

TABLE E1 Grading System of Merle d'Aubigné and Postel<sup>17</sup>

	Pain	Mobility	Ability to Walk
0	Pain is intense and permanent	Ankylosis with bad position of the hip	None
1	Pain is severe even at night	No movement; pain or slight deformity	Only with crutches
2	Pain is severe when walking; prevents any activity	Flexion of less than 40 degrees	Only with canes
3	Pain is tolerable with limited activity	Flexion between 40 and 60 degrees	With one cane, less than one hour; very difficult without a cane
4	Pain is mild when walking; it disappears with rest	Flexion between 60 and 80 degrees; patient can reach foot	Long time with cane; short time without cane and with limp
5	Pain is mild and not constant; normal activity	Flexion between 80 and 90 degrees; abduction of at least 15 degrees	Without cane but with slight limp
6	No pain	Flexion of more than 90 degrees; abduction to 30 degrees	Normal

TABLE E2 Nonparametric Survivorship Analysis with the Use of Log-Rank Test

	No. of Joints (No. with Progression of Arthritis)	P Value
Age at time of surgery		
20-39 years	8 (1)	0.372
40-49 years	28 (6)	
50-59 years	7 (3)	
Unilateral dysplasia	11 (2)	0.735
Bilateral dysplasia	32 (8)	
Postoperative center-edge angle		
<29 degrees	17 (4)	0.876
≥29 degrees	26 (6)	
Postoperative acetabular roof angle		
<11 degrees	29 (8)	0.297
≥11 degrees	14 (2)	
Postoperative head lateralization index		
<0.65	33 (6)	0.184
≥0.65	10 (4)	
Postoperative joint congruency		
Good	30 (3)	0.007
Fair	13 (7)	
Preoperative joint space		
<2.2 mm	23 (9)	0.011
≥2.2 mm	20 (1)	
Postoperative joint space		
<2.5 mm	13 (6)	0.014
≥2.5 mm	30 (4)	

Nonparametric survivorship analysis was used to assess various risk factors that might play a role in progression of osteoarthritis.



Fig. E-1A



Fig. E-1B

**Figs. E1-A through E1-D** Radiographic stages according to the Japanese Orthopaedic Association guidelines. **Fig. E1-A** Prearthrosis (no osteoarthritic change resulting from the acetabular dysplasia). **Fig. E1-B** Early-stage osteoarthritis, characterized by slight narrowing of the joint space associated with sclerosis of the subchondral bone.



Fig. E-1C

**Fig. E1-C** Advanced-stage osteoarthritis, characterized by narrowing of the joint space with cystic radiolucencies and small osteophytes. **Fig. E1-D** End-stage osteoarthritis, characterized by disappearance of the joint space and marked osteophyte formation.



Fig. E-1D

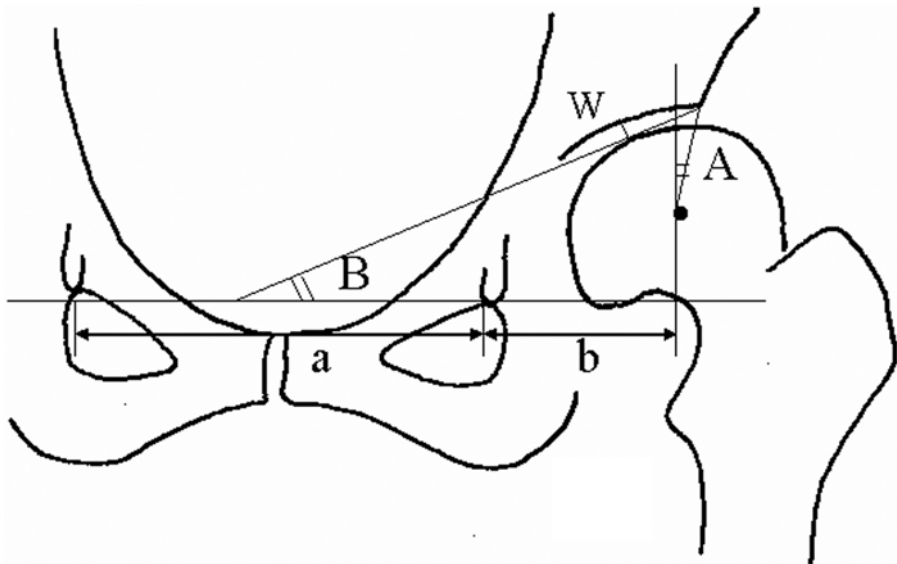


Fig. E-2

Radiographic indices for evaluation of the hip. A = center-edge angle, B = acetabular roof angle, and W = minimum width of the joint space. The head lateralization index (HLI) is calculated with

the formula: 
$$HLI = \frac{b}{\frac{1}{2}a}$$