Bone & Joint Open

Supplementary Material

10.1302/2633-1462.210.BJO-2021-0069.R1

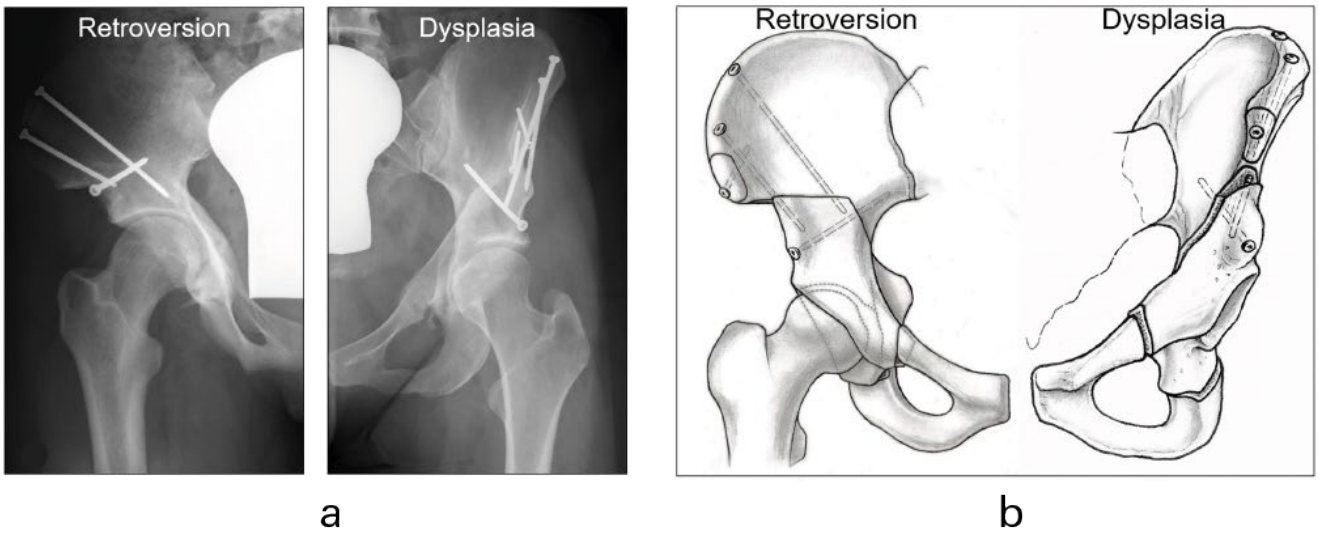

Figure a. a) Radiological and b) schematic views of patients who underwent surgical treatment with periacetabular osteotomy.

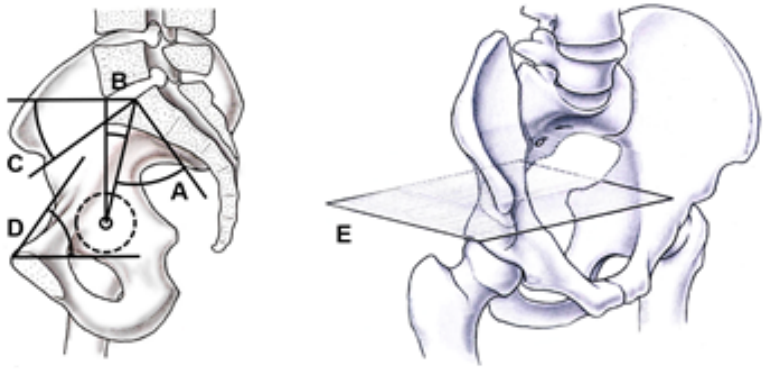

Figure b. Schematic view showing a) pelvic incidence, b) pelvic tilt, c) sacral slope, d) pelvic inclination, and e) the axial plane to measure the inferior iliac wing angle.

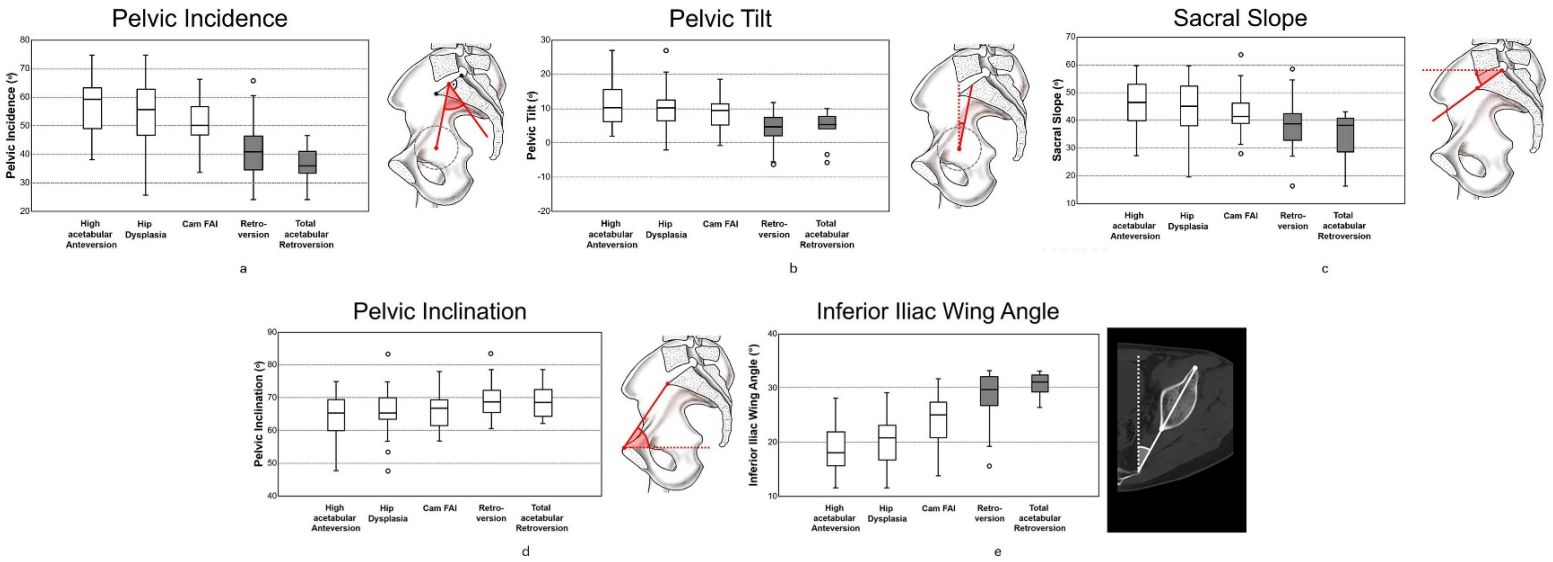

Figure c. Boxplots for a) pelvic incidence, b) pelvic tilt (PT), c) sacral slope (SS), d) pelvic inclination, and e) the iliac wing angle. We found a significantly decreased PI, PT, and SS for acetabular retroversion (AR) compared to hip dysplasia. In addition, we found a significantly increased iliac wing angle for AR compared to hip dysplasia. The level of significance was adjusted for 6 groups (0.05/6 = 0.008). Dark boxes signify significant difference compared to hip dysplasia. FAI, femoroacetabular impingement.

Table i. Studies investigating sagittal balance (pelvic incidence (PI), pelvic tilt (PT), and sacral slope (SS)) in normal and femoracetabular impingement (FAO) patients.

Study (year)	Hips (patients)	Study group/morphology	Mean age, yrs (SD; range)	Mean PI, ° (SD; range)	Mean PT, ° (SD; range)	Mean SS, ° (SD; range)
Legaye et al (1998)[1]	I: 28	I: Normal male	I: 24 (6; 19 to 50)	I: 53 (10	I: 12 (7)	I: 42 (9)
	II: 21	II: Normal female	II: 24 (6; 19 to 50)	II: 48 (7)	II: 10 (5	II: 38 (8)
	II: 66	III: Scoliotic subjects	III: 33 (20; 10 to 84)	III: 51 (10)	III: 12 (9)	III: 39 (11)
Roussouly et al (2005)[2]	160	Volunteers (86/160 females)	27 (18 to 48)	52 (11; 34 to 84)	12 (7; -5 to 31)	40 (8; 21 to 66)
Vialle et al (2005[3]	(300)	Normal	35 (12; 20 to 70)	55 (11; 33 to 82)	13 (6; -5 to 27)	41 (8; 17 to 63)
Boulay et al (2006)[4]	(149)	Normal	31 (6; 19 to 51)	53 (9; 34 to 78)	12 (6; -2 to 30)	41 (7; 1 to 20)
Mac Thiong et al (2010)[5]	I: 355	I: Asymptomatic female	I: 36 (14)	I: 52 (11)	I: 13 (7)	I: 40 (8)
	II: 354	II: Asymptomatic male	II: 38 (15)	II: 53 (10)	II: 13 (7)	II: 40 (8)
Legaye et al (2011)[6]	I: 51 (Total)	Anatomical specimens	Adult	I: 54 (12)		I: 41 (14)
	II: 26	II: Male		II: 56 (11)		II: 43 (14)
	III: 25	III: Female		III: 53 (12)		III: 38 (14)
Gebhardt et al (2014)[7]	I: 40 (20)	I: Cadavers with cam	43 (9; 25 to 55)	I: 43 (9; 19 to 62)		
	II: 28 (14)	II: Cadavers with pincer		II: 43 (9; 19 to 58)		
Tiziani et al (2015)[8]	I: 86	I: Asymptomatic with COS	14 to 94	I: 49 (11)		
	II: 18	II: Posterior wall sign pos		II: 45 (12)		
	III: 12	III: Ischial spine sign pos.		III: 41 (8)		
Weinberg et al (2016)[9]	I: 25	I: Mixed-type FAI patients	I: 34 (3)	I: 47 (4)		

	II: 21	II: Cam-type FAI patients	II: 34 (5)	II: 51 (5)		
	III: 19	III: Acetabular retroversion	III: 36 (7)	III: 51 (5)		
Weinberg et al (2016)[10]	I: 880	I: Total cadaveric skeletons	48 (16; 16 to 88)	I: 46 (11)		
	II: 130	II: Females	(Total)	II: 47 (14)		
	III: 750	III: Males		III: 46 (10)		
	IV: 265	IV: African-Americans		IV: 49 (11)		
	V: 614	V: Caucasians		V: 45 (11)		
Hellman et al (2017)[11]	I: 47	I: Cam-type FAI patients	33 (9 (18 to 63)	I: 49 (12)		
	II: 8	II: Deep socket FAI patients	(Total)	II: 38 (8)		
	III: 31	III: Acetabular retroversion		III: 45 (11)		

COS, crossover sign; SD, standard deviation.

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