Common Intern Pages

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RAD-AID

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Common Intern Pages

Adapted from Cases by: Alex Solomon, MD and David Gullotti, MD

Matt Hoyer, MD
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The following are cases designed to test your clinical decision making based, in part, on radiological interpretation.

Imagine you are on service receiving the following pages without an available senior or attending. How would you work through each scenario?
• 52F POD3 from elective right hemicolecctomy for recurrent diverticulitis with SOB
• 52F POD3 from elective right hemicolecctiony for recurrent diverticulitis with SOB
  – What are the common causes of SOB for hospitalized and post-operative patients?
• 52F POD3 from elective right hemicolecotomy for recurrent diverticulitis with SOB
  – What are common causes of SOB for post-operative pts?
    • Atelectasis/splinting
    • Pneumonia
    • Pulmonary embolism
    • Heart failure
    • Exacerbation of underlying lung disease (e.g. COPD, asthma)
    • Sedatives/narcotics
• 52F POD3 from elective right hemicolecctomy for recurrent diverticulitis with SOB
  – What additional information do you want?
52F POD3 from elective right hemicolectomy for recurrent diverticulitis with SOB

- What additional information do you want?
  - Vitals!
    - HR: 154 bpm
    - RR: 28 respirations/minute
    - BP: 140/90 mmHg
  - EKG →
  - Chest x-ray (next slide)
• 52F POD3 from elective right hemicolecctionomy for recurrent diverticulitis with SOB
  – Put it all together – what do you think happened?
  – Next steps?
• 52F POD3 from elective right hemicolecctomy for recurrent diverticulitis with SOB
  – Put it all together – what do you think happened?
    • New-onset atrial fibrillation causing heart failure
  – Next steps?
    • Diuretics, beta blocker, consider anticoagulation, cardioversion if needed
• 27M in the PACU after right first rib resection for neurogenic thoracic outlet syndrome, now with SOB
• 27M in the PACU after right first rib resection for neurogenic thoracic outlet syndrome, now with SOB
  – What is thoracic outlet syndrome? What anatomic structures are in and around the thoracic outlet?
• 27M in the PACU after right first rib resection for neurogenic thoracic outlet syndrome, now with SOB
  – Vitals are normal, but it looks like he is working very hard to breathe
  – What imaging study do you want?
• 27M in the PACU after right first rib resection for neurogenic thoracic outlet syndrome, now with SOB
  – What does the CXR show? Why is he short of breath?
27M in the PACU after right first rib resection for neurogenic thoracic outlet syndrome, now with SOB

- What does the CXR show? Why is he short of breath?
  - Elevation of the right hemidiaphragm
  - Phrenic nerve injury
• 45M POD0 from right partial nephrectomy for incidentally discovered right upper pole renal mass. Surgery uncomplicated, apart from small pressor requirement in OR. Now in ICU with increasing pressor requirement
• 45M POD0 from right partial nephrectomy, now with increasing pressor requirement
  – What are pressors? What are the most common pressors used and how do they work?
• Vasopressors: drugs that cause vasoconstriction and elevate mean arterial pressure

<table>
<thead>
<tr>
<th>Drug</th>
<th>Receptor activity</th>
<th>Predominant clinical effects</th>
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<tbody>
<tr>
<td></td>
<td>Alpha-1</td>
<td>Beta-1</td>
</tr>
<tr>
<td>Phenylephrine</td>
<td>+++</td>
<td>0</td>
</tr>
<tr>
<td>Norepinephrine</td>
<td>+++</td>
<td>++</td>
</tr>
<tr>
<td>Epinephrine</td>
<td>+++</td>
<td>+++</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Dopamine (mcg/kg/min)*</th>
<th>0.5 to 2.</th>
<th>5. to 10.</th>
<th>10. to 20.</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>0</td>
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</tbody>
</table>
• 45M POD0 from right partial nephrectomy, now with increasing pressor requirement
  – What are the most likely causes of hypotension for this postoperative patient?
45M POD0 from right partial nephrectomy, now with increasing pressor requirement

- What are the most likely causes of hypotension for this postoperative patient?
  - Shock (hypovolemic, cardiogenic, obstructive, distributive)
  - Dissection
  - Drugs
  - Hypocalcemia
  - Adrenal insufficiency
  - CHF exacerbation
• 45M POD0 from right partial nephrectomy, now with increasing pressor requirement
  – What information do you want?
• 45M POD0 from right partial nephrectomy, now with increasing pressor requirement
  – What information do you want?
    • Vitals: stable, but now requiring two pressors
    • Labs: CBC, CMP, troponin, lactate all unremarkable except for 3-point drop in hemoglobin
    • Exam: no blood in Foley catheter, no blood in surgical drains, mild abdominal pain (expected post-op)
    • What imaging do you want?
• 45M POD0 from right partial nephrectomy, now with increasing pressor requirement
  – What is the cause of this patient’s hypotension?
  – What are next steps?
• 45M POD0 from right partial nephrectomy, now with increasing pressor requirement
  – What is the cause of this patient’s hypotension?
    • Adrenal hemorrhage
  – What are next steps?
    • Transfuse
    • Can test for adrenal insufficiency (unlikely when unilateral): AM cortisol
    • Surgical intervention rarely needed. Will involute spontaneously
• 22M with Crohn’s disease POD2 from uncomplicated small bowel resection, now with 2 episodes of emesis with worsening abdominal pain and distension
• 22M with Crohn’s disease POD2 from uncomplicated small bowel resection, now with 2 episodes of emesis with worsening abdominal pain and distension
  – What are common causes of post-operative nausea, vomiting, and abdominal pain/distension?
22M with Crohn’s disease POD2 from uncomplicated small bowel resection, now with 2 episodes of emesis with worsening abdominal pain and distension

- What are common causes of post-operative nausea, vomiting, and abdominal pain/distension?
  - Ileus
  - Obstruction
  - Drugs (opioids)
  - Ischemia
  - Surgical complications (abscess, perforation, dehiscence)
• 22M with Crohn’s disease POD2 from uncomplicated small bowel resection, now with 2 episodes of emesis with worsening abdominal pain and distension
  – What information do you want?
    • Physical exam: abdomen distended but appropriately tender
    • Labs: all within normal limits except chronically low hemoglobin, potassium of 2.1
    • What imaging do you want?
• 22M with Crohn’s disease POD2 from uncomplicated small bowel resection, now with 2 episodes of emesis with worsening abdominal pain and distension
  – What is happening with this patient? What is the treatment?
• 22M with Crohn’s disease POD2 from uncomplicated small bowel resection, now with 2 episodes of emesis with worsening abdominal pain and distension
  – What is happening with this patient?
    • Postoperative ileus
  – Treatment?
    • Correct underlying cause: replete electrolytes
    • Minimize opioids
    • IV fluids
    • Bowel rest. Can decompress with NG tube if severe
• 22M with Crohn’s disease POD2 from uncomplicated small bowel resection, now with 2 episodes of emesis with worsening abdominal pain and distension
  – How can you differentiate obstruction from ileus on imaging?
• 22M with Crohn’s disease POD2 from uncomplicated small bowel resection, now with 2 episodes of emesis with worsening abdominal pain and distension
  – How can you differentiate obstruction from ileus on imaging?
    • Transition point with bowel dilation proximally, decompressed bowel distally
      – If SBO: dilated small bowel, decompressed large bowel/rectum
      – If LBO: dilated large bowel (may have dilated small bowel if incompetent ileocecal valve), decompressed rectum
• How can we tell this is obstruction rather than ileus?
• Can you identify a cause from this image?
• How can we tell this is obstruction rather than ileus?
  – Dilated small bowel, no visible large bowel
• Can you identify a cause from this image?
  – Inguinal hernia
• 70M with no significant history presents to ED with nausea/vomiting for two days, malaise, weight loss
• 70M with no significant history presents to ED with nausea/vomiting for two days, malaise, weight loss
  – What is the differential diagnosis?
70M with no significant history presents to ED with nausea/vomiting for two days, malaise, weight loss

- What is the differential diagnosis?
  - Gastroenteritis/infection
  - Pancreatitis
  - Cholecystitis
  - Appendicitis
  - Obstruction
  - Ileus
  - Ischemia
• 70M with no significant history presents to ED with nausea/vomiting for two days, malaise, weight loss
  – What additional information do you want?
70M with no significant history presents to ED with nausea/vomiting for two days, malaise, weight loss

- What additional information do you want?
  - Vitals: HR 110 bpm, otherwise unremarkable
  - Labs: Hgb 7.4, otherwise unremarkable CBC, CMP, lactate
  - Physical exam: abdominal distention without palpable umbilical or inguinal hernia
  - What imaging do you want?
• 70M with no significant history presents to ED with nausea/vomiting for two days, malaise, weight loss
  – What is your diagnosis?
  – What are the three most common causes?
• 70M with no significant history presents to ED with nausea/vomiting for two days, malaise, weight loss
  – What is your diagnosis?
    • Large bowel obstruction
  – What are the three most common causes?
    • Colon cancer
    • Acute diverticulitis
    • Volvulus
22M without significant history POD1 from uncomplicated appendectomy. Feels well, but febrile to 38.5 degrees
• 22M without significant history POD1 from uncomplicated appendectomy. Feels well, but febrile to 38.5 degrees
  – What are the common causes and timelines for post-operative fever?
• 22M without significant history POD1 from uncomplicated appendectomy. Feels well, but febrile to 38.5 degrees
  – What are the common causes and timelines for post-operative fever?
• 22M without significant history POD1 from uncomplicated appendectomy. Feels well, but febrile to 38.5 degrees
  – What imaging do you want?
• 22M without significant history POD1 from uncomplicated appendectomy. Feels well, but febrile to 38.5 degrees
  – What is the cause of this patient’s fever?
  – What is your management?
• 22M without significant history POD1 from uncomplicated appendectomy. Feels well, but febrile to 38.5 degrees
  – What is the cause of this patient’s fever?
    • Atelectasis
  – What is your management?
    • Incentive spirometry
• 22M without significant history POD1 from uncomplicated appendectomy. Feels well, but febrile to 38.5 degrees
  – What additional labs/studies would you like if it were POD3? POD5?
• 22M without significant history POD1 from uncomplicated appendectomy. Feels well, but febrile to 38.5 degrees
  – What additional labs/studies would you like if it were POD3? POD5?
    • POD3: UA/Cx, BCx, sputum Cx, CXR, CBC, consider venous duplex
    • POD5: venous duplex, above infectious workup
• 45F with extensive smoking history POD1 from elective laparoscopic cholecystectomy. Pain has been hard to control. Now hypertensive to 200/140
  – What are the common causes of post-operative HTN?
• 45F with extensive smoking history POD1 from elective laparoscopic cholecystectomy. Pain has been hard to control. Now hypertensive to 200/140
  – What are the common causes of post-operative HTN?
    • Pain
    • Fluid overload
    • Hypercarbia
    • Essential HTN
• 45F with extensive smoking history POD1 from elective laparoscopic cholecystectomy. Pain has been hard to control. Now hypertensive to 200/140
  – What is hypertensive urgency?
    • BP > 180/110
  – What is hypertensive emergency?
    • End-organ damage (headache, vision changes, AMS, oliguria)
• 45F with extensive smoking history POD1 from elective laparoscopic cholecystectomy. Pain has been hard to control. Now hypertensive to 200/140
  – Vitals are otherwise unremarkable. On exam, the patient is sleepy but complains of headache
  – What imaging do you want?
• 45F with extensive smoking history POD1 from elective laparoscopic cholecystectomy. Pain has been hard to control. Now hypertensive to 200/140
  – What is your diagnosis?
  – What are the next steps?
• 45F with extensive smoking history POD1 from elective laparoscopic cholecystectomy. Pain has been hard to control. Now hypertensive to 200/140
  – What is your diagnosis?
    • COPD, hypercarbia (narcosis)
  – What are the next steps?
    • ABG, decrease narcotics, intubate if severe
• 64M with history of IVDU, 5 hours s/p I&D of L thigh. Now febrile to 41 degrees with rigors, hypotension
  – Physical exam: crepitus
  – Labs: WBC 24 (increased from 15 just 5 hours ago)
  – What imaging do you want?
• 64M with history of IVDU, 5 hours s/p I&D of L thigh. Now febrile to 41 degrees with rigors, hypotension
  – What is the diagnosis?
  – What is the management?
64M with history of IVDU, 5 hours s/p I&D of L thigh. Now febrile to 41 degrees with rigors, hypotension

- What is the diagnosis?
  - Necrotizing fasciitis

- What is the management?
  - Emergency surgery
  - Broad-spectrum antibiotics (including anaerobic coverage)
• 52M with diabetic foot infection is POD3 from below-knee amputation, now with chest pain
• 52M with diabetic foot infection is POD3 from below-knee amputation, now with chest pain
  – What are the common causes of acute chest pain?
• 52M with diabetic foot infection is POD3 from below-knee amputation, now with chest pain
  – What are the common causes of acute chest pain?
    • MI
    • Angina
    • PE
    • Pneumothorax
    • Pneumonia
    • Aortic dissection
    • GERD/PUD/esophagitis
• 52M with diabetic foot infection is POD3 from below-knee amputation, now with chest pain
  – What additional information do you want?
52M with diabetic foot infection is POD3 from below-knee amputation, now with chest pain

- What additional information do you want?
  - History: acute onset
  - Vitals: HR 120, RR 18, otherwise unremarkable
  - Physical exam: clutching fist over his sternum
  - Labs: you ordered a CBC, CMP, and troponins…but he isn’t looking so good and you probably shouldn’t wait around for the results
  - EKG: next slide
• 52M with diabetic foot infection is POD3 from below-knee amputation, now with chest pain
• 52M with diabetic foot infection is POD3 from below-knee amputation, now with chest pain
  – What imaging do you want?
52M with diabetic foot infection is POD3 from below-knee amputation, now with chest pain

- What is the diagnosis?
- What is the management?
52M with diabetic foot infection is POD3 from below-knee amputation, now with chest pain
  - What is the diagnosis?
    • Pneumoperitoneum
  - What is the management?
    • NPO, broad-spectrum antibiotics, surgical consult
Thank you!

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