



PORTABLE CT FOR SMARTER SURGERY

xCAT™ is the most compact, portable and practical intraoperative CT available ^{1,5}

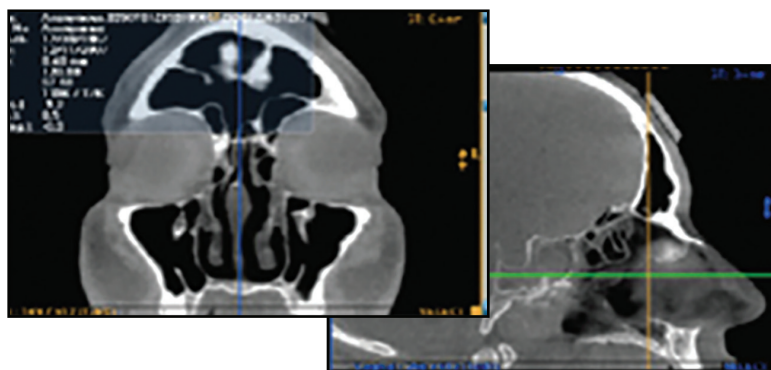
- Fits in compact OR, four-wheel steering pivots on a dime
- Radiation dose is a small fraction of conventional head CT
- IGS updates can quickly improve accuracy at the skull base ²
- Assess completeness of your surgery before leaving the OR
- Aligns with the *Institute of Medicine's High Quality Care* ³



In Sinus and Skull Base Surgery

xCAT can help with:

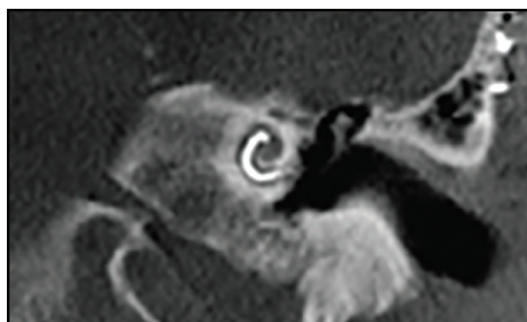
- Stent positioning
- Dissection of ethmoid partitions
- Additional tumor resection
Removal of unwanted bony fragments
- Alters surgical decision-making 26% to 30% of patients ^{4,5}



For Cochlear Implants

xCAT has been shown to enable:

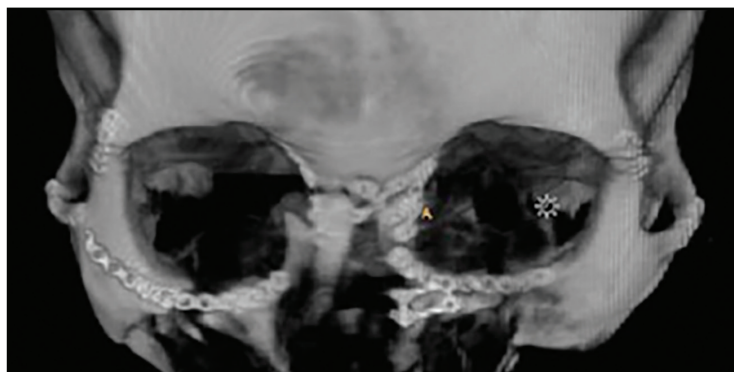
- Sub-millimeter resolution for electrode implantation ⁶
- Intra-cochlear trauma, depth of electrode insertion, and intra-scalar positioning ⁸
- Superior geometrical accuracy than portable multi-slice CT ⁷ supporting minimally-invasive or robotic surgery research ⁹



In Facial Trauma

xCAT can reveal and help address:

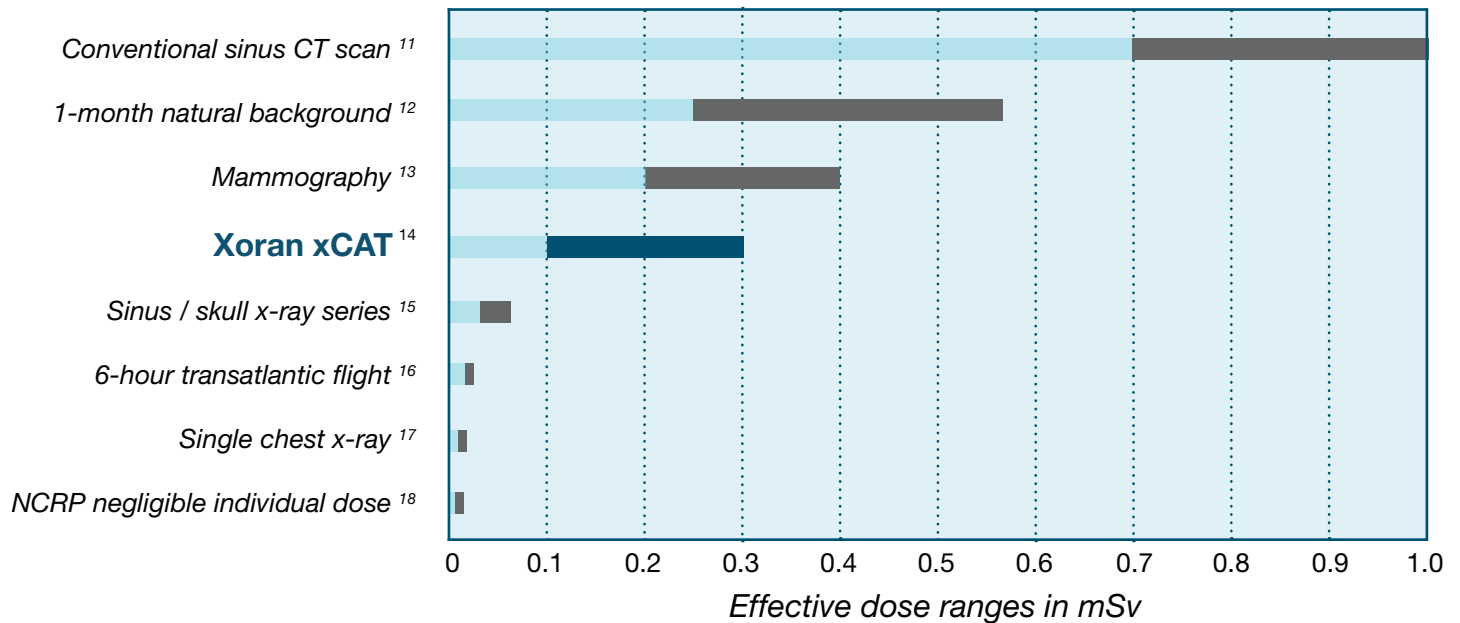
- Insufficient fracture reduction
- Suboptimal implant placement
- Remaining bony fragments
- Altered the surgical plan in 26% of patients ¹⁰





PORTABLE CT FOR SMARTER SURGERY

Radiation Dose Comparison



Please contact xcat@xorantech.com for availability

xCAT is available in Europe. Not currently available for sale in the U.S.

REFERENCES

- 1 Comparison of Intraoperative Portable CT Scanners in Skull Base and Endoscopic Sinus Surgery: Single Center Case Series. David B. Conley et.al. Skull Base. (2011)
- 2 The use of portable intraoperative CT for real-time image guidance: a pilot study. Das et. al. American Journal of Rhinology (2008)
- 3 AAO-HNS Position Statement on Point of Care Imaging in Otolaryngology. <http://www.entnet.org> (2013)
- 4 Clinical utility of intraoperative volume computed tomography scanner for endoscopic sinonasal and skull base procedures. Batra PS1, Kanowitz SJ, Citardi MJ. Am J Rhinol. (2008)
- 5 Use of intraoperative CT scanning in endoscopic sinus surgery: a preliminary report. Jackman AHs, Palmer JN, Chiu AG, Kennedy DW, Am J Rhinol. (2008)
- 6 Automatic pre- to intra-operative CT registration for image-guided cochlear implant surgery. Fitsum A. Reda, Jack H. Noble, Robert F. Labadie, and Benoit M. Dawant, IEEE Trans Biomed Eng. (2012)
- 7 Flat-panel CT vs multislice CT to evaluate cochlear implant positioning. Zeitler DM et al. Cochlear implants International (2011)
- 8 Evaluation of portable CT scanners for otological image-guided surgery. Balachandran et al. Int J Computer Assisted RadiolSurg (2012)
- 9 Minimally invasive image-guided cochlear implantation surgery: first report of clinical implementation. Labadie R, Balachandran R, Noble JH, Blachon GS, Mitchell JE, Reda FA, Dawant BM, Fitzpatrick JM. (2014)
- 10 Intraoperative cone beam computed tomography in the management of facial fractures. Stuck, B. A., R. Hülse, and T. J. Barth. International journal of oral and maxillofacial surgery (2012)
- 11 0.7 to 1.0 mSv | Radiation Dose from Adult and Pediatric Multidetector Computed Tomography. Denis Tack MD, et. al. (2007)
- 12 0.26 to 0.56 mSv | Background on Biological Effects of Radiation. United States Nuclear Regulatory Commission. (2015); Why is dose reduction such a "hot" topic?. Norman E. Bolus, MPH, CNMT. SNMITS Uptake Newsletter (2011); NCRP Report 160 and What It Means for Medical Imaging and Nuclear Medicine. Norman E. Bolus (2013)
- 13 0.2 to 0.4 mSv | Computed Tomography Dose (CT Dose). Mahadevappa Mahesh, M.S. Radiological Society of North America, Inc. (2016)
- 14 0.1 to 0.3 mSv | xCAT ENT User Manual. Xoran Technologies. (2008).
- 15 0.04 to 0.07 mSv | Dose from medical X-Ray Procedures. Revised radiation doses typical for x-ray examinations. Wall BF, Hart D. . The British J. of Rad. (1997)
- 16 0.03 mSv | Radiation Doses and Risks in Chest Computed Tomography Examinations. Walter Huda. Proceedings of the American Thoracic Society (2007)
- 17 0.02 mSv | What are the Radiation Risks from CT? U.S. Food and Drug Administration. (2016)
- 18 0.01 mSv | Presidential Report on Radiation Protection Advice: Screening of Humans for Security Purposes Using Ionizing Radiation Scanning Systems. Thomas S. Tenforde, et. al. (2002)



xorantech.com

800.709.6126