
List of contents

SESSION 1A

Tribology

- 1A.1 Differences and Opportunities of THA in the USA, Asia and Europe 3**
H. Kiefer
- 1A.2 Influence of the Wear-Couple and Patient Activity on Linear Wear in Total Hip Replacement 9**
Ch. Hendrich, N. Wollmerstedt, S. Goebel and J. M. Martell
- 1A.3 Roles of Cellular and Molecular Targets of Wear Debris in Periprosthetic Osteolysis 19**
S.-S. Lee, J.-D. Chang, P. E. Purdue, B. J. Nestor, T. P. Sculco and E. A. Salvati

SESSION 1B

Tribology

- 1B.1 Wear Performance of 36mm BIOLOX® forte/delta Hip Combinations Compared in Simulated 'Severe' Micro-Separation Test Mode 33**
I. C. Clarke, D. Green, P. Williams, G. Pezzotti and T. Donaldson
- 1B.2 In-Vitro and In-Vivo Ceramic Debris with Ceramic Prosthesis 45**
A. Toni, F. Traina, M. De Fine, E. Tassinari, F. Biondi, A. Galvani, F. Pilla and S. Stea
- 1B.3 Surface Roughness of Ceramic Femoral Heads after In-Vivo Transfer of Metal Correlation to Polyethylene Wear 49**
Y.-H. Kim
- 1B.4 Hydrothermal Stability of Ceramic Femoral Heads 59**
V. Corfield, I. Khan and R. Scott

SESSION 2

Ceramic/Polyethylene

- 2.1 Ceramic on highly cross-linked Polyethylene in cementless Total Hip Arthroplasty 67**
J.-S. Kang and K.-H. Moon
- 2.2 Comparative Analysis of Ceramic to Ceramic Bearing with Metal to Electron Beam-Irradiated highly cross-linked UHMWPE Bearing 71**
S.-K. Kim, J.-W. Park, J.-H. Wang and J.-G. Kim
- 2.3 Comparison of Uncemented Total Hip Arthroplasty between Metal on Metal and Ceramic on Polyethylene Bearing Surfaces in Young Patients 73**
Y.-H. Kim
- 2.4 Comparison of Polyethylene Wear against Alumina and Zirconia Heads in Cemented Total Hip Arthroplasty 83**
K. Kawanabe, B. Liang, K. Ise and T. Nakamura

SESSION 3

Large Diameter Wear Couples

- 3.1 Wear of large Ceramic Bearings 91**
T. Pandorf
- 3.2 Evolution for Diameters Features and Results 99**
P. Dalla Pria, M. Pressacco, F. Benazzo and S. Fusi
- 3.3 Design Rationale for Acetabular Cups with alternative Bearings and large Diameter Heads 107**
J. Oehy and M. Shen
- 3.4 Use of Modular Femoral Stem combined with large Diameter Femoral Head in Alumina-on-Alumina Total Hip Arthroplasty 117**
Y.-S. Park, Y.-W. Moon and S.-J. Lim

SESSION 4

Ceramic Knee Implants

- 4.1 Ceramic Femoral Prosthesis in TKA
– Present and Future** 123
M.-C. Lee and J.-W. Ahn
- 4.2 Finite-Element-Analysis of a Cemented Ceramic
Femoral Component in Total Knee Arthroplasty** 133
Ch. Schultze, D. Klüß, A. Lubomierski, K.-P. Schmitz, R. Bader and W. Mittelmeier
- 4.3 Advanced Testing of Ceramic Femoral Knee
Components** 137
T. Pandorf and M. Kuntz
- 4.4 Reasons using a Ceramic Femoral Component
and First Clinical Experience** 145
F. Benazzo, P. Dalla Pria, W. Mittelmeier, D. Tigani, C. Zorzi, D. Ganzer,
C.H. Lohmann, E.G. Cimbrello, C.R. Merchan, E.M. Saura, A.U. Lizaur,
J.F. Couceiro and S. Burelli
- 4.5 Comparison of In-Vivo Wear between Polyethylene
Inserts articulating against Ceramic and Cobalt-
Chrome Femoral Components in Total Knee Prostheses** 149
H. Oonishi, S.-C. Kim, H. Oonishi, M. Kyomoto, M. Iwamoto and M. Ueno

SESSION 5A

Hard on Hard Bearings

- 5A.1 Toughening vs. Environmental Aging
in BIOLOX® delta: A micromechanics study** 163
G. Pezzotti
- 5A.2 Clinical Experience with Ceramic on Ceramic
in the USA** 169
J. P. Garino
- 5A.3 Why use an all Ceramic Tripolar THR ?
– clinical and experimental data** 173
J.-Y. Lazennec, H. Sari Ali, M. Gorin, B. Roger, A. Baudoin and A. Rangel
- 5A.4 Lessons from 1st generation
Ceramic on Ceramic THA** 179
Y.-J. Cho
- 5A.5 Nine-Year Experience with a Contemporary
Alumina-on-alumina THA Implant** 181
H.-J. Kim and J.-J. Yoo

5A.6 Ceramic on Ceramic Bearing in Coren® Hip System	187
J. - M. Lee	

SESSION 5B

Hard on Hard Bearings

5B.1 Metallosis in Metal-on-Metal PPF Total Hip Arthroplasties	193
R. Legenstein, W. Huber and P. Boesch	
5B.2 Results of 10 Years' Follow-Up of Ceramic- Ceramic Couples in Total Hip Replacement	205
M. Azizbaig Mohajer, F. Plattner and R. Graf	
5B.3 Mid-Term Results of Ceramic-on-Ceramic Bearing Extensively Porous Coated AML® Total Hip Arthroplasty	211
K.-H. Moon, J.-S. Kang, D.-J. Lee, S.-H. Lee and K.-H. Kim	
5B.4 Alumina-on-Alumina Total Hip Arthroplasty in Patients with Osteonecrosis less than 50 Years Old	219
S.-Y. Kim	
5B.5 Total Hip Arthroplasty using third Generation Alumina-on-Alumina Articulation	221
K.-H. Koo	
5B.6 Ceramic on Ceramic in Hybrid THR (Cemented Femoral Stem) – A five to seven year evaluation	223
S.-J. Yim	
5B.7 Mechanical Effect of the Articulating Materials on the Proximal Femur and the Femoral Stem in Total Hip Arthroplasty	229
Y.-Y. Won, K.-H. Moon, Y.-S. Yu, L.-S. Hyup and W.-Q. Cui	

SESSION 6

Market Trends and Future Applications

6.1 Surface Characteristics and Biocompatibility of Micro Arc Oxidized (MAO) Titanium Alloy	239
S.-Y. Kwon, Y.-S. Kim, D.-H. Sun, S.-S. Kim and H.-W. Kim	

6.2 Reasons for our Preference for Ceramic over Metal Bearing – clinical, radiological and biological evidences	249
J.-Y. Lazennec, P. Boyer, J. Poupon, M. A. Rousseau, F. Laude, Y. Catonné and G. Saillant	
6.3 Spine: Ceramic Disc – what you should know	261
M. Grässel	
6.4 Trend: Bigger Ball Heads: Is Bigger Really Better?	269
K.-H. Widmer	

SESSION 7

Hip Revision

7.1 Strategies for Head and Inlay Exchange in Revision Hip Arthroplasty	275
K. Knahr and M. Pospischill	
7.2 Live-Time Prediction of BIOLOX® delta	281
M. Kuntz	
7.3 Revision Total Hip Arthroplasty with Sandwich-type Ceramic on Ceramic Liner	289
S.-H. Lee, J.-H. Hwang, B.-K. Kim and S.-H. Hong	
7.4 Revision Surgery of Acetabular Polyethylene Wear – cup retention or revision?	295
T.-C. Yu	

SESSION 8

Tips and Tricks

8.1 Tragedy of Polyethylene Back Ceramic on Ceramic Articulation	299
K. Kawate, T. Ohmura, I. Kawahara, H. Kataoka, K. Tamai, T. Ueha and Y. Takakura	
8.2 Breakage of Alumina Ceramic Head and Clinical Failure after Minor Modification of Tapered Junction	303
M. Ishii, M. Takagi, H. Ida, S. Kobayashi, H. Kawaji and M. Hamasaki	

8.3 Tips and Tricks: Fracture of a Ceramic Insert with modern Ceramic Total Hip Replacement	311
B.-W. Min, K.-S. Song, C.-H. Kang, K.-J. Lee, K.-C. Bae, C.-H. Cho and Y.-Y. Won	
8.4 Minimally Invasive Two-Incision Total Hip Replacement using large Diameter Ceramic-on-Ceramic Articulation	319
T.-R. Yoon, C.-I. Hur, S. Diwanji and D.-S. Lee	
8.5 MIS and the Demands on Bearing Couples	329
S. Junk-Jantsch and G. Pflüger	
8.6 Computer Navigation: Improving Outcomes with Hard on Hard Bearings	341
R. G. Middleton, C. Olyslaegers and T. W. Wainwright	