Back Pain Emergencies

Easily Missed Diagnoses

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KEYWORDS

- Back pain • Epidural abscess • Cauda equina syndrome • Aortic dissection
- Abdominal aortic aneurysm

KEY POINTS

- Back pain emergencies are frequently missed on the initial presentation to the emergency department (ED).
- A focused and careful history with attention toward identifying "red flags" is critical.
- The presence of saddle anesthesia should raise suspicion for cauda equina syndrome.
- Many patients with a spinal epidural abscess are afebrile with a normal white blood cell count on initial presentation to the ED.
- A vascular catastrophe should be considered in any patient with the acute onset of maximal intensity back pain.

INTRODUCTION

Back pain is a common presenting complaint to the emergency department (ED). Twenty-five percent of all adults in the United States report 1 day of back pain within the proceeding 3-month period.[1] In 2008, there were 7.3 million visits to EDs for back pain.[2] The overwhelming majority of back pain complaints are owing to mechanical or musculoskeletal etiologies, and require only symptomatic treatment.

With chief complaints that imply urgent conditions, such as chest pain, dyspnea, and abdominal pain, the emergency clinician is focused on potentially serious causes. However, in the case of back pain, the clinician is often initially focused on more benign causes. A further challenge to the physician assistant (PA) is that, in EDs, urgent care centers, and other acute care environments, triage systems often assign back pain as a low-acuity complaint. As such, potentially serious etiologies are directed toward lower acuity locations. These patients are often evaluated later, after complaints such as chest pain, or in the case of scheduled systems, be given a less time-sensitive appointment than another, more worrisome chief complaint. This article

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discusses the “can't miss” etiologies of acute back pain, including cauda equina syndrome (CES), spinal epidural abscess (SEA), and aortic catastrophes.

HISTORY AND PHYSICAL EXAMINATION

The most available and most useful investigative tool for patients with back pain is a detailed history. The presence, or absence, of certain historical features should aid the seasoned clinician in having a heightened concern. These features should also be important and pertinent points for inclusion in the medical record. The greatest tool the PA has is not the magnetic resonance imaging study, but rather the ability to extract a good history that directs one toward the right differential diagnosis, and then in turn the right workup. “Worst first” is a very appropriate way for emergency medicine providers to approach all patients. When formulating a differential diagnosis for acute back pain, it may not be feasible to routinely explore all the possible life-threatening etiologies in all patients. What is needed then is to focus the differential diagnosis on historical features that suggest the possibility of serious disease.

History of Present Illness

It is common for patients to associate any antecedent trauma to the cause of back pain. Patients can elaborate a cause and effect history that can be misleading to the PA. When an injury is assumed to be the cause, the PA's differential diagnosis often rapidly shrinks and excludes more serious causes. As with gastrointestinal complaints, where patients often associate the meal immediately prior, patients with back pain attempt to understand symptoms in relationship to something they must have done right before the onset of pain. They will recall poor positioning or lifting and connect that event to their pain. Patients with back pain are rarely aware that back pain has a number of potentially serious causes. This potential bias can be overcome by asking about the timing of events and obtaining details of the mechanical circumstances. It is important for the PA to ensure that the onset of symptoms fit with timing of the trauma and that the trauma itself is a plausible source for the patient's pain. Although it is very true that musculoskeletal pain may have its onset delayed by hours, the PA should be careful to scrutinize any delays in the onset of pain, because this can be a suggestion of a more serious etiology.

Pain that begins immediately after a particular injury and is reproduced consistently by position or by palpation are reassuring features. However, if parts of the history do not fall into place for a benign cause, the PA should avoid the temptation to trivialize or disregard these details. Patients often do not make associations with fever or neurologic symptoms with their back pain. Thus, it is critical in the evaluation of ED patients with acute back pain to inquire about the presence of “red flags” for more serious conditions.

Red Flags for Back Pain

The Agency for Healthcare Research and Quality practice guidelines identified several historical features that were considered indicators of potential serious underlying pathology.[3] These red flags are listed in **Box 1**.

The presence of any back pain red flag should raise suspicion for malignancy, fracture, or infection as the cause of back pain. In addition, age over 50 years increases the likelihood of serious disease. In patients with back pain who report sciatica or lower limb pain or weakness, it is important to consider CES. The PA should question the patient on signs and symptoms of CES, which are listed in **Box 2**.

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