

Foreword

This book is a unique collaborative effort from physicians trained in medicine, gastroenterology, and radiology. It is the brainchild of two former internal medicine residents: Abdullah Shaikh and Syed Hussain. Abdullah is currently a radiology resident with an interest in gastrointestinal imaging, and Syed is a GI fellow specializing in hepatobiliary disease. This book would not have been possible without the mentorship of David Desilets, who has kept a stack of interesting endoscopic images and cases over several decades, and provided expert guidance and oversight. Tara Catanzano, a radiologist with a multispecialty imaging background, provided expertise and was an integral part of this project. Incidentally, three of the authors are graduates of the Royal College of Surgeons in Ireland, and have incorporated aspects of their Irish education into this book.

We hope that you, the reader, will fall in love with GI imaging as we have done. Perhaps it will spark your interest in GI diseases. Each individual case stands alone, requires no other chapter to support it, and provides a few clinical pearls that may come in handy on rounds. The book will possibly help you in caring for your patients, or will be recalled with a smile when you are sitting for board exams. The cases are best read one at a time, in your spare time, so that a few clinical pearls will be absorbed once in a while. It is not a textbook or reference book. We hope you will learn that the approach to GI illnesses involves a synthesis of all the available data: historical, physical, radiographic, laboratory, and endoscopic. Putting this information together to solve the patient's puzzle is what's so fun about medicine in general, and gastroenterology in particular.

Abdullah A. Shaikh MD

Department of Medicine and Radiology
Baystate Medical Center/Tufts University
Springfield, Massachusetts, USA

Syed M. Hussain MD MRCS

Department of Medicine
University of Cincinnati
Cincinnati, Ohio, USA

David J. Desilets MD PhD

Department of Medicine
Baystate Medical Center/Tufts University
Springfield, Massachusetts, USA

Tara M. Catanzano MD

Department of Radiology
Baystate Medical Center/Tufts University
Springfield, Massachusetts, USA

Case 1

A 44-year-old woman presents to the emergency room with right upper quadrant pain. The pain began about 20 minutes after eating dinner. It is described as a "shooting pain" that is constant, radiates to her back, and is 6/10 in intensity. The pain is worse on deep inspiration, and a tablet of oxycodone offers some relief. She denies nausea or vomiting. Her bowel movements are regular. She has never had this pain before.

What is your differential diagnosis?

The differential diagnosis includes cholelithiasis, acute cholecystitis, pancreatitis, gastritis, peptic ulcer disease, gastric volvulus, and intussusception.

Physical examination

Vitals Afebrile, HR 88 bpm, BP 130/78mmHg, oxygen saturation 99% on RA.
GEN No distress.
HEENT No scleral icterus.
CVS Normal S1, S2. No murmurs, rubs, or gallops.
RESP Clear to auscultation.
ABD Soft and non-tender. No rigidity, guarding, or rebound tenderness. Bowel sounds are normal. Rectal examination reveals an empty vault.
EXT No edema.

Does this narrow your differential diagnosis?

Yes. Volvulus and intussusception can be removed from the differential diagnosis, as bowel sounds are altered in these clinical settings.

What blood test(s) will you order?

LFTs	AST	267 units/L
	ALT	285 units/L
	Alkaline phosphatase	262 units/L
	Total bilirubin	3.6mg/dL

What is the pattern of the elevated LFTs?

Elevated LFTs usually suggest either a hepatocellular process or an obstructive (or cholestatic) process. A cholestatic process presents with elevated alkaline phosphatase and elevated total bilirubin levels. With the passage of a gallstone through the common bile duct, ALT may be the first measure to appear abnormal.

What other blood tests will you order?

CBC, CHEM-7, and bHCG.

All are within normal limits.

What imaging test will you order?

Your differential diagnosis already includes gallbladder pathology. Therefore, an ultrasound is the most important imaging test. The probe is placed over the ninth rib costal margin in the right mid-clavicular line. You see the image shown in Figure 1.

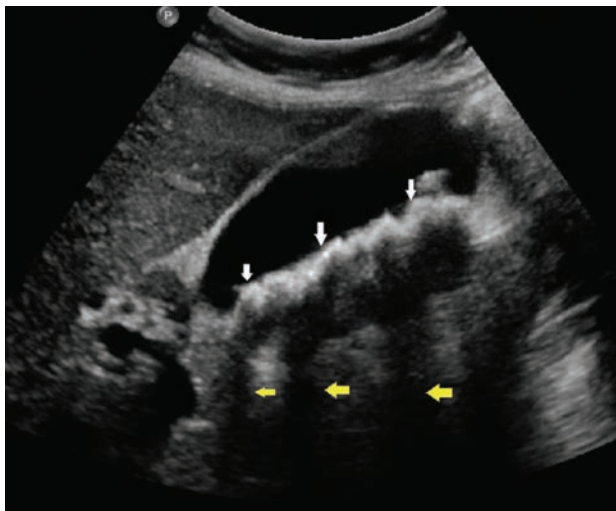


Figure 1.

Describe what you see and read on

The ultrasound shows a gallbladder in the sagittal view. Gallstones (white arrows) cast dark shadows (yellow arrows) on ultrasound. Changing the patient's position demonstrates the stones are mobile. This image does not show a thickened gallbladder wall, or a black rim around the gallbladder wall suggesting fluid (pericholecystic fluid). The patient's Murphy's sign was negative on physical examination.

By now you have admitted the patient, kept her nil by mouth, started IV fluids, and called for a surgical consultation. Later you receive the radiology report and notice the patient's common bile duct is 8mm.

What is your initial diagnosis, and how will you proceed?

The diameter of the common bile duct, measured in millimeters, should be less than or equal to the

patient's age in decades. So for this 44-year-old patient, who is in her fifth decade, it should be 5mm or less. An 8mm bile duct is suggestive, but not diagnostic, of at least some degree of biliary obstruction, and liver enzymes elevated in an obstructive pattern support this diagnosis. Given the numerous gallstones seen on ultrasound, a working diagnosis of choledocholithiasis – common duct stone(s) – is reasonable.

The next step is to obtain a GI consultation for a possible ERCP. This is arranged for the next day. The image shown in Figure 2 is obtained during the procedure.

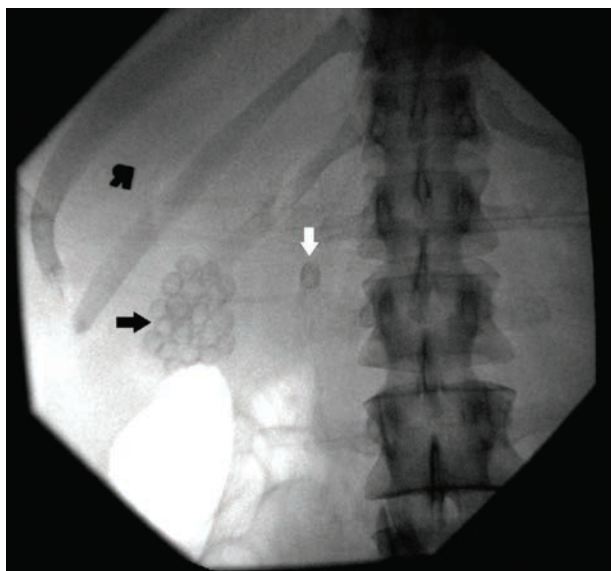


Figure 2.

Describe what you see and read on

A fluoroscopic scout view of the right upper quadrant is obtained prior to the endoscopic procedure. Numerous stones are present in the gallbladder (black arrow). In addition, a solitary stone is seen outside the expected location of the gallbladder (white arrow), suggesting a stone in the biliary tree. A fluoroscopic image is obtained during the ERCP (Figure 3).