

Preoperative Cardiac Evaluation of Noncardiac Surgical Patients: Review Questions

Jamal J. Hoballah, MD, MBA, FACS

Alan F. Ross, MD

QUESTIONS

Choose the single best answer for each question.

- A 72-year-old man presents to the emergency department with sudden onset of abdominal pain with fever and tenderness. A chest radiograph reveals free air under the diaphragm. His past medical history is significant for episodes of diverticulitis. He is known to have severe coronary artery disease and a history of myocardial infarction (MI) 2 years prior to admission. What is the next step in this patient's management?

 - Adenosine thallium scan
 - Cardiac catheterization
 - Dobutamine stress echocardiogram
 - Exploratory laparotomy with intensive monitoring
 - Intravenous antibiotics and observation
- A 59-year-old woman presents to the outpatient clinic with a thyroid nodule. She is scheduled for hemithyroidectomy. Her past medical history is significant for diabetes and chronic smoking. She had an MI 3 years prior to admission. Currently, she is taking a β -blocker and nitrates and has occasional angina with moderate exercise. Which of the following is the next step in this patient's management?

 - Adenosine thallium scan
 - Perform a cardiac catheterization
 - Proceed with the hemithyroidectomy
 - Order a thallium scan
 - Order an exercise stress test
- A 54-year-old man with ulcerative colitis is scheduled for total colectomy and ileoproctostomy. His past medical history is significant for chronic smoking, diabetes, and a prior MI. He leads a sedentary lifestyle and denies any history of angina. What would be the next step in this patient's management?

 - Cardiac catheterization
 - Exercise stress testing
 - Left ventricular ejection fraction determination
 - No further evaluation
 - Surgery under epidural anesthesia
- A 65-year-old man with no previous medical problems is diagnosed with a 5.5-cm abdominal aortic aneurysm. He denies any heart symptoms. He exercises daily and jogs 2 miles twice weekly. His electrocardiogram is normal, as are his blood urea nitrogen and serum creatinine levels. Which of the following would be the most appropriate next step in this patient's management?

 - Adenosine thallium scan
 - Dobutamine stress echocardiogram
 - Ejection fraction determination
 - Exercise stress testing
 - Proceed with surgery without further cardiac evaluation
- Which of the following is NOT a contraindication to performing a dobutamine stress echocardiogram?

 - Chest pain on exertion
 - Recent MI
 - Severe aortic stenosis
 - Severe hypertension
 - Unstable angina

Dr. Hoballah is a professor of surgery, University of Iowa Roy J. and Lucille A. Carver College of Medicine, and director, Division of Vascular Surgery, University of Iowa Hospitals and Clinics, Iowa City, IA. Dr. Ross is an associate professor of anesthesia, University of Iowa Roy J. and Lucille A. Carver College of Medicine, Iowa City.

ANSWERS AND EXPLANATIONS

1. **(D) Exploratory laparotomy with intensive monitoring.** This patient is best served by an exploratory laparotomy under intensive monitoring. Due to the emergent nature of his pathology, further cardiac evaluation would significantly delay the therapeutic option and would jeopardize the patient's outcome.¹
2. **(C) Proceed with the hemithyroidectomy.** Hemithyroidectomy is a procedure with intermediate risk.¹ The patient has intermediate clinical predictors (eg, diabetes, smoking, prior MI) and moderate functional capacity. No further cardiac evaluation is necessary, and proceeding with hemithyroidectomy is appropriate.
3. **(B) Exercise stress testing.** This patient is scheduled for a total colectomy and ileoproctostomy, which is an intermediate-risk procedure.¹ The patient's functional capacity is undetermined, and he may benefit from further cardiac evaluation. Exercise stress testing is an appropriate management option for this patient.
4. **(E) Proceed with surgery without further cardiac**

evaluation. This patient would be scheduled for an abdominal aortic aneurysm replacement, which is a high-risk procedure.¹ He has no clinical predictors and has excellent functional capacity; therefore, proceeding with surgery without further cardiac evaluation is appropriate.

5. **(A) Chest pain on exertion.** Severe aortic stenosis, severe hypertension, unstable angina, and recent MI are all contraindications for performing a dobutamine stress echocardiogram test. This test can be hazardous to patients with these conditions; however, it is not considered hazardous for patients with chest pain on exertion.

REFERENCE

1. Eagle KA, Berger PB, Calkins H, et al. ACC/AHA guideline update for perioperative cardiovascular evaluation for noncardiac surgery—executive summary: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1996 Guidelines on Perioperative Cardiovascular Evaluation for Noncardiac Surgery). *Circulation* 2002;105:1257–67.

Copyright 2005 by Turner White Communications Inc., Wayne, PA. All rights reserved.

SELF-ASSESSMENT QUESTIONS ON THE WEB

Now you can access the entire Self-Assessment Series on the Web. Go to www.turner-white.com, click on the "Hospital Physician" link, and then click on the "Self-Assessment Questions" option.

GENERAL SURGERY

A current list of certification and recertification exam dates and registration information is maintained on the American Board of General Surgery Web site, at <http://www.absurgery.org>.