

Supplementary Material

10.1302/2633-1462.54.BJO-2023-0185.R1

Table i. Individual patient characteristics.

Case	Age, yrs	Sex	Primary diagnosis	If rTHA; Paprosky classification, pelvic discontinuity (yes/no)	If tumour; Enneking resection type	Side	Surgical approach	Location	Intraoperative navigation	Implant accuracy outlier	Implant-specific complication
1	57	M	Tumour	N/A	type II	Left	Iliofemoral	Sydney	No	No	Deep infection, DAIR
2	58	M	Tumour	N/A	type I - II	Left	Iliofemoral	Sydney	No	No	None
3	34	M	Tumour	N/A	type I - II	Right	Iliofemoral	Sydney	No	No	None
4	41	F	Tumour	N/A	type II	Right	Iliofemoral	Sydney	No	No	None
5*	16	F	Tumour	N/A	type I - II	Right	Iliofemoral	Sydney	No	Yes	None
6	22	F	rTHA	3B, No	N/A	Right	Anterolateral	Sydney	No	No	None
7	71	M	Tumour	N/A	type II - III	Left	Iliofemoral	Sydney	No	No	Deep infection, tumour recurrence; hindquarter amputation
8*	78	M	rTHA	3A, No	N/A	Left	Anterolateral	Sydney	No	Yes	None

9	44	M	Tumour	N/A	type I - II - III	Right	Iliofemoral	Sydney	No	No	Dislocation; constrained liner
10	65	M	Tumour	N/A	type II	Right	Iliofemoral	Sydney	No	No	Deep infection, suppression
11	51	M	Tumour	N/A	type II	Right	Iliofemoral	Sydney	No	No	None
12	68	F	Tumour	N/A	type II	Left	Iliofemoral	Sydney	No	No	None
13	70	M	Tumour	N/A	type II	Right	Iliofemoral	Sydney	No	No	None
14	39	M	Tumour	N/A	type II	Right	Iliofemoral	Sydney	No	No	None
15	29	M	Tumour	N/A	type II - III	Left	Iliofemoral	Sydney	No	No	Dislocation, open reduction
16	43	F	Tumour	N/A	type II	Left	Iliofemoral	Sydney	No	No	None
17	31	F	Tumour	N/A	type I - II	Left	Iliofemoral	Sydney	No	No	None
18*	66	F	rTHA	3B, Yes	N/A	Left	Posterior	Perth	No	Yes	Periprosthetic fracture, ORIF posterior column
19	63	M	Tumour	N/A	type II - III	Right	Iliofemoral	Perth	Yes	No	None
20	69	F	Tumour	N/A	type II - III	Left	Iliofemoral	Perth	Yes	No	None
21	33	M	Tumour	N/A	type II	Right	Anterolateral	Perth	Yes	No	Dislocation; constrained liner
22	56	F	rTHA	3B, No	N/A	Left	Posterior	Perth	Yes	No	None
23	49	F	Tumour	N/A	type II - III	Left	Iliofemoral	Perth	Yes	No	None
24	57	M	rTHA	3A, No	N/A	Left	Posterior	Perth	Yes	No	None
25	71	F	rTHA	3B, Yes	N/A	Left	Posterior	Perth	Yes	no	None
26*	73	F	rTHA	3B, No	N/A	Right	Posterior	Perth	No	Yes	None
27	68	M	Tumour	N/A	type I - II	Right	Iliofemoral	Brisbane	Yes	No	None
28	21	M	Tumour	N/A	type I - II	Left	Iliofemoral	Brisbane	Yes	No	Dislocation; liner revision and soft-tissue augmentation
29	69	M	Tumour	N/A	type I - II - III	Left	Iliofemoral	Brisbane	Yes	No	Dislocation, deep infection
30	44	F	Tumour	N/A	type I - II	Right	Iliofemoral	Brisbane	Yes	No	None
31	18	M	Tumour	N/A	type I - II	Right	Iliofemoral	Brisbane	Yes	No	None
32	22	M	Tumour	N/A	type I - II	Left	Iliofemoral	Brisbane	Yes	No	None
33	55	M	Tumour	N/A	type I - II	Right	Posterolateral	Brisbane	No	No	None

34	60	M	Tumour	N/A	type II - III	Left	Extended anterolateral	Brisbane	No	No	None
35	80	F	rTHA	3B, Yes	N/A	Right	Posterior	Brisbane	No	No	Dislocation, untreated

DAIR, debridement, antibiotics and implant retention; N/A, not applicable; ORIF, open reduction and internal fixation; rTHA, revision total hip arthroplasty.

*Outlier.

Table ii. Individual patient outcomes, outliers in bold. Signed values. Dashes signify that no such flange was present on the implant.

Case	INCL, °			AV, °			ROT, °	COR, mm				Pubic flange, mm				Ischial flange, mm				Ilium flange, mm			
	Planned	Post op	Δ°	Planned	Post op	Δ°	Δ°	ML	AP	SI	Δ Vector	ML	AP	SI	Δ Vector	ML	AP	SI	Δ Vector	ML	AP	SI	Δ Vector
1	40.8	42.8	2.0	25.4	24.1	-1.3	1.0	-1.9	-2.0	0.6	2.8	-2.5	-1.7	-1.9	3.6	-3.4	-2.8	0.5	4.4	1.7	-0.2	1.3	2.1
2	45.9	46.5	0.6	25.9	23.1	-2.8	1.9	-8.5	-2.2	4.5	9.8	-10.4	-1.3	-1.1	10.5	-	-	-	-	-5.5	2.4	6.7	9.0
3	42.2	37.9	-4.3	18.6	23.1	4.6	-0.2	-0.1	1.7	0.8	1.9	2.9	1.3	3.3	4.6	1.3	3.1	0.3	3.4	-7.5	0.9	-3.3	8.3
4	45.3	43.7	-1.6	34.2	32.4	-1.8	0.1	0.5	0.5	0.1	0.7	0.0	1.1	-0.4	1.2	1.1	0.0	0.9	1.5	-0.2	3.6	0.6	3.6
5	49.4	53.3	3.9	4.2	33.8	29.6	1.4	8.3	28.0	33.1	44.1	14.0	26.8	39.8	49.9	0.4	38.4	27.1	47.0	-6.3	0.4	4.3	7.6
6	38.3	36.4	-1.9	21.6	19.9	-1.8	2.2	1.1	-3.2	-2.9	4.5	-	-	-	-	1.2	-5.0	-2.0	5.5	-0.6	1.1	-1.2	1.7
7	48.4	50.1	1.7	17.9	18.0	0.0	0.6	-3.1	2.2	-5.3	6.6	-3.5	2.6	-8.4	9.5	-	-	-	-	-0.5	1.8	-5.7	6.0
8	39.2	34.5	-4.8	23.9	27.4	3.5	10.5	-1.2	-2.2	-0.5	2.5	4.8	-5.3	-2.5	7.6	-4.6	-8.1	1.0	9.4	-3.0	4.7	-0.2	5.6
9	43.0	39.7	-3.4	17.5	13.0	-4.5	-1.1	-0.4	-6.8	-3.1	7.5	-3.3	-1.2	-0.6	3.6	-	-	-	-	-3.8	-0.2	-0.2	3.8
10	38.1	42.4	4.3	17.6	22.1	4.5	2.2	-2.9	4.2	0.6	5.1	-1.3	3.8	1.0	4.1	-6.2	5.2	-0.2	8.1	-0.1	0.0	-2.8	2.8
11	36.7	37.4	0.8	15.1	14.9	-0.2	0.4	-0.7	0.4	0.8	1.2	-0.9	0.4	0.3	1.0	-1.0	0.3	0.8	1.3	0.5	0.7	0.9	1.3
12	43.5	43.7	0.2	23.6	23.6	0.0	1.8	0.9	-0.1	2.3	2.4	1.9	-1.3	0.6	2.4	0.0	-0.7	2.7	2.8	1.4	1.7	2.9	3.6
13	41.5	40.0	-1.5	18.4	24.9	6.5	0.1	0.3	8.1	-4.6	9.4	3.8	3.6	0.3	5.3	-1.2	9.4	-6.5	11.5	-4.5	3.9	-7.1	9.3
14	41.8	38.7	-3.1	16.4	18.4	1.9	4.2	-1.7	3.6	0.8	4.1	1.0	1.4	0.6	1.8	-4.4	2.1	2.0	5.2	-7.0	5.5	1.9	9.2

15	41.3	39.4	-2.0	13.4	13.2	-0.2	2.0	-1.0	1.4	-3.3	3.7	1.1	-2.5	-3.0	4.0	-0.7	-0.9	-2.0	2.3	-4.3	3.7	-1.3	5.9
16	40.1	48.8	8.7	16.6	20.3	3.6	-0.9	-3.6	-1.0	-0.3	3.8	-4.2	-0.6	0.2	4.2	-	-	-	-	4.8	-7.2	-4.1	9.6
17	41.5	42.4	0.9	19.0	26.0	7.1	1.3	-0.4	8.0	-2.0	8.3	1.9	6.7	-0.2	7.0	-3.0	9.3	-4.1	10.6	-4.1	-1.8	-6.9	8.3
18	47.6	56.1	8.5	23.2	11.0	-12.2	10.7	-6.0	-10.1	2.0	11.9	-9.3	-12.4	-5.2	16.3	-8.7	-14.6	11.2	20.4	2.0	-2.6	7.8	8.5
19	40.8	38.2	-2.6	22.1	24.9	2.8	0.1	6.4	2.4	-0.7	6.9	9.0	-1.0	4.4	10.1	-	-	-	-	-0.7	-0.2	-1.8	1.9
20	44.5	43.3	-1.2	23.3	21.4	-1.9	-0.2	-0.2	0.6	-1.8	1.9	-1.1	2.1	-1.5	2.8	1.0	-0.2	-1.2	1.6	-1.0	2.3	-1.3	2.8
21	40.1	39.9	-0.2	24.4	25.2	0.8	-0.1	-0.5	3.4	1.6	3.8	-0.2	3.4	2.1	4.0	-0.7	3.6	1.4	4.0	-0.8	3.0	1.5	3.4
22	47.9	46.0	-1.8	32.6	35.5	2.9	-4.7	-1.3	-5.4	-2.6	6.2	0.4	-3.0	1.2	3.2	0.8	-2.7	-5.3	6.0	-3.3	-8.3	-6.4	11.0
23	39.1	36.2	-2.8	24.3	28.6	4.3	-1.5	-1.8	0.1	-0.2	1.8	1.2	-2.7	7.7	8.2	-1.6	1.8	-1.8	3.0	-3.1	-0.6	-1.6	3.6
24	40.0	44.9	4.8	21.6	23.3	1.7	-1.3	0.8	-0.9	0.0	1.1	-0.6	0.1	0.0	0.6	-1.1	0.7	-1.2	1.7	4.4	-3.6	0.5	5.7
25	40.8	38.9	-1.9	16.9	14.9	-2.0	1.5	1.2	-2.0	-0.8	2.4	1.5	-2.5	-1.5	3.3	1.7	-3.6	1.0	4.1	-0.2	1.5	0.6	1.6
26	27.6	41.8	14.2	16.3	11.7	-4.6	-2.5	-4.1	-3.4	1.9	5.7	-9.1	-0.4	-3.4	9.8	-3.3	-3.7	2.4	5.5	4.5	-6.7	8.4	11.7
27	44.5	44.7	0.2	11.7	11.8	0.1	-0.5	1.0	-1.7	0.2	2.0	0.8	-1.4	0.3	1.6	1.1	-1.4	0.0	1.8	1.5	-2.2	-0.3	2.7
28	46.7	47.8	1.2	16.8	14.7	-2.1	-1.6	-2.8	-3.3	0.2	4.3	-5.7	1.1	-1.1	5.9	-1.9	-3.0	0.2	3.5	1.4	-2.6	0.0	3.0
29	35.2	36.2	1.0	13.6	16.5	2.9	1.4	0.8	3.1	0.6	3.3	3.0	-1.4	-0.4	3.4	-	-	-	-	-0.1	0.2	-1.1	1.1

30	44.8	45.2	0.4	22.1	23.5	1.4	-0.8	2.2	0.6	-1.9	3.0	2.5	0.8	-0.8	2.7	2.1	1.4	-2.7	3.7	1.6	-2.3	-2.9	4.0
31	43.3	43.4	0.1	22.7	24.7	2.1	-1.7	-2.6	3.6	-4.4	6.2	-2.1	3.9	-0.8	4.5	-2.3	4.7	-5.6	7.6	-4.4	-0.6	-6.2	7.6
32	49.6	45.9	-3.6	12.9	11.8	-1.1	-2.5	5.4	0.5	-2.8	6.1	5.2	1.1	-1.8	5.6	8.1	1.0	-2.2	8.4	0.3	0.4	-2.6	2.7
33	45.4	44.6	-0.9	27.7	30.7	3.1	1.9	-1.8	1.8	3.1	4.0	0.1	1.1	3.4	3.6	-3.3	1.2	3.0	4.7	-5.4	-0.1	3.1	6.2
34	36.5	37.9	1.4	15.3	13.8	-1.5	-6.1	-6.2	-12.0	5.3	14.5	-	-	-	-	-	-	-	-	-1.1	-2.8	6.5	7.2
35	38.6	40.0	1.3	9.8	6.2	-3.7	0.9	-3.0	-3.3	-1.8	4.7	-4.2	-3.6	-3.3	6.5	-2.8	-5.8	0.5	6.5	-0.6	-1.5	0.2	1.6

For ROT, positive values represents clockwise rotation for a right hip and counterclockwise rotation for a left hip.

AP, anterior-posterior; AV, anteversion; COR, centre of rotation; INCL, inclination; ML, medial-lateral; ROT, rotation; SI, superior-inferior.