

Additional file 5
Relative displacement in left twisting

LPF	1	2	3	4
Xa	-0.0515	-0.0474	-0.0599	0.0123
Xb	-0.1096	-0.0672	-0.0607	-0.0048
RDx(leftward)	0.0581	0.0198	0.0008	0.0171
Ya	1.0689	0.8258	0.7351	0.4812
Yb	1.1318	0.6957	0.5429	0.1219
RDy(backward)	-0.0629	0.1301	0.1922	0.3593
Za	-1.2314	-1.3871	-1.4762	-1.4638
Zb	-0.5795	-0.8442	-0.9938	-0.9843
RDz(upward)	-0.6519	-0.5429	-0.4824	-0.4795
RD	0.6575	0.5586	0.5193	0.5994
TIFI				
	1	2	3	4
Xa	-0.0272	-0.0640	-0.0973	-0.0202
Xb	-0.1252	-0.1043	-0.1007	-0.0731
RDx(leftward)	0.0980	0.0403	0.0034	0.0529
Ya	0.8055	0.6232	0.5519	0.3625
Yb	1.1384	0.6938	0.5379	0.1084
RDy(backward)	-0.3329	-0.0706	0.014	0.2541
Za	-1.2059	-1.3318	-1.4027	-1.3945
Zb	-0.5656	-0.8350	-0.9871	-0.9775
RDz(upward)	-0.6403	-0.4968	-0.4156	-0.417
RD	0.7283	0.5034	0.4158	0.4912
SIS				
	1	2	3	4
Xa	0.0417	-0.0351	-0.0696	-0.0750
Xb	0.0441	-0.1011	-0.1537	-0.3028
RDx(leftward)	-0.0024	0.066	0.0841	0.2278
Ya	1.0265	0.7305	0.6156	0.3033
Yb	1.0841	0.7201	0.5941	0.2468
RDy(backward)	-0.0576	0.0104	0.0215	0.0565
Za	-0.8483	-1.0466	-1.1608	-1.1524
Zb	-0.7067	-0.9229	-1.0455	-1.0365
RDz(upward)	-0.1416	-0.1237	-0.1153	-0.1159
RD	0.1529	0.1406	0.1443	0.2618
S2AI-S1				
	1	2	3	4

Xa	0.1313	-0.0164	-0.0751	-0.1386
Xb	0.1173	-0.0181	-0.0754	-0.1385
RDx(leftward)	0.014	0.0017	0.0003	-0.0001
Ya	1.0348	0.7274	0.6050	0.2925
Yb	1.0857	0.7146	0.5765	0.1952
RDy(backward)	-0.0509	0.0128	0.0285	0.0973
Za	-0.7496	-0.9306	-1.0587	-1.0562
Zb	-0.6915	-0.9240	-1.0571	-1.0462
RDz(upward)	-0.0581	-0.0066	-0.0016	-0.0100
RD	0.0785	0.0145	0.0285	0.0978
S2AI-CS1	1	2	3	4
Xa	0.0982	0.0034	-0.0376	-0.0820
Xb	0.0213	0.0035	-0.0393	-0.0813
RDx(leftward)	0.0769	-0.0001	0.0017	-0.0007
Ya	1.0308	0.7527	0.6179	0.2840
Yb	1.2282	0.7491	0.5912	0.1563
RDy(backward)	-0.1974	0.0036	0.0267	0.1277
Za	-0.8337	-0.9872	-1.1297	-1.1253
Zb	-0.6877	-0.9782	-1.1285	-1.1131
RDz(upward)	-0.1460	-0.0090	-0.0012	-0.0122
RD	0.2573	0.0097	0.0268	0.1283

Point a is located inside the fracture line, and point b is located outside the fracture line.

Xa and Xb respectively represent the displacement of the two points relative to the origin on the X axis. Ya and Yb respectively represent the displacement of the two points on the Y axis relative to the origin. Za and Zb respectively represent the displacement of the two points on the Z axis relative to the origin.

LPF: Lumbopelvic fixation ;

TIFI: Transiliac internal fixator ;

SIS: sacroiliac screw ;

S2AI-S1: S2-alar-iliac screw and S1 pedicle screw fixation ;

S2AI-CS1: S2-alar-iliac screw and contralateral S1 pedicle screw fixation.

RD_x: The relative displacement of the two points a, b on the X axis. Leftward is a positive value

RD_y: The relative displacement of the two points a, b on the Y axis. Backward is a positive value

RD_z: The relative displacement of the two points a, b on the Z axis .Upward is a positive value

RD: The total relative displacement of two points a, b in the three-dimensional direction