Five year single center experience with 1‘866 Total Hip Replacements using 4th generation ceramic on ceramic bearings

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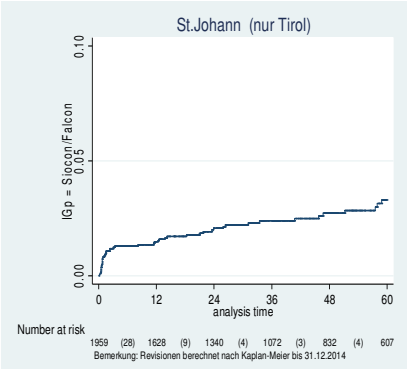
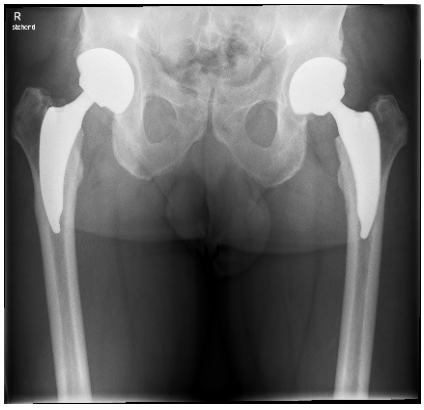
Introduction: Polyethylene wear is still a major reason for failure of total hip replacement (THR). Therefore, hard-on-hard bearings have been introduced to overcome this problem. Ceramic-on-ceramic (CoC) bearings were first used in the early 1970s and demonstrate very low wear and osteolysis, although with a certain risk of component fractures, which was decreased with every new generation of ceramics. 4th generation CoC bearings (BIOLOX®*delta*) were introduced in our department in 2010.

Material and Methods: From 2010 to 2015 1‘866 cementless THRs using this fourth generation CoC bearing with diameters from 28 to 36 mm were implanted in a single Orthopedic Center (58% 36 mm, 41% 32 mm, 1% 28 mm). All patients received the same type of socket (Falcon Medical) and a corresponding ceramic head from the same manufacturer. All patient data were transferred to regional endoprostheses registry. Combining the data of our hospital and the data oft the registry we were able to identify a total of 40 revisions of this cohort.



Results: Major cause for revision was periprosthetic fracture of the femur in 21 cases followed by deep infection in 8 cases, aseptic component-loosening in 5 cases, mechanical reasons (dislocation, impingement) in 4 cases and malpositioning of the liner in 2 cases. There was no case of ceramic fracture or squeaking either experienced at our department or reported to the prostheses registry.



Discussion: In this mid-term evaluation of a large number of THRs with 4th generation CoC articulation no failure was considered to be related to the bearing. Although further longer term observation of these THR with CoC bearings is necessary, our data demonstrate promising clinical results with minimal complications.