Adult Intussusception Induced by Colonic Adenocarcinoma: A Case Report

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Adult intussusception caused by colonic adenocarcinoma is rare. We report a 45-year-old woman with a colonic adenocarcinoma that induced ileo-cecal intussusception. The patient presented with symptoms of intermittent right-lower-quadrant abdominal pain, diarrhea, nausea and vomiting that had lasted four days. Abdominal computed tomography demonstrated intussusception from the terminal ileum into ascending colon and ileo-cecal intussusception was confirmed by surgery. The pathological report indicated colonic adenocarcinoma. In conclusion, the clinical signs of adult intussusception may be nonspecific and preoperative diagnosis is difficult. Abdominal computed tomography offers the most useful diagnostic information. Surgical intervention should be considered because of the high risk of the presence of a tumor.

Key words: colonic adenocarcinoma, intussusception

Introduction

Intussusception occurs when one segment of bowel telescopes into an adjacent segment; this can result in obstruction and possible ischemic changes\(^1\). Although intussusception is a relatively common cause of intestinal obstruction in children below the age of 5, it rarely occurs in adults. The presenting symptoms and signs included abdominal pain, nausea, vomiting, abdominal mass and gastrointestinal bleeding. Due to the fact that these presentations are nonspecific, the preoperative diagnostic rate is relatively low. We present a case of ileo-cecal intussusception due to colonic adenocarcinoma in an adult female. This case reminds emergency physicians to use broad differential diagnosis when evaluating patients who present with nonspecific symptoms.

Case Report

A 45-year-old woman was brought to our emergency department due to intermittent right-lower-quadrant abdominal pain that had lasted for four days. Yellowish watery diarrhea, nausea and vomiting were also noted. She was relatively healthy without any previous history of systemic disease. She was admitted to a local hospital initially where panendoscopy gave nonspecific findings and she was transferred to our emergency department because of a lack of improvement during hospitalization.

On arrival, her vital signs were a blood pressure of 121/75mmHg, a pulse rate of 80 beats/min, a respiratory rate of 16/min and a body temperature of 36°C. Physical examination of abdomen revealed local tenderness with rebounding pain...
over right lower quadrant. Routine blood examinations showed a hemoglobin of 9.5g/dl, a platelet count of 210000/mm and a white blood cell count of 7590/mm. Serum biochemistry was normal (including serum electrolytes and creatinine, liver enzymes, amylase and lipase) except for a mild elevation of C-reactive protein (1.75mg/dl, normal range <0.4mg/dl).

Abdominal sonography showed a small amount of fluid accumulation over right lower quadrant of abdomen with a suspicious enlargement of appendix. (Fig. 1) An abdominal computed tomography scan showed intussusception from the terminal ileum to ascending colon. (Fig. 2) Emergency laparotomy was arranged under the impression of ileo-cecal intussusception. During the laparotomy, an ileo-cecal intussusception from the terminal ileum to ascending colon was found, the leading point of which was a polypoid mass (size 4.0x3.5x2.8cm) at the cecum. (Fig. 3) A radical right hemicolectomy was performed with end-to-side anastomosis. The histopathological examination confirmed the presence of a well-differentiated adenocarcinoma of the ascending colon with superficial ulceration. The patient was discharged without complications 10 days after the operation.

**Discussion**

Intussusception is the invagination of a proximal segment of bowel into the lumen of an adjacent distal segment, resulting in obstruction and possible ischemic injury. Intraluminal polypoid lesions have a greater tendency to cause invagination of the bowel as peristalsis drags the lesion forward. Nonetheless, the exact mechanism precipitating intussusception is not well understood.

Intussusception occurs commonly in children below the age of five years. In children, an underlying lesion is found to be present in most cases of intussusception, including enlarged Peyer’s patches secondary to a recent viral infection, Meckel’s diverticulum, lymphoma, polyps and others factors. Intussusception rarely occurs in adults and is usually associated with a pathological lesion that serves as a lead point
Fig. 3 The surgical findings indicate an ileo-cecal intussusception caused by a polypoid mass

for the invagination. The etiology of adult intussusception can be categorized into four groups: tumor related; postoperative related due to gastrojejunal anastomosis and multiple adhesions; miscellaneous causes such as Meckel's diverticulum and idiopathic(2). Tumor-related is the most common etiology and malignancy is the major etiology of colonic intussusception; in these circumstances, the most common cause is adenocarcinoma(3). A benign tumor is the primary etiology of small bowel intussusception and the most common cause is lipoma. The frequency of the various locations for intussusception has been found to be colonic, small bowel, ileo-colonic and ileo-cecal in decreasing frequency(2). Thus, the case reported here of ileocecal intussusception is therefore quite rare.

In children, the most common symptoms associated with intussusception are abdominal pain, vomiting and a bloody stool. A palpable abdominal mass is uncommon. In adult, the majority of patients presented with chronic intermittent symptoms of bowel obstruction. Bloody stools and a palpable abdominal mass seldom occur with adults(4). Presentation with nonspecific symptoms therefore means that adult intussusception is often misdiagnosed until surgery is performed.

In children, barium enemas can be both diagnostic and therapeutic. However, barium enemas should be avoided before surgery because of the risk of seeding from a malignant leading point with adult intussusceptions. Abdominal ultrasound is most commonly used for detecting intussusceptions and this approach shows a “target sign” on transverse sections and a “hay-fork sign” on longitudinal sections. Ileocele intussusceptions are the most common and are easily visualized by ultrasound(5,6). Abdominal computed tomography is a most useful diagnostic tool for adult intussusceptions(7). The typical computed tomography findings are those of a “target sign”, a “layered appearance”, a “sausage shaped sign” and the “hay-fork sign” and these seem to be reliable for the diagnosis of adult intussusception.

Children with intussusceptions usually are treated by reduction using an enema and surgery is only performed when reduction by enema fails and there are signs of perforation or peritonitis(8). In adults, resectioning should be used for large bowel intussusceptions, where the malignancy rate is high(2). The use of reduction before resectioning is a selective method for small bowel intussusceptions in adult(9). When early diagnosis and surgery are performed, adult intussusceptions have a good prognosis, except for intussusceptions caused by
malignancy with distal metastasis.

In this case, the clinical symptoms did not present with the classical findings of acute appendicitis such as shifting pain, Rovsing’s sign, psoas sign, obturator sign and leukocytosis. To diagnose an unknown cause of bowel obstruction, abdominal computed tomography was performed at the emergency department and this revealed the cause clearly. As a result of early diagnosis and quick surgical intervention, this patient has a good prognosis.

In conclusion, the physician needs to consider the possibility of adult intussusceptions when chronic intermittent symptoms of bowel obstruction persist; this is important even though the clinical signs of intussusception are nonspecific. Preoperative diagnosis of adult intussusceptions is difficult. The use of abdominal computed tomography can avoid misdiagnosis before surgery and may offer useful help with the diagnosis. The additional information may include the underlying pathology and other valuable information such as metastases or lymphadenopathy. Surgical intervention needs to be seriously considered because of high risk of malignancy.

References


大腸腺癌導致成人腸套疊：病例報告

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大腸腺癌導致成人腸套疊是很少見。本篇病例報告，是一個45歲女性，由於大腸癌導致腸套疊的案例。病人呈現間歇性右下腹痛，噁心嘔吐，併水瀉，症狀持續4天。腹部電腦斷層發現：腸套疊從迴腸末端套入升結腸。手術後診斷證實是大腸腺癌導致成人腸套疊。結論：成人腸套疊的症狀並無特異性，所以很難在手術前被診斷出。但可藉由腹部電腦斷層掃描診斷出。由於大腸腸套疊有可能是大腸癌造成的，所以需考慮以手術治療之。

關鍵詞：大腸腺癌，腸套疊