Score (MHQ) to 28 (37,84%) patients and all of them were rated good or very good.

**Conclusions:** Surgery has the main method of treatment in radial nerve injuries, leading to good and very good result, with a major positive social impact.

**Key words:** radial nerve injuries, humerus fractures, surgical treatment.