The THAI Journal of SURGERY 2019;40:44-48.
Official Publication of The Royal College of Surgeons of Thailand

Case Report

Non-Hodgkin Lymphoma Initially Presenting as Acute Appendicitis: A Case Report

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Abstract Non-Hodgkin lymphoma (NHL) of the ascending colon is the rare tumor. Moreover, NHL with clinical presentation that mimics acute appendicitis, viz., the right lower quadrant (RLQ) abdominal pain with fever as in this report has been extremely rare. She was a 39-year old patient who was firstly diagnosed as having acute appendicitis because of having RLQ pain and tenderness for two days. Her blood showed Hb 12.5 g%, WBC 12,000/mm^3, N 82%. The diagnosis of acute appendicitis was concluded hence the appendectomy was promptly performed. And its pathology was found to be caseating granulomatous lymphadenitis, no acid-fast bacilli or fungi documented. There was no fecalith, the common cause of acute appendicitis. However, she was continuously treated with standard anti-tuberculous regimen. Seven months later, she noticed the slowly growing intra-abdominal mass at the RLQ, without any constitutional symptom. The mass was around 10 x 10 cm in diameter without tenderness. The ultrasonography of the abdomen confirmed one lobulated mixed echoic mass at the RLQ, thickened wall of the ascending colon with diffuse liver metastasis. The right half colectomy was performed. The gross appearance of the mass was ulceroproliferative, 15 x 14 cm in diameter, and 4 cm in maximal thickness and it involved the entire circumference of the bowel wall. The pathology of the resected colon was diffuse large B cell lymphoma (DLBCL) involving the large and small bowels as well as pericolic tissue. Blood tests included: Hb 9.9 g%, WBC 6,100/mm^3, alkaline phosphatase 176 U/L, HIV antigen / antibody-negative. She was finally diagnosed as having DLBCL of the ascending colon with the liver metastasis and further treated with the CHOP regimen without rituximab. She passed away due to febrile neutropenia within 3 weeks after the first course of chemotherapy.

Keywords: Non-Hodgkin's lymphoma, Ascending colon, Acute appendicitis

Introduction

Non-Hodgkin lymphoma (NHL) is the common type of neoplastic diseases of lymphoid tissue. Around half cases are found originating from many organs outside the lymphatic system, so called the extranodal lymphoma, and among them, the gastrointestinal (GI) tract is the most common site, accounting for 30-50%[1]. Among various parts of the very long GI tract, the stomach is most commonly involved (52.2%), followed by the colon (34.8%) and the small intestine (8.7%) whereas the appendix is considered the very unusual site[2]. The common symptoms of the NHL of the GI tract are always non-specific, including abdominal pain or discomfort (91.3%), loss of appetite (65.2%) and weight

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loss (56.5%)[3] therefore its diagnosis is always delayed and the disease is usually found in the advanced stage[4]. Focus on the ascending colon, NHL usually presents as a palpable bulky mass with more insidious onset of pain in the right iliac fossa for a few months[5,6]. The special presenting manifestation of NHL of the GI tract which mimics the acute appendicitis that comprises acute right lower quadrant (RLQ) abdominal pain with fever, has been rarely reported so far[7].

Herein, we reported one case of NHL who presented with acute RLQ abdominal pain and she was provisionally diagnosed as acute appendicitis but later pathologically proved to be NHL, diffuse large B cell type of mainly the ascending colon.

Case Report

A 39-year-old Thai woman presented with sudden onset of right lower quadrant (RLQ) abdominal pain for two days but she did not have fever, nausea-vomiting and leucorrhea. The physical examination revealed only RLQ tenderness, no rebound tenderness, no hepatosplenomegaly, and no lymphadenopathy. Her blood test showed: Hb 12.5 g%, WBC 12,000/mm^3, N 82%, L 11.1%, platelet 366,000/mm^3. Her urinalysis was unremarkable. The ultrasonography of the lower abdomen showed one hypoechoic mass 1.8 x 5 cm in size, probably at the small bowel wall or the appendix and one enlarged lymph node. Appendectomy was promptly performed and the operative finding was a small mass at the distal end of the appendix whereas its proximal part looked grossly normal. The microscopic pathology of the resected appendix was caseating granulomatous lymphadenitis with the negative results for AFB and Gomori methenamine silver staining. The patient was further continuously treated with the standard 4-drug anti-tuberculous regimen until the 6-month course was completed. She could tolerate the drugs well.

Seven months after the appendectomy, the patient noticed a slowly growing mass at the RLQ without gastrointestinal or constitutional symptoms like fever or weight loss. The physical examination confirmed an abdominal mass, around 10 x 10 cm in diameter, with firm consistency and normal covering skin but lack of tenderness. No other lymph node was found. The ultrasonography of the lower abdomen showed a lobulated mixed echoic lesion at the RLQ, 8.3 x 4.4 x 6.7 cm with suspected bowel in origin. The colonoscopy confirmed the mass at the ascending colon, 60 cm from the anal verge and the scope could not be further passed due to the obstruction. Thus, a right half colectomy was performed. The gross pathology of the resected ascending colon was an ulceroproliferative mass, 15 x 14 cm in diameter and 4 cm in maximal thickness, involving the entire circumference of both the large and small bowels and invading the pericolic tissue. Both ends were free from the cancer. The microscopic pathology was diffuse large B cell lymphoma (DLBCL) that was positive for LCA, CD45, and CD20 but negative for CD3, and AE1/AE3 stain.

Blood tests showed Hb 9.9 g%, WBC 6,100/mm^3, N 85%, L 7%, platelet 273,000/mm^3, AST 64 U/L, ALT 17 U/L, alkaline phosphatase 176 U/L, HIV antigen / antibody-negative, creatinine 0.8 mg%, FBS 89 mg%, cortisol 32.8 ug/dL. A bone marrow study showed no evidence of lymphoma involvement. A chest roentgenogram was unremarkable.

She was definitively diagnosed as having DLBCL, involving the ascending colon, the terminal ileum with liver metastasis. She was further treated with cyclophosphamide, doxorubicin, vincristine and prednisolone (CHOP) regimen without rituximab. She developed severe febrile neutropenia and passed away three weeks after starting the first course of chemotherapy.

Discussion

Besides tenderness at RLQ and slight WBC elevation, the diagnosis of acute appendicitis may be confirmed on ultrasonographic findings: diameter of appendix > 6 mm, single wall of appendix thickness $\geq$ 3 mm, hypoechoic fluid-filled lumen, hyperechoic mucosa/submucosa, hypoechoic muscularis layer, appendicolith, perforation of appendix[8], and non-compressibility of inflamed appendix[9]. Although ultrasonography has less sensitivity and less specificity than the computed tomography[10], it should be the first line radiologic investigation, to avoid ionizing radiation and decrease costs[8]. Our case had a hypoechoic mass probably at appendix on first ultrasonography, so the pre-operative diagnosis of acute appendicitis was reasonable.

Besides the fecalith obstructing the lumen leading to an acute appendicitis, other etiologies include catarrhal inflammation and lymphoid hyperplasia due to viral or bacterial infection, constipation, trauma, diet, genetic predilection, hypersensitivity, mucosal ulceration[11], foreign body, parasite and neoplasms either primary or metastatic[12].

The appendicitis in our case was presumably incited by lymphoid enlargement of lymphoma.

The pathology of NHL can be rarely seen as chronic non-caseating[13,14] or caseating granuloma[15] and improperly treated as tuberculosis[16]. The pathological diagnosis in our case was firstly chronic caseating granulomatous lymphadenitis without AFB but later found to be DLBC lymphoma after 7 months, despite adequate treatment for tuberculosis. Hence lymphoma with unusual pathological manifestation like tuberculosis was supposedly the most likely explanation. Other possibilities were the coexistence of tuberculosis and lymphoma[17] and less likely true tuberculosis followed by lymphoma because it is known that tuberculosis can contribute the risk for lymphoma development[18].

The three common neoplasms of the appendix are carcinoid, metastasis and adenocarcinoma whereas lymphoma is very unusual[5, 19]. Likewise, the primary lymphoma of the large bowel is also less common, it accounts for only 0.4% of all tumors of the colon[20] or comprises 5.8% of all cases of GI tract lymphoma[21]. The two common sites of colon lymphoma are the caecum and rectosigmoid[4]. Focus on the ascending colon, lymphoma is not frequently found, especially those spreading to the liver has been rarely seen[22, 23].

According to the WHO classification, lymphoma of the ascending colon mostly originates from B lymphocyte and its most common pathology is DLBC[4]. Other pathologies include the mantle cell, mucosa-associated lymphoid tissue, small lymphocytic and peripheral T cell lymphoma[6]. The pathology in our case was DLBC and CHOP regimen was appropriate. Unfortunately, she developed severe neutropenia and sepsis and passed away within 3 weeks after the first course of chemotherapy even though antibiotics and colony-stimulating factor therapy were fully administered.

Conclusion

A 39-year-old Thai woman was diagnosed and treated as having acute appendicitis because of acute right lower quadrant abdominal pain for two days. Seven months later she developed RLQ mass which was pathologically proved to be lymphoma. The lymphoid tissue enlargement from lymphoma was proposed to be the inciting cause of the acute appendicitis.

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บทคัดย่อ **มะเร็งต่อมน้ำเหลืองชนิดไม่ใช่ฮ็อดจ์กิ้นที่มีอาการแสดงเบื้องต้นแบบไส้ติ่งอักเสบเฉียบพลัน: รายงานผู้ป่วย 1 ราย**

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มะเร็งต่อมน้ำเหลืองชนิดไม่ใช่ฮ็อดจ์กิ้น หรือ Non-Hodgkin lymphoma (NHL) ของลำไส้ใหญ่ช่วงขาขึ้นยังเป็นสิ่งที่พบได้น้อย ยิ่งผู้ป่วยที่มาด้วยอาการที่คล้ายไส้ติ่งอักเสบเฉียบพลัน ได้แก่ ปวดท้องด้านขวาล่างร่วมกับมีไข้ ยิ่งนับว่าพบได้น้อยมาก ดังในรายงานนี้ ซึ่งเป็นหญิงไทย อายุ 39 ปี ตอนแรกได้รับการวินิจฉัยว่าเป็นไส้ติ่งอักเสบเฉียบพลัน เนื่องจากมีอาการปวดท้อง เป็นเวลา 2 วัน และกดเจ็บบริเวณท้องด้านขวาตอนล่าง ตรวจเลือดพบ Hb 12.5 กรัม%, เม็ดเลือดขาว 12,000/มม.^{3}, N 82% วินิจฉัยว่าเป็นไส้ติ่งอักเสบเฉียบพลัน ผู้ป่วยจึงได้รับการผ่าตัดไส้ติ่งทันที ผลทางพยาธิวิทยาของชิ้นเนื้อของไส้ติ่งเป็นต่อมน้ำเหลืองอักเสบแบบ caseating granulomatous แต่ตรวจไม่พบเชื้อวัณโรค และเชื้อรา ไม่พบก้อน fecalith ซึ่งเป็นสาเหตุที่พบบ่อยของไส้ติ่งอักเสบเฉียบพลัน ผู้ป่วยได้รับการรักษาแบบวัณโรคตามมาตรฐานอย่างต่อเนื่อง 7 เดือนต่อมา ผู้ป่วยคลำได้ก้อนเนื้องอกในช่องท้องด้านขวาล่าง โตขึ้นช้าๆ แต่ไม่มีอาการอื่นๆ ก้อนขนาดประมาณ 10 x 10 ซม. กดไม่เจ็บ ผลตรวจท้องด้วยเครื่องสะท้อนคลื่นเสียงความถี่สูงก็ยืนยันว่าเป็นก้อนแบบ lobulated mixed echoic mass ในช่องท้องส่วนขวาล่าง ผนังลำไส้ใหญ่ช่วงขาขึ้นหนาตัว ตับเป็นจุดแบบกระจาย ผู้ป่วยได้รับการตัดลำไส้ใหญ่ซีกขวาออก พบลำไส้มีก้อนและมีแผล ขนาดเส้นผ่าศูนย์กลาง 15 x 14 ซม. ผนังลำไส้หนาสุด 4 ซม. เนื้องอกลามรอบลำไส้ทั้งหมด ผลพยาธิวิทยาของชิ้นเนื้อของลำไส้ใหญ่ส่วนที่ตัดออกมา เป็นมะเร็งต่อมน้ำเหลืองชนิด diffuse large B cell lymphoma (DLBCL) ทั้งลำไส้เล็ก ลำไส้ใหญ่ และเนื้อเยื่อรอบลำไส้ใหญ่ ผลตรวจเลือดพบ Hb 9.9 กรัม%, เม็ดเลือดขาว 6,100/มม.^{3}, alkaline phosphatase 176 U/L, HIV antigen / antibody ให้ผลลบ การวินิจฉัยสุดท้ายคือ มะเร็งต่อมน้ำเหลืองชนิด DLBCL ของลำไส้ใหญ่ช่วงขาขึ้น และกระจายไปที่ตับ ได้ให้การรักษาต่อด้วยยาเคมีบำบัดสูตร CHOP ผู้ป่วยเสียชีวิตเนื่องจากโรคติดเชื้อเพราะเม็ดเลือดขาวต่ำมากหลังจากได้รับยาเคมีบำบัดครั้งแรกเพียง 3 สัปดาห์

คำสำคัญ: มะเร็งต่อมน้ำเหลืองชนิดไม่ใช่ฮ็อดจ์กิ้น, ลำไส้ใหญ่ช่วงขาขึ้น, ไส้ติ่งอักเสบเฉียบพลัน