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Transverse Colon Cancer Presenting as a Large Abdominal Mass with Anterior Abdominal Wall Abscess: A Case Report and Literature Review

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Abstract

Colorectal cancer usually presents with intestinal symptoms, but rare extraintestinal manifestations may occur from tumuor invasion. These include abdominal wall abscess, rupture, subcutaneous thigh or retroperitoneal abscess, and emphysema, often leading to misdiagnosis and treatment delays. We report a 30-year-old male with progressive, painless right upper abdominal swelling for four months and a discharging anterior abdominal wound for two months. Initially treated as soft tissue infection, further evaluation revealed a transverse colon tumuor with abdominal wall abscess. He underwent extended right hemicolectomy with ileotransverse anastomosis. Histopathology confirmed adenocarcinoma. A postoperative complication of surgical site infection was successfully managed with antibiotics and wound dressing with povidone iodine. This case highlights considering colonic cancer in atypical abdominal wall presentations.

Keywords: abdominal wall abscess, abdominal mass, surgical site infection, transverse colon cancer, adenocarcinoma

Introduction

Colorectal cancer, a leading cause of cancer-related deaths worldwide, is strongly linked to a Western lifestyle characterized by factors such as obesity, sedentary behavior, and a diet low in fruits and vegetables but high in red meat. This association explains the higher prevalence of the disease in affluent societies. In addition, certain pre-cancerous conditions like familial adenomatous polyposis and inflammatory bowel disease also play a significant role.[1] Notably, the incidence of colorectal cancer is on the rise in sub-Sahara Africa, possibly due to lifestyle changes resulting from globalization.[2,3] Typical symptoms of colorectal cancer include changes in bowel habits, haematochezia, and abdominal pain, which can prompt the patient to seek medical attention for early diagnosis and treatment by a surgeon. However, atypical symptoms, such as the formation of an anterior abdominal wall abscess due to tumor invasion and perforation, can lead to misdiagnosis and delayed treatment. Other rare presentations of colon cancers such as subcutaneous thigh abscess, retroperitoneal abscess, and subcutaneous emphysema, have been reported.[4] Locally advanced colorectal cancers, characterized by invasion of neighboring organs without distant metastases, account for 10-20% of all colon cancer cases and are classified as T4 lesions by the American Joint Committee on Cancer staging system. The formation of an abscess is a rare complication,

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occurring in only 0.3-4% of cases.[4,5] There is no consensus on the best approach for repairing extensive abdominal wall defects following surgery for abdominal wall involvement, as radical surgery is often avoided due to high risks and poor outcomes.[4,5]

This report presents a unique case of a large abdominal mass accompanied by an anterior abdominal wall abscess and rupture, discussing the diagnostic challenges, treatment options, and the methods of repairing abdominal wall defects. It highlights the importance of considering colonic cancer in the differential diagnosis of patients presenting with an abdominal mass and abdominal wall abscess, even in the absence of typical bowel symptoms, to facilitate early detection and timely management. This contribution aims to provide valuable insights and support further research on colonic tumors presenting with anterior abdominal wall abscesses.

Case Report

A 30-year-old male presented to the Emergency Unit of our facility with a 4-month history of progressive, painless upper right abdominal swelling and a 2-month history of a discharging wound on the anterior abdominal wall. He also reported high-grade fever. He had no prior history of abdominal pain, hematochezia, melena, constipation alternating with diarrhea, passage of pencil-like or pellet-like stool, abdominal distension, and vomiting. However, he reported weight loss, anorexia, easy fatigability, but no fainting spells or dizziness, and no jaundice. He had no chronic cough, contact with anyone with chronic cough, night sweats, or consumption of unpasteurized dairy products.

He had a positive family history of two first-degree relatives (his older brother and sister) who passed away from colon and endometrial cancers at ages 45 and 50, respectively. For these symptoms, he initially sought care at a peripheral hospital where he was diagnosed with a soft tissue infection and started on intravenous antibiotics without improvement, necessitating his referral to our facility.

Physical examination revealed a young male who appeared chronically ill, pale, anicteric, and not dehydrated. He had tachycardia (123 per minute), but other vital signs were within normal limits. Abdominal examination revealed a full abdomen with a palpable intra-abdominal mass in the right hypochondrium extending to the right lumbar and umbilical regions. The mass was slightly tender, nodular, hard with irregular edges, and attached to the skin. There were two discharging sinuses at the umbilicus and supraumbilical regions (Figure 1), discharging purulent effluent.

Figure 1: Image at presentation showing purulent umbilical discharge

The full blood counts showed a packed cell volume of 21%, other parameters were within normal range. Serum electrolytes, urea, and creatinine indicated hypokalemia (2.9mmol/L). A wound swab culture grew Escherichia coli. The carcinoembryonic antigen (CEA) level was elevated at 15.4ng/ml (normal range: 0–5). Coagulation profile and liver function tests were normal. The patient underwent drainage of the abdominal wall abscess and started on broad-spectrum antibiotics. A contrast-enhanced abdominal CT scan (Figures 2, 3 and 4) revealed irregular circumferential thickening of the hepatic flexure and proximal transverse colon, causing

Figure 2: Abdominopelvic Computed tomography (sagittal view) showing the fistulous tract

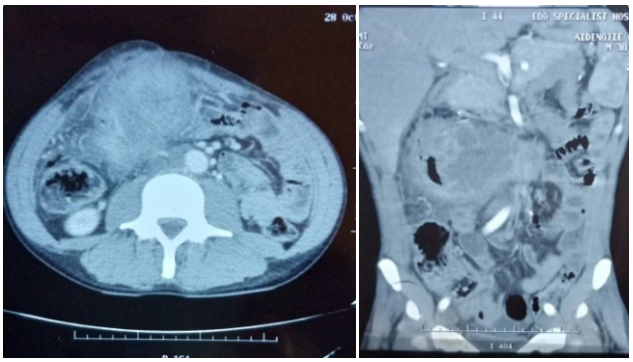

Figure 3: CT scan showing the mass, extending to the adjacent muscles and penetrating the abdominal wall. Figure 4: Coronal view of abdominopelvic CT scan

narrowing of the bowel. The mass measured 14.68cm x 11.23cm x 9.39cm, with associated hepatomegaly. Colonoscopy was not performed due to financial constraints.

The patient received daily wound dressing with povidone-iodine in preparation for surgery. He subsequently underwent an exploratory laparotomy, and intra-operative findings included a large intra-abdominal mass involving the hepatic flexure and proximal transverse colon weighing 2kg, The mass was attached to the anterior abdominal wall around

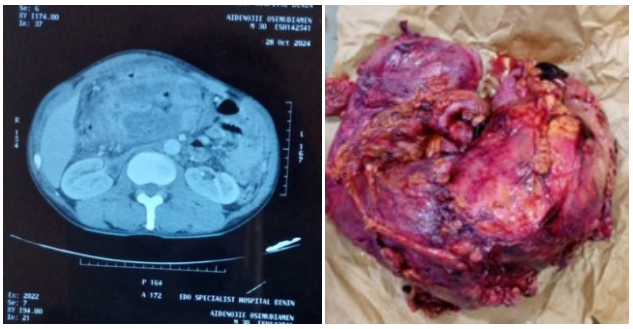

Figure 5: CT scan showing the mass, extending to the adjacent muscles and penetrating the abdominal wall. Figure 6: Intraoperative findings demonstrating resected specimen.

the fistulous tracts (Figure 5, 6 and 7). The liver appeared normal. The patient had an extended right hemicolectomy and ileo-transverse anastomosis, with excision of the fistular tract.

Post-operatively, he developed a deep surgical site infection (Figure 8), requiring daily wound dressing

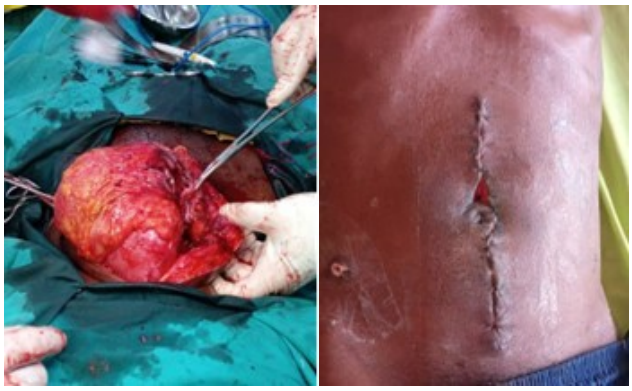

Figure 7: Intraoperative picture showing the huge mass and fistulous tract. Figure 8: The Surgical site infection after dressing

Figure 9: A year after surgery on follow up visit

with povidone-iodine. He was discharged in good condition on the 11th postoperative day. Histological examination revealed colonic adenocarcinoma and he was commenced on cytotoxic chemotherapy with FOLFOX-4 regimen. He is stable after a year on follow up (Figure 9).

Discussion

Colorectal cancer is the most common gastrointestinal malignancy.[6] In the United States, about 140,000 people are diagnosed with this disease annually, and over 50,000 die from it each year. This high mortality rate makes colorectal cancer the third leading cause of cancer-related deaths in the United States.[6] Mortality rate is even higher if it is not diagnosed early, or if treatment is

delayed. Typically, it presents with symptoms such as haematochezia, changes in bowel habits, abdominal swelling or abdominal pain.[7,8]

Locally advanced colonic cancer cases presenting as abdominal wall abscesses due to colon cancer invasion and perforation are rare, occurring in only 0.3-4% of cases.[5] Diagnosis can be challenging, especially if there are no associated intestinal symptoms. This unique presentation may involve local invasion or perforation leading to the formation of malignant fistulas into adjacent organs like the small bowel or bladder, as well as intra-abdominal, abdominal wall, retroperitoneal or intrahepatic abscesses.[5,6,9] Locally advanced colon cancer can also spread along tissue planes, causing abscesses in unusual locations. These atypical presentations can be the initial manifestations of the disease.[10,11] A similar unusual presentation was also documented by Ruscelli et al.[12] When faced with such cases, clinicians must maintain a high index of suspicion to ensure prompt diagnosis and proper management. Timely intervention is crucial as it can significantly reduce patient morbidity and mortality rates, especially in critical cases where eliminating the source of sepsis is vital.[13]

Early identification of the source of the abscess is crucial, and a comprehensive approach involving physical examination, laboratory tests, and imaging studies is necessary for an accurate diagnosis. This was evident in our patient's case, where a thorough evaluation was required upon presentation to our facility.

Computed tomography (CT) scans play a vital role in evaluating suspected abscesses and colon cancer by revealing colon wall thickening or distinct masses. In our patient's case, an abdominopelvic CT scan was conducted to determine the source of the abscess. Colonoscopy can also provide valuable insights into tumour characteristics and structure.[14] However, colonoscopy may have limitations as it cannot detect abnormalities beyond the lumen of the colon. In cases where repeat biopsies yield benign results or non-specific pathology reports, a structured evaluation with an abdominal CT scan is typically necessary. The CT scan can identify various aspects such as exophytic growths, perforated cancers with abscess formation, infiltration into adjacent structures, abdominal wall involvement, lymph node involvement, and the extent of the disease.[15] In our patient's case, the CT scan revealed a tumour as the cause of the abdominal abscess. In some instances, diagnostic laparoscopy or exploratory laparotomy may be required to make the diagnosis and obtain tissue for a definitive pathological diagnosis, as was the case with our patient. Velasco et al[16] also reported a similar approach that led to a favourable outcome without the need for additional colonoscopy. Conversely, Aritake et al[17] employed a different strategy, involving colonoscopy, diversion colostomy, and neoadjuvant chemotherapy before definitive surgery.

Furthermore, managing colon cancer with abdominal wall abscesses is a complex task that requires a multidisciplinary approach. Control of sepsis along with management of the primary malignancy is crucial.[15] This was the case for the index patient. Radical surgical interventions, such as en bloc resection of the colon, invaded organs, and fistulae, as well as full-thickness abdominal wall resection, followed by abdominal wall reconstruction using techniques such as autologous tissue repair or biological patches, may be necessary.[15,18] This approach mirrors that of Aritake et al,[17] who also performed abdominal wall reconstruction. However, it is important to strike a balance between ensuring a safe resection margin and adequately repairing the abdominal wall defect.

Multivisceral resection may be planned preoperatively for a small subset of patients, but in most cases, the decision to perform this procedure for primary colorectal carcinoma is made intraoperatively.[4] If neoadjuvant therapy is not feasible due to the patient's poor condition, primary surgery and autologous tissue abdominal wall reconstruction techniques could be considered as a viable alternative.[19]

Conclusion

This case report highlights the importance of considering colonic cancer in the differential diagnosis of a patient presenting with an abdominal mass and abdominal wall abscess, even in the absence of associated bowel symptoms. This consideration can aid in the prompt diagnosis and early management of colon cancer. Delayed diagnosis and treatment may result in severe consequences, such as extensive local spread of the

disease, sepsis, and ultimately, mortality. In cases of colonic tumour with abscess formation, initial treatment may involve local drainage of the abscess, appropriate antibiotic therapy, followed by tumour resection and reconstruction of the anterior abdominal wall defect.

Informed Consent: Informed consent was obtained from the patient.

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Conflict of Interest: None to be declared.

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