

CO-ORGANIZED EVENT

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&
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Pain reduction and functionality of knee osteoarthritis through a 3D bioprinting device enriched of bone marrow mesenchymal stem cells in 10 patients over the age of 50

Joe Loui Carrillo

Terumo Medical, Mexico

10 patients of both sexes over the age of 50 clinically diagnosed with Kellgren-Lawrence grade 2 or 3 knee osteoarthritis and according to Lequesne's evaluation and SF-36, controlled for associated sicknesses, inflammatory signs (oversensitive reactive C protein, VSG, etc.), mechanical axis radiometry, 60° axes, AP of knees bearing weight and of knees not bearing weight, Magnetic Resonance Imaging (MRI) of 3.0 T knees printed on Dicom, segmented by the Mimic system. Once the segment is processed, it is printed in 3D with polycaprolactone (PCL) polymer. Simultaneously in the operating room through arthroscopy, the identified region implant is placed. When concentrated bone marrow Concemo is taken simultaneously, stem cells are introduced in the implant placed in the lesion inside of the scaffold, and the excess is left deposited in the articulation. The knee is left to rest two weeks; physical therapy and progressive rehabilitation begin without weight being placed on the knee. At four weeks, all assistance through walking support is taken away. Rehabilitation complete arc movement is recovered. Radiological follow-up is given at three and six months, and three patients are randomly selected in order to undergo biopsies at the placement site of the implant in order to corroborate the characteristics of the healed tissue taking into consideration waiting time for type II collagen cells and knowing their geometric distribution in order to determine weight-bearing tolerance. At the moment of the biopsy result, after six months of radiological follow-up and the random biopsy of three cases, the monitoring according to protocol is completed. The patient should stop consuming anti-inflammatory medication.



ANATOMÍA PATOLÓGICA DE LA ARTRÓSI

Kernoch B Brandt, An Atlas of Osteoarthritis, 1st ed, pag 9-25, 2002



Biography

Joe Loui Carrillo is an Orthopedic Traumatologist. He is an active member of the International Cartilage Repair Society since 2016. He is a Founder and General Director of Center of Regenerative Medicine Queretaro, active member of International Geriatric Fracture Society 2015.

joelouicarrillo@gmail.com

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