Cartilage Repair Using Combined Osteochondral Autograft Transfer and Microfracture Technique for Severe Osteoarthritis of the Knee in Younger Patients

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It is hard to expect successful cartilage repair with mosaicplasty only or microfracture only technique for extensive lesion of severe osteoarthritis.

To evaluate arthroscopic, radiologic, and clinical results of cartilage repair using combined osteochondral autograft transfer (OAT) and microfracture (MF) technique for severe osteoarthritis of the knee in younger patients.
Materials & Methods

- 63 knees of 58 patients who underwent combined OAT and Microfracture (MF) for MFC Grade 4 lesion, and medial opening wedge HTO from Jan. 2011 to July 2016

Evaluation
- Status of cartilage repair by ICRS grading on 2 look AS at PO 1 years
- Radiologic results by Kellgren-Lawrence (K-L) grading
- MOCART score
- Clinical results: KOOS score, IKDC subjective forms, KS function score, patient’s satisfaction in Likert scale.

Statistical analysis: Chi-square analysis, Student t-test, and ANOVA test.

Postoperative Treatment
- CPM: 6-8hr/day for 6wks
- Non-wt. bearing for postop. 6wks
Surgical Technique (52, F)

- Standing AP (K-L G4)
- MTP G4
- MFC G4
- MTP subchondral bone abrasion
- MTP Microfracture
MFC G4

LFC Donor site

LFC recipient bone plug-in

MFC Island OATS & MF
PO 1d

PO 5m

PO 11m

MFC

MTP

< 2º look AS >

PO 65ms
Results

- Age: 52.8 (range: 39-61 years)
- Sex: Male 10 patients, Female 53 patients
- FU period: 45.6 ms (13~87ms)
- The size of ICRS grade 4 lesion of MFC and MTP were 4.03 cm², 1.30 cm² in average, respectively.
AS Results

**MFC**

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**MTP**

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Radiologic Results

- **K-L grading**

- **MOCART score: 82.4**
Clinical Results

(Avr Fu: 45.6ms (13~87ms))

Patient satisfaction:
4
(2~5)
Discussion

- Osteochondral graft inserted with island pattern will give the blood clot generated by the microfracture structural integrity to prevent certain damages from the shear stress.
Conclusion

This combined technique of cartilage repair of MFC is very promising and reproducible.

Therefore, it would be a good alternative to the arthroplasty for the active, Younger patients who have severe OA, but do not want to replace the joint.


