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Adult Ileocecal Intussusception Induced by Malignant Lymphoma

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Abstract

Adult intussusception is a rare cause of acute abdomen in adults but is relatively common in children younger than 3 years of age. In contrast to pediatric cases, most adult intussusceptions are associated with an identifiable lead-point lesion. We report the case of a 51-year-old woman who presented with a one-day history of upper and right lower abdominal pain. Comprehensive evaluation revealed ileocecal intussusception with a leading tumor. The patient subsequently underwent radical right hemicolectomy. Pathological examination confirmed that the ileocecal intussusception was secondary to ileal diffuse large B-cell lymphoma.

Key Words: Adult Intussusception; Lymphoma; Leading Point Lesion

Introduction

Intussusception is a medical emergency in which a segment of the intestine telescopes into an adjacent distal segment, resulting in a spectrum of gastrointestinal complications. This invagination leads to bowel obstruction and may subsequently cause ischemia, necrosis, perforation, or infection if not promptly treated.

Intussusception occurs predominantly in children, whereas adult cases are rare, accounting for approximately 5% of all intussusceptions[1]. In contrast to pediatric cases, adult intussusception typically presents with nonspecific symptoms, such as intermittent abdominal pain and distension, and is most reliably diagnosed by imaging studies, particularly computed tomography (CT).

In the present case, a 51-year-old woman presented with isolated abdominal pain of one day's duration, without associated nausea or vomiting. Following comprehensive evaluation, she was diagnosed with ileocecal intussusception secondary to an underlying ileal malignant lymphoma.

Case history

A 51-year-old woman presented with a one-day history of epigastric and right lower quadrant abdominal pain. Her medical history was significant for asthma under regular treatment and chronic hepatitis B virus carrier status. She initially visited our outpatient department. On physical examination,

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she was alert and oriented. The abdomen was soft but distended, with tenderness over the epigastric and right lower quadrant regions, without rebound tenderness.

Abdominal ultrasonography revealed no ascites and no specific abnormalities, except for heterogeneous echotexture of the liver. Contrast-enhanced abdominal computed tomography (CT) demonstrated ileocecal intussusception with a suspected leading tumor measuring 1.7 cm in diameter. Regional lymphadenopathy was also identified (Figure 1A and 1B), along with a moderate amount of pelvic ascites and distension of the distal ileum. No pneumoperitoneum was observed. Laboratory investigations showed mild neutrophilia (76%; reference range, 55-71%) with a normal total white blood cell count ($9.37 \times 10^3/\mu L$). Serum biochemical parameters were within normal limits.

The patient subsequently underwent radical right hemicolectomy with primary anastomosis. Intraoperatively, ileocecal-type intussusception caused by a terminal ileal tumor measuring 3.2 cm in diameter (Figure 2) was identified. Multiple enlarged lymph nodes, up to 2.2 cm in size, were noted around the ileocecal valve. Approximately 100 mL of clear ascitic fluid was present, and no

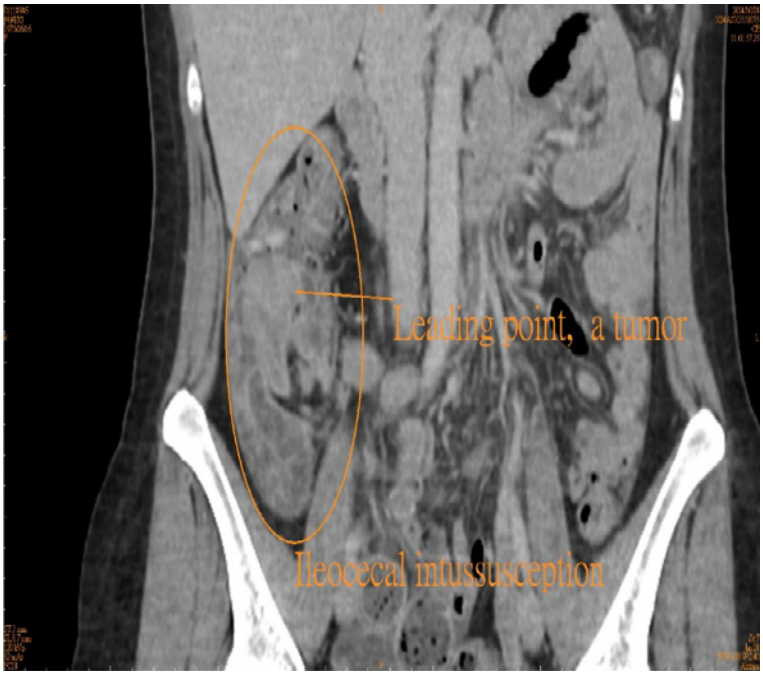


Fig 1(a). Coronal multiplanar reformatted (MPR) CT imaging demonstrated an ileocolic intussusception, characterized by the telescoping of the terminal ileum into the ascending colon, with a well-defined, enhancing soft-tissue mass serving as the pathologic lead point.



Fig 1(b). Typical teleoscopic feature of Intussusception with a leading point A contrast-enhanced CT scan in the axial plane demonstrated a telescoped bowel segment; a suspected malignant tumor was identified as the leading point, situated at the apex of the invagination and resulting in proximal mechanical bowel obstruction.



Fig 2. Gross pathology demonstrated a well-circumscribed polypoid lesion protruding through the mucosal surface of the terminal ileum. The tumor measured 3.2 cm (arrow) in maximum diameter and was associated with localized wall thickening and secondary intussusception.

evidence of peritoneal carcinomatosis was found.

Histopathological examination of the small intestinal tumor confirmed diffuse large B-cell lymphoma, with infiltration extending from the mucosa to the deep muscular layer near the serosa (Figure 3A and 3B). Immunohistochemical staining showed that the tumor cells were positive for CD20 (Figure 3C) and negative for CD3 and cytokeratin. Several regional lymph nodes also demonstrated involvement by diffuse large B-cell lymphoma (Figure 3D). No significant ischemic changes of the intestine were observed; however, focal hemorrhage attributable to intussusception was present.

Discussion

Intussusception is a potentially life-threatening condition in which a proximal segment of the intestine telescopes into an adjacent distal segment. This invagination may obstruct the passage of intestinal contents and compromise mesenteric blood flow, leading to bowel obstruction, ischemia, necrosis, perforation, or infection if left untreated. Intussusception is most commonly observed in children younger than 3 years of age, in whom the etiology is usually idiopathic. In contrast, adult intussusception is rare and is typically associated with an underlying structural lesion of the intestine.

In pediatric patients, intussusception is generally managed with pneumatic or hydrostatic reduction via enema, with surgery reserved for cases in which nonoperative reduction fails. Conversely, surgical intervention is considered the standard treatment for adult intussusception because of the high likelihood of an identifiable pathological lead point[2].

Unlike the predominantly idiopathic nature of pediatric cases, approximately 70-80% of adult intussusceptions are associated with a definable lesion, according to reports from Taiwan and other countries. These lesions include both benign and malignant neoplasms, such as lipoma, adenocarcinoma, and lymphoma[3,4].

The ileocecal region is regarded as a high-pressure zone due to the sphincteric function of the ileocecal valve. Although the precise mechanism of intussusception remains unclear, it is believed that a focal lesion within the bowel wall may disrupt normal peristalsis, particularly in high-pressure areas such as the ileocecal region. The presence of a pathological lead point combined with altered peristaltic activity is considered a key factor in the development of bowel invagination[5].

In the present case, the lead point was diffuse large B-cell lymphoma (DLBCL) of the small intestine. Lymphoma is a malignant neoplasm of lym-

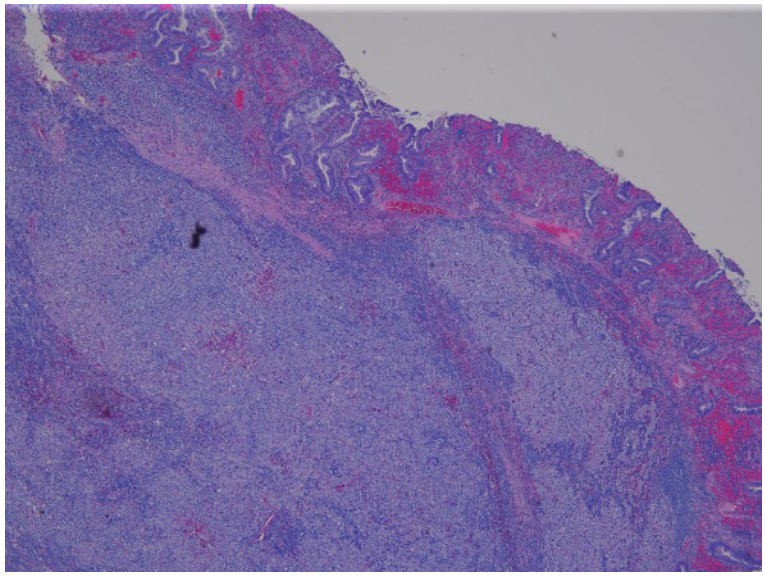


Fig 3(a). Histopathological examination of the terminal ileum (H&E, 40x). The section demonstrates a dense, diffuse infiltrative growth of Diffuse Large B-Cell Lymphoma (DLBCL). The neoplastic cells are characterized by large, atypical lymphoid cells with vesicular nuclei, prominent nucleoli, and scant cytoplasm, completely effacing the normal ileal mucosal architecture.

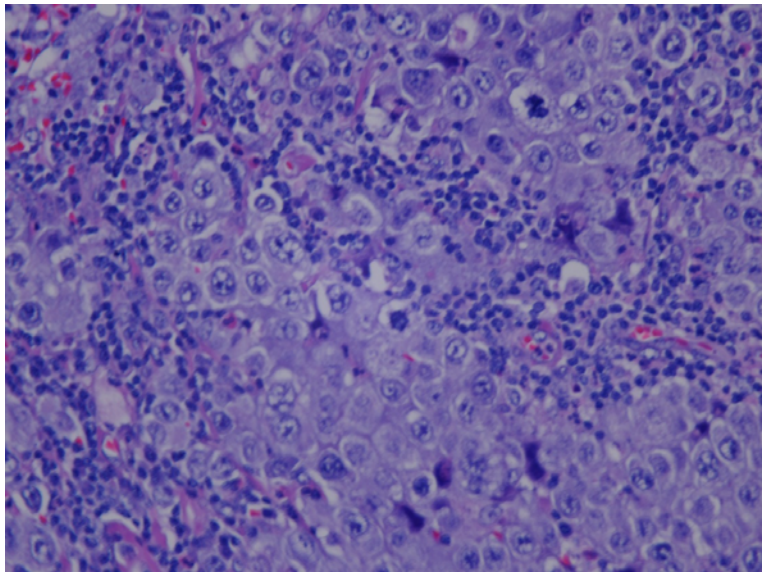


Fig 3(b). Histopathological features of ileal DLBCL (H&E, 400x). High-power magnification of the terminal ileum biopsy reveals a dense sheet-like infiltration of large atypical lymphoid cells. The neoplastic cells exhibit characteristic vesicular chromatin and prominent, centrally located nucleoli, with a high nuclear-to-cytoplasmic ratio, confirming the diagnosis of Diffuse Large B-cell Lymphoma.

phoid tissue that primarily involves lymph nodes but may also arise in extranodal sites. The gastrointestinal tract is the most common extranodal location, with involvement of the stomach, small intestine, and colon. In this patient, the lymphoma presented as a flat, polypoid tumor infiltrating deeply into the muscular layer of the ileum, with regional lymph node involvement. Primary small intestinal DLBCL is relatively uncommon compared with the classical nodal form but represents the most frequent histological subtype of primary intestinal lymphoma[6]. It is an aggressive non-Hodgkin lymphoma that typically affects patients between 40 and 60 years of age and most commonly involves the ileum.

Patients with small intestinal DLBCL often present with nonspecific symptoms, including abdominal pain, weight loss, diarrhea, and fever. Complications such as intestinal obstruction, bleeding, or perforation may also occur.

Comprehensive staging, including bone marrow biopsy and positron emission tomography-computed tomography (PET-CT), was not completed in this case because the patient sought a second medical opinion. Based on abdominal CT findings, the disease appeared localized to the small intestine. If bone marrow biopsy and PET-CT find-

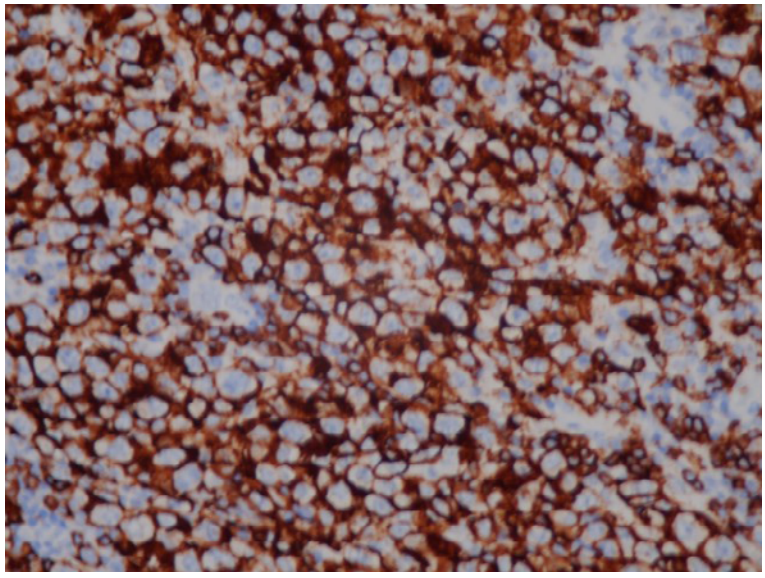


Fig 3(c). Immunohistochemical staining of the terminal ileum lesion (200x). The neoplastic infiltrate demonstrates diffuse and intense membranous reactivity for CD20, confirming the B-cell lineage of the atypical lymphoid cells in this case of DLBCL.

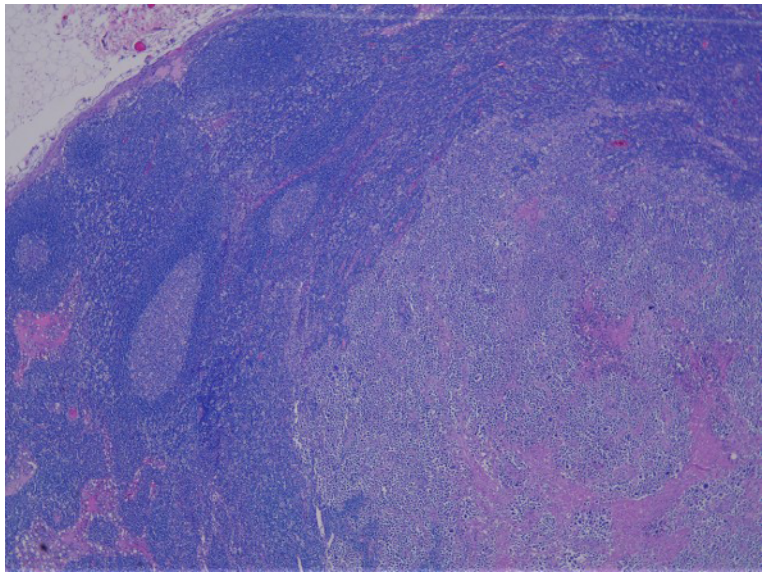


Fig 3(d). Regional lymph node involvement in DLBCL (H&E). The section demonstrates a dense, monomorphic population of large lymphoid cells replacing the lymphoid follicles and paracortical regions. The malignant cells exhibit pleomorphic nuclei, prominent nucleoli, and brisk mitotic activity, confirming extranodal extension into the regional lymphatic system.

ings were negative, the tumor would be classified as early-stage disease (stage I E, extranodal involvement) according to the Lugano classification[7].

Adult intussusception may present with vague or intermittent abdominal pain and can occasionally be asymptomatic, making early diagnosis challenging. Epigastric pain alone may be misattributed to upper gastrointestinal disorders such as peptic ulcer disease. In female patients presenting solely with abdominal pain, gynecological conditions should also be considered in the differential diagnosis. In our patient, the presence of pain in both the epigastric and right lower abdominal regions prompted timely medical evaluation, thereby avoiding delayed diagnosis.

The standard treatment for diffuse large B-cell lymphoma consists of combination chemotherapy with the CHOP regimen (cyclophosphamide, doxorubicin, vincristine, and prednisone), often combined with rituximab, an anti-CD20 monoclonal antibody[8-9]. Postoperative systemic chemotherapy was not initiated because the patient elected to seek a second medical opinion. Ongoing follow-up has been arranged.

In adults, intussusception is an exceedingly rare clinical event, occurring with an esti-

mated incidence of only 2-3 cases per million[10-11]. Unlike pediatric cases, which are typically idiopathic, approximately 70%-90% of adult intussusceptions result from a definitive pathological lead point, with malignancies accounting for over half of these occurrences. While the gastrointestinal tract is the most common extranodal site for Non-Hodgkin Lymphoma (NHL)—representing 5%-20% of cases—primary lymphoma remains an infrequent cause of intussusception[12]. Specifically, DLBCL originating in the terminal ileum and presenting as intussusception is considered exceptionally rare.

In summary, we report a case of adult ileocecal intussusception secondary to malignant lymphoma. Because clinical manifestations are often nonspecific, diagnosis may be challenging. Cross-sectional imaging, particularly CT, plays a crucial role in accurate and timely diagnosis. Given the high likelihood of an underlying pathological lead point, often malignant, surgical resection remains the treatment of choice in adult intussusception.

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惡性淋巴瘤引發成人之小腸盲腸腸套疊

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摘要

成人腸套疊是一種罕見的急性腹部疾病，但在兒童中較為常見。大多數成人腸套疊病例是由可明確定位的引導點病變引起的。我們報告了一例 51 歲女性患者，主訴上腹部和右下腹部疼痛 1 天。經全面檢查，發現迴盲部腸套疊伴隨引導點腫瘤。患者接受了右半結腸根治切除術，病理檢查證實為迴腸部位瀰漫性大 B 細胞淋巴瘤引起的迴盲部腸套疊。