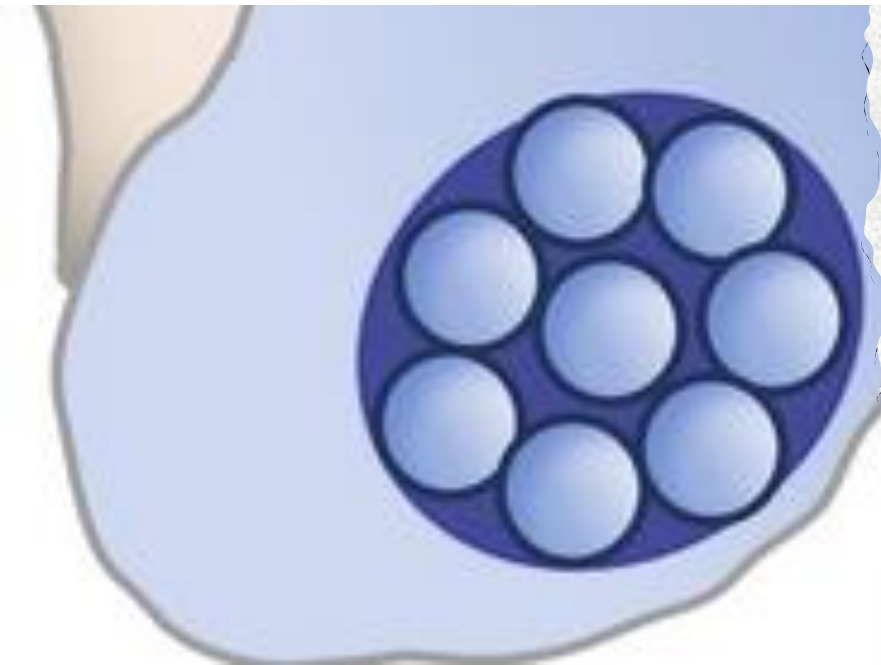




# Nuts in Jelly Mosaicplasty for medium to large chondral defects of knee – functional outcomes upto 5 years follow up



## Authors:

**Dr. Girinivasan Chellamuthu,  
Dr. Santhosh Sahanand,  
Dr. David. V. Rajan**

*No Conflict of Interest*

*No commercial affiliations*

## **Dr. Girinivasan Chellamuthu**

MBBS., MS (Ortho), FASM (Arthroscopy and Sports Med), FIOT (Trauma & Limb reconstruction), FEIORA (Orthopedic Rheumatology)


### **Affiliations:**

- Consultant Arthroscopy and Sports Surgeon – Ravina Hospital, Chennai*
- Assistant Professor of Orthopedics – Saveetha Medical College and Hospital, Chennai*
- Founding Member & Research lead – Orthopaedic Research Group*

Clinical Orthopaedics and Related Research

Volume NO. 201, 1985, Pages 43-50

## The transplantation of an autogeneic osteochondral fragment for osteochondritis dissecans of the knee(Article)

Yamashita, F., Sakakida, K., Suzu, F., Takai, S. 

Department of Orthopedic Surgery, Kyoto Prefectural University of Medicine, Kamigyo-Ku, Kyoto 602, Japan

- The graft was transplanted from the normal portion of the medial femoral condyle, which in extension was in contact with neither patella nor meniscus.
- The donor site was repaired with an iliac bone fragment. After curettage of the crater, the osteochondral fragment was transfixed with AO mini-cancellous screw(s)

ARCHIVE

## The use of a lateral patellar autologous graft for the repair of a large osteochondral defect in the knee.

Outerbridge, H K; Outerbridge, A R; Outerbridge, R E

[Author Information](#) ⓘ

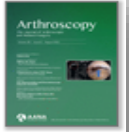
Royal Columbian Hospital, New Westminster, Canada.

The Journal of Bone & Joint Surgery: Jan 1995 - Volume 77 - Issue 1 - p 65-72



Arthroscopy: The Journal of Arthroscopic & Related Surgery

Volume 9, Issue 3, June 1993, Pages 318-321



## Arthroscopic multiple osteochondral transplantation to the chondral defect in the knee associated with anterior cruciate ligament disruption

M.D. Yoshitaka Matsusue <sup>1</sup>✉, M.D. Takao Yamamuro <sup>1</sup>, M.D. Hiromichi Hama <sup>1</sup>

- Simplicity - one-stage surgical procedure,
- Transfer of living autologous cartilage,
- low cost and morbidity,
- No transmission of infection
- Avoids complications related to multiple procedures like infection
- Low resource setting

- Both treatments resulted in a decrease in symptoms.
- Improvement provided by the ACI lagged behind that provided by OATS.
- Histologically, ACI were primarily filled with fibrocartilage, whereas the osteochondral cylinder transplants retained their hyaline character, although there was a persistent interface between the transplant and the surrounding original cartilage.

## Autologous Chondrocyte Implantation and Osteochondral Cylinder Transplantation in Cartilage Repair of the Knee Joint

### A Prospective, Comparative Trial

Horas, U. MD; Pelinkovic, D. MD; Herr, G. DSc; Aigner, T. MD; Schnettler, R. MD

[Author Information](#) ☺

The Journal of Bone & Joint Surgery: February 2003 - Volume 85 - Issue 2 - p 185-192

Larger  
defects??

[Int J Clin Exp Med](#). 2015; 8(4): 6053–6059.

Published online 2015 Apr 15.

PMCID: PMC4483996

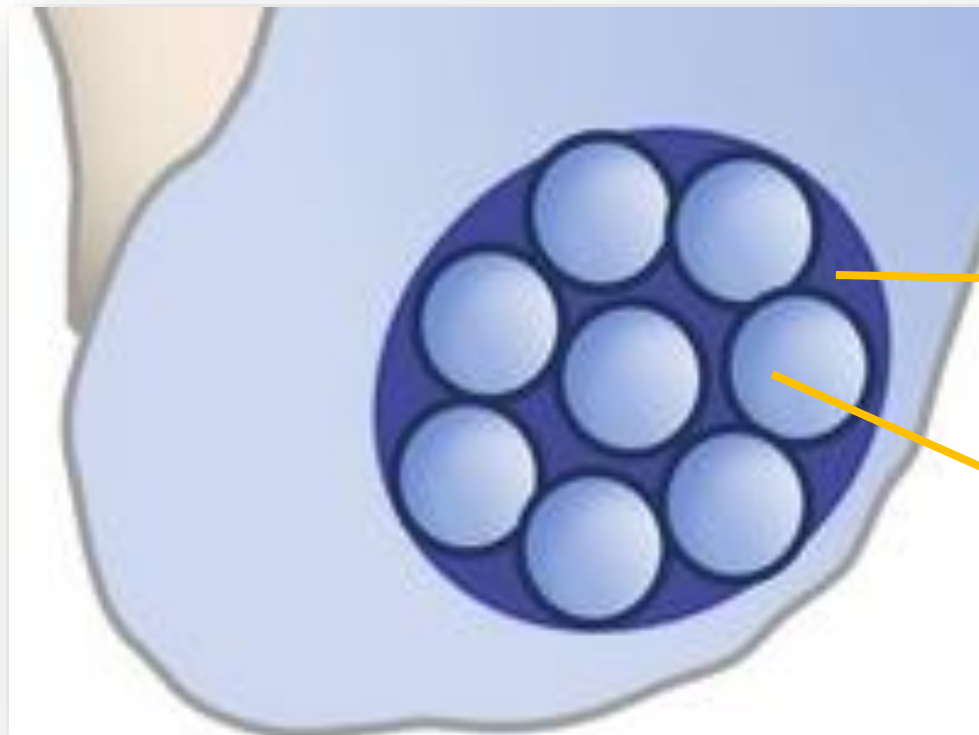
PMID: [26131203](#)

## Repair of osteochondral defects by mosaicplasty and allogeneic BMSCs transplantation

[Xin Ma](#), [Yuan Sun](#), [Xiangguo Cheng](#), [Youshui Gao](#), [Bin Hu](#), [Gen Wen](#), [Yebin Qian](#), [Wenqi Gu](#), [Yanjie Mao](#), and [Wanjun Liu](#)

- Rabbits
- In BMSCs group, from 4 to 16 weeks, the interspace was filled with white and tenacious tissues
- The texture of newly generated cartilage was similar to normal cartilage with gradually disappearing borderline
- In control group, the interspace was distinguishable with a rough surface

# Surgical technique



BMAC

Mosaicplasty  
cylinders

**Larger traumatic defects** –  
(mosaicplasty + BMAC)

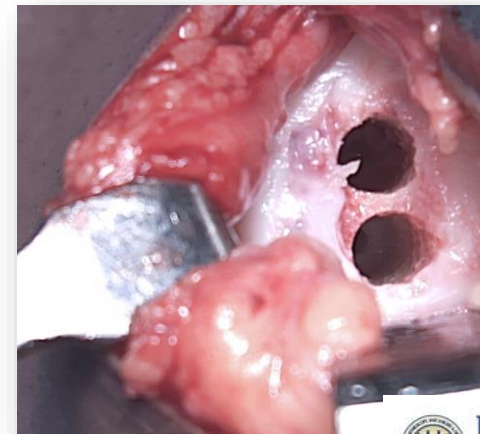
**OCD** – whatever fragment available  
fixed + (Mosaicplasty) + BMAC

**BMAC** – Arthrex angel system – fully  
automated system



# Surgical technique

- (1) Initial arthroscopic examination – assessment and debridement.
- (2) Graft harvesting.
- (3) Recipient site preparation
- (4) Graft placement.
- (5) BMAC preparation and spread





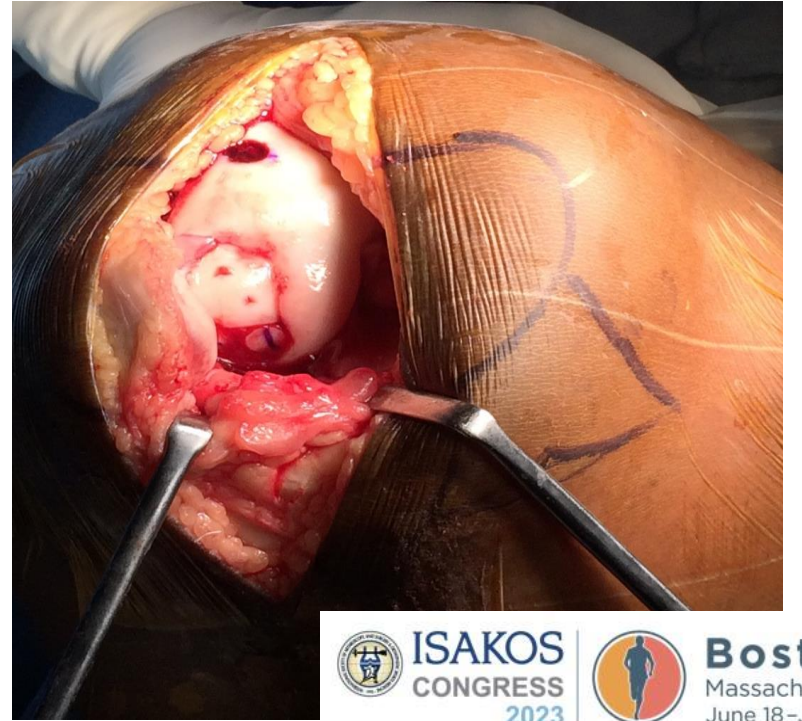
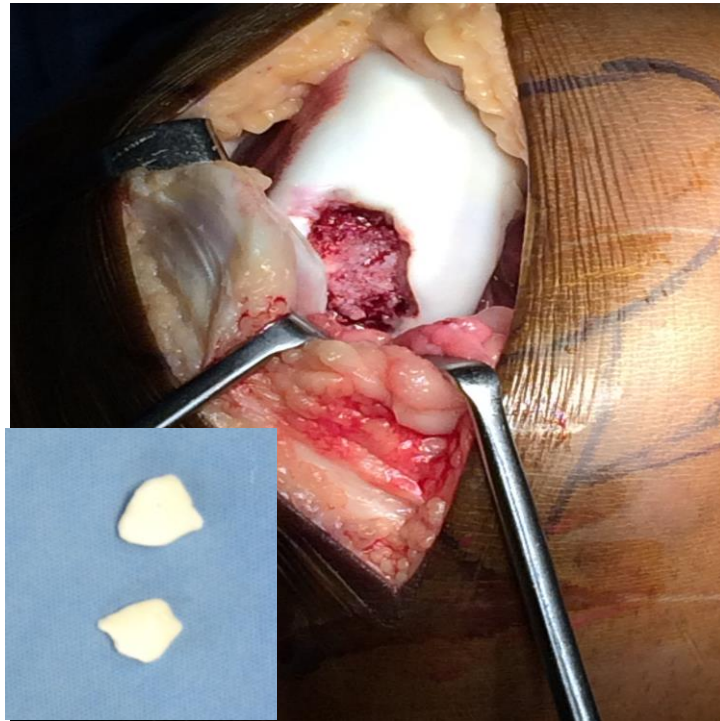
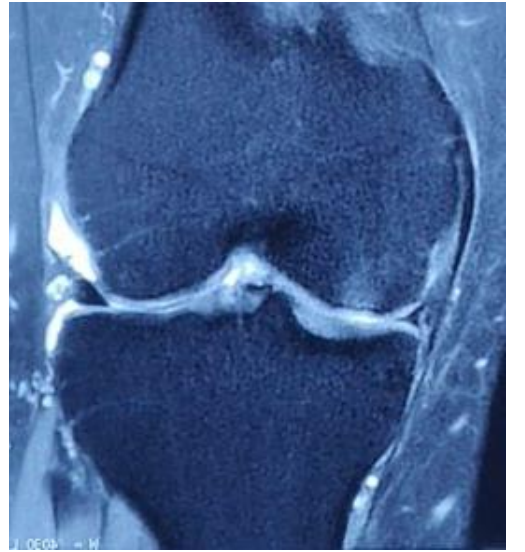
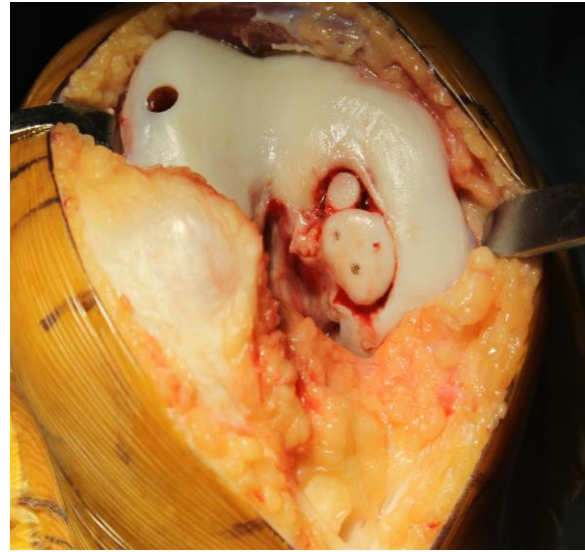
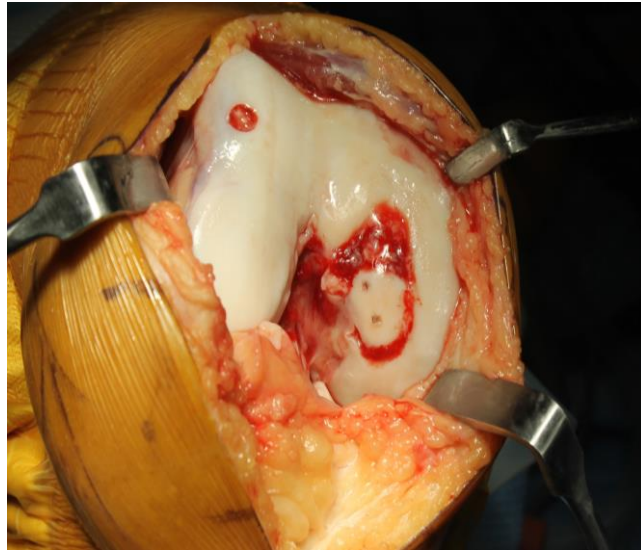
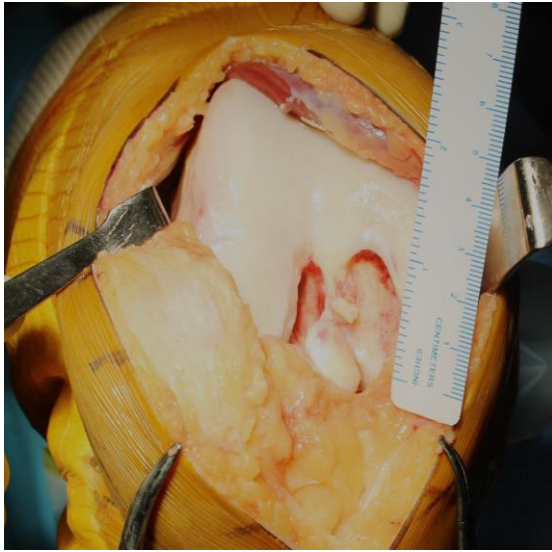
3000 RPM  
25 MINUTES  
ACD-A  
100 – 120 mL blood – 4 mL  
BMAC



 **Fibrin Sealant**  
**TISSEEL**  
Vapor Heated, Solvent/Detergent Treated, Frozen  
with Pre-filled PRIMA Syringe

- 13 cases were followed up for a minimum of 2 years (5 to 2 years).
- The average age is 34 years (23 to 46 years).
- There were 10 males and 3 females;
- OCD – 7, Traumatic - 6
- Repeat MRI showed complete healing of lesions at 2 years in all cases.
- Tegner Lysholm score was good in 4 patients and excellent in 9 patients.





## Conclusion

- Nuts in Jelly technique - effective single-stage procedure
- Low cost – compared to ACI + OATS
- Simple when compared to MegaOATS etc
- Reproducible
- Medium to large chondral defects of the knee.
- Further prospective comparison studies, biopsy - are needed to validate the superiority of this technique over chondrocyte implantation techniques

