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3 Abdominal Pain and Chronic Constipation in a 14-year-old Girl

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CASE PRESENTATION

A previously healthy 14-year-old girl presents to the emergency department with 3 days of worsening left-sided abdominal pain. She reports multiple episodes of nonbloody, nonbilious emesis and constipation. She denies sexual activity, dysuria, or fevers and her last menstrual period was 2 weeks ago. She reports occasional constipation, which she treats with over-the-counter laxatives, but is otherwise healthy. Her past surgical history includes a splenectomy after sustaining a traumatic splenic rupture several years earlier. A subphrenic abscess that required surgical drainage complicated her postoperative course, and she had an appendectomy during that procedure.

Physical examination reveals a well-appearing adolescent with a temperature of 36.7°C (98.1°F), heart rate of 113 beats/min, respiratory rate of 16 breaths/min, and blood pressure of 128/96 mm Hg. She has a well-healed midline abdominal scar. Her abdomen is soft and nondistended. She has tenderness to deep palpation but no guarding or rebound tenderness. The rest of her physical examination findings are unremarkable.

Laboratory evaluation reveals a negative urine pregnancy test and normal complete blood cell count, serum electrolyte panel, liver enzymes, lipase, and urinalysis. An abdominal radiograph demonstrates a possible ileus with moderate stool burden. An abdominal and pelvic computed tomography (CT) scan shows a nonobstructive bowel gas pattern, with no acute pathology. She is admitted to the pediatric unit with a presumptive diagnosis of constipation and treated with oral polyethylene glycol and enemas. Her blood pressure normalizes with adequate pain control. A surgical procedure ultimately reveals the diagnosis.

CASE DISCUSSION

The girl's abdominal pain, nausea, and emesis worsen over the next 48 hours. She is evaluated by general surgery and undergoes nasogastric decompression and bowel rest for probable small bowel obstruction (SBO). A repeat abdominal CT scan confirms a partial SBO and she is taken for diagnostic laparoscopy. Intraoperative findings include viable bowel with extensive adhesions involving the abdominal wall and numerous tan-brown pelvic and omental nodules. Biopsies of the nodules are obtained and the adhesions lysed. Postoperatively, she regains spontaneous bowel function and is discharged. Histology of the nodules reveals splenic tissue, and her final diagnosis is partial SBO due to adhesions and splenosis.

The Condition

Splenositis is the benign, heterotopic transplantation of splenic tissue that results from surgical or traumatic manipulation of the spleen. It most commonly occurs after traumatic splenic rupture and subsequent splenectomy. The average interval between initial splenic trauma and a diagnosis of splenositis is 10 years. Therefore, the condition is more frequently seen in the adult population. Approximately 70% of patients with splenositis have a history of sustaining splenic trauma during their teenage years. The proposed pathogenesis of splenositis is either by hematogenous spread or direct extension of splenic tissue. Splenic nodules are most commonly found in the abdomen and pelvis, although there have been isolated case reports of splenositis in the thoracic cavity, subcutaneously, and even intracranially. The nodules receive blood supply from surrounding tissues and can often retain some normal splenic function.

Although splenositis is typically asymptomatic, it can lead to intestinal obstruction or more rarely present as infarction, hemorrhage, ureteral compression with hydronephrosis, or even recurrence of hematologic diseases. A case of a 12-year-old boy with widespread intra-abdominal splenositis that was identified after recurrence of his chronic immune thrombocytopenic purpura 13 months after a splenectomy has been reported. In most patients with splenositis, removal of the ectopic splenic tissue is usually not recommended unless the patient is symptomatic.

MAKING THE DIAGNOSIS

Abdominal pain and constipation are common complaints that are frequently managed by clinicians in both the inpatient and outpatient settings. For adolescents who have a history of chronic constipation, the differential diagnosis can be broad, making a thorough history and physical examination even more important.

Adhesions should always be considered in patients with a history of prior abdominal surgery and signs of SBO, particularly in those who have had multiple surgeries. Well-known postsplenectomy complications include sus-

ceptibility to bacterial sepsis due to encapsulated organisms, reactive thrombocytosis, and, rarely, splenositis. In this patient, the surgical finding of numerous nodules with adhesions raised concern for malignancy, an inflammatory or infectious process, or endometriosis. However, her lack of constitutional symptoms and signs of chronic illness should have raised the possibility of splenositis.

Generally, splenositis is asymptomatic and most often detected incidentally. This may lead to an extensive diagnostic evaluation, perhaps even including surgical exploration. CT scan and magnetic resonance imaging may define the number, shape, and size of the lesions, but these modalities are not useful in differentiating splenositis from malignant lesions. A biopsy is often performed for definitive diagnosis, and histology shows distorted splenic architecture. In adult case reports, both technetium 99m radionuclide red blood cell scintigraphy and positron emission tomography scans have been used with variable success in diagnosing splenositis. Optimizing the use of these studies may help prevent diagnostic delay and the use of invasive procedures for diagnosis in an otherwise asymptomatic patient who has an incidental discovery of abdominal nodules. These studies were not performed in this patient due to concern for acute SBO.

LESSONS FOR THE CLINICIAN

- Intestinal obstruction should be considered in children who present with constipation and have a history of abdominal surgery.
- Intestinal adhesions and splenositis are complications to consider in posttraumatic splenectomy patients.
- Splenositis should be considered when tumor-like lesions are detected in patients who have a history of splenic injury.

References for this article at <http://pedsinreview.aappublications.org/content/36/8/373.full>.

Parent Resources from the AAP at HealthyChildren.org

- <https://www.healthychildren.org/English/health-issues/conditions/abdominal/Pages/Abdominal-Pain-in-Children.aspx>
- Spanish: <https://www.healthychildren.org/spanish/health-issues/conditions/abdominal/paginas/abdominal-pain-in-children.aspx>
- <https://www.healthychildren.org/English/health-issues/conditions/abdominal/Pages/Constipation.aspx>
- Spanish: <https://www.healthychildren.org/spanish/health-issues/conditions/abdominal/paginas/constipation.aspx>

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