BRAINLAB

Sharing Scientific Knowledge and Evidence

Clinical Literature Library

Title	Author	Year	Journal	Keywords	Link
Histopathological correlation of brain tumor recurrence vs. radiation effect post-radiosurgery as detected by MRI contrast clearance analysis: a validation study	Goulenko V	2014	J Neurooncol.	Elements Contrast Clearance Analysis, Clinical Outcome, Brain Metastasis	Go to article
Survey Assessment of Utility in Preoperative Magnetic Resonance (MR) Tractography Surgical Planning	Mayur Sharma	2023	World Neurosurgery	Preoperative Planning, Elements Fibertracking, Brain Tumor	Go to article
Reduction in CT scan number with the reference frame middle attachment method in intraoperative CT navigation for adolescent idiopathic scoliosis	Hiroki Oba	2023	European Spine Journal	Spine Navigation, ICT, Scoliosis, Registration Methods, Radiation Exposure	Go to article
Intraoperative computed tomography-guided navigation for implant anchorage in spine surgery	Ralph Kothe	2023	Operative Orthopädie und Traumatologie	Spine Navigation, Airo, Accuracy, Radiation Exposure	Go to article
Intra-operative applications of augmented reality in glioma surgery: a systematic review	Ragnhildstveit et al.	2023	Frontiers in surgery	Microscope Navigation, Gliomas, Mixed Reality, Augmented Reality	Go to article
Airo® navigation versus freehand fluoroscopy technique: A comparative study of accuracy and radiological exposure for thoracolumbar screws placement	Chatelain	2023	Neurochirurgie	Spine Navigation, Airo, Accuracy, Radiation Exposure	Go to article
Surgical planning, histopathology findings and postoperative outcome in MR-negative extra-temporal epilepsy using intracranial EEG, functional imaging, magnetoencephalography, neuronavigation and intraoperative MRI	Maslarova A	2023	Clinical neurology and neurosurgery	Elements Stereotaxy, Cranial Navigation, Frameless Stereotaxy, Epilepsy, Elements BOLD MRI Mapping, Intraoperative Ultrasound, Patient Outcomes, IPlan Stereotaxy	Go to article
Connectivity-based segmentation of the thalamic motor region for deep brain stimulation in essential tremor: A comparison of deterministic and probabilistic tractography	Tsolaki E	2024	NeuroImage: Clinical	Elements Fibertracking, Elements Segmentation Cranial, Elements Object Manipulation, Essential Tremor, Accuracy, Patient Outcomes	Go to article
Enhancing outcomes in deep brain stimulation: a comparative study of direct targeting using 7T versus 3T MRI	Middlebrooks EH	2024	Journal of neurosurgery	Elements Distortion Correction Cranial, Elements Image Fusion, Essential Tremor, Patient Specific Targeting, Accuracy, Patient Outcomes	Go to article

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Deep Brain Stimulation Lead Localization Variability Comparing Intraoperative MRI Versus Postoperative Computed Tomography	Alexander G Yearley	2023	Operative neurosurgery (Hagerstown, Md.)	Elements Lead Localization, Elements Image Fusion, Accuracy, IMRI	Go to article
Radiofrequency ablation of the pallidothalamic tract and ventral intermediate nucleus for dystonic tremor through the parietal approach	Shiro Horisawa	2023	Surgical Neurology International	Elements Stereotaxy, Elements Segmentation Basal Ganglia, Patient Specific Targeting, Tremor	Go to article
Improving the efficiency of single-isocenter multiple metastases stereotactic radiosurgery treatment	Jonathan J Wyatt	2024	Advances in Radiation Oncology	Elements Multiple Brain Mets SRS, Brain Metastasis, Single Isocenter, Radiotherapy Planning	Go to article
Intraoperative Cone-Beam Computed Tomography Navigation Versus 2-Dimensional Fluoroscopy in Single-Level Lumbar Spinal Fusion: A Comparative Analysis	Gianluca Vadalà	2024	Neurospine	Loop-X, Spine Navigation, MIS	Go to article
Accuracy and Utility of Frameless Stereotactic Placement of Stereoelectroencephalography Electrodes	Brimley C	2023	World Neurosurg.	VarioGuide, Elements Stereotaxy, Epilepsy, Frameless Stereotaxy, Registration Accuracy	Go to article
Technical Note: Advantages of a 2-Room Intraoperative 3-Tesla Magnetic Resonance Imaging Operating Suite for Performing Laser Interstitial Thermal Therapy in Pediatric Epilepsy and Tumor Surgery	Tomschik M	2023	World Neurosurg	VarioGuide, Automatic Image Registration (AIR), Cranial Navigation, IMRI, Epilepsy, Brain Tumor	Go to article
Intraoperative Local Field Potential Beta Power and Three-Dimensional Neuroimaging Mapping Predict Long-Term Clinical Response to Deep Brain Stimulation in Parkinson Disease: A Retrospective Study	di Biase L, Lazio DBS Study Group	2023	Neuromodulation	Elements Guide XT, Elements Lead Localization, Elements Segmentation Basal Ganglia, Directional Deep Brain Stimulation, Parkinson's Disease	Go to article
Targeting Accuracy of the Leksell Vantage Stereotactic System for Deep Brain Stimulation Surgery: A Retrospective Review	Phillips KR	2023	Oper Neurosurg (Hagerstown)	Elements Stereotaxy, Elements Lead Localization, Elements Image Fusion, Intraoperative Ultrasound, Airo	Go to article
Resolving dyskinesias at sustained anti-OCD efficacy by steering of DBS away from the anteromedial STN to the mesencephalic ventral tegmentum - case report.	Coenen VA	2022	Acta Neurochir (Wien)	Elements Guide XT, Elements Lead Localization, Elements Segmentation Basal Ganglia, Directional Deep Brain Stimulation, Obsessive Compulsive Disorder (OCD), Automatic Image Registration (AIR)	Go to article

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Radiation doses and accuracy of navigated pedicle screw placement in cervical and thoracic spine surgery: a comparison of sliding gantry CT and mobile cone-beam CT in a homogeneous cohort	Lea Baumgart	2023	Journal of neurosurgery	Spine Navigation, Radiation Exposure, Accuracy	Go to article
Ten-step minimally invasive slalom unilateral laminotomy for bilateral decompression (sULBD) with navigation	Adelhoefer et al.	2023	BMC musculoskeletal disorders	Spine Navigation, Airo, Lumbar, MIS	Go to article
Automatic image registration on intraoperative CBCT compared to Surface Matching registration on preoperative CT for spinal navigation: accuracy and workflow	Frisk et al.	2024	International journal of computer assisted radiology and surgery	Automatic Image Registration (AIR), Surface Matching, Spine Navigation, Registration Accuracy	Go to article
Using Augmented Reality Technology to Optimize Transfacet Lumbar Interbody Fusion: A Case Report	Bardeesi et al.	2024	JCM (Journal of Clinical Medicine)	Spine Navigation, Microscope Navigation, Elements SmartBrush Spine, Elements Curvature Correction Spine, MIS	Go to article
Assessing the impact of distortion correction on Gamma Knife radiosurgery for multiple metastasis: Volumetric and dosimetric analysis	Yavuz Samanci	2024	Brain and Spine	Elements Distortion Correction Cranial, Elements Image Fusion, Radiotherapy Planning	Go to article
Contrast Clearance Analysis (CCA) to Assess Viable Tumour following Stereotactic Radiosurgery (SRS) to Brain Metastasis in Non-Small Cell Lung Cancer (NSCLC)	Mohamedkhan et al.	2024	Cancers	Elements Contrast Clearance Analysis, Clinical Outcome, Brain Metastasis	Go to article
Intrafractional motion detection for spine SBRT via X-ray imaging using ExacTrac Dynamic	Johannes Muecke	2024	Clinical and Translational Radiation Oncology	ExacTrac X-Ray / Dynamic, Intrafraction Motion, Stereotactic Body Radiotherapy (SBRT/SABR), Spine Metastasis	Go to article
Connectivity-based segmentation of the thalamic motor region for deep brain stimulation in essential tremor: A comparison of deterministic and probabilistic tractography	Evangelia Tsolaki	2024	NeuroImage: Clinical	Elements Fibertracking, Radiotherapy Planning, Functional SRS, Essential Tremor	Go to article
EP-2101 Evaluation of the feasibility of performing markerless tracking for lung SBRT patients	T. Gevaert	2019	Radiotherapy and Oncology	ExacTrac X-Ray / Dynamic, Intrafraction Motion, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article

Title	Author	Year	Journal	Keywords	Link
PO-1909 Clinical evaluation of Exactrac Dynamic surface guided pre-positioning system for cranial treatments	J. Alonso Muriedas	2023	Radiotherapy and Oncology	ExacTrac X-Ray / Dynamic, Intrafraction Motion	Go to article
PO-1884 Clinical implementation of ExacTrac Dynamic DIBH for left sided breast patients	T. Gevaert	2023	Radiotherapy and Oncology	ExacTrac X-Ray / Dynamic, ExacTrac Dynamic DIBH, Intrafraction Motion	Go to article
PO-1883 Markerless SBRT for lung treatment using ExacTrac Dynamic: a feasibility study	T. Gevaert	2023	Radiotherapy and Oncology	ExacTrac X-Ray / Dynamic, Intrafraction Motion	Go to article
Stereoscopic X-ray image and thermo-optical surface guidance for breast cancer radiotherapy in deep inspiration breath-hold	Buschmann M	2023	Strahlenther Onkol.	ExacTrac X-Ray / Dynamic, ExacTrac Dynamic DIBH, Intrafraction Motion	Go to article
Frequency of Large Intrafractional Target Motions During Spine Stereotactic Body Radiation Therapy	Jacqueline Wu	2020	Pract Radiat Oncol.	ExacTrac X-Ray / Dynamic, Spine Metastasis, Stereotactic Body Radiotherapy (SBRT/SABR), Intrafraction Motion	Go to article
A New Approach to Virtual Occlusion in Orthognathic Surgery Planning Using Mixed Reality-A Technical Note and Review of the Literature	Max Wilkat	2023	Journal of personalized medicine	Elements Mixed Reality Viewer, Orthognathic Surgery	Go to article
Usage of Object Matching Algorithms Combined with Mixed Reality for Enhanced Decision Making in Orbital Reconstruction-A Technical Note	Max Wilkat	2023	Journal of personalized medicine	Elements Mixed Reality Viewer, Magic Leap, Elements Angio Contouring, Orbital Reconstruction, Patient Specific Implants	Go to article
Advances and Innovations in Ablative Head and Neck Oncologic Surgery Using Mixed Reality Technologies in Personalized Medicine	Nadia Karnatz	2022	Journal of clinical medicine	Elements Mixed Reality Viewer, Elements Stereotaxy, Magic Leap	Go to article
Mixed reality in oral and maxillofacial surgery: a symbiosis of virtual and augmented reality or a pointless technological gadget?	Alexander K Bartella	2021	International journal of computerized dentistry	Elements Mixed Reality Viewer, Elements Stereotaxy, Magic Leap, Elements Segmentation Cranial, Elements Image Fusion	Go to article
Mixed Reality as a Teaching Tool for Medical Students in Neurosurgery	Silvero Isidre et al. (2023)	2023	Medicina	Elements Mixed Reality Viewer, Education	Go to article
Augmented reality-assisted craniofacial reconstruction in skull base lesions - an innovative technique for single-step resection and cranioplasty in neurosurgery	Christine Steiert	2022	Neurosurgical review	Elements Mixed Reality Viewer, Elements SmartBrush, Orbital Reconstruction, Patient Specific Implants	Go to article

Title	Author	Year	Journal	Keywords	Link
Impact on Brain Metastasis Survival after Recurrence Diagnose by Contrast Clearance Analysis	Goulenko et al.	2023	Cureus	Elements Contrast Clearance Analysis, Clinical Outcome, Brain Metastasis	Go to article
Initial Experience Using Brainlab Elements Cranial SRS	CD Venencia	2019	AAPM Library	Elements Cranial SRS, Radiotherapy Planning, Brain Primary Tumors, Brain Metastasis	Go to article
Evaluation of a four-pi approach to stereotactic treatment planning in cranial SRT	J Robar	2018	Radiotherapy and Oncology	Elements Cranial SRS, Radiotherapy Planning, Brain Primary Tumors	Go to article
Producing High Quality Cranial SRS Plans with 4Pi Planning Technique	G Narayanasamy	2022	Medical Physics	Elements Cranial SRS, Radiotherapy Planning, Brain Primary Tumors	Go to article
Early Biomarkers from Conventional and Delayed-Contrast MRI to Predict the Response to Bevacizumab in Recurrent High-Grade Gliomas	Daniels D	2016	AJNR Am J Neuroradiol.	Elements Contrast Clearance Analysis, Clinical Outcome	Go to article
Are treatment response assessment maps (TRAMs) and 18 F-choline positron emission tomography the future of central nervous system lymphoma imaging?	Kowa JY	2021	Br J Haematol.	Elements Contrast Clearance Analysis, Clinical Outcome	Go to article
Treatment Response Assessment Maps (TRAMs), a new tool for CNS lymphoma	Millard T	2022	EJHaem.	Elements Contrast Clearance Analysis, Clinical Outcome	Go to article
MRI Treatment Response Assessment Maps (TRAMs) for differentiating recurrent glioblastoma from radiation necrosis	Müller SJ	2024	J Neurooncol.	Elements Contrast Clearance Analysis, Clinical Outcome	Go to article
Predicting the need for cerebrospinal fluid shunt implantation after spontaneous intracerebral hemorrhage: a challenging task	Khalaveh et al.	2023	Frontiers in neurology	Elements SmartBrush, Intracerebral hemorrhage, Shunt, External Ventricular Drain	Go to article
Advantages of computed tomography-based navigation in clipping distal anterior cerebral artery aneurysms: a retrospective cohort study	Han et al.	2023	Quantitative imaging in medicine and surgery	Cranial Navigation, Elements Stereotaxy, Cerebral Aneurysm, Clipping	Go to article
The NeuroPoint alliance SRS & tumor QOD registries	Sheehan JP	2024	J Neurooncol.	Quentry Cloud Service, SRS Registry, Brain Metastasis	Go to article

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Using Novel Segmentation Technology to Define Safe Corridors for Minimally Invasive Posterior Lumbar Interbody Fusion	Troy Q Tabarestani	2023	Operative Neurosurgery	Elements SmartBrush Spine, Elements Curvature Correction Spine, Microscope Navigation, Airo	Go to article
Effect of prescription isodose line on tissue sparing in linear accelerator-based stereotactic radiosurgery treating multiple brain metastases using dynamic conformal arcs	Walter YA	2024	J Appl Clin Med Phys.	Elements Multiple Brain Mets SRS, Brain Metastasis, Single Isocenter, Radiotherapy Planning	Go to article
Urethra-sparing prostate cancer stereotactic body radiotherapy: sexual function and radiation dose to the penile bulb, the crura, and the internal pudendal arteries from a randomized phase 2 trial	Achard V	2023	Int J Radiat Oncol Biol Phys.	ExacTrac X-Ray / Dynamic, Prostate, Intrafraction Motion, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Single isocenter dynamic conformal arcs-based radiosurgery for brain metastases: Dosimetric comparison with Cyberknife and clinical investigation	Yoshiko Oshiro	2024	Technical Innovations & Patient Support in Radiation Oncology	Elements Multiple Brain Mets SRS, Brain Metastasis, Single Isocenter, Radiotherapy Planning	Go to article
Mixed reality compared to the traditional ex cathedra format for neuroanatomy learning: the value of a three-dimensional virtual environment to better understand the real world	Sandralegar et al.	2024	Neurosurgical focus	Elements Viewer, Elements Mixed Reality Viewer, Magic Leap, Elements Fibertracking, Vascular Malformations, Education	Go to article
Combined use of 3D printing and mixed reality technology for neurosurgical training: getting ready for brain surgery	Jeising et al.	2024	Neurosurgical focus	Elements Viewer, Elements Mixed Reality Viewer, Magic Leap, Brain Tumor Resection, Mixed Reality, Education	Go to article
Accuracy of augmented reality-guided drainage versus stereotactic and conventional puncture in an intracerebral hemorrhage phantom model	Demerath et al.	2023	Journal of neurointerventional surgery	Elements Viewer, Elements Mixed Reality Viewer, Magic Leap, Elements Trajectory Planning	Go to article
Evaluation of PTV margins and plan robustness for single isocentre multiple target stereotactic radiosurgery	Lam CHM	2023	Phys Med.	Elements Multiple Brain Mets SRS, Brain Metastasis, Single Isocenter, Radiotherapy Planning	Go to article
Evaluation of PTV margins and plan robustness for single isocentre multiple target stereotactic radiosurgery	Lam CHM	2023	Phys Med.	ExacTrac X-Ray / Dynamic, Single Isocenter, Intrafraction Motion, Brain Metastasis	Go to article

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Comparison of patient setup accuracy for optical surface-guided and X-ray-guided imaging with respect to the impact on intracranial stereotactic radiotherapy	Schöpe M	2023	Strahlenther Onkol.	ExacTrac X-Ray / Dynamic, Brain Metastasis, Intrafraction Motion	Go to article
Improving tractography in brainstem cavernoma patients by distortion correction	Liang et al.	2023	Brain and Spine	Elements Distortion Correction Cranial, Elements Image Fusion, Elements Fibertracking, Diffusion Tensor Imaging, Cavernomas	Go to article
Intraoperative Navigated Three-Dimensional Ultrasound Guidance Improves Resection in Gliomas Compared with Standard Two-Dimensional Ultrasound-Results from a Comparative Cohort Study	Moiyadi et al.	2023	World neurosurgery	Ultrasound Navigation, 3D, Extent Of Resection (EOR), Planned Subtotal Resection (STR), Gliomas	Go to article
Shift detection discrepancy between ExacTrac Dynamic system and cone-beam computed tomography	Chow VUY	2022	Appl Clin Med Phys.	ExacTrac X-Ray / Dynamic	Go to article
Clinical experience of intra-fractional motion monitoring of patients under head and neck radiotherapy using ExacTrac Dynamic system	Vivian U.Y. Chow	2023	Advances in Radiation Oncology	ExacTrac X-Ray / Dynamic, Intrafraction Motion	Go to article
ExacTrac X-Ray 6D Imaging During Stereotactic Body Radiation Therapy of Spinal and Nonspinal Metastases	Hadj Henni A	2023	Technol Cancer Res Treat.	ExacTrac X-Ray / Dynamic, Spine Metastasis, Stereotactic Body Radiotherapy (SBRT/SABR), Intrafraction Motion	Go to article
Stereotactic radiosurgery in the management of non-small cell lung cancer brain metastases: a prospective study using the NeuroPoint Alliance Stereotactic Radiosurgery Registry	Michalopoulos GD	2023	J Neurosurg.	Quentry Cloud Service, SRS Registry, Brain Metastasis	Go to article
VarioGuide® frameless neuronavigation-guided stereoelectroencephalography in adult epilepsy patients: technique, accuracy and clinical experience	Ladisich B	2021	Acta neurochirurgica	VarioGuide, Elements Stereotaxy, Epilepsy, Frameless Stereotaxy, Registration Accuracy, IPlan Stereotaxy	Go to article
Automated optimization of deep brain stimulation parameters for modulating neuroimaging-based targets	Malekmohammadi M	2022	Journal of neural engineering	Elements Lead Localization, Elements Image Fusion, Treatment Resistant Depression, Automatic Image Registration (AIR)	Go to article

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Preoperative tractography algorithm for safe resection of tumors located in the descending motor pathways zone	Ordonez-Rubiano et al.	2023	Surgical neurology international	Cranial Navigation, Elements SmartBrush, Elements Fibertracking, Brain Tumor, Diffusion Tensor Imaging	Go to article
Hypofractionated stereotactic radiotherapy (HFSRT) versus single fraction stereotactic radiosurgery (SRS) to the resection cavity of brain metastases after surgical resection (SATURNUS): study protocol for a randomized phase III trial	Waltenberger M	2023	BMC Cancer.	ExacTrac X-Ray / Dynamic, Brain Metastasis	Go to article
Gantry triggered X-ray verification during single-isocenter stereotactic radiosurgery: Increased certainty for a no-margin strategy	Gutiérrez A	2023	Radiother Oncol.	ExacTrac X-Ray / Dynamic, Intrafraction Motion, Single Isocenter, Brain Metastasis	Go to article
Dynamic intrafractional position monitoring with implanted fiducial markers for enhanced accuracy in radiotherapy of prostate cancer	Mangesius J	2023	Phys Eng Sci Med.	ExacTrac X-Ray / Dynamic, Prostate, Intrafraction Motion, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Robotic alignment system Cirq (Brainlab) for navigated brain tumor biopsies in children	van Baarsen et al.	2023	Child's nervous system	VarioGuide, Biopsy, Pediatric, Brain Tumor, Alignment System Cranial, Target Registration Error	Go to article
Navigated, percutaneous, three-step technique for lumbar and sacral screw placement: a novel, minimally invasive, and maximally safe strategy	La Rocca et al.	2023	Journal of orthopaedics and traumatology	Spine Navigation, Drill Guide, Accuracy, Screw Placement, Lumbar, Airo	Go to article
Novel MIS 3D NAV Single Step Pedicle Screw System (SSPSS): Workflow, Accuracy and Initial Clinical Experience	Schmidt et al.	2022	Global Spine Journal	Spine Navigation, Accuracy, Airo, Screw Placement	Go to article
Commissioning and validation of a Monte Carlo algorithm for spine stereotactic radiosurgery	Knill C	2023	J Appl Clin Med Phys.	Elements Spine SRS, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Brainlab Spine SRS planning and verification, comparison with CyberKnife	C. Jones	2020	Radiotherapy and Oncology	Elements Spine SRS, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article

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Pedicle Screw Placement Using Intraoperative Computed Tomography and Computer-Aided Spinal Navigation Improves Screw Accuracy and Avoids Postoperative Revisions: Single-Center Analysis of 1400 Pedicle Screws	Hagan et al.	2022	World neurosurgery	Spine Navigation, Accuracy, Revision Surgery, Airo, ICT, Screw Placement	Go to article
Atlantoaxial posterior screw fixation using intra-operative spinal navigation with three-dimensional isocentric C-arm fluoroscopy	Jannelli et al.	2022	International orthopaedics	Spine Navigation, Cervical, Drill Guide, Screw Placement	Go to article
Evaluation of the implantation of transpedicular screws in spinal instrumentation with free-hand technique and navigation-assisted with intraoperative computed tomography: An analytical-positional study	González-Vargas et al.	2021	Neurocirugia	Spine Navigation, Accuracy, Screw Placement	Go to article
Navigation-guided resection of locally advanced midface malignancies. Does it improve the safety of oncologic resection?	Ranz-Colio Álvaro et al.	2023	Oral oncology	CMF Navigation, Tumor Resection And Reconstruction, Complex Procedures	Go to article
Dosimetric Effects of Dynamic Jaw Tracking and Collimator Angle Optimization in Non-Coplanar Cranial Arc Radiotherapy	Knill C	2023	Med Dosim.	Elements Cranial SRS, Radiotherapy Planning, Brain Primary Tumors, Brain Metastasis	Go to article
Every-other-day vs once-a-week urethra-sparing prostate SBRT: 5-year results of a randomized phase II trial	Zilli T	2023	Int J Radiat Oncol Biol Phys.	ExacTrac X-Ray / Dynamic, Prostate, Intrafraction Motion, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Evaluation of a dedicated software for semi-automated VMAT planning of spine Stereotactic Body Radiotherapy (SBRT)	Dupuis P	2023	Phys Med.	Elements Spine SRS, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
A sub-analysis of multi-center planning radiosurgery for intracranial metastases through automation (MC-PRIMA) comparing UK and international centers	Mark K.H. Chan	2023	Medical Engineering and Physics	Elements Multiple Brain Mets SRS, Brain Metastasis, Single Isocenter, Radiotherapy Planning	Go to article

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Automatic rigid image Fusion of preoperative MR and intraoperative US acquired after craniotomy	Edoardo Mazzucchi	2023	Cancer Imaging	Ultrasound Navigation, Automatic Image Registration (AIR), Elements Image Fusion, Brain Tumor Resection, Extent Of Resection (EOR), Target Registration Error, Ultrasound SNAP to MRI	Go to article
Simultaneous Anterior Posterior Approach for Single-Position Lateral Lumbar Interbody Fusion with Robotic Assistance: Technical Guidelines and Early Outcomes	Ghenbot et al.	2023	World neurosurgery	Cirq Instrument Guidance, Spine Navigation, Accuracy, Lumbar	Go to article
Cirq® robotic assistance for thoracolumbar pedicle screw placement – feasibility, accuracy, and safety	Gabrovsky et al.	2023	Brain and Spine	Cirq Instrument Guidance, Spine Navigation, Accuracy	Go to article
Preoperative joint line convergence angle correction is a key factor in optimising accuracy in varus knee correction osteotomy	P. Behrendt	2022	Knee Surgery, Sports Traumatology, Arthroscopy	Preoperative Planning, Osteotomy, Hto, TraumaCad	Go to article
Pre-Operative Digital Templating Aids Restoration of Leg-Length Discrepancy and Femoral Offset in Patients Undergoing Total Hip Arthroplasty for Primary Osteoarthritis	Joshua Rui Yen Wong	2022	Cureus	Lld, Leg Length Discrepancy, TraumaCad, Hip Arthroplasty, Total Hip Replacement, Osteoarthritis	Go to article
Reliability of a simple fluoroscopic image to assess leg length discrepancy during direct anterior approach total hip arthroplasty	Sandi Caus	2021	World Jornal of Orthopedics	Lld, Total Hip Replacement, Leg Length Discrepancy, Hip, TraumaCad, Hip Arthroplasty	Go to article
Targeting the safe zones for cup position without fluoroscopic guidance in total hip arthroplasty: does the surgical approach affect the outcomes?	Carlo Trevisan	2021	European Journal of Orthopaedic Surgery & Traumatology	TraumaCad, Hip Arthroplasty, Total Hip Replacement, Hip	Go to article
Navigation Techniques in Endoscopic Spine Surgery	Hagan et al.	2022	BioMed research international	Spine Navigation, Airo, Automatic Image Registration (AIR), MIS, Endoscopic	Go to article
Cochlear sparing in LINAC-based radiosurgery for vestibular schwannoma: a dosimetric comparison of dynamic conformal arc, IMRT and VMAT treatment plans	Khong J	2023	Radiat Oncol.	Elements Cranial SRS, Radiotherapy Planning, Brain Primary Tumors	Go to article

Title	Author	Year	Journal	Keywords	Link
Gantry triggered X-ray verification of patient positioning during single-isocenter stereotactic radiosurgery using ExacTrac Dynamic: Increasing certainty of lesion localization	Gutiérrez et al.	2022	Journal of Radiosurgery and SBRT	ExacTrac X-Ray / Dynamic, Intrafraction Motion, Single Isocenter, Brain Metastasis	Go to article
Evaluation of a novel elastic registration algorithm for spinal imaging data: A pilot clinical study	Rashad et al.	2019	Int J Med Robot	Elements Image Fusion, Elements Curvature Correction Spine, Radiotherapy Planning	Go to article
Fully Automated Enhanced Tumor Compartmentalization: Man vs. Machine Reloaded	Porz et al.	2016	PLoS One.	Radiotherapy Planning, Elements SmartBrush, Gliobastoma	Go to article
Reliability of Semi-Automated Segmentations in Glioblastoma	Huber et al.	2017	Clin Neuroradiol.	Gliobastoma, Elements SmartBrush, Radiotherapy Planning	Go to article
Progressive disease in glioblastoma: Benefits and limitations of semi-automated volumetry	Huber et al.	2017	PLoS One.	Elements SmartBrush, Radiotherapy Planning, Gliobastoma	Go to article
Retrospective distortion correction of diffusion tensor imaging data by semi-elastic image fusion - Evaluation by means of anatomical landmarks	Gerhardt et al.	2019	Clin Neurol Neurosurg.	Elements Distortion Correction Cranial, Elements Image Fusion, Radiotherapy Planning, Diffusion Tensor Imaging, Elements Fibertracking	Go to article
Improving tractography in brainstem cavernoma patients by distortion correction	Sebastian Ille	2020	DGNC 2020 Meeting Abstract	Elements Distortion Correction Cranial, Elements Image Fusion, Diffusion Tensor Imaging, Radiotherapy Planning	Go to article
The Importance of Distortion Correction in Stereotactic Radiosurgery for Trigeminal Neuralgia	Samanci et al.	2022	Journal of Radiosurgery and SBRT	Elements Distortion Correction Cranial, Elements Image Fusion, Radiotherapy Planning, Trigeminal Neuralgia, Functional SRS	Go to article
Effect of Distortion to Radiosurgery Treatment Plans for Brain Metastases	Nadir Kucuk	2020	Cureus	Elements Distortion Correction Cranial, Elements Image Fusion, Radiotherapy Planning	Go to article
Effectiveness of a cranial distortion correction software using a novel measurement method	Belloeil-Marrane et al.	2022	Journal of Radiosurgery and SBRT	Elements Distortion Correction Cranial, Elements Image Fusion, Radiotherapy Planning	Go to article
Dosimetric Impact of Distortion Correction of MR Image Set for Cranial Stereotactic Radiation Treatments	R Sandhu	2020	American Association of Physicists in Medicine Virtual Meeting	Elements Distortion Correction Cranial, Elements Image Fusion, Radiotherapy Planning	Go to article

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Pinless Electromagnetic Neuronavigation During Awake Craniotomies: Technical Pearls, Pitfalls, and Nuances	Edward Harwick	2023	World Neurosurgery	Cranial EM Navigation, Brain Tumor Resection, Extent Of Resection (EOR), Minimal Invasiveness	Go to article
Catheter placement for lysis of spontaneous intracerebral hematomas: is a navigated stylet better than pointer-guided frameless stereotaxy for intrahematomal catheter positioning?	Vesna Malinova	2014	Translational Stroke Research	Frameless Stereotaxy, Catheter, Intracerebral hemorrhage, Disposable Stylet	Go to article
Image-guided implantation of precalibrated catheters in the ICU: a feasibility study.	Naureen Keric	2013	Acta Neurochirurgica	Frameless Stereotaxy, Catheter, Intracerebral hemorrhage, Disposable Stylet	Go to article
Optimizing ventriculoperitoneal shunt placement in the treatment of idiopathic intracranial hypertension: an analysis of neuroendoscopy, frameless stereotaxy, and intraoperative CT	Benjamin Yim	2016	Neurosurgical Focus	Frameless Stereotaxy, Catheter, Disposable Stylet	Go to article
Initial End-to-End testing of the ExacTrac Dynamic Deep Inspiration Breath Hold workflow using a breath hold breast phantom	Simon Goodall	2023	Preprint Under Review in Physical and Engineering Sciences in Medicine	ExacTrac X-Ray / Dynamic, ExacTrac Dynamic DIBH	Go to article
A framework for ExacTrac Dynamic commissioning for stereotactic radiosurgery and stereotactic ablative radiotherapy	Ben Perrett	2022	J Med Phys	ExacTrac X-Ray / Dynamic	Go to article
SURG-04. Robotic alignment system Cirq (Brainlab) for navigated brain tumor biopsies in children	Kirsten van Baarsen	2022	Neuro Oncology	Pediatric, Biopsy, Frameless Stereotaxy, Alignment System Cranial	Go to article
Cirq® robotic assistance for thoracolumbar pedicle screw placement – feasibility, accuracy, and safety	Gabrovsky Nikolay et al.	2023	Brain and Spine	Cirq Instrument Guidance, Spine Navigation, Accuracy, Screw Placement	Go to article
Target location after deep cerebral biopsies using low-volume air injection in 75 patients. Results and technical note	Maria A Poca	2017	Acta Neurochir (Wien)	VarioGuide, Cranial Navigation, Biopsy, Frameless Stereotaxy	Go to article
Factors affecting diagnostic yield in needle biopsy for brain lesions	Georgios Tsermoulas	2013	British Journal of Neurosurgery	VarioGuide, Cranial Navigation, Biopsy, Frameless Stereotaxy	Go to article

Title	Author	Year	Journal	Keywords	Link
Contemporary frameless intracranial biopsy techniques: Might variation in safety and efficacy be expected?	Iris S C Verploegh	2015	Acta Neurochir (Wien)	VarioGuide, Biopsy, Frameless Stereotaxy, Diagnostic Yield, Brain Tumor	Go to article
Diffuse infiltrative pontine glioma biopsy in children with neuronavigation, frameless procedure: A single center experience of 10 cases	A. Joud	2020	Neurochirurgie	VarioGuide, Cranial Navigation, Biopsy, Gliomas, Pediatric	Go to article
Mobile intraoperative CT-assisted frameless stereotactic biopsies achieved singlemillimeter trajectory accuracy for deep-seated brain lesions in a sample of 7 patients	Oliver Bichsel	2021	BMC Neurol	VarioGuide, ICT, Automatic Image Registration (AIR), Frameless Stereotaxy	Go to article
Pushing the boundaries of accuracy and reliability during stereotactic procedures: A prospective study on 526 biopsies comparing the frameless robotic and Image-Guided Surgery systems	Charles-Henry Mallereau	2022	J Clin Neurosci	VarioGuide, Biopsy, Frameless Stereotaxy, Diagnostic Yield	Go to article
Frameless stereotactic targeting devices: technical features, targeting errors and clinical results	Gerlig Widmann	2012	Int J Med Robot	VarioGuide, Biopsy, Frameless Stereotaxy, Accuracy	Go to article
Comparing Fiducial-Based and Intraoperative Computed Tomography-Based Registration for Frameless Stereotactic Brain Biopsy	Benjamin Saß	2021	Stereotact Funct Neurosurg	VarioGuide, Elements SmartBrush, Elements Image Fusion, Elements Trajectory Planning, Automatic Image Registration (AIR)	Go to article
Comparison of Frame-Based Versus Frameless Intracranial Stereotactic Biopsy: Systematic Review and Meta-Analysis	Sanjay Dhawan	2019	World Neurosurg	VarioGuide, Cranial Navigation, Biopsy, Frameless Stereotaxy	Go to article
Elastic Fusion Enables Fusion of Intraoperative Magnetic Resonance Imaging Data with Preoperative Neuronavigation Data	Negwer et al.	2020	World neurosurgery	Extent Of Resection (EOR), Brain Tumor Resection, Elements Fibertracking, Elements Image Fusion, Elements Virtual IMRI Cranial	Go to article
Focused ultrasound using a novel targeting method four-tract tractography for magnetic resonance–guided high-intensity focused ultrasound targeting	Feltrin et al.	2022	Brain Communications	Elements Fibertracking, Elements Trajectory Planning, Elements Distortion Correction Cranial, Diffusion Tensor Imaging, Elements Object Manipulation, Elements DICOM Burned-In Export	Go to article
Combined use of multimodal techniques for the resection of glioblastoma involving corpus callosum	Cui et al.	2022	Acta neurochirurgica	Cranial Navigation, Intraoperative Ultrasound, Elements Fibertracking, Gliobastoma	Go to article

Title	Author	Year	Journal	Keywords	Link
Stimulation of the Presupplementary Motor Area Cluster of the Subthalamic Nucleus Predicts More Consistent Clinical Outcomes	Kähkölä et al.	2022	Neurosurgery	Elements Fibertracking, Elements Guide XT, Elements Stereotaxy, Parkinson's Disease, Directional Deep Brain Stimulation, Diffusion Tensor Imaging	Go to article
Usability of mixed reality in awake craniotomy planning	Moon, Barua	2022	British journal of neurosurgery	Magic Leap, Elements Segmentation Cranial, Elements Fibertracking, Elements Distortion Correction Cranial, Elements SmartBrush, Elements Mixed Reality Viewer	Go to article
Postcentral Gyrus High-Grade Glioma: Maximal Safe Anatomic Resection Guided by Augmented Reality with Fiber Tractography and Fluorescein	Luzzi et al.	2022	World neurosurgery	Microscope Navigation, Elements SmartBrush, Elements Fibertracking, Augmented Reality, Gliomas	Go to article
Personalized Medicine Workflow in Post-Traumatic Orbital Reconstruction	Sabelis et al.	2022	Journal of personalized medicine	CMF Navigation, Preoperative Planning, Orbital Reconstruction, Patient Specific Implants	Go to article
Augmented Reality to Compensate for Navigation Inaccuracies	Bopp et al.	2022	Sensors	Microscope Navigation, Cranial Navigation, Airo, Automatic Image Registration (AIR), Elements Object Management	Go to article
Augmented Reality to Improve Surgical Workflow in Minimally Invasive Transforaminal Lumbar Interbody Fusion – A Feasibility Study With Case Series	Sommer et al.	2022	Neurospine	Elements SmartBrush Spine, Elements Curvature Correction Spine, Airo, MIS, Microscope Navigation, Elements Viewer	Go to article
Safety and Feasibility of Augmented Reality Assistance in Minimally Invasive and Open Resection of Benign Intradural Extramedullary Tumors	Sommer et al.	2022	Neurospine	Microscope Navigation, Elements Curvature Correction Spine, Elements SmartBrush Spine, Head Up Display (HUD), Augmented Reality, Elements Viewer	Go to article
Preoperative prediction of language function by diffusion tensor imaging	C. F. Freyschlag	2017	Brain Inform	Elements Distortion Correction Cranial, Diffusion Tensor Imaging, Cranial Navigation, Gliomas, Awake Surgery	Go to article
Associations between clinical outcome and navigated transcranial magnetic stimulation characteristics in patients with motoreloquent brain lesions: a combined navigated transcranial magnetic stimulation-diffusion tensor imaging fiber tracking approach.	C. F. Freyschlag	2017	Brain Inform	Elements Fibertracking, Cranial Navigation, Transcranial Magnetic Stimulation, Diffusion Tensor Imaging	Go to article

Title	Author	Year	Journal	Keywords	Link
Functional MRI in Children: Current Clinical Applications	Guerin et al.	2020	Seminars in pediatric neurology	Pediatric, Elements BOLD MRI Mapping	Go to article
Adaptive Hybrid Surgery: Feasibility of Planned Subtotal Resection of Benign Skull Base Tumors Followed by Radiosurgery to Minimize Morbidity Without Compromising Tumor Control	I.J. Barani	2012	IJROBP	Elements Adaptive Hybrid Surgery Analysis, Planned Subtotal Resection (STR), Brain Primary Tumors, Skull Base Surgery, Radiotherapy Planning	Go to article
PO-0658 Adaptive hybrid surgery: feasibility study of computer-assisted multi-modality approach to skull base tumors	I.J. Barani	2013	Radiotherapy and Oncology	Elements Adaptive Hybrid Surgery Analysis, Planned Subtotal Resection (STR), Brain Primary Tumors, Skull Base Surgery, Radiotherapy Planning	Go to article
Integrating Surgery and Radiosurgery: Our First Experiences with Adaptive Hybrid Surgery Analysis Software in Benign Skull Base Tumors	L. Schwyzer	2017	J Neurol Surg A Cent Eur Neurosurg	Elements Adaptive Hybrid Surgery Analysis, Planned Subtotal Resection (STR), Brain Primary Tumors, Skull Base Surgery, Radiotherapy Planning	Go to article
Adaptive Hybrid Surgery Experiences in Benign Skull Base Tumors	Jenny Christine Kienzler	2022	Brain Sci.	Elements Adaptive Hybrid Surgery Analysis, Planned Subtotal Resection (STR), Brain Primary Tumors, Skull Base Surgery, Radiotherapy Planning	Go to article
Optimized workflow to minimise intra-fractional motion during stereotactic body radiotherapy of spinal metastases	W.M. vanNiekerk	2022	Tecnical Innovations & Patient Support in Radiation Oncology	ExacTrac X-Ray / Dynamic, Intrafraction Motion, Spine Metastasis, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Intraoperative CT-guided navigation versus fuoroscopy for percutaneous pedicle screw placement in 192 patients: a comparative analysis	La Rocca et al.	2022	Journal of Orthopaedics and Traumatology	Drill Guide, Spine Navigation, Airo, Accuracy, Radiation Exposure	Go to article
Navigated 3D ultrasound-guided resection of high-grade gliomas: A case series and review	Habib et al.	2022	Surgical neurology international	Ultrasound Navigation, Brain Tumor Resection, Gliobastoma, Pilocytic Astrocytoma, Planned Subtotal Resection (STR)	Go to article
Evaluation of a novel software application for magnetic resonance distortion correction in cranial stereotactic radiosurgery	Calvo-Ortega JF	2019	Med Dosim.	Radiotherapy Planning, Elements Distortion Correction Cranial, Elements Image Fusion	Go to article

Title	Author	Year	Journal	Keywords	Link
Evaluation of the ability of the Brainlab Elements Cranial Distortion Correction algorithm to correct clinically relevant MRI distortions for cranial SRT	Paul Retif	2022	Strahlenther Onkol.	Radiotherapy Planning, Elements Distortion Correction Cranial, Elements Image Fusion	Go to article
Frameless Co-Registration of Biplane 2D Digital Subtraction Angiography Whole Frames and 3D Rotational Angiography-Based Cone-Beam Computed Tomography Angiogram on Dedicated Software for Stereotactic Radiosurgery of Cranial Vascular Malformations	Kazuhiro Ohtakara	2022	Cureus	Elements Angio Contouring, Vascular Malformations, Radiotherapy Planning	Go to article
Elastic Image Fusion Software to Coregister Preoperatively Planned Pedicle Screws With Intraoperative Computed Tomography Data for Image-Guided Spinal Surgery	Franziska A. Schmidt	2021	International Journal of Spine Surgery	Elements Curvature Correction Spine, Airo, Spine Navigation, Accuracy, ICT	Go to article
Primary Orbital Reconstruction with Selective Laser Melting (SLM) of Patient-Specific Implants (PSIs): An Overview of 96 Surgically Treated Patients	Rana et al.	2022	Journal of clinical medicine	CMF Navigation, Elements Segmentation Cranial, Orbital Reconstruction, Patient Specific Implants, Accuracy	Go to article
PO-1556 Evaluation of the new Brainlab Exactrac Dynamic structured light positioning system	R. Astudillo	2021	Radiotherapy and Oncology	ExacTrac X-Ray / Dynamic	Go to article
PD-0435: Brainlab ExacTrac Dynamic – First pre-clinical validation of surface- and X-Ray positioning accuracy	V. Da Silva Mendes	2020	Radiotherapy and Oncology	ExacTrac X-Ray / Dynamic	Go to article
PO-1130 Stereotactic Radiosurgery for trigeminal neuralgia using Exactrac Dynamic. First experience	A. Corro Verde	2022	Radiotherapy and Oncology	ExacTrac X-Ray / Dynamic, Trigeminal Neuralgia, Functional SRS	Go to article
PO-1752 Intrafractional motion detection for spine SBRT via X-ray imaging using ExacTrac Dynamic	J. Mücke	2021	Radiotherapy and Oncology	ExacTrac X-Ray / Dynamic, Stereotactic Body Radiotherapy (SBRT/SABR), Spine Metastasis, Intrafraction Motion	Go to article
ExacTrac Dynamic workflow evaluation: Combined surface optical/thermal imaging and X-ray positioning	Vanessa Da Silva Mendes	2022	J Appl Clin Med Phys.	ExacTrac X-Ray / Dynamic, Intrafraction Motion	Go to article
A phantom-based study and clinical implementation of Brainlab's treatment planning system for radiosurgical treatments of arteriovenous malformations	Nishan Shrestha	2022	Biomed Phys Eng Express.	Elements Angio Contouring, Vascular Malformations, Radiotherapy Planning	Go to article

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Single-isocenter multiple-target stereotactic radiosurgery for multiple brain metastases: dosimetric evaluation of two automated treatment planning systems	Giorgio Hamid Raza	2022	Radiat Oncol.	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Is the Gothic Arch a reliable radiographic landmark for migration percentage in children with cerebral palsy?	Caesar Wek	2020	Journal of Children's Orthopaedics	Pediatric, Hip	Go to article
Feasibility and preliminary clinical results of linac-based Stereotactic Body Radiotherapy for spinal metastases using a dedicated contouring and planning system	Giaj-levra et al.	2019	Radiat Oncol (Radiation Oncology)	Clinical Outcome, Elements Curvature Correction Spine, Elements SmartBrush Spine, Elements Image Fusion	Go to article
Accuracy of CT-navigated pedicle screw positioning in the cervical and upper thoracic region with and without prior anterior surgery and ventral plating	Rienmüller et al.	2017	The Bone & Joint Journal	Spine Navigation, Cervical, Transpedicular Screws, K-wire, Drill Guide	Go to article
Cervical Pedicle Screws Conventional Versus Computer-Assisted Placement of Cannulated Screws.	Richter M	2005	Spine	Spine Navigation, Cervical, Transpedicular Screws, K-wire, Drill Guide	Go to article
3-D-navigierte Pedikelschrauben der Halswirbelsäule – Erfahrungen und Komplikationsanalyse	Schiffer et al.	2016	Zeitschrift fur Orthopadie und Unfallchirurgie	Spine Navigation, Cervical, Transpedicular Screws, K-wire, Drill Guide	Go to article
Automatic image segmentation based on synthetic tissue model for delineating organs at risk in spinal metastasis treatment planning	Olaf Wittenstein	2019	Strahlenther Onkol.	Elements Spine SRS, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR), Elements Segmentation Spine	Go to article
Comparison of three imaging and navigation systems regarding accuracy of pedicle screw placement in a sawbone model	Beisemann et al.	2022	Scientific reports	Spine Navigation, Airo, ICT, Accuracy	Go to article
Feasibility of intraoperative computed tomography for endoscopic-assisted intraparenchymal hemorrhage evacuation	Potts, Jahromi	2020	Clinical neurology and neurosurgery	Automatic Image Registration (AIR), Airo, Registration Accuracy, ICT	Go to article
Accuracy and safety of pedicle screws implantation using Zeego and Brainlab navigation system in hybrid operation room	Fong et al.	2020	Formos J Surg	Spine Navigation, Automatic Image Registration (AIR), Registration Accuracy, MIS, Radiation Exposure	Go to article

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Individualized treatment of craniovertebral junction malformation guided by intraoperative computed tomography	Li et al.	2012	Journal of spinal disorders & techniques	Spine Navigation, Automatic Image Registration (AIR), Registration Accuracy, ICT	Go to article
Accuracy of image-guided pedicle screw placement using intraoperative computed tomography-based navigation with automated referencing. Part II: thoracolumbar spine	Scheufler et al.	2011	Neurosurgery	Spine Navigation, Automatic Image Registration (AIR), ICT, Registration Accuracy, Radiation Exposure	Go to article
Safety and Efficacy of Posterior Atlanto-Axial Stabilization Using Intraoperative Navigation System with Preoperative Computed Tomographic Scan	Fiorenza, Ascanio	2019	World neurosurgery	Spine Navigation, ICT, Cervical	Go to article
Less invasive surgical correction of adult degenerative scoliosis, part I: technique and radiographic results.	Scheufler et al.	2010	Neurosurgery	Spine Navigation, ICT, Radiation Exposure, Scoliosis, Spinal Fusion	Go to article
Diffusion tensor magnetic resonance imaging (DTI) tractography-guided deep brain stimulation in neuropathic pain	Coenen et al.	2015	Acta neurochirurgica	Elements Fibertracking	Go to article
Optic Radiation Diffusion Tensor Imaging Tractography. An Alternative and Simple Technique for the Accurate Detection of Meyer's Loop	Bertani et al.	2018	World neurosurgery	Elements Fibertracking, Diffusion Tensor Imaging	Go to article
Risk Assessment by Presurgical Tractography Using Navigated TMS Maps in Patients with Highly Motor- or Language-Eloquent Brain Tumors	Sollmann et al.	2020	Cancers	Elements Fibertracking, Diffusion Tensor Imaging	Go to article
EP-2055 Impact of patient-specific MRI distortion correction for stereotactic cranial target definition	Gevaert et al.	2019	Radiotherapy and Oncology	Elements Distortion Correction Cranial, Elements Image Fusion, Radiotherapy Planning	Go to article
Supratentorial high-grade gliomas: maximal safe anatomical resection guided by augmented reality high-definition fiber tractography and fluorescein	Luzzi et al.	2021	Neurosurgical focus	Microscope Navigation, Elements SmartBrush, Elements Fibertracking, Augmented Reality, Gliomas, 5 ALA	Go to article
Truebeam Radiosurgery for the Treatment of Trigeminal Neuralgia: Preliminary Results at a Single Institution	Kerolus et al.	2017	Cureus	ExacTrac X-Ray / Dynamic, Trigeminal Neuralgia, Functional SRS, Clinical Outcome	Go to article

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Single-isocenter stereotactic radiosurgery for multiple brain metastases: Impact of patient misalignments on target coverage in non-coplanar treatments	Michael Martin Eder	2022	Z Med Phys.	ExacTrac X-Ray / Dynamic, Brain Metastasis, Intrafraction Motion, Single Isocenter	Go to article
Simultaneous radiosurgery for multiple brain metastases: technical overview of the UCLA experience	Nzhde Agazaryan	2021	Radiat Oncol.	Elements Multiple Brain Mets SRS, Brain Metastasis, Single Isocenter, Radiotherapy Planning	Go to article
Noninvasive Thalamotomy for Refractory Tremor by Frameless Radiosurgery	Mohamed H Khattab	2021	Int J Radiat Oncol Biol Phys.	ExacTrac X-Ray / Dynamic, Functional SRS, Clinical Outcome, Tremor	Go to article
Neurological outcome and memory performance in patients with 10 or more brain metastases treated with frameless linear accelerator (LINAC)-based stereotactic radiosurgery	Minniti et al.	2020	J Neurooncol (Journal of Neuro-Oncology)	ExacTrac X-Ray / Dynamic, Brain Metastasis, Single Isocenter, Clinical Outcome	Go to article
Multi-center planning study of radiosurgery for intracranial metastases through Automation (MC-PRIMA) by crowdsourcing prior web-based plan challenge study	M.K.H. Chan	2022	Physica Medica	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
MRI-based contrast clearance analysis shows high differentiation accuracy between radiation-induced reactions and progressive disease after cranial radiotherapy	R. Bodensohn	2022	ESMO Open	Elements Contrast Clearance Analysis, Brain Metastasis, Clinical Outcome	Go to article
Margin of error for a frameless image guided radiosurgery system: Direct confirmation based on posttreatment MRI scans	Luo et al.	2017	Practical Radiation Oncology	ExacTrac X-Ray / Dynamic, Tremor, Functional SRS, Clinical Outcome	Go to article
Initial Experience With Single-Isocenter Radiosurgery to Target Multiple Brain Metastases Using an Automated Treatment Planning Software: Clinical Outcomes and Optimal Target Volume Margins Strategy	Minniti et al.	2020	Advances in Radiation Oncology	ExacTrac X-Ray / Dynamic, Brain Metastasis, Single Isocenter, Clinical Outcome	Go to article
Frameless Angiography-based GammaKnife Stereotactic Radiosurgery for Cerebral Arteriovenous Malformations: A Proof-of-Concept Study	Fadi Al Saiegh	2022	World Neurosurgery	Elements Angio Contouring, Vascular Malformations, Radiotherapy Planning	Go to article

Title	Author	Year	Journal	Keywords	Link
Evaluation of a Dedicated Software “Elements™ Spine SRS, Brainlab®” for Target Volume Definition in the Treatment of Spinal Bone Metastases With Stereotactic Body Radiotherapy	Rogé Maximilien	2022	Front Oncol.	Elements SmartBrush Spine, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR), Elements Spine SRS	Go to article
Clinical Evaluation of an Auto-Segmentation Tool for Spine SBRT Treatment	Chen Y	2022	Front Oncol.	Elements SmartBrush Spine, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR), Elements Spine SRS	Go to article
Simultaneous stereotactic radiosurgery of multiple brain metastases using single-isocenter dynamic conformal arc therapy: a prospective monocentric registry trial	Bodensohn et al.	2021	Strahlenther Onkol	ExacTrac X-Ray / Dynamic, Brain Metastasis, Single Isocenter, Clinical Outcome	Go to article
Cirq robotic arm-assisted transpedicular instrumentation with intraoperative navigation: technical note and case series with 714 thoracolumbar screws	Chesney et al.	2021	Journal of robotic surgery	Cirq Instrument Guidance, Spine Navigation, Airo, Spinal Fusion, Screw Placement	Go to article
Robotic Assistance for Minimally Invasive Cervical Pedicle Instrumentation: Report on Feasibility and Safety	Farah et al.	2021	World neurosurgery	Cirq Instrument Guidance, Spine Navigation, Cervical, Screw Placement	Go to article
First experience with the jump-starting robotic assistance device Cirq	Krieg, Meyer	2018	Neurosurgical focus	Cirq Instrument Guidance, Spine Navigation, Lumbar, Screw Placement	Go to article
Intraoperative MRI versus intraoperative ultrasound in pediatric brain tumor surgery: is expensive better than cheap? A review of the literature	Giussani C	2022	Child's Nervous System	Ultrasound Navigation, Intraoperative Ultrasound, Extent Of Resection (EOR), Pediatric	Go to article
Tracking motor and language eloquent white matter pathways with intraoperative fiber tracking versus preoperative tractography adjusted by intraoperative MRI-based elastic fusion	Zhang et al.	2022	Journal of neurosurgery	Elements Virtual IMRI Cranial, Elements Fibertracking, Brain Tumor Resection	Go to article
Case Report: Multimodal Functional and Structural Evaluation Combining Pre-operative nTMS Mapping and Neuroimaging With Intraoperative CT-Scan and Brain Shift Correction for Brain Tumor Surgical Resection	Senova et al.	2021	Frontiers in human neuroscience	Elements Virtual IMRI Cranial, Elements Fibertracking, Cranial Navigation, Airo, Brain Tumor Resection, Diffusion Tensor Imaging	Go to article

Title	Author	Year	Journal	Keywords	Link
Intraoperative integration of multimodal imaging to improve neuronavigation: a technical note	Mazzucchi et al.	2022	World neurosurgery	Elements Virtual IMRI Cranial, Ultrasound Navigation, Elements Image Fusion, Brain Tumor Resection, Extent Of Resection (EOR), Cranial Navigation	Go to article
Use of virtual magnetic resonance imaging to compensate for brain shift during image-guided surgery: illustrative case	Kim et al.	2022	Journal of neurosurgery. Case lessons	Elements Virtual IMRI Cranial, Brain Tumor Resection, Brainshift	Go to article
Image guided navigation by intraoperative CT scan for cochlear implantation	Stelter et al.	2012	Computer aided surgery : official journal of the International Society for Computer Aided Surgery	Automatic Image Registration (AIR), Cranial Navigation	Go to article
Reliable navigation registration in cranial and spine surgery based on intraoperative computed tomography	Carl et al.	2019	Neurosurgical focus	Elements SmartBrush, Elements Curvature Correction Spine, Elements Image Fusion, Airo	Go to article
Planificación Preoperatoria Digital en Traumatología	Esmitt Ramirez	2009	Central University of Venezuela	TraumaCad, Trauma	Go to article
Reproducibility and Accuracy of Templating Uncemented THA With Digital Radiographic and Digital TraumaCad Templating Software.	Panamoottil G Anil Kumar	2009	Orthopedics	TraumaCad, Total Hip Replacement, Hip, Templating	Go to article
Preoperative planning of total hip replacement using the TraumaCad™ system	Ely Liviu Steinberg	2010	Arch Orthop Trauma Surg	TraumaCad, Total Hip Replacement, Hip, Templating	Go to article
Intra- and interobserver reliability analysis of digital radiographic measurements for pediatric orthopedic parameters using a novel PACS integrated computer software program	Eitan Segev	2010	J Child Orthop.	TraumaCad, Intracerebral hemorrhage, Pediatric	Go to article
The accuracy of digital templating in primary total knee replacements	S. Prasad	2011	Orthopaedic Proceedings	TraumaCad, Tkr, Total Knee Replacement, Tibia, Femur	Go to article
The accuracy of automatic calibration of digital pelvic radiographs using two different scale markers: a comparative study	Jonathan A Baxter	2012	Hip Int	TraumaCad, Kingmark, Calibration, Hip, Pelvic	Go to article

Title	Author	Year	Journal	Keywords	Link
Radiographic Assessment of Lower Limb Lengthening in Achondroplastic Patients, Using the Ilizarov Frame: A 5-19 Year Follow up Study	Maria A Stefanou	2014	International Journal of Orthopaedics	TraumaCad, Lower Limb, Deformity, Ilizarov	Go to article
Digital planning for foot and ankle deformity correction: Evans osteotomy	Noman A Siddiqui	2014	J Foot Ankle Surg	TraumaCad, Deformity, Osteotomy	Go to article
A comparison of acetate and digital templating for hip resurfacing	Daniel N Bracey	2014	Am J Orthop (Belle Mead NJ)	TraumaCad, Hip, Templating	Go to article
Comparison of Hallux Valgus Deformity Evaluation on Printed Versus Digital X-Rays	Ehud Atoun	2015	Clinical Research on Foot & Ankle	TraumaCad, Valgus, ExacTrac X-Ray / Dynamic, Deformity	Go to article
Updates on preoperative planning, limb deformity analysis and surgical correction for the growing children	Eitan Segev	2016	J Child Orthop.	TraumaCad, Deformity, Lower Limb, Limb Length	Go to article
The orthopaedic management of lower limb deformity in hypophosphataemic rickets	A Horn	2017	J Child Orthop.	TraumaCad, Deformity, Lower Limb, Growth	Go to article
Radiographic templating of total hip arthroplasty for femoral neck fractures	Dror Lakstein	2017	International Orthopaedics	TraumaCad, Total Hip Replacement, Lld, Leg Length Discrepancy, Femoral Neck Fracture	Go to article
Pre-Operative Planning of Total Hip Arthroplasty on Dysplastic Acetabuli	Dror Lakstein	2017	Sage Journal	Total Knee Replacement, Hip	Go to article
The 3-dot circle: A reliable method for safe and efficient digital templating of the acetabular component	Firas Arnaout	2018	J Orthop	TraumaCad, Kingmark, Total Hip Replacement, Hip, Calibration	Go to article
Robotic-arm assisted total knee arthroplasty has a learning curve of seven cases for integration into the surgical workflow but no learning curve effect for accuracy of implant positioning	Babar Kayani	2018	Knee Surg Sports Traumatol Arthrosc	Robotics, Total Knee Replacement, Tkr	Go to article
Risk of patella baja after opening-wedge high tibial osteotomy	Tomohiko Murakami	2018	Sage Journal	TraumaCad, Osteotomy, Hto, Patella Baja, Lower Limb	Go to article
A new technique for correction of leg length discrepancies in combination with complex axis deformities of the lower limb using a lengthening nail and a locking plate	C. N. Steiger	2018	J Child Orthop.	TraumaCad, Deformity, Leg Lengthening, Intramedullary Nailing	Go to article

Title	Author	Year	Journal	Keywords	Link
Templating Hip Arthroplasty	Amro Alnahhal	2019	Open Access Maced J Med Sci.	TraumaCad, Kingmark, Total Hip Replacement, Templating, Hip, Calibration	Go to article
Subcutaneous Radiographic Measurement: A Marker to Evaluate Surgical Site Infection Risk in Elderly Hip Fracture Patients	Martí Bernaus	2019	JBJI	TraumaCad, Hip, Condylar Fractures, Elderly Patients	Go to article
Preoperative Evaluation of Intramedullary Tibial Nail Measurements—A Review of the Literature and a New Technique Using Contralateral Radiographs and Digital Planning	Eran Keltz	2019	AAOS	TraumaCad, Trauma, Tibial Diaphysial, Condylar Fractures, Intramedullary Nailing	Go to article
Improving the accuracy of digital templating: achieving success through stakeholder management	Hammad Parwaiz	2019	BMJ Open Qual	TraumaCad, Hip, Templating	Go to article
Growth modulation in idiopathic angular knee deformities: is it predictable?	B Danino	2019	Bone& Joint publishing	Knee, Varus, Valgus, Deformity	Go to article
Geometric planning in vertebral and pelvic complex surgery: sufficient number of evaluating parameters proving	Anna S. Kolesnikova	2019	SPIE	TraumaCad, Preoperative Planning, Spine, Pelvic	Go to article
Should we employ preoperative templating in hip hemiarthroplasty after femoral neck fracture? A nested case-control study	Oriol Pujol	2020	Sage Journal	TraumaCad, Preoperative Planning, Femoral Neck, Hip	Go to article
Orthopedic Digital Planning for Total Hip Arthroplasties	Nicolas Reina	2020	N/A	TraumaCad, Preoperative Planning, Hip, Radiography	Go to article
Digital Preop-planning of Total Hip Arthroplasties	Nicolas Reina	2020	N/A	TraumaCad, Total Hip Replacement, Hip, Preoperative Planning, Osteoarthritis	Go to article
Bone Lengthening with a Motorized Intramedullary Nail in 34 Patients with Posttraumatic Limb Length Discrepancies	Maxime Teulières	2021	PMC Journal	TraumaCad, Trauma, Limb Lengthening, Lld, Fracture	Go to article
KingMark's dual-marker versus a conventional single-marker templating system: is there a difference in accuracy of predicting final implant sizes and leg lengths?	Mohammad Al-Ashqar	2021	Eur J Orthop Surg Traumatol	Kingmark, Calibration, Hip Arthroplasty, Total Hip Replacement, Pelvic, Templating	Go to article

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Lower Limb Deformity and Gait Deviations Among Adolescents and Adults With X-Linked Hypophosphatemia	Gabriel T. Mindler	2021	Front. Endocrinol	TraumaCad, Deformity, Elements Adaptive Hybrid Surgery Analysis, Lower Limb	Go to article
A dosimetric comparative analysis of Brainlab elements and Eclipse RapidArc for spine SBRT treatment planning	Garron Deshazer	2022	Biomed Phys Eng Express.	Elements Spine SRS, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
The Use of Treatment Response Assessment Maps in Discriminating Between Radiation Effect and Persistent Tumoral Lesion in Metastatic Brain Tumors Treated with Gamma Knife Radiosurgery	Selcuk Peker	2021	World Neurosurg.	Elements Contrast Clearance Analysis, Brain Metastasis, Clinical Outcome	Go to article
Factors associated with progression and mortality among patients undergoing stereotactic radiosurgery for intracranial metastasis: results from a national real-world registry	Alvi	2022	Journal of Neurosurgery (published online ahead of print)	Quentry Cloud Service, Brain Metastasis, SRS Registry	Go to article
Quality of Automated Stereotactic Radiosurgery Plans in Patients with 4 to 10 Brain Metastases	Petoukhova	2021	Cancers (Basel).	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Noninvasive Thalamotomy for Refractory Tremor by Frameless Radiosurgery	Mohamed H Khattab	2021	Int J Radiat Oncol Biol Phys.	Elements Cranial SRS W/ Cones Or Cone Planning, Functional SRS, Clinical Outcome, Tremor	Go to article
Analysis of potential time saving in brain arteriovenous malformation stereotactic radiosurgery planning using a new software platform	Guilherme Dabus	2021	Med Dosim.	Elements Angio Contouring, Cost Savings, Radiotherapy Planning, Vascular Malformations	Go to article
Reduction of inter-observer differences in the delineation of the target in spinal metastases SBRT using an automatic contouring dedicated system	Niccolò Giaj-Levra	2021	Radiat Oncol.	Elements SmartBrush Spine, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR), Elements Spine SRS	Go to article
Targeting for stereotactic radiosurgical thalamotomy based on tremor treatment response	Guozhen Luo	2021	J Neurosurg.	Elements Segmentation Cranial, Functional SRS, Tremor, Radiotherapy Planning, Clinical Outcome	Go to article

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Simultaneous radiosurgery for multiple brain metastases: technical overview of the UCLA experience	Nzhde Agazaryan	2021	Radiat Oncol.	ExacTrac X-Ray / Dynamic, Brain Metastasis, Intrafraction Motion, Single Isocenter	Go to article
SBRT in single or multiple spinal metastases: 36 Gy in 3 fractions given to GTV	Zunino et al.	2020	Radiocirugia (Radiocirugía)	Elements Spine SRS, Spine Metastasis, Stereotactic Body Radiotherapy (SBRT/SABR), ExacTrac X-Ray / Dynamic, Clinical Outcome	Go to article
Once-a-week or every-other-day urethra-sparing prostate cancer stereotactic body radiotherapy, a randomized phase II trial: 18 months follow-up results	Zilli et al.	2020	Cancer Medicine	ExacTrac X-Ray / Dynamic, Prostate, Stereotactic Body Radiotherapy (SBRT/SABR), Intrafraction Motion	Go to article
Delayed contrast extravasation MRI: a new paradigm in neuro-oncology	Zach et al.	2015	Neuro-Oncology	Elements Contrast Clearance Analysis, Brain Metastasis, Clinical Outcome	Go to article
Delayed contrast extravasation MRI for depicting tumor and non-tumoral tissues in primary and metastatic brain tumors	Zach et al.	2012	PLoS ONE	Elements Contrast Clearance Analysis, Brain Metastasis, Clinical Outcome	Go to article
Submillimeter alignment of more than three contiguous vertebrae in spinal SRS/SBRT with 6-degree couch	Wang et al.	2017	J. Appl. Clin. Med. Phys. (Journal of applied clinical medical physics)	ExacTrac X-Ray / Dynamic, Spine Metastasis, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Dosimetric effect of translational and rotational errors for patients undergoing image-guided stereotactic body radiotherapy for spinal metastases	Wang et al.	2008	International Journal of Radiation Oncology*Biology*Physics	ExacTrac X-Ray / Dynamic, Spine Metastasis, Stereotactic Body Radiotherapy (SBRT/SABR), Intrafraction Motion	Go to article
Single isocenter treatment planning techniques for stereotactic radiosurgery of multiple cranial metastases	Velten et al.	2021	Physics and Imaging in Radiation Oncology	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Evaluation of Elements Spine SRS Plan Quality for SRS and SBRT Treatment of Spine Metastases	Trager et al.	2020	Frontiers in oncology	Elements Spine SRS, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Effects of Multileaf Collimator Design and Function When Using an Optimized Dynamic Conformal Arc Approach for Stereotactic Radiosurgery Treatment of Multiple Brain Metastases With a Single Isocenter: A Planning Study	Taylor et al.	2020	Cureus	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article

Title	Author	Year	Journal	Keywords	Link
The impact of the three degrees-of-freedom fiducial marker-based setup compared to soft tissue-based setup in hypofractionated intensity-modulated radiotherapy for prostate cancer	Tanabe et al.	2019	J. Appl. Clin. Med. Phys. (Journal of applied clinical medical physics)	ExacTrac X-Ray / Dynamic, Prostate, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Accuracy of dose-volume metric calculation for small-volume radiosurgery targets	Stanley et al.	2021	Med. Phys. (Medical physics)	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning	Go to article
Study of ExacTrac X-ray 6D IGRT setup uncertainty for marker-based prostate IMRT treatment	Shi et al.	2012	J. Appl. Clin. Med. Phys. (Journal of applied clinical medical physics)	ExacTrac X-Ray / Dynamic, Prostate, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Planned Subtotal Resection of Vestibular Schwannoma Differs from the Ideal Radiosurgical Target Defined by Adaptive Hybrid Surgery	Sheppard et al.	2018	World neurosurgery	Elements Adaptive Hybrid Surgery Analysis, Planned Subtotal Resection (STR), Brain Primary Tumors, Skull Base Surgery, Radiotherapy Planning	Go to article
Inception of a national multidisciplinary registry for stereotactic radiosurgery	Sheehan et al.	2016	Journal of neurosurgery	Quentry Cloud Service, Brain Metastasis, SRS Registry	Go to article
Quality of life outcomes for brain metastasis patients treated with stereotactic radiosurgery: pre-procedural predictive factors from a prospective national registry	Sheehan et al.	2018	Journal of neurosurgery	Quentry Cloud Service, Brain Metastasis, SRS Registry	Go to article
A dosimetric analysis of a spine SBRT specific treatment planning system	Saenz et al.	2019	J. Appl. Clin. Med. Phys. (Journal of applied clinical medical physics)	Elements Spine SRS, Spine Metastasis, Radiotherapy Planning, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Time-Driven Activity-Based Costing Comparison of Stereotactic Radiosurgery to Multiple Brain Lesions Using Single-Isocenter Versus Multiple-Isocenter Technique	Parikh et al.	2020	International Journal of Radiation Oncology*Biology*Physics	Elements Multiple Brain Mets SRS, Brain Metastasis, Single Isocenter, Radiotherapy Planning, Cost Savings	Go to article
Dosimetric impact of intrafraction motion during RapidArc stereotactic vertebral radiation therapy using flattened and flattening filter-free beams	Ong et al.	2013	International Journal of Radiation Oncology*Biology*Physics	ExacTrac X-Ray / Dynamic, Spine Metastasis, Stereotactic Body Radiotherapy (SBRT/SABR), Intrafraction Motion	Go to article

Title	Author	Year	Journal	Keywords	Link
A Systematic Analysis of 2 Monoisocentric Techniques for the Treatment of Multiple Brain Metastases	Narayanasamy et al.	2017	Technology in Cancer Research & Treatment	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Dosimetric Study of Automatic Brain Metastases Planning in Comparison with Conventional Multi-Isocenter Dynamic Conformal Arc Therapy and Gamma Knife Radiosurgery for Multiple Brain Metastases	Mori et al.	2016	Cureus	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
An evaluation of the BrainLAB 6D ExacTrac/Novalis Tx System for image-guided intracranial radiotherapy	Montgomery, Collins	2017	J Radiother Pract (Journal of Radiotherapy in Practice)	ExacTrac X-Ray / Dynamic, Intrafraction Motion	Go to article
Neurological outcome and memory performance in patients with 10 or more brain metastases treated with frameless linear accelerator (LINAC)-based stereotactic radiosurgery	Minniti et al.	2020	J Neurooncol (Journal of Neuro-Oncology)	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter, Clinical Outcome	Go to article
Initial Experience With Single-Isocenter Radiosurgery to Target Multiple Brain Metastases Using an Automated Treatment Planning Software: Clinical Outcomes and Optimal Target Volume Margins Strategy	Minniti et al.	2020	Advances in Radiation Oncology	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter, Clinical Outcome	Go to article
Patient-specific dose quality assurance of single-isocenter multiple brain metastasis stereotactic radiosurgery using PTW Octavius 4D	McCulloch et al.	2020	J. Appl. Clin. Med. Phys. (Journal of applied clinical medical physics)	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Margin of error for a frameless image guided radiosurgery system: Direct confirmation based on posttreatment MRI scans	Luo et al.	2017	Practical Radiation Oncology	Elements Cranial SRS W/ Cones Or Cone Planning, Tremor, Functional SRS, Clinical Outcome	Go to article
Dosimetric validation for an automatic brain metastases planning software using single-isocenter dynamic conformal arcs	Liu et al.	2016	J. Appl. Clin. Med. Phys. (Journal of applied clinical medical physics)	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Comparison of Online 6 Degree-of-Freedom Image Registration of Varian TrueBeam Cone-Beam CT and BrainLab ExacTrac X-Ray for Intracranial Radiosurgery	Li et al.	2017	Technology in Cancer Research & Treatment	ExacTrac X-Ray / Dynamic, Brain Metastasis, Single Isocenter	Go to article

Title	Author	Year	Journal	Keywords	Link
Dosimetric comparison of mono-isocentric and multi-isocentric plans for oligobrain metastases: A single institutional experience	Kuntz et al.	2020	Cancer radiotherapie : journal de la Societe francaise de radiotherapie oncologique	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Commissioning cranial single-isocenter multi-target radiosurgery for the Versa HD	Knill et al.	2021	Journal of applied clinical medical physics	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Truebeam Radiosurgery for the Treatment of Trigeminal Neuralgia: Preliminary Results at a Single Institution	Kerolus et al.	2017	Cureus	Elements Cranial SRS W/ Cones Or Cone Planning, Trigeminal Neuralgia, Functional SRS, Clinical Outcome	Go to article
Single isocenter stereotactic radiosurgery for patients with multiple brain metastases: dosimetric comparison of VMAT and a dedicated DCAT planning tool	Hofmaier et al.	2019	Radiat Oncol (Radiation Oncology)	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Radiation-induced vascular malformations in the brain, mimicking tumor in MRI-based treatment response assessment maps (TRAMs)	Guez et al.	2019	Clinical and Translational Radiation Oncology	Elements Contrast Clearance Analysis, Brain Metastasis, Clinical Outcome	Go to article
Positioning accuracy of a single-isocenter multiple targets SRS treatment: A comparison between Varian TrueBeam CBCT and Brainlab ExacTrac	Graulieres et al.	2020	Physica Medica	ExacTrac X-Ray / Dynamic, Brain Metastasis, Single Isocenter	Go to article
Feasibility and preliminary clinical results of linac-based Stereotactic Body Radiotherapy for spinal metastases using a dedicated contouring and planning system	Giaj-levra et al.	2019	Radiat Oncol (Radiation Oncology)	Elements Spine SRS, Elements SmartBrush Spine, Radiotherapy Planning, Spine Metastasis, Clinical Outcome, Elements Curvature Correction Spine, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Evaluation of a dedicated brain metastases treatment planning optimization for radiosurgery: a new treatment paradigm?	Gevaert et al.	2016	Radiat Oncol (Radiation Oncology)	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article

Title	Author	Year	Journal	Keywords	Link
Evaluation of the clinical usefulness for using verification images during frameless radiosurgery	Gevaert et al.	2013	Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology	ExacTrac X-Ray / Dynamic, Trigeminal Neuralgia, Intrafraction Motion, Functional SRS	Go to article
Adaptive Hybrid Surgery: Paradigm Shift for Patient-centered Neurosurgery	Or Cohen-Inbar	2018	Rambam Maimonides Med J.	Elements Adaptive Hybrid Surgery Analysis, Planned Subtotal Resection (STR), Brain Primary Tumors, Skull Base Surgery	Go to article
Frameless image-guided radiosurgery for initial treatment of typical trigeminal neuralgia	Chen et al.	2010	World neurosurgery	ExacTrac X-Ray / Dynamic, Trigeminal Neuralgia, Intrafraction Motion, Functional SRS, Clinical Outcome, Elements Cranial SRS W/ Cones Or Cone Planning	Go to article
Dosimetric study between a single isocenter dynamic conformal arc therapy technique and Gamma Knife radiosurgery for multiple brain metastases treatment: impact of target volume geometrical characteristics	Chea et al.	2021	Radiation oncology (London, England)	Elements Multiple Brain Mets SRS, Brain Metastasis, Radiotherapy Planning, Single Isocenter	Go to article
Quality-of-life trajectories after stereotactic radiosurgery for brain metastases	Bunevicius et al.	2020	Journal of neurosurgery	Quentry Cloud Service, Brain Metastasis, SRS Registry	Go to article
Hypofractionated stereotactic radiotherapy for large brain metastases: Optimizing the dosimetric parameters	Brun et al.	2021	Cancer radiotherapie : journal de la Societe francaise de radiotherapie oncologique	Elements Cranial SRS, Brain Metastasis, Radiotherapy Planning	Go to article
Simultaneous stereotactic radiosurgery of multiple brain metastases using single-isocenter dynamic conformal arc therapy: a prospective monocentric registry trial	Bodensohn et al.	2021	Strahlenther Onkol	Elements Multiple Brain Mets SRS, Brain Metastasis, Single Isocenter, Radiotherapy Planning, Clinical Outcome	Go to article
Adaptive hybrid surgery analysis (AHSA) for adjuvant gamma knife radiosurgery treatment of vestibular schwannoma residuals	Bartek et al.	2019	Clinical Neurology and Neurosurgery	Elements Adaptive Hybrid Surgery Analysis, Planned Subtotal Resection (STR), Brain Primary Tumors, Skull Base Surgery, Radiotherapy Planning	Go to article

Title	Author	Year	Journal	Keywords	Link
Intrafraction variations in linac-based image-guided radiosurgery of intracranial lesions	Badakhshi et al.	2013	Cancer radiotherapie : journal de la Societe francaise de radiotherapie oncologique	ExacTrac X-Ray / Dynamic, Intrafraction Motion, Brain Primary Tumors	Go to article
Local failure after stereotactic radiosurgery (SRS) for intracranial metastasis: analysis from a cooperative, prospective national registry	Asher et al.	2021	J Neurooncol (Journal of Neuro-Oncology)	Quentry Cloud Service, Brain Metastasis, SRS Registry	Go to article
Image-guided radiosurgery for spinal tumors: methods, accuracy and patient intrafraction motion	Agazaryan et al.	2008	Phys. Med. Biol. (Physics in medicine and biology)	ExacTrac X-Ray / Dynamic, Spine Metastasis, Intrafraction Motion, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Intra-Fraction Motion Management for Radiosurgical Treatments of Trigeminal Neuralgia: Clinical Experience, Imaging Frequency, and Motion Analysis	Agazaryan et al.	2021	Cureus	ExacTrac X-Ray / Dynamic, Trigeminal Neuralgia, Intrafraction Motion, Functional SRS	Go to article
Intraoperative computed tomography as reliable navigation registration device in 200 cranial procedures	Carl et al.	2018	Acta neurochirurgica	Airo, Cranial Navigation, Intraoperative Ultrasound, Registration Accuracy, Radiation Dose	Go to article
Navigation-Supported Stereotaxy by Applying Intraoperative Computed Tomography	Carl et al.	2018	World neurosurgery	Airo, Cranial Navigation, Elements Stereotaxy, VarioGuide, Intraoperative Ultrasound	Go to article
Visualization of volume of tissue activated modeling in a clinical planning system for deep brain stimulation	Carl et al.	2020	Journal of neurosurgical sciences	Elements Guide XT, Elements Segmentation Basal Ganglia, Elements Fibertracking, Automatic Image Registration (AIR), Directional Deep Brain Stimulation	Go to article
Longitudinal Assessment of Rotation Angles after Implantation of Directional Deep Brain Stimulation Leads	Lange et al.	2021	Stereotactic and functional neurosurgery	Elements Viewer, Automatic Image Registration (AIR), Directional Deep Brain Stimulation, Intraoperative Ultrasound	Go to article
Navigated Deep Brain Stimulation Surgery: Evaluating the Combined Use of a Frame-Based Stereotactic System and a Navigation System	Krüger et al.	2021	Stereotactic and functional neurosurgery	Elements Stereotaxy, Cranial Navigation, Elements Segmentation Basal Ganglia, Complex Procedures	Go to article

Title	Author	Year	Journal	Keywords	Link
Application of Augmented Reality in Percutaneous Procedures-Rhizotomy of the Gasserian Ganglion	Rau et al.	2021	Operative Neurosurgery	Magic Leap, Elements Viewer, Mixed Reality, Pain, Complex Procedures	Go to article
Superolateral medial forebrain bundle deep brain stimulation in major depression: a gateway trial	Coenen et al.	2019	Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology	Elements Fibertracking, Elements Guide XT, Elements Lead Localization, Elements Segmentation Basal Ganglia, Treatment Resistant Depression	Go to article
Electrode placement for SEEG: Combining stereotactic technique with latest generation planning software for intraoperative visualization and postoperative evaluation of accuracy and accuracy predictors	Kogias et al.	2022	Clinical Neurology and Neurosurgery	Elements Stereotaxy, Elements Segmentation Cranial, Elements Lead Localization, Epilepsy, Patient Specific Targeting	Go to article
Deep brain stimulation and refractory freezing of gait in Parkinson's disease: Improvement with high-frequency current steering co-stimulation of subthalamic nucleus and substantia Nigra	Golfrè Andreasi et al.	2020	Brain stimulation	Elements Guide XT, Elements Segmentation Basal Ganglia, Elements Lead Localization, Automatic Image Registration (AIR), Parkinson's Disease	Go to article
Imaging-based programming of subthalamic nucleus deep brain stimulation in Parkinson's disease	Waldthaler et al.	2021	Brain stimulation	Elements Guide XT, Elements Segmentation Basal Ganglia, Elements Lead Localization, Automatic Image Registration (AIR), Directional Deep Brain Stimulation	Go to article
Reduced Programming Time and Strong Symptom Control Even in Chronic Course Through Imaging-Based DBS Programming	Lange et al.	2021	Front. Neurol. (Frontiers in Neurology)	Elements Guide XT, Elements Segmentation Basal Ganglia, Elements Lead Localization, Automatic Image Registration (AIR), Directional Deep Brain Stimulation	Go to article
A detailed analysis of anatomical plausibility of crossed and uncrossed streamline rendition of the dentato-rubro-thalamic tract (DRT(T)) in a commercial stereotactic planning system	Coenen et al.	2021	Acta neurochirurgica	Elements Fibertracking, Elements Segmentation Basal Ganglia, Patient Specific Targeting, Elements Adaptive Hybrid Surgery Analysis, Parkinson's Disease	Go to article
Reliable navigation registration in cranial and spine surgery based on intraoperative computed tomography	Carl et al.	2019	Neurosurgical focus	Airo, Cranial Navigation, Elements Stereotaxy, Intraoperative Ultrasound, Registration Accuracy, Radiation Dose	Go to article

Title	Author	Year	Journal	Keywords	Link
Intraoperative Stereotactic Frame Registration Using a Three-Dimensional Imaging System with and without Preoperative Computed Tomography for Image Fusion	Spatz et al.	2020	Stereotactic and functional neurosurgery	Elements Image Fusion, Registration Accuracy, Intraoperative Ultrasound, Radiation Dose	Go to article
Understanding gamma ventral capsulotomy: Potential implications of diffusion tensor image tractography on target selectivity	Santos et al.	2019	Surgical neurology international	Elements Fibertracking, Elements Trajectory Planning, Patient Specific Targeting, Diffusion Tensor Imaging, Parkinson's Disease, Obsessive Compulsive Disorder (OCD)	Go to article
Do directional deep brain stimulation leads rotate after implantation?	Krüger et al.	2021	Acta neurochirurgica	Elements Lead Localization, Elements Stereotaxy, Directional Deep Brain Stimulation, Automatic Image Registration (AIR)	Go to article
Implementation of Intraoperative Computed Tomography for Deep Brain Stimulation: Pitfalls and Optimization of Workflow, Accuracy, and Radiation Exposure	Carl et al.	2018	World neurosurgery	Airo, Cranial Navigation, Elements Segmentation Basal Ganglia, Elements Lead Localization, Intraoperative Ultrasound, Radiation Dose	Go to article
Implantation of Depth Electrodes in Children Using VarioGuide® Frameless Navigation System: Technical Note	Budke et al.	2018	Operative Neurosurgery	VarioGuide, Elements Stereotaxy, Epilepsy, Cranial Navigation, Complex Procedures, Registration Accuracy, IPlan Stereotaxy	Go to article
Early outcomes of stereoelectroencephalography followed by MR-guided laser interstitial thermal therapy: a paradigm for minimally invasive epilepsy surgery	Cobourn et al.	2018	Neurosurgical focus	VarioGuide, Cranial Navigation, Epilepsy, Complex Procedures	Go to article
Novel Programming Features Help Alleviate Subthalamic Nucleus Stimulation-Induced Side Effects	Dayal et al.	2020	Movement disorders : official journal of the Movement Disorder Society	Elements Guide XT, Elements Lead Localization, Directional Deep Brain Stimulation, Automatic Image Registration (AIR), Parkinson's Disease	Go to article
Targeting for stereotactic radiosurgical thalamotomy based on tremor treatment response	Luo et al.	2021	Journal of neurosurgery	Elements Segmentation Basal Ganglia, Elements Fibertracking, Elements Distortion Correction Cranial, Patient Specific Targeting, Essential Tremor	Go to article

Title	Author	Year	Journal	Keywords	Link
Automatic Segmentation of the Subthalamic Nucleus: A Viable Option to Support Planning and Visualization of Patient-Specific Targeting in Deep Brain Stimulation	Reinacher et al.	2019	Operative Neurosurgery	Elements Segmentation Basal Ganglia, Elements Stereotaxy, Patient Specific Targeting, Parkinson's Disease, Automatic Image Registration (AIR)	Go to article
Validation of diffusion tensor imaging tractography to visualize the dentatorubrothalamic tract for surgical planning	Nowacki et al.	2018	Journal of neurosurgery	Elements Stereotaxy, Diffusion Tensor Imaging, Patient Specific Targeting, Essential Tremor, IPlan Stereotaxy	Go to article
Evaluation of Automatic Segmentation of Thalamic Nuclei through Clinical Effects Using Directional Deep Brain Stimulation Leads: A Technical Note	Krüger et al.	2020	Brain sciences	Elements Guide XT, Elements Segmentation Basal Ganglia, Elements Lead Localization, Automatic Image Registration (AIR), Directional Deep Brain Stimulation, Patient Specific Targeting	Go to article
Comparison of Automatic Segmentation Algorithms for the Subthalamic Nucleus	Polanski et al.	2020	Stereotactic and functional neurosurgery	Elements Segmentation Basal Ganglia, Patient Specific Targeting, Parkinson's Disease	Go to article
Intraoperative high-field magnetic resonance imaging, multimodal neuronavigation, and intraoperative electrophysiological monitoring-guided surgery for treating supratentorial cavernomas	Li et al.	2016	Chronic diseases and translational medicine	Elements BOLD MRI Mapping, Brainshift, Intraoperative Ultrasound, Cavernomas	Go to article
Testing the Reliability of BOLD-fMRI Motor Mapping in Patients with Cerebral Arteriovenous Malformations by Electric Cortical Stimulation and Surgery Outcomes	Wang et al.	2016	World neurosurgery	Elements BOLD MRI Mapping, Arteriovenous Malformation (AVM), Electric Cortical Stimulation, Brainshift	Go to article
Functional Magnetic Resonance Imaging (fMRI), Pre-intraoperative Tractography in Neurosurgery: The Experience of Sant' Andrea Rome University Hospital	D'Andrea et al.	2017	Acta neurochirurgica. Supplement	Elements BOLD MRI Mapping, Diffusion Tensor Imaging, Brainshift	Go to article
Surgical strategies for older patients with glioblastoma	Barak et al.	2021	Journal of neuro-oncology	Ultrasound Navigation, IMRI, Gliobastoma, Brain Tumor Resection, Patient Outcomes	Go to article
Efficacy of intraoperative ultrasonography in neurosurgical tumor resection	Sweeney et al.	2018	Journal of neurosurgery. Pediatrics	Ultrasound Navigation, Brain Tumor Resection, Extent Of Resection (EOR), Planned Subtotal Resection (STR)	Go to article

Title	Author	Year	Journal	Keywords	Link
Challenges and Opportunities of Intraoperative 3D Ultrasound With Neuronavigation in Relation to Intraoperative MRI	Bastos et al.	2021	Frontiers in oncology	Ultrasound Navigation, Elements Fibertracking, Brain Tumor Resection, IMRI	Go to article
Initial Intraoperative Experience with Robotic-Assisted Pedicle Screw Placement with Cirq® Robotic Alignment: An Evaluation of the First 70 Screws	Pojskić et al.	2021	JCM	Spine Navigation, Alignment System Spine, Accuracy, Screw Placement, Screw Entry Point	Go to article
A prospective multicenter study to compare the precision of posttraumatic internal orbital reconstruction with standard preformed and individualized orbital implants	Zimmerer et al.	2016	Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery	CMF Navigation, Orbital Reconstruction, Patient Specific Implants	Go to article
Removal of Orbital Metallic Foreign Bodies With Image-Guided Surgical Navigation	Zhao et al.	2020	Ophthalmic plastic and reconstructive surgery	CMF Navigation, Stereotactic Body Radiotherapy (SBRT/SABR), Orbital Reconstruction	Go to article
Surgical navigation improves reductions accuracy of unilateral complicated zygomaticomaxillary complex fractures: a randomized controlled trial	Zhang et al.	2018	Scientific Reports	CMF Navigation, Zygomatic Fractures, Accuracy, Complex Procedures	Go to article
Reconstruction of maxillary defects with free fibula flap assisted by computer techniques	Zhang et al.	2015	Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery	CMF Navigation, Fibula, 3D, Orbital Reconstruction, Patient Outcomes	Go to article
Digital Diagnosis and Treatment Program for Maxillofacial Fractures: A Retrospective Analysis of 626 Cases	Zeng et al.	2018	Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons	CMF Navigation, Condylar Fractures, 3D, Orbital Reconstruction, Zygomatic Fractures	Go to article

Title	Author	Year	Journal	Keywords	Link
Comparison of the Outcomes of Complex Orbital Fracture Repair with and without a Surgical Navigation System: A Prospective Cohort Study with Historical Controls	Zavattero et al.	2017	Plastic and reconstructive surgery	CMF Navigation, Orbital Reconstruction, Patient Outcomes, Complex Procedures	Go to article
Three-Dimensional Accuracy of Virtual Planning and Surgical Navigation for Mandibular Reconstruction With Free Fibula Flap	Yu et al.	2016	Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons	CMF Navigation, 3D, Mandibular Fractures, Patient Outcomes, Fibula	Go to article
Application of Computer-Assisted Navigation System in Acute Zygomatic Fractures	Yang et al.	2019	Annals of plastic surgery	CMF Navigation, Zygomatic Fractures, Patient Outcomes	Go to article
The Use of Brainlab Navigation in Le Fort III Osteotomy	Wood et al.	2015	The Journal of craniofacial surgery	CMF Navigation, Postoperative Complications, Adults, Pedriatics	Go to article
Intraoperative imaging in orbital and midface reconstruction	Wilde, Schramm	2014	Facial plastic surgery : FPS	CMF Navigation, Orbital Reconstruction, 3D	Go to article
"Mirroring" computational planning, navigation guidance system, and intraoperative mobile C-arm cone-beam computed tomography with flat-panel detector: a new rationale in primary and secondary treatment of midfacial fractures?	Scolozzi, Terzic	2011	Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons	CMF Navigation, Orbital Reconstruction, Facial Symmetry, Zygomatic Fractures	Go to article
Applications of 3D orbital computer-assisted surgery (CAS)	Scolozzi	2017	Journal of stomatology, oral and maxillofacial surgery	CMF Navigation, Orbital Reconstruction, 3D, Adults, Pedriatics	Go to article
Advances and innovations in computer-assisted head and neck oncologic surgery	Rana et al.	2012	The Journal of craniofacial surgery	CMF Navigation, Tumor Resection And Reconstruction, Biopsy	Go to article
Intraoperative stereotactic navigation for reconstruction in zygomatic-orbital trauma	Nyachhyon, Kim	2011	JNMA; journal of the Nepal Medical Association	CMF Navigation, Orbital Reconstruction, Zygomatic Fractures, Stereotaxy	Go to article

Title	Author	Year	Journal	Keywords	Link
Surgical navigation in craniomaxillofacial surgery: expensive toy or useful tool? A classification of different indications	Lübbers et al.	2011	Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons	CMF Navigation, Stereotactic Body Radiotherapy (SBRT/SABR), Orbital Reconstruction, Zygomatic Fractures	Go to article
Three-Dimensional Accuracy of Bone Contouring Surgery for Zygomaticomaxillary Fibrous Dysplasia Using Virtual Planning and Surgical Navigation	Liu et al.	2020	Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons	CMF Navigation, Preoperative Planning, 3D, Zygomatic Fractures	Go to article
Three-dimensional computer-assisted orthognathic surgery: experience of 37 patients	Lin et al.	2015	Annals of plastic surgery	CMF Navigation, Orthognathic Surgery, 3D	Go to article
Applications of Computer-Assisted Navigation for the Minimally Invasive Reduction of Isolated Zygomatic Arch Fractures	Li, Yang	2015	Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons	CMF Navigation, Zygomatic Fractures, Minimal Invasiveness, Adults	Go to article
Application of Computer-Aided Navigation Technology in the Extraction of Foreign Body From the Face	Lan et al.	2020	The Journal of craniofacial surgery	CMF Navigation, Stereotactic Body Radiotherapy (SBRT/SABR), Adults, Pediatric	Go to article
Orbital floor symmetry after maxillectomy and orbital floor reconstruction with individual titanium mesh using computer-assisted navigation	Kang et al.	2020	Journal of plastic, reconstructive & aesthetic surgery : JPRAS	CMF Navigation, Orbital Reconstruction, Patient Specific Implants	Go to article
Application of a computer-assisted surgical navigation system in temporomandibular joint ankylosis surgery: a retrospective study	He et al.	2017	International journal of oral and maxillofacial surgery	CMF Navigation, Mandibular Fractures, Patient Outcomes	Go to article

Title	Author	Year	Journal	Keywords	Link
Orbitozygomatic fractures with enophthalmos: analysis of 64 cases treated late	He et al.	2012	Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons	CMF Navigation, Orbital Reconstruction, Patient Specific Implants, Patient Outcomes, Zygomatic Fractures	Go to article
Does Intraoperative Navigation Improve the Anatomical Reduction of Intracapsular Condylar Fractures?	Han et al.	2018	Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons	CMF Navigation, Condylar Fractures, Mandibular Fractures, Orbital Reconstruction	Go to article
Diagnostic and therapeutic aspects in the treatment of gunshot wounds of the viscerocranium	Gröbe et al.	2011	European journal of trauma and emergency surgery : official publication of the European Trauma Society	CMF Navigation, Stereotactic Body Radiotherapy (SBRT/SABR)	Go to article
Predictability in orbital reconstruction.	Dubois et al.	2015	Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery	CMF Navigation, Automatic Image Registration (AIR), Orbital Reconstruction, 3D, Patient Specific Implants	Go to article
Intraoperative navigation for single-splint two-jaw orthognathic surgery: From model to actual surgery	Chang et al.	2015	Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery	CMF Navigation, Orthognathic Surgery, 3D	Go to article

Title	Author	Year	Journal	Keywords	Link
Intraoperative navigation in complex head and neck resections: indications and limits	Catanzaro et al.	2017	International journal of computer assisted radiology and surgery	CMF Navigation, Complex Procedures, Tumor Resection And Reconstruction	Go to article
Computer-assisted navigational surgery improves outcomes in orbital reconstructive surgery	Cai et al.	2012	The Journal of craniofacial surgery	CMF Navigation, Orbital Reconstruction, Postoperative Complications	Go to article
Late Reconstruction of the Orbit With Patient-Specific Implants Using Computer-Aided Planning and Navigation	Baumann et al.	2015	Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons	CMF Navigation, Preoperative Planning, Orbital Reconstruction, Patient Specific Implants	Go to article
Quantitative assessment of symmetry recovery in navigation-assisted surgical reduction of zygomaticomaxillary complex fractures	Bao et al.	2019	Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery	CMF Navigation, Complex Procedures, Orbital Reconstruction, Facial Symmetry, Zygomatic Fractures	Go to article
A Multicenter Experience With Image-Guided Surgical Navigation: Broadening Clinical Indications in Complex Craniomaxillofacial Surgery	Andrews et al.	2015	The Journal of craniofacial surgery	CMF Navigation, Complex Procedures	Go to article
Utilization of computed tomography image-guided navigation in orbit fracture repair	Andrews et al.	2013	The Laryngoscope	CMF Navigation, Orbital Reconstruction, Accuracy	Go to article
Tractography for Subcortical Resection of Gliomas Is Highly Accurate for Motor and Language Function: ioMRI-Based Elastic Fusion Disproves the Severity of Brain Shift.	Ille et al.	2021	Cancers	Elements Virtual IMRI Cranial, Elements Fibertracking, Intraoperative Ultrasound, Diffusion Tensor Imaging, Gliomas	Go to article
Elastic Image Fusion Software to Coregister Preoperatively Planned Pedicle Screws With Intraoperative Computed Tomography Data for Image-Guided Spinal Surgery.	Schmidt et al.	2021	International journal of spine surgery	Spine Navigation, Airo, Screw Placement	Go to article

Title	Author	Year	Journal	Keywords	Link
Large residual pilocytic astrocytoma after failed ultrasound-guided resection: intraoperative ultrasound limitations require special attention	Šteňo, Buvala	2021	World neurosurgery	Ultrasound Navigation, 3D, Pilocytic Astrocytoma	Go to article
Intraoperative MRI-based elastic fusion for anatomically accurate tractography of the corticospinal tract: correlation with intraoperative neuromonitoring and clinical status	Ille et al.	2021	Neurosurgical focus	Elements Virtual IMRI Cranial, Elements Fibertracking, Intraoperative Ultrasound, Diffusion Tensor Imaging, Gliomas, Motor Evoked Potential	Go to article
Image-guided ultrasonography for recurrent cystic gliomas	Enchev et al.	2006	Acta neurochirurgica	Ultrasound Navigation, Brainshift, Brain Tumor Resection, Gliomas	Go to article
Is the image guidance of ultrasonography beneficial for neurosurgical routine?	Miller et al.	2007	Surgical neurology	Ultrasound Navigation, Brainshift, Brain Tumor Resection	Go to article
Automated registration of intraoperative CT image data for navigated skull base surgery	Eggers et al.	2008	Minimally invasive neurosurgery : MIN	Cranial Navigation, Automatic Image Registration (AIR), ICT, Registration Accuracy	Go to article
VarioGuide: a new frameless image-guided stereotactic system--accuracy study and clinical assessment	Ringel et al.	2009	Neurosurgery	VarioGuide, Cranial Navigation, Frameless Stereotaxy, Biopsy	Go to article
Clinical indications for high-field 1.5 T intraoperative magnetic resonance imaging and neuro-navigation for neurosurgical procedures. Review of initial 100 cases	Maesawa et al.	2009	Neurologia medico-chirurgica	Cranial Navigation, IMRI, Gliomas	Go to article
Impact of intraoperative high-field magnetic resonance imaging guidance on glioma surgery: a prospective volumetric analysis	Hatiboglu et al.	2009	Neurosurgery	Cranial Navigation, IMRI, Extent Of Resection (EOR), Gliomas, Volumetric Analysis	Go to article
Intraoperative computed tomography and automated registration for image-guided cranial surgery	Eggers et al.	2009	Dento maxillo facial radiology	Cranial Navigation, Automatic Image Registration (AIR), ICT, Registration Accuracy	Go to article
Can computer-assisted surgery reduce the effective dose for spinal fusion and sacroiliac screw insertion?	Kraus et al.	2010	Clinical orthopaedics and related research	Spine Navigation, Radiation Exposure, Spinal Fusion, Sacroiliac	Go to article
Iso-C/3-dimensional neuronavigation versus conventional fluoroscopy for minimally invasive pedicle screw placement in lumbar fusion	Fraser et al.	2010	Minimally invasive neurosurgery : MIN	Spine Navigation, Accuracy, MIS	Go to article

Title	Author	Year	Journal	Keywords	Link
Less invasive surgical correction of adult degenerative scoliosis, part I: technique and radiographic results	Scheufler et al.	2010	Neurosurgery	Spine Navigation, Automatic Image Registration (AIR), Radiation Exposure, Scoliosis	Go to article
Intraoperative tractography and motor evoked potential (MEP) monitoring in surgery for gliomas around the corticospinal tract	Maesawa et al.	2010	World neurosurgery	Cranial Navigation, IMRI, Gliomas, Diffusion Tensor Imaging, Motor Evoked Potential	Go to article
Accuracy of image-guided pedicle screw placement using intraoperative computed tomography-based navigation with automated referencing, part I: cervicothoracic spine	Scheufler et al.	2011	Neurosurgery	Spine Navigation, Automatic Image Registration (AIR), Radiation Exposure, Screw Placement	Go to article
Frameless stereotactic procedures in pediatric patients: safety and diagnostic efficacy	Parreño et al.	2011	Child's nervous system : ChNS : official journal of the International Society for Pediatric Neurosurgery	VarioGuide, Cranial Navigation, Frameless Stereotaxy, Biopsy, Catheter, Pediatric	Go to article
Intraoperative ultrasound in malformations of cortical development	Miller et al.	2011	Ultraschall in der Medizin (Stuttgart, Germany : 1980)	Ultrasound Navigation, Automatic Image Registration (AIR), Epilepsy, Seizures, Extent Of Resection (EOR)	Go to article
Correlation of the extent of tumor volume resection and patient survival in surgery of glioblastoma multiforme with high-field intraoperative MRI guidance	Kuhnt et al.	2011	Neuro-oncology	Microscope Navigation, Elements Image Fusion, IMRI, Extent Of Resection (EOR), Planned Subtotal Resection (STR), Gliobastoma	Go to article
Application of intraoperative computed tomography with or without navigation system in surgical correction of spinal deformity: a preliminary result of 59 consecutive human cases	Cui et al.	2012	Spine	Spine Navigation, Accuracy, Scoliosis, Khyposis, Screw Placement	Go to article
Frameless image-guided stereotaxy with real-time visual feedback for brain biopsy	Gempt et al.	2012	Acta neurochirurgica	VarioGuide, Cranial Navigation, Frameless Stereotaxy, Biopsy, Brain Tumor	Go to article
Image guided navigation by intraoperative CT scan for cochlear implantation	Stelter et al.	2012	Computer aided surgery : official journal of the International Society for Computer Aided Surgery	Automatic Image Registration (AIR), Cranial Navigation	Go to article

Title	Author	Year	Journal	Keywords	Link
Importance of intraoperative magnetic resonance imaging for pediatric brain tumor surgery	Yousaf et al.	2012	Surgical neurology international	Cranial Navigation, Automatic Image Registration (AIR), IMRI, Brain Tumor Resection, Pediatric	Go to article
Intra-arterial intraoperative computed tomography angiography guided navigation: a new technique for localization of vascular pathology	Raza et al.	2012	Neurosurgery	Cranial Navigation, Automatic Image Registration (AIR), Angiography, Cerebral Aneurysm, Arteriovenous Malformation (AVM)	Go to article
Comparison of navigated versus non-navigated pedicle screw placement in 260 patients and 1434 screws: screw accuracy, screw size, and the complexity of surgery	Luther et al.	2013	Journal of spinal disorders & techniques	Spine Navigation, Accuracy, Spinal Fusion, Stereotaxy	Go to article
Advances in assessing the volume of odontogenic cysts and tumors in the mandible: a retrospective clinical trial	Stoetzer et al.	2013	Head & Face Medicine	Deliniation, Tumor Resection And Reconstruction, Preoperative Planning	Go to article
Design and development of a virtual anatomic atlas of the human skull for automatic segmentation in computer-assisted surgery, preoperative planning, and navigation	Metzger et al.	2013	International journal of computer assisted radiology and surgery	Elements Segmentation Cranial, Accuracy, Preoperative Planning	Go to article
Frameless navigated biopsy with the BrainLAB® VarioGuide system: a technical note	Buchalla et al.	2013	Journal of neurological surgery. Part A, Central European neurosurgery	VarioGuide, Cranial Navigation, Frameless Stereotaxy, Biopsy, Brain Tumor	Go to article
The silent loss of neuronavigation accuracy: a systematic retrospective analysis of factors influencing the mismatch of frameless stereotactic systems in cranial neurosurgery	Stieglitz et al.	2013	Neurosurgery	Cranial Navigation, Z Touch, Softtouch, Automatic Image Registration (AIR), Frameless Stereotaxy	Go to article
The benefits of navigated intraoperative ultrasonography during resection of fourth ventricular tumors in children	El Beltagy, Atteya	2013	Child's nervous system : ChNS : official journal of the International Society for Pediatric Neurosurgery	Ultrasound Navigation, Extent Of Resection (EOR), Intraoperative Ultrasound, Brain Primary Tumors, Pediatric	Go to article
Three-dimensional navigation is more accurate than two-dimensional navigation or conventional fluoroscopy for percutaneous sacroiliac screw fixation in the dysmorphic sacrum: a randomized multicenter study	Matityahu et al.	2014	Journal of orthopaedic trauma	Spine Navigation, Accuracy, Sacroiliac, Trauma	Go to article

Title	Author	Year	Journal	Keywords	Link
Three-dimensional simulation of the nasoalveolar cleft defect	Pálházi et al.	2014	The Cleft palate-craniofacial journal : official publication of the American Cleft Palate-Craniofacial Association	Elements Segmentation Cranial, 3D, Patient Specific Implants	Go to article
Virtual surgery simulation in orbital wall reconstruction: integration of surgical navigation and stereolithographic models	Novelli et al.	2014	Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery	CMF Navigation, Elements Segmentation Cranial, Preoperative Planning, Orbital Volume, Orbital Reconstruction	Go to article
Augmented reality in the surgery of cerebral arteriovenous malformations: technique assessment and considerations	Cabrilo et al.	2014	Acta neurochirurgica	Cranial Navigation, Microscope Navigation, Augmented Reality, Arteriovenous Malformation (AVM), Minimal Invasiveness	Go to article
Augmented reality in the surgery of cerebral aneurysms: a technical report	Cabrilo et al.	2014	Neurosurgery	Cranial Navigation, Microscope Navigation, Augmented Reality, Cerebral Aneurysm, Minimal Invasiveness	Go to article
Navigated versus non-navigated intraoperative ultrasound: is there any impact on the extent of resection of high-grade gliomas? A retrospective clinical analysis	Renovanz et al.	2014	Journal of neurological surgery. Part A, Central European neurosurgery	Ultrasound Navigation, Planned Subtotal Resection (STR), Intraoperative Ultrasound, Brain Tumor Resection, Gliomas	Go to article
Navigated high frequency ultrasound: description of technique and clinical comparison with conventional intracranial ultrasound	Coburger et al.	2014	World neurosurgery	Ultrasound Navigation, Extent Of Resection (EOR), Intraoperative Ultrasound, Brain Tumor Resection, Gliobastoma	Go to article
Development and first clinical application of automated virtual reconstruction of unilateral midface defects	Wagner et al.	2015	Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery	Elements Segmentation Cranial, Orbital Reconstruction, Preoperative Planning	Go to article

Title	Author	Year	Journal	Keywords	Link
Development and evaluation of an automatic tumor segmentation tool: a comparison between automatic, semi-automatic and manual segmentation of mandibular odontogenic cysts and tumors	Rana et al.	2015	Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery	Elements Segmentation Cranial, Tumor Resection And Reconstruction	Go to article
Patient specific implants (PSI) in reconstruction of orbital floor and wall fractures	Gander et al.	2015	Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery	Elements Segmentation Cranial, Orbital Reconstruction, Patient Specific Implants	Go to article
Pre-operative image-based segmentation of the cranial nerves and blood vessels in microvascular decompression: Can we prevent unnecessary explorations?	Dolati et al.	2015	Clinical neurology and neurosurgery	Elements SmartBrush, Cranial Navigation, Deliniation, Trigeminal Neuralgia, Nerve Segmentation	Go to article
Augmented reality-assisted bypass surgery: embracing minimal invasiveness	Cabrilo et al.	2015	World neurosurgery	Cranial Navigation, Microscope Navigation, Augmented Reality, Bypass Surgery, Minimal Invasiveness	Go to article
Use of intraoperative Doppler ultrasound with neuronavigation to guide arteriovenous malformation resection: a pediatric case series	Walkden et al.	2015	Journal of neurosurgery. Pediatrics	Cranial Navigation, Ultrasound Navigation, Extent Of Resection (EOR), Arteriovenous Malformation (AVM), Microscope Navigation	Go to article
Accuracy of computer-assisted iliosacral screw placement using a hybrid operating room	Richter et al.	2016	Injury	Spine Navigation, Accuracy, Sacroiliac, Revision Surgery, Trauma	Go to article
Accuracy and workflow of navigated spinal instrumentation with the mobile Airo(®) CT scanner	Hecht et al.	2016	European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society	Spine Navigation, Automatic Image Registration (AIR), Airo, Accuracy, Screw Placement	Go to article

Title	Author	Year	Journal	Keywords	Link
Orbital volume analysis: validation of a semi-automatic software segmentation method	Jansen et al.	2016	International journal of computer assisted radiology and surgery	Elements Segmentation Cranial, Orbital Volume, Preoperative Planning, Deliniation	Go to article
Fully Automated Enhanced Tumor Compartmentalization: Man vs. Machine Reloaded	Porz et al.	2016	PloS one	VarioGuide, Elements SmartBrush, Gliobastoma, Deliniation, Brain Tumor	Go to article
Distinct displacements of the optic radiation based on tumor location revealed using preoperative diffusion tensor imaging	Faust, Vajkoczy	2016	Journal of neurosurgery	Elements Fibertracking, Diffusion Tensor Imaging, Optic Radiation, Brain Tumor Resection, Temporal Lobe, Visual Field Defect	Go to article
Multimodal Neuronavigation in Microsurgery Resection of BrainStem Tumors	Zhang et al.	2016	The Journal of craniofacial surgery	Cranial Navigation, Elements SmartBrush, Brain Tumor, Deliniation, Diffusion Tensor Imaging	Go to article
Neuroendoscopic Intraventricular Biopsy in Children with Small Ventricles Using Frameless VarioGuide System	Avecillas-Chasin et al.	2016	World neurosurgery	VarioGuide, Cranial Navigation, Frameless Stereotaxy, Biopsy	Go to article
Correlation between intraoperative ultrasound and postoperative MRI in pediatric tumor surgery	Smith et al.	2016	Journal of neurosurgery. Pediatrics	Ultrasound Navigation, Extent Of Resection (EOR), Intraoperative Ultrasound, Brain Tumor Resection, Pediatric	Go to article
Comparison of minimally invasive spine surgery using intraoperative computed tomography integrated navigation, fluoroscopy, and conventional open surgery for lumbar spondylolisthesis: a prospective registry-based cohort study	Wu et al.	2017	The spine journal : official journal of the North American Spine Society	Spine Navigation, MIS, Patient Outcomes, TLIF, Spondylolisthesis	Go to article
Total Navigation in Spine Surgery; A Concise Guide to Eliminate Fluoroscopy Using a Portable Intraoperative Computed Tomography 3-Dimensional Navigation System	Navarro-Ramirez et al.	2017	World neurosurgery	Spine Navigation, Airo, Accuracy, MIS, Revision Surgery	Go to article
Spinal navigation for posterior instrumentation of C1-2 instability using a mobile intraoperative CT scanner	Czabanka et al.	2017	Journal of neurosurgery. Spine	Spine Navigation, Airo, Cervical	Go to article
Specific DTI seeding and diffusivity-analysis improve the quality and prognostic value of TMS-based deterministic DTI of the pyramidal tract	Rosenstock et al.	2017	NeuroImage. Clinical	Elements Fibertracking, Transcranial Magnetic Stimulation, Motor Outcome, Gliomas, Brain Tumor Resection	Go to article

Title	Author	Year	Journal	Keywords	Link
Visualization of subcortical language pathways by diffusion tensor imaging fiber tracking based on rTMS language mapping	Negwer et al.	2017	Brain imaging and behavior	Elements Fibertracking, Diffusion Tensor Imaging, Transcranial Magnetic Stimulation, Cortical Mapping	Go to article
Progressive disease in glioblastoma: Benefits and limitations of semi-automated volumetry	Huber et al.	2017	PloS one	Elements SmartBrush, Gliobastoma, Volumetric Analysis, 3D	Go to article
Reliability of Semi-Automated Segmentations in Glioblastoma	Huber et al.	2017	Clinical neuroradiology	Elements SmartBrush, Gliobastoma, Volumetric Analysis, 3D	Go to article
Removal of recurrent intraorbital tumour using a system of augmented reality	Scolozzi, Bijlenga	2017	The British journal of oral & maxillofacial surgery	CMF Navigation, Orbital Reconstruction, Tumor Resection And Reconstruction, Augmented Reality, Microscope Navigation	Go to article
Accuracy of VarioGuide Frameless Stereotactic System Against Frame-Based Stereotaxy: Prospective, Randomized, Single-Center Study	Bradac et al.	2017	World neurosurgery	VarioGuide, Cranial Navigation, Frameless Stereotaxy, Biopsy, Accuracy, Diagnostic Yield	Go to article
Accuracy of Novel Computed Tomography-Guided Frameless Stereotactic Drilling and Catheter System in Human Cadavers	Sankey et al.	2017	World neurosurgery	VarioGuide, VarioGuide Drill Kit, ICT, Automatic Image Registration (AIR), Catheter, Frameless Stereotaxy	Go to article
Intraoperative Computed Tomography Versus 3D C-Arm Imaging for Navigated Spinal Instrumentation	Hecht et al.	2018	Spine	Spine Navigation, Automatic Image Registration (AIR), Airo, Screw Placement, Accuracy	Go to article
Semi-automatic tumour volume measurements on MR-Imaging using smartbrush® in oropharyngeal carcinomas; our experience in 5 patients	Lodder et al.	2018	Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery	Elements SmartBrush, Tumor Resection And Reconstruction, Volumetric Analysis	Go to article
Intraoperative 3-dimensional cone beam computed tomographic imaging during reconstruction of the zygoma and orbit	Gander et al.	2018	Oral surgery, oral medicine, oral pathology and oral radiology	Elements Segmentation Cranial, Orbital Reconstruction, Zygomatic Fractures, Preoperative Planning	Go to article
Optic Radiation Diffusion Tensor Imaging Tractography: An Alternative and Simple Technique for the Accurate Detection of Meyer's Loop	Bertani et al.	2018	World neurosurgery	Elements Fibertracking, Diffusion Tensor Imaging, Optic Radiation	Go to article

Title	Author	Year	Journal	Keywords	Link
Head-up display may facilitate safe keyhole surgery for cerebral aneurysm clipping	Toyooka et al.	2018	Journal of neurosurgery	Cranial Navigation, Microscope Navigation, Head Up Display (HUD), Cerebral Aneurysm, Clipping	Go to article
Navigation-Linked Heads-Up Display in Intracranial Surgery: Early Experience	Mascitelli et al.	2018	Operative neurosurgery (Hagerstown, Md.)	Cranial Navigation, Microscope Navigation, Augmented Reality, Head Up Display (HUD)	Go to article
Flat Panel Detector Computed Tomography-Guided Placement of External Ventricular Drains Using the BrainLAB Headband and Precalibrated Disposable Stylet Instrument: A Cadaveric Feasibility Study	Feulner et al.	2018	World neurosurgery	Cranial Navigation, Disposable Stylet, Cadaveric Setting, External Ventricular Drain	Go to article
Navigation-Supported Stereotaxy by Applying Intraoperative Computed Tomography	Carl et al.	2018	World neurosurgery	VarioGuide, Automatic Image Registration (AIR), Frameless Stereotaxy, Registration Accuracy, Airo	Go to article
Preoperative 3-Dimensional Angiography Data and Intraoperative Real-Time Vascular Data Integrated in Microscope-Based Navigation by Automatic Patient Registration Applying Intraoperative Computed Tomography	Carl et al.	2018	World neurosurgery	Cranial Navigation, Microscope Navigation, Elements Image Fusion, Arteriovenous Malformation (AVM), Cerebral Aneurysm, Automatic Image Registration (AIR)	Go to article
Intraoperative computed tomography as reliable navigation registration device in 200 cranial procedures	Carl et al.	2018	Acta neurochirurgica	Elements Image Fusion, Airo, Automatic Image Registration (AIR), ICT, Effective Radiation Dose, Registration Accuracy	Go to article
Evaluation of a novel elastic registration algorithm for spinal imaging data: A pilot clinical study	Rashad et al.	2019	The international journal of medical robotics + computer assisted surgery: MRCAS	Spine Navigation, Elements Curvature Correction Spine, Cervical, Accuracy, Elements Image Fusion	Go to article
Radiation exposure for the surgical team in a hybrid-operating room	Schuetze et al.	2019	Journal of robotic surgery	Spine Navigation, Sacroiliac, Radiation Exposure	Go to article
Is bony attachment necessary for dynamic reference frame in navigation-assisted minimally invasive lumbar spine fusion surgery?	Lin et al.	2019	Computer assisted surgery (Abingdon, England)	Spine Navigation, MIS, Lumbar	Go to article

Title	Author	Year	Journal	Keywords	Link
Navigation Versus Fluoroscopy in Multilevel MIS Pedicle Screw Insertion: Separate Analysis of Exposure to Radiation of the Surgeon and of the Patients	Konieczny, Krauspe	2019	Clin Spine Surg (Clinical spine surgery)	Spine Navigation, MIS, Radiation Exposure, Screw Placement	Go to article
Navigated 3-Dimensional Intraoperative Ultrasound for Spine Surgery	Saß et al.	2019	World neurosurgery	Spine Navigation, Ultrasound Navigation, 3D	Go to article
Microscope-Based Augmented Reality in Degenerative Spine Surgery: Initial Experience	Carl et al.	2019	World neurosurgery	Microscope Navigation, Spine Navigation, Head Up Display (HUD), Low Dose CT, Augmented Reality	Go to article
Augmented reality in intradural spinal tumor surgery	Carl et al.	2019	Acta neurochirurgica	Microscope Navigation, Spine Navigation, Automatic Image Registration (AIR), Head Up Display (HUD), Tumor, Airo	Go to article
Minimal invasive percutaneous C1C2 fixation using an intraoperative 3D imaging-based navigation system on management of odontoid fractures	Meyer et al.	2019	World neurosurgery	Spine Navigation, Airo, Cervical	Go to article
Implementation of augmented reality support in spine surgery	Carl et al.	2019	European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society	Microscope Navigation, Spine Navigation, Airo, Low Dose CT, Tumor, Augmented Reality	Go to article
Standard navigation versus intraoperative computed tomography navigation in upper cervical spine trauma	Carl et al.	2019	International journal of computer assisted radiology and surgery	Microscope Navigation, Spine Navigation, Airo, Automatic Image Registration (AIR), Screw Placement, Radiation Exposure	Go to article
Combined Use of Diffusion Tractography and Advanced Intraoperative Imaging for Resection of Cervical Intramedullary Spinal Cord Neoplasms: A Case Series and Technical Note	Benjamin et al.	2019	Operative neurosurgery (Hagerstown, Md.)	Microscope Navigation, Spine Navigation, Tumor, Diffusion Tensor Imaging	Go to article

Title	Author	Year	Journal	Keywords	Link
Primary orbital reconstruction with selective laser melted core patient-specific implants: overview of 100 patients	Rana et al.	2019	The British journal of oral & maxillofacial surgery	Elements Segmentation Cranial, Orbital Reconstruction, 3D, Preoperative Planning	Go to article
Retrospective distortion correction of diffusion tensor imaging data by semi-elastic image fusion - Evaluation by means of anatomical landmarks	Gerhardt et al.	2019	Clinical neurology and neurosurgery	Elements Distortion Correction Cranial, Elements Image Fusion, Elements Viewer, Diffusion Tensor Imaging	Go to article
Brain Tumor-Enhancement Visualization and Morphometric Assessment: A Comparison of MPRAGE, SPACE, and VIBE MRI Techniques	Danieli et al.	2019	AJNR. American journal of neuroradiology	Elements Image Fusion, Cranial Navigation, Brain Tumor, 3D	Go to article
Frameless stereotactic biopsy for precision neurosurgery: diagnostic value, safety, and accuracy	Sciortino et al.	2019	Acta neurochirurgica	Elements Image Fusion, VarioGuide, Cranial Navigation, Biopsy, Gliomas, Frameless Stereotaxy	Go to article
Frameless Stereotactic Navigation during Insular Glioma Resection using Fusion of Three-Dimensional Rotational Angiography and Magnetic Resonance Imaging	Dasenbrock et al.	2019	World neurosurgery	Elements Image Fusion, Z Touch, Frameless Stereotaxy, Gliomas, Angiography	Go to article
The role of frameless stereotactic biopsy in contemporary neuro-oncology: molecular specifications and diagnostic yield in biopsied glioma patients	Mader et al.	2019	Journal of neuro-oncology	VarioGuide, Cranial Navigation, Biopsy, Gliomas, Frameless Stereotaxy	Go to article
Use of Frameless Stereotactic Navigation System Combined with Intraoperative Magnetic Resonance Imaging and 5-Aminolevulinic Acid	Giordano et al.	2019	World neurosurgery	Cranial Navigation, Microscope Navigation, VarioGuide, IMRI, Gliomas, 5 ALA	Go to article
Reliable navigation registration in cranial and spine surgery based on intraoperative computed tomography	Carl et al.	2019	Neurosurgical focus	Elements Segmentation Cranial, Elements SmartBrush, Elements Curvature Correction Spine, Elements Trajectory Planning, Elements Image Fusion, Airo	Go to article
Augmented Reality in Transsphenoidal Surgery	Carl et al.	2019	World neurosurgery	Cranial Navigation, Microscope Navigation, Elements Segmentation Cranial, Augmented Reality, Elements Image Fusion, Transsphenoidal Surgery	Go to article

Title	Author	Year	Journal	Keywords	Link
Evolving Navigation, Robotics, and Augmented Reality in Minimally Invasive Spine Surgery	Hussain et al.	2020	Global Spine Journal	Microscope Navigation, Spine Navigation, MIS, Augmented Reality, 3D	Go to article
Cirq® Robotic Assistance for Minimally Invasive C1-C2 Posterior Instrumentation: Report on Feasibility and Safety	Farah et al.	2020	Operative neurosurgery (Hagerstown, Md.)	Spine Navigation, Automatic Image Registration (AIR), Airo, Cervical, MIS	Go to article
Spine Surgery Supported by Augmented Reality	Carl et al.	2020	Global Spine Journal	Elements SmartBrush, Elements Segmentation Spine, Elements Image Fusion, Elements Curvature Correction Spine, Head Up Display (HUD), Microscope Navigation	Go to article
Surgical workflow for fully navigated high sacral amputation in sacral chordoma	Goldberg et al.	2020	Neurosurgical review	Spine Navigation, Airo, ICT, Tumor	Go to article
Clinical Uses of Diffusion Tensor Imaging Fiber Tracking Merged Neuronavigation with Lesions Adjacent to Corticospinal Tract : A Retrospective Cohort Study	Yu et al.	2020	Journal of Korean Neurosurgical Society	Elements Fibertracking, Cranial Navigation, Diffusion Tensor Imaging, Brain Tumor	Go to article
Augmented reality for the virtual dissection of white matter pathways	Ille et al.	2020	Acta neurochirurgica	Magic Leap, Elements Fibertracking, Augmented Reality, Gliomas, Awake Surgery, Elements Mixed Reality Viewer, Education	Go to article
Augmented Reality in Superficial Temporal Artery to Middle Cerebral Artery Bypass Surgery: Technical Note	Rychen et al.	2020	Operative neurosurgery (Hagerstown, Md.)	Cranial Navigation, Microscope Navigation, Augmented Reality, Bypass Surgery, 3D	Go to article
Navigated intraoperative ultrasonography for brain tumors: a pictorial essay on the technique, its utility, and its benefits in neuro-oncology	Yeole et al.	2020	Ultrasonography (Seoul, Korea)	Ultrasound Navigation, Brainshift, Intraoperative Ultrasound, Brain Tumor Resection, 3D	Go to article
Intraoperative Computed Tomography and Finite Element Modelling for Multimodal Image Fusion in Brain Surgery	Riva et al.	2020	Operative neurosurgery (Hagerstown, Md.)	Elements Virtual IMRI Cranial, Elements Image Fusion, Elements Viewer, ICT, Brain Tumor Resection, Brainshift	Go to article
Auf einem Gewebemodell basierende automatische Bildsegmentierung zur Konturierung von Risikoorganen in der Behandlungsplanung für spinale Metastasierung	Wittenstein et al.	2019	Strahlentherapie und Onkologie : Organ der Deutschen Rontgengesellschaft ... [et al]		Go to article

Title	Author	Year	Journal	Keywords	Link
Feasibility and preliminary clinical results of linac-based Stereotactic Body Radiotherapy for spinal metastases using a dedicated contouring and planning system	Giaj-Levra et al.	2019	Radiation oncology (London, England)		Go to article
The Importance of Planning Ahead: A Three-Dimensional Analysis of the Novel Trans-Facet Corridor for Posterior Lumbar Interbody Fusion Using Segmentation Technology	Tabarestani et al.	2024	World neurosurgery	Spine Navigation, Elements SmartBrush Spine, Elements Curvature Correction Spine, Elements Spine Screw Planning	Go to article
Augmented Reality in Spine Surgery: A Case Study of Atlantoaxial Instrumentation in Os Odontoideum	Li et al.	2024	Medicina	Spine Navigation, Microscope Navigation, Cervical, Augmented Reality	Go to article
Enabling Navigation and Augmented Reality in the Sitting Position in Posterior Fossa Surgery Using Intraoperative Ultrasound	Bopp et al.	2024	Cancers	Ultrasound Navigation, Ultrasound SNAP to MRI, Elements SmartBrush, Elements Image Fusion	Go to article
Comparison of Cervical Pedicle Screw Placement Accuracy With Robotic Guidance System Versus Image Guidance System Using Propensity Score Matching	Yamamoto et al.	2024	Clinical spine surgery	Spine Navigation, Alignment System Spine, Drill Guide, Cervical	Go to article
Cirq® robotic assistance for percutaneous kyphoplasty of C1: report on feasibility	Meyer et al.	2023	Acta neurochirurgica	Spine Navigation, Cirq Instrument Guidance, Drill Guide, Cervical	Go to article
Navigated intraoperative ultrasound in pediatric brain tumors - PubMed (nih.gov)	Klein Gunnewiek et al.	2024	Child's nervous system : ChNS : official journal of the International Society for Pediatric Neurosurgery	Ultrasound Navigation, IMRI, Elements SmartBrush, Pediatric	Go to article
Navigated Intraoperative Ultrasound Offers Effective and Efficient Real-Time Analysis of Intracranial Tumor Resection and Brain Shift - PubMed (nih.gov)	West et al.	2024	Operative neurosurgery (Hagerstown, Md.)	Ultrasound Navigation, Ultrasound SNAP to MRI, Elements SmartBrush, Elements Anatomical Mapping	Go to article
Streamlining streamlines: Probabilistic versus deterministic tractography algorithms in two CE marked software packages - ScienceDirect	Jessica Fitzpatrick	2024	Physica Medica	Elements Fibertracking	Go to article