



**FIGURE 1**  
Abdominal radiograph

## CASE

A 23-year-old white male presented to a rural emergency department (ED) with a chief complaint of abdominal pain. He was seen in the ED 12 hours earlier with nausea and vomiting. Gastroenteritis was diagnosed and the patient was given promethazine (Phenergan), 25 mg IM. On this visit, the patient stated that the earlier treatment did not relieve his symptoms and that he was now experiencing abdominal pain as well.

**HISTORY** The patient denied any significant medical history. He denied current medication use, drug allergies, or use of illicit drugs. He had had no ill contacts, toxin exposure, or recent travel. He had no family history of GI problems, cancer, or heart disease. He worked as a rig hand on an oil well derrick. He drank 2 to 3 beers daily and did not use tobacco in any form. The last time he ate food was at home the night before. His last bowel movement occurred that morning and was normal. The patient rated his pain as an 8 on a pain scale of 0 to 10 (10 being the worst pain of his life). He described the pain as constant, nonradiating, and stabbing in nature. He denied any aggravating or alleviating factors.

**PHYSICAL EXAMINATION** The patient was lying in the fetal position

holding his abdomen. A focused examination was performed by the same clinician who treated him at his earlier ED visit. Vital signs were BP, 142/87 mm Hg; pulse, 60 beats per minute; respirations, 22 breaths per minute; temperature, 98.8°F; SpO<sub>2</sub>, 95% on room air; weight, 210 lb; and height, 56 in. The patient had equal breath sounds bilaterally, with no adventitious breath sounds, and equal expansion of the chest wall. His cardiac rhythm was regular with no murmurs, rubs, or gallops. The abdomen was soft and nondistended with high-pitched hyperactive bowel sounds and dullness to percussion in all four quadrants. There was tenderness to palpation in the epigastric region, no palpable hepatosplenomegaly or masses, a negative Murphy's sign, and no rebound or costovertebral angle tenderness.

**TESTS** Laboratory studies included a CBC with manual differential, a comprehensive metabolic panel (CMP), and urinalysis. Abdominal radiographs were taken. Laboratory results from the patient's first ED visit were available for comparison. The CBC and hemoglobin and hematocrit were essentially normal and unchanged. The CMP and urinalysis results were normal. Abdominal radiographs showed no free air and no signs of obstruction. However, small particulate areas of opacity were seen within the stools in the distal ileum and throughout the colon (see Figure 1). These were not present in the earlier radiographs.

## WHAT IS CAUSING THIS PATIENT'S PAIN?

- *Chronic pancreatitis*
- *Heavy metal ingestion or exposure*
- *Obstipation*
- *Bleeding ulcer*

## DISCUSSION

A review of studies revealed that the only change from the patient's earlier ED visit was the small particulate opacities in the GI tract. The most likely

diagnosis is obstipation. At this point, a complete physical examination was performed, and a more thorough immediate history was obtained.

The patient now had a smooth, black tongue. Upon further questioning, he admitted to consuming a large quantity of an OTC medication that contained bismuth subsalicylate. The patient was initially hesitant to quantify the amount he had taken, but once told of the possible problems that could occur, he stated he had taken one 8-oz bottle and a "handful" of pills 8 hours ago.

Bismuth subsalicylate is converted to salicylic acid and insoluble bismuth salts in the GI tract.<sup>1</sup> Each 262.4-mg tablet of bismuth subsalicylate contains an equivalent of 130 mg aspirin.<sup>1</sup> Life-threatening toxicity occurs at 300 mg/kg or more of salicylic acid.<sup>1</sup>

Bismuth salts act as an antidiarrheal by slowing GI peristalsis. In this case, the increased amount of bismuth substantially slowed GI peristalsis, not only causing the patient severe discomfort but becoming apparent on radiographs. Since the patient was stable and exhibited no signs or symptoms of toxicity, he was placed in observation for IV fluids, analgesics, and oral stool softeners. Analgesia was achieved by the administration of ketorolac (Toradol), 30 mg IV. Within 18 hours, the patient's pain had decreased substantially and he was able to have a significant bowel movement, which relieved any residual pain and discomfort. At discharge, the patient was educated at length on OTC medications and the importance of following the enclosed dosing instructions. **JAAPA**

**Shane Harper** practices with Canadian Family Physicians in Canadian, Texas. He has indicated no relationships to disclose relating to the content of this article.

**Erich Fogg, PA-C, MMSc, department editor**

## REFERENCE

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