

A rare case of colon cancer with splenic abscess



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Cancer of the colon does not always present with the familiar symptoms. Perforation and penetration of adjacent organs, with abscess formation as the initial presentation, is uncommon. Splenic abscess is a rare clinical entity. The four causes of a splenic abscess described are: primary pyogenic infection, splenic trauma, hemoglobinopathies and contiguous disease. In this paper we report a case of splenic abscess from colon cancer in an 50-year-old man who had a left lower chest contusion two-week before and review pertinent literature. Only 11 reported cases of splenic abscess from colorectal cancer were found in Medline.

KEY WORDS: Colon cancer, Splenic abscess.

Introduction

Colorectal cancers are among the common malignancies. Typical presentig symptoms related to colorectal cancer include rectal bleeding, anemia, change of bowel habits, or abdominal pain.

Perforation and penetration of adjacent organs, with abscess formation as the initial presentation, is uncommon. The incidence of colonic perforation ranges from 2.6 to 10%, including cases of free perforation into the peritoneal cavity and those where the tumor has perforated locally resulting in abscess or fistula formation¹. Splenic abscess is a rare clinical entity. It generally occurs

in patients with neoplasia, immunodeficiency, trauma, metastatic infection, splenic infarct or diabetes². Splenic abscess associated with colon cancer is very rarely reported^{3,4}. We report a case of splenic abscess due to penetration of colon cancer.

Case report

A 50-year-old man was referred to our emergency department with a four-day history of fever, left upper quadrant abdominal pain and left lower chest tenderness. He had a left lower chest contusion two-week before. Breathing sounds were diminished in the left lower chest. The abdomen was mildly distended with tenderness in the left upper quadrant abdominal. Bowel sound was hypoactive. Laboratory examination showed that the white blood cell count was 18,500. Emergency chest X-rays showed a left basilar pleural effusion.

Ultrasonography of the abdomen showed a hypoechogenic area with an unclear margin in the spleen.

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Enhanced abdominal CT revealed two intrasplenic low-density collections, containing air (Fig. 1) and a non specific wall thickening of descending colon next to the spleen (Fig. 2).

He developed an episode of severe left upper quadrant abdominal pain twelve hours after admission. A laparotomy performed immediately, showed purulent material in the left subdiaphragmatic region and a splenic flexure mass invading the spleen. There was no hepatic metastases or peritoneal dissemination. The colonic mass was resected en bloc with the spleen. The specimen showed advanced colon cancer penetrating to the spleen. His recovery was uneventful and he was discharged 2 weeks later.



Fig. 1: CT shows two intrasplenic low-density collections, containing air.



Fig. 2: A non specific wall thickening of descending colon next to the spleen (arrow).

Discussion

Approximately one third of patients with colorectal cancer will have major complications, such as involvement of adjacent organs or structures, obstruction, or perforation. Abscess formation occurs in 0.3 to 0.4% of colonic carcinoma and is the second most common complication perforative lesions¹. Michowitz et al. have proposed the following clinical classification of perforation-complicated carcinoma of the colon: 1) free perforation with leakage of the bowel contents into peritoneal cavity; 2) covered perforation with local abscess formation; 3) perforation into one of the neighboring organs or formation of a fistula⁵. Splenic abscess is a rare entity with an incidence ranging from 0.14% to 0.7% in autopsy studies⁶. Splenic abscess occurs mostly in males with average age ranging from 37 to 54 years⁴.

According to Chun's classification, the four causes of a splenic abscess described are: primary pyogenic infection, splenic trauma, hemoglobinopathies and contiguous disease⁷. In literature metastatic hematogenous infection represents the most common cause of splenic abscess⁸. Endocarditis or another distant site of infection accounted for more than two thirds of all the cases⁹. In our patient, a history of previous chest trauma suggested a secondary infection and suppurative of a contused spleen or of a haematoma arising from injury to splenic tissue. Two weeks is the most common latency period between the trauma and development of the abscess⁸. However, splenic abscess also develops from direct extension of a disease in a contiguous organ, such as a neoplasm of the gastrointestinal tract^{3,4,10-13}, a penetrating gastric ulcer^{4,14}, diverticulitis, perinephric abscess, Crohn's colitis, necrotizing pancreatitis or perihepatic and subphrenic abscess⁸. This group of splenic abscess is still more rare than the traumatic¹⁵. Splenic abscess is a rare presentation of colon cancer^{3,4}. To the best of our knowledge, only 11 cases have been reported in the literature (Table I)^{3,4,10,13,16-20}. Splenic abscess can occur because of synchronous splenic metastasis with abscess¹⁹, hematogenous spread to the spleen¹⁶ or direct invasion or local perforation into the spleen^{3,4}, as in our case.

TABLE I - Literature review of splenic abscess from colon cancer

Year	Author	Journal
1983	Belinkie SA ²¹	Dis Colon Rectum
1993	Kawamoto K ¹³	Jpn J Clin Oncol
1997	Shinhar S ¹⁹	Dig Surg
1999	Nakao A ¹²	Anticancer Res
1999	Chevallier P ¹¹	AJR
2001	Paramelle PJ ²⁷	J Radiol
2002	Leibovitz I ¹¹	Harefuah
2006	Kubota T ⁹	Am Coll Surg
2007	Pisanu A ²⁰	World J Gastroenterol
2010	Gervaise A ²⁸	J Radiol
2011	Tan TW ⁶	Arch Surg

Such cases often present with atypical clinical findings and are difficult to diagnose. Clinical manifestations of splenic abscess include the triad of fever, left upper quadrant pain and a tender mass²¹. The association with digestive symptoms (bleeding, change of bowel habits or abdominal pain) related to colon cancer is inconsistent. The majority of patients have leukocytosis. The chest radiograph is abnormal in 33 to 80 per cent of cases⁸. A left lower lung infiltration or a left pleural effusion are the most common findings²². A splenic abscess may rupture into the peritoneal cavity, thus causing acute peritonitis, as in our case. Fever, splenomegaly and localized peritoneal signs indicate perforation of splenic abscess⁹. A mortality rate of 50% has been reported in cases of splenic rupture. A splenic abscess may also drain into the stomach, colon, or pleura; however, splenic abscesses most frequently produce repeated bacteremia, which ends in septic shock if not treated²³. The most common organisms in most reported series²⁴ have been aerobic microbes, and particularly *Streptococci* and *Escherichia coli*. Gas formation in the abscess was found mainly in patients with gram negative bacillus infections²².

The diagnosis of splenic abscess is difficult because it is uncommon and often presents misleading, non specific clinical pictures. CT, with a sensitivity of 96% and associated specificity between 90% and 95%, currently is the best diagnostic test for splenic abscess²³. CT may show a homogeneous low density area with or without rim enhancement. The presence of gas in an intrasplenic collection is diagnostic for an abscess, although the majority of splenic abscess do not contain air⁹. In addition, CT has the capability to demonstrate any other concomitant disease and in rare cases portal venous gas has been observed in splenic abscess from colon cancer^{10,11,13}. However, a review of large series of patients with splenic abscess found that the sensitivity of both CT and US was equal and extremely high (98%)²². US generally plays a major role in reaching an early diagnosis of acute abdomen in the emergency department because of its cost-effectiveness, noninvasiveness, promptness, and portability. Differential diagnosis of splenic abscess in CT and US images should include splenic infarct, hematoma, neoplasm, and even complicated cyst²³.

Curative treatment of T4 colon cancer involves en bloc resection of the tumor and the involved tissue or organ³. The overall survival of lesions treated by multivisceral resection is similar to that of tumors not requiring resection of additional organs, if complete resection is accomplished (the five-year survival rate was 51 percent). Emergency operation for ileus or perforation was not related to survival in curatively operated patients²⁵. The survival time was not influenced by the type of perforation but by the stage of tumor invasion⁴. The best therapeutic approach for splenic abscess due to hematogenous spread is still a matter of debate. Traditional treatment includes appropriate antimicrobial therapy with or without splenectomy²⁶. Percutaneous treatment of

splenic abscess is an effective alternative to surgery. The success rate for splenic abscess has been reported between 67% and 100%²⁷. The procedure is most likely to be successful when the abscess collection is unilocular and when its content is liquefied enough to be drained. Percutaneous aspiration of splenic abscess can be used as a bridge to surgery for those patients who are critically ill or who have several comorbidities²⁶.

Conclusion

Splenic abscess is a rare entity that remains mainly a subject of case reports. Splenic abscess secondary to colon cancer is a very rare clinical entity. In present case, splenic abscess was due to penetration of colon cancer. An appropriate diagnosis was made at an urgent laparotomy for perforation of splenic abscess into the peritoneal cavity.

Riassunto

Il cancro del colon non sempre si presenta con i sintomi familiari. La perforazione e la penetrazione di organi adiacenti con formazioni di ascessi, non è una comune presentazione iniziale. L'ascesso splenico è un'entità clinica rara. Le cause descritte di un ascesso splenico sono quattro: l'infezione primaria ai piogeni, il trauma della milza, l'emoglobinopatie e la malattia contigua. In questo articolo riportiamo un caso di ascesso splenico da carcinoma del colon, in un uomo di 50 anni che aveva avuto una contusione toracica sinistra due settimane prima ed analizziamo la letteratura pertinente. Sono stati trovati su Medline solo 11 casi di ascesso splenico da cancro del colon-retto.

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