Acute Cholecystitis

Keck School of Medicine Educational Objectives 1, 2, 3, 4, 5 & 6

Clerkship Objectives - Upon completion of the following case studies, the student will be able to:

1. Describe common signs and symptoms of acute cholecystitis.
2. List the etiology of gallstone disease and learn the differences among biliary colic, acute cholecystitis, and chronic cholecystitis.
3. Describe the basic diagnostic plan appropriate in a suspected case of cholecystitis including laboratory and imaging studies.
4. Outline the treatment options and list advantages and disadvantages of each.
5. List and discuss the major complications of acute cholecystitis.

Patient Case

A 50-year old woman presents to the emergency room with a 24-hour history of abdominal pain that began approximately one hour after a reportedly large dinner. The pain began as a dull ache in the epigastrium but then localized in the right upper quadrant. She reports some nausea but no vomiting. Since her arrival to the ER, the pain has decreased significantly. She admits to a number of previous episodes in the recent past. Her medical history is significant for type II diabetes mellitus. On physical examination, her temperature is 38.1 C (99 F). Remaining vital signs are normal. The abdomen is nondistended with minimal tenderness in the RUQ. The liver, rectal and pelvic examinations are normal. CBC reveals a WBC count of 13,000/mm. Serum chemistry studies demonstrate total bilirubin 1.8 mg/dL, direct bilirubin 0.6 mg/dL, alkaline phosphatase 140 U/L, AST 45 U/L and ALT 30 U/L. Ultrasonography of the RUQ demonstrates stones in the gallbladder, a thickened gallbladder wall, and a common bile duct diameter of 4.0 mm.

Discussion Questions

1. What is the most likely diagnosis?
2. What is the best therapy?
3. What are the complications associated with the disease process?

Patient Cases (continued)

Suggest a diagnosis and management plan for each of the following:

A 65-year old woman presents to the emergency room with postprandial RUQ pain, nausea, and emesis over the last 12 hours. The pain is persistent and radiates to her back. She is afebrile. Her abdomen is tender to palpation in the RUQ. Sonography demonstrates cholelithiasis, gallbladder wall thickening, and a dilated common bile duct measuring 12 mm. Laboratory studies reveal the following: WBC 13,000/mm, AST 220 U/L, ALT 240 U/L, alkaline phophatase 385 U/L, and direct bilirubin 4.0 mg/dL.

A 28-year old woman undergoing an obstetric ultrasound during the second trimester of pregnancy is found to have gallstones. She reports a history of indigestion and belching throughout the pregnancy.

Bowel Obstruction

Keck School of Medicine Educational Objectives 1, 2, 3, 4, 5 & 6

Clerkship Objectives - Upon completion of the following case studies, the student will be able to:

1. Describe common signs and symptoms of intestinal obstruction.
2. List 4 common causes of intestinal obstruction.
3. Discuss the complications of small bowel obstruction including fluid and electrolyte shifts, vascular compromise of the intestine, and sepsis.
4. List the appropriate laboratory and x-ray tests to be used in a patient with suspected small bowel obstruction.
5. Differentiate between mechanical small bowel obstruction and paralytic ileus.
6. List the signs and symptoms suggestive of a strangulation obstruction.
7. Compare and contrast a large bowel obstruction and a small bowel obstruction.
8. Given a patient with small bowel obstruction outline a plan of treatment including a consideration of fluid and electrolyte therapy, intestinal intubation, and operative therapy.
9. Discuss the diagnostic tests used to confirm large bowel obstruction.
10. Outline the treatment plan for a patient diagnosed with intussusception.
11. Describe the diagnostic studies and treatments used for patients with a volvulus.

Patient Case

A 47-year-old white male is admitted to the emergency room with a 36-hour history of lower abdominal pain, nausea, and vomiting. The patient describes the pain as crampy in nature and notes that his abdomen has become distended over the last 12 hours. His last bowel movement was three days prior to presentation. His past medical history reveals an appendectomy for acute appendicitis eight months ago. He is otherwise healthy and takes no medications.

Physical exam reveals a temperature of 100ºF. His abdomen is distended and tympanic. Mild tenderness is present periumbilically but no guarding or rebound. High-pitched bowel sounds are present and rectal exam reveals no stool in the ampulla.

Admitting laboratory data include a hemoglobin of 16, hematocrit 48, white blood cell count 12,200 with 74 polys and 5 bands. Serum electrolytes are normal, BUN is 28, and creatinine is 1.2. An abdominal series reveals multiple dilated loops of small bowel with numerous air fluid levels. No gas or stool is visible in the colon. The patient is admitted to the hospital.

Discussion Questions

1. What is the most likely diagnosis? Do you think his condition can be treated without an operation? What is the initial management plan?
2. If you choose conservative management in this case, how would you follow his progress? What form of gastrointestinal decompression would you use in this patient?
3. What are the indications for early operative intervention in postoperative acute small bowel obstruction?
4. In order of frequency, list the causes of small bowel obstruction in the adult and in the child.

Patient Cases (continued)

Suggest a diagnosis and management plan for each of the following:

A 7-week-old infant male is brought in by his parents with non-bilious vomiting for four days and the child is presently unable to hold down even water. Evaluation reveals severe dehydration with hypokalemia. A small mass is palpable in the right upper quadrant.

A newborn infant presents with irritability and bilious vomiting as well as bloody stools. Erythema and edema of the abdominal wall are present and a barium enema reveals a markedly displaced cecum to the left.

A 10-month-old male infant is brought to the hospital because of paroxysms of crampy abdominal pain and intermittent vomiting. Between attacks, the child appears well. The mother noted some bloody mucus in the diaper. Barium enema reveals a "coiled spring" appearance of the ascending colon.

A 74-year-old patient from the nursing home presents with increasing abdominal distention over the past five days. Abdominal films reveal a markedly dilated colon with cecal diameter approaching 14 cm. There is no air noted in the rectum and a "parrot beak" is noted in the distal sigmoid colon.

A 62-year-old white male presents with increasing abdominal distention, nausea, and vomiting. He has recently noted narrowing of his stools. Sigmoidoscopy reveals a large, bulky tumor obstructing the sigmoid colon at 20 cm.

Gastrointestinal Bleeding

Keck School of Medicine Educational Objectives 1, 2, 3, 4, 5 & 6

Clerkship Objectives - Upon completion of the following case studies, the student will be able to:

1. Define hematemesis, hematochezia, melena, and guaiac positive stool; state their significance with regard to the level of the bleeding source.
2. Outline the resuscitation plan for a hypotensive patient with a massive gastrointestinal hemorrhage.

3. In order of frequency, list the most common causes of upper and lower gastrointestinal bleeding in the general population, in adults (age 16 years and above), and in the infant (birth to 2 years).
4. Outline the work-up of the adult patient presenting with occult blood rectal exam.
5. List criteria for surgical intervention in a patient with gastrointestinal hemorrhage.

Patient Case: Upper GI Bleeding

J.S. is a 55-year-old white male with a long history of mild epigastric pain now presenting with hematemesis. His past medical history is remarkable for a previous MI eight years ago. Presently, he has occasional angina with exertion. His medications are metoprolol 25 mg TID and baby aspirin once a day. Examination reveals a blood pressure of 110/72 and a pulse of 88 lying down. Orthostatics reveal a BP drop of 92/62 and pulse of 116 upon standing. The abdomen is soft and benign, no fluid wave and no caput medusae are noted. The stool is guiac positive.

Discussion Questions

1. What is your management plan for resuscitating this patient?
2. What is the differential diagnosis in this setting?
3. How do you plan to pursue the diagnosis?
4. List the common causes of upper GI bleeding for adults and children.
5. What are the various non-operative treatments for upper GI bleeding?
6. Why is lavage done in patients with an upper GI bleed?
7. What prophylactic therapy is administered to critically ill patients to prevent acute mucosal erosions and subsequent upper GI bleeding?

Patient Cases (continued)

Suggest an appropriate plan for evaluating and managing the following case.

G.R. is a 64-year-old white male with a long history of intermittent crampy abdominal pain. For several days prior to admission, he has noted that his stools are somewhat looser than normal as well as dark in color. Two hours before coming to the emergency room he began passing bright red blood per rectum. He has had no previous hospitalizations for abdominal pain but was diagnosed as having diverticular disease after a barium enema in 1982. Physical examination reveals a slightly overweight, white male, somewhat pale in color. Blood pressure is 105/60 and pulse is 104. Orthostatic changes are noted. The abdomen is soft and non-tender with no abdominal masses. Bowel sounds are increased. Rectal exam reveals bright red blood in the rectal vault. Diagnostic studies include a chest x-ray and abdominal series that are read as normal. Hemoglobin is 12, hematocrit 31, PT and PTT normal. He is typed and crossed for 6 units of packed red cells.

Discussion Questions

1. What is the differential diagnosis for lower GI bleeding in this age group?
2. What is your plan for diagnosis work-up and management in this case?

3. After four hours and a total of 5 units of packed red blood cells, the bleeding stops. Twenty-four hours later the bleeding resumes with mild hypotension. What is your plan at this time?
4. What diagnostic modalities are available for the work-up of lower GI bleeding?
5. Why is angiography considered both diagnostic and therapeutic?
6. What are the indications for surgery in patients presenting with diverticular bleeding?

Patient Cases (continued)

Suggest an appropriate plan for evaluating and managing each of the following cases.

A 92-year-old white female from a local nursing home with organic brain syndrome, congestive heart failure, and severe pulmonary disease has persistent lower GI bleeding. On angiography, the site of bleeding is identified as the hepatic flexure.

A 6-year-old white male is brought to you by his parents with recent bright red blood per rectum. What is the most likely diagnosis? Which test would you order? What is the treatment?

A 64-year-old white male is found to have guaiac positive stool and anemia on routine physical examination.

A 34-year-old Mexican-American female presents with bloody diarrhea. She gives a recent history of eight to ten bowel movements per day, containing both blood and mucus, and associated with tenesmus. Sigmoidoscopy is negative, but colonoscopy reveals multiple ulcerations extending from the cecum to the midtransverse colon.

Hernia

Keck School of Medicine Educational Objectives 1, 2, 3, 4, 5 & 6

Clerkship Objectives - Upon completion of the following case studies, the student will be able to:

1. Identify the clinically relevant anatomy of inguinal hernias.
2. Describe the risk factors for inguinal hernia development.
3. Differentiate inguinal hernia findings from other inguinal pathology.
4. Describe the indications for inguinal hernia repair.
5. Describe the risk factors for inguinal hernia recurrence.
6. Describe the post-operative complications after inguinal hernia repair.
7. Describe the risk factors for ventral hernia development.
8. Describe the indications for ventral hernia repair.
9. Describe the risk factors for ventral hernia recurrence.

Patient Cases

Suggest a diagnosis and management plan for each of the following:

A 65-year old male is brought to the ER with complaints of abdominal pain, distention, nausea, and vomiting. His last BM was 3 days ago. His PSH is significant for an exploratory laparotomy 5 years ago for an MVA. Vital signs include: Temp 100.8 F, Pulse 118, BP 116/78. PE shows a midline scar, distended abdomen, high-pitched bowel sounds, and tenderness along a bulge in the midabdomen. The overlying skin is warm and erythematous. WBC is 14K. Abdominal Series shows multiple air/fluid levels. What is his primary problem? What is the cause of this problem? Would you consider further testing, such as a CT scan? What is the next step?

A 22-year old male is admitted to the ER with acute onset of severe right groin pain shooting into his scrotum. He is a football player at his college. His exam shows a tender bulge at his scrotum. What is the differential diagnosis?

A 6-month old boy is brought to your office by his parents for consultation regarding a small right inguinal hernia detected by his pediatrician. What do you recommend?

A 45-year old male is 3-months status post an elective right inguinal hernia repair with mesh. He is complaining of shooting pain into his scrotum which affects his quality of life. He cannot walk comfortably and his pants irritate him. What do you tell him? What are the different nerves that can be injured during herniorrhaphy and how do they present?