CLINICAL VIGNETTE

Unusual Presentation of Abdominal Adhesions after Removal of a Rare Intestinal Tumor

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Post-operative adhesions following abdominal or pelvic surgeries are a normal response to injury of the peritoneal surfaces during surgery, yet they are a reason for significant morbidity, adhesive small bowel obstruction, infertility, and chronic abdominal pain. These complications related to or resulting from adhesions causes significant economic burden with annual costs exceeding $2 billion in the USA.[1] Increasing awareness among physicians regarding adhesions presentation and ways to diagnose and treat is crucial to treat our patients and avoid medico legal conflict.

A 63-year-old woman with history of polymyalgia rheumatic was found to have an incidental intra-abdominal tumor during her work up for polymyalgia rheumatic. She subsequently underwent a laparoscopic removal of the tumor, which was found by pathology to be GIST (gastrointestinal stromal tumor) of small bowel.

Seven months later, she noted onset of deep, left-sided abdominal pain which increased in intensity up to 7-8/10 over six weeks. The pain was associated with severe nausea but no vomiting, did not radiate, and did not respond to analgesics. She felt bloated and distended but not constipated. She eventually noticed localized swelling of her left abdominal wall, which disappeared when she lay down in bed. While in vacation in Florida, the pain became intolerable, prompting a call to her doctor in California who suggested getting an abdominal CT, which showed no acute obstruction, masses, or bowel distension.

She was re-examined after returning to California. She now reported visible distension of the left abdomen shortly after eating. The left abdomen also consistently distended when standing, with resolution when lying on her back. There was occasional abdominal pain moving from one side to the other. She had no nausea and did not notice any relation to specific type of meals.

On standing exam, the patient's abdomen showed an obvious bulge anteriorly on the left side from below the costal margin to the pelvic brim extending medially to the midline. The bulge disappears immediately when she lies down. Normal bowel sounds were present and palpation elicited discomfort and tenderness on the left quadrants. The remainder of her physical exam was normal.

Considering her recent GIST tumor resection, adhesions were considered. Her CT scan did not show any masses or intestinal obstruction making recurrence of GIST unlikely. The symptoms were significant and persistent enough to disturb daily activities. After discussion about the probability that adhesions could be the cause of abdominal pain and swelling, she was referred back to her surgeon for re-evaluation of the need for revision/laparoscopic adhesiolysis. Her surgeon decided to proceed with diagnostic laparoscopy due to her previous history of GIST resection, the severity of symptoms, and LLQ abdominal tenderness.

Upon entering the abdomen with the laparoscope, omental adhesions were noted on the left anterior abdominal wall with adherent loops of small intestine. Adhesions were noted between the loops of bowel and also involving the sigmoid, left colon and rectum. This was unusual as there was no evidence of inflammation or adhesions in the recent CT scan.

The surgeon's intra operative note reported dense adhesions seemed dense, and adhesiolysis was performed throughout the abdomen including omentum and between loops of the bowel. She had an uneventful recovery and was discharged the following day. The patient's abdominal swelling resolved and she remains symptom free more than 6 months post-op.

Discussion

Postoperative Adhesions after gastrointestinal surgery can cause significant morbidity and mortality. Adhesions are an inevitable consequence of intra-abdominal surgery. They can represent a major unsolved problem. Risk of Adhesions is estimated to be about 45% using laparoscopic approach compared to 93-100% in upper abdominal laparotomy and 67-93% in lower abdomen open surgery.[2]

Dembrowski was the first to publish data on induction of adhesions in an animal model in 1889, though extensive studies were done both in vivo and in vitro in the following 120 years, Nevertheless, the literature is still lacking an official definition of adhesions and a recognized standardized classification for objective assessment of their extent and severity.[3]

Post-operative chronic abdominal pain due to adhesions is a controversial entity with unknown incidence. Intra-abdominal adhesions are often well-vascularized and innervated explaining the relationship to chronic abdominal pain syndrome.[4] In our case, the presentation was pain as well as swelling of the left side of the abdomen. Pain was very

significant and prompted the repeat laparoscopy for diagnosis and therapy even though the CT scan was negative.

Intra-abdominal adhesions are predominantly diagnosed intraoperatively. Presence of adhesions may be detected by high-resolution ultrasonography and functional cine-MRI, both of which detect limited movement relative to other organs joined by adhesions. However, neither of these modalities is established in routine clinical practice. This patient's CT did not show any adhesions between the bowel and the anterior abdominal wall or adhering to loops of bowel. Careful history and clinical evaluation, as well as the suspicion of adhesions, were the keys in diagnosing this patient. No other clinical investigations or imaging procedures established a diagnosis. The success rate of laparoscopic lysis of adhesions remains between 46% and 87%.[4]

Conclusion

Intra-abdominal adhesions should be considered by primary care physicians as a significant source of morbidity. The best known complications are subacute bowel obstruction and intractable abdominal pain. Diagnosis is best made using high-resolution ultrasonography and functional cine MRI, both of which can detect limited movement of organs joined by adhesions.

Treatment is laparoscopic lysis of adhesions, which seems to be safe in the hands of well-trained laparoscopic surgeons. Laparotomy can predispose to development of more adhesions and incisional hernias.

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