Primary lymphoma of the colon
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Section: Abdominal imaging
Area of Interest: Abdomen
Procedure: Diagnostic procedure
Imaging Technique: Conventional radiography
Imaging Technique: CT
Special Focus: Acute Case Type: Clinical Cases
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Patient: 58 years, male

Clinical History:
58-year-old gentleman presenting with progressively worsening abdominal discomfort of two weeks duration associated with nonbilious nonbloody vomiting. Physical examination revealed abdominal distention and tenderness.

Imaging Findings:
Radiographs performed at presentation (Fig. 1) showed features of mechanical obstruction with contrast enhanced CT (Fig. 2, 3) demonstrating large soft tissue mass involving the caecal pole and proximal ascending colon extending over 15 cm in length with wall thickness of up to 5 cm. Luminal narrowing with upstream dilatation of the small bowel up to the proximal jejunum through an incompetent ileocaecal valve is noted. There are extensive peri-colic inflammatory changes, nodularity and fluid around the mass. Enlarged lymph nodes adjacent to the lesion are observed with smaller nodes in the central mesentery adjacent to the SMA. Repeat CT 2 months post right hemicolecetomy showed confluent lymphonodal masses in the abdomen and retroperitoneum consistent with disease recurrence.

Discussion:
Primary colorectal lymphoma is rare and accounts for 3% of all gastrointestinal lymphomas and 0.1-0.5% of all colorectal malignancies [1]. Unlike gastric lymphomas, where the most common histological type is MALT, the most common histological subtype of colorectal lymphoma is diffuse large B-cell lymphoma (DLBCL). In colorectal lymphoma, the most frequent location is the caecum, likely because it contains a larger amount of lymphoid tissue. To date, the aetiological factors related to development of primary colorectal lymphoma remain unclear. The condition is twice as common in men as in women with a mean age of diagnosis of 55 years [2]. Common presentations include abdominal pain, abdominal mass, change in bowel habits, haematochezia, intussusception, or obstruction.

In our patient who presented with clinical and radiographic features of mechanical obstruction (Fig. 1), CT demonstrated uniform thickening of the ascending colon and caecal wall due to infiltrative spread in the submucosa, with associated desmoplastic reaction and pericolonic lymphadenopathy. The finding of enlarged intra-abdominal and retroperitoneal nodes (such as the paracaval nodes seen in Fig. 3) helps to establish lymphoma as a primary differential. Other imaging features include the demonstration of either localised or diffuse involvement and in characterisation i.e polypoidal, annular, ulcerating or nodular lesions with intraabdominal lymphadenopathy. Several other features may also help to differentiate between lymphoma and adenocarcinoma, such as terminal ileum involvement, preserved fat planes and lack of adjacent organ invasion [3]. The overall features are however
Secondary bowel obstruction is associated with a high risk of perforation and early recognition is paramount, with surgery as the mainstay of treatment. Our patient underwent urgent surgical exploration. A large 15 x 11 cm caecal/ascending colon tumour was found intraoperatively, with the tumour abutting the duodenum and right ureter. Right hemicolectomy was performed with large lymph nodes along the ileocolic branch taken enbloc. Histopathology revealed DLBCL involving the caecum/ascending colon mucosa up to serosa.

Our patient underwent adjuvant chemotherapy but a repeat scan in 2 months showed evidence of disease progression and recurrence, with confluent lymphonodal masses in the abdomen and retroperitoneum (Fig. 4 and 5) and obstructive right hydroureteronephrosis due to mass effect from the tumours.

The majority of primary colorectal lymphomas ultimately suffer recurrences, with median survival of 24-36 months and recurrence rates of 33-75%, often within 5 years after resection and with diffuse disease. Patients may benefit from chemotherapy but ultimately die from disseminated lymphoma [5].

**Differential Diagnosis List:** Bowel obstruction from colonic DLBCL. Post-surgical recurrence with disseminated disease., Colonic adenocarcinoma, Gastrointestinal tuberculosis

**Final Diagnosis:** Bowel obstruction from colonic DLBCL. Post-surgical recurrence with disseminated disease.

**References:**


S Cheddie, B Singh (2013) Primary Colon Lymphoma: A rare cause of small-bowel obstruction. The Internet Journal of Surgery Volume 29 Number 1

**Figure 1**

**Description:** Dilated small bowel loops are noted on the supine projection (left) with differential air-fluid levels on the erect projection (right), suspicious for mechanical obstruction. **Origin:** F Poh, Department of Diagnostic Radiology, Singapore General Hospital
Description: Large ascending colon/caecal pole soft tissue mass with luminal narrowing. Peri-colic stranding and lymphadenopathy, suspicious for extraserosal spread. Origin: F Poh, Department of Diagnostic Radiology, Singapore General Hospital
Description: Sequential coronal images (anterior right, posterior left) shows ascending colon/caecal pole soft tissue mass with severe luminal narrowing and upstream dilatation of small bowel up to the proximal jejunum through incompetent ileo caecal valve. 

Origin: F Poh, Department of Diagnostic Radiology, Singapore General Hospital
Description: Sequential images show confluent lymphnodal masses in the abdomen and retroperitoneum consistent with recurrence. Extensive involvement is noted, including the anastomotic site (surgical sutures, right image). Obstructive right hydroureteronephrosis with reduced enhancement and delayed excretion. Origin: F Poh, Department of Diagnostic Radiology, Singapore General Hospital
Description: Sequential images show confluent lymphonodal masses in the abdomen and retroperitoneum consistent with recurrence. Extensive involvement is noted, including the anastomotic site (surgical sutures, left image). Origin: F Poh, Department of Diagnostic Radiology, Singapore General Hospital