Abdominal Pain

- Author: David Gordon, MD, Duke University, Durham, North Carolina

- Last Updated: 2008

Introduction

Abdominal pain is a common yet challenging complaint due to the large number of possible etiologies in conjunction with variable clinical presentations. While a specific diagnosis is frequently difficult to make in the emergency department, it is imperative that the emergency physician exclude time-dependent disease processes that if left undiagnosed could lead to morbidity or mortality.

Objectives

Upon completion of this self-study module, you should be able to:

- Discuss the initial assessment and management of a patient presenting to the emergency department with abdominal pain
- List the critical diagnoses for abdominal pain
- Describe the classic historical and physical exam findings for the critical abdominal pain diagnoses
- Discuss the utility of laboratory testing in the evaluation of abdominal pain
- Discuss the advantages and limitations of different radiologic modalities used in the evaluation of abdominal pain
- Discuss the treatment and disposition for the critical diagnoses for abdominal pain

Initial Actions

What initial actions should be taken in patients presenting with abdominal pain?

- Perform the primary survey
- Order a pregnancy test in women of child-bearing age
- Order blood products in unstable patients with suspected hemorrhage
- Obtain bedside imaging in patients whose presentation is concerning for pneumoperitoneum or hemoperitoneum
- Order antibiotics early in the setting of sepsis, peritonitis, or perforation
- Provide analgesia
- Obtain immediate surgical consultation in the setting of hemodynamic instability or a rigid abdomen

Primary Survey

While airway compromise and respiratory insufficiency can develop in a patient suffering from an abdominal catastrophe, the circulatory system most commonly needs the attention

of the clinician in the setting of abdominal pain. Abdominal pain in conjunction with hemodynamic instability should alert the physician to the possibility of hemorrhage, sepsis, perforated viscus, or necrotic bowel. Immediate fluid resuscitation should begin by establishing 2 large bore IVs and rapidly infusing isotonic crystalloid. Supplemental oxygen should be administered, and patients should be placed on a monitor.

In the unstable patient with abdominal pain in whom hemorrhage is diagnosed or highly suspected, typed and crossed blood should be immediately ordered. The transfusion of type O blood can be performed in critical situations where there is not enough time to wait for crossmatched blood.

Pregnancy testing

Women of childbearing age who present with abdominal pain are presumed to have an ectopic pregnancy until proven otherwise. When the patient is unstable, a Foley catheter can be placed to rapidly obtain urine for qualitative beta-HCG testing. Blood should also be sent for a quantitative level.

Bedside imaging

Portable x-ray and ultrasound can serve as immediate diagnostic tools that can be performed at the bedside when there is concern for pneumoperitoneum or hemoperitoneum, respectively. An upright chest x-ray or lateral decubitis abdominal film may reveal free air in the case of a perforated viscus. Ultrasound can be used to search for abdominal free fluid suggestive of hemoperitoneum along with possible etiologies such as a ruptured abdominal aortic aneurysm (AAA) or ruptured ectopic pregnancy.

Antibiotics

The abdomen is a frequent site of infection in the development of sepsis. Patients with abdominal pain who are found to be septic should receive early administration of antibiotics as part of their initial resuscitation. Prompt antibiotics should also be given to patients with peritonitis or a perforated viscus.

Analgesia

Patients presenting in significant abdominal discomfort should be provided with immediate pain relief. Narcotic medication should not be withheld out of concern that the abdominal exam may become unreliable and the diagnosis therefore obscured. Fentanyl provides a nice option if a shorter acting agent is desired or if the blood pressure is tenuous.

Surgical Consultation

Immediate surgical consultation should be obtained in patients whose presentation of abdominal pain involves hemodynamic instability and/or a rigid abdomen. It is important to consider which specialty to consult based on the likely diagnosis. For instance, a ruptured AAA will be managed by vascular surgery, a perforated viscus by general surgery, and a ruptured ectopic pregnancy by OB/GYN.

Abdominal Pain Critical Diagnoses

The life- or organ-threatening diagnoses you must consider in patients with abdominal pain include:

1. Ectopic Pregnancy
2. Appendicitis
3. Abdominal Aortic Aneurysm (AAA)
4. Pelvic Inflammatory Disease (PID)/Tuboovarian Abscess (TOA)
5. Biliary Disease
6. Bowel Obstruction
7. Perforated Viscus
8. Mesenteric Ischemia
9. Testicular or Ovarian Torsion

It is important to recognize acute coronary syndrome as a critical extra-abdominal cause of abdominal pain – particularly in the elderly with vague or unexplained pain. For this study module, however, abdominal and genitourinary etiologies will serve as the focus. Certainly, there are other possible sources for abdominal pain beyond those listed above, such as pancreatitis, diverticulitis, nephrolithiasis, and gastroenteritis, for which we refer you to other sources.

The disease entities listed above will provide further discussion on a focused secondary survey and how to select further diagnostic testing and treatment in the evaluation and management of acute abdominal pain.