

**Supplementary Table 3.** Calculation of the actual displacement distance of the MARNS 3D model of lesions

Case No.	Location of lesion	$\angle \beta$ (°)	d (cm)	d2 (cm)
1	L3-4	15	10	0.34
2	T5	11	12	0.24
3	C5-6	13	11	0.33
4	L3-4	20	5	0.30
5	L3	8	15	0.15
6	L1	14	12	0.36
7	L4-S1	16	10	0.38
8	T8-9	4	11	0.02
9	T6-7	13	12	0.31
10	T10-11	10	12	0.18
11	L1	21	1	0.07
12	T6-8	3	9	0.01
13	T4	11	2	0.04
14	T12-L2	8	11	0.11
15	T5-7	9	10	0.12
16	L2-3	5	3	0.01
17	T2-3	7	15	0.11
18	L3-4	13	9	0.23
19	T11-L1	2	11	0.01
20	T4-7	5	8	0.03
21	L1-4	11	7	0.13

MARNS, mobile augmented reality navigation system; 3D, 3-dimensional; L, lumbar vertebra; T, thoracic vertebra; C, cervical vertebra.