THREE-YEAR RESULTS OF AUTOLOGOUS CHONDROCYTE IMPLANTATION (ACI) VERSUS MATRIX-INDUCED AUTOLOGOUS CHONDROCYTE IMPLANTATION (MACI) FOR OSTEOCHONDRAL DEFECTS OF THE KNEE

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Autologous Chondrocyte Implantation (ACI) is used widely as a treatment for symptomatic chondral and osteochondral defects of the knee. We report the minimum 2-year follow-up results of 217 patients randomised to ACI using porcine-derived collagen membrane as a cover (ACI-C) and matrix-induced autlogous chondrocyte implantation (MACI) for the treatment of osteochondral defects of the knee.217 patients (mean age 34.2) were randomised to have either ACI (92 patients) or MACI (125 patients). 1 year following surgery, patients underwent check arthroscopy (with or without biopsy) to assess the graft. Functional assessment was performed yearly by using the Modified Cincinatti Knee score, the Bentley Functional Rating Score and the Visual Analogue Score. In the ACI group the Cincinatti score increased from 45.2 pre-operatively to 56.7, 54.1, and 65.4 at 1 year, 2 years and 3 years respectively. In the MACI group the Cincinatti score increased from 45.5 pre-operatively to 59.9, 58.9, and 63.4. Arthroscopic assessment showed a good to excellent International Cartilage Repair Society score in 91.4% of ACI-C grafts and 76.1% of MACI grafts. Hyaline-like with fibrocartilage was found in biopsies of 48.6% of ACI-C grafts and 30.5% of MACI grafts. ACI grafts are more likely to produce hyaline-like or mixed hyaline-like cartilage and fibrocartilage with better ICRS grades than MACI grafts. However, this does not translate to better a clinical functional outcome. More importantly, ACI and MACI had similar results that were maintained at 3 years.