Appropriateness for Ambulatory Surgery: No Magic Formula

Kenneth Cummings, MD, MS, FASA
Director, Pre-Anesthesia Consultation Clinics
Cleveland Clinic

As the director of a preoperative clinic, one of the recurring challenges I face is the appropriate scheduling of ambulatory versus inpatient procedures. It is remarkable how many patients with significant medical issues may safely undergo ambulatory procedures if carefully selected. Innovative surgical techniques, shorter-acting anesthetic agents, and changes in reimbursement models have increased interest in ambulatory surgery. At the same time, however, an aging population with an increasing disease burden significantly complicates the decision as to who is an appropriate candidate for an outpatient procedure.

Fundamentally, the only absolute requirement for ambulatory surgery is that the patient returns home after the procedure. A popular approach suggested by Drs. Apfelbaum and Cutter, well-known experts in ambulatory anesthesiology, is the “4 P’s” mnemonic (1), which recommends matching the correct patient, procedure, personnel, and place. We will discuss these issues in more detail using a similar framework evaluating three criteria: the patient’s characteristics (comorbidities, preoperative function, support at home), the capabilities of the facility and staff, and the nature of the proposed procedure (and recovery). If all three align, it is reasonable to proceed with ambulatory surgery.

The Patient
Most attention is typically devoted to the patient’s comorbidities. Table 1 lists several medical conditions of concern. The patient’s available support network and psychosocial issues are also important to keep in mind: Is someone available to care for the patient? Is the home environment conducive to recovering from surgery?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Further Evaluation</th>
<th>Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactive airways / asthma</td>
<td>None</td>
<td>Respiratory complications</td>
</tr>
<tr>
<td>Age &gt; 65</td>
<td>None</td>
<td>Hemodynamic variation, postoperative function</td>
</tr>
<tr>
<td>Ex-premature infant</td>
<td>Hematocrit &gt; 30, &gt;60 weeks post-conceptional age</td>
<td>Apnea, bradycardia</td>
</tr>
<tr>
<td>Coronary artery disease</td>
<td>None if moderate—good function and stable</td>
<td>Potential cardiovascular complications</td>
</tr>
<tr>
<td>Implanted cardiac device</td>
<td>Consult expert for possible interrogation and/or reprogramming</td>
<td>Cautery interference, device damage</td>
</tr>
</tbody>
</table>

Table 1. Summary of Patient Comorbidities Relating to Ambulatory Anesthesia (2-4)
Obstructive sleep apnea

None if already diagnosed; evaluate optimization of comorbidities

Difficult airway; minimize opioids; postoperative CPAP availability

Diabetes mellitus

None if controlled

Avoid hypoglycemia, wound healing concerns

Morbid obesity

None

Respiratory complications, difficult airway, risk of OSA

Malignant hyperthermia

None

Avoid triggers; dantrolene availability

Difficult airway history or concern

Examine old records if available, careful airway exam

Consider an awake intubation; Ensure viable “Plan B” for failed intubation

*OSA=obstructive sleep apnea; CPAP=continuous positive airway pressure*

**The Facility and Staff**

Considerations about the surgical location include surgical equipment (e.g., bariatric beds and long instruments for obese patients), anesthetic resources (difficult airway supplies, available medications), and the ability of the available personnel to handle emergencies and complications. For example, a rapid-turnover endoscopy suite may not be a suitable venue for a morbidly obese patient with a known difficult airway. A surgical center that frequently performs head and neck procedures may well be. The ability to escalate care via transfer to an emergency department and/or inpatient setting should also be considered.

**The Surgical Procedure**

Rather than generating a list of allowed or disallowed procedures, one should consider the risk of complications and ability of a patient to return home. As long as patients can tolerate oral intake and control their pain with oral analgesics, patients may undergo low-risk procedures on an ambulatory basis. Higher-risk surgery (e.g., intraperitoneal, perhaps even some arthroplasties) may also be considered, but should be taken on a case-by-case basis.

**Conclusions**

Rather than enforcing rigid criteria, one should take an individualized approach to scheduling ambulatory procedures. A critical appraisal of the patient, the facility, and the proposed surgery will generally lead to a correct decision. It is also important to emphasize the need for proper preoperative evaluation. It is well-established that preoperative clinics run by anesthesiologists improve efficiency and cost-effectiveness and may even decrease postoperative morbidity and mortality (5-7).

*The views, information, or opinions expressed in this manuscript are solely those of the author and do not necessarily represent those of SAMBA. The author, editors, and SAMBA can make no warranties that the information contained herein is totally free from error, not least because clinical standards are constantly changing through research and regulations. The author, editors, and SAMBA therefore disclaim all liability for direct or consequential damages resulting from the use of material contained in this website.*
References