General anesthesia (Intubationand Sedation)

I. Emergent intubation by rapid-sequence induction

A. Patients in respiratory distress outside the operating room may require intubation to ensure adequate oxygenation and ventilatory support. Whenever possible, an anesthesiologist should be alerted and present at the time of intubation to assist if necessary; however, intubation should not be unduly delayed while waiting for an anesthesiologist to arrive.

B. Airway support with 100% oxygen mask ventilation should be initiated before intubation. In the emergent setting or with the hemodynamically unstable patient in whom paralysis is necessary to intubate, rapid-sequence induction of anesthesia with etomidate followed by succinylcholine is preferred. Intubation can then be performed via laryngoscopy using a size 8 tube for men and size 7 tube for women. After inflation of the cuff, bilateral and equal breath sounds should be auscultated, end-tidal CO_2 and pulse oximetry measured, and a portable chest X-ray ordered to ensure proper placement. The patient should be continued on 100% oxygen until being transferred to an intensive care setting.

II. Sedation for procedures

A. Monitored anesthesia care

1. In monitored anesthesia care or local standby cases, **an anesthesiologist is present** to monitor and sedate the patient during the procedure. The surgeon is responsible for analgesia, which is accomplished with local infiltration or peripheral nerve blockade. Sedating or hypnotic medications (e.g., propofol) provide sedation only and, when given in the presence of inadequate analgesia, may result in a disinhibited, uncooperative patient.

2. Monitoring is identical to that required for general or regional anesthesia. Supplemental oxygen is provided by face mask or nasal cannula.

3. n.p.o. criteria are identical to those for general or regional anesthesia.

4. Considerable variation exists regarding the response of patients to sedating medications, and protective airway reflexes may be diminished with even small doses.

B. Local procedures in the operating room

1. *Local* implies that **an anesthesiologist is not required** to monitor the patient or provide sedation. It still is advisable for the physician performing the procedure to monitor the ECG, arterial oxygen saturation, and BP even if sedation is not given.

2. Painful stimuli can increase vagal tone, resulting in bradycardia, hypotension, and hypoventilation.

C. Sedation outside the operating room

1. Indications are to relieve patient anxiety and avoid potentially detrimental hemodynamic sequelae during invasive procedures or diagnostic tests.

2. Oxygen should be supplied by nasal cannula or face mask when sedation is given. When benzodiazepines and narcotics are combined, even healthy patients breathing room air may become hypoxic.

3. Monitoring should include pulse oximetry, continuous ECG, and BP.

4. Agents. All medications should be titrated, with adequate time between doses to judge clinical effects. The end result should be a calm, easily arousable, cooperative patient. Oversedation may result in hypoventilation, airway obstruction, or disinhibition.

5. Side effects that result from benzodiazepine administration include oversedation, respiratory depression, and depressed airway reflexes. Flumazenil (Romazicon), a benzodiazepine antagonist, can be used to reverse such effects. A dose of 0.2 mg i.v. should be administered and repeated every 60 seconds as required to a total dose of 1 mg. It can produce seizures and cardiac arrhythmias, and resedation can occur after 30–60 minutes.