

TABLE E-1 Precision of manually and digitally measured RSA examinations based on double examinations in fifty-three hips\*

	Manual n=30				Digital n=23			
	median	min	max	mean+2SD	median	min	max	mean+2SD
Rotations ( <i>deg</i> )								
Transverse axis	0.09	0.00	0.97	0.56	0.06	0.00	0.47	0.33
Longitudinal axis	0.29	0.40	2.14	1.20	0.14	0.01	0.65	0.51
Sagittal axis	0.05	0.00	0.22	0.16	0.03	0.01	0.17	0.13
Segment translations ( <i>mm</i> )								
Proximal - distal	0.05	0.01	0.18	0.14	0.02	0.00	0.15	0.12
Mean error of rigid body fitting ( <i>mm</i> )								
Femoral bone	0.115	0.042	0.208	0.190	0.052	0.018	0.271	0.169
Stem	0.156	0.041	0.263	0.274	0.094	0.039	0.189	0.196
Condition number								
Femoral bone	29	16	75	59	25	17	55	45
Stem	35	17	57	50	32	22	52	47
Number of markers								
Femoral bone	7	5	9	10	7	4	9	10
Stem	4	3	9	9	6	3	9	10

\*RSA = radiostereometric

TABLE E-2. Radiostereometric results\*

	Epoch					Anatomic					Mann-Whitney test
	Median	Min	Max	Mean	95% confidence limits of mean	Median	Min	Max	Mean	95% confidence limits of mean	
Segment translations ( <i>mm</i> )											
Proximal (+) / Distal (-)	-0.02	-0.16	1.04	0.05	-0.03 to 0.13	-0.05	-0.31	0.31	-0.02	-0.08 to 0.05	0.35
Rotations (degrees)											
Anterior (+) / Posterior (-) tilt	-0.08	-1.41	0.45	-0.19	-0.35 to -0.03	0.08	-0.56	0.56	-0.04	-0.14 to 0.07	0.54
Retro- (+) / Ante- (-) version	-0.02	-0.7	1.49	0.05	-0.14 to 0.23	0.11	-0.88	1.11	0.07	-0.15 to 0.30	0.65
Valgus (+) / Varus (-) tilt	0.01	-0.56	1.55	0.05	-0.07 to 0.17	0.03	-0.49	0.47	0.04	-0.04 to 0.12	0.78

\*(See Fig. 2 for interpretation of rotations.)

TABLE E-3 Radiographic results

	Epoch				Anatomic				Mann-Whitney test
	Median	Min	Max	95% confidence interval of mean	Median	Min	Max	95% confidence interval of mean	
Postoperative radiographs									
Varus(-)/valgus(+) position ( <i>deg</i> )	0.0	-2.6	1.2	-0.4 to 0.2	-0.3	-2.8	2.9	--0.6 to 0.0	0.13
Fill (%)									
Anteroposterior	88	63	99	83 to 88	87	75	92	84 to 88	0.47
Lateral	84	54	95	80 to 85	82	73	92	81 to 85	0.62
Cortical contact (%)									
AP	38	13	67	32 to 42	23	4	46	27 to 35	<0.0005
Lateral	29	10	61	28 to 33	20	2	45	24 to 30	0.023
Two years follow-up									
Sclerotic lines-total (%) <sup>1</sup>									
Anteroposterior	0	0	32	0 to 3	10	0	41	3 to 8	<0.0005
Lateral	0	0	39	0 to 5	0	0	41	1 to 7	0.002
Radiolucent lines <sup>2</sup> 0/<50%/50-99%/100% ( <i>no. of hips</i> )									
Gruen region 1	0/0/0/0				0/0/0/0				1.00
2	0/0/0/0				0/0/0/0				1.00
3	0/0/0/0				0/1/0/0				0.25
4	0/0/0/0				0/0/2/1				0.10
5	0/0/2/0				0/0/1/0				0.83
6	0/0/0/0				0/0/0/0				1.00
7	0/0/0/0				0/0/0/0				1.00
Tip sclerosis ( <i>cm</i> <sup>2</sup> )	0	0.0	0.1	0 to 0	0	0	0.8	0 to 0.1	0.001
Calcar resorption ( <i>cm</i> <sup>2</sup> )	0.2	0.0	0.8	0.1 to 0.2	0	0	0.6	0.1 to 0.2	0.69
Cortical hypertrophy y/n ( <i>no. of hips</i> )	5/31				7/20				0.18
Heterotopic bone formation <sup>3</sup>									
Grade 0/1/2/3/4	19/13/1/3/0				14/10/2/1/0				0.84

<sup>1</sup> Percent of total interface, with or without radiolucency<sup>2</sup> Radiolucent line  $\geq 2$  mm<sup>3</sup> Brooker AF, Bowerman JW, Robinson RA, Riley LH Jr. Ectopic ossification following total hip replacement. Incidence and a method of classification. *J Bone Joint Surg Am.* 1973;55:1629-32.

TABLE E-4 Clinical results

	Epoch				Anatomic				Mann-Whitney test
	No. of Hips	Median	Min	Max	No. of Hips	Median	Min	Max	
<i>Harris score (points)</i>									
total – preoperatively	38	55	19	70	30	50	30	70	0.60
- 2 years	37	100	62	100	27	99	65	100	0.82
- 0 to 2 years	37	43	0	81	27	44	15	65	0.88
pain – preoperatively	38	20	0	30	30	15	0	30	0.61
- 2 years	37	44	20	44	27	44	20	44	0.14
- 0 to 2 years	37	24	0	44	27	26	10	40	0.63
<i>Pain questionnaire (no. of hips)</i>									
quality: no pain/"discomfort"/pain	21	18/1/2			16	10/2/4			
frequency: rarely/sometimes/often/always	21	1/1/1/0			16	2/1/2/1			
location: groin/gluteal/trochanteric/thigh	21	0/0/2/1			16	0/1/1/4			
activity: at activity/ at activity and rest	21	2/1			16	2/4			