



Prevention of Surgical Fires

Surgical Team Communication is Essential

At the Start of Each Surgery: Enriched O₂ and N₂O atmospheres can vastly increase flammability of drapes, plastics and hair. Be aware of possible O₂ enrichment under the drapes near the surgical site and in the fenestration, especially during head/face/neck/ upper chest surgery. Do not apply drapes until all flammable preps have fully dried (3 minutes) ; soak up spilled or pooled agent. Cautery, Fiberoptic light sources, lasers and drills can start fires: Complete all cable connections before activating the source. Place the source in standby mode when disconnecting cables. Moisten sponges and/or towels to make them ignition resistant in oropharyngeal surgery.

During Head, Face, Neck and Upper-Chest Surgery: Use only air for open delivery to the face if the patient can maintain a safe blood O₂ saturation without supplemental O₂. If the patient cannot maintain a safe blood O₂ saturation without extra O₂, secure the airway with a laryngeal mask airway or tracheal tube.

When Using Electrosurgery, Electrocautery, or Laser: The surgeon should be made aware of open O₂ use. Surgical team discussion and communication about preventive measures before use of electro-surgery, electrocautery, and laser is indicated. Activate the unit only when the active tip is in view (especially if looking through a microscope and endoscope). Deactivate the unit before the tip leaves the surgical site. Place electrosurgical electrodes in a holster or another location off the patient when not in active use (i.e., when not needed within the next few moments). Place lasers in standby mode when not in active use. Do not place rubber catheter sleeves over electrosurgical electrodes.

10 Step Top Prevention of Surgical Fires

1. At all times, deliver the minimum O₂ concentration necessary for adequate oxygenation.
2. Begin with a 30% delivered O₂ concentration and increase as necessary,
3. For unavoidable open O₂ delivery above 30%, deliver 5 to 10 units of air under drapes to wash out excess O₂.
4. Stop supplemental O₂ at least one minute before and during use of electrosurgery, electrocautery or laser if possible. Surgical team communication is essential for this recommendation.
5. Use an adherent incise drape, if possible, to help isolate the incision from possible O₂ enriched atmosphere beneath the drapes.



6. Keep fenestration towel edges as far from the incision as possible.
7. Arrange drapes to minimize O² buildup underneath.
8. Coat head hair and facial hair (e.g., eyebrows, beard, moustache) within the fenestration with water-soluble surgical lubricating jelly to make it nonflammable.
9. For coagulation, use bipolar electrosurgery, not monopolar electrosurgery.
10. Communication between surgeon and anesthesia is essential.

Disclaimer: The preceding recommendations are from the ISAPS Patient Safety Committee and not an established standard of care.