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Minimally invasive augmented posterior fixation in vertebral body pseudoarthosis following facture in osteoporotic population using fenestrated pedicle screws

Dharmendra Singh Medanta – The Medicity Hospital, India

We describe a percutaneous approach of PMMA bone cement augmentation of fenestrated pedicle screws fixation in osteoporotic vertebral body fracture with pseudoarthrosis in a clinical series of 12 elderly osteoporotic patients. Clinical and functional outcome were assessed respectively. Data analysis included Visual Analogue Scale (VAS) score and the Oswestry Disability Index (ODI) and procedure related complications. Only 2 minor complications occurred. Cement leakage was observed in one patient with no further clinical relevance. Loosening of cement augmented pedicle screws occurred in 1 patient but there was no need to remove any of the cement-augmented screws in follow-ups. Radiographic follow-up was based on plain X-rays at 3, 6 and 12 months for a minimum period of 2 years and plain CT scan at the end of two years. VAS scores and ODI showed a statistically significant improvement postoperatively. The percutaneous PMMA augmented fenestrated screws provided an effective and long lasting fixation in vertebral body pseudoarthosis in osteoporotic patients.

Dharmendra.Singh1@Medanta.org

Functional recovery after microscopic and non-microscopic median and ulnar nerve repair

Abdallah Attia Zagazig University, Egypt

Objective: To evaluate the clinical results and test the hypothesis that the use of an operating microscope improves the results of peripheral nerve repair.

Design: A prospective and retrospective clinical and operative study was conducted.

Patients & Methods: Forty-two patients with 52 median and ulnar nerve injuries were treated by direct nerve repair with microscope (26 nerves) and without microscope (26 nerves). In 10 patients, there were ipsilateral combined median and ulnar nerve injuries. The mean age of the patients at time of nerve repair was 29 years (range 11 to 50 years). There were 29 male and 13 female patients. Forty patients were right handed and 2 left handed. Causes of nerve injury were glass cut in 39 patients, knife injury in 3 patients. Delay between injury and repair was 0-48 hours (mean; 10.5 hours). Level of injury was at the wrist in 38 injuries; at the distal ½ of forearm in 9 injuries, at the elbow in 2 injuries and above the elbow in 3 injuries. All nerves were repaired by direct nerve repair without nerve graft. The mean follow up period was 58 months (range, 7 to 140 months).

Results: Results of nerve repair were evaluated using clinical tests (motor and sensory), timed functional tests, measurement of sudomotor activity by skin resistance meter, and assessment of activity of daily life (ADL) of the hand. Overall results were excellent in 12 hands (23%), good in 14 hands (27%), fair in 19 hands (13%), and poor in 7 hands (13%).

Conclusions: Microscopic nerve repair gives better functional recovery, motor power and localization test score than nerves repaired without microscope. There was no significant difference in sensory and sudomotor recovery in both groups. The age of the patients, level of injury and associated vascular injury influence the outcome of nerve repair. Functional recovery continues to improve for at least 4 years after nerve repair.

abdallah.attia2525@yahoo.com