Case report

Upper gastrointestinal hemorrhage after nonresponsive thoracic spine pain: a case report

James W. George DC^{a,*}, Clayton D. Skaggs DC^b

^a*Instructor of Chiropractic Science and Research, Division of Research, Logan College of Chiropractic, St. Louis, MO 63006*

^b*Associate Professor of Research, Division of Research, Logan College of Chiropractic, St. Louis, MO 63006*

Received 8 August 2008; accepted 12 December 2008

Key indexing terms:

Upper gastrointestinal tract;
Hemorrhage;
Spinal injuries;
Chiropractic

Abstract

Objective: This case study reports the findings of an upper gastrointestinal hemorrhage in a patient with thoracic spine pain reporting to a chiropractic clinic. The purpose of this article is to highlight the importance of identifying a patient's medication history as well as reviewing the signs and symptoms of gastrointestinal bleeding from a nonvariceal lesion.

Clinical Features: A 61-year-old woman presented with worsening middle thoracic spine pain of 3 months' duration along with recent abdominal pain. Medications, physical therapy, and spinal manipulation did not provide considerable improvement. The patient was taking ibuprofen daily to cope with her back pain.

Intervention and Outcome: The initial physical examination demonstrated mild increased tissue tension in the thoracic paraspinal muscles with mild restriction of thoracic spine range of motion secondary to the patient's pain. There was pain on palpation of the T4-5 and T7-8 spinal segments. The physical examination findings did not correlate to the patient's pain presentation, and she was referred back to her primary care physician. Two days after the initial examination, the patient experienced an upper gastrointestinal hemorrhage and underwent emergency surgery. It was determined postoperatively that she had a medication-induced duodenal ulcer that subsequently ruptured.

Conclusion: An upper gastrointestinal bleed should be considered in the differential diagnosis of a patient with a history of prolonged aspirin or nonsteroidal anti-inflammatory drug use with nonspecific abdominal symptoms.

© 2009 National University of Health Sciences.

Introduction

An acute upper gastrointestinal hemorrhage (UGIH) includes any blood loss within the intraluminal gastrointestinal tract from the upper esophagus to the duodenum.¹ The severity of blood loss ranges from

* Corresponding author. 1851 Schoettler Rd, Chesterfield, MO 63006, USA. Tel.: +1 636 230 1938; fax: +1 636 207 2417.

E-mail address: james.george@logan.edu (J. W. George).

intermittent or low-grade occult bleeding to massive hemorrhage. Signs can range from occult-blood–positive stools or iron-deficiency anemia to hematemesis or hypovolemic shock.² Gastrointestinal bleeding can be categorized as either variceal or nonvariceal. Variceal bleeds are those caused by enlarged venous collateral channels that dilate as a result of portal hypertension. These gradually enlarge and eventually rupture, causing massive hemorrhage. Nonvariceal hemorrhages develop from a disruption of the esophageal or gastroduodenal mucosa.^{1,3} Factors that can disrupt the mucosa include hyperacidity, pepsin, bile salts, ischemia, aspirin, or nonsteroidal anti-inflammatory drugs (NSAIDs).^{3,4} Examples of nonvariceal lesions include tumors, ulcers, and Mallory-Weiss tears.

We present a case study of a 61-year-old female patient with a duodenal ulcer likely induced from NSAID overutilization that subsequently ruptured. She was on prolonged NSAID therapy for middle thoracic spine pain and had increased her dosage in response to her symptoms worsening. The purpose of this article was to highlight the importance of identifying a patient's medication history as well as reviewing the signs and symptoms of gastrointestinal bleeding from a nonvariceal lesion.

Case report

A 61-year-old woman presented with midthoracic spine pain that had been getting progressively worse over a 3-month period. The midthoracic pain began after twisting to the right from the driver's seat of her car to pick something up in the backseat. Her initial symptoms were sharp pain in the midthoracic spine that was made worse with turning either way or taking a deep breath. She initially used ice, heat, and NSAIDs that did not seem to decrease the symptoms.

After 1 week of nonimprovement, she presented to her primary care physician (PCP) who prescribed a muscle relaxant and additional pain medication and told her to continue NSAIDs. She was to follow up with him in 1 week if the symptoms persisted. After 1 week, she followed up with her PCP with no change in her pain level. He ordered plain film radiographs of the thoracic spine that were read negative. Her symptoms worsened and became sharp and stabbing. A magnetic resonance imaging of the thoracic spine was ordered and revealed small posterior disk bulges at multiple levels in the thoracic spine without focal herniations or central canal narrowing. At this point, her PCP prescribed physical therapy and continuation of her medications.

The patient had 6 sessions of physical therapy and reported no change in the level of her symptoms. The physical therapist was instructing her on stabilization exercises for the middle and lower trapezius muscles as well as stretching maneuvers for the thoracic spine and chest. She also received ultrasound and electrical stimulation to the thoracic spine region. After physical therapy, she decided to see a chiropractic physician near her home. The chiropractic physician noted thoracic spine fixations at multiple levels. She was given a posterior to anterior thoracic spine manipulation in the prone position using diversified technique. She reported that the symptoms significantly worsened after the manipulation. After her 6 physical therapy sessions and single chiropractic visit, she reported back to her PCP; and a bone scan was ordered. The result of the bone scan was normal, and she was referred to a physiatrist for pain management. The physiatrist prescribed a Medrol Dosepack (Pfizer, Manati, Puerto Rico) and referred her to our office for consultation.

The patient presented to our clinic, and her pain level at the time of our initial examination was 9 of 10 on a numerical rating scale. She was in significant distress as she entered the examination room. Her pain was stabbing and located in the midthoracic spine and was made slightly better with laying in the fetal position. Deep breaths seemed to make the pain travel around her right torso to the upper abdominal region. She also reported burning pain in the epigastric region that seemed like "someone was sticking a knife through her back to her stomach." At the time of our examination, her medications included Medrol (Pfizer, Manati, Puerto Rico), Ultram (Pricara, Raritan, NJ), carisoprodol, Adderall (DSM Pharmaceuticals, Greenville, NC), Levoxyl (King Pharmaceuticals, Bristol, TN), Evista (Eli Lilly, Indianapolis, IN), glucosamine, and insulin. She was also taking between 10 and 12 pieces of Advil (Wyeth, Madison, NJ) per day. She reported a history of thyroid disease and diabetes but denied heart disease, hypertension, hypercholesterolemia, gout, or other illnesses. She had no prior surgical history, and her family medical history was unremarkable. She reported no visual changes, hearing changes, significant weight changes, fevers, chills, constipation, chest pain, shortness of breath, vomiting, or diarrhea. She did report some nausea and had a loss of appetite for the previous 2 days secondary to her pain.

The physical examination was difficult to perform because of the pain level of the patient. The patient was 61 years of age, was 5 ft 4 in tall, and weighed 145 lb. Her posture revealed that she had internally rotated arms and forward drawn shoulders bilaterally. Inspection of the

thoracic spine region demonstrated a mild scoliotic curvature in the standing position with convexity to the right. There was pain on palpation of the spinous processes at approximately T4-5 and T7-8. There was mild increased tissue tension in the thoracic paraspinal muscles left greater than right without focal trigger point formation. Her thoracic spine range of motion was mildly limited in all planes secondary to her thoracic discomfort. By this point of the examination, the patient was in a great amount of pain and wanted to lay in the fetal position on the examination table. The patient was given ice and allowed to rest for approximately 20 minutes. After this period, it was determined that the patient should continue her ice therapy and follow up the next day with the senior chiropractic physician of our office.

The next day, her pain level in the thoracic spine was about the same; and her abdominal pain was worse. She described her abdominal pain as sharp and burning. She had increased nausea and had not eaten since the day before. The senior chiropractic physician saw the patient and recommended acupuncture to help decrease her pain level because the physical examination had not changed. Acupuncture using electrical stimulation was applied for 20 minutes with no subsequent change in the symptoms. The patient was told to contact her PCP from our office to set up a follow-up appointment to review her symptoms and medications. A call was placed to the referring physiatrist who agreed that the patient should be directed back to her PCP for further testing because the physical examination findings did not match her symptom intensity.

The patient was found by her husband at approximately 2:30 AM the next morning unconscious in her bathroom after vomiting a large amount of blood. The patient was taken by ambulance to the nearest hospital and was diagnosed with an acute upper gastrointestinal bleed. An emergency upper panendoscopy was performed. The patient tolerated the surgery well and was released from the hospital approximately 1 week later. A follow-up phone call was made to the patient 2 weeks after her surgery, and she had no significant pain in either the abdominal or thoracic spine regions.

Discussion

The signs and symptoms of a UGIH from a ruptured ulcer are often nonspecific; however, the combination of a thorough history and physical examination can improve the likelihood of an accurate diagnosis.^{5,6} The symptoms range from minor abdominal discomfort to severe pain with associated signs of early satiety, ano-

rexia, nausea, and vomiting. Approximately 30% of patients will have antecedent symptoms suggestive of hemorrhage.⁷ The patient's history should include questions regarding their previous or current medication use. Prolonged use of aspirin and NSAIDs is a factor that can damage the mucosal lining of the digestive tract and initiate bleeds.¹ The patient in our case was taking 10 to 12 pieces of Advil per day for approximately 2 months. Her medication use combined with her recent loss of appetite, nausea, and abdominal discomfort should have indicated a possible gastrointestinal disorder.

The physical examination for suspected UGIH from a duodenal ulcer should include a rectal examination, nasogastric tube aspiration, and assessment of the stigmata of chronic liver disease.⁸ Black, tarry feces (melena) are indicative of a UGIH, although right-sided colonic bleeds can often produce melena as well. Bright red blood from the rectum is usually caused by a lower gastrointestinal bleed. A nasogastric tube aspiration test producing clots, coffee ground-like material, or bright red blood is highly indicative of a UGIH.⁹ The patient in this case did not report changes in her stools to any of the practitioners providing her care.

Laboratory examinations and imaging studies are often necessary for detecting and confirming gastrointestinal bleeding. A complete blood count should be ordered. The chemistry panel should include an analysis of alanine aminotransferase, aspartate aminotransferase, albumin, bilirubin, prothrombin time, partial thromboplastin time, and bleeding time.¹⁰ These studies can help distinguish an intestinal bleed from similar presenting conditions such as liver disease. The imaging study with the highest specificity and sensitivity for gastrointestinal hemorrhage is endoscopy.³ Additional methods such as barium radiographs, radionuclide scans, and angiography can also be used but are rarely indicated.

The treatments for UGIH include medication, endoscopic procedures, and surgery, depending on the severity and duration of the patient's hemorrhage.¹ Medications are typically used for treatment after endoscopy or surgery. Antacids are commonly used to decrease acidity, whereas antisecretory medications help decrease acid production. These in combination can help the repair of an ulcer and decrease the incidence of rebleeding.⁶ Endoscopic procedures are typically used for nonemergent situations and are less invasive for patients who need intestinal repair. Complicated bleeds and/or emergency massive hemorrhages usually require surgical intervention to ligate the bleeding vessel.³

The prognosis for a UGIH is good, and most patients will stop bleeding spontaneously. The recurrence rate for patients who undergo endoscopy or surgery for a

ruptured ulcer is around 1%.³ Patients who are at risk for rebleeds are those with hemodynamic instability. Patients can decrease their chance of recurring bleeds or new ulcers by improving their diet, decreasing their stress, and following their physician's recommendations for medication dosage and duration.

Conclusion

Upper gastrointestinal hemorrhages occur as a result of damage to the mucosal lining of the gastrointestinal tract. Factors that can alter the integrity of the mucosal lining include prolonged use of aspirin and NSAIDs. A patient's history should include questions regarding their previous and current use of these medications. An upper gastrointestinal bleed should be considered in the differential diagnosis of a patient with a history of prolonged aspirin or NSAID use with nonspecific abdominal symptoms.

References

1. Jensen DM. Endoscopic control of nonvariceal upper gastrointestinal hemorrhage. In: Yamada T, et al, editor. Textbook of gastroenterology. Philadelphia: Lippincott; 1991. p. 2618.
2. Chiu YC, Wu KL, Kuo CH, Hu TH, Chou YP, Chuah SK, et al. Endoscopic findings and management of dengue patients with upper gastrointestinal bleeding. *Am J Trop Med Hyg* 2005;73:441-4.
3. Mahadeva S, Linch M, Hull MA. Variable use of endoscopic haemostasis in the management of bleeding peptic ulcers. *Postgrad Med J* 2002;78:347-51.
4. Jensen DM. Severe non-variceal upper gastrointestinal hemorrhage. *Gastrointest Endosc Clin North Am* 1991;1:209.
5. Segal WN, Cello JP. Hemorrhage in the upper gastrointestinal tract in the older patient. *Am J Gastroenterol* 1997;92:42-6.
6. Lakhwani MN, Ismail AR, Barras CD, Tan WJ. Upper gastrointestinal bleeding in Kuala Lumpur Hospital, Malaysia. *Med J Malaysia* 2000;55:498-505.
7. Inadomi J, Koch J, Cello JP. Long-term follow-up of endoscopic treatment for bleeding gastric and duodenal ulcers. *Am J Gastroenterol* 1995;90:1065-8.
8. Kovacs TOG, Jensen DM. Therapeutic endoscopy for upper gastrointestinal bleeding. In: Taylor MD, et al, editor. Gastrointestinal emergencies. Philadelphia: Williams & Wilkins; 1992.
9. López Vallejos P, García Sánchez MV, González Galilea A, Gálvez Calderón C, Naranjo Rodríguez A, Montero Alvarez JL, et al. Failure of endoscopic therapy in upper gastrointestinal hemorrhage due to duodenal ulcers. *Rev Esp Enferm Dig* 2003;95:700-6.
10. Choudari CP, Elton RA, Palmer KR. Age-related mortality in patients treated endoscopically for bleeding peptic ulcer. *Gastrointest Endosc* 1995;41:557-60.