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Enhancement of neural regeneration after spinal cord injury using muscle graft in experimental dogs

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Spinal cord injuries can cause severe disability. The principal treatments for traumatic SCI include surgical stabilization. Using muscle as a scaffold is a new approach. This work aimed to evaluate the clinical efficacy of muscle graft as a scaffold for the growing axons organizing their growth, preventing gliosis in the damaged area and enhancing neural recovery in canine model of traumatic spinal cord injury. 14 dogs were divided into Group-1: 4 dogs subjected to Sham operation, Group-2: 5 dogs subjected to dorsal laminectomy with excision of 1 cm segment of the spinal cord and Group-3: 5 dogs subjected to dorsal laminectomy then muscle graft was inserted into the spinal cord gap. The animals of all groups were euthanatized after 8 weeks. Olby and modified Tarlov scores were used to clinically evaluate the therapeutic effects. Spinal cord specimens were subjected to histological, morphometric and statistical studies. Olby and modified Tarlov scores revealed significant improvement in group-3. Histological sections showed overgrowth of axons on the muscle graft. CD44 and CD105 stains were positive for endogenous stem cells. This study proved the clinical efficacy of muscle grafting as a tool for induction of neuroregeneration after traumatic spinal cord injury.

Biography

Mohammed Alobaidi was completed PhD in mental health from Baghdad University 2003. And I got a degree (Professor) in 2012. worked Professor of mental health and clinical psychology at several universities. Clinical psychotherapist and worked in several hospitals, Then she served as Dean of the Psychological Counseling Center in Ibb, Yemen and Head of Mental Health at Majd Specialist Hospital. More than 21 published scientific research. And wrote 6 books in the specialty. Participated in a number of scientific conferences. Many psychological services provided in the field of humanitarian and voluntary work, especially psychological support to groups which suffered war and conflicts.

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