Mesenchymal Stem Cell Allograft

The development of an AVM within a period of 3 years after implantation of the glucagon-like peptide-1-secreting mesenchymal stem cells suggests a possible relationship. A case exemplifies that further investigations are necessary to assess the safety of genetically modified cell lines for local biological drug delivery in the brain ¹⁾.

Live Mesenchymal Stem Cell Allograft MSC-containing allogenic bone grafts have gained popularity and currently account for greater than 17% of all bone grafts and bone graft substitutes utilized in spinal surgery. While the claim of CBMs containing osteogenic cells with osteoinductive properties is attractive, little is known about their clinical success when used in anterior cervical discectomy and fusión(ACDF).

A consecutive series of 57 patients who underwent a one- or two- level instrumented ACDF procedure between 2010 and 2012 were retrospectively analyzed. All fusion constructs comprised of an interbody allograft, an anterior plate. and Osteocel® (NuVasive, San Diego, CA, USA). These patients were matched to a control group of 57 patients. There were no sources of funding for this project and no potential conflicts of interests amongst any of the authors RESULTS: Of the 57 cases in both cohorts, 29 (50.9%) were single-level and 28 (49.1%) were two-level instrumented ACDFs. There were no significant differences in patient age (p=0.71), gender, comorbidity burden (CCI: 1.95; 2.42, p=0.71) or body mass index (p=0.79). At the one-year follow up, 50/57 (87.7%) patients in the Osteocel® cohort demonstrated a solid fusion compared to 54/57 (94.7%) in the control group (p=0.19). Seven (12.3%) patients in the Osteocel® cohort were reported as having a failed fusion at one-year.

This is the first non-industry sponsored study to analyze a matched cohort assessing the one-year arthrodesis rates associated with a non-structural MSC allograft in one and two-level ACDF procedures. There were no statistically significant differences in fusion rates between the two cohorts ²⁾.

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