Preoperative Evaluation and Preparation of Patients for Orthopedic Surgery

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KEYWORDS

- Preoperative evaluation • Perioperative Surgical Home
- Orthopedic surgical patients

KEY POINTS

- The Perioperative Surgical Home model of patient care is a patient-centered, physician-led, multidisciplinary system of care for surgical patients that spans the entire surgical experience.
- Medical conditions that frequently require patients to undergo orthopedic procedures include ankylosing spondylitis, scoliosis, rheumatoid arthritis, and hemophilia.
- Each comorbidity has specific considerations for anesthesiologists during the preoperative evaluation.
- Blood conservation strategies should be considered and may be initiated during a preoperative evaluation.
- Preoperative teaching may increase patients' acceptance of regional anesthetic and analgesic techniques.

INTRODUCTION

Appropriate preoperative evaluation and preparation of patients for orthopedic surgery is an essential component of patient management. During the evaluation, a patient's preexisting medical comorbidities must be identified and explored. A detailed interview can occasionally reveal a patient history suggesting occult disease. For example, dyspnea on exertion first reported to an anesthesiologist may herald undiagnosed congestive heart failure, pulmonary hypertension, or ischemic heart disease. With a complete evaluation, the need for further diagnostic testing and medical management can more judiciously be prescribed. Along with a complete history,

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physical examination in orthopedic patients must be focused not only on the cardiopulmonary system and the airway but must also include the neuromuscular system. The overall goals of the preanesthetic evaluation are shown in **Box 1**.

In 2011, the American Society of Anesthesiologists (ASA) formed the Committee on Future Models of Anesthesia Practice, in order to explore ways to provide quality patient care as well as reduce costs and improve efficiency. This group is currently developing the Perioperative Surgical Home (PSH). The goals of the PSH are multifaceted: to improve health care quality, enhance patient experience, increase anesthesiologist value, and streamline medical spending. The ASA's approach to the PSH calls for early patient engagement, decreased preoperative testing redundancy, improved operating room efficiency, and postsurgical care initiatives and planning; in essence to involve the anesthesiologist in every aspect of the surgical patients care.[1] In the ever-changing environment of clinical medicine it has become imperative for patients to be evaluated in a preoperative clinic before the day of surgery. Anesthesiologists often meet patients only minutes before entering the operating room and interact with them mainly through their postoperative visit, and this approach provides the anesthesiologist little time to adequately evaluate and manage patients. The PSH model attempts to remedy these shortcomings by creating "a patient-centered, physician-led system of coordinated care striving for better health care and reduced costs of care."[2]

RISK STRATIFICATION

One of the main goals of anesthesiologists is to evaluate patients for underlying cardiovascular disease in order to risk stratify patients and potentially alter management. Each year, thousands of patients have severe cardiovascular complications that contribute to increased perioperative morbidity and mortality.[3]

Originally developed in 1977 and updated in 1999 by Goldman and colleagues[4] as a tool to assist in stratifying patients with cardiovascular disease for noncardiac surgery, the Revised Cardiac Risk Index (RCRI) determined 6 predictors of cardiac morbidity and mortality. These predictors are shown in **Box 2**.[5] Not only does the RCRI allow for cardiovascular risk stratification, it provides anesthesiologists a screening tool to determine which patients might benefit from further diagnostic testing, medical therapy, or more invasive intraoperative monitoring. The American College of Cardiology and the American Heart Association (ACC/AHA) guidelines for preoperative testing for

Box 1
Goals and objectives of the preoperative evaluation of patients presenting for orthopedic surgery

- Risk stratification
- Anticipate and potentially prevent complications
- Manage preoperative medications
- Propose blood conservation strategies
- Discussion of anesthetic plan
- Perform preoperative education
- Respond to patient questions
- Plan for appropriate postoperative care