

Can Obese Patients be Treated with a Short Stem?

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INTRODUCTION

Obesity contributes to a higher rate of osteoarthritis which may lead to total hip arthroplasty (THA). Literature describes a greater risk for perioperative complications for these patients. Short stems are becoming common in THA but it is not clear if they are suitable for obese patients.

OBJECTIVES

Aim of this prospective multicenter study was to follow up and compare the clinical and radiological outcome in obese, overweight and normal weight patients who received a cementless short stem hip prosthesis.

METHODS

- Data were collected peri- and postoperatively up to 24 months.
- Patients were operated in 5 clinics
- All patients received the optimys short stem
- Patients were divided into 3 BMI classes

RESULTS

Patients:

Class	BMI	N	Age Mean (range)	Gender f/m%
1	< 25 normal weight	144	66.7 (28-91)	62.5 / 37.5
2	25 – 30 over weight	207	65.9 (36-88)	41.5 / 58.5
3	> 30 obese	132	62.3 (33-87)	56.1 / 43.9
Overall		483	65.1 (28-91)	51.8 / 48.2

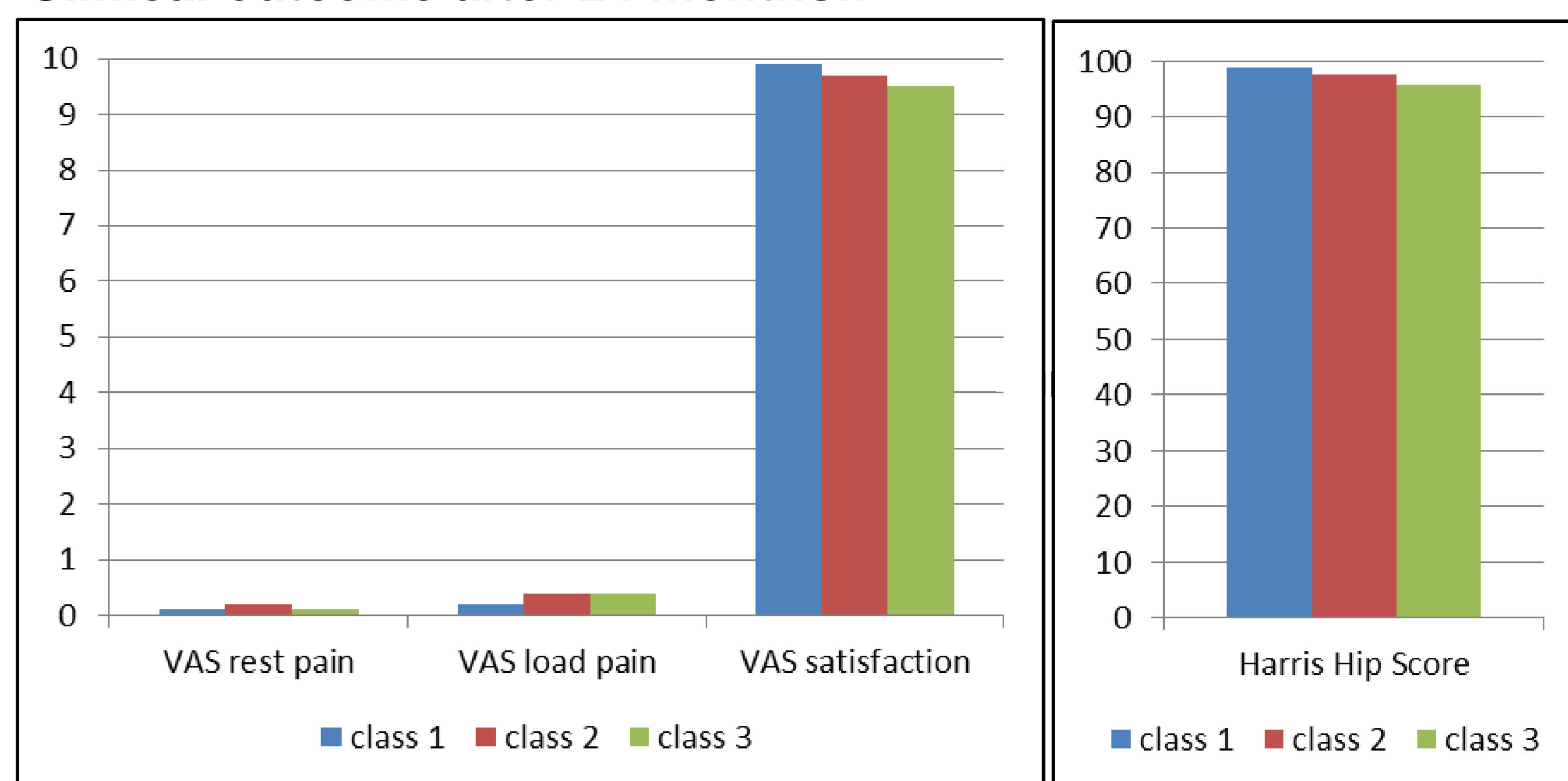
%	Class 1	Class 2	Class 3
Charnley Score			
A	47.9	53.1	44.7
B	45.1	42.0	44.7
C	6.9	4.8	10.6
Diagnosis			
Primary osteoarthritis	72.9	78.3	73.5
Secondary osteoarthritis	13.9	9.7	13.6
Dysplasia	5.6	5.3	7.6
Approach anterolateral	77.1	74.4	78.8
MIS technique performed	97.2	93.7	94.7
Duration of surgery (min)	49.9	53.4	60.6
Standard vs lateral stem	50.0 / 50.0	59.4 / 40.6	53.0 / 47.0

Complications and revisions

%	Class 1	Class 2	Class 3
Intraop. complications			
None	95.1	96.6	95.5
Fracture of femur or trochanter	1.4	1.5	1.6
Postop. complications			
Haematoma / seroma	0.7	3.4	3.0
Wound healing disorder	0.0	0.5	0.8
Infection with inlay revision	0.0	0.5	0.8
Aseptic loosening	0.0	0.0	0.8
Mayor systemic compl. (embolism, thrombosis)	0.0	0.0	2.5
Stem revision			
Aseptic loosening	0.0	0.0	0.8
Periprosthetic fracture	0.0	0.5	0.0

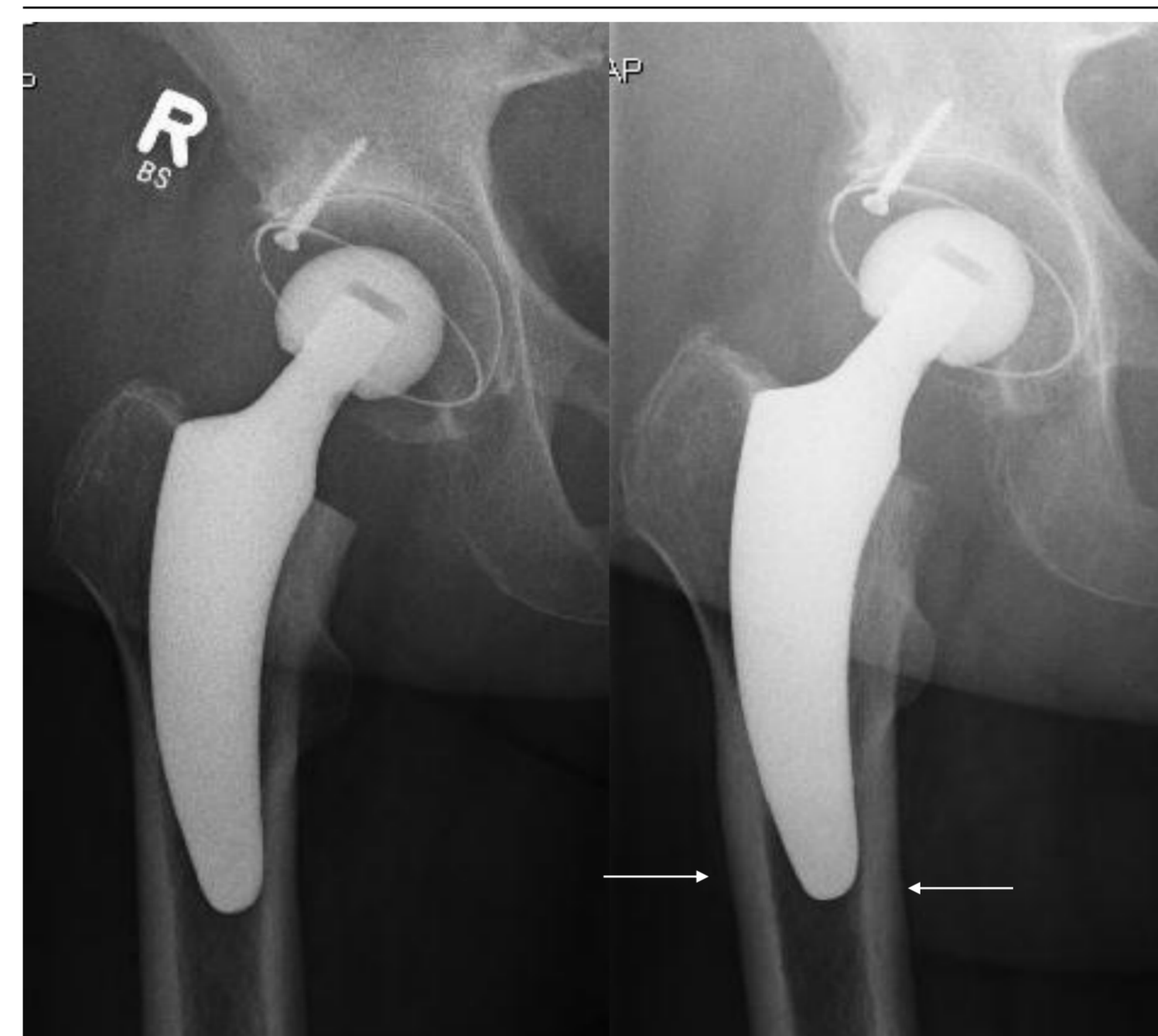
Literature:
 Bieger R. et al. Biomechanics of a short stem: in vitro primary stability and stress shielding of a conservative cementless hip stem. J Orthop Res. 2013 Aug; 31(8): 1180-6
 Bryan D. Springer et al. Obesity and total joint arthroplasty, a literature based review. The journal of arthroplasty 2013; 28: 714-721
 Haverkamp D. et al. Obesity in THA – does it really matter? A meta analysis. Acta Orthop 2011; 82 (4): 417-422
 Huddleston J.I. et al. Age and Obesity are risk factors for adverse events after THA. Clin Orthop Relat Res 2012; 470: 490-496
 Mai S. et al. Erfahrungsbericht über 2 Jahre Anwendung des Kurzschachts optimys. OUP 2013; 2(4):180-184

Clinical outcome after 24 months::



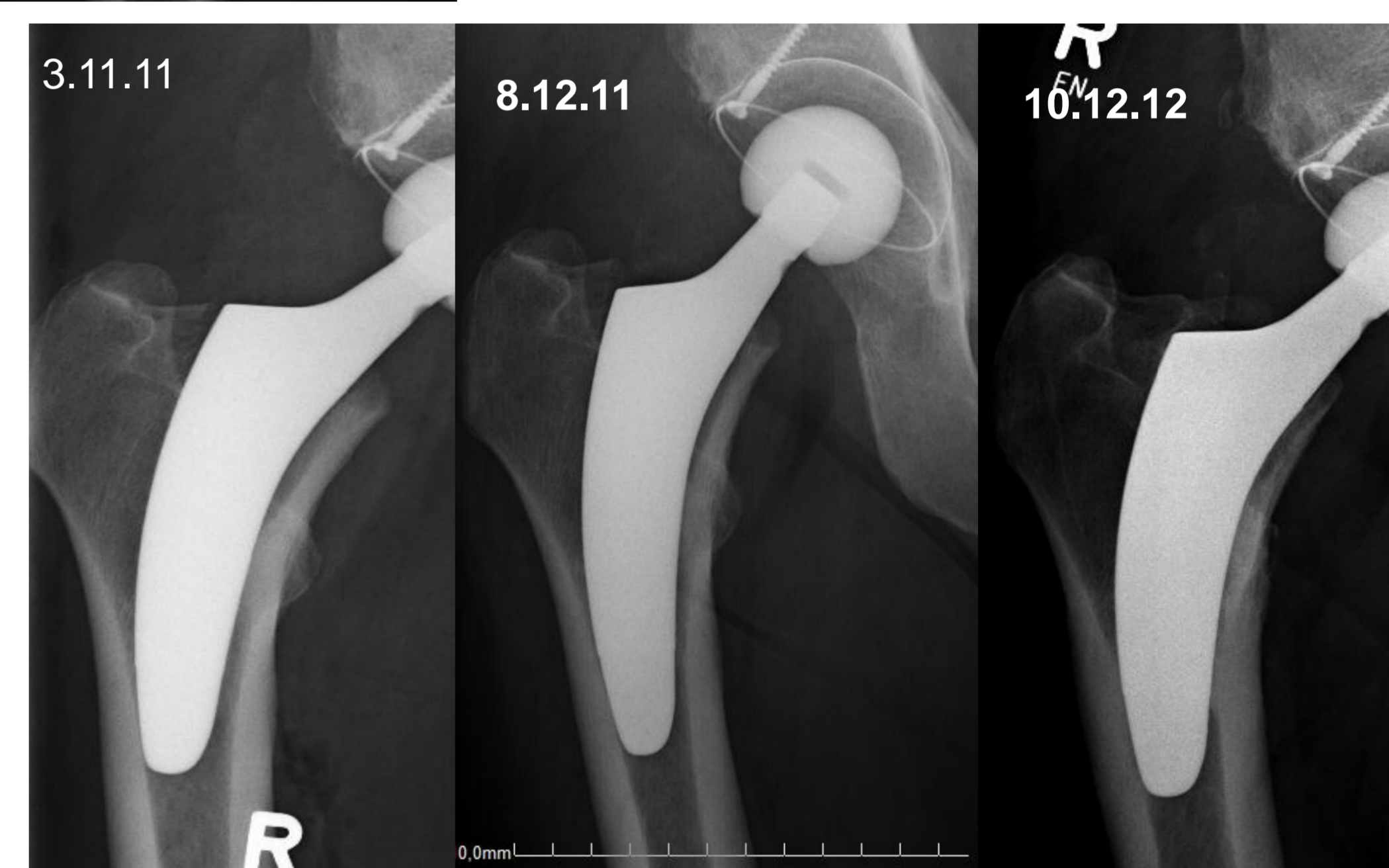
Radiological outcome:

	Class 1	Class 2	Class 3
Stem subsidence			
%	2.8	3.4	2.3
Range (mm)	1 - 3	1 - 6	3 - 4
Hypertrophy Zone 3 and/or 5			
%	2.0	3.8	3.8



Slight painless hypertrophy Zone 3 and 5 after 2 years

Subsidence in the first month, stable situation thereafter



DISCUSSION AND CONCLUSION

Discussion:

- No stem related problems were detected. The stem related results are comparable in all classes.
- Overweight and obese patients have an increased risk for the development of adverse events such as wound healing, infections and systemic complications.
- No significant differences were seen between the classes respective the clinical outcome.
- No significant differences in radiologic findings between the groups, no further subsidence after three months, good stability of the implant

Conclusion:

- Two-year results of the evaluated short stem are promising and comparable in the three weight classes.
- They go along with the results reported in literature evaluating the outcome of THA in obese patients. Wound healing and infections remain the main problem after these surgeries.
- However, further follow up and larger numbers of patients will be necessary to prove the longevity of this implant in obese patients.