

# Use of intraoperative CT scanning in endoscopic sinus surgery: A preliminary report

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**Source:** [American Journal of Rhinology](#), Volume 22, Number 2, March/April 2008 , pp. 170-174(5)

## Abstract:

**Background:** Image-guided functional endoscopic sinus surgery (IG- FESS) using preoperatively acquired CT images for navigation has been proven to facilitate complicated endoscopic sinus procedures and decrease the need for revision procedures. However, this system does not render the intraoperative anatomic changes that occur throughout the procedure. The purpose of this study is to show the technical feasibility and the potential impact of intraoperative CT scanning in conjunction with real-time update of computer-assisted navigation during ESS.

**Methods:** Intraoperative CT scanning was performed in selected patients undergoing FESS. A scan was taken before the conclusion of surgery performed by skilled endoscopic sinus surgeons. The scans were evaluated for residual disease or cellular partitions. Where indicated, intraoperative scan was then loaded into the image guidance system and intraoperative scans were then used for additional IGS. The scan findings were documented.

**Results:** Intraoperatively acquired CT scans were obtained successfully in <40 seconds and able to be loaded into the image guidance system within minutes. All surgeries were performed without complication. New information obtained from the intraoperative CT scan led to alteration in the surgical plan in 30% of patients.

**Conclusion:** Intraoperative CT scanning can be performed with currently available technology and has the potential to improve the extent of surgery in patients with complicated anatomy and extensive disease.

**Keywords:** [Chronic](#); [CT scan](#); [endoscopic](#); [image-guided surgery](#); [imaging](#); [intraoperative](#); [rhinosinusitis](#); [sinus](#); [surgery](#)

**Document Type:** Research article

**DOI:** 10.2500/ajr.2008.22.3153

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