

Instrumentation Through Interrupted Trajectory In Complex Cervical Spine Cases

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Purpose:

Surgical challenges in complex spine cases include yet not limited to; limited exposure, decompression near vital or neural structures, decompression at a blind angle, and difficult trajectories for instrumentation. Displaced bone pieces across the desired trajectory is a major challenge when it is the only available trajectory to use.

Methods:

We selected 80 complex cervical spine cases that were operated upon during the years 2009-2016 by the first author to be included in this study. Then categorized as follows: fresh Vs. revisions, traumatic Vs. pathologic inflict, single Vs. multiple levels, contingent Vs. non-contingent affection, challenges, and degree of instability. Then, we selected the ones that showed interrupted and challenging trajectories for fixation. We studied their CT, MRI, operative videos, navigation images and then tiered them according to level of challenge. Finally, we selected two cases that properly demonstrate the theme of this study. Intraoperative videos, radiologic images and neuronavigation and CT snapshots were systematically arranged to present the two cases. In both cases the Medtronic O-arm and Medtronic StealthStation were used as intraoperative mapping tools.

Results:

Intraoperative navigation tools were so useful in securing neural and vascular tissue safety, surpassing the trajectory difficulty, together with tough bony purchases of the hardware from the first and only trial of application when needed.

Conclusion:

The intraoperative use of the O-arm and stealth Station is very useful in this modality of spine surgeries.