Supplementary Table 9 Multiple Comparison Adjustment with the Benjamini-Hochberg Procedure

The main hypothesis tests in this study are those in the Cox proportional models of the rates of subsequent interventions and long-term complications, and those in the logistic regression of life-threatening events. These hazard ratios and odds ratios are adjusted using patient demographics and clinical characteristics. We determined that the Benjamini-Hochberg procedure was the most appropriate method to control for the false discovery rate (FDR). Following the Bejamini-Hochberg procedure, the individual p-values of the main hypothesis tests were listed in an ascending order and assigned ranks from 1 (smallest p-value) to 10 largest p-value) (See Table).

The Benjamini-Hochberg critical value is calculated using the formula:

Critical value = (i/ m)·Q

i = the individual p-value's rank; m = total number of tests (10 tests); Q = the FDR which we set to be 5% (0.05)

The original p-values are then compared to the Benjamini-Hochberg critical value to determine statistical significance.

Study Outcomes	**p-value**	**rank**	**Benjamini-Hochberg critical value**
Rate of any subsequent spine intervention	**<0.001**	**1**	**0.005**
Rate of any LSS intervention	**<0.001**	**2**	**0.010**
Rate of a subsequent MILD	**<0.001**	**3**	**0.015**
Rate of other spine interventions	**0.013**	**4**	**0.020**
Rate of open decompression	**0.015**	**5**	**0.025**
Rate of spinal cord stimulation	0.053	6	0.030
Rate of a subsequent ISD	0.241	7	0.035
Risk of a short term complication	0.433	8	0.040
Rate of fusion	0.617	9	0.045
Risk of a long term complication	0.747	10	0.050

The largest p-value that is smaller than the Benjamini-Hochberg critical value is significant, and all the p values smaller than the largest value are also significant. In this analysis, the p-values of the outcomes that are bold are significant. The findings of this study remain consistent after this adjustment to control for the FDR.

References

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