Methods and Materials: The posterior femoral condyle is osteotomized through an anteromedial/antolateral (mini-)arthrotomy and implanted at the defect site using a press-fit technique. The biomechanical changes that occur when removing the posterior condyle were analysed by intraarticular pressure analysis in a series of 8 human cadaver knees. Clinical results were evaluated using IKDC and Lysholm Score.

Results: Intraarticular contact pressure increases after removing the posterior femoral condyle at 30° and 60° of flexion – the so called „edge-effect“. The analysis of postoperative MRI shows scar-tissue that imitates the curvature of the resected condyle, so in vivo the edge-effect is a lot milder. In our opinion harvesting the posterior femoral condyle through a second posterior approach is no alternative because of possible neurovascular complications and difficulties in harvesting the graft in orthograde axial direction. All patients improved subjectively and objectively (Lysholm 38±9, IKDC), there were no complications.

Conclusions: Mega-OATS is a salvage procedure for large osteochondral defects. Clinical results are encouraging, although long term results are still missing. The biomechanical changes are tolerable when thinking of the possible protraction or even prevention of TKA.

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Scaffold ACI in femuropatellar cartilage defects

**S. Anders**, O. Wiech, J. Schaumburger, J. Grifka; Dept. Of Orthopaedics, University of Regensburg, Bad Abbach, Germany

**Purpose:** Focal cartilage defects of the femuropatellar joint have been problematic for conventional periosteal based ACI especially because of periosteal hypertrophy and delamination. The results of a scaffold ACI (MACI®) for this location are presented in this prospective study.

**Methods and Materials:** 32 knees (Ø age 31 (16-51) years) with 46 focal defects (ICRS III-IV®) of the patella P (n=12), trochlea T (n=6), patella and trochlea P+T (n=4) or in combination with a condyle defect P/T+C (n=10) were treated by scaffold ACI (MACI®). The average follow-up was 18.2 (6-43) months. The mean defect size was 4.8 cm² (2.4-7.8) per knee. Mean age of the subgroups was 27.4 (P), 23.8 (P+T), 34.3 (P/T+C) and 35.5 years (T). Characteristics of previous surgery and follow-up were comparable.

**Results:** Significant improvements (p<0.05) in each subgroup were found in the Lysholm-Score for P (52.4 to 86.4), GL (63.5 to 91.4), P+T (66.5 to 75.6) and P/T+C (58.9 to 79.2). On a visual 10-point analogue scale best pain reduction was seen in the P/T+C group (5.9 to 2.9), followed by T (5.5 to 1.1), P (5.4 to 3.1) and P+T (5.7 to 4.9). MRI showed reasonable results. No specific complications were found.

**Conclusions:** Scaffold ACI is an appropriate therapeutic option for local or femuropatellar cartilage defects. Single defects of the patella or trochlea showed the best outcome. Combination of a patella or trochlea defect with an additional condyle defect did not show negative effects. Corresponding femuropatellar lesions can not be recommended for scaffold ACI routinely. Cocomittant pathology (e.g. maltracking) must be addressed properly.