Additional file 2
Relative displacement in standing

LPF	1	2	3	4
Xa	-0.1106	-0.0640	-0.0538	0.0288
Xb	-0.1212	-0.0784	-0.0606	-0.0369
RDx(leftward)	0.0106	0.0144	0.0068	0.0657
Ya	1.2156	0.9235	0.8167	0.5109
Yb	1.3080	0.8271	0.6584	0.1935
RDy(backward)	-0.0924	0.0964	0.1583	0.3174
Za	-1.2215	-1.4035	-1.5082	-1.4974
Zb	-0.6543	-0.9455	-1.1101	-1.0999
RDz(upward)	-0.5672	-0.4580	-0.3981	-0.3975
RD	**0.5748**	**0.4683**	**0.4285**	**0.5129**
TIFI	1	2	3	4
Xa	-0.1284	-0.0700	-0.0540	0.0389
Xb	-0.1702	-0.1231	-0.1081	-0.0635
RDx(leftward)	0.0418	0.0531	0.0541	0.1024
Ya	1.2626	0.9735	0.8670	0.5675
Yb	1.2771	0.7923	0.6224	0.1541
RDy(backward)	-0.0145	0.1812	0.2446	0.4134
Za	-1.3119	-1.4918	-1.5962	-1.5862
Zb	-0.6095	-0.9031	-1.069	-1.0587
RDz(upward)	-0.7024	-0.5887	-0.5272	-0.5275
RD	**0.7038**	**0.6182**	**0.5837**	**0.6780**
SIS	1	2	3	4
Xa	-0.0275	-0.0470	-0.0510	-0.0496
Xb	-0.0305	-0.1728	-0.2294	-0.3530
RDx(leftward)	0.0030	0.1258	0.1784	0.3034
Ya	1.304	0.9191	0.7768	0.3803
Yb	1.3048	0.8817	0.7348	0.3296
RDy(backward)	-0.0008	0.0374	0.042	0.0507
Za	-0.8692	-1.1196	-1.2599	-1.2513
Zb	-0.7486	-1.0023	-1.1456	-1.1360
RDz(upward)	-0.1206	-0.1173	-0.1143	-0.1153
RD	**0.1206**	**0.1760**	**0.2160**	**0.3285**
S2AI-S1	1	2	3	4
Xa	0.0498	-0.0377	-0.0656	-0.1069
Xb	0.0493	-0.0436	-0.0797	-0.1077
RDx(leftward)	0.0005	0.0059	0.0141	0.0008
Ya	1.2341	0.8525	0.7139	0.3372

	1	2	3	4
Yb	1.2687	0.8369	0.6767	0.2354
RDy(backward)	-0.0346	0.0156	0.0372	0.1018
Za	-0.7829	-1.0104	-1.1526	-1.1493
Zb	-0.7391	-1.0091	-1.1627	-1.1507
RDz(upward)	-0.0438	-0.0013	0.0101	0.0014
RD	**0.0558**	**0.0167**	**0.0410**	**0.1018**
S2AI-CS1	1	2	3	4
Xa	0.0127	-0.0233	-0.0344	-0.0554
Xb	-0.0323	-0.0273	-0.0528	-0.0558
RDx(leftward)	0.0450	0.0040	0.0184	0.0004
Ya	1.2735	0.9052	0.7490	0.3453
Yb	1.4442	0.8935	0.7100	0.2038
RDy(backward)	-0.1707	0.0117	0.0390	0.1415
Za	-0.8992	-1.1009	-1.2643	-1.2584
Zb	-0.7574	-1.0904	-1.2645	-1.2469
RDz(upward)	-0.1418	-0.0105	0.0002	-0.0115
RD	**0.2264**	**0.0162**	**0.0431**	**0.1420**

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

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

RDz: 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