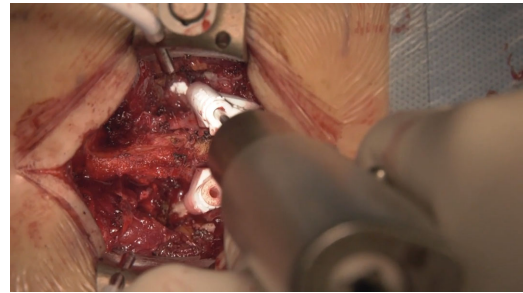


A Tailored Approach to Cortical Bone Track for Spine Fixation Surgery: 3-Dimensional Printed Custom Made Guides for Screws Placement: 2-Dimensional Operative Video



Watch now at <https://academic.oup.com/ons/article-lookup/doi/10.1093/ons/opaa219>

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Cortical bone trajectory (CBT) screw fixation is an attractive technique.¹⁻⁴ However, the ideal insertion of those screws could be technically demanding.^{5,6} The use of 3-dimensional (3D) patient-matched guides increase safety for CBT screws implantation.⁷ In this video, the case of a 46 yr old male is presented. He complained low back pain with left sciatica. magnetic resonance imaging showed an L5/S1 degenerative disc disease with left herniation. The patient was positioned prone; the L5 spinous process was identified under fluoroscopic guidance than skin incision was performed. Preserving the cranial facet joints, spinous processes and laminae of L5 and S1 vertebrae were exposed. Guides were positioned on the corresponding vertebra and the contact areas checked to avoid any discrepancy. With a high-speed drill the cortical bone was violated through the guide tubes. The drill itself has a stop mechanism provided

by the guides. With this mechanism the drilling can be safely performed up to the planned depth. Guidewires were then introduced into the pedicle and body of the vertebra; undertapping could be performed with cannulated instrument. Laminectomy and facetectomy were performed. Discectomy was performed, then a titanium kidney-shaped pivoting cage was implanted. Four Screws were finally placed. Proper positioning of the implants were verified on fluoroscopy and on the postoperative computed tomography scan confirming the accuracy of the trajectory.

All procedures performed for this study were in accordance with the ethical standards of our Institute and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Written informed consent was obtained from the patient who is operated in this video.

KEY WORDS: 3D patient-matched guides, CBT screws, Lumbar spinal surgery, Minimally invasive spinal surgery, Navigation system, Screws placement accuracy

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Disclosures

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