

Additional file 4

Relative displacement in right bending

LPF	1	2	3	4
Xa	-0.1412	-0.0608	-0.0398	0.0751
Xb	-0.1829	-0.0736	-0.0409	0.0635
RDx(leftward)	0.0417	0.0128	0.0011	0.0116
Ya	1.0621	0.8335	0.7483	0.4998
Yb	1.2218	0.7645	0.6045	0.1627
RDy(backward)	-0.1597	0.0690	0.1438	0.3371
Za	-1.2698	-1.4097	-1.4931	-1.4826
Zb	-0.6107	-0.8881	-1.0448	-1.0353
RDz(upward)	-0.6591	-0.5216	-0.4483	-0.4473
RD	0.6795	0.5263	0.4708	0.5602
TIFI				
	1	2	3	4
Xa	-0.1720	-0.0638	-0.0328	0.1134
Xb	-0.2385	-0.1596	-0.1325	-0.0628
RDx(leftward)	0.0665	0.0958	0.0997	0.1762
Ya	1.0186	0.8252	0.7518	0.5410
Yb	1.1284	0.6964	0.5449	0.1278
RDy(backward)	-0.1098	0.1288	0.2069	0.4132
Za	-1.3591	-1.4759	-1.5478	-1.5386
Zb	-0.5328	-0.7945	-0.9423	-0.9331
RDz(upward)	-0.8263	-0.6814	-0.6055	-0.6055
RD	0.8362	0.7001	0.6476	0.7539
SIS				
	1	2	3	4
Xa	-0.0579	-0.0551	-0.0479	-0.0371
Xb	-0.0682	-0.2238	-0.2870	-0.4150
RDx(leftward)	0.0103	0.1687	0.2391	0.3779
Ya	1.1762	0.8546	0.7337	0.3929
Yb	1.1745	0.8104	0.6848	0.3383
RDy(backward)	0.0017	0.0442	0.0489	0.0546
Za	-0.8339	-1.0463	-1.1658	-1.1591
Zb	-0.6987	-0.9165	-1.0388	-1.0302
RDz(upward)	-0.1352	-0.1298	-0.1270	-0.1289
RD	0.1356	0.2174	0.2751	0.4030
S2AI-S1				
	1	2	3	4
Xa	0.0214	-0.0412	-0.0577	-0.0809
Xb	0.0157	-0.0495	-0.0775	-0.0817
RDx(leftward)	0.0057	0.0083	0.0198	0.0008
Ya	1.1166	0.7937	0.6713	0.3437

Yb	1.1726	0.7704	0.6235	0.2176
RDy(backward)	-0.0560	0.0233	0.0478	0.1261
Za	-0.7790	-0.9645	-1.0925	-1.0905
Zb	-0.7078	-0.9572	-1.0967	-1.0835
RDz(upward)	-0.0712	-0.0073	0.0042	-0.0070
RD	0.0908	0.0258	0.0519	0.1263
S2AI-CS1	1	2	3	4
Xa	-0.0057	-0.0233	-0.0252	-0.0335
Xb	-0.0737	-0.0270	-0.0436	-0.0333
RDx(leftward)	0.0680	0.0037	0.0184	-0.0002
Ya	1.0965	0.8101	0.6769	0.3404
Yb	1.3045	0.7972	0.6322	0.1766
RDy(backward)	-0.2080	0.0129	0.0447	0.1638
Za	-0.8697	-1.015	-1.1573	-1.1533
Zb	-0.6973	-1.0037	-1.1591	-1.1413
RDz(upward)	-0.1724	-0.0113	0.0018	-0.012
RD	0.2786	0.0175	0.0484	0.1642

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.

RDx: 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