The role of minimally invasive skull base (MISB) surgery is expanding in the management of benign and malignant tumors of the paranasal sinuses, skull base and intracranial lesions. MISB surgery incorporates an endoscope—a long, rigid instrument the size of a straw, attached to a camera and a light source—to guide surgeons through very small ports of entry to remove these tumors. Tumors of the nasal sinuses, skull base and upper spine can be removed with the scope and instruments passed through the nose. These procedures involve very small or no incisions. For tumors involving the brain or intracranial compartment, a transnasal approach avoids retraction of the brain. This approach creates fewer complications, reduced blood loss and shorter recovery times for patients compared to traditional approaches.

“Neurosurgery and skull-based surgery are undergoing a paradigm shift,” says UCSF head and neck surgeon Ivan El-Sayed, MD. “We are using endoscopic techniques to visualize and excise lesions that we could previously only address through large incisions.”

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Advantages of endoscopic techniques for skull base lesions

- Decreased morbidity to patients
- Endoscopic approaches are useful for many benign tumors of the nasal cavity and sinuses
- Direct access to tumors without brain retraction
- Greater access to some lesions of the pituitary gland that allows for improved resection
- Ability to work around critical structures, such as the optic nerve and carotid artery, without manipulating them
- Ability to offer surgery to medically ill or neurologically impaired patients who might not tolerate a large skull base craniotomy
- Cosmetic appeal of surgery that does not require incisions

The UCSF Minimally Invasive Skull Base Surgery Center combines expertise with the latest endoscopic technology to remove tumors of the head, neck, skull base and intracranial compartment.

The most common approach often involves the combined efforts of an otolaryngologist and a neurosurgeon in the operating room. Cancers of the paranasal sinuses are now commonly treated with these techniques and tumors of the skull base also are amenable to these procedures. Not all tumors can be resected through these approaches, but our center offers the full range of open and endoscopic procedures so that treatment can be tailored to each patient’s needs. The center also has an active anatomical research program with a full-time anatomist working to develop new approaches to address lesions of the lateral skull base and the adjacent spine. El-Sayed attributes the success of minimally invasive brain surgery to new technology in endoscopic equipment and in neuroradiological imaging for preoperative planning and for guiding physicians during surgery. “Imaging these days is light-years ahead of where it was a decade ago,” he says. “In addition, our understanding of the anatomy from an endoscopic viewpoint has improved over the past decade, and this has allowed us to safely approach these tumors.”

The skills necessary to do such surgery have been carefully acquired over years, El-Sayed says. “Two surgeons working with four instruments through a very small hole is not an easy feat and requires significant planning and practice,” says El-Sayed, who now has more than eight years of experience with these techniques.

To observe several minimally invasive skull base procedures, visit www.youtube.com/UCSFNeurosurgery.
FEATURED PROGRAM
Minimally Invasive Skull Base Surgery Center

The Minimally Invasive Skull Base Surgery Center combines the expertise of neurosurgeons led by Manish Aghi, MD, and Michael McDermott, MD, and otolaryngologists Ivan El-Sayed, MD, Andrew Goldberg, MD, and Steven Pletcher, MD, to apply endoscopic technology to the removal of tumors in the head and neck, skull base and intracranial compartment. These techniques provide resection that is comparable to open procedures, but with less morbidity and shorter recovery times for patients. This has made it an increasingly attractive option for removing skull base tumors and the volume of MISB surgery cases at UCSF has increased by 30 percent since 2011.

Minimally Invasive Skull Base Surgery Center
2830 Sutter St., Third Floor, San Francisco, CA 94115
Phone: (415) 353-2206 Website: http://misb.ucsf.edu

Resources for Physicians

Physician Liaison Service
Phone: (800) 444-2559
Fax: (415) 353-2558
Email: referral.center@ucsfmedctr.org
Contact the Physician Liaison Service for help in making a referral, assistance in obtaining follow-up information or to address other questions or concerns.

Transfer Center
Phone: (415) 353-9166
Fax: (415) 353-9172
The Transfer Center is staffed 24 hours daily to coordinate the transfer of patients to UCSF Medical Center. The center provides quick access to our doctors and other members of our team. We evaluate the needs of each patient to ensure that appropriate care is provided. The center can also facilitate your patient’s return transfer.

Ida & Joseph Friend Cancer Resource Center
Phone: (415) 885-3693
Website: cancer.ucsf.edu/crc
The Cancer Resource Center (CRC) provides patients and their loved ones with information, classes, support groups and referrals to community resources. Most CRC programs are free.

Continuing Medical Education
Phone: (415) 476-4251
Fax: (415) 476-0318
Website: www.cme.ucsf.edu
UC San Francisco’s Office of Continuing Medical Education offers more than 200 courses each year for physicians and allied health care professionals to improve their abilities as practitioners.

Information for Health Professionals
Website: www.ucsfhealth.org/healthprofessionals
Our website for health professionals provides information regarding referrals, transfers, billing, consultations, insurance issues and more.

Clinical Trials
Phone: (877) 827-3222
Email: communications@cc.ucsf.edu
Clinical trials database: cancer.ucsf.edu/trials
As home to one of the nation’s largest cancer clinical trials programs, we offer trials focusing on treatment, prevention, survivorship and quality of life. Review our database to find studies for which your patients may be eligible. To subscribe to a monthly email listing of open trials, send your name and email address to clinicaltrialist@ucsfmedctr.org.