Clinical Implementation Of Autologous Chondrocyte Implantation in Collagen Scaffold In Brazil: a Series of the First 10 Cases

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Disclosure

• The authors have no conflict of interest to disclose
Autologous chondrocyte implantation (ACI)

• Treatment of focal cartilage defects
• Joint biopsy followed by expansion of autologous chondrocytes
• Had not been available in Brazil previously
3rd generation ACI: chondrocytes cultured in membrane

Avoid complications of the periosteal patch hypertrophy

Delivery system – avoids chondrocyte loss in surgery

Scaffold membrane - Regeneration Framework
Objective

- Clinical implementation of ACI in a collagen scaffold and reporting the safety and outcome of the first cases.

Patients and methods

Inclusion criteria:
- Symptomatic knee cartilage defects > 2 cm²
- Less than 45 years old
- Desire for higher demand activity
- Conservative treatment failure

Relative contraindications:
- Bipolar defects (osteoarthritis)
- Subchondral defect> 8mm
- Inability to perform long rehabilitation
- Inflammatory Arthropathy
- Obesity
- Uncorrectable Causes of Overload
Demographic data

- 10 patients, 11 knees
- Age: 32 +/- 11.5 anos
- Defect size: 5.3 cm² +/- 2.3
- Etiology: 6 traumatic (ligament injury), 2 osteochondritis, 1 patellar instability
- Associated procedures performed as indicated
- Current follow-up: 7.6 months (1.7 to 14 months)
Cultured chondrocytes positive for collagen type II

Cell viability essay showing >95% viability

Chondrocytes adhered to collagen membrane
Complications: 2 patients undergoing arthroscopic release and 8 week manipulation
Paciente 2
Conclusion

Third generation ACI is viable in our setting, having been safely and successfully applied in 10 patients. Longer follow-up is necessary to statistically demonstrate functional improvement.
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