



MIĘDZYNARODOWE SYMPOZJUM

Katowice, 21-23.04.2016

Hip revision in elderly – the advantages and disadvantages of the uncemented implants

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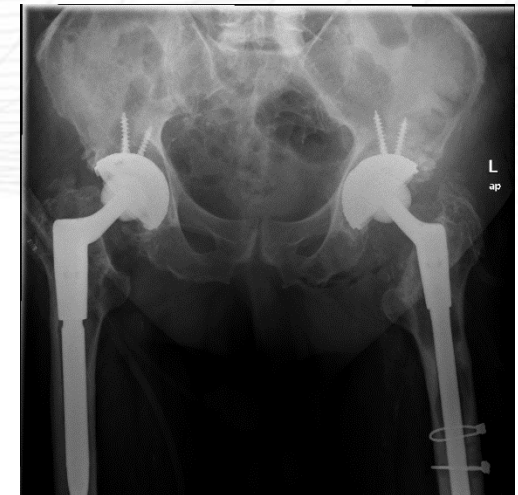
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- Population of people age >85 will quadruple by 2050
- At the same time most of them will be suffering from coronary heart disease, diabetes, obesity, osteoporosis and homeostasis disorders related to used drugs.
- With development of civilization quality of life improves, together with patients expectations.



- THA is becoming more popular.
- In the last decade – the number of revision procedures has grown by 79%.
- This data allow to estimate rapid increase of revision surgeries in elderly.



Causes of hip revision in elderly

1. Aseptic loosening
2. Recurrent dislocations
3. Periprosthetic fractures
4. Periprotetic osteolysis
5. PE wear
6. Periprosthetic infection
7. Sepsis



Revision surgeries

25% are associated with complications

- Problem with wound healing 10.6 %
 - Hematoma and chronic discharge 8.24%
 - Wound infection 2.35%
- Periprosthetic infection 1.76%
- Dislocations
 - 2.35% with antiluxation system
 - 3.7%-20% without antiluxation system
- Fractures 7.64%
 - Intraoperative 4.7%
 - Post-operative 2.94%
- Intraoperative bleeding 1.76%
- Another revision surgery 7.6%

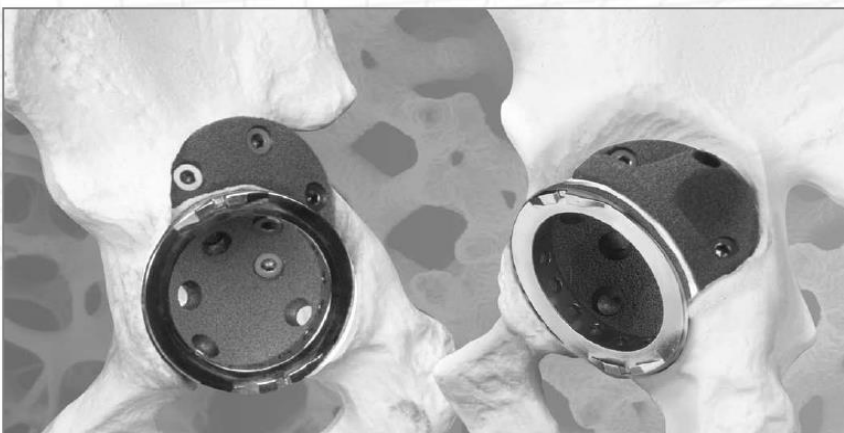
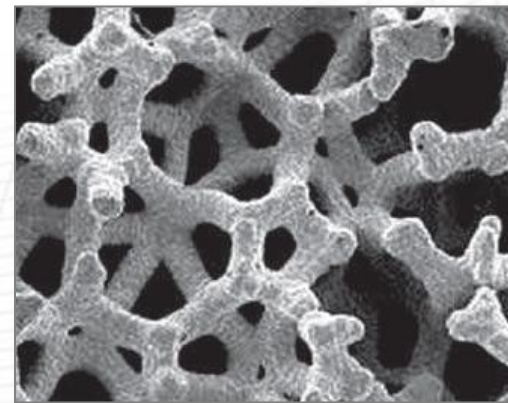


Types of implants

- Cups
 - Cemented.
 - Cemented + antiprotrusion cage.
 - Cemented + reconstruction by bone grafts and mesh.
 - Uncemented threaded.
 - Uncemented + screws.
 - Uncemented + metal augment.
 - Uncemented + antiprotrusion cage.
- Stem
 - Standard cemented.
 - Long cemented.
 - Uncemented monoblock.
 - Uncemented modular:
 - Tapered (Wagner).
 - Cylindrical (Fluted).
 - Poresekcyjny:
 - Cemented.
 - Uncemented.

Pros of uncemented cups

- Osteoinductive coating
- No osteolytic effect on bone grafts.
- Possibility to implant multi-directional screws.
- Possibility to use metal augments.



Cons of uncemented cups

- Prolonged partial weight-bearing.
- Risk of bone stock damage.



Pros of uncemented stems

- Modularity.
- Different sizes of proximal/distal part of stem depending on bone damage.
- Leg length adjustability.
- Stem anteversion adjustability.
- Offset adjustability.
- Shorter time of surgery.
- Implant of choice - > II deg. Paprosky.
- Implant of choice -> BII and BIII by Vancouver.
- Implant of choice when using extended trochanteric osteotomy [ETO] by Wagner.



Cons of uncemented stems

- Higher risk of intraoperative periprosthetic fracture.
- „Stress shielding”.
- Difficult implant removal.
- Thigh pain, especially with bigger stems.



Which revision stem?

- Taper Fluted Stem
 - 95% midterm survivorship
 - *Devane et al. J Arthroplasty 2006*
 - *Lim et al. J Arthroplasty 2007*
- Cylindrical Full Coat
 - 95-96% survivorship 10-14 years.
 - Engh et al. J Arthroplasty 2007
 - Paprosky et al. J Arthroplasty 2002

Femoral Revision With a Fluted, Tapered, Modular Stem

Seventy Patients Followed for a Mean of 3.9 Years

Douglas P. McNis, MD,* Geoffrey Home, MBChB, FRCS, FRACS,† and Peter A. Devane, MBChB, FRACS†

Revision Total Hip Arthroplasty Using a Fluted and Tapered Modular Distal Fixation Stem With and Without Extended Trochanteric Osteotomy

Youn-Soo Park, MD, Young-Wan Moon, MD, and Seung-Jae Lim, MD

The Outcome of Rerevision of an Extensively Porous-Coated Stem With Another Extensively Porous-Coated Stem

William G. Hamilton, MD,* James P. McAuley, MD,* Ehsan Tabaraee, MS,† and Charles A. Engh Sr, MD*

[Am J Orthop \(Belle Mead NJ\)](#), 2002 Aug;31(8):471-4.

Extensively porous-coated femoral stems in revision hip arthroplasty: rationale and results.

[Paprosky WG](#); [Burnett RS](#).

Which revision stem?

- Taper Fluted Stem
- Intra-operative fracture
1.5-9 %

- *Bischel et al. JBJS 2001*
- *Garbuz et al. CORR 2010*

*Femoral Revision with the Wagner SL Revision Stem
Evaluation of One Hundred and Twenty-nine Revisions Followed for a
Mean of 4.8 Years*

Paul Böhm, MD; Oliver Bischel, MD

J Bone Joint Surg Am, 2001 Jul; 83 (7): 1023 -1031

- Cylindrical Full Coat
- Intra-operative fracture
9-30 %

- *Duncan et al. JBJS 2004*
- *Paprosky et al. J Arthroplasty 2002*

*Intraoperative Fracture of the Femur in Revision Total Hip Arthroplasty
with a Diaphyseal Fitting Stem*

R.M. Dominic Meek, MBChB, MD, FRCS(Tr and Orth); Donald S. Garbuz,
MD, MHSc, FRCSC; Bassam A. Masri, MD, FRCSC; Nelson V.

Greidanus, MD, MPh, FRCSC; Clive P. Duncan, MD, MSc, FRCSC
J Bone Joint Surg Am, 2004 Mar; 86 (3): 480 -485

[Am J Orthop \(Belle Mead NJ\)](#). 2002 Aug;31(8):471-4.

*Extensively porous-coated femoral stems in revision hip arthroplasty:
rationale and results.*

[Paprosky WG¹](#), [Burnett RS](#).

Which revision stem?

- Taper Fluted Stem
- Thigh pain
 - No reported rates
 - Less stiff
- Cylindrical Full Coat
- Thigh pain 8-30 %
 - *Bernstein et al. CORR 1995*
 - *Paprosky et al. J Arthroplasty 1997*

[Clin Orthop Relat Res.](#) 1995 Oct;(319):141-50.

Femoral revision hip arthroplasty with uncemented, porous-coated stems.

[Moreland JR](#)¹, [Bernstein ML](#).

5- to 13-Year Follow-up Study on Cementless Femoral Components in Revision Surgery

Anil B. Krishnamurthy, MD,* Steven J. MacDonald, MD, FRCS (C),†
and Wayne G. Paprosky, MD, FACS‡

Which revision stem?

- Taper Fluted Stem
- Stress shielding 3 %
- *Bischel et al. JBJS 2001*
- Cylindrical Full Coat
- Stress shielding 8%
- *Bernstein et al. CORR 1995*

*Femoral Revision with the Wagner SL Revision Stem
Evaluation of One Hundred and Twenty-nine Revisions Followed for a
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Paul Böhm, MD; Oliver Bischel, MD
J Bone Joint Surg Am, 2001 Jul; 83 (7): 1023 -1031*

[Clin Orthop Relat Res.](#) 1995 Oct;(319):141-50.

Femoral revision hip arthroplasty with uncemented, porous-coated stems.

[Moreland JR](#)¹, [Bernstein ML](#).

Which uncemented stem?



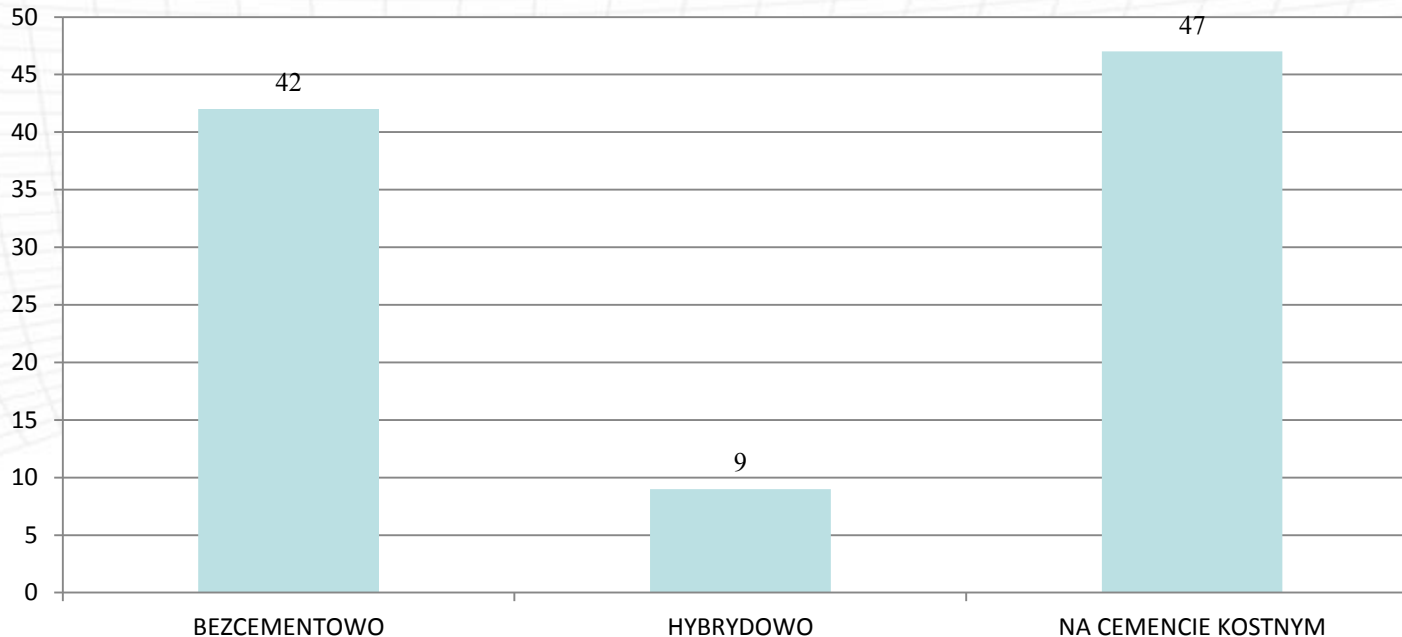
A Comparison of Modular Tapered Versus Modular Cylindrical Stems for Complex Femoral Revisions

Revision Total Hip Arthroplasty Study Group*

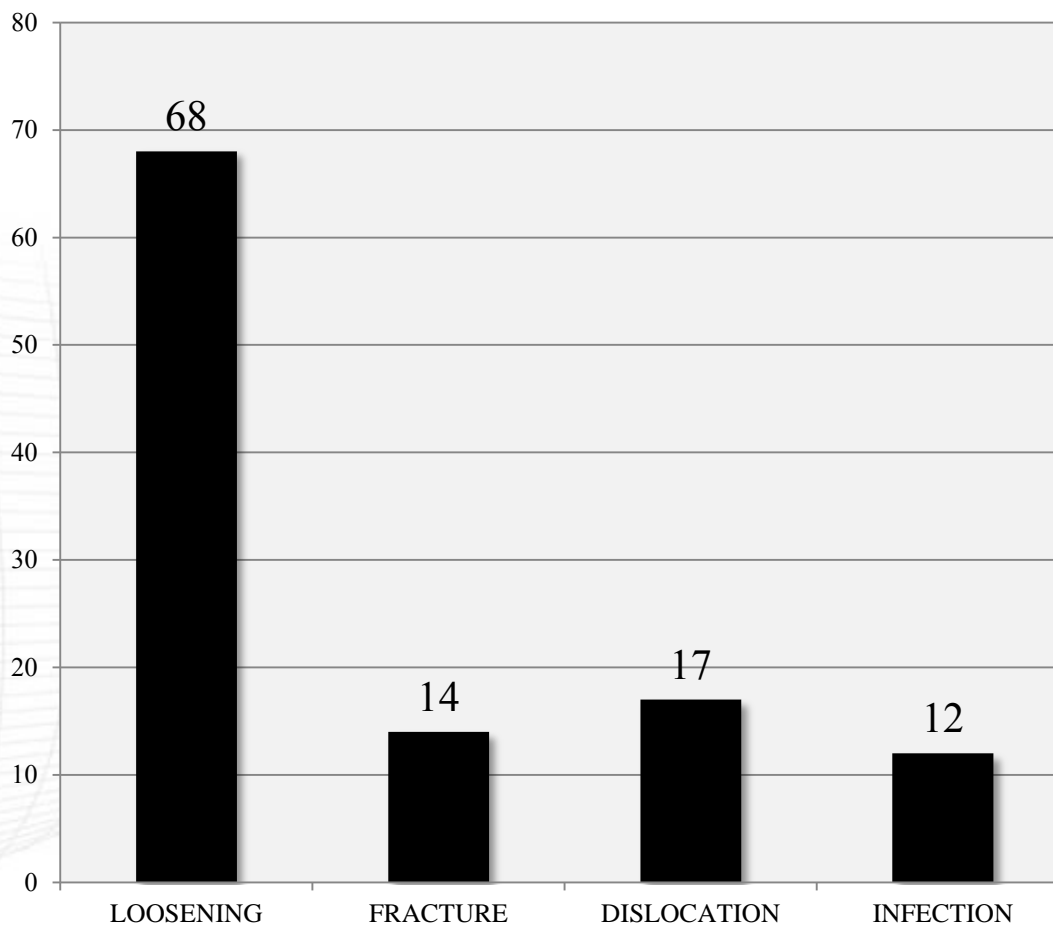
- Multi-center study – 105 revisions with IIIB and IV Parosky using taper fluted and cylindrical stems
 - 1.6 % complications with osseointegration with taper fluted stem.
 - 15.9 % complications with osseointegration with cylindrical stem.
 - 4.9 % another revision after taper fluted.
 - 22.7 % another revision after cylindrical stem.

Own experience

- Retrospective study of 98 revision THA hip surgeries
- Patients > 75 years old
- Years 2010-2015.
- Mean observation time – 3.5 years.
- Mean Hip Harris Score increased from 47 to 75 points postoperatively.

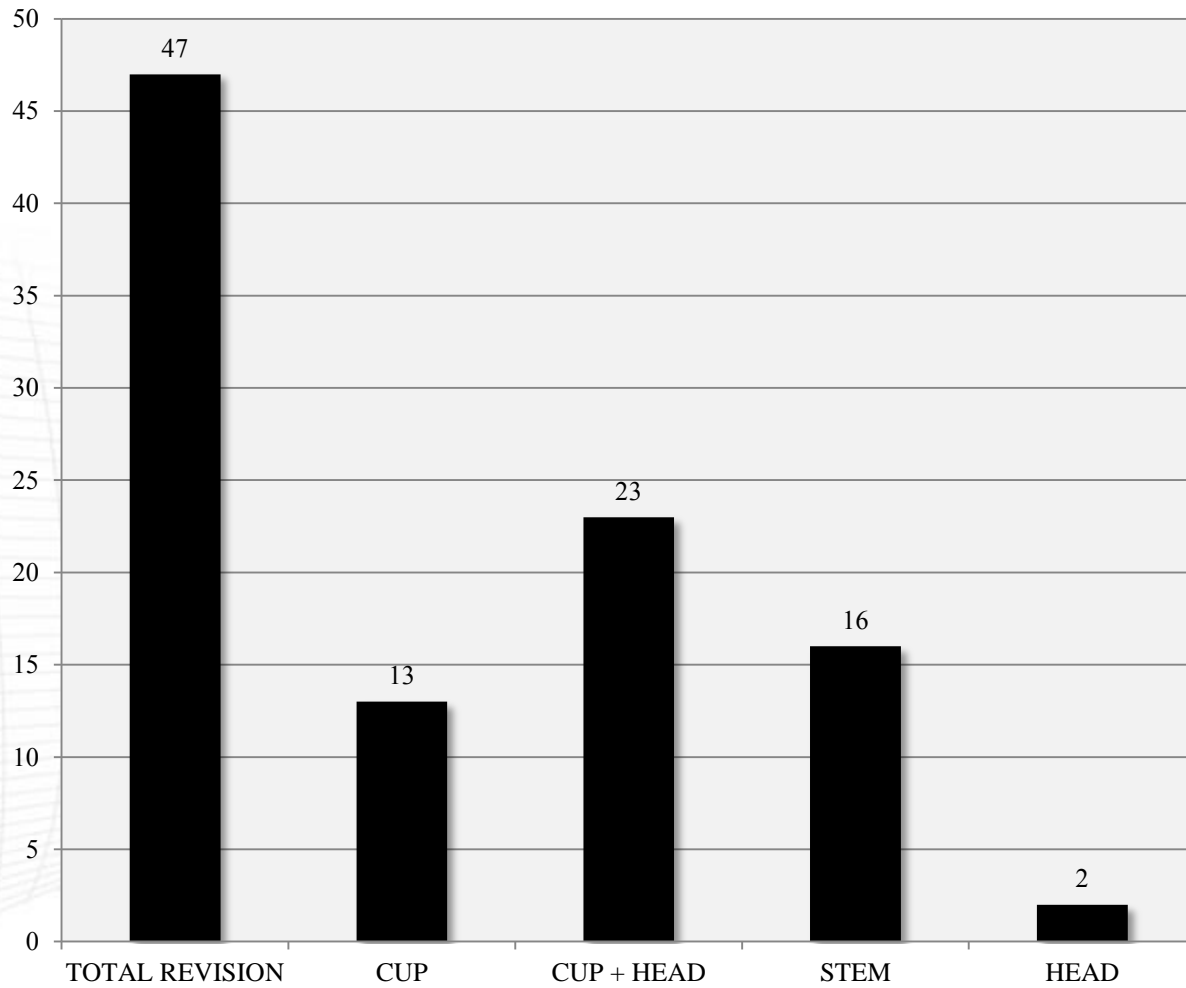


Own experience



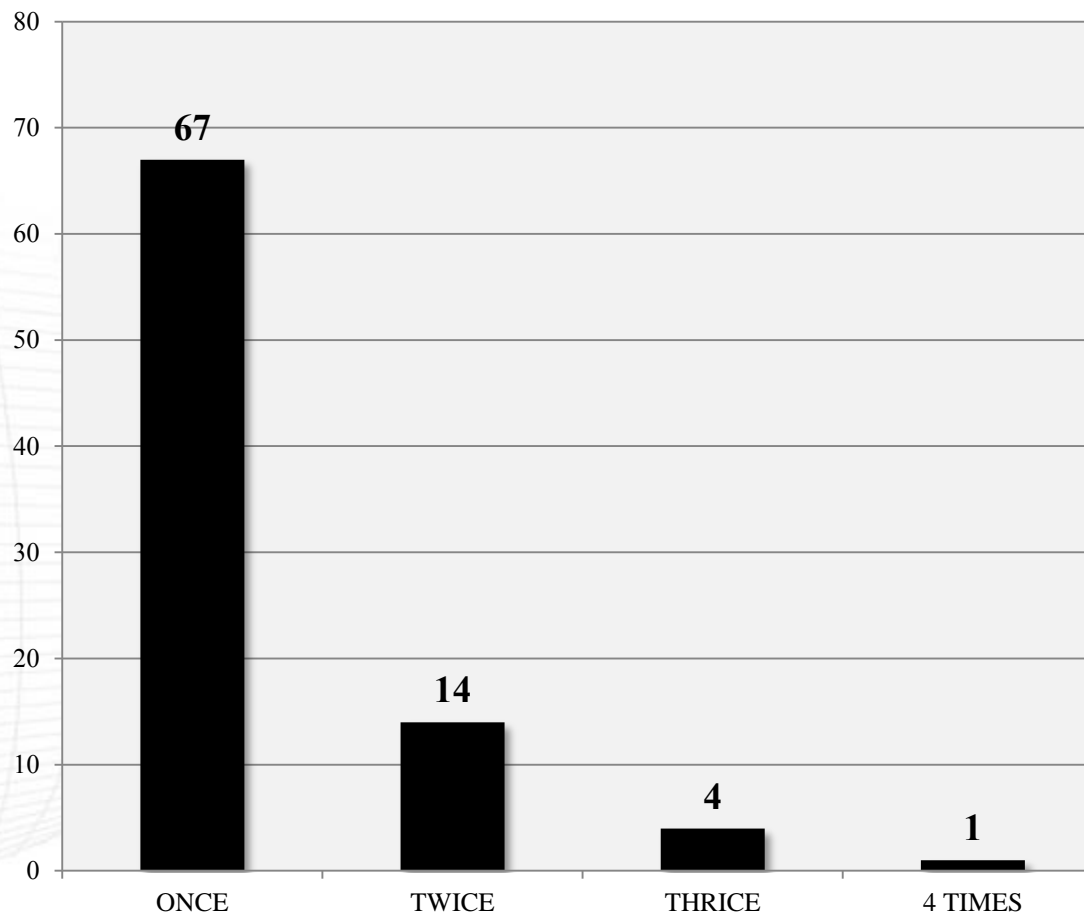
Indications for revision

Own experience



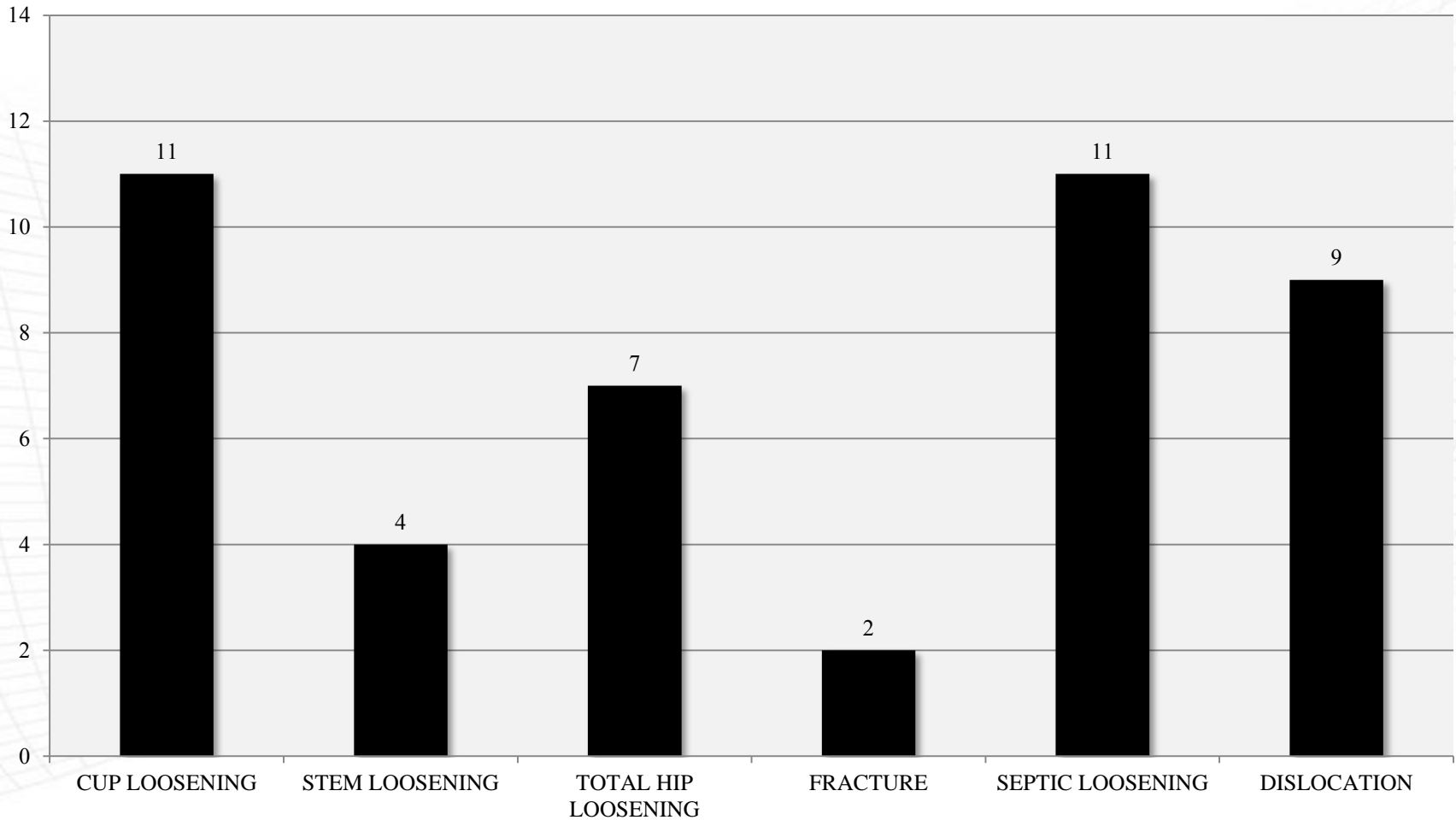
Type of revision

Own experience



Quantity of multiple revisions

Own experience



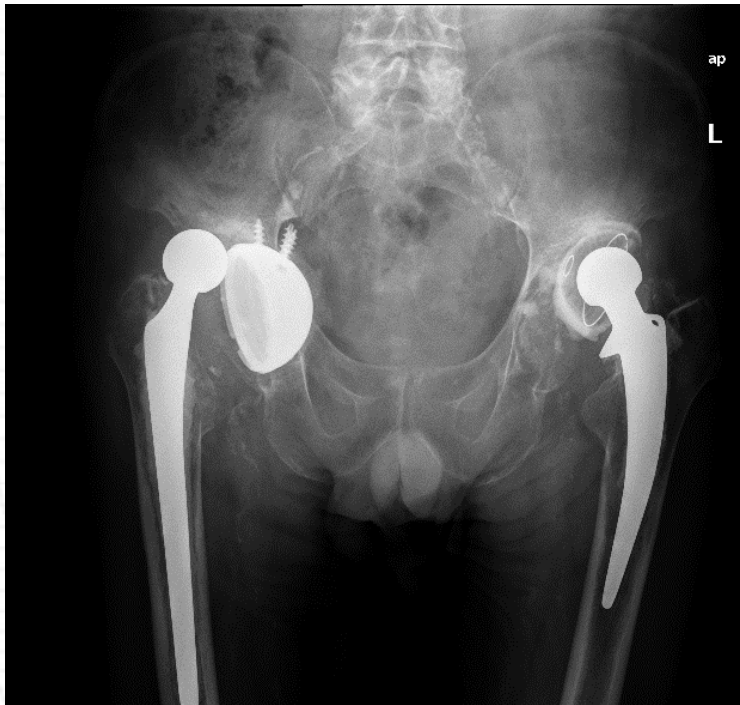
Causes of another revision surgeries

Own experience



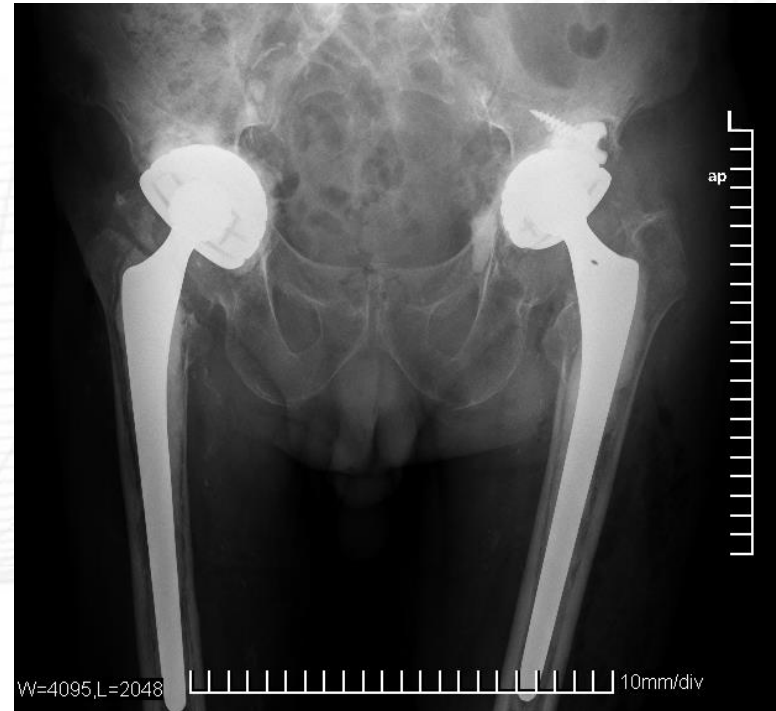
Patient aged 82, hybrid revision.

Own experience



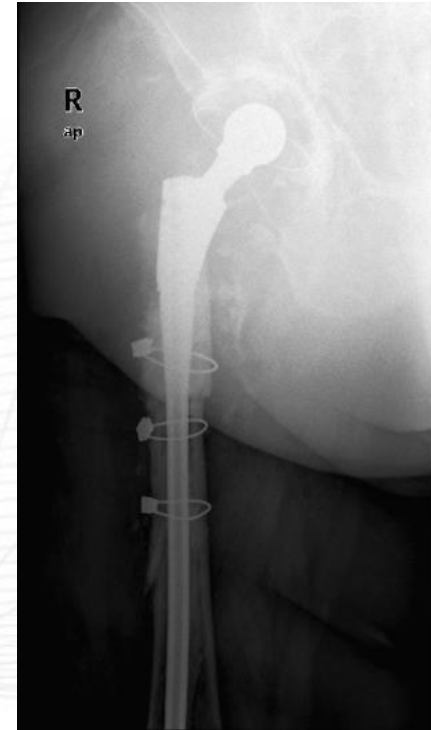
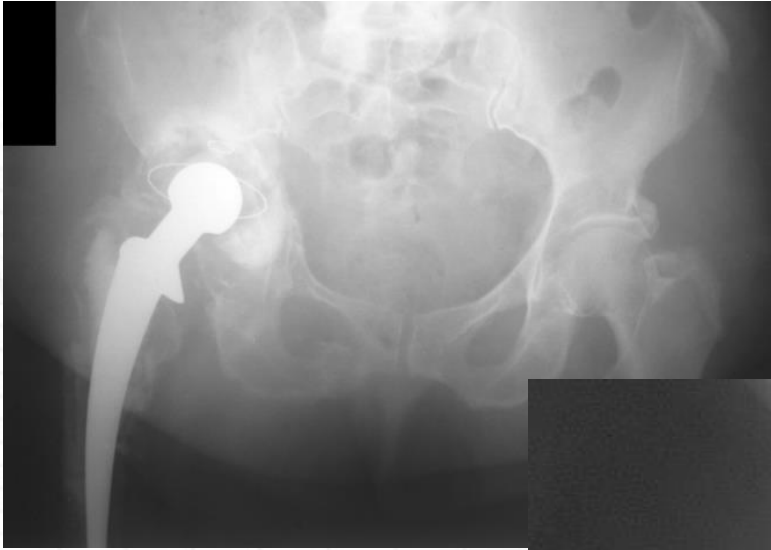
Patient, 82y, dislocation and revision dual-mobility cup.

Own experience



Patient, 82y, cemented dual-mobility cup + metal augment.

Own experience



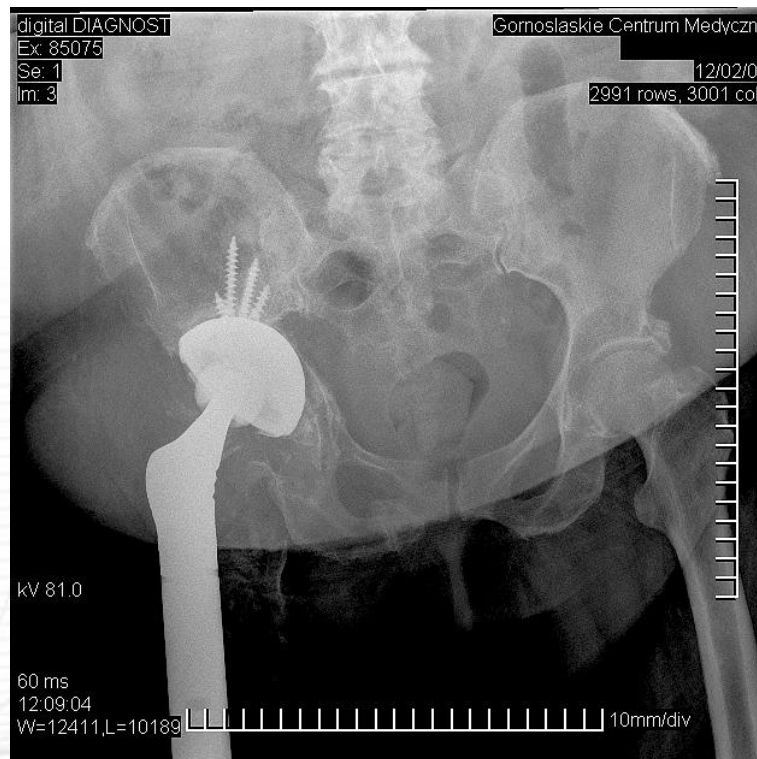
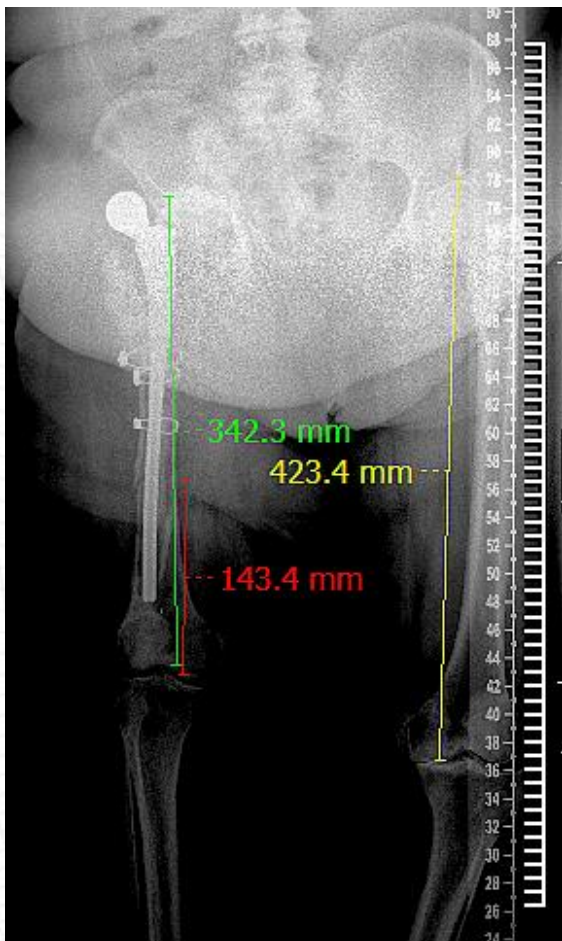
Patient, 75y, primary hip 1994.

Own experience



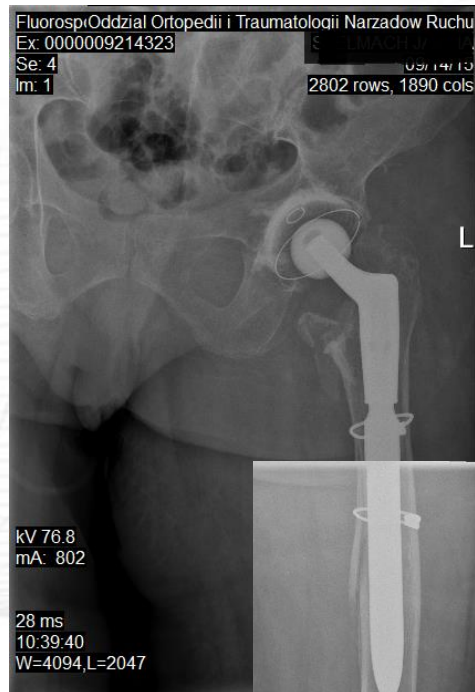
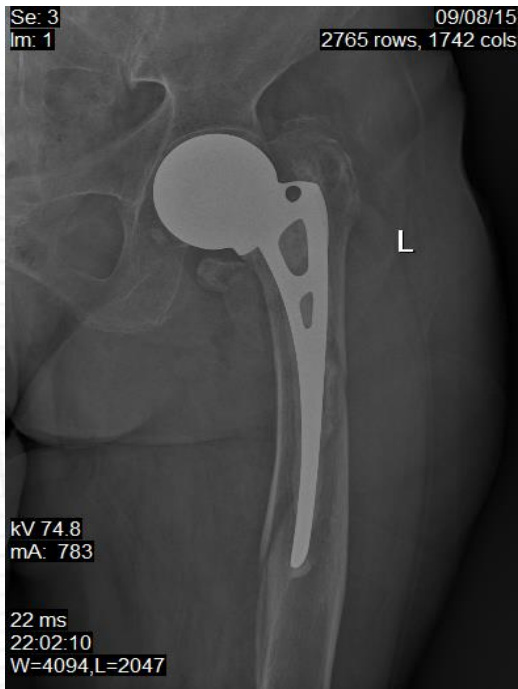
Patient, 75y, recurrent revision hip dislocations.

Own experience



Patient, 75y, post
resection stem,
cementless cup.

Own experience



Patient, 95y, Austin Moore (1996), loosening + Vancouver B III fracture.

Own experience



Patient, 95y, periprosthetic fracture fixation with plate and wires.

Conclusions

- Results of hip revision surgeries in geriatric patients are comparable with younger patients.
- At this same time – higher morbidity rate, general and orthopedics complications are more common.
- Dislocations and periprosthetic fractures are common orthopedic complications.
- Antiluxation systems are needed as well as experienced surgeons.



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Thank you !