

OPEN CHONDROPLASTY AND AUTOLOGOUS MATRIX INDUCED CHONDROGENESIS (AMIC) FOR KNEE CHONDRAL INJURY

Muhamad Amir Azfar Sahadun¹, Tengku Muzaffar Tengku Mohd Shihabudin¹

¹Hospital Universiti Sains Malaysia

Introduction: Chondral injury in the knee is a common disorder and can occur in isolation or following ligamentous as well as meniscal deficiencies. To get the best possible outcome, each concomitant pathology must be addressed prior to, or at the same time of cartilage procedure. In general, surgical technique to be utilized for cartilage procedure will depends on the size of defect

Discussion: We present a case of 35 years old gentleman with complaint of right knee pain which started in 2013 (7 years prior) following injury while playing futsal. He underwent right anterior cruciate ligament reconstruction in 2017 due to persistent instability. Intra-operatively, there were presence of cartilage injury not amenable to immediate repair and he was scheduled for another operation to address the cartilage injury. In December 2020, he underwent open chondroplasty of right knee with Hyalofast scaffold. At 2 months post-operative follow up assessment, he regained pre-operative knee range of motion and reduction in knee pain.

Conclusion: It is well documented that cartilage lesion heals poorly in response to damage due to limited vascularity. This forms the basis of bone marrow stimulation technique (microfracture) that was first developed in 1950's to induce subchondral bone bleeding which is rich in multipotent mesenchymal stem cells (MSC) and growth factor. Unfortunately, this technique is limited to small size of defect and has unsatisfactory long-term outcome as the resulting clots formed tend to be a mixture of fibrous and hyaline-like cartilage which has poor capacity to withstand repetitive loading. With the advance of biological technology, autologous matrix induced chondrogenesis (AMIC) scaffold has been introduced as a single stage operative procedure to improve efficacy of microfracture by stabilizing MSC clot and stimulating differentiation along the chondrogenic lineage.