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Instrumentation through interrupted trajectory in complex cervical spine cases

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Introduction: 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 are a major challenge when it is the only available trajectory to use. The type and extent of image guided-surgery for spine disorders still lacks evidence-based medicine proof. It is up to the health care provider's sound judgment and expertise to do what is needed for the patient. The use of intraoperative CT-quality O-arm and neuro navigation are still tested as aiding tools in such operative modalities.

Method: We selected 2 cervical spine cases that were operated upon during the years 2009-2016 in our institute. Both represent complex traumatic spinal fractures. Both of them are major technical challenge in the trajectory jeopardizing the safety of instrumentation. In both cases the Medtronic O-arm and Medtronic Stealthstation were used as intra-operative mapping tools.

Result: 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. Intraoperative CT taken by the o-arm was a useful confirmatory intraoperative test of proper hardware placement.

Conclusion: The intraoperative use of the O-arm and stealthStation is very useful in this modality of spine surgeries.

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