**P9**

**Fresh osteochondral allografting for treatment of deep cartilage and bone defects.**

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**Purpose:** Deep cartilage defects are very serious problem in knee surgery. The use of fresh osteochondral allografts in the reconstruction of the articular surfaces seems to be a promising technique. Fresh allografts are most useful in treating large osteochondral lesions such as those seen with osteochondritis dissecans or osteonecrosis, and osteochondral fractures. The aim of our study was to describe indications, contrindications, imaging technique of the lesions and elaborate technique and instruments for large osteochondral allograft transplantation.

**Methods and Materials:** Between June 2006 and January 2007 we work out special instruments for large osteochondral allograft transplantation. This instrumentation contains allograft workstation, dilators and tamps.

**Results:** The instruments were tested on artificial bone and osteochondral large fragment transplantation have been performed on 5 swine knees. The results of this transplantations were very good and we present them on tables and pictures.

**Conclusions:** This is a preliminary report but our results of operation on swine knees suggest that large osteochondral allograft transplantation supposed to be good option for treatment large and deep osteochondral lesions on weight-bearing surfaces of the femur.

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**P10**

**Experimental and clinical research into effectiveness of calcemin for prophylaxis and treatment of osteoporosis**

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**Purpose:** The aim of this study was to estimate the effectiveness of calcemin drug for prophylaxis and treatment of osteoporosis in otherwise healthy elderly people, and in patients with proximal hip fractures in anamnesis.

**Methods and Materials:** During the experimental research 18 adult rats were examined and divided into 3 groups (I group – intact animals, II group - rats after surgical castration, III group - operated animals treated with calcemin). 12 somatically healthy postmenopausal women with structural-functional disorders of bone and 10 patients aged 58-78 years with hip fractures (duration of postmenopausal period up to 6 months) were clinically examined and prescribed 1 tablet of calcemin twice a day. Besides, we’ve examined 20 patients aged 58-78 years with hip fractures in anamnesis.

**Results:** The medial tibial plateau was damaged more compared to the lateral tibial plateau and the lateral femoral condyle (p<0.05). Microscopically, the medial tibial plateau was damaged more in both implant groups compared to the sham-operated group (p<0.05). Additionally, the Cobalt Chromium implants caused more damage compared to the microfracturing group (p<0.05). There was no statistically significant difference between the damage invoked by oxidized Zirconium and Cobalt Chromium.

**Conclusions:** This study showed that treatment of a longer existing cartilage defect in the medial femoral condyle using small metal implants causes more cartilage damage compared to microfracturing or even by the absence of treatment. All in all, caution is warranted using small metal implants as a treatment for established localized cartilage defects.

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**P11**

**Treatment of established localized cartilage defects with metal implants cause considerable cartilage damage**

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**Purpose:** Currently, the surgical treatment of localized cartilage defects has limitations. Alternatively, localized cartilage defects may be treated with small biocompatible metal cartilage tacks. Our purpose was to investigate the applicability of defect-size femoral implants as compared to a sham operation and microfracturing in a four-week-old defect-model.

**Methods and Materials:** In 31 NZW rabbits, a medial femoral condyle defect was created. After four weeks three control animals were sacrificed. In the other rabbits, the knees were either sham operated, treated with microfracturing, or treated by placing an oxidized Zirconium or Cobalt Chromium implant (Ø articulating surface 3.5mm; fixating pin of 9.1mm length). These animals were sacrificed after 4 weeks. Cartilage repair (O’Driscoll, 1986) and quality was scored (macroscopically Mautbergen, 2005 and microscopically Pritzker, 2006).

**Results:** Macroscopically, in all groups the cartilage damage of the medial and lateral tibial plateaus had increased versus the 4-week time point (p<0.05). The medial tibial plateau was damaged more compared to the lateral tibial plateau and the lateral femoral condyle (p<0.05). Microscopically, the medial tibial plateau was damaged more in both implant groups compared to the sham-operated group (p<0.05). Additionally, the Cobalt Chromium implants caused more damage compared to the microfracturing group (p<0.05). There was no statistically significant difference between the damage invoked by oxidized Zirconium and Cobalt Chromium.

**Conclusions:** This study showed that treatment of a longer existing cartilage defect in the medial femoral condyle using small metal implants causes more cartilage damage compared to microfracturing or even by the absence of treatment. All in all, caution is warranted using small metal implants as a treatment for established localized cartilage defects.