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The EM Educator Series

The EM Educator Series: When the bowel flips on you

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Cases:

#1: A 75-year-old female from a nursing home presents with severe abdominal pain and distension, with no bowel movements for over one week. She appears ill.

Questions for Learners:

1) What do you need to consider with abdominal pain in the elderly?
2) What about the chief complaint of constipation in the elderly patient? What other conditions do you need to consider?
3) What are risk factors & clinical presentations regarding cecal and sigmoid volvulus?
4) What's the ED work-up and classic X-ray findings in cecal and sigmoid volvulus? Are there limitations in x-ray?
5) What's the ED management of cecal and sigmoid volvulus? What complications do you need to consider?
6) How do you identify sepsis from an abdominal source in the elderly patient? How do you manage sepsis in this population?
7) What do you need to consider regarding code status and goals of care?

Suggested Resources:

- ✓ Articles:
  - EP Monthly – Abdominal Pain in the Elderly Patient
  - Radiopaedia – Caecal Volvulus
  - Radiopaedia – Sigmoid Volvulus
  - emDOCs – So you think it is sepsis: considerations beyond lung and urine in the sick patient without a source
  - emDOCs – The sepsis patient not improving after IV fluids and resuscitation: What should be considered? How can we improve?
- ✓ Podcast/Vodcast:
  - EM Cases – Episode 34: Geriatric Emergency Medicine
  - EM Cases – Episode 70 End of Life Care in Emergency Medicine

Answers for Learners:

1) What do you need to consider with abdominal pain in the elderly?

Abdominal pain is the chief complaint in 3% to 13% of older patients coming to the emergency department. These patients are six to eight times more likely to die and twice as likely to need surgery as their younger counterparts. Misdiagnosis is common, ranging from 18% to 60%. Given these statistics, it is not surprising that emergency physicians report having difficulty with elderly patients with abdominal pain.

2) What about the chief complaint of constipation in the elderly patient? What other conditions do you need to consider?

Constipation is a diagnosis of exclusion. Consider all the following diagnosis below before you diagnose an elderly patient with constipation:

Table 1: Causes of Abdominal Pain in Elderly Patients

Cause	Percentage
Biliary disease	20%
Obstruction	12%
Perforated viscus	7%
Diverticular disease	6%
Appendicitis	5%
Renal colic	4%
Miscellaneous (includes abdominal aortic aneurysm, mesenteric ischemia, pancreatitis, etc)	25%
Unknown	20%

Remember non-abdominal causes of abdominal pain in the elderly. (MI, pneumonia, PE, DKA/ AKA, zoster, hypercalcemia, and medication toxicity)

<u>Keep in mind that managing constipation in the elderly is important!</u>

Under-treatment of constipation can lead to premature death. Outpatient meds for constipation in the geriatric patient: our experts recommend a combination of lactulose or PEG plus a sennoside or bisacodyl. See this full pdf recent review for further tips (Gandell, D et al. CMAJ. 2013;185:663).

3) What are risk factors & clinical presentations regarding cecal and sigmoid volvulus?

There are two predisposing factors that are important for the development of a caecal volvulus:

1. a developmental failure of peritoneal fixation allows the proximal colon to be free and mobile: this occurs in 11-25% of the population
2. restriction of the bowel at a fixed point within the abdomen, acting as a fulcrum for rotation, e.g. adhesion, abdominal mass, scarring from calcified lymph nodes

Medical history of these patients may include prior abdominal surgery, the presence of a pelvic mass, violent coughing, atonia of the colon, extreme exertion, unpressurised air travel, or third-trimester pregnancy.

In regards to sigmoid volvulus, there is a wide range of causes; some are geographically-specific:

- chronic constipation and/or laxative abuse
- fibre-rich diet (especially in Africa)
- Chagas disease (especially in South America)

Associations

- chronic neurological conditions (e.g. Parkinson disease, multiple sclerosis, pseudobulbar palsy)
- medications from chronic psychiatric conditions (e.g. chronic schizophrenia)

4) What's the ED work-up and classic X-ray findings in cecal and sigmoid volvulus? Are there limitations in x-ray?

Cecal:
On abdominal radiographs, there is marked distension of a loop of large bowel with its long axis extending from the right lower quadrant to the epigastrium or left upper quadrant. Depending on the initial bowel position and the length of mobile right colon, the distended caecum may be seen anywhere in the abdomen.

Despite the varying positions of the distended caecum, the plain radiographic features of a caecal volvulus are characteristic, and the caput caecum can typically be identified. The colonic haustral pattern is generally maintained in contradistinction to a sigmoid volvulus although some effacement may be present if ischemia develops. One air-fluid level may be seen in the caecal volvulus in comparison to the sigmoid volvulus with a few air-fluid levels.

When shorter segments of the colon and cecum are involved, the distended caecum may be found in the normal location. In most patients, obstruction is almost complete and the distal colon is usually empty and the small bowel frequently distended.

Sigmoid:
Abdominal radiographs will show a large, dilated loop of the colon, often with a few air-fluid levels. Specific signs include:

- coffee bean sign
- Frimann-Dahl sign - three dense lines converge towards the site of obstruction
- absent rectal gas

5) What's the ED management of cecal and sigmoid volvulus? What complications do you need to consider?

Cecal:
Colonoscopic decompression may be appropriate if patient unfit for surgery. However, laparotomy is normally required. Where there is colonic ischaemia, a right hemicolectomy is performed; in some cases, the primary anastomosis is not possible, and stoma formation at both ends is the safest option. If the caecum is viable and the volvulus reduces, there are a number of options:

- reduction alone, but this is associated with the highest risk of recurrence
- right hemicolectomy
- caecostomy
- caecopexy

Sigmoid:
Rectal tube insertion is successful in treating 90% of cases. The mortality rate is 20-25%. The most serious complication is bowel ischaemia.

6) How do you identify sepsis from an abdominal source in the elderly patient? How do you manage sepsis in this population?

Vital sign abnormalities (tachycardia, fever, hypotension) are less likely present in older patients, even with severe intra-abdominal infections. A "normal" blood pressure may actually represent relative hypotension in the older patient whose BP is typically much higher. Older patients are less likely to mount a fever, and medications (such as B-blockers) blunt tachycardic response to anemia, fever or sepsis. Peritoneal signs are often absent, rebound less specific, and visceral pain is more challenging to localize in older patients.

In patients unresponsive to initial sepsis bundle treatments, consider the following:

1. Source identification – LUCCASSS.
2. Ensure adequate preload, and determine whether further fluid resuscitation warranted.
3. Antibiotic regimen coverage and dosage – beware of patient/microbe factors, as well as pharmacodynamics and pharmacokinetic drug effects.
4. US for other causes using RUSH – Heart, IVC, FAST, Lungs.
5. Balanced resuscitation – early vasopressor provision, which improves venoconstriction, arterial constriction, positive inotropy, improved cardiac output, and renal perfusion.
6. Metabolic/Endocrine concerns – hypocalcemia, adrenal insufficiency, thyroid disease (myxedema coma).
7. Abdominal Compartment Syndrome – measure bladder pressure.
8. Transfusion of Products – look for bleeding.
9. Respiratory Status – if declining, take airway with intubation, place on low tidal volume settings.

7) What do you need to consider regarding code status and goals of care?

Find a quiet room to have end of life discussions. In an unresponsive patient, find a room where the patient cannot hear the discussion. It is prudent to assume the unconscious patient hears everything.

Allow patients and/or their families the time to tell their story so you can understand it. Avoid power struggles with families. It is often prudent to provide your clear medical opinion, and when appropriate,

make clear recommendations rather than giving options only and leaving end of life decisions to family alone. This may help reduce the burden of this difficult decision on the family.

In discussions regarding goals of care and code status, talking about the risk of broken ribs will not help you, the patient and their family get any closer to effective decisions about goals of care. Rather, discussions around goals of care emergency management of pediatric seizuresshould include information regarding overall prognosis, patient goals, and explanations of different levels of care.

An informed decision involves sharing realistic expectations. The common and uncommon material risks of CPR/CCR and treatment may include:

- Incomplete recovery
- Prolonged death
- Uncomfortable investigations and treatments
- Ventilator dependence

DNR means no resuscitation in the setting of a full cardiopulmonary arrest. This is often misinterpreted, and sometimes associated with lower quality or less care. Patients can and should still receive full and aggressive medical management even if they are rendered DNR.

There is a movement, as stated in the AHA Cardiopulmonary Resuscitation Guidelines in 2010, towards changing the DNR order to 'Allow Natural Death' (AND). AND uses positive language, stating what we will do, as opposed to what we will not do. Patients and their families may feel less guilt and may be more likely to be agreeable to an AND order than to a DNR order.