The femoral axis aiming device we present is made of a vertical bar, firmly fixed to the operating table, and a horizontal one overhanging the operated knee.
Through a guiding tubes system, it allows to mark any point of the femoral condyle and to keep the "memory " of its spatial location.The situation in space of a selected femoral mark (any point is suitable) is determined and kept in "memory" both in abduction and adduction position. A rod passing perpendicularly through the center of the segment joining those two positions will automatically cross the center of the hip.
During 20 total knee replacements operated between march and June 2007,the coronal plane femoral axis was determined using this method and an image intensifier set over the hip joint as a reference.
The results obtained with each method were compared and the differences measured.
Results: In comparison with the ideal 0° reference axis: Mean error (in degrees) ± SD : 0.6 ± 0.6. Error ≤1°: 80% of cases. Error ≤3°: all cases.
Conclusions: The described method allows to determine the lower limb mechanical axis in the frontal plane without violating the femoral medullary canal and without any computer assistance. It is quick, simple and inexpensive. It is compatible with minimal invasive procedures and could be also used in uni arthroplasties or osteotomies.

P19-1036
Cementing the tibial component in total knee arthroplasty: which technique is the best?
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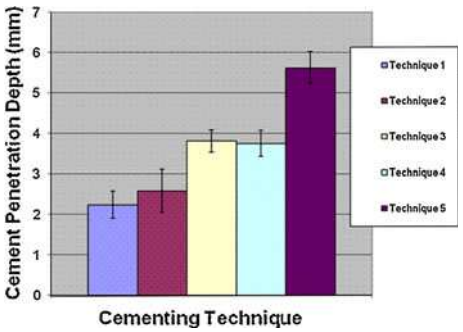
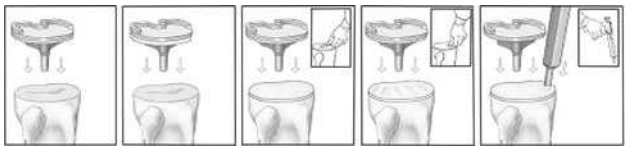
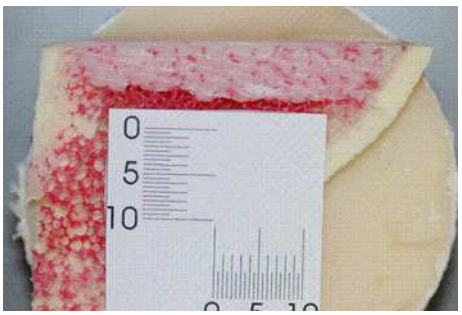
Objectives: Aseptic loosening of the tibial component remains a major cause of failure in total knee arthroplasty and may be related, directly or indirectly, to micromotion. Therefore, good fixation of the tibial component is a prerequisite to achieve long-term success of the implant. Cementing technique is one of the factors that play a role in this respect. We investigated the effect of different cementing techniques on the cement penetration in the proximal tibia.
Methods: We compared 5 different cementing techniques in an anatomical open pore sawbone model (n=25), using a contemporary TKA design and standard polymethylmetacrylate cement. In the first technique, 10 g of cement was applied in a thin layer on the lower surface of the tibial component. The component was then placed and impacted onto the tibia using the specific component impactor supplied by the manufacturer. In the second technique, 20 g of cement was applied in a thick layer on the lower surface of the tibial component. In the third technique, 20 g of cement was applied in equal parts, on both the tibial component and the tibial bone using a spatula. In the fourth technique, 20 g of cement was applied in equal parts on both the tibial component and the tibial bone, but it was fingerpacked into the bone. In the fifth technique, 20g of cement was applied to the tibial bone with the use of a cement gun.
After making cuts in the medial and lateral oblique sagittal plane of the tibia, we used Corel PHOTO-PAINT 9 to quantify the cement penetration.
Results: Technique 1 (thin layer of cement on the tibial implant only) and 2 (thick layer of cement on the tibial implant only) were not significantly different from each other in terms of penetration depth, but were both significantly different from the other techniques. The same was seen for technique 3 (two equal parts of cement on both the tibial component and the tibial bone using a spatula) and 4 (two equal parts of cement on both the tibial component and the tibial bone, using the fingerpacking technique). The penetration depth was highest for technique 5 (using a cement gun), which was significantly different from all the other techniques.



Average cement penetration depth for each technique


5 different cementing techniques



Example of a section with the measuring scale

Conclusions: We demonstrated that applying cement to both the undersurface of the tibial baseplate and as well as onto the tibial bone, either by a spatula or fingerpacking technique, leads to an optimal cement penetration of 3-5mm. When cement is applied only onto the tibial component, penetration is insufficient. When a cement gun is used, cement penetration is too excessive.

P19-1050
Three-dimensional analysis of unicompartimental knee implant positioning
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Objectives: The purpose of this study was to analyze the positioning of unicompartmental knee arthroplasty (UKA) and to compare between the medial and lateral compartments.
Methods: All patients were examined postoperatively using computed tomography with three-dimensional analysis of the lower limb from the hip to the ankle. There were 18 lateral and 19 medial UKAs. All knees were analyzed using an image processing software that enabled 3D bone reconstructions and digitization. We measured the varus-valgus inclination and internal-external rotation of the femoral and tibial components.