

8th International Conference on
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

Retrospective analysis of Pedicle Screw accuracy for patients undergoing Spinal Surgery assisted by Brain lab navigation and Intraoperative Computed Tomography (CT) Scanner AIRO(R)

Ranjit Ganguly

The Ohio State University, USA

Minimally invasive spine surgery approaches for pedicle screw instrumentation are being used more frequently. They provide shorter hospital stays for patients, shorter operative times, faster recovery, less damage to surrounding tissues and less blood loss. However, they may rely largely on fluoroscopic imaging, and confer radiation exposure to the team members and surgeon. Using AIRO Mobile Intraoperative CT by Brainlab during surgery is a way to eliminate radiation exposure to staff and may also improve the accuracy rate of pedicle screw instrumentation. We designed a retrospective analysis of our first 12 patients who had a total of 59 pedicle screws placed when we started to incorporate the AIRO iCT scanner to our surgical workflow. Projection images were saved during pedicle screw

insertion and compared to CT scans taken at the end of the case. We calculated the distances between the projected and postproedural screw locations, at both the screw tips and tulip heads. We observed a mean of 2.8mm difference between the postproedural images and projection. None of the screws placed had any clinically significant problems, and no patient needed revision surgery. Overall, iCT assisted navigation with the AIRO system is a safe addition to spinal surgery. It reduced operator and staff radiation exposure, and helped to facilitate effective MIS surgery without fluoroscopic imaging. Additional studies and research can be conducted to increase accuracy and reliability.

e: ranjit.ganguly@osumc.edu