HOSPITAL PHYSICIAN®

GASTROENTEROLOGY BOARD REVIEW MANUAL

# Endoscopic Ultrasound in Clinical Practice

**Series Editor:**
**Richard A. Wright, MD**
*Professor and Chief, Division of Gastroenterology/Hepatology, Department of Medicine, University of Louisville School of Medicine, Louisville, KY*

**Contributors:**
**Kevin K. Ho, MD**
*Gastroenterology Fellow, Department of Gastroenterology, Lahey Clinic Medical Center, Burlington, MA*

**Maurits J. Wiersema, MD, FACP, FACG**
*Staff Gastroenterologist, Indiana Medical Associates, Fort Wayne, IN*

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**STATEMENT OF EDITORIAL PURPOSE**

The *Hospital Physician Gastroenterology Board Review Manual* is a peer-reviewed study guide for fellows and practicing physicians preparing for board examinations in gastroenterology. Each manual reviews a topic essential to the current practice of gastroenterology.

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# Endoscopic Ultrasound in Clinical Practice

Kevin K. Ho, MD, and Maurits J. Wiersema, MD, FACP, FACG

## INTRODUCTION

Endoscopic ultrasound has emerged as an invaluable tool in the evaluation and management of many gastrointestinal diseases since its development in the 1980s. Because this powerful tool also allows the gastroenterologist to evaluate processes adjacent to the gastrointestinal tract, it has expanded the role of gastrointestinal endoscopy and will continue to do so as more clinical applications are investigated. A multitude of publications have proven that endoscopic ultrasound is a minimally invasive and low-risk endoscopic procedure that can guide the management of many common scenarios that clinicians encounter regularly in practice. Although a thorough analysis of the accepted and potential applications of endoscopic ultrasound is beyond the scope of this review article, the following cases illustrate the most common indications for endoscopic ultrasound.

## CASE PRESENTATION I

### INITIAL PRESENTATION AND HISTORY

A 75-year-old woman presents to a gastroenterology clinic for evaluation of a 1-cm, ill-defined heterogenous area in the head of the pancreas that was incidentally found on a contrast-enhanced, abdominal computed tomography (CT) scan (**Figure 1**). The scan was obtained several weeks ago when she presented to her local emergency department for acute abdominal pain. The final interpretation remarked that an early pancreatic mass could not be excluded. No other pathology was identified on the scan. The patient's acute pain subsided after a few hours in the emergency department and she was discharged to home feeling well.

The patient continues to be asymptomatic. She denies any pain, nausea, vomiting, anorexia, unintentional weight loss, jaundice, change in bowel habits, or signs of gastrointestinal bleeding. The remainder of her review of symptoms is negative. Her past medical history is significant for hypertension, hypercholesterolemia, and coronary disease. She has had 2 prior myocardial infarctions, which have led to the development of congestive heart failure. Her last transthoracic echocardiogram revealed an estimated ejection fraction of 30% with evidence of moderate aortic stenosis. With careful follow-up with her cardiologist, she has been able to avoid hospitalization for decompensated heart failure for the past 2 years.

The patient's medications include aspirin, metoprolol, lisinopril, and atorvastatin. She is widowed and is a retired elementary school teacher. She has been a lifelong nonsmoker. She consumes alcoholic beverages only several times per year. Her sister had breast cancer diagnosed at age 40 years. Her family history is unremarkable for any gastrointestinal tract malignancies.

Despite being asymptomatic, the patient is extremely concerned about the finding on the CT scan and the possibility of early pancreatic carcinoma. She explains that her neighbor was diagnosed with pancreatic cancer and ultimately died from the disease within months of the diagnosis.

### PHYSICAL EXAMINATION

On physical examination, she is an elderly woman who appears her stated age. She is 170 cm (67 in) in height and weighs 72.6 kg (160 lbs). Her blood pressure is 100/65 mm Hg with a heart rate of 65 bpm. Her sclerae are anicteric. She has no cervical or supraclavicular lymphadenopathy. Her cardiac examination is significant for a harsh, late-peaking systolic ejection murmur heard throughout the precordium. Her abdominal examination is benign, with no masses or organomegaly palpated. The remainder of her physical examination is normal.

### LABORATORY EVALUATION

Laboratory studies performed during the patient's emergency department visit revealed a hemoglobin of 11.3 g/dL and a mean corpuscular volume of 82 fL. Electrolytes, calcium concentration, liver biochemistries, and pancreatic enzymes were normal. A cancer antigen (CA) 19-9 assay was performed on the blood specimen obtained in the emergency department, and the result was within the normal limits of the test.



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